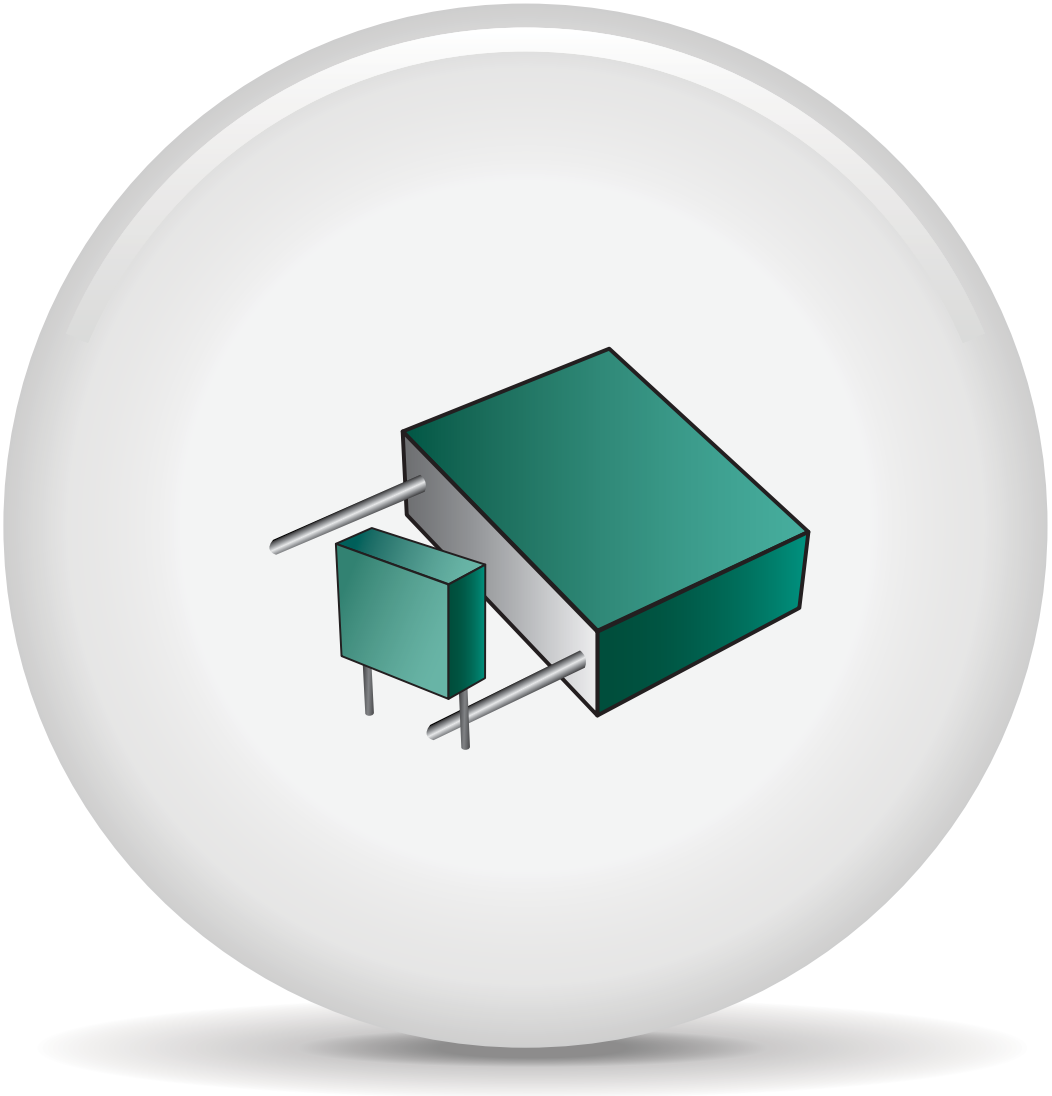
Film Capacitors

General Purpose, Pulse and DC Transient Suppression



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General Purpose, Pulse and DC Transient Suppression

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Packaging Information

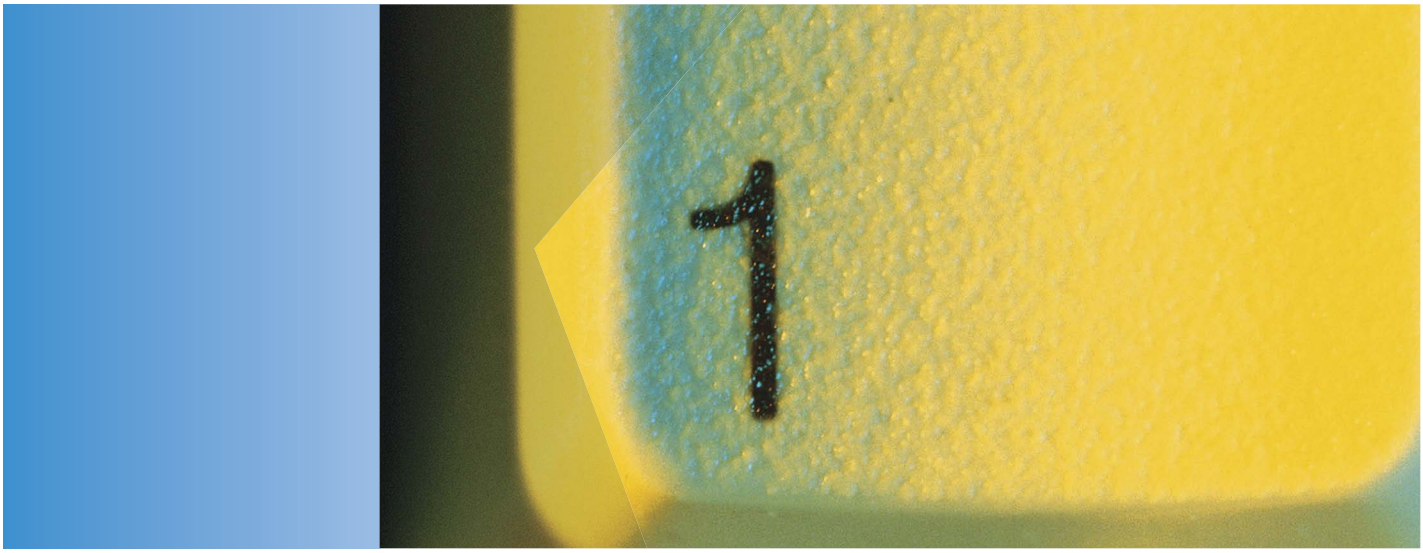
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About KEMET.

KEMET Corporation is a leading global supplier of electronic components. We offer our customers the broadest selection of capacitor technologies in the industry across multiple dielectrics, along with an expanding range of electromechanical devices, and electromagnetic compatibility solutions. Our vision is to be the preferred supplier of electronic component solutions for customers demanding the highest standards of quality, delivery and service.

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F611 & F612 Series Metallized Polyester Film, 5 – 37.5 mm Lead Spacing, 50 – 1,000 VDC

Overview

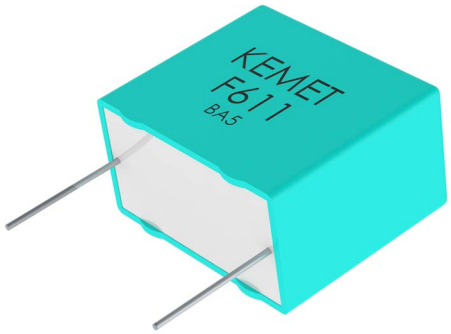
The F611 and F612 Series is constructed of metallized wound or stacked polyester film capacitor with radial leads of tinned wire. Radial leads are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing material meeting the requirements of UL 94 V–0.

Applications

Typical applications include blocking, coupling, decoupling, bypassing and interference suppression in low voltage applications such as automotive. Not for use with the mains.

Benefits

- Voltage range: 50 – 1,000 VDC
- Capacitance range: 0.001 – 180 µF
- Lead spacing: 5 – 37.5 mm
- Capacitance tolerance: ±10%, ±20%, ±5% on request
- Climatic category: 55/105/56, IEC 60068–1
- Tape and reel packaging in accordance with IEC 60286–2
- RoHS Compliant and lead-free terminations
- Operating temperature range of -55˚C to +105˚C



Part Number System

F	611	J	F	104	M	050	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging
F = Film	Metallized Polyester 611 = Wound 612 = Stacked	J = 5 K = 7.5 A = 10.0 B = 15.0 D = 22.5 F = 27.5 R = 37.5	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	050 = 50 063 = 63 100 = 100 160 = 160 250 = 250 400 = 400 630 = 630 1K0 = 1,000	See Ordering Options Table

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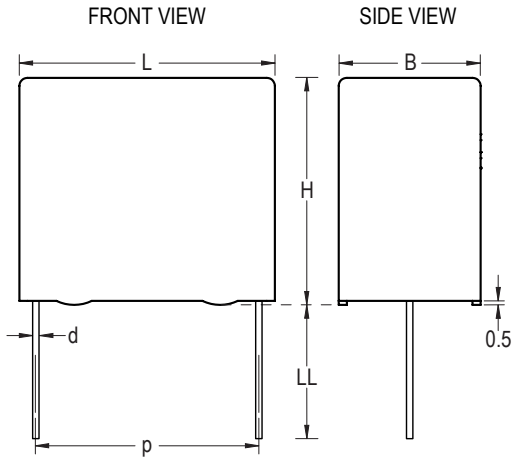
Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	C
	Bulk (Bag) – Long Leads	17 +0/-1	A
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L
	Other Lead and Packaging Options		
	Bulk (Bag) – Max Length Leads	20 +5/-0	ALL0L
	Ammo Pack	H_0= 18.5 +/-0.5	R
7.5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	C
	Bulk (Bag) – Long Leads	17 +0/-1	A
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L
	Other Lead and Packaging Options		
	Bulk (Bag) – Max Length Leads	20 +5/-0	ALL0L
	Ammo Pack	H_0= 18.5 +/-0.5	R
10	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	C
	Bulk (Bag) – Long Leads	17 +0/-1	A
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L
	Other Lead and Packaging Options		
	Bulk (Bag) – Max Length Leads	20 +5/-0	ALL0L
	Ammo Pack	H_0= 18.5 +/-0.5	R
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P
15	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	C
	Bulk (Bag) – Long Leads	17 +0/-1	A
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L
	Pizza Pack	4 +2/-0	Z
	Other Lead and Packaging Options		
	Bulk (Bag) – Max Length Leads	25 +5/-0	ALR0L
	Ammo Pack	H_0= 18.5 +/-0.5	R
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P

Ordering Options Table cont'd

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
22.5	**Standard Lead and Packaging Options**		
	Bulk (Tray) – Short Leads	4 +2/-0	C
	Bulk (Tray) – Long Leads	17 +0/-1	A
	Pizza Pack	4 +2/-0	Z
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P
	Ammo Pack	H_0= 18.5 +/-0.5	R
27.5	**Standard Lead and Packaging Options**		
	Bulk (Tray) – Short Leads	4 +2/-0	C
	Bulk (Tray) – Long Leads	17 +0/-1	A
	Pizza Pack	4 +2/-0	Z
37.5	**Standard Lead and Packaging Options**		
	Bulk (Tray) – Short Leads	4 +2/-0	C
	Bulk (Tray) – Long Leads	17 +0/-1	A
	Pizza Pack	4 +2/-0	Z

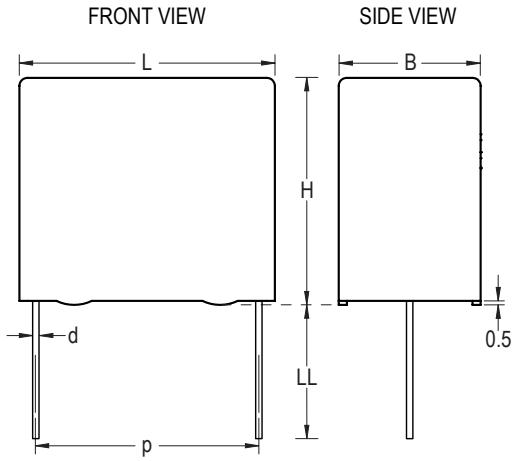
Dimensions – Millimeters



Size Code	p		B		H		L		d	
	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
JF	5.0	+/-0.4	2.5	Maximum	6.5	Maximum	7.2	Maximum	0.5	+/-0.05
JG	5.0	+/-0.4	3.5	Maximum	7.5	Maximum	7.2	Maximum	0.5	+/-0.05
JM	5.0	+/-0.4	4.5	Maximum	9.5	Maximum	7.2	Maximum	0.5	+/-0.05
JQ	5.0	+/-0.4	5.0	Maximum	10.0	Maximum	7.2	Maximum	0.5	+/-0.05
JT	5.0	+/-0.4	6.0	Maximum	11.0	Maximum	7.2	Maximum	0.5	+/-0.05
JU	5.0	+/-0.4	7.2	Maximum	13.0	Maximum	7.2	Maximum	0.6	+/-0.05
KE	7.5	+/-0.4	2.5	Maximum	6.0	Maximum	10.0	Maximum	0.6	+/-0.05
KF	7.5	+/-0.4	3.0	Maximum	8.0	Maximum	10.0	Maximum	0.6	+/-0.05
KG	7.5	+/-0.4	4.0	Maximum	8.0	Maximum	10.0	Maximum	0.6	+/-0.05
KH	7.5	+/-0.4	4.0	Maximum	9.0	Maximum	10.0	Maximum	0.6	+/-0.05
KJ	7.5	+/-0.4	5.0	Maximum	10.5	Maximum	10.0	Maximum	0.6	+/-0.05
KM	7.5	+/-0.4	6.0	Maximum	12.0	Maximum	10.5	Maximum	0.6	+/-0.05
AG	10.0	+/-0.4	4.0	Maximum	9.0	Maximum	13.0	Maximum	0.6	+/-0.05
AK	10.0	+/-0.4	5.0	Maximum	11.0	Maximum	13.0	Maximum	0.6	+/-0.05
AP	10.0	+/-0.4	6.0	Maximum	12.0	Maximum	13.0	Maximum	0.6	+/-0.05
BB	15.0	+/-0.4	4.0	Maximum	10.0	Maximum	18.0	Maximum	0.8	+/-0.05
BC	15.0	+/-0.4	5.0	Maximum	11.0	Maximum	18.0	Maximum	0.8	+/-0.05
BE	15.0	+/-0.4	5.5	Maximum	12.5	Maximum	18.0	Maximum	0.8	+/-0.05
BG	15.0	+/-0.4	6.0	Maximum	12.0	Maximum	18.0	Maximum	0.8	+/-0.05
BK	15.0	+/-0.4	7.5	Maximum	13.5	Maximum	18.0	Maximum	0.8	+/-0.05
BP	15.0	+/-0.4	8.5	Maximum	14.5	Maximum	18.0	Maximum	0.8	+/-0.05
BS	15.0	+/-0.4	10.0	Maximum	16.0	Maximum	18.0	Maximum	0.8	+/-0.05
BY	15.0	+/-0.4	11.0	Maximum	19.0	Maximum	18.0	Maximum	0.8	+/-0.05
DB	22.5	+/-0.4	6.0	Maximum	14.5	Maximum	26.0	Maximum	0.8	+/-0.05
DI	22.5	+/-0.4	7.0	Maximum	16.0	Maximum	26.0	Maximum	0.8	+/-0.05
DH	22.5	+/-0.4	8.0	Maximum	16.0	Maximum	26.0	Maximum	0.8	+/-0.05
DJ	22.5	+/-0.4	8.5	Maximum	17.0	Maximum	26.0	Maximum	0.8	+/-0.05
DM	22.5	+/-0.4	9.0	Maximum	18.5	Maximum	26.0	Maximum	0.8	+/-0.05
DO	22.5	+/-0.4	10.0	Maximum	18.5	Maximum	26.0	Maximum	0.8	+/-0.05

Note: See Ordering Options Table for lead length (LL) options.

Dimensions – Millimeters cont'd



Size Code	p		B		H		L		d	
	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
DP	22.5	+/-0.4	11.0	Maximum	20.0	Maximum	26.0	Maximum	0.8	+/-0.05
DU	22.5	+/-0.4	13.0	Maximum	22.0	Maximum	26.0	Maximum	0.8	+/-0.05
DY	22.5	+/-0.4	15.5	Maximum	24.5	Maximum	26.0	Maximum	0.8	+/-0.05
FB	27.5	+/-0.4	9.0	Maximum	17.0	Maximum	31.5	Maximum	0.8	+/-0.05
FC	27.5	+/-0.4	11.0	Maximum	20.0	Maximum	31.5	Maximum	0.8	+/-0.05
FI	27.5	+/-0.4	13.0	Maximum	25.0	Maximum	31.5	Maximum	0.8	+/-0.05
FN	27.5	+/-0.4	14.0	Maximum	28.0	Maximum	31.5	Maximum	0.8	+/-0.05
FR	27.5	+/-0.4	17.5	Maximum	28.0	Maximum	31.5	Maximum	0.8	+/-0.05
FS	27.5	+/-0.4	19.0	Maximum	29.0	Maximum	31.5	Maximum	0.8	+/-0.05
FY	27.5	+/-0.4	22.0	Maximum	37.0	Maximum	31.5	Maximum	0.8	+/-0.05
RB	37.5	+/-0.4	11.0	Maximum	22.0	Maximum	41.0	Maximum	1	+/-0.05
RF	37.5	+/-0.4	13.0	Maximum	24.0	Maximum	41.0	Maximum	1	+/-0.05
RH	37.5	+/-0.4	15.0	Maximum	26.0	Maximum	41.0	Maximum	1	+/-0.05
RC	37.5	+/-0.4	16.0	Maximum	28.5	Maximum	41.0	Maximum	1	+/-0.05
RD	37.5	+/-0.4	19.0	Maximum	32.0	Maximum	41.0	Maximum	1	+/-0.05
RP	37.5	+/-0.4	21.0	Maximum	38.0	Maximum	41.0	Maximum	1	+/-0.05
RO	37.5	+/-0.4	24.0	Maximum	44.0	Maximum	41.0	Maximum	1	+/-0.05
RU	37.5	+/-0.4	30.0	Maximum	45.0	Maximum	41.0	Maximum	1	+/-0.05

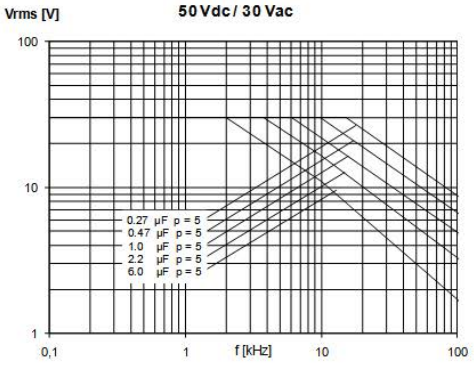
Note: See Ordering Options Table for lead length (LL) options.

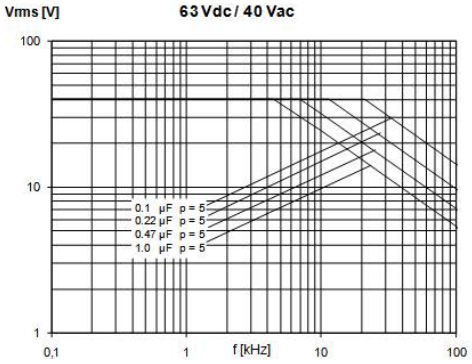
Performance Characteristics

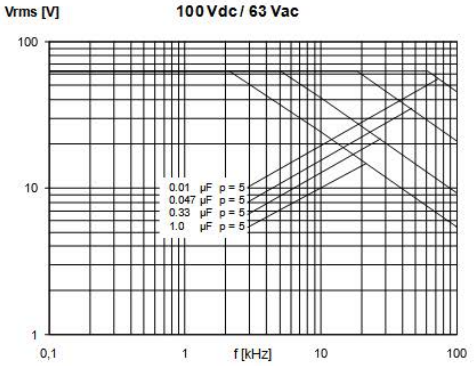
Voltage Range V_R (VDC)	50	63	100	160	250	400	630	1,000
Voltage Range V_R (VAC)	30	40	63	90	160/140	200/160	220	250
Capacitance Range (µF)	0.27 – 15	0.1 – 180	0.001 – 180	0.18 – 120	0.0068 – 82	0.001 – 33	0.0012 – 12	0.001 – 5.6
Capacitance Tolerance	±10%, ±20%, ±5% on request							
Category Temperature Range	-55°C to +105°C							
Voltage Derating	Above +85°C DC and AC voltage derating is 1.25%/°C							
Rated Temperature	+85°C							
Climatic Category	IEC60068–1, 55/105/56							
	–55 to +105°C (For +125°C, please consult KEMET)							
	Average relative humidity ≤ 75%							
	RH = 95% for 30 days per year							
	RH = 85% for further days limited by average value per year							
Test Voltage	1.6 x V_R VDC for 2 seconds							
Capacitance Drift	Maximum 2% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%							
Reliability	Operational life > 200,000 hours							
	Failure rate < 3 FIT, T = +40°C, V = 0.5 x V_R							
	Failure criteria: open circuit, short circuit, cap change > 10%, DF 2 times the catalog limits, IR < 50 MΩ							
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp < V_R), the specified dV/dt can be multiplied by the factor V_R/Vpp.							
Temperature Coefficient	+400 (±200) ppm/°C at 1 kHz							
Self Inductance	Approximately 6 nH/cm for the total length of capacitor winding and the leads							
Dissipation Factor tanδ	Maximum Values at +23°C							
		C ≤ 0.1 µF		0.1 µF < C ≤ 1.0 µF		C > 1.0 µF		
Lead Spacing 5 mm	1 kHz	0.8%		0.8%		0.8%		
	10 kHz	1.2%		1.2%		1.5%		
	100 kHz	2.5%						
Lead Spacing 7.5 – 37.5 mm	1 kHz	0.8%		0.8%		1.2%		
	10 kHz	1.5%		1.5%				
	100 kHz	3.0%						
Insulation Resistance	Measured at +20°C, according to IEC 60384–2							
	Minimum Values Between Terminals							
			C ≤ 0.33 µF		C > 0.33 µF			
	V_R ≤ 100 VDC		15,000 MΩ		5,000 MΩ • µF			
	V_R > 100 VDC		30,000 MΩ		10,000 MΩ • µF			

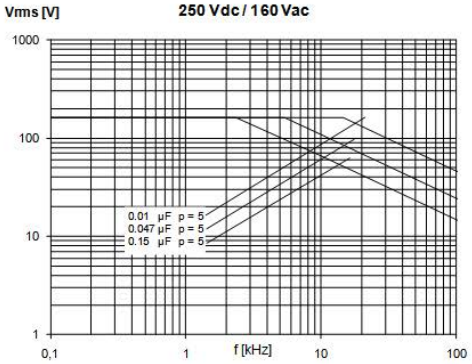
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/T ≤ 40°C)

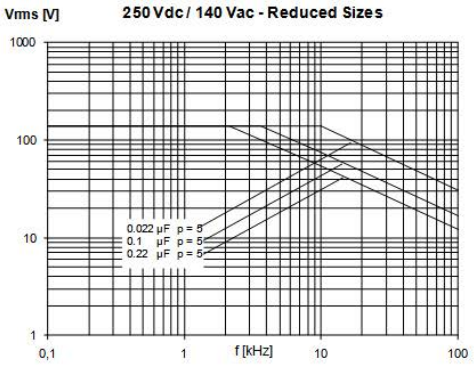
Lead Spacing 5 mm

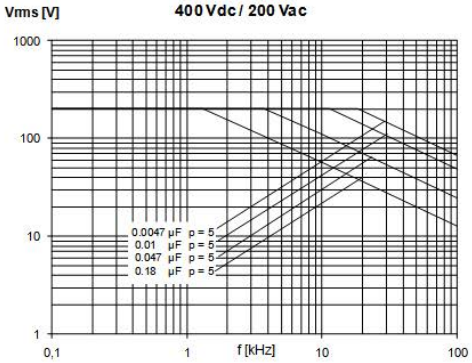


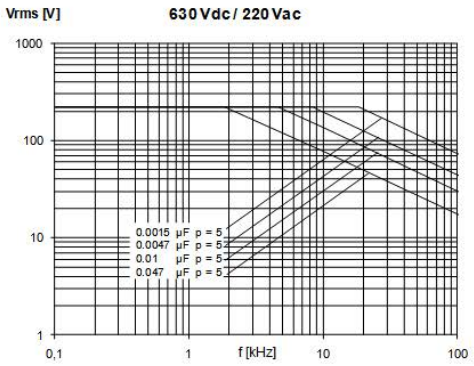


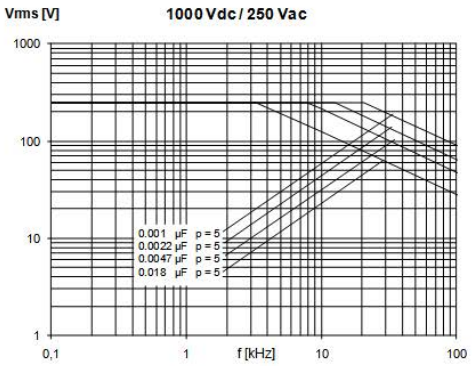






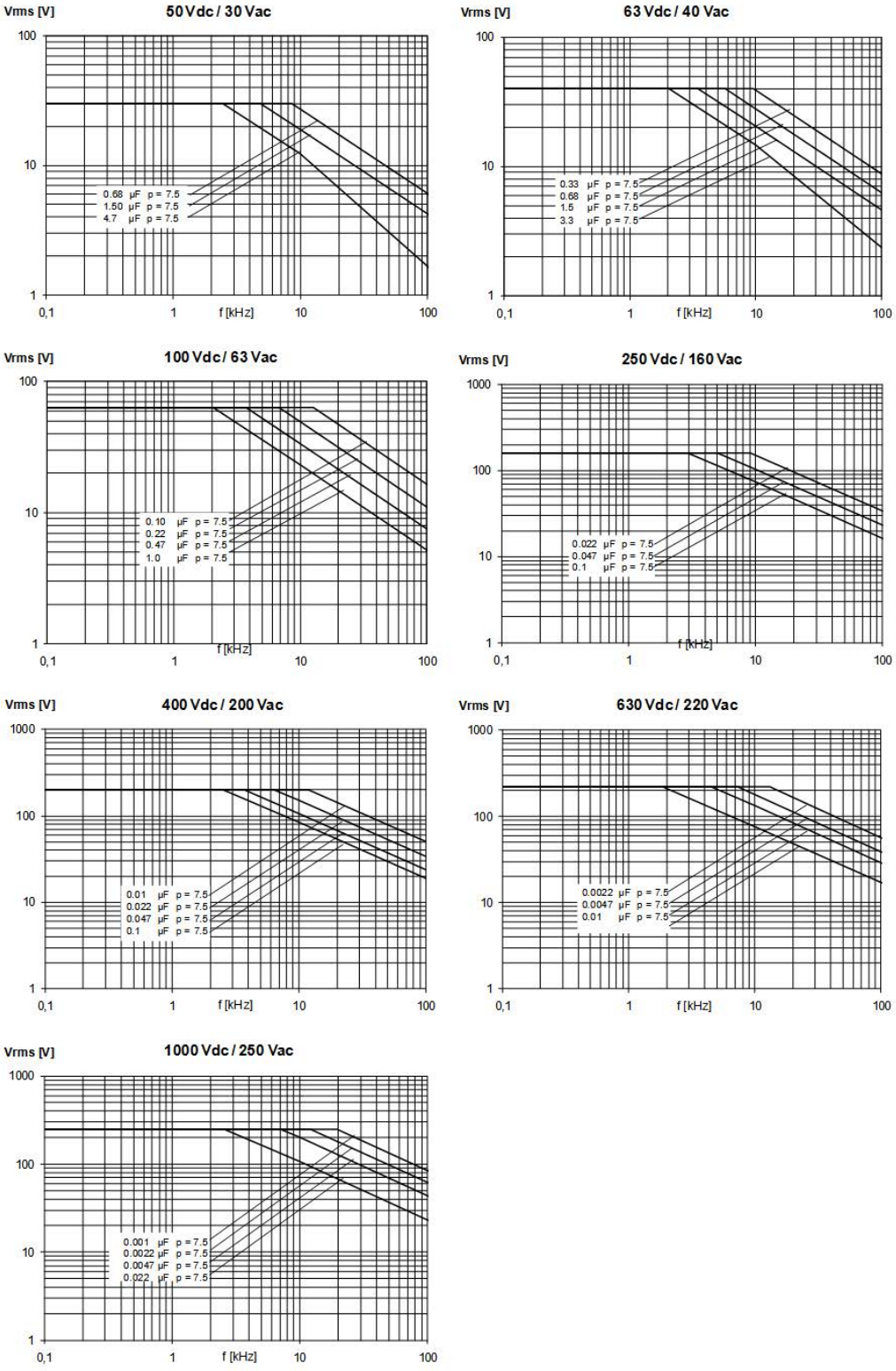






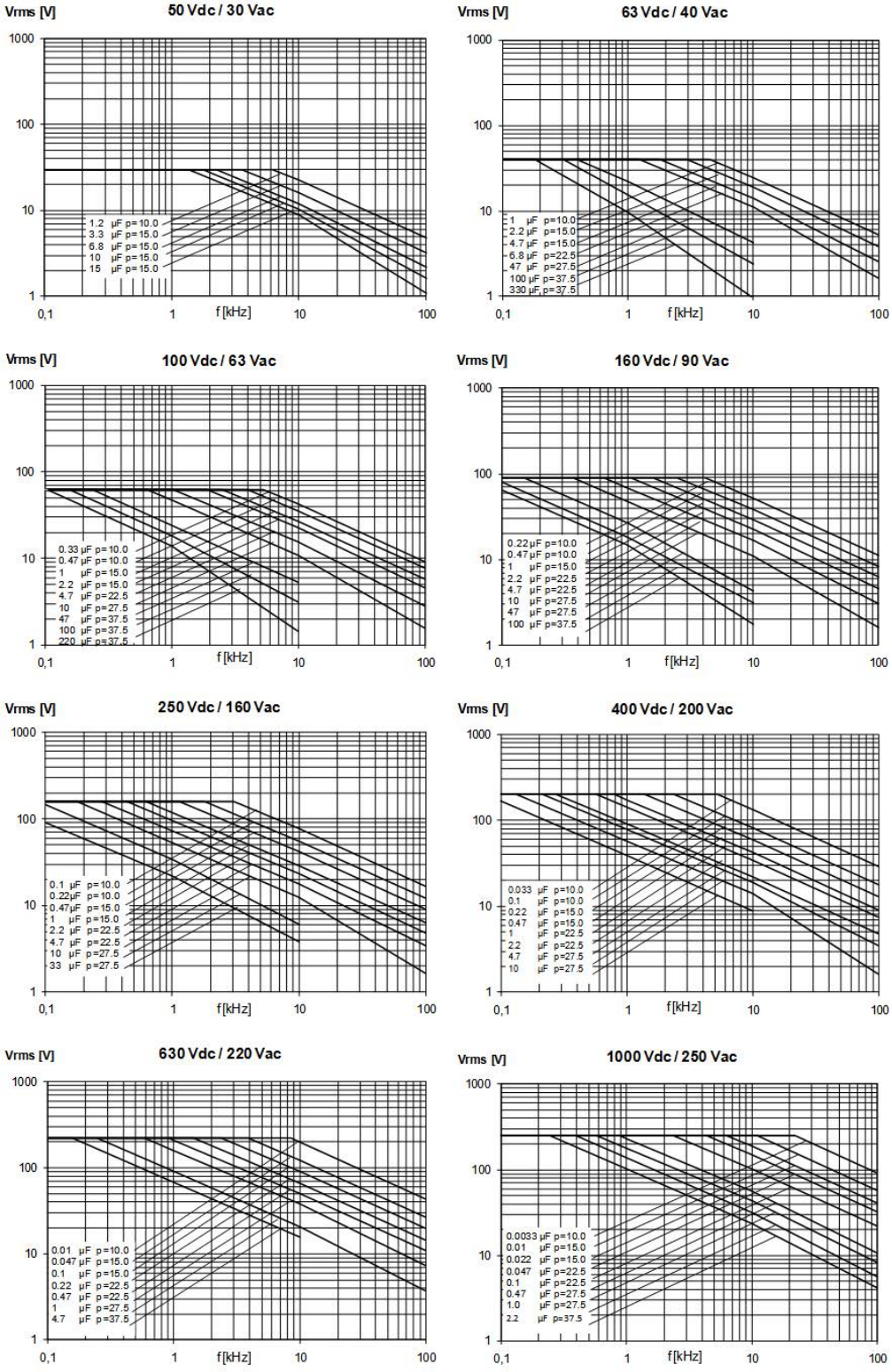
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/T ≤ 40°C)

Lead Spacing 7.5 mm



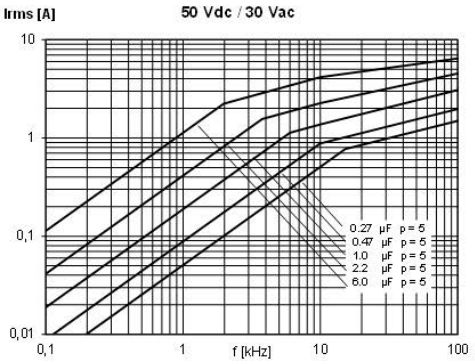
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/T ≤ 40°C)

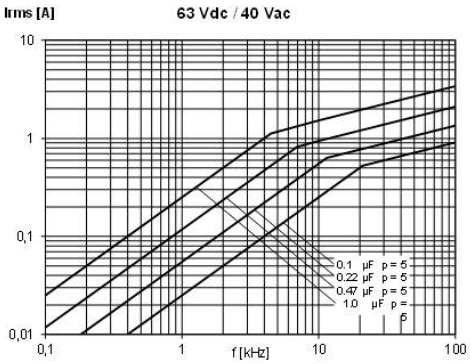
Lead Spacing 10 – 37.5 mm

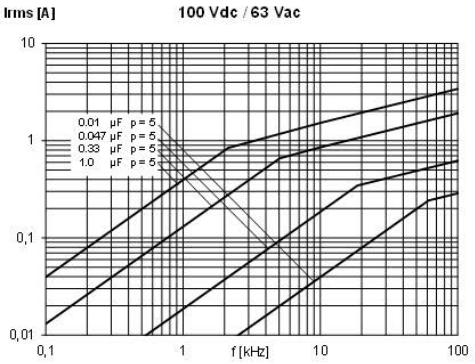


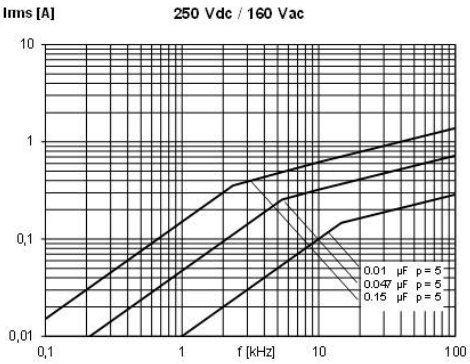
Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/T ≤ 40°C)

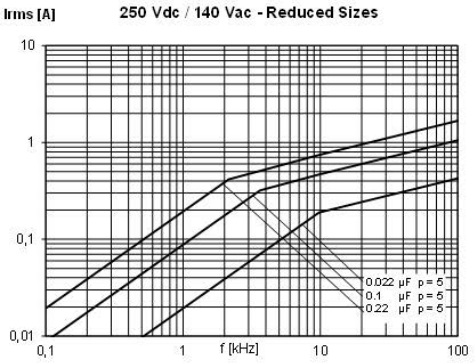
Lead Spacing 5 mm

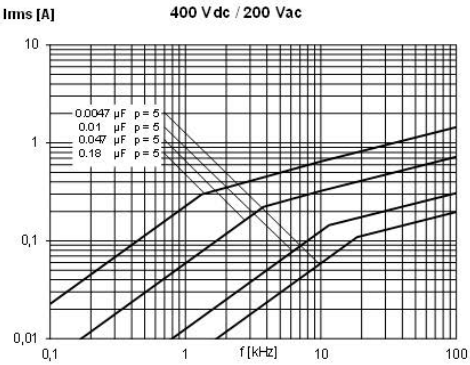


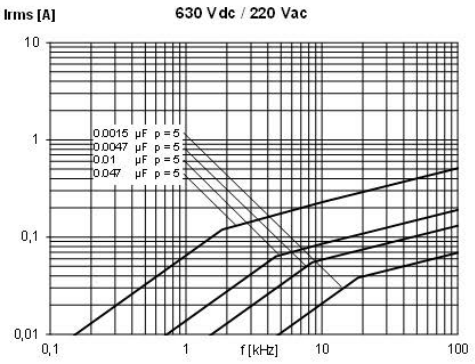


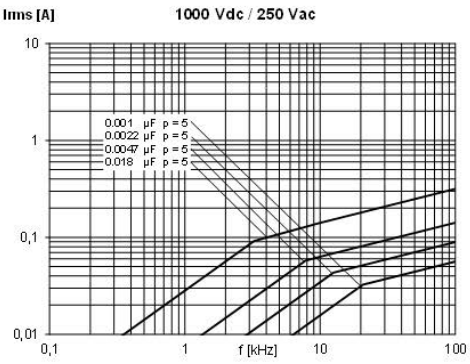






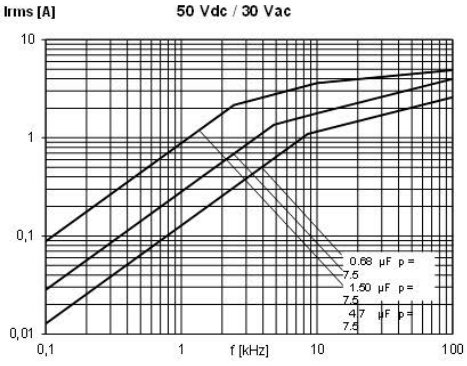


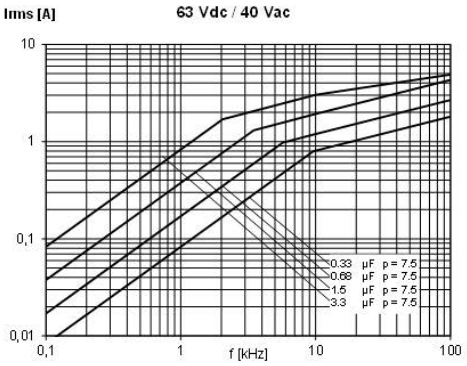


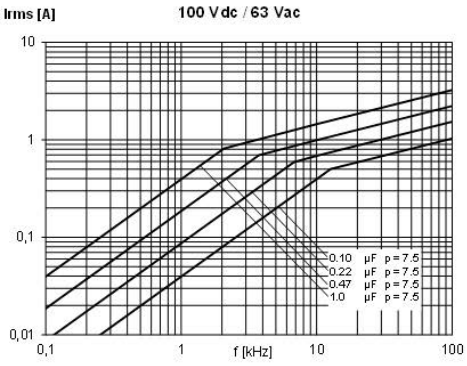


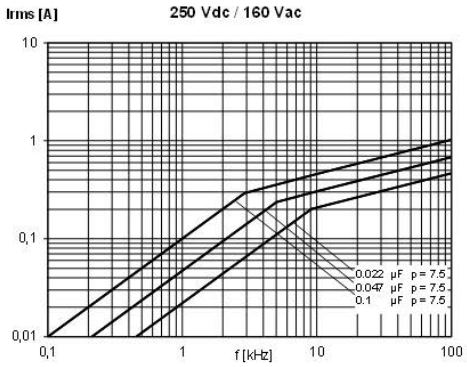
Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/T ≤ 40°C)

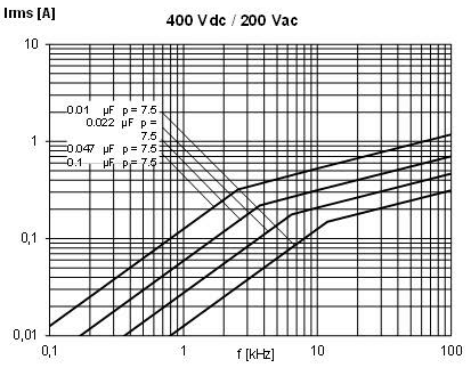
Lead Spacing 7.5 mm

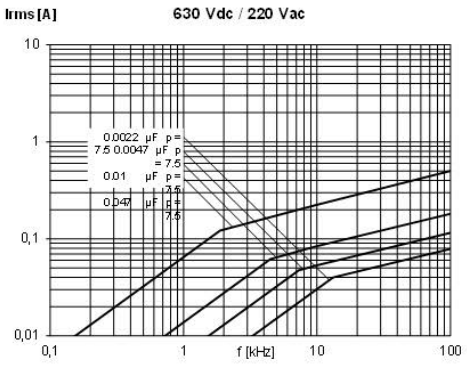


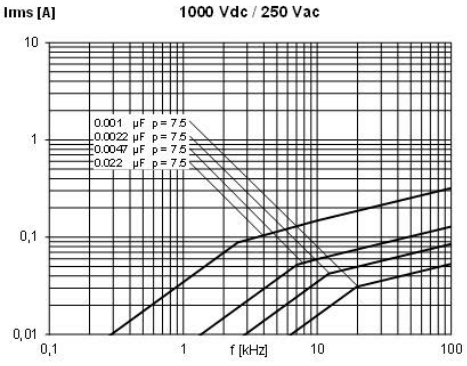






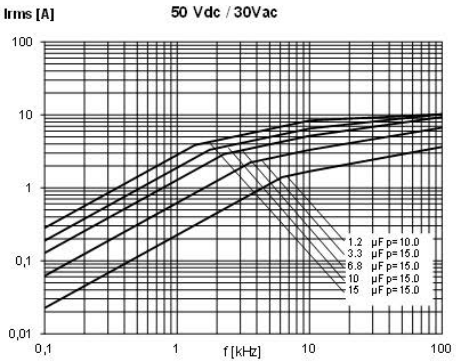


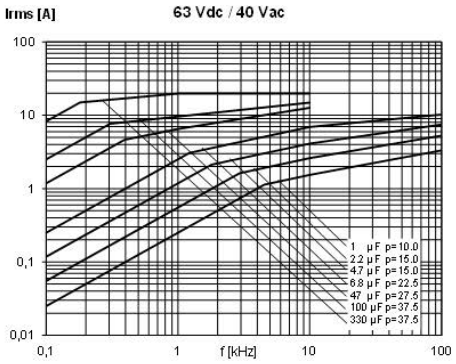


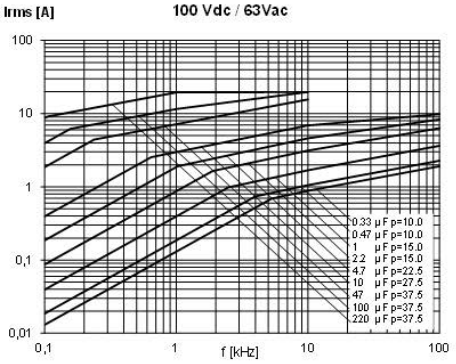


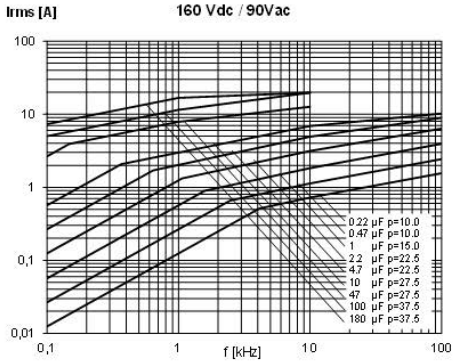
Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/T ≤ 40°C)

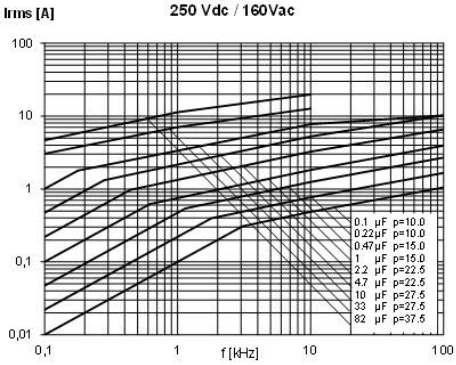
Lead Spacing 10 – 37.5 mm

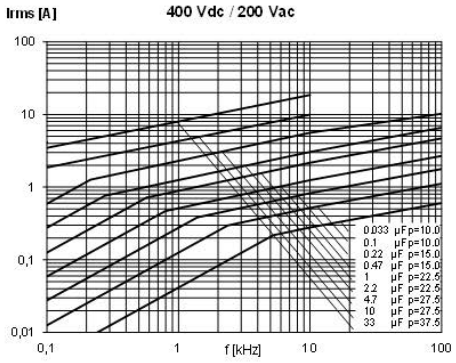


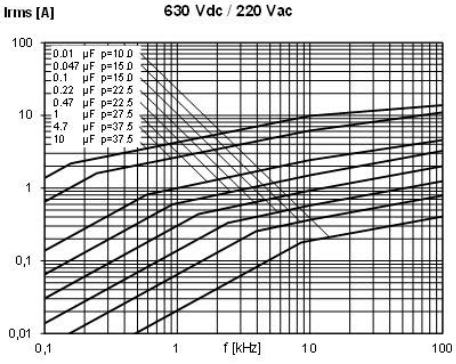


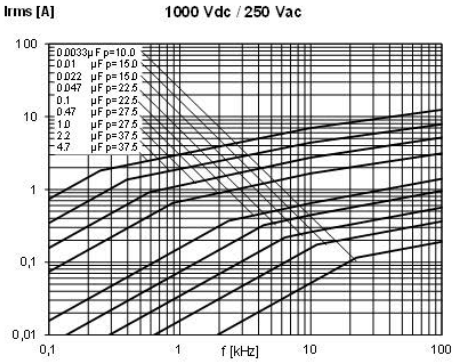












Environmental Test Data

Damp Heat Test	Test Conditions	T = +40°C, RH = 93%, t = 56 days
	Test Criteria	Δ C/C ≤ ±5% Δ tanδ ≤ 0.005 (1 kHz) IR after test 0.5 x IR minimum
Endurance Test	**Test Conditions**	**T = +100°C, U = 1.25 x (0.8 x U_R)**
	Test Criteria	t = 2,000 hours Δ C/C ≤ ±5%, Δ tanδ ≤ 0.005 (1 kHz) Δ tanδ ≤ 0.010 (100 kHz) IR after test 0.5 x IR minimum

Environmental Compliance

All KEMET MKT capacitors are RoHS Compliant and Halogen Free.



Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Size Code	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
50	30	0.27	JF	2.5	6.5	7.2	5.0	12	F611JF274(1)050(4)
50	30	0.33	JF	2.5	6.5	7.2	5.0	12	F611JF334(1)050(4)
50	30	0.39	JF	2.5	6.5	7.2	5.0	12	F611JF394(1)050(4)
50	30	0.47	JF	2.5	6.5	7.2	5.0	12	F611JF474(1)050(4)
50	30	0.56	JG	3.5	7.5	7.2	5.0	12	F611JG564(1)050(4)
50	30	0.68	JG	3.5	7.5	7.2	5.0	12	F611JG684(1)050(4)
50	30	0.82	JG	3.5	7.5	7.2	5.0	12	F611JG824(1)050(4)
50	30	1	JG	3.5	7.5	7.2	5.0	12	F611JG105(1)050(4)
50	30	1.2	JM	4.5	9.5	7.2	5.0	12	F611JM125(1)050(4)
50	30	1.5	JM	4.5	9.5	7.2	5.0	12	F611JM155(1)050(4)
50	30	1.8	JQ	5	10	7.2	5.0	12	F611JQ185(1)050(4)
50	30	2.2	JQ	5	10	7.2	5.0	12	F611JQ225(1)050(4)
50	30	2.7	JT	6	11	7.2	5.0	12	F611JT275(1)050(4)
50	30	3.3	JT	6	11	7.2	5.0	12	F611JT335(1)050(4)
50	30	3.9	JU	7.2	13	7.2	5.0	12	F611JU395(1)050(4)
50	30	4.7	JU	7.2	13	7.2	5.0	12	F611JU475(1)050(4)
50	30	5.6	JU	7.2	13	7.2	5.0	12	F611JU565(1)050(4)
50	30	6	JU	7.2	13	7.2	5.0	12	F611JU605(1)050(4)
50	30	0.68	KF	3	8	10	7.5	100	F612KF684(1)050(4)
50	30	0.82	KF	3	8	10	7.5	100	F612KF824(1)050(4)
50	30	1	KF	3	8	10	7.5	100	F612KF105(1)050(4)
50	30	1.2	KH	4	9	10	7.5	100	F612KH125(1)050(4)
50	30	1.5	KH	4	9	10	7.5	100	F612KH155(1)050(4)
50	30	1.8	KJ	5	10.5	10	7.5	100	F612KJ185(1)050(4)
50	30	2.2	KJ	5	10.5	10	7.5	100	F612KJ225(1)050(4)
50	30	2.7	KJ	5	10.5	10	7.5	100	F612KJ275(1)050(4)
50	30	3.3	KJ	5	10.5	10	7.5	100	F612KJ335(1)050(4)
50	30	3.9	KM	6	12	10.5	7.5	100	F612KM395(1)050(4)
50	30	4.7	KM	6	12	10.5	7.5	100	F612KM475(1)050(4)
50	30	1.2	AG	4	9	13	10.0	30	F612AG125(1)050(4)
50	30	1.5	AG	4	9	13	10.0	30	F612AG155(1)050(4)
50	30	1.8	AG	4	9	13	10.0	30	F612AG185(1)050(4)
50	30	2.2	AG	4	9	13	10.0	30	F612AG225(1)050(4)
50	30	2.7	AK	5	11	13	10.0	30	F612AK275(1)050(4)
50	30	3.3	AK	5	11	13	10.0	30	F612AK335(1)050(4)
50	30	3.9	AK	5	11	13	10.0	30	F612AK395(1)050(4)
50	30	4.7	AP	6	12	13	10.0	30	F612AP475(1)050(4)
50	30	5.6	AP	6	12	13	10.0	30	F612AP565(1)050(4)
50	30	1.8	BB	4	10	18	15.0	3	F611BB185(1)050(4)
50	30	2.2	BC	5	11	18	15.0	3	F611BC225(1)050(4)
50	30	2.7	BC	5	11	18	15.0	3	F611BC275(1)050(4)
50	30	3.3	BE	5.5	12.5	18	15.0	3	F611BE335(1)050(4)
50	30	3.9	BE	5.5	12.5	18	15.0	3	F611BE395(1)050(4)
50	30	4.7	BK	7.5	13.5	18	15.0	3	F611BK475(1)050(4)
50	30	5.6	BK	7.5	13.5	18	15.0	3	F611BK565(1)050(4)
50	30	6.8	BP	8.5	14.5	18	15.0	3	F611BP685(1)050(4)
50	30	8.2	BP	8.5	14.5	18	15.0	3	F611BP825(1)050(4)
50	30	10	BS	10	16	18	15.0	3	F611BS106(1)050(4)
50	30	12	BY	11	19	18	15.0	3	F611BY126(1)050(4)
50	30	15	BY	11	19	18	15.0	3	F611BY156(1)050(4)
63	40	0.1	JF	2.5	6.5	7.2	5.0	160	F612JF104(1)063(4)
63	40	0.12	JF	2.5	6.5	7.2	5.0	160	F612JF124(1)063(4)
63	40	0.15	JF	2.5	6.5	7.2	5.0	160	F612JF154(1)063(4)
63	40	0.18	JF	2.5	6.5	7.2	5.0	160	F612JF184(1)063(4)
63	40	0.22	JF	2.5	6.5	7.2	5.0	160	F612JF224(1)063(4)
63	40	0.27	JG	3.5	7.5	7.2	5.0	160	F612JG274(1)063(4)
63	40	0.33	JG	3.5	7.5	7.2	5.0	160	F612JG334(1)063(4)
VDC	VAC	Capacitance Value (µF)	Size Code	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Part Number

(1) K= ±10%, M = ±20%; J = ±5% on request
(2) K= ±10%, M = ±20%; J = ±5% not available
(3) M = ±20% (only available tolerance).
(4) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
63	40	0.39	JG	3.5	7.5	7.2	5.0	160	F612JG394(1)063(4)
63	40	0.47	JG	3.5	7.5	7.2	5.0	160	F612JG474(1)063(4)
63	40	0.56	JM	4.5	9.5	7.2	5.0	160	F612JM564(1)063(4)
63	40	0.68	JM	4.5	9.5	7.2	5.0	160	F612JM684(1)063(4)
63	40	0.82	JM	4.5	9.5	7.2	5.0	160	F612JM824(1)063(4)
63	40	1	JQ	5	10	7.2	5.0	160	F612JQ105(1)063(4)
63	40	1.2	JT	6	11	7.2	5.0	160	F612JT125(1)063(4)
63	40	1.5	JT	6	11	7.2	5.0	160	F612JT155(1)063(4)
63	40	0.33	KF	3	8	10	7.5	120	F612KF334(1)063(4)
63	40	0.39	KF	3	8	10	7.5	120	F612KF394(1)063(4)
63	40	0.47	KF	3	8	10	7.5	120	F612KF474(1)063(4)
63	40	0.56	KH	4	9	10	7.5	120	F612KH564(1)063(4)
63	40	0.68	KH	4	9	10	7.5	120	F612KH684(1)063(4)
63	40	0.82	KH	4	9	10	7.5	120	F612KH824(1)063(4)
63	40	1	KH	4	9	10	7.5	120	F612KH105(1)063(4)
63	40	1.2	KJ	5	10.5	10	7.5	120	F612KJ125(1)063(4)
63	40	1.5	KJ	5	10.5	10	7.5	120	F612KJ155(1)063(4)
63	40	1.8	KM	6	12	10.5	7.5	120	F612KM185(1)063(4)
63	40	2.2	KM	6	12	10.5	7.5	120	F612KM225(1)063(4)
63	40	2.7	KM	6	12	10.5	7.5	120	F612KM275(1)063(4)
63	40	3.3	KM	6	12	10.5	7.5	120	F612KM335(1)063(4)
63	40	1	AG	4	9	13	10.0	50	F612AG105(1)063(4)
63	40	1.2	AG	4	9	13	10.0	50	F612AG125(1)063(4)
63	40	1.5	AK	5	11	13	10.0	50	F612AK155(1)063(4)
63	40	1.8	AK	5	11	13	10.0	50	F612AK185(1)063(4)
63	40	2.2	AK	5	11	13	10.0	50	F612AK225(1)063(4)
63	40	2.7	AK	5	11	13	10.0	50	F612AK275(1)063(4)
63	40	3.3	AP	6	12	13	10.0	50	F612AP335(1)063(4)
63	40	3.9	AP	6	12	13	10.0	50	F612AP395(1)063(4)
63	40	1.2	BB	4	10	18	15.0	5	F611BB125(1)063(4)
63	40	1.5	BB	4	10	18	15.0	5	F611BB155(1)063(4)
63	40	1.8	BC	5	11	18	15.0	5	F611BC185(1)063(4)
63	40	2.2	BE	5.5	12.5	18	15.0	5	F611BE225(1)063(4)
63	40	2.7	BE	5.5	12.5	18	15.0	5	F611BE275(1)063(4)
63	40	3.3	BG	6	12	18	15.0	5	F611BG335(1)063(4)
63	40	3.9	BK	7.5	13.5	18	15.0	5	F611BK395(1)063(4)
63	40	4.7	BK	7.5	13.5	18	15.0	5	F611BK475(1)063(4)
63	40	5.6	BP	8.5	14.5	18	15.0	5	F611BP565(1)063(4)
63	40	6.8	BP	8.5	14.5	18	15.0	5	F611BP685(1)063(4)
63	40	8.2	BS	10	16	18	15.0	5	F611BS825(1)063(4)
63	40	10	BS	10	16	18	15.0	5	F611BS106(1)063(4)
63	40	12	BY	11	19	18	15.0	5	F611BY126(1)063(4)
63	40	4.7	DB	6	14.5	26	22.5	3	F611DB475(1)063(4)
63	40	5.6	DB	6	14.5	26	22.5	3	F611DB565(1)063(4)
63	40	6.8	DI	7	16	26	22.5	3	F611DI685(1)063(4)
63	40	8.2	DI	7	16	26	22.5	3	F611DI825(1)063(4)
63	40	10	DJ	8.5	17	26	22.5	3	F611DJ106(1)063(4)
63	40	12	DM	9	18.5	26	22.5	3	F611DM126(1)063(4)
63	40	15	DO	10	18.5	26	22.5	3	F611DO156(1)063(4)
63	40	18	DP	11	20	26	22.5	3	F611DP186(1)063(4)
63	40	22	DU	13	22	26	22.5	3	F611DU226(1)063(4)
63	40	27	DY	15.5	24.5	26	22.5	3	F611DY276(1)063(4)
63	40	33	DY	15.5	24.5	26	22.5	3	F611DY336(1)063(4)
63	40	15	FB	9	17	31.5	27.5	2	F611FB156(3)063(4)
63	40	18	FC	11	20	31.5	27.5	2	F611FC186(1)063(4)
63	40	22	FC	11	20	31.5	27.5	2	F611FC226(3)063(4)
63	40	27	FI	13	25	31.5	27.5	2	F611FI276(1)063(4)
VDC	VAC	Capacitance Value (µF)	Size Code	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Part Number

(1) K= ±10%, M = ±20%; J = ±5% on request
(2) K= ±10%, M = ±20%; J = ±5% not available
(3) M = ±20% (only available tolerance).
(4) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
63	40	33	FI	13	25	31.5	27.5	2	F611FI336(3)063(4)
63	40	39	FN	14	28	31.5	27.5	2	F611FN396(2)063(4)
63	40	47	FR	17.5	28	31.5	27.5	2	F611FR476(2)063(4)
63	40	56	FS	19	29	31.5	27.5	2	F611FS566(2)063(4)
63	40	68	FY	22	37	31.5	27.5	2	F611FY686(1)063(4)
63	40	82	FY	22	37	31.5	27.5	2	F611FY826(1)063(4)
63	40	100	FY	22	37	31.5	27.5	2	F611FY107(3)063(4)
63	40	22	RB	11	22	41	37.5	1	F611RB226(1)063(4)
63	40	27	RB	11	22	41	37.5	1	F611RB276(2)063(4)
63	40	33	RF	13	24	41	37.5	1	F611RF336(1)063(4)
63	40	39	RH	15	26	41	37.5	1	F611RH396(1)063(4)
63	40	47	RH	15	26	41	37.5	1	F611RH476(2)063(4)
63	40	56	RC	16	28.5	41	37.5	1	F611RC566(2)063(4)
63	40	68	RD	19	32	41	37.5	1	F611RD686(1)063(4)
63	40	82	RP	21	38	41	37.5	1	F611RP826(1)063(4)
63	40	100	RP	21	38	41	37.5	1	F611RP107(2)063(4)
63	40	120	RO	24	44	41	37.5	1	F611RO127(1)063(4)
63	40	150	RO	24	44	41	37.5	1	F611RO157(2)063(4)
63	40	180	RU	30	45	41	37.5	1	F611RU187(2)063(4)
100	63	0.001	JF	2.5	6.5	7.2	5.0	200	F612JF102(1)100(4)
100	63	0.0012	JF	2.5	6.5	7.2	5.0	200	F612JF122(1)100(4)
100	63	0.0015	JF	2.5	6.5	7.2	5.0	200	F612JF152(1)100(4)
100	63	0.0018	JF	2.5	6.5	7.2	5.0	200	F612JF182(1)100(4)
100	63	0.0022	JF	2.5	6.5	7.2	5.0	200	F612JF222(1)100(4)
100	63	0.0027	JF	2.5	6.5	7.2	5.0	200	F612JF272(1)100(4)
100	63	0.0033	JF	2.5	6.5	7.2	5.0	200	F612JF332(1)100(4)
100	63	0.0039	JF	2.5	6.5	7.2	5.0	200	F612JF392(1)100(4)
100	63	0.0047	JF	2.5	6.5	7.2	5.0	200	F612JF472(1)100(4)
100	63	0.0056	JF	2.5	6.5	7.2	5.0	200	F612JF562(1)100(4)
100	63	0.0068	JF	2.5	6.5	7.2	5.0	200	F612JF682(1)100(4)
100	63	0.0082	JF	2.5	6.5	7.2	5.0	200	F612JF822(1)100(4)
100	63	0.01	JF	2.5	6.5	7.2	5.0	200	F612JF103(1)100(4)
100	63	0.012	JF	2.5	6.5	7.2	5.0	200	F612JF123(1)100(4)
100	63	0.015	JF	2.5	6.5	7.2	5.0	200	F612JF153(1)100(4)
100	63	0.018	JF	2.5	6.5	7.2	5.0	200	F612JF183(1)100(4)
100	63	0.022	JF	2.5	6.5	7.2	5.0	200	F612JF223(1)100(4)
100	63	0.027	JF	2.5	6.5	7.2	5.0	200	F612JF273(1)100(4)
100	63	0.033	JF	2.5	6.5	7.2	5.0	200	F612JF333(1)100(4)
100	63	0.039	JF	2.5	6.5	7.2	5.0	200	F612JF393(1)100(4)
100	63	0.047	JF	2.5	6.5	7.2	5.0	200	F612JF473(1)100(4)
100	63	0.056	JF	2.5	6.5	7.2	5.0	200	F612JF563(1)100(4)
100	63	0.068	JF	2.5	6.5	7.2	5.0	200	F612JF683(1)100(4)
100	63	0.082	JF	2.5	6.5	7.2	5.0	200	F612JF823(1)100(4)
100	63	0.1	JF	2.5	6.5	7.2	5.0	200	F612JF104(1)100(4)
100	63	0.12	JF	2.5	6.5	7.2	5.0	200	F612JF124(1)100(4)
100	63	0.15	JG	3.5	7.5	7.2	5.0	200	F612JG154(1)100(4)
100	63	0.18	JG	3.5	7.5	7.2	5.0	200	F612JG184(1)100(4)
100	63	0.22	JG	3.5	7.5	7.2	5.0	200	F612JG224(1)100(4)
100	63	0.27	JG	3.5	7.5	7.2	5.0	200	F612JG274(1)100(4)
100	63	0.33	JM	4.5	9.5	7.2	5.0	200	F612JM334(1)100(4)
100	63	0.39	JM	4.5	9.5	7.2	5.0	200	F612JM394(1)100(4)
100	63	0.47	JM	4.5	9.5	7.2	5.0	200	F612JM474(1)100(4)
100	63	0.56	JQ	5	10	7.2	5.0	200	F612JQ564(1)100(4)
100	63	0.68	JQ	5	10	7.2	5.0	200	F612JQ684(1)100(4)
100	63	0.82	JT	6	11	7.2	5.0	200	F612JT824(1)100(4)
100	63	1	JT	6	11	7.2	5.0	200	F612JT105(1)100(4)
100	63	0.068	KF	3	8	10	7.5	150	F612KF683(1)100(4)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) K= ±10%, M = ±20%; J = ±5% on request
(2) K= ±10%, M = ±20%; J = ±5% not available
(3) M = ±20% (only available tolerance).
(4) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
100	63	0.082	KF	3	8	10	7.5	150	F612KF823(1)100(4)
100	63	0.1	KF	3	8	10	7.5	150	F612KF104(1)100(4)
100	63	0.12	KF	3	8	10	7.5	150	F612KF124(1)100(4)
100	63	0.15	KF	3	8	10	7.5	150	F612KF154(1)100(4)
100	63	0.18	KF	3	8	10	7.5	150	F612KF184(1)100(4)
100	63	0.22	KF	3	8	10	7.5	150	F612KF224(1)100(4)
100	63	0.27	KH	4	9	10	7.5	150	F612KH274(1)100(4)
100	63	0.33	KH	4	9	10	7.5	150	F612KH334(1)100(4)
100	63	0.39	KH	4	9	10	7.5	150	F612KH394(1)100(4)
100	63	0.47	KH	4	9	10	7.5	150	F612KH474(1)100(4)
100	63	0.56	KH	4	9	10	7.5	150	F612KH564(1)100(4)
100	63	0.68	KH	4	9	10	7.5	150	F612KH684(1)100(4)
100	63	0.82	KJ	5	10.5	10	7.5	150	F612KJ824(1)100(4)
100	63	1	KJ	5	10.5	10	7.5	150	F612KJ105(1)100(4)
100	63	1.5	KM	6	12	10.5	7.5	150	F612KM155(1)100(4)
100	63	1.8	KM	6	12	10.5	7.5	150	F612KM185(1)100(4)
100	63	0.33	AG	4	9	13	10.0	75	F612AG334(1)100(4)
100	63	0.39	AG	4	9	13	10.0	75	F612AG394(1)100(4)
100	63	0.47	AG	4	9	13	10.0	75	F612AG474(1)100(4)
100	63	0.56	AG	4	9	13	10.0	75	F612AG564(1)100(4)
100	63	0.68	AG	4	9	13	10.0	75	F612AG684(1)100(4)
100	63	0.82	AG	4	9	13	10.0	75	F612AG824(1)100(4)
100	63	1	AK	5	11	13	10.0	75	F612AK105(1)100(4)
100	63	1.2	AK	5	11	13	10.0	75	F612AK125(1)100(4)
100	63	1.5	AK	5	11	13	10.0	75	F612AK155(1)100(4)
100	63	1.8	AP	6	12	13	10.0	75	F612AP185(1)100(4)
100	63	0.56	BB	4	10	18	15.0	8	F611BB564(1)100(4)
100	63	0.68	BB	4	10	18	15.0	8	F611BB684(1)100(4)
100	63	0.82	BB	4	10	18	15.0	8	F611BB824(1)100(4)
100	63	1	BB	4	10	18	15.0	8	F611BB105(1)100(4)
100	63	1.2	BC	5	11	18	15.0	8	F611BC125(1)100(4)
100	63	1.5	BC	5	11	18	15.0	8	F611BC155(1)100(4)
100	63	1.8	BE	5.5	12.5	18	15.0	8	F611BE185(1)100(4)
100	63	2.2	BG	6	12	18	15.0	8	F611BG225(1)100(4)
100	63	2.7	BK	7.5	13.5	18	15.0	8	F611BK275(1)100(4)
100	63	3.3	BK	7.5	13.5	18	15.0	8	F611BK335(1)100(4)
100	63	3.9	BP	8.5	14.5	18	15.0	8	F611BP395(1)100(4)
100	63	4.7	BP	8.5	14.5	18	15.0	8	F611BP475(1)100(4)
100	63	5.6	BS	10	16	18	15.0	8	F611BS565(1)100(4)
100	63	6.8	BY	11	19	18	15.0	8	F611BY685(1)100(4)
100	63	8.2	BY	11	19	18	15.0	8	F611BY825(1)100(4)
100	63	2.2	DB	6	14.5	26	22.5	5	F611DB225(1)100(4)
100	63	2.7	DB	6	14.5	26	22.5	5	F611DB275(1)100(4)
100	63	3.3	DB	6	14.5	26	22.5	5	F611DB335(1)100(4)
100	63	3.9	DB	6	14.5	26	22.5	5	F611DB395(1)100(4)
100	63	4.7	DI	7	16	26	22.5	5	F611DI475(1)100(4)
100	63	5.6	DI	7	16	26	22.5	5	F611DI565(1)100(4)
100	63	6.8	DH	8	16	26	22.5	5	F611DH685(1)100(4)
100	63	8.2	DJ	8.5	17	26	22.5	5	F611DJ825(1)100(4)
100	63	10	DM	9	18.5	26	22.5	5	F611DM106(1)100(4)
100	63	12	DO	10	18.5	26	22.5	5	F611DO126(1)100(4)
100	63	15	DP	11	20	26	22.5	5	F611DP156(1)100(4)
100	63	18	DU	13	22	26	22.5	5	F611DU186(1)100(4)
100	63	22	DY	15.5	24.5	26	22.5	5	F611DY226(1)100(4)
100	63	27	DY	15.5	24.5	26	22.5	5	F611DY276(1)100(4)
100	63	10	FB	9	17	31.5	27.5	3	F611FB106(1)100(4)
100	63	12	FB	9	17	31.5	27.5	3	F611FB126(2)100(4)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) K= ±10%, M = ±20%; J = ±5% on request
(2) K= ±10%, M = ±20%; J = ±5% not available
(3) M = ±20% (only available tolerance).
(4) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
100	63	15	FC	11	20	31.5	27.5	3	F611FC156(1)100(4)
100	63	18	FC	11	20	31.5	27.5	3	F611FC186(2)100(4)
100	63	22	FI	13	25	31.5	27.5	3	F611FI226(1)100(4)
100	63	27	FI	13	25	31.5	27.5	3	F611FI276(2)100(4)
100	63	33	FN	14	28	31.5	27.5	3	F611FN336(2)100(4)
100	63	39	FR	17.5	28	31.5	27.5	3	F611FR396(2)100(4)
100	63	47	FS	19	29	31.5	27.5	3	F611FS476(2)100(4)
100	63	56	FY	22	37	31.5	27.5	3	F611FY566(1)100(4)
100	63	68	FY	22	37	31.5	27.5	3	F611FY686(1)100(4)
100	63	82	FY	22	37	31.5	27.5	3	F611FY826(3)100(4)
100	63	22	RB	11	22	41	37.5	2	F611RB226(1)100(4)
100	63	27	RB	11	22	41	37.5	2	F611RB276(2)100(4)
100	63	33	RF	13	24	41	37.5	2	F611RF336(1)100(4)
100	63	39	RH	15	26	41	37.5	2	F611RH396(1)100(4)
100	63	47	RH	15	26	41	37.5	2	F611RH476(2)100(4)
100	63	56	RC	16	28.5	41	37.5	2	F611RC566(2)100(4)
100	63	68	RD	19	32	41	37.5	2	F611RD686(1)100(4)
100	63	82	RP	21	38	41	37.5	2	F611RP826(1)100(4)
100	63	100	RP	21	38	41	37.5	2	F611RP107(2)100(4)
100	63	120	RO	24	44	41	37.5	2	F611RO127(1)100(4)
100	63	150	RO	24	44	41	37.5	2	F611RO157(2)100(4)
100	63	180	RU	30	45	41	37.5	2	F611RU187(2)100(4)
160	90	0.18	AG	4	9	13	10.0	100	F612AG184(1)160(4)
160	90	0.22	AG	4	9	13	10.0	100	F612AG224(1)160(4)
160	90	0.27	AG	4	9	13	10.0	100	F612AG274(1)160(4)
160	90	0.33	AG	4	9	13	10.0	100	F612AG334(1)160(4)
160	90	0.39	AK	5	11	13	10.0	100	F612AK394(1)160(4)
160	90	0.47	AK	5	11	13	10.0	100	F612AK474(1)160(4)
160	90	0.56	AK	5	11	13	10.0	100	F612AK564(1)160(4)
160	90	0.68	AP	6	12	13	10.0	100	F612AP684(1)160(4)
160	90	0.82	AP	6	12	13	10.0	100	F612AP824(1)160(4)
160	90	0.33	BB	4	10	18	15.0	10	F611BB334(1)160(4)
160	90	0.39	BB	4	10	18	15.0	10	F611BB394(1)160(4)
160	90	0.47	BC	5	11	18	15.0	10	F611BC474(1)160(4)
160	90	0.56	BC	5	11	18	15.0	10	F611BC564(1)160(4)
160	90	0.68	BC	5	11	18	15.0	10	F611BC684(1)160(4)
160	90	0.82	BE	5.5	12.5	18	15.0	10	F611BE824(1)160(4)
160	90	1	BG	6	12	18	15.0	10	F611BG105(1)160(4)
160	90	1.2	BK	7.5	13.5	18	15.0	10	F611BK125(1)160(4)
160	90	1.5	BK	7.5	13.5	18	15.0	10	F611BK155(1)160(4)
160	90	1.8	BP	8.5	14.5	18	15.0	10	F611BP185(1)160(4)
160	90	2.2	BS	10	16	18	15.0	10	F611BS225(1)160(4)
160	90	2.7	BY	11	19	18	15.0	10	F611BY275(1)160(4)
160	90	3.3	BY	11	19	18	15.0	10	F611BY335(1)160(4)
160	90	3.9	BY	11	19	18	15.0	10	F611BY395(1)160(4)
160	90	1.2	DB	6	14.5	26	22.5	6	F611DB125(1)160(4)
160	90	1.5	DB	6	14.5	26	22.5	6	F611DB155(1)160(4)
160	90	1.8	DB	6	14.5	26	22.5	6	F611DB185(1)160(4)
160	90	2.2	DI	7	16	26	22.5	6	F611DI225(1)160(4)
160	90	2.7	DI	7	16	26	22.5	6	F611DI275(1)160(4)
160	90	3.3	DJ	8.5	17	26	22.5	6	F611DJ335(1)160(4)
160	90	3.9	DM	9	18.5	26	22.5	6	F611DM395(1)160(4)
160	90	4.7	DO	10	18.5	26	22.5	6	F611DO475(1)160(4)
160	90	5.6	DP	11	20	26	22.5	6	F611DP565(1)160(4)
160	90	6.8	DU	13	22	26	22.5	6	F611DU685(1)160(4)
160	90	8.2	DU	13	22	26	22.5	6	F611DU825(1)160(4)
160	90	10	DY	15.5	24.5	26	22.5	6	F611DY106(1)160(4)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) K= ±10%, M = ±20%; J = ±5% on request
(2) K= ±10%, M = ±20%; J = ±5% not available
(3) M = ±20% (only available tolerance).
(4) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
160	90	12	DY	15.5	24.5	26	22.5	6	F611DY126(1)160(4)
160	90	5.6	FB	9	17	31.5	27.5	4	F611FB565(1)160(4)
160	90	6.8	FB	9	17	31.5	27.5	4	F611FB685(1)160(4)
160	90	8.2	FB	9	17	31.5	27.5	4	F611FB825(3)160(4)
160	90	10	FC	11	20	31.5	27.5	4	F611FC106(1)160(4)
160	90	12	FC	11	20	31.5	27.5	4	F611FC126(3)160(4)
160	90	15	FI	13	25	31.5	27.5	4	F611FI156(1)160(4)
160	90	18	FI	13	25	31.5	27.5	4	F611FI186(2)160(4)
160	90	22	FN	14	28	31.5	27.5	4	F611FN226(2)160(4)
160	90	27	FR	17.5	28	31.5	27.5	4	F611FR276(2)160(4)
160	90	33	FS	19	29	31.5	27.5	4	F611FS336(2)160(4)
160	90	39	FY	22	37	31.5	27.5	4	F611FY396(1)160(4)
160	90	47	FY	22	37	31.5	27.5	4	F611FY476(2)160(4)
160	90	56	FY	22	37	31.5	27.5	4	F611FY566(3)160(4)
160	90	15	RB	11	22	41	37.5	3	F611RB156(1)160(4)
160	90	18	RB	11	22	41	37.5	3	F611RB186(3)160(4)
160	90	22	RF	13	24	41	37.5	3	F611RF226(2)160(4)
160	90	27	RH	15	26	41	37.5	3	F611RH276(1)160(4)
160	90	33	RH	15	26	41	37.5	3	F611RH336(3)160(4)
160	90	39	RC	16	28.5	41	37.5	3	F611RC396(3)160(4)
160	90	47	RD	19	32	41	37.5	3	F611RD476(2)160(4)
160	90	56	RP	21	38	41	37.5	3	F611RP566(1)160(4)
160	90	68	RP	21	38	41	37.5	3	F611RP686(1)160(4)
160	90	82	RO	24	44	41	37.5	3	F611RO826(1)160(4)
160	90	100	RO	24	44	41	37.5	3	F611RO107(3)160(4)
160	90	120	RU	30	45	41	37.5	3	F611RU127(3)160(4)
250	160	0.0068	JF	2.5	6.5	7.2	5.0	250	F612JF682(1)250(4)
250	160	0.0082	JF	2.5	6.5	7.2	5.0	250	F612JF822(1)250(4)
250	160	0.01	JF	2.5	6.5	7.2	5.0	250	F612JF103(1)250(4)
250	160	0.012	JF	2.5	6.5	7.2	5.0	250	F612JF123(1)250(4)
250	160	0.015	JF	2.5	6.5	7.2	5.0	250	F612JF153(1)250(4)
250	160	0.018	JF	2.5	6.5	7.2	5.0	250	F612JF183(1)250(4)
250	160	0.022	JG	3.5	7.5	7.2	5.0	250	F612JG223(1)250(4)
250	160	0.027	JG	3.5	7.5	7.2	5.0	250	F612JG273(1)250(4)
250	160	0.033	JG	3.5	7.5	7.2	5.0	250	F612JG333(1)250(4)
250	160	0.039	JG	3.5	7.5	7.2	5.0	250	F612JG393(1)250(4)
250	160	0.047	JM	4.5	9.5	7.2	5.0	250	F612JM473(1)250(4)
250	160	0.056	JM	4.5	9.5	7.2	5.0	250	F612JM563(1)250(4)
250	160	0.068	JM	4.5	9.5	7.2	5.0	250	F612JM683(1)250(4)
250	160	0.082	JQ	5	10	7.2	5.0	250	F612JQ823(1)250(4)
250	160	0.1	JQ	5	10	7.2	5.0	250	F612JQ104(1)250(4)
250	160	0.12	JT	6	11	7.2	5.0	250	F612JT124(1)250(4)
250	160	0.15	JT	6	11	7.2	5.0	250	F612JT154(1)250(4)
250	140	0.022	JF	2.5	6.5	7.2	5.0	130	F612JF223(1)250(4)
250	140	0.027	JF	2.5	6.5	7.2	5.0	130	F612JF273(1)250(4)
250	140	0.047	JG	3.5	7.5	7.2	5.0	130	F612JG473(1)250(4)
250	140	0.056	JG	3.5	7.5	7.2	5.0	130	F612JG563(1)250(4)
250	140	0.068	JG	3.5	7.5	7.2	5.0	130	F612JG683(1)250(4)
250	140	0.082	JM	4.5	9.5	7.2	5.0	130	F612JM823(1)250(4)
250	140	0.1	JM	4.5	9.5	7.2	5.0	130	F612JM104(1)250(4)
250	140	0.12	JM	4.5	9.5	7.2	5.0	130	F612JM124(1)250(4)
250	140	0.15	JQ	5	10	7.2	5.0	130	F612JQ154(1)250(4)
250	140	0.18	JT	6	11	7.2	5.0	130	F612JT184(1)250(4)
250	140	0.22	JT	6	11	7.2	5.0	130	F612JT224(1)250(4)
250	160	0.022	KF	3	8	10	7.5	200	F612KF223(1)250(4)
250	160	0.027	KF	3	8	10	7.5	200	F612KF273(1)250(4)
250	160	0.033	KF	3	8	10	7.5	200	F612KF333(1)250(4)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) K= ±10%, M = ±20%; J = ±5% on request
(2) K= ±10%, M = ±20%; J = ±5% not available
(3) M = ±20% (only available tolerance).
(4) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
250	160	0.039	KF	3	8	10	7.5	200	F612KF393(1)250(4)
250	160	0.047	KF	3	8	10	7.5	200	F612KF473(1)250(4)
250	160	0.056	KF	3	8	10	7.5	200	F612KF563(1)250(4)
250	160	0.068	KF	3	8	10	7.5	200	F612KF683(1)250(4)
250	160	0.082	KH	4	9	10	7.5	200	F612KH823(1)250(4)
250	160	0.1	KH	4	9	10	7.5	200	F612KH104(1)250(4)
250	160	0.12	KH	4	9	10	7.5	200	F612KH124(1)250(4)
250	160	0.15	KH	4	9	10	7.5	200	F612KH154(1)250(4)
250	160	0.18	KJ	5	10.5	10	7.5	200	F612KJ184(1)250(4)
250	160	0.22	KJ	5	10.5	10	7.5	200	F612KJ224(1)250(4)
250	160	0.27	KM	6	12	10.5	7.5	200	F612KM274(1)250(4)
250	160	0.33	KM	6	12	10.5	7.5	200	F612KM334(1)250(4)
250	160	0.39	KM	6	12	10.5	7.5	200	F612KM394(1)250(4)
250	160	0.1	AG	4	9	13	10.0	20	F611AG104(1)250(4)
250	160	0.12	AG	4	9	13	10.0	20	F611AG124(1)250(4)
250	160	0.15	AG	4	9	13	10.0	20	F611AG154(1)250(4)
250	160	0.18	AK	5	11	13	10.0	20	F611AK184(1)250(4)
250	160	0.22	AK	5	11	13	10.0	20	F611AK224(1)250(4)
250	160	0.27	AK	5	11	13	10.0	20	F611AK274(1)250(4)
250	160	0.33	AP	6	12	13	10.0	20	F611AP334(1)250(4)
250	160	0.39	AP	6	12	13	10.0	20	F611AP394(1)250(4)
250	160	0.47	AP	6	12	13	10.0	20	F611AP474(1)250(4)
250	160	0.18	BB	4	10	18	15.0	12	F611BB184(1)250(4)
250	160	0.22	BB	4	10	18	15.0	12	F611BB224(1)250(4)
250	160	0.27	BB	4	10	18	15.0	12	F611BB274(1)250(4)
250	160	0.33	BC	5	11	18	15.0	12	F611BC334(1)250(4)
250	160	0.39	BC	5	11	18	15.0	12	F611BC394(1)250(4)
250	160	0.47	BE	5.5	12.5	18	15.0	12	F611BE474(1)250(4)
250	160	0.56	BG	6	12	18	15.0	12	F611BG564(1)250(4)
250	160	0.68	BK	7.5	13.5	18	15.0	12	F611BK684(1)250(4)
250	160	0.82	BK	7.5	13.5	18	15.0	12	F611BK824(1)250(4)
250	160	1	BK	7.5	13.5	18	15.0	12	F611BK105(1)250(4)
250	160	1.2	BP	8.5	14.5	18	15.0	12	F611BP125(1)250(4)
250	160	1.5	BS	10	16	18	15.0	12	F611BS155(1)250(4)
250	160	1.8	BY	11	19	18	15.0	12	F611BY185(1)250(4)
250	160	2.2	BY	11	19	18	15.0	12	F611BY225(1)250(4)
250	160	0.82	DB	6	14.5	26	22.5	8	F611DB824(1)250(4)
250	160	1	DB	6	14.5	26	22.5	8	F611DB105(1)250(4)
250	160	1.2	DI	7	16	26	22.5	8	F611DI125(1)250(4)
250	160	1.5	DI	7	16	26	22.5	8	F611DI155(1)250(4)
250	160	1.8	DH	8	16	26	22.5	8	F611DH185(1)250(4)
250	160	2.2	DJ	8.5	17	26	22.5	8	F611DJ225(1)250(4)
250	160	2.7	DO	10	18.5	26	22.5	8	F611DO275(1)250(4)
250	160	3.3	DP	11	20	26	22.5	8	F611DP335(1)250(4)
250	160	3.9	DU	13	22	26	22.5	8	F611DU395(1)250(4)
250	160	4.7	DU	13	22	26	22.5	8	F611DU475(1)250(4)
250	160	5.6	DY	15.5	24.5	26	22.5	8	F611DY565(1)250(4)
250	160	6.8	DY	15.5	24.5	26	22.5	8	F611DY685(1)250(4)
250	160	2.2	FB	9	17	31.5	27.5	5	F611FB225(1)250(4)
250	160	2.7	FB	9	17	31.5	27.5	5	F611FB275(1)250(4)
250	160	3.3	FB	9	17	31.5	27.5	5	F611FB335(1)250(4)
250	160	3.9	FB	9	17	31.5	27.5	5	F611FB395(1)250(4)
250	160	4.7	FB	9	17	31.5	27.5	5	F611FB475(1)250(4)
250	160	5.6	FC	11	20	31.5	27.5	5	F611FC565(1)250(4)
250	160	6.8	FC	11	20	31.5	27.5	5	F611FC685(1)250(4)
250	160	8.2	FI	13	25	31.5	27.5	5	F611FI825(1)250(4)
250	160	10	FI	13	25	31.5	27.5	5	F611FI106(1)250(4)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) K= ±10%, M = ±20%; J = ±5% on request
(2) K= ±10%, M = ±20%; J = ±5% not available
(3) M = ±20% (only available tolerance).
(4) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
250	160	12	FI	13	25	31.5	27.5	5	F611FI126(2)250(4)
250	160	15	FN	14	28	31.5	27.5	5	F611FN156(2)250(4)
250	160	18	FR	17.5	28	31.5	27.5	5	F611FR186(1)250(4)
250	160	22	FS	19	29	31.5	27.5	5	F611FS226(2)250(4)
250	160	27	FY	22	37	31.5	27.5	5	F611FY276(1)250(4)
250	160	33	FY	22	37	31.5	27.5	5	F611FY336(2)250(4)
250	160	5.6	RB	11	22	41	37.5	4	F611RB565(1)250(4)
250	160	6.8	RB	11	22	41	37.5	4	F611RB685(1)250(4)
250	160	8.2	RB	11	22	41	37.5	4	F611RB825(1)250(4)
250	160	10	RB	11	22	41	37.5	4	F611RB106(1)250(4)
250	160	12	RB	11	22	41	37.5	4	F611RB126(2)250(4)
250	160	15	RF	13	24	41	37.5	4	F611RF156(1)250(4)
250	160	18	RH	15	26	41	37.5	4	F611RH186(1)250(4)
250	160	22	RH	15	26	41	37.5	4	F611RH226(2)250(4)
250	160	27	RC	16	28.5	41	37.5	4	F611RC276(3)250(4)
250	160	33	RD	19	32	41	37.5	4	F611RD336(2)250(4)
250	160	39	RP	21	38	41	37.5	4	F611RP396(1)250(4)
250	160	47	RP	21	38	41	37.5	4	F611RP476(2)250(4)
250	160	56	RO	24	44	41	37.5	4	F611RO566(1)250(4)
250	160	68	RO	24	44	41	37.5	4	F611RO686(3)250(4)
250	160	82	RU	30	45	41	37.5	4	F611RU826(2)250(4)
400	200	0.001	JF	2.5	6.5	7.2	5.0	400	F612JF102(1)400(4)
400	200	0.0012	JF	2.5	6.5	7.2	5.0	400	F612JF122(1)400(4)
400	200	0.0015	JF	2.5	6.5	7.2	5.0	400	F612JF152(1)400(4)
400	200	0.0018	JF	2.5	6.5	7.2	5.0	400	F612JF182(1)400(4)
400	200	0.0022	JF	2.5	6.5	7.2	5.0	400	F612JF222(1)400(4)
400	200	0.0027	JF	2.5	6.5	7.2	5.0	400	F612JF272(1)400(4)
400	200	0.0033	JF	2.5	6.5	7.2	5.0	400	F612JF332(1)400(4)
400	200	0.0039	JF	2.5	6.5	7.2	5.0	400	F612JF392(1)400(4)
400	200	0.0047	JF	2.5	6.5	7.2	5.0	400	F612JF472(1)400(4)
400	200	0.0056	JG	3.5	7.5	7.2	5.0	400	F612JG562(1)400(4)
400	200	0.0068	JG	3.5	7.5	7.2	5.0	400	F612JG682(1)400(4)
400	200	0.082	JG	3.5	7.5	7.2	5.0	400	F612JG823(1)400(4)
400	200	0.01	JG	3.5	7.5	7.2	5.0	400	F612JG103(1)400(4)
400	200	0.012	JG	3.5	7.5	7.2	5.0	400	F612JG123(1)400(4)
400	200	0.015	JM	4.5	9.5	7.2	5.0	400	F612JM153(1)400(4)
400	200	0.018	JM	4.5	9.5	7.2	5.0	400	F612JM183(1)400(4)
400	200	0.022	JM	4.5	9.5	7.2	5.0	400	F612JM223(1)400(4)
400	200	0.027	JQ	5	10	7.2	5.0	400	F612JQ273(1)400(4)
400	200	0.033	JQ	5	10	7.2	5.0	400	F612JQ333(1)400(4)
400	200	0.039	JT	6	11	7.2	5.0	400	F612JT393(1)400(4)
400	200	0.047	JT	6	11	7.2	5.0	400	F612JT473(1)400(4)
400	200	0.056	JT	6	11	7.2	5.0	400	F612JT563(1)400(4)
400	160	0.0068	JF	2.5	6.5	7.2	5.0	200	F612JF682(1)400(4)
400	160	0.0082	JF	2.5	6.5	7.2	5.0	200	F612JF822(1)400(4)
400	160	0.015	JG	3.5	7.5	7.2	5.0	200	F612JG153(1)400(4)
400	160	0.018	JG	3.5	7.5	7.2	5.0	200	F612JG183(1)400(4)
400	160	0.033	JM	4.5	9.5	7.2	5.0	200	F612JM333(1)400(4)
400	160	0.039	JM	4.5	9.5	7.2	5.0	200	F612JM393(1)400(4)
400	160	0.047	JQ	5	10	7.2	5.0	200	F612JQ473(1)400(4)
400	160	0.068	JT	6	11	7.2	5.0	200	F612JT683(1)400(4)
400	200	0.0068	KF	3	8	10	7.5	275	F612KF682(1)400(4)
400	200	0.0082	KF	3	8	10	7.5	275	F612KF822(1)400(4)
400	200	0.01	KF	3	8	10	7.5	275	F612KF103(1)400(4)
400	200	0.012	KF	3	8	10	7.5	275	F612KF123(1)400(4)
400	200	0.015	KF	3	8	10	7.5	275	F612KF153(1)400(4)
400	200	0.018	KF	3	8	10	7.5	275	F612KF183(1)400(4)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) K= ±10%, M = ±20%; J = ±5% on request
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(3) M = ±20% (only available tolerance).
(4) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
400	200	0.022	KF	3	8	10	7.5	275	F612KF223(1)400(4)
400	200	0.027	KF	3	8	10	7.5	275	F612KF273(1)400(4)
400	200	0.033	KH	4	9	10	7.5	275	F612KH333(1)400(4)
400	200	0.039	KH	4	9	10	7.5	275	F612KH393(1)400(4)
400	200	0.047	KH	4	9	10	7.5	275	F612KH473(1)400(4)
400	200	0.056	KH	4	9	10	7.5	275	F612KH563(1)400(4)
400	200	0.068	KJ	5	10.5	10	7.5	275	F612KJ683(1)400(4)
400	200	0.082	KJ	5	10.5	10	7.5	275	F612KJ823(1)400(4)
400	200	0.1	KM	6	12	10.5	7.5	275	F612KM104(1)400(4)
400	200	0.12	KM	6	12	10.5	7.5	275	F612KM124(1)400(4)
400	200	0.15	KM	6	12	10.5	7.5	275	F612KM154(1)400(4)
400	200	0.033	AG	4	9	13	10.0	30	F611AG333(1)400(4)
400	200	0.039	AG	4	9	13	10.0	30	F611AG393(1)400(4)
400	200	0.047	AG	4	9	13	10.0	30	F611AG473(1)400(4)
400	200	0.056	AG	4	9	13	10.0	30	F611AG563(1)400(4)
400	200	0.068	AG	4	9	13	10.0	30	F611AG683(1)400(4)
400	200	0.082	AG	4	9	13	10.0	30	F611AG823(1)400(4)
400	200	0.1	AK	5	11	13	10.0	30	F611AK104(1)400(4)
400	200	0.12	AK	5	11	13	10.0	30	F611AK124(1)400(4)
400	200	0.15	AK	5	11	13	10.0	30	F611AK154(1)400(4)
400	200	0.18	AP	6	12	13	10.0	30	F611AP184(1)400(4)
400	200	0.22	AP	6	12	13	10.0	30	F611AP224(1)400(4)
400	200	0.056	BB	4	10	18	15.0	20	F611BB563(1)400(4)
400	200	0.068	BB	4	10	18	15.0	20	F611BB683(1)400(4)
400	200	0.082	BB	4	10	18	15.0	20	F611BB823(1)400(4)
400	200	0.1	BB	4	10	18	15.0	20	F611BB104(1)400(4)
400	200	0.12	BB	4	10	18	15.0	20	F611BB124(1)400(4)
400	200	0.15	BB	4	10	18	15.0	20	F611BB154(1)400(4)
400	200	0.18	BC	5	11	18	15.0	20	F611BC184(1)400(4)
400	200	0.22	BC	5	11	18	15.0	20	F611BC224(1)400(4)
400	200	0.27	BE	5.5	12.5	18	15.0	20	F611BE274(1)400(4)
400	200	0.33	BG	6	12	18	15.0	20	F611BG334(1)400(4)
400	200	0.39	BK	7.5	13.5	18	15.0	20	F611BK394(1)400(4)
400	200	0.47	BK	7.5	13.5	18	15.0	20	F611BK474(1)400(4)
400	200	0.56	BK	7.5	13.5	18	15.0	20	F611BK564(1)400(4)
400	200	0.68	BP	8.5	14.5	18	15.0	20	F611BP684(1)400(4)
400	200	0.82	BS	10	16	18	15.0	20	F611BS824(1)400(4)
400	200	1	BY	11	19	18	15.0	20	F611BY105(1)400(4)
400	200	1.2	BY	11	19	18	15.0	20	F611BY125(1)400(4)
400	200	1.5	BY	11	19	18	15.0	20	F611BY155(1)400(4)
400	200	0.27	DB	6	14.5	26	22.5	10	F611DB274(1)400(4)
400	200	0.33	DB	6	14.5	26	22.5	10	F611DB334(1)400(4)
400	200	0.39	DB	6	14.5	26	22.5	10	F611DB394(1)400(4)
400	200	0.47	DB	6	14.5	26	22.5	10	F611DB474(1)400(4)
400	200	0.56	DB	6	14.5	26	22.5	10	F611DB564(1)400(4)
400	200	0.68	DB	6	14.5	26	22.5	10	F611DB684(1)400(4)
400	200	0.82	DI	7	16	26	22.5	10	F611DI824(1)400(4)
400	200	1	DI	7	16	26	22.5	10	F611DI105(1)400(4)
400	200	1.2	DJ	8.5	17	26	22.5	10	F611DJ125(1)400(4)
400	200	1.5	DM	9	18.5	26	22.5	10	F611DM155(1)400(4)
400	200	1.8	DO	10	18.5	26	22.5	10	F611DO185(1)400(4)
400	200	2.2	DP	11	20	26	22.5	10	F611DP225(1)400(4)
400	200	2.7	DU	13	22	26	22.5	10	F611DU275(1)400(4)
400	200	3.3	DU	13	22	26	22.5	10	F611DU335(1)400(4)
400	200	3.9	DY	15.5	24.5	26	22.5	10	F611DY395(1)400(4)
400	200	4.7	DY	15.5	24.5	26	22.5	10	F611DY475(1)400(4)
400	200	0.82	FB	9	17	31.5	27.5	8.5	F611FB824(1)400(4)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) K= ±10%, M = ±20%; J = ±5% on request
(2) K= ±10%, M = ±20%; J = ±5% not available
(3) M = ±20% (only available tolerance).
(4) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
400	200	1	FB	9	17	31.5	27.5	8.5	F611FB105(1)400(4)
400	200	1.2	FB	9	17	31.5	27.5	8.5	F611FB125(1)400(4)
400	200	1.5	FB	9	17	31.5	27.5	8.5	F611FB155(1)400(4)
400	200	1.8	FB	9	17	31.5	27.5	8.5	F611FB185(1)400(4)
400	200	2.2	FC	11	20	31.5	27.5	8.5	F611FC225(1)400(4)
400	200	2.7	FC	11	20	31.5	27.5	8.5	F611FC275(1)400(4)
400	200	3.3	FI	13	25	31.5	27.5	8.5	F611FI335(1)400(4)
400	200	3.9	FI	13	25	31.5	27.5	8.5	F611FI395(1)400(4)
400	200	4.7	FI	13	25	31.5	27.5	8.5	F611FI475(2)400(4)
400	200	5.6	FN	14	28	31.5	27.5	8.5	F611FN565(2)400(4)
400	200	6.8	FR	17.5	28	31.5	27.5	8.5	F611FR685(2)400(4)
400	200	8.2	FR	17.5	28	31.5	27.5	8.5	F611FR825(3)400(4)
400	200	10	FY	22	37	31.5	27.5	8.5	F611FY106(2)400(4)
400	200	12	FY	22	37	31.5	27.5	8.5	F611FY126(2)400(4)
400	200	15	FY	22	37	31.5	27.5	8.5	F611FY156(3)400(4)
400	200	2.2	RB	11	22	41	37.5	6	F611RB225(1)400(4)
400	200	2.7	RB	11	22	41	37.5	6	F611RB275(1)400(4)
400	200	3.3	RB	11	22	41	37.5	6	F611RB335(1)400(4)
400	200	3.9	RB	11	22	41	37.5	6	F611RB395(1)400(4)
400	200	4.7	RB	11	22	41	37.5	6	F611RB475(2)400(4)
400	200	5.6	RF	13	24	41	37.5	6	F611RF565(1)400(4)
400	200	6.8	RF	13	24	41	37.5	6	F611RF685(3)400(4)
400	200	8.2	RH	15	26	41	37.5	6	F611RH825(2)400(4)
400	200	10	RC	16	28.5	41	37.5	6	F611RC106(2)400(4)
400	200	12	RD	19	32	41	37.5	6	F611RD126(2)400(4)
400	200	15	RP	21	38	41	37.5	6	F611RP156(1)400(4)
400	200	18	RP	21	38	41	37.5	6	F611RP186(2)400(4)
400	200	22	RO	24	44	41	37.5	6	F611RO226(1)400(4)
400	200	27	RO	24	44	41	37.5	6	F611RO276(3)400(4)
400	200	33	RU	30	45	41	37.5	6	F611RU336(3)400(4)
630	220	0.0012	JF	2.5	6.5	7.2	5.0	80	F611JF122(1)630(4)
630	220	0.0015	JF	2.5	6.5	7.2	5.0	80	F611JF152(1)630(4)
630	220	0.0018	JF	2.5	6.5	7.2	5.0	80	F611JF182(1)630(4)
630	220	0.0022	JF	2.5	6.5	7.2	5.0	80	F611JF222(1)630(4)
630	220	0.0027	JF	2.5	6.5	7.2	5.0	80	F611JF272(1)630(4)
630	220	0.0033	JF	2.5	6.5	7.2	5.0	80	F611JF332(1)630(4)
630	220	0.0039	JF	2.5	6.5	7.2	5.0	80	F611JF392(1)630(4)
630	220	0.0047	JG	3.5	7.5	7.2	5.0	80	F611JG472(1)630(4)
630	220	0.0056	JG	3.5	7.5	7.2	5.0	80	F611JG562(1)630(4)
630	220	0.0068	JG	3.5	7.5	7.2	5.0	80	F611JG682(1)630(4)
630	220	0.0082	JG	3.5	7.5	7.2	5.0	80	F611JG822(1)630(4)
630	220	0.01	JG	3.5	7.5	7.2	5.0	80	F611JG103(1)630(4)
630	220	0.012	JM	4.5	9.5	7.2	5.0	80	F611JM123(1)630(4)
630	220	0.015	JM	4.5	9.5	7.2	5.0	80	F611JM153(1)630(4)
630	220	0.018	JM	4.5	9.5	7.2	5.0	80	F611JM183(1)630(4)
630	220	0.022	JQ	5	10	7.2	5.0	80	F611JQ223(1)630(4)
630	220	0.027	JT	6	11	7.2	5.0	80	F611JT273(1)630(4)
630	220	0.033	JT	6	11	7.2	5.0	80	F611JT333(1)630(4)
630	220	0.039	JU	7.2	13	7.2	5.0	80	F611JU393(1)630(4)
630	220	0.047	JU	7.2	13	7.2	5.0	80	F611JU473(1)630(4)
630	220	0.0018	KE	2.5	6	10	7.5	60	F611KE182(1)630(4)
630	220	0.0022	KE	2.5	6	10	7.5	60	F611KE222(1)630(4)
630	220	0.0027	KE	2.5	6	10	7.5	60	F611KE272(1)630(4)
630	220	0.0033	KE	2.5	6	10	7.5	60	F611KE332(1)630(4)
630	220	0.0039	KE	2.5	6	10	7.5	60	F611KE392(1)630(4)
630	220	0.0047	KE	2.5	6	10	7.5	60	F611KE472(1)630(4)
630	220	0.0056	KF	3	8	10	7.5	60	F611KF562(1)630(4)
VDC	VAC	Capacitance Value (µF)	Size Code	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Part Number

(1) K= ±10%, M = ±20%; J = ±5% on request
(2) K= ±10%, M = ±20%; J = ±5% not available
(3) M = ±20% (only available tolerance).
(4) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
630	220	0.0068	KF	3	8	10	7.5	60	F611KF682(1)630(4)
630	220	0.0082	KF	3	8	10	7.5	60	F611KF822(1)630(4)
630	220	0.01	KF	3	8	10	7.5	60	F611KF103(1)630(4)
630	220	0.012	KG	4	8	10	7.5	60	F611KG123(1)630(4)
630	220	0.015	KG	4	8	10	7.5	60	F611KG153(1)630(4)
630	220	0.018	KG	4	8	10	7.5	60	F611KG183(1)630(4)
630	220	0.022	KJ	5	10.5	10	7.5	60	F611KJ223(1)630(4)
630	220	0.027	KJ	5	10.5	10	7.5	60	F611KJ273(1)630(4)
630	220	0.033	KJ	5	10.5	10	7.5	60	F611KJ333(1)630(4)
630	220	0.039	KJ	5	10.5	10	7.5	60	F611KJ393(1)630(4)
630	220	0.047	KM	6	12	10.5	7.5	60	F611KM473(1)630(4)
630	220	0.056	KM	6	12	10.5	7.5	60	F611KM563(1)630(4)
630	220	0.012	AG	4	9	13	10.0	40	F611AG123(1)630(4)
630	220	0.015	AG	4	9	13	10.0	40	F611AG153(1)630(4)
630	220	0.018	AG	4	9	13	10.0	40	F611AG183(1)630(4)
630	220	0.022	AG	4	9	13	10.0	40	F611AG223(1)630(4)
630	220	0.027	AG	4	9	13	10.0	40	F611AG273(1)630(4)
630	220	0.033	AK	5	11	13	10.0	40	F611AK333(1)630(4)
630	220	0.039	AK	5	11	13	10.0	40	F611AK393(1)630(4)
630	220	0.047	AK	5	11	13	10.0	40	F611AK473(1)630(4)
630	220	0.056	AP	6	12	13	10.0	40	F611AP563(1)630(4)
630	220	0.068	AP	6	12	13	10.0	40	F611AP683(1)630(4)
630	220	0.082	AP	6	12	13	10.0	40	F611AP823(1)630(4)
630	220	0.022	BB	4	10	18	15.0	25	F611BB223(1)630(4)
630	220	0.027	BB	4	10	18	15.0	25	F611BB273(1)630(4)
630	220	0.033	BB	4	10	18	15.0	25	F611BB333(1)630(4)
630	220	0.039	BB	4	10	18	15.0	25	F611BB393(1)630(4)
630	220	0.047	BB	4	10	18	15.0	25	F611BB473(1)630(4)
630	220	0.056	BC	5	11	18	15.0	25	F611BC563(1)630(4)
630	220	0.068	BC	5	11	18	15.0	25	F611BC683(1)630(4)
630	220	0.082	BC	5	11	18	15.0	25	F611BC823(1)630(4)
630	220	0.1	BE	5.5	12.5	18	15.0	25	F611BE104(1)630(4)
630	220	0.12	BG	6	12	18	15.0	25	F611BG124(1)630(4)
630	220	0.15	BK	7.5	13.5	18	15.0	25	F611BK154(1)630(4)
630	220	0.18	BK	7.5	13.5	18	15.0	25	F611BK184(1)630(4)
630	220	0.22	BP	8.5	14.5	18	15.0	25	F611BP224(1)630(4)
630	220	0.27	BS	10	16	18	15.0	25	F611BS274(1)630(4)
630	220	0.33	BS	10	16	18	15.0	25	F611BS334(1)630(4)
630	220	0.39	BY	11	19	18	15.0	25	F611BY394(1)630(4)
630	220	0.47	BY	11	19	18	15.0	25	F611BY474(1)630(4)
630	220	0.12	DB	6	14.5	26	22.5	12	F611DB124(1)630(4)
630	220	0.15	DB	6	14.5	26	22.5	12	F611DB154(1)630(4)
630	220	0.18	DB	6	14.5	26	22.5	12	F611DB184(1)630(4)
630	220	0.22	DB	6	14.5	26	22.5	12	F611DB224(1)630(4)
630	220	0.27	DI	7	16	26	22.5	12	F611DI274(1)630(4)
630	220	0.33	DI	7	16	26	22.5	12	F611DI334(1)630(4)
630	220	0.39	DH	8	16	26	22.5	12	F611DH394(1)630(4)
630	220	0.47	DJ	8.5	17	26	22.5	12	F611DJ474(1)630(4)
630	220	0.56	DM	9	18.5	26	22.5	12	F611DM564(1)630(4)
630	220	0.68	DO	10	18.5	26	22.5	12	F611DO684(1)630(4)
630	220	0.82	DP	11	20	26	22.5	12	F611DP824(1)630(4)
630	220	1	DU	13	22	26	22.5	12	F611DU105(1)630(4)
630	220	1.2	DY	15.5	24.5	26	22.5	12	F611DY125(1)630(4)
630	220	1.5	DY	15.5	24.5	26	22.5	12	F611DY155(1)630(4)
630	220	0.33	FB	9	17	31.5	27.5	10	F611FB334(1)630(4)
630	220	0.39	FB	9	17	31.5	27.5	10	F611FB394(1)630(4)
630	220	0.47	FB	9	17	31.5	27.5	10	F611FB474(1)630(4)
VDC	VAC	Capacitance Value (µF)	Size Code	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Part Number

(1) K= ±10%, M = ±20%; J = ±5% on request
(2) K= ±10%, M = ±20%; J = ±5% not available
(3) M = ±20% (only available tolerance).
(4) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
630	220	0.56	FB	9	17	31.5	27.5	10	F611FB564(1)630(4)
630	220	0.68	FB	9	17	31.5	27.5	10	F611FB684(2)630(4)
630	220	0.82	FC	11	20	31.5	27.5	10	F611FC824(1)630(4)
630	220	1	FC	11	20	31.5	27.5	10	F611FC105(2)630(4)
630	220	1.2	FI	13	25	31.5	27.5	10	F611FI125(1)630(4)
630	220	1.5	FI	13	25	31.5	27.5	10	F611FI155(2)630(4)
630	220	1.8	FI	13	25	31.5	27.5	10	F611FI185(3)630(4)
630	220	2.2	FN	14	28	31.5	27.5	10	F611FN225(3)630(4)
630	220	2.2	FR	17.5	28	31.5	27.5	10	F611FR225(1)630(4)
630	220	2.7	FR	17.5	28	31.5	27.5	10	F611FR275(3)630(4)
630	220	3.3	FY	19	29	31.5	27.5	10	F611FY335(2)630(4)
630	220	3.9	FY	22	37	31.5	27.5	10	F611FY395(1)630(4)
630	220	4.7	FY	22	37	31.5	27.5	10	F611FY475(3)630(4)
630	220	0.82	RB	11	22	41	37.5	8	F611RB824(1)630(4)
630	220	1	RB	11	22	41	37.5	8	F611RB105(1)630(4)
630	220	1.2	RB	11	22	41	37.5	8	F611RB125(1)630(4)
630	220	1.5	RB	11	22	41	37.5	8	F611RB155(1)630(4)
630	220	1.8	RB	11	22	41	37.5	8	F611RB185(3)630(4)
630	220	2.2	RF	13	24	41	37.5	8	F611RF225(1)630(4)
630	220	2.7	RH	15	26	41	37.5	8	F611RH275(1)630(4)
630	220	3.3	RC	16	28.5	41	37.5	8	F611RC335(1)630(4)
630	220	3.9	RD	19	32	41	37.5	8	F611RD395(1)630(4)
630	220	4.7	RD	19	32	41	37.5	8	F611RD475(2)630(4)
630	220	5.6	RP	21	38	41	37.5	8	F611RP565(1)630(4)
630	220	6.8	RP	21	38	41	37.5	8	F611RP685(2)630(4)
630	220	8.2	RO	24	44	41	37.5	8	F611RO825(1)630(4)
630	220	10	RO	24	44	41	37.5	8	F611RO106(3)630(4)
630	220	12	RU	30	45	41	37.5	8	F611RU126(3)630(4)
1000	250	0.001	JF	2.5	6.5	7.2	5.0	100	F611JF102(1)1K0(4)
1000	250	0.0012	JG	3.5	7.5	7.2	5.0	100	F611JG122(1)1K0(4)
1000	250	0.0015	JG	3.5	7.5	7.2	5.0	100	F611JG152(1)1K0(4)
1000	250	0.0018	JG	3.5	7.5	7.2	5.0	100	F611JG182(1)1K0(4)
1000	250	0.0022	JG	3.5	7.5	7.2	5.0	100	F611JG222(1)1K0(4)
1000	250	0.0027	JG	3.5	7.5	7.2	5.0	100	F611JG272(1)1K0(4)
1000	250	0.0033	JG	3.5	7.5	7.2	5.0	100	F611JG332(1)1K0(4)
1000	250	0.0039	JM	4.5	9.5	7.2	5.0	100	F611JM392(1)1K0(4)
1000	250	0.0047	JM	4.5	9.5	7.2	5.0	100	F611JM472(1)1K0(4)
1000	250	0.0056	JM	4.5	9.5	7.2	5.0	100	F611JM562(1)1K0(4)
1000	250	0.0068	JQ	5	10	7.2	5.0	100	F611JQ682(1)1K0(4)
1000	250	0.0082	JT	6	11	7.2	5.0	100	F611JT822(1)1K0(4)
1000	250	0.01	JT	6	11	7.2	5.0	100	F611JT103(1)1K0(4)
1000	250	0.012	JT	6	11	7.2	5.0	100	F611JT123(1)1K0(4)
1000	250	0.015	JU	7.2	13	7.2	5.0	100	F611JU153(1)1K0(4)
1000	250	0.001	KE	2.5	6	10	7.5	80	F611KE102(1)1K0(4)
1000	250	0.0012	KE	2.5	6	10	7.5	80	F611KE122(1)1K0(4)
1000	250	0.0015	KE	2.5	6	10	7.5	80	F611KE152(1)1K0(4)
1000	250	0.0018	KF	3	8	10	7.5	80	F611KF182(1)1K0(4)
1000	250	0.0022	KF	3	8	10	7.5	80	F611KF222(1)1K0(4)
1000	250	0.0027	KF	3	8	10	7.5	80	F611KF272(1)1K0(4)
1000	250	0.0033	KF	3	8	10	7.5	80	F611KF332(1)1K0(4)
1000	250	0.0039	KG	4	8	10	7.5	80	F611KG392(1)1K0(4)
1000	250	0.0047	KG	4	8	10	7.5	80	F611KG472(1)1K0(4)
1000	250	0.0056	KG	4	8	10	7.5	80	F611KG562(1)1K0(4)
1000	250	0.0068	KG	4	8	10	7.5	80	F611KG682(1)1K0(4)
1000	250	0.0082	KJ	5	10.5	10	7.5	80	F611KJ822(1)1K0(4)
1000	250	0.01	KJ	5	10.5	10	7.5	80	F611KJ103(1)1K0(4)
1000	250	0.012	KJ	5	10.5	10	7.5	80	F611KJ123(1)1K0(4)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) K= ±10%, M = ±20%; J = ±5% on request
(2) K= ±10%, M = ±20%; J = ±5% not available
(3) M = ±20% (only available tolerance).
(4) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
1000	250	0.015	KM	6	12	10.5	7.5	80	F611KM153(1)1K0(4)
1000	250	0.018	KM	6	12	10.5	7.5	80	F611KM183(1)1K0(4)
1000	250	0.022	KM	6	12	10.5	7.5	80	F611KM223(1)1K0(4)
1000	250	0.001	AG	4	9	13	10.0	60	F611AG102(1)1K0(4)
1000	250	0.0012	AG	4	9	13	10.0	60	F611AG122(1)1K0(4)
1000	250	0.0015	AG	4	9	13	10.0	60	F611AG152(1)1K0(4)
1000	250	0.0018	AG	4	9	13	10.0	60	F611AG182(1)1K0(4)
1000	250	0.0022	AG	4	9	13	10.0	60	F611AG222(1)1K0(4)
1000	250	0.0027	AG	4	9	13	10.0	60	F611AG272(1)1K0(4)
1000	250	0.0033	AG	4	9	13	10.0	60	F611AG332(1)1K0(4)
1000	250	0.0039	AG	4	9	13	10.0	60	F611AG392(1)1K0(4)
1000	250	0.0047	AG	4	9	13	10.0	60	F611AG472(1)1K0(4)
1000	250	0.0056	AG	4	9	13	10.0	60	F611AG562(1)1K0(4)
1000	250	0.0068	AG	4	9	13	10.0	60	F611AG682(1)1K0(4)
1000	250	0.0082	AG	4	9	13	10.0	60	F611AG822(1)1K0(4)
1000	250	0.01	AG	4	9	13	10.0	60	F611AG103(1)1K0(4)
1000	250	0.012	AG	4	9	13	10.0	60	F611AG123(1)1K0(4)
1000	250	0.015	AK	5	11	13	10.0	60	F611AK153(1)1K0(4)
1000	250	0.018	AK	5	11	13	10.0	60	F611AK183(1)1K0(4)
1000	250	0.022	AP	6	12	13	10.0	60	F611AP223(1)1K0(4)
1000	250	0.027	AP	6	12	13	10.0	60	F611AP273(1)1K0(4)
1000	250	0.033	AP	6	12	13	10.0	60	F611AP333(1)1K0(4)
1000	250	0.0082	BB	4	10	18	15.0	30	F611BB822(1)1K0(4)
1000	250	0.01	BB	4	10	18	15.0	30	F611BB103(1)1K0(4)
1000	250	0.012	BB	4	10	18	15.0	30	F611BB123(1)1K0(4)
1000	250	0.015	BB	4	10	18	15.0	30	F611BB153(1)1K0(4)
1000	250	0.018	BB	4	10	18	15.0	30	F611BB183(1)1K0(4)
1000	250	0.022	BC	5	11	18	15.0	30	F611BC223(1)1K0(4)
1000	250	0.027	BC	5	11	18	15.0	30	F611BC273(1)1K0(4)
1000	250	0.033	BC	5	11	18	15.0	30	F611BC333(1)1K0(4)
1000	250	0.039	BE	5.5	12.5	18	15.0	30	F611BE393(1)1K0(4)
1000	250	0.047	BG	6	12	18	15.0	30	F611BG473(1)1K0(4)
1000	250	0.056	BK	7.5	13.5	18	15.0	30	F611BK563(1)1K0(4)
1000	250	0.068	BK	7.5	13.5	18	15.0	30	F611BK683(1)1K0(4)
1000	250	0.082	BP	8.5	14.5	18	15.0	30	F611BP823(1)1K0(4)
1000	250	0.1	BP	8.5	14.5	18	15.0	30	F611BP104(1)1K0(4)
1000	250	0.12	BS	10	16	18	15.0	30	F611BS124(1)1K0(4)
1000	250	0.15	BY	11	19	18	15.0	30	F611BY154(1)1K0(4)
1000	250	0.18	BY	11	19	18	15.0	30	F611BY184(1)1K0(4)
1000	250	0.033	DB	6	14.5	26	22.5	15	F611DB333(1)1K0(4)
1000	250	0.039	DB	6	14.5	26	22.5	15	F611DB393(1)1K0(4)
1000	250	0.047	DB	6	14.5	26	22.5	15	F611DB473(1)1K0(4)
1000	250	0.056	DB	6	14.5	26	22.5	15	F611DB563(1)1K0(4)
1000	250	0.068	DB	6	14.5	26	22.5	15	F611DB683(1)1K0(4)
1000	250	0.082	DB	6	14.5	26	22.5	15	F611DB823(1)1K0(4)
1000	250	0.1	DB	6	14.5	26	22.5	15	F611DB104(1)1K0(4)
1000	250	0.12	DI	7	16	26	22.5	15	F611DI124(1)1K0(4)
1000	250	0.15	DI	7	16	26	22.5	15	F611DI154(1)1K0(4)
1000	250	0.18	DH	8	16	26	22.5	15	F611DH184(1)1K0(4)
1000	250	0.22	DM	9	18.5	26	22.5	15	F611DM224(1)1K0(4)
1000	250	0.27	DO	10	18.5	26	22.5	15	F611DO274(1)1K0(4)
1000	250	0.33	DP	11	20	26	22.5	15	F611DP334(1)1K0(4)
1000	250	0.39	DU	13	22	26	22.5	15	F611DU394(1)1K0(4)
1000	250	0.47	DU	13	22	26	22.5	15	F611DU474(1)1K0(4)
1000	250	0.56	DY	15.5	24.5	26	22.5	15	F611DY564(1)1K0(4)
1000	250	0.68	DY	15.5	24.5	26	22.5	15	F611DY684(1)1K0(4)
1000	250	0.15	FB	9	17	31.5	27.5	12	F611FB154(1)1K0(4)
VDC	VAC	Capacitance Value (µF)	Size Code	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Part Number

(1) K= ±10%, M = ±20%; J = ±5% on request
(2) K= ±10%, M = ±20%; J = ±5% not available
(3) M = ±20% (only available tolerance).
(4) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
1000	250	0.18	FB	9	17	31.5	27.5	12	F611FB184(1)1K0(4)
1000	250	0.22	FB	9	17	31.5	27.5	12	F611FB224(1)1K0(4)
1000	250	0.27	FB	9	17	31.5	27.5	12	F611FB274(1)1K0(4)
1000	250	0.33	FB	9	17	31.5	27.5	12	F611FB334(3)1K0(4)
1000	250	0.39	FC	11	20	31.5	27.5	12	F611FC394(1)1K0(4)
1000	250	0.47	FC	11	20	31.5	27.5	12	F611FC474(2)1K0(4)
1000	250	0.56	FI	13	25	31.5	27.5	12	F611FI564(1)1K0(4)
1000	250	0.68	FI	13	25	31.5	27.5	12	F611FI684(2)1K0(4)
1000	250	0.82	FN	14	28	31.5	27.5	12	F611FN824(2)1K0(4)
1000	250	1	FR	17.5	28	31.5	27.5	12	F611FR105(1)1K0(4)
1000	250	1.2	FR	17.5	28	31.5	27.5	12	F611FR125(3)1K0(4)
1000	250	1.5	FS	19	29	31.5	27.5	12	F611FS155(3)1K0(4)
1000	250	1.8	FY	22	37	31.5	27.5	12	F611FY185(1)1K0(4)
1000	250	2.2	FY	22	37	31.5	27.5	12	F611FY225(3)1K0(4)
1000	250	0.47	RB	11	22	41	37.5	10	F611RB474(1)1K0(4)
1000	250	0.56	RB	11	22	41	37.5	10	F611RB564(1)1K0(4)
1000	250	0.68	RB	11	22	41	37.5	10	F611RB684(1)1K0(4)
1000	250	0.82	RF	13	24	41	37.5	10	F611RF824(1)1K0(4)
1000	250	1	RF	13	24	41	37.5	10	F611RF105(2)1K0(4)
1000	250	1.2	RH	15	26	41	37.5	10	F611RH125(1)1K0(4)
1000	250	1.5	RC	16	28.5	41	37.5	10	F611RC155(2)1K0(4)
1000	250	1.8	RD	19	32	41	37.5	10	F611RD185(1)1K0(4)
1000	250	2.2	RD	19	32	41	37.5	10	F611RD225(3)1K0(4)
1000	250	2.7	RP	21	38	41	37.5	10	F611RP275(2)1K0(4)
1000	250	3.3	RO	24	44	41	37.5	10	F611RO335(1)1K0(4)
1000	250	3.9	RO	24	44	41	37.5	10	F611RO395(2)1K0(4)
1000	250	4.7	RU	30	45	41	37.5	10	F611RU475(1)1K0(4)
1000	250	5.6	RU	30	45	41	37.5	10	F611RU565(3)1K0(4)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) K= ±10%, M = ±20%; J = ±5% on request
(2) K= ±10%, M = ±20%; J = ±5% not available
(3) M = ±20% (only available tolerance).
(4) Insert lead and packaging code. See Ordering Options Table for available options.

Soldering Process

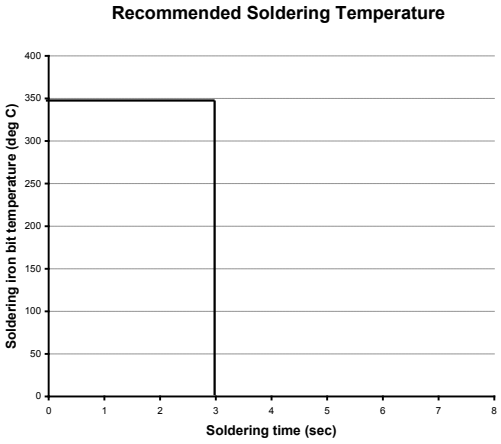
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

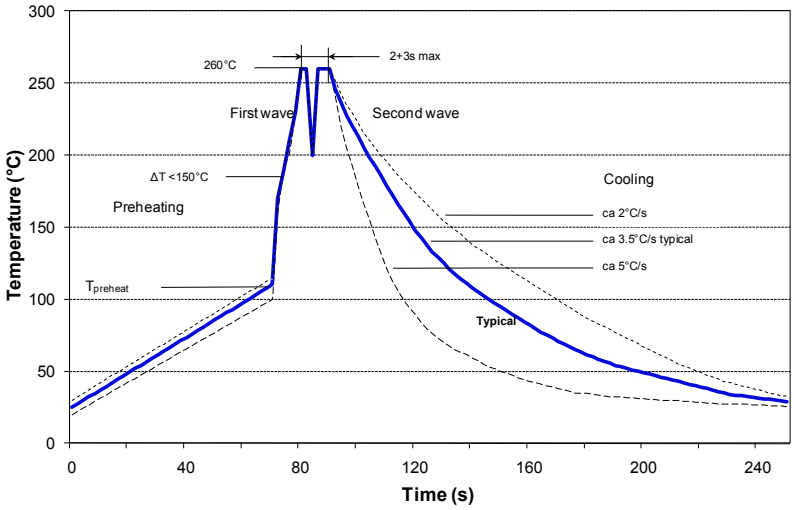
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

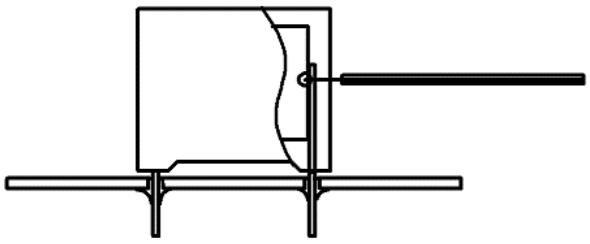
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



Temperature monitored inside the capacitor.

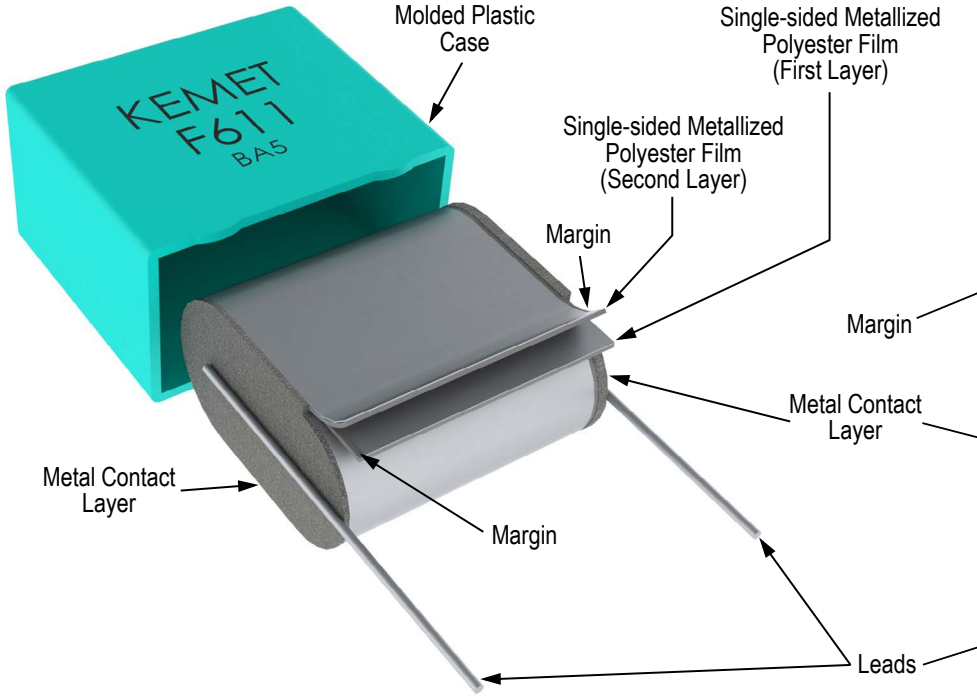
Selective Soldering Recommendations

Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

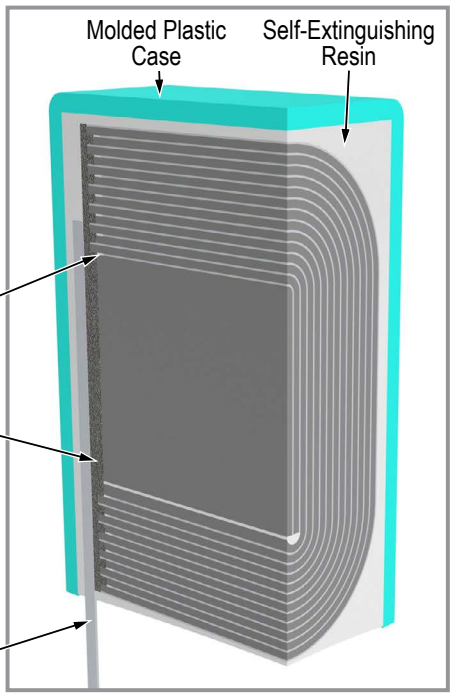
The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

Construction

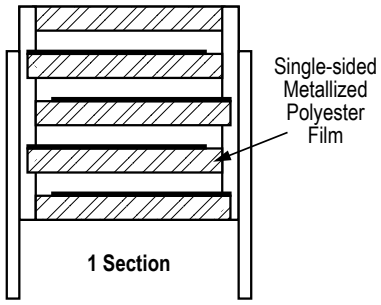
Wound



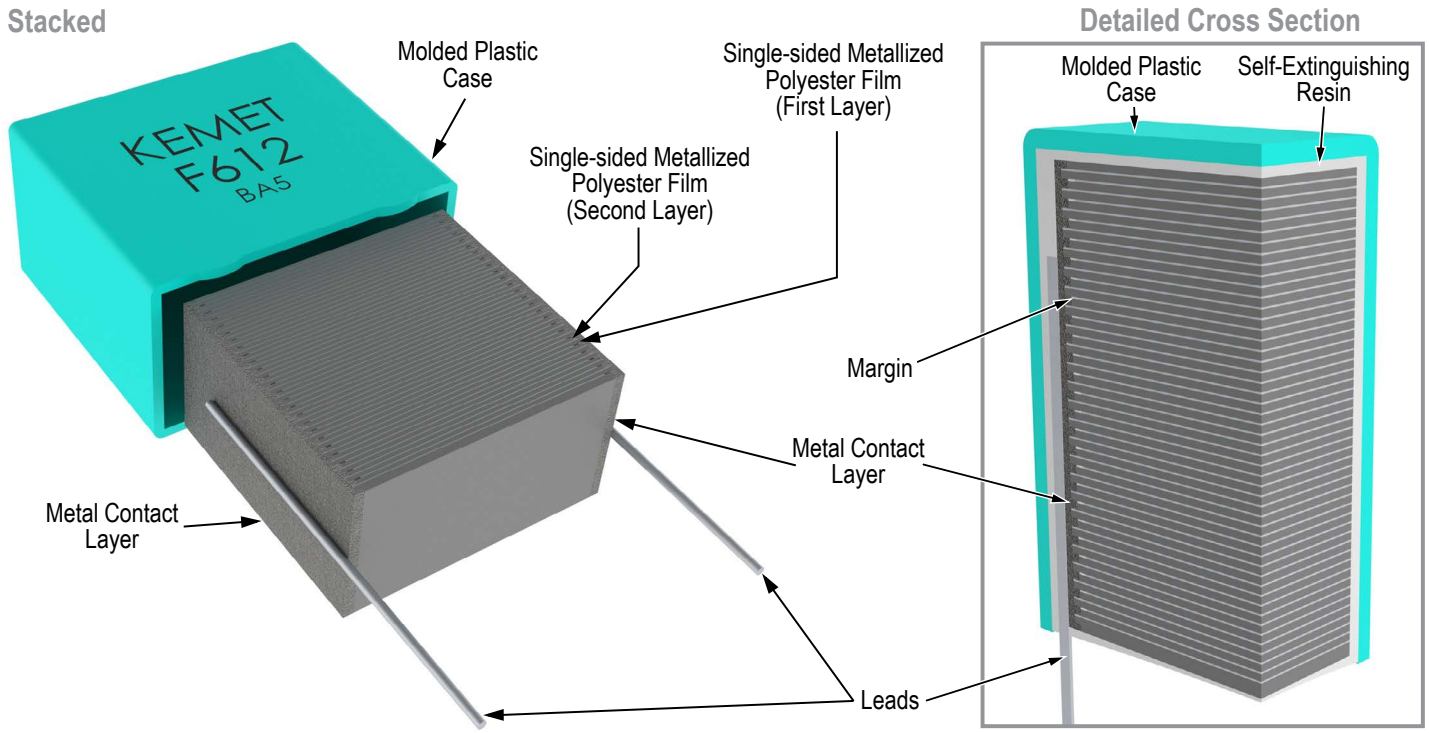
Detailed Cross Section



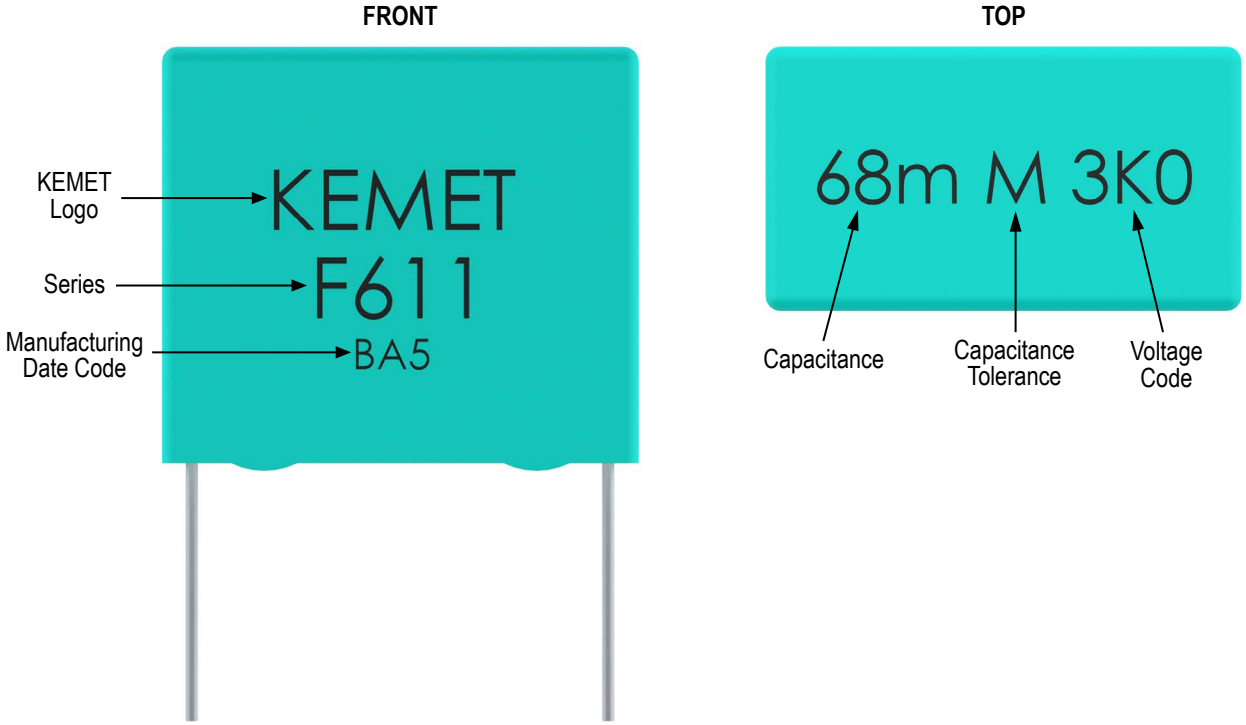
Winding Scheme



Construction cont'd



Marking



Packaging Quantities

Size Code	Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Large Reel ø 500 mm	Ammo	Pizza
JF	5	2.5	6.5	7.2	3000	4000	2500		3500	
JG		3.5	7.5	7.2	2000	3000	1800		2500	
JM		4.5	9.5	7.2	1500	2000	1400		1900	
JQ		5.0	10.0	7.2	1000	1500	1200		1700	
JT		6	11	7.2	2000	1000	1000		1400	
JU		7.2	13	7.2	1500	750	800		1150	
KE	7.5	2.5	6	10	2000	3000	2500		3500	
KF		3	8	10	1500	1750	2100		2800	
KG		4	8	10	2000	1500	1500		2100	
KJ		5	10.5	10	1500	1000	1200		1600	
KM		6	12	10.5	1000	800	1000		1350	
KH		4	9	10	2000	1500	1500		2100	
AN	10	3.5	9	13	2200	3200	850	1700	1150	
AG		4	9	13	2000	2200	750	1500	1000	
AK		5	11	13	1300	2000	600	1250	800	
AP		6	12	13	1000	1800	500	1000	680	
AO		7	17	13	600	900	450	900	580	
AL		9.5	7.5	13	1100	2000	300	600	430	
AE		4	8	13	2000	2200	750	1500	1000	
BB	15	4	10	18	1300	1500	750	1500	1000	1411
BC		5	11	18	1000	1250	600	1250	800	1139
BE		5.5	12.5	18	800	1100	550	1100	750	1020
BG		6	12	18	1750	1000	500	1000	680	935
BK		7.5	13.5	18	1000	800	350	800	500	748
BI		6	17.5	18	1000	800	500	1000	680	935
BP		8.5	14.5	18	1000	650	300	700	440	663
BT		9	12.5	18	1000	700	270	650	410	629
BO		7.5	18.5	18	900	600	350	800	500	748
BS		10	16	18	750	550	300	600	380	561
BR		13	12	18	750	520	200	480	280	425
BY		11	19	18	450	400	250	500	340	510
BA		8.5	12.5	18	1000	650	300	700	440	663
BZ		12	20	18	350	300	220	450	330	459

F622 Series Metallized Polyester Film, 5 mm Lead Spacing, 50 – 630 VDC

Overview

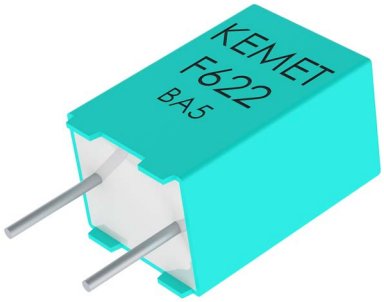
The F622 Series is constructed of metallized stacked polyester film capacitor with radial leads of tinned wire. Radial leads are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing material meeting the requirements of UL 94 V–0.

Applications

Typical applications include high performance, high temperature blocking, coupling, decoupling, bypassing and interference suppression in low voltage applications such as automotive. Not for use with the mains.

Benefits

- Voltage range: 50 – 630 VDC
- Capacitance range: 0.001 – 2.2 µF
- Lead spacing: 5 mm
- Capacitance tolerance: ±10%, ±20%, ±5% on request
- Climatic category: 55/125/56
- Tape and reel packaging in accordance with IEC 60286–2
- RoHS Compliant and lead-free terminations
- Operating temperature range of -55˚C to +125˚C
- Designed for high performance, high temperature applications



Part Number System

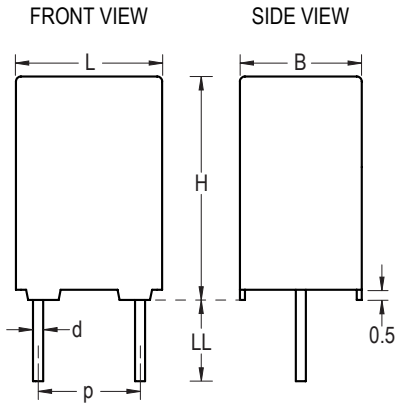
F	622	J	F	104	M	050	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging
F = Film	Metallized Polyester	J = 5	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% M = ±20%	050 = 50 063 = 63 100 = 100 250 = 250 400 = 400 500 = 500 630 = 630	See Ordering Options Table

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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	C
	Bulk (Bag) – Long Leads	17 +0/-1	A
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L
	Other Lead and Packaging Options		
	Bulk (Bag) – Max Length Leads	20 +5/-0	ALL0L
	Ammo Pack	H_0= 18.5 +/-0.5	R

Dimensions – Millimeters



Size Code	p		B		H		L		d	
	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
JF	5.0	+/-0.4	2.5	Maximum	6.5	Maximum	7.2	Maximum	0.5	+/-0.05
JG	5.0	+/-0.4	3.5	Maximum	7.5	Maximum	7.2	Maximum	0.5	+/-0.05
JM	5.0	+/-0.4	4.5	Maximum	9.5	Maximum	7.2	Maximum	0.5	+/-0.05
JQ	5.0	+/-0.4	5.0	Maximum	10.0	Maximum	7.2	Maximum	0.5	+/-0.05
JT	5.0	+/-0.4	6.0	Maximum	11.0	Maximum	7.2	Maximum	0.5	+/-0.05

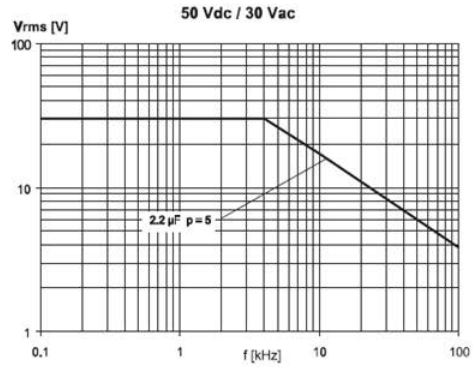
Note: See Ordering Options Table for lead length (LL) options.

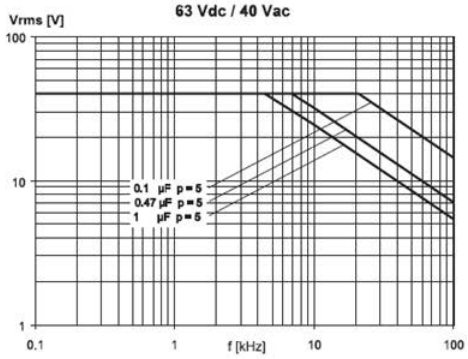
Performance Characteristics

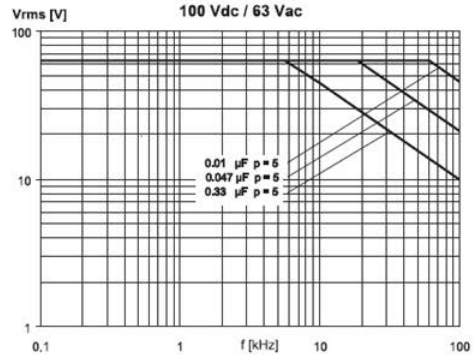
Capacitance Tolerance	±20%, ±10%, ±5% on request			
Category Temperature Range	-55°C to 125°C			
Voltage Derating	Above +85°C DC and AC voltage derating is 1.25%/°C			
Rated Temperature	+85°C			
Climatic Category	–55 to +125°C			
	Average relative humidity ≤ 75%			
	RH = 95% for 30 days per year			
	RH = 85% for further days limited by average value per year			
Test Voltage	1.6 x V_R VDC for 2 seconds			
Capacitance Drift	Maximum 3% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%			
Reliability	Operational life > 200,000 hours			
	Failure rate < 3 FIT, T = +40°C, V = 0.5 x V_R			
	Failure criteria: open circuit, short circuit, cap change > 10%, DF 2 times the catalog limits, IR < 50 MΩ			
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp < V_R), the specified dV/dt can be multiplied by the factor V_R/Vpp.			
Temperature Coefficient	+400 (±200) ppm/°C at 1 kHz			
Self Inductance	Approximately 6 nH/cm for the total length of capacitor winding and the leads			
Dissipation Factor tanδ	Maximum Values at +23°C			
		C ≤ 0.1 µF	0.1 µF < C ≤ 1.0 µF	C > 1.0 µF
	1 kHz	0.8%	0.8%	0.8%
	10 kHz	1.2%	1.2%	1.5%
	100 kHz	2.5%		
Insulation Resistance	Measured at +20°C, according to IEC 60384–2			
	Minimum Values Between Terminals			
		C ≤ 0.33 µF	C > 0.33 µF and < 1 µF	C > 1.0 µF
	V_R ≤ 100 VDC	15,000 MΩ	5,000 MΩ • µF	1,000 MΩ • µF
	V_R > 100 VDC	30,000 MΩ	10,000 MΩ • µF	

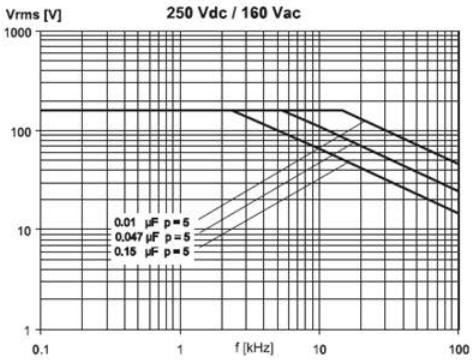
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/T ≤ 40°C)

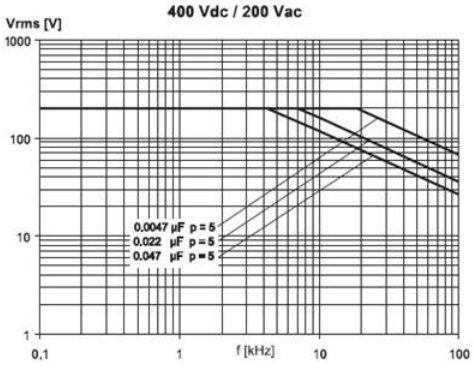
Lead Spacing 5 mm

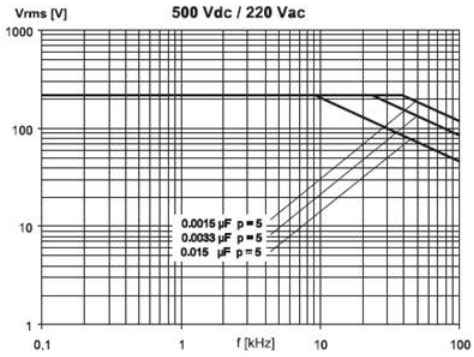


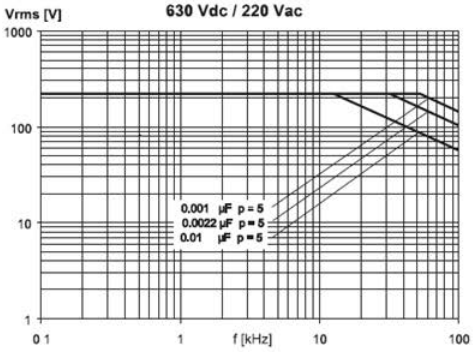






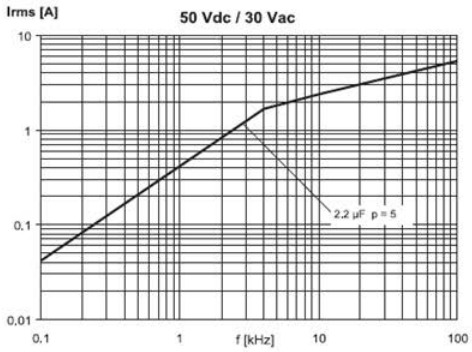


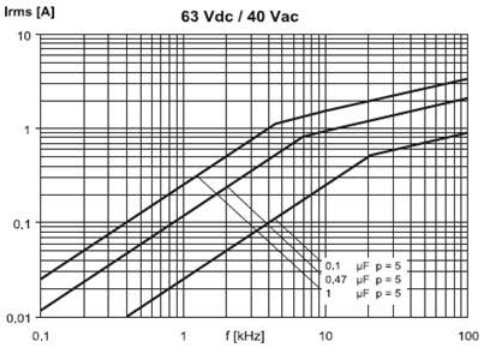


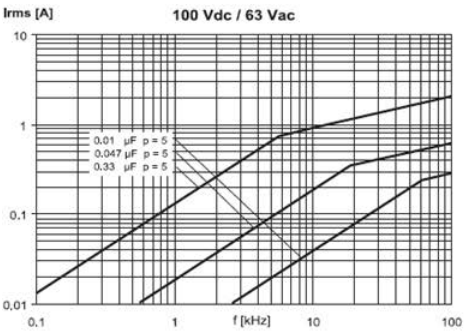


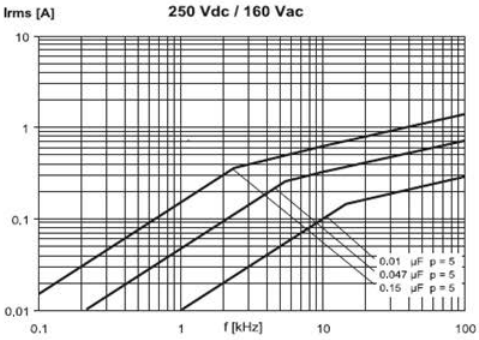
Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/T ≤ 40°C)

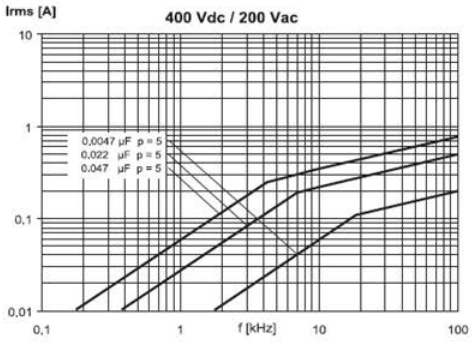
Lead Spacing 5 mm

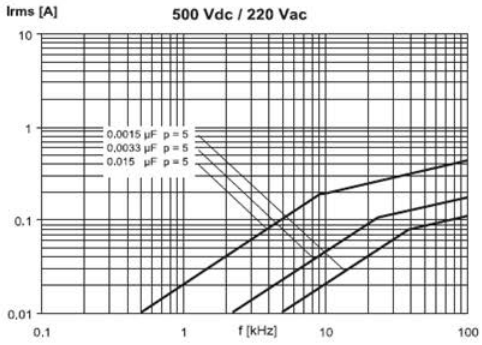


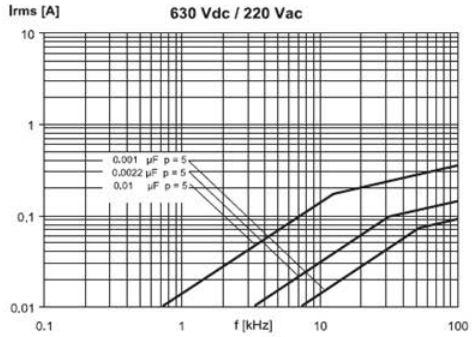












Environmental Test Data

Damp Heat Test	Test Conditions	T = +40°C, RH = 93%, t = 56 days
	Test Criteria	Δ C/C ≤ ±5% Δ tanδ ≤ 0.005 (1 kHz) IR after test 0.5 x IR minimum
Endurance Test	**Test Conditions**	**T = +100°C, U = 1.25 x (0.8 x U_R)**
	Test Criteria	t = 2,000 hours Δ C/C ≤ ±5% Δ tanδ ≤ 0.005 (1 kHz) Δ tanδ ≤ 0.010 (100 kHz) IR after test 0.5 x IR minimum

Environmental Compliance

All KEMET MKT capacitors are RoHS Compliant and Halogen Free.



Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
50	30	2.2	JT	6.0	11.0	7.2	5.0	200	F622JT225(1)050(2)
63	40	0.10	JF	2.5	6.5	7.2	5.0	250	F622JF104(1)063(2)
63	40	0.12	JF	2.5	6.5	7.2	5.0	250	F622JF124(1)063(2)
63	40	0.15	JF	2.5	6.5	7.2	5.0	250	F622JF154(1)063(2)
63	40	0.18	JF	2.5	6.5	7.2	5.0	250	F622JF184(1)063(2)
63	40	0.22	JF	2.5	6.5	7.2	5.0	250	F622JF224(1)063(2)
63	40	0.27	JG	3.5	7.5	7.2	5.0	250	F622JG274(1)063(2)
63	40	0.33	JG	3.5	7.5	7.2	5.0	250	F622JG334(1)063(2)
63	40	0.39	JG	3.5	7.5	7.2	5.0	250	F622JG394(1)063(2)
63	40	0.47	JG	3.5	7.5	7.2	5.0	250	F622JG474(1)063(2)
63	40	0.56	JM	4.5	9.5	7.2	5.0	250	F622JM564(1)063(2)
63	40	0.68	JM	4.5	9.5	7.2	5.0	250	F622JM684(1)063(2)
63	40	0.82	JM	4.5	9.5	7.2	5.0	250	F622JM824(1)063(2)
63	40	1.0	JQ	5.0	10.0	7.2	5.0	250	F622JQ105(1)063(2)
63	40	1.2	JT	6.0	11.0	7.2	5.0	250	F622JT125(1)063(2)
63	40	1.5	JT	6.0	11.0	7.2	5.0	250	F622JT155(1)063(2)
100	63	0.0047	JF	2.5	6.5	7.2	5.0	300	F622JF472(1)100(2)
100	63	0.0056	JF	2.5	6.5	7.2	5.0	300	F622JF562(1)100(2)
100	63	0.0068	JF	2.5	6.5	7.2	5.0	300	F622JF682(1)100(2)
100	63	0.0082	JF	2.5	6.5	7.2	5.0	300	F622JF822(1)100(2)
100	63	0.010	JF	2.5	6.5	7.2	5.0	300	F622JF103(1)100(2)
100	63	0.012	JF	2.5	6.5	7.2	5.0	300	F622JF123(1)100(2)
100	63	0.015	JF	2.5	6.5	7.2	5.0	300	F622JF153(1)100(2)
100	63	0.018	JF	2.5	6.5	7.2	5.0	300	F622JF183(1)100(2)
100	63	0.022	JF	2.5	6.5	7.2	5.0	300	F622JF223(1)100(2)
100	63	0.027	JF	2.5	6.5	7.2	5.0	300	F622JF273(1)100(2)
100	63	0.033	JF	2.5	6.5	7.2	5.0	300	F622JF333(1)100(2)
100	63	0.039	JF	2.5	6.5	7.2	5.0	300	F622JF393(1)100(2)
100	63	0.047	JF	2.5	6.5	7.2	5.0	300	F622JF473(1)100(2)
100	63	0.056	JF	2.5	6.5	7.2	5.0	300	F622JF563(1)100(2)
100	63	0.068	JF	2.5	6.5	7.2	5.0	300	F622JF683(1)100(2)
100	63	0.082	JG	3.5	7.5	7.2	5.0	300	F622JG823(1)100(2)
100	63	0.10	JG	3.5	7.5	7.2	5.0	300	F622JG104(1)100(2)
100	63	0.12	JM	4.5	9.5	7.2	5.0	300	F622JM124(1)100(2)
100	63	0.15	JM	4.5	9.5	7.2	5.0	300	F622JM154(1)100(2)
100	63	0.18	JM	4.5	9.5	7.2	5.0	300	F622JM184(1)100(2)
100	63	0.22	JQ	5.0	10.0	7.2	5.0	300	F622JQ224(1)100(2)
100	63	0.27	JT	6.0	11.0	7.2	5.0	300	F622JT274(1)100(2)
100	63	0.33	JT	6.0	11.0	7.2	5.0	300	F622JT334(1)100(2)
100	63	0.39	JT	6.0	11.0	7.2	5.0	300	F622JT394(1)100(2)
100	63	0.47	JT	6.0	11.0	7.2	5.0	300	F622JT474(1)100(2)
250	160	0.0010	JF	2.5	6.5	7.2	5.0	400	F622JF102(1)250(2)
250	160	0.0012	JF	2.5	6.5	7.2	5.0	400	F622JF122(1)250(2)
250	160	0.0015	JF	2.5	6.5	7.2	5.0	400	F622JF152(1)250(2)
250	160	0.0018	JF	2.5	6.5	7.2	5.0	400	F622JF182(1)250(2)
250	160	0.0022	JF	2.5	6.5	7.2	5.0	400	F622JF222(1)250(2)
250	160	0.0027	JF	2.5	6.5	7.2	5.0	400	F622JF272(1)250(2)
250	160	0.0033	JF	2.5	6.5	7.2	5.0	400	F622JF332(1)250(2)
250	160	0.0039	JF	2.5	6.5	7.2	5.0	400	F622JF392(1)250(2)
250	160	0.0047	JF	2.5	6.5	7.2	5.0	400	F622JF472(1)250(2)
250	160	0.0056	JF	2.5	6.5	7.2	5.0	400	F622JF562(1)250(2)
250	160	0.0068	JF	2.5	6.5	7.2	5.0	400	F622JF682(1)250(2)
250	160	0.082	JF	2.5	6.5	7.2	5.0	400	F622JF823(1)250(2)
250	160	0.010	JF	2.5	6.5	7.2	5.0	400	F622JF103(1)250(2)
250	160	0.012	JF	2.5	6.5	7.2	5.0	400	F622JF123(1)250(2)
250	160	0.015	JF	2.5	6.5	7.2	5.0	400	F622JF153(1)250(2)
250	160	0.018	JF	2.5	6.5	7.2	5.0	400	F622JF183(1)250(2)
250	160	0.022	JG	3.5	7.5	7.2	5.0	400	F622JG223(1)250(2)
250	160	0.027	JG	3.5	7.5	7.2	5.0	400	F622JG273(1)250(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) K = ±10%, M = ±20%, J = ±5% on request.
(2) Insert lead and packaging code. See table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
250	160	0.033	JG	3.5	7.5	7.2	5.0	400	F622JG333(1)250(2)
250	160	0.039	JG	3.5	7.5	7.2	5.0	400	F622JG393(1)250(2)
250	160	0.047	JM	4.5	9.5	7.2	5.0	400	F622JM473(1)250(2)
250	160	0.056	JM	4.5	9.5	7.2	5.0	400	F622JM563(1)250(2)
250	160	0.068	JM	4.5	9.5	7.2	5.0	400	F622JM683(1)250(2)
250	160	0.082	JM	4.5	9.5	7.2	5.0	400	F622JM823(1)250(2)
250	160	0.10	JQ	5.0	10.0	7.2	5.0	400	F622JQ104(1)250(2)
250	160	0.12	JT	6.0	11.0	7.2	5.0	400	F622JT124(1)250(2)
250	160	0.15	JT	6.0	11.0	7.2	5.0	400	F622JT154(1)250(2)
400	200	0.0010	JF	2.5	6.5	7.2	5.0	600	F622JF102(1)400(2)
400	200	0.0012	JF	2.5	6.5	7.2	5.0	600	F622JF122(1)400(2)
400	200	0.0015	JF	2.5	6.5	7.2	5.0	600	F622JF152(1)400(2)
400	200	0.0018	JF	2.5	6.5	7.2	5.0	600	F622JF182(1)400(2)
400	200	0.0022	JF	2.5	6.5	7.2	5.0	600	F622JF222(1)400(2)
400	200	0.0027	JF	2.5	6.5	7.2	5.0	600	F622JF272(1)400(2)
400	200	0.0033	JF	2.5	6.5	7.2	5.0	600	F622JF332(1)400(2)
400	200	0.0039	JF	2.5	6.5	7.2	5.0	600	F622JF392(1)400(2)
400	200	0.0047	JF	2.5	6.5	7.2	5.0	600	F622JF472(1)400(2)
400	200	0.0056	JG	3.5	7.5	7.2	5.0	600	F622JG562(1)400(2)
400	200	0.0068	JG	3.5	7.5	7.2	5.0	600	F622JG682(1)400(2)
400	200	0.0082	JG	3.5	7.5	7.2	5.0	600	F622JG822(1)400(2)
400	200	0.010	JG	3.5	7.5	7.2	5.0	600	F622JG103(1)400(2)
400	200	0.012	JG	3.5	7.5	7.2	5.0	600	F622JG123(1)400(2)
400	200	0.015	JG	3.5	7.5	7.2	5.0	600	F622JG153(1)400(2)
400	200	0.018	JM	4.5	9.5	7.2	5.0	600	F622JM183(1)400(2)
400	200	0.022	JM	4.5	9.5	7.2	5.0	600	F622JM223(1)400(2)
400	200	0.027	JM	4.5	9.5	7.2	5.0	600	F622JM273(1)400(2)
400	200	0.033	JQ	5.0	10.0	7.2	5.0	600	F622JQ333(1)400(2)
400	200	0.039	JQ	5.0	10.0	7.2	5.0	600	F622JQ393(1)400(2)
400	200	0.047	JT	6.0	11.0	7.2	5.0	600	F622JT473(1)400(2)
400	200	0.056	JT	6.0	11.0	7.2	5.0	600	F622JT563(1)400(2)
500	220	0.0010	JF	2.5	6.5	7.2	5.0	700	F622JF102(1)500(2)
500	220	0.0012	JF	2.5	6.5	7.2	5.0	700	F622JF122(1)500(2)
500	220	0.0015	JF	2.5	6.5	7.2	5.0	700	F622JF152(1)500(2)
500	220	0.0018	JF	2.5	6.5	7.2	5.0	700	F622JF182(1)500(2)
500	220	0.0022	JG	3.5	7.5	7.2	5.0	700	F622JG222(1)500(2)
500	220	0.0027	JG	3.5	7.5	7.2	5.0	700	F622JG272(1)500(2)
500	220	0.0033	JG	3.5	7.5	7.2	5.0	700	F622JG332(1)500(2)
500	220	0.0039	JG	3.5	7.5	7.2	5.0	700	F622JG392(1)500(2)
500	220	0.0047	JG	3.5	7.5	7.2	5.0	700	F622JG472(1)500(2)
500	220	0.0056	JM	4.5	9.5	7.2	5.0	700	F622JM562(1)500(2)
500	220	0.0068	JM	4.5	9.5	7.2	5.0	700	F622JM682(1)500(2)
500	220	0.0082	JM	4.5	9.5	7.2	5.0	700	F622JM822(1)500(2)
500	220	0.010	JQ	5.0	10.0	7.2	5.0	700	F622JQ103(1)500(2)
500	220	0.012	JT	6.0	11.0	7.2	5.0	700	F622JT123(1)500(2)
500	220	0.015	JT	6.0	11.0	7.2	5.0	700	F622JT153(1)500(2)
630	220	0.0010	JF	2.5	6.5	7.2	5.0	800	F622JF102(1)630(2)
630	220	0.0012	JF	2.5	6.5	7.2	5.0	800	F622JF122(1)630(2)
630	220	0.0015	JG	3.5	7.5	7.2	5.0	800	F622JG152(1)630(2)
630	220	0.0018	JG	3.5	7.5	7.2	5.0	800	F622JG182(1)630(2)
630	220	0.0022	JG	3.5	7.5	7.2	5.0	800	F622JG222(1)630(2)
630	220	0.0027	JG	3.5	7.5	7.2	5.0	800	F622JG272(1)630(2)
630	220	0.0033	JM	4.5	9.5	7.2	5.0	800	F622JM332(1)630(2)
630	220	0.0039	JM	4.5	9.5	7.2	5.0	800	F622JM392(1)630(2)
630	220	0.0047	JM	4.5	9.5	7.2	5.0	800	F622JM472(1)630(2)
630	220	0.0056	JM	4.5	9.5	7.2	5.0	800	F622JM562(1)630(2)
630	220	0.0068	JQ	5.0	10.0	7.2	5.0	800	F622JQ682(1)630(2)
630	220	0.0082	JT	6.0	11	7.2	5.0	800	F622JT822(1)630(2)
630	220	0.010	JT	6.0	11	7.2	5.0	800	F622JT103(1)630(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) K = ±10%, M = ±20%, J = ±5% on request.
(2) Insert lead and packaging code. See table for available options.

Soldering Process

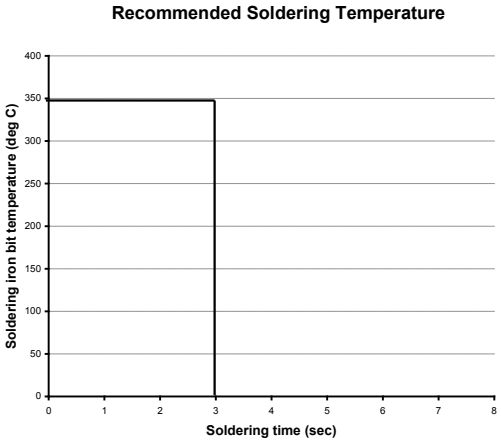
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

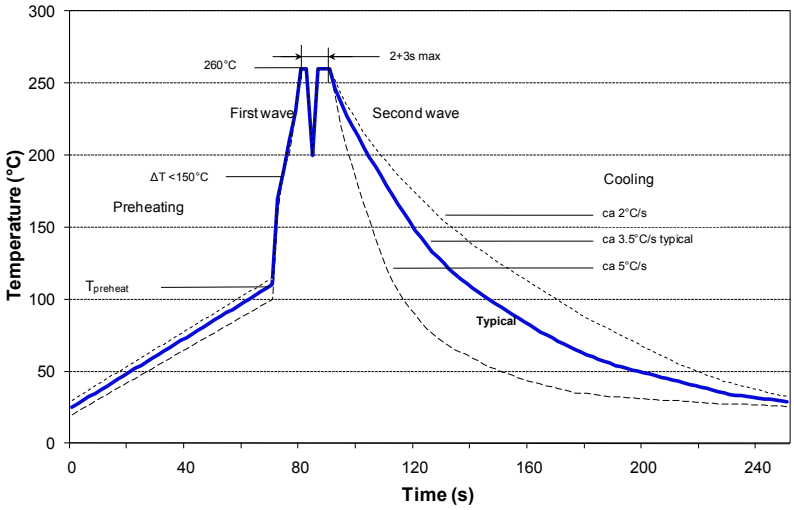
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

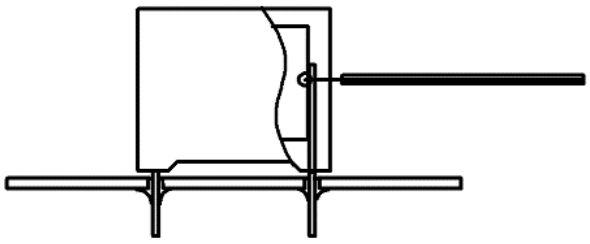
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



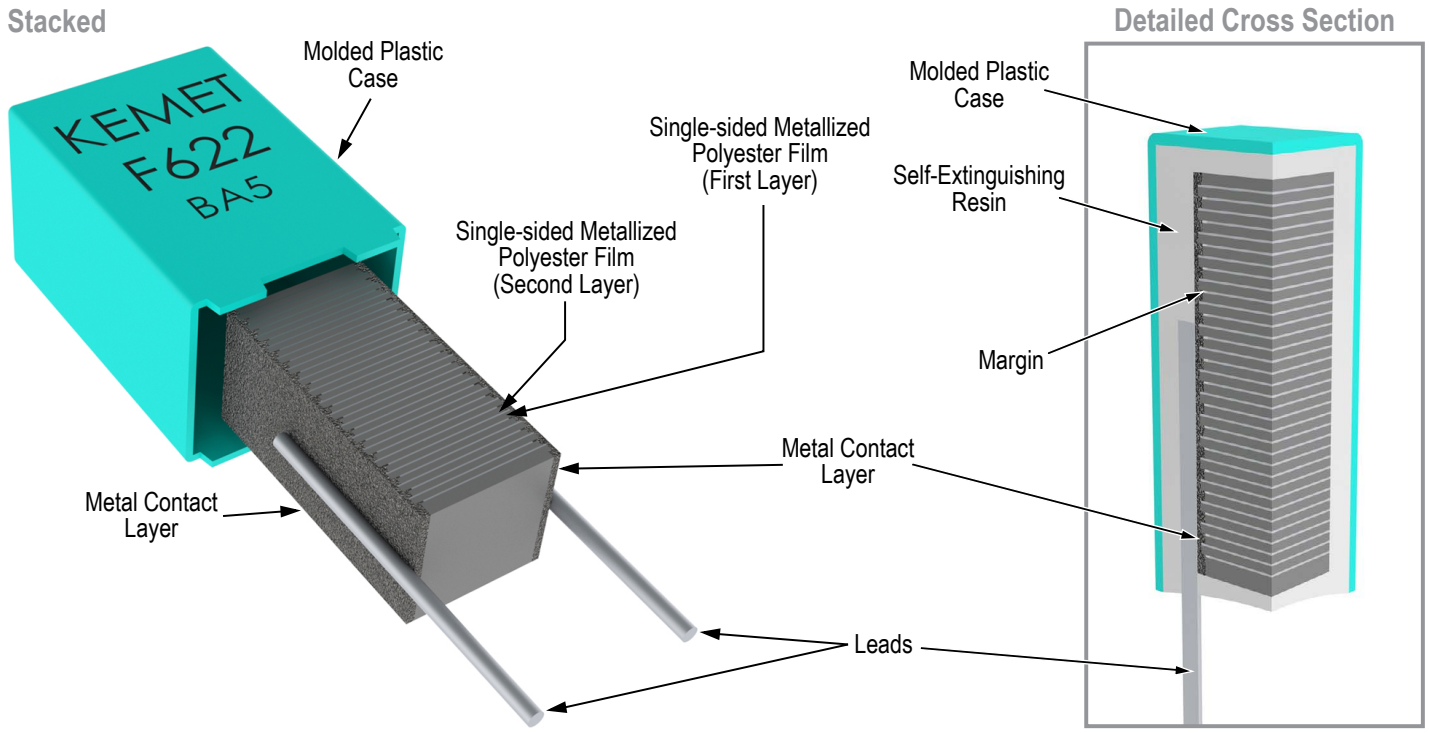
Temperature monitored inside the capacitor.

Selective Soldering Recommendations

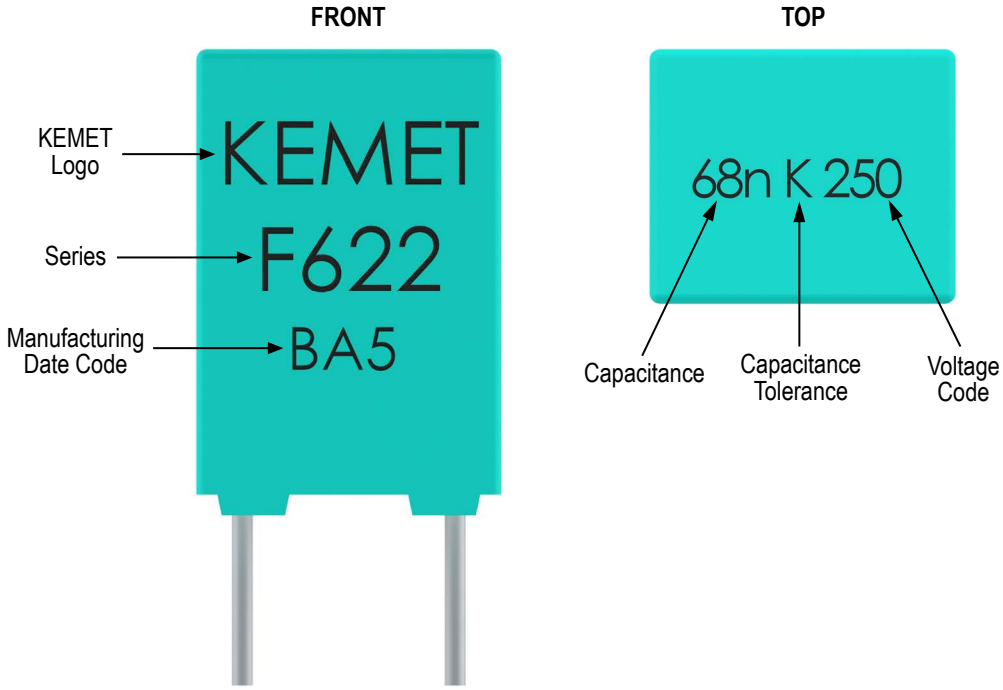
Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

Construction



Marking



Packaging Quantities

Size Code	Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Ammo
JF	5	2.5	6.5	7.2	3000	4000	2500	3500
JG		3.5	7.5	7.2	2000	3000	1800	2500
JM		4.5	9.5	7.2	1500	2000	1400	1900
JQ		5.0	10.0	7.2	1000	1500	1200	1700
JT		6	11	7.2	2000	1000	1000	1400
JU		7.2	13	7.2	1500	750	800	1150

R82 Series, Radial, 5 mm Lead Spacing, 50 – 400 VDC (Automotive Grade)

Overview

The R82 Series is constructed of metallized polyester film (wound or stacked technology) with radial leads of tinned wire. Radial leads are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated with thermosetting resin in a box of material meeting the UL 94V–0 requirements.

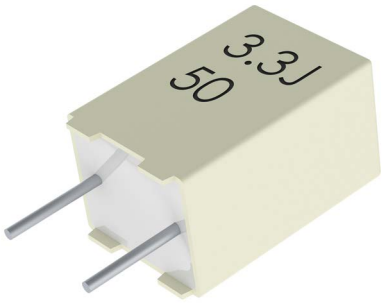
Automotive grade devices are available and meet the demanding Automotive Electronics Council's AEC–Q200 qualification requirements.

Applications

Typical applications include blocking, coupling, decoupling, timing and oscillator circuits. Not suitable for across-the-line application (see Suppressor Capacitors).

Benefits

- Voltage range: 50 – 400 VDC
- Capacitance range: 0.001 µF – 4.7 µF
- Lead Spacing: 5 mm
- Capacitance tolerance: ±5%, ±10%, ±20%
- Climatic category: 55/105/56
- Operating temperature range of -55˚C to +105˚C
- RoHS compliance and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–2
- Self-healing
- Automotive (AEC–Q200) grades available



Part Number System

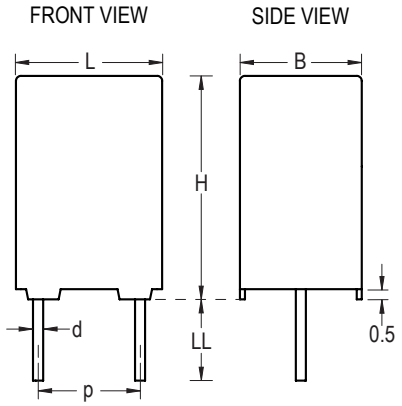
R82	D	C	3470	AA	60	J
Series	Rated Voltage (VDC)	Length (mm)	Capacitance Code (pF)	Packaging	Internal Use	Capacitance Tolerance
Metallized Polyester	C = 50 D = 63 E = 100 I = 250 M = 400	C = 5.0	The last three digits represent significant figures. First digit specifies the number of zeros to be added.	See Ordering Options Table	30 50 60 70	J = ±5% K = ±10% M = ±20%

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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	LL Lead Length (mm)	Lead and Packaging Code
5	**Standard Lead and Packaging Options**		
	Bulk (Bag)–Short Leads	4 +1.5/-0	AA
	Ammo Pack	H_0=18.5 +/- 0.5	DQ
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel)	H_0 = 18.5 +/- 0.5	CK
	Bulk (Bag)–Short Leads	2.7 +0.5/-0	JA
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	10 +/- 1	JC
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	17 +1/-2	Z3

Dimensions – Millimeters



p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
5.0	+/-0.4	2.5	+0.1	6.5	+0.1	7.2	+0.2	0.5	+/-0.05
5.0	+/-0.4	3.5	+0.1	7.5	+0.1	7.2	+0.2	0.5	+/-0.05
5.0	+/-0.4	4.5	+0.1	9.5	+0.1	7.2	+0.3	0.5	+/-0.05
5.0	+/-0.4	5.0	+0.1	10.0	+0.1	7.2	+0.3	0.5	+/-0.05
5.0	+/-0.4	6.0	+0.1	11.0	+0.1	7.2	+0.3	0.5	+/-0.05
5.0	+/-0.4	7.2	+0.1	13.0	+0.1	7.2	+0.3	0.6	+/-0.05

Note: See Ordering Options Table for lead length (LL/H_0) options.

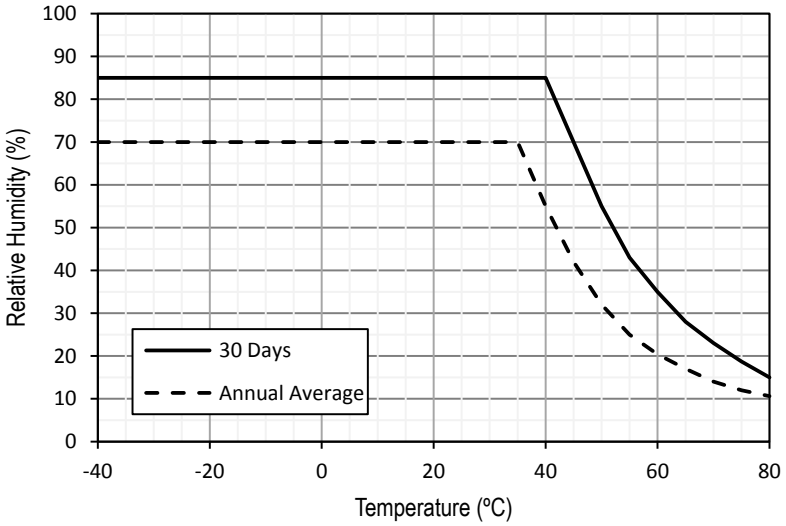
Performance Characteristics

Dielectric	Polyester film (polyethylene terephthalate).						
Plates	Metal layer deposited by evaporation under vacum.						
Winding	Non-inductive type.						
Leads	Tinned wire.						
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.						
Related Documents	IEC 60384-2						
Rated Voltage V_R (VDC)	50	63	100	250	250	400	400
Rated Voltage V_R (VAC)	30	40	63	140	160	160	200
Capacitance Range (µF)	2.2 – 4.7	0.1 – 1.5	0.001 – 1	0.022 – 0.22	0.0068 – 0.15	0.0068 – 0.068	0.001 – 0.047
Capacitance Values	E6 series (IEC 60063) measured @ 1 kHz and +20 ±1°C						
Capacitance Tolerance	±5%, ±10%, ±20%						
Operating Temperature Range	-55°C to 105°C						
Rated Temperature T_R	+85°C						
Voltage Derating	Above +85°C DC and AC voltage derating is 1.25%/°C						
Climatic Category	55/105/56 IEC 60068-1						
Storage Conditions	Storage time: ≤ 24 months from the date marked on the label package						
	Average relative humidity per year ≤ 70%						
	RH ≤ 85% for 30 days randomly distributed throughout the year						
	Dew is absent						
	Temperature: -40 to 80°C (see "Maximum Humidity in Storage Conditions" graph below)						
Test Voltage	1.4 x V_R VDC for 2 seconds (between terminations) @ +25°C ±5°C						
Capacitance Drift	Maximum 3% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%						
Reliability (Reference MIL-HDBK-217)	Operational life >200,000 hours						
	Failure rate ≤ 1 FIT, T = +40°C, V = 0.5 x V_R						
	Failure criteria: open or short circuit, cap. change > 10%, DF 2 times the catalog limits, IR < 0.005 x initial limit						
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp <V_R), the specified dv/dt can be multiplied by the factor V_R/Vpp						
Temperature Coefficient	+400 (±200)ppm/°C at 1 kHz						
Self Inductance (Lead Length ~ 2 mm)	Approximately 7 nH. Maximum 1nH per 1 mm lead and capacitor length.						

Performance Characteristics cont'd

Dissipation Factor tanδ	Maximum Values @ 25°C ±5°C			
	Frequency		C ≤ 0.1 µF	C > 1 µF
	1 kHz		0.80%	0.80%
	10 kHz		1.20%	1.20%
	100 kHz		2.50%	–
Insulation Resistance	Measured @ +25°C ±5°C, according to IEC 60384–2			
	Minimum Values Between Terminals			
	Voltage Charge/Time	C ≤ 0.33 µF	0.33 µF < C ≤ 1.0 µF	C > 1.0 µF
	50 VDC for V_R ≤ 100 VDC 1 minute	≥ 15,000 MΩ	≥ 5,000 MΩ • µF	≥ 1,000 MΩ • µF
	100 VDC for V_R > 100 VDC 1 minute	≥ 30,000 MΩ		

Maximum Humidity in Storage Conditions

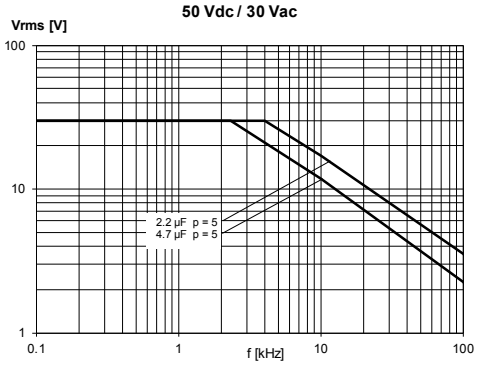


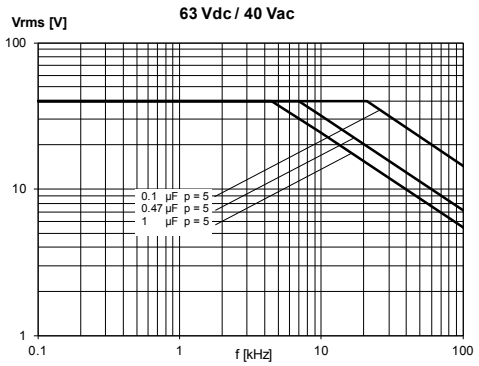
Qualification

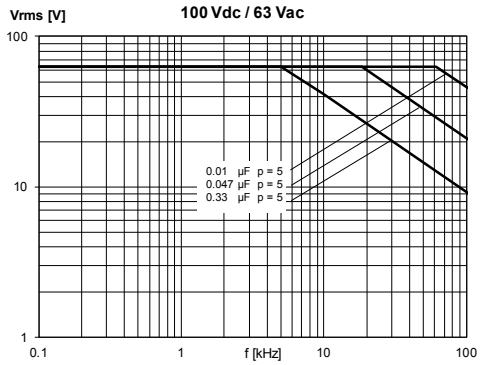
Automotive Grade products meet or exceed the requirements outlined by the Automotive Electronics Council. Details regarding test methods and conditions are referenced in document AEC–Q200, Stress Test Qualification for Passive Components. For additional information regarding the Automotive Electronics Council and AEC–Q200, please visit their website at www.aecouncil.com.

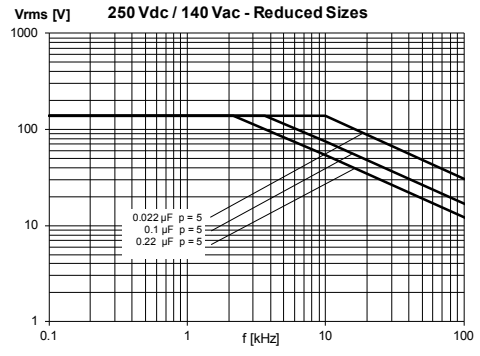
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40°C)

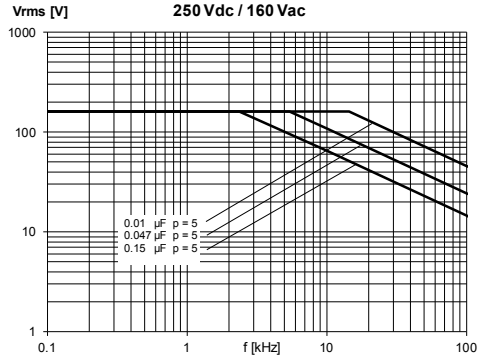
Lead Spacing 5 mm

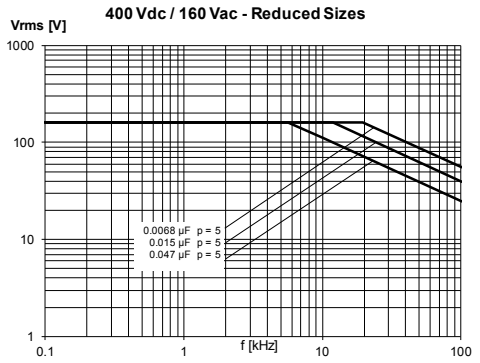


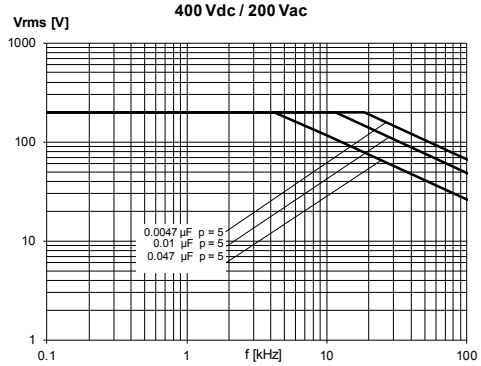






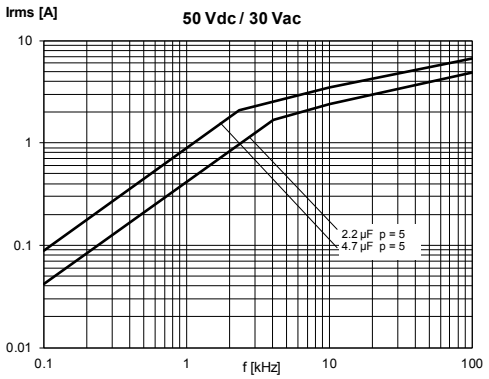


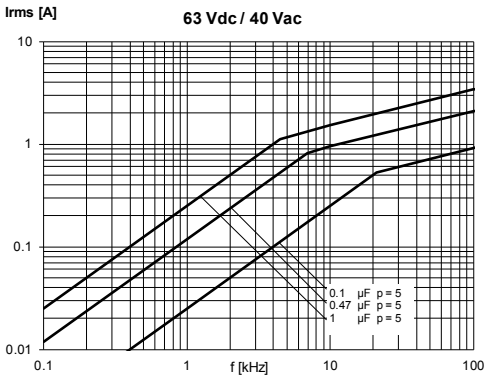


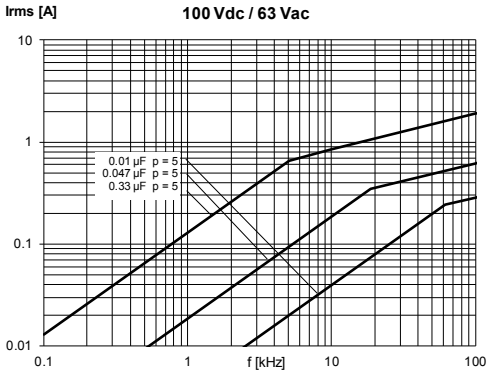


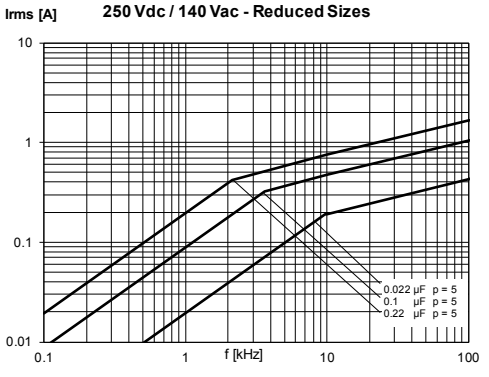
Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40°C)

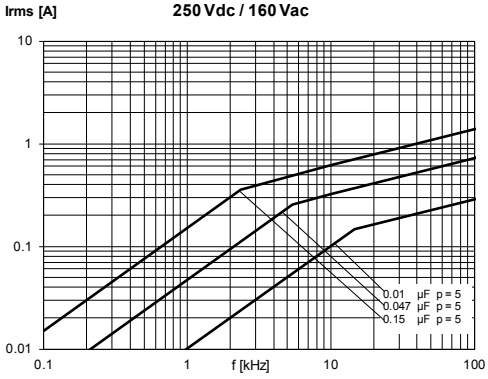
Lead Spacing 5 mm

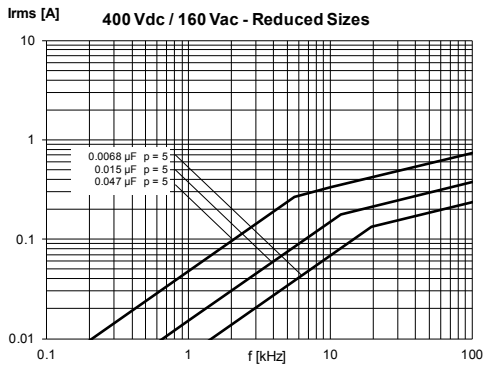


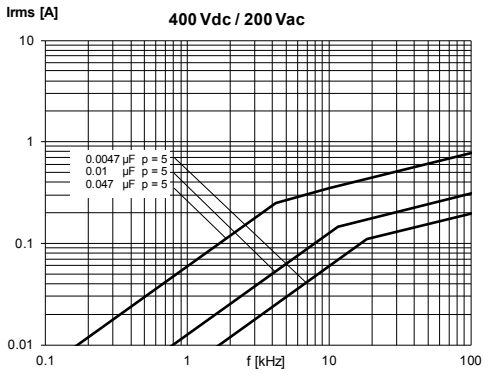












Environmental Test Data

Damp Heat, Steady State Test	Test Conditions:		Performances
	Temperature: Relative humidity (RH): Test duration:	+40°C ±2°C 93% ±2% 56 days	|Δ C/C| ≤ 5%, Δ tanδ ≤ 0.005 @ 1 kHz IR after test ≥ 50% of initial limit
Endurance Test	**Test Conditions**		**Performances**
	Temperature: Voltage applied: Test duration:	+105°C ±2°C 1.25 x V_C 2,000 hours	|Δ C/C| ≤ 5%, Δ tanδ ≤ 0.003 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.002 @ 1 kHz for C > 1µF IR after test ≥ 50% of initial limit
Resistance to Soldering Heat Test	**Test Conditions**		**Performances**
	Solder bath temperature: Dipping time (with heat screen):	260°C ±5°C 10 seconds ±1 second	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.003 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.002 @ 1 kHz for C > 1µF IR after test ≥ initial limit

Environmental Compliance

All KEMET MKT capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing	dV/dt (V/µs)	Maximum K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
50	30	2.2	6.0	11.0	7.2	5.0	100	10000	82CC4220(1)70(2)	R82CC4220(1)70(2)
50	**30**	**3.3**	**7.2**	**13.0**	**7.2**	**5.0**	**25**	**2500**	**82CC4330(1)30(2)**	**R82CC4330(1)30(2)**
50	**30**	**4.7**	**7.2**	**13.0**	**7.2**	**5.0**	**25**	**2500**	**82CC4470(1)30(2)**	**R82CC4470(1)30(2)**
63	40	0.10	2.5	6.5	7.2	5.0	160	20160	82DC3100(1)50(2)	R82DC3100(1)50(2)
63	40	0.15	2.5	6.5	7.2	5.0	160	20160	82DC3150(1)60(2)	R82DC3150(1)60(2)
63	40	0.22	2.5	6.5	7.2	5.0	160	20160	82DC3220(1)60(2)	R82DC3220(1)60(2)
63	40	0.33	3.5	7.5	7.2	5.0	160	20160	82DC3330(1)60(2)	R82DC3330(1)60(2)
63	40	0.47	3.5	7.5	7.2	5.0	160	20160	82DC3470(1)60(2)	R82DC3470(1)60(2)
63	40	0.68	4.5	9.5	7.2	5.0	160	20160	82DC3680(1)60(2)	R82DC3680(1)60(2)
63	40	1.0	5.0	10.0	7.2	5.0	160	20160	82DC4100(1)60(2)	R82DC4100(1)60(2)
63	40	1.5	6.0	11.0	7.2	5.0	160	20160	82DC4150(1)60(2)	R82DC4150(1)60(2)
100	63	0.0010	2.5	6.5	7.2	5.0	200	40000	82EC1100(1)50(2)	R82EC1100(1)50(2)
100	63	0.0015	2.5	6.5	7.2	5.0	200	40000	82EC1150(1)50(2)	R82EC1150(1)50(2)
100	63	0.0022	2.5	6.5	7.2	5.0	200	40000	82EC1220(1)50(2)	R82EC1220(1)50(2)
100	63	0.0033	2.5	6.5	7.2	5.0	200	40000	82EC1330(1)50(2)	R82EC1330(1)50(2)
100	63	0.0047	2.5	6.5	7.2	5.0	200	40000	82EC1470(1)50(2)	R82EC1470(1)50(2)
100	63	0.0068	2.5	6.5	7.2	5.0	200	40000	82EC1680(1)50(2)	R82EC1680(1)50(2)
100	63	0.010	2.5	6.5	7.2	5.0	200	40000	82EC2100(1)50(2)	R82EC2100(1)50(2)
100	63	0.015	2.5	6.5	7.2	5.0	200	40000	82EC2150(1)50(2)	R82EC2150(1)50(2)
100	63	0.022	2.5	6.5	7.2	5.0	200	40000	82EC2220(1)50(2)	R82EC2220(1)50(2)
100	63	0.033	2.5	6.5	7.2	5.0	200	40000	82EC2330(1)50(2)	R82EC2330(1)50(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%
Bold denotes wound capacitor technology

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing	dV/dt (V/µs)	Maximum K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
100	63	0.047	2.5	6.5	7.2	5.0	200	40000	82EC2470(1)60(2)	R82EC2470(1)60(2)
100	63	0.068	2.5	6.5	7.2	5.0	200	40000	82EC2680(1)60(2)	R82EC2680(1)60(2)
100	63	0.10	2.5	6.5	7.2	5.0	200	40000	82EC3100(1)70(2)	R82EC3100(1)70(2)
100	63	0.15	3.5	7.5	7.2	5.0	200	40000	82EC3150(1)70(2)	R82EC3150(1)70(2)
100	63	0.22	3.5	7.5	7.2	5.0	200	40000	82EC3220(1)70(2)	R82EC3220(1)70(2)
100	63	0.33	4.5	9.5	7.2	5.0	200	40000	82EC3330(1)70(2)	R82EC3330(1)70(2)
100	63	0.47	4.5	9.5	7.2	5.0	200	40000	82EC3470(1)70(2)	R82EC3470(1)70(2)
100	63	0.68	5.0	10.0	7.2	5.0	200	40000	82EC3680(1)70(2)	R82EC3680(1)70(2)
100	63	1.00	6.0	11.0	7.2	5.0	200	40000	82EC4100(1)70(2)	R82EC4100(1)70(2)
250	140	0.022	2.5	6.5	7.2	5.0	130	65000	82IC2220(1)60(2)	R82IC2220(1)60(2)
250	140	0.047	3.5	7.5	7.2	5.0	130	65000	82IC2470(1)60(2)	R82IC2470(1)60(2)
250	140	0.068	3.5	7.5	7.2	5.0	130	65000	82IC2680(1)60(2)	R82IC2680(1)60(2)
250	140	0.10	4.5	9.5	7.2	5.0	130	65000	82IC3100(1)60(2)	R82IC3100(1)60(2)
250	140	0.15	5.0	10.0	7.2	5.0	130	65000	82IC3150(1)60(2)	R82IC3150(1)60(2)
250	140	0.22	6.0	11.0	7.2	5.0	130	65000	82IC3220(1)60(2)	R82IC3220(1)60(2)
250	160	0.0068	2.5	6.5	7.2	5.0	250	125000	82IC1680(1)50(2)	R82IC1680(1)50(2)
250	160	0.010	2.5	6.5	7.2	5.0	250	125000	82IC2100(1)50(2)	R82IC2100(1)50(2)
250	160	0.015	2.5	6.5	7.2	5.0	250	125000	82IC2150(1)50(2)	R82IC2150(1)50(2)
250	160	0.022	3.5	7.5	7.2	5.0	250	125000	82IC2220(1)50(2)	R82IC2220(1)50(2)
250	160	0.033	3.5	7.5	7.2	5.0	250	125000	82IC2330(1)50(2)	R82IC2330(1)50(2)
250	160	0.047	4.5	9.5	7.2	5.0	250	125000	82IC2470(1)50(2)	R82IC2470(1)50(2)
250	160	0.068	4.5	9.5	7.2	5.0	250	125000	82IC2680(1)50(2)	R82IC2680(1)50(2)
250	160	0.10	5.0	10.0	7.2	5.0	250	125000	82IC3100(1)55(2)	R82IC3100(1)55(2)
250	160	0.15	6.0	11.0	7.2	5.0	250	125000	82IC3150(1)50(2)	R82IC3150(1)50(2)
400	160	0.0068	2.5	6.5	7.2	5.0	200	160000	82MC1680(1)60(2)	R82MC1680(1)60(2)
400	160	0.015	3.5	7.5	7.2	5.0	200	160000	82MC2150(1)60(2)	R82MC2150(1)60(2)
400	160	0.033	4.5	9.5	7.2	5.0	200	160000	82MC2330(1)60(2)	R82MC2330(1)60(2)
400	160	0.047	5.0	10.0	7.2	5.0	200	160000	82MC2470(1)60(2)	R82MC2470(1)60(2)
400	160	0.068	6.0	11.0	7.2	5.0	200	160000	82MC2680(1)60(2)	R82MC2680(1)60(2)
400	200	0.0010	2.5	6.5	7.2	5.0	400	320000	82MC1100(1)50(2)	R82MC1100(1)50(2)
400	200	0.0015	2.5	6.5	7.2	5.0	400	320000	82MC1150(1)50(2)	R82MC1150(1)50(2)
400	200	0.0022	2.5	6.5	7.2	5.0	400	320000	82MC1220(1)50(2)	R82MC1220(1)50(2)
400	200	0.0033	2.5	6.5	7.2	5.0	400	320000	82MC1330(1)50(2)	R82MC1330(1)50(2)
400	200	0.0047	2.5	6.5	7.2	5.0	400	320000	82MC1470(1)50(2)	R82MC1470(1)50(2)
400	200	0.0068	3.5	7.5	7.2	5.0	400	320000	82MC1680(1)50(2)	R82MC1680(1)50(2)
400	200	0.010	3.5	7.5	7.2	5.0	400	320000	82MC2100(1)50(2)	R82MC2100(1)50(2)
400	200	0.015	4.5	9.5	7.2	5.0	400	320000	82MC2150(1)50(2)	R82MC2150(1)50(2)
400	200	0.022	4.5	9.5	7.2	5.0	400	320000	82MC2220(1)50(2)	R82MC2220(1)50(2)
400	200	0.033	5.0	10.0	7.2	5.0	400	320000	82MC2330(1)50(2)	R82MC2330(1)50(2)
400	200	0.047	6.0	11.0	7.2	5.0	400	320000	82MC2470(1)50(2)	R82MC2470(1)50(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Soldering Process

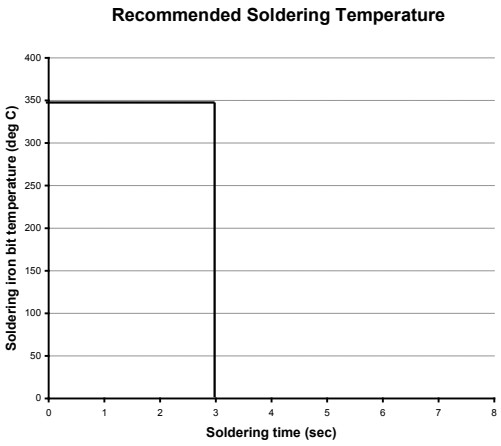
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

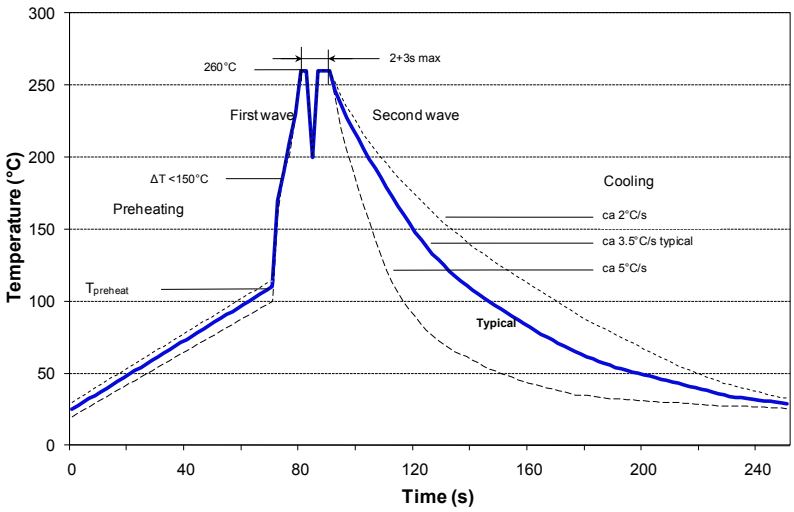
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

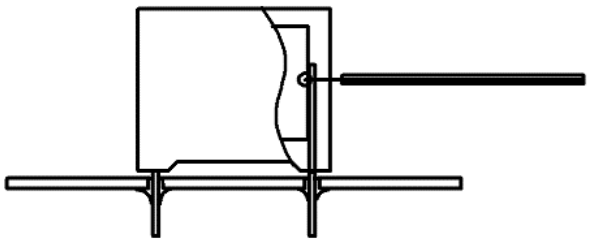
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



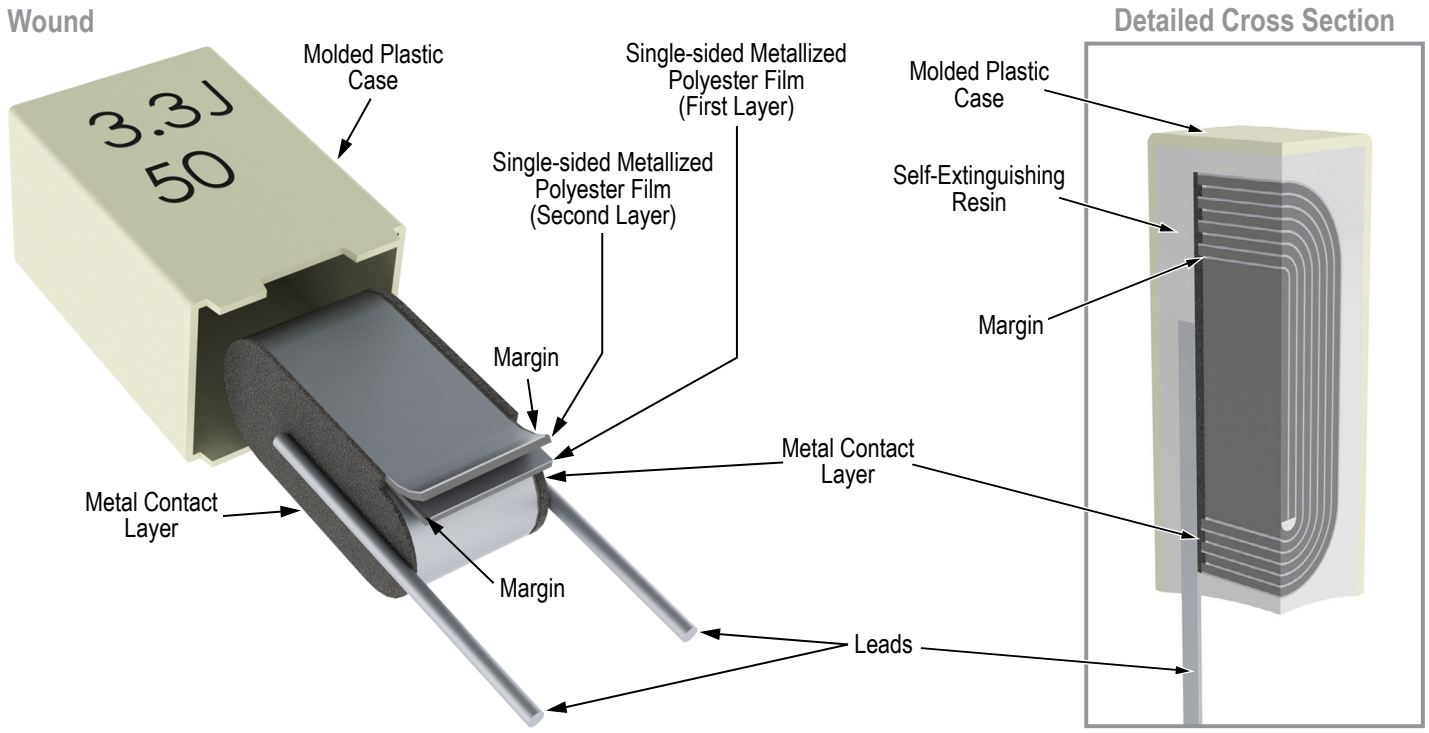
Temperature monitored inside the capacitor.

Selective Soldering Recommendations

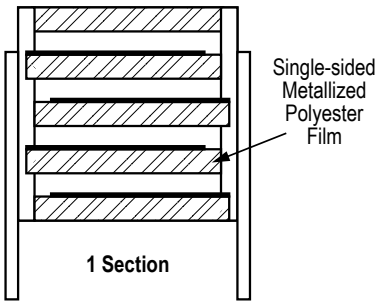
Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

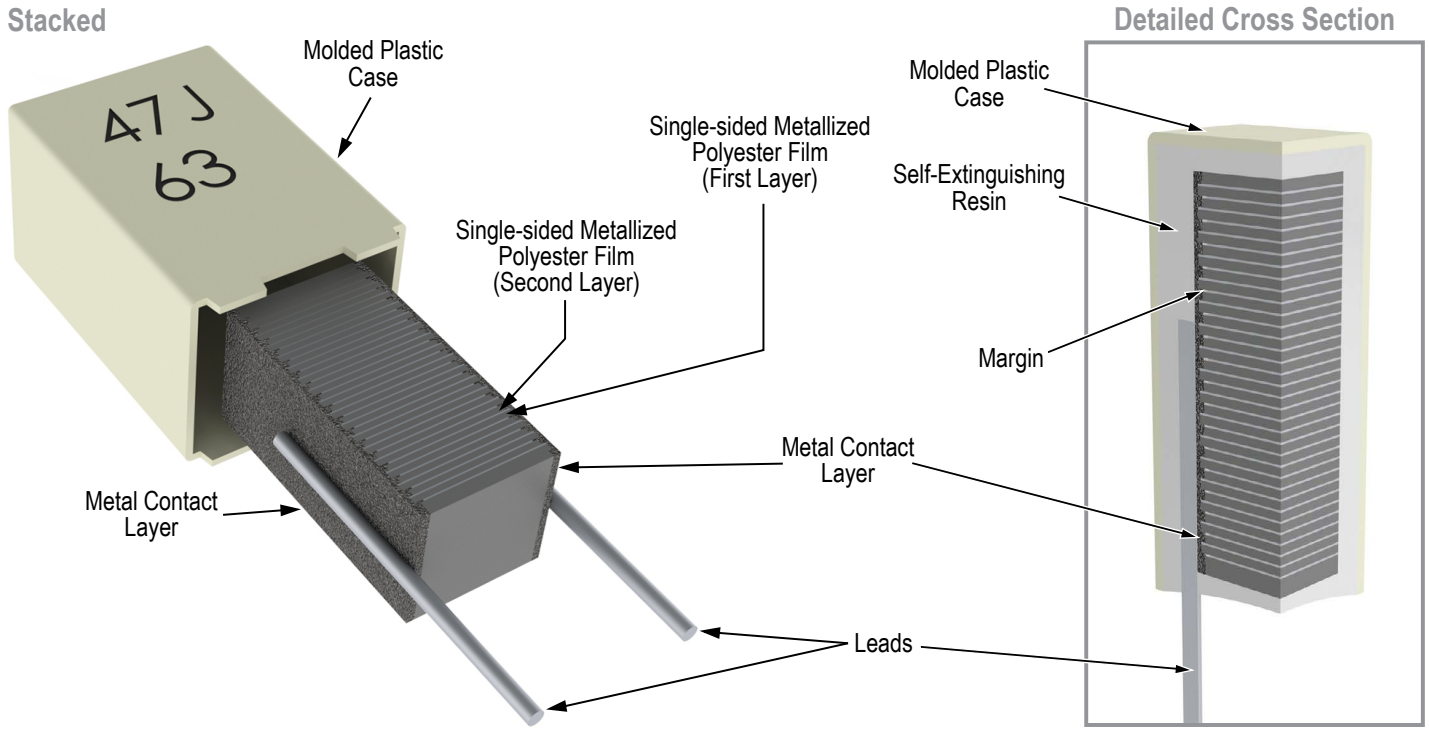
Construction



Winding Scheme

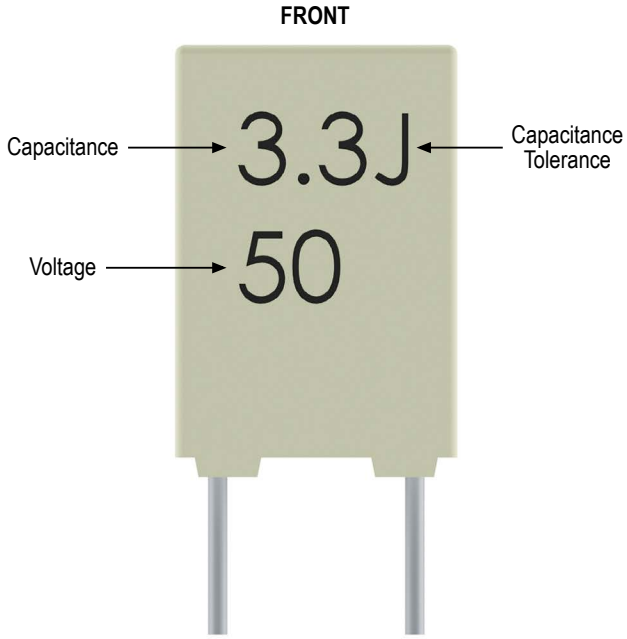


Construction cont'd

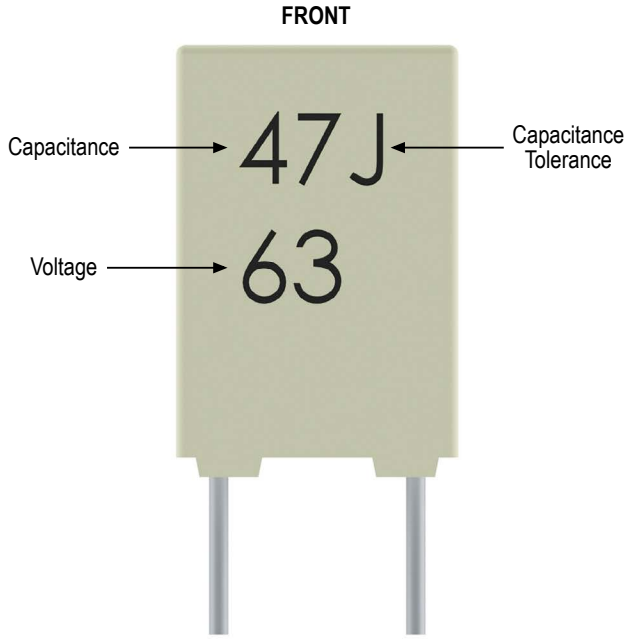


Marking

Wound



Stacked



Packaging Quantities

Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel 355 mm	Ammo Taped
5	2.5	6.5	7.2	3,000	4,000	2,500	3,500
	3.5	7.5	7.2	2,000	3,000	1,800	2,500
	4.5	9.5	7.2	1,500	2,000	1,400	1,900
	5.0	10.0	7.2	1,000	1,500	1,200	1,700
	6.0	11.0	7.2	2,000	1,000	1,000	1,400
	7.2	13.0	7.2	1,500	750	800	1,150

RSB Series, 5 mm Lead Spacing, 50 – 630 VDC (Automotive Grade)

Overview

The RSB Series is constructed of metallized polyester film (stacked technology) with radial leads of tinned wire. Radial leads are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated with thermosetting resin in a box of material meeting the UL 94V–0 requirements.

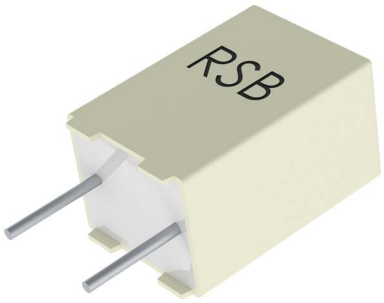
Automotive grade devices are available and meet the demanding Automotive Electronics Council's AEC–Q200 qualification requirements.

Applications

Typical applications include high performance, high temperature, blocking, coupling, decoupling for a signal from DC to high frequency, pulse, logic and timing circuit, lamp capacitor for electronic compact lamps, inverter for LCD monitors, automotive DC motor suppression. Not suitable for across-the-line application (see Suppressor Capacitors).

Benefits

- Voltage range: 50 – 630 VDC
- Capacitance range: 0.001 – 2.2 µF
- Lead spacing: 5 mm
- Capacitance tolerance: ±20%, ±10% standard, ±5% on request
- Climatic category: 55/125/56
- Operating temperature range of -55˚C to +125˚C
- RoHS Compliant and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–2
- Self-healing
- Automotive (AEC–Q200) grades available



Part Number System

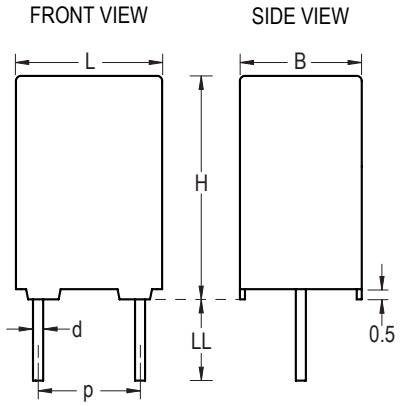
RSB	D	C	3100	AA	00	J
Series	Rated Voltage (VDC)	Length (mm)	Capacitance Code (pF)	Packaging	Internal Use	Capacitance Tolerance
Metallized Polyester	C = 50 D = 63 E = 100 I = 250 M = 400 W = 500 P = 630	C = 5.0	The last three digits represent significant figures. First digit specifies the number of zeros to be added.	See Ordering Options Table	30 50 60 70	J = ±5% K = ±10% M = ±20%

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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	LL Lead Length (mm)	Lead and Packaging Code
5	**Standard Lead and Packaging Options**		
	Bulk (Bag)–Short Leads	4 +1.5/-0	AA
	Ammo Pack	H_0=18.5 +/- 0.5	DQ
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel)	H_0=18.5 +/- 0.5	CK
	Bulk (Bag)–Short Leads	2.7 +0.5/-0	JA
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	10 +/- 1	JC
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	17 +1/-2	Z3

Dimensions – Millimeters



p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
5.0	+/-0.4	2.5	+0.1	6.5	+0.1	7.2	+0.2	0.5	+/-0.05
5.0	+/-0.4	3.5	+0.1	7.5	+0.1	7.2	+0.2	0.5	+/-0.05
5.0	+/-0.4	4.5	+0.1	9.5	+0.1	7.2	+0.3	0.5	+/-0.05
5.0	+/-0.4	5.0	+0.1	10.0	+0.1	7.2	+0.3	0.5	+/-0.05
5.0	+/-0.4	6.0	+0.1	11.0	+0.1	7.2	+0.3	0.5	+/-0.05

Note: See Ordering Options Table for lead length (LL/H_0) options.

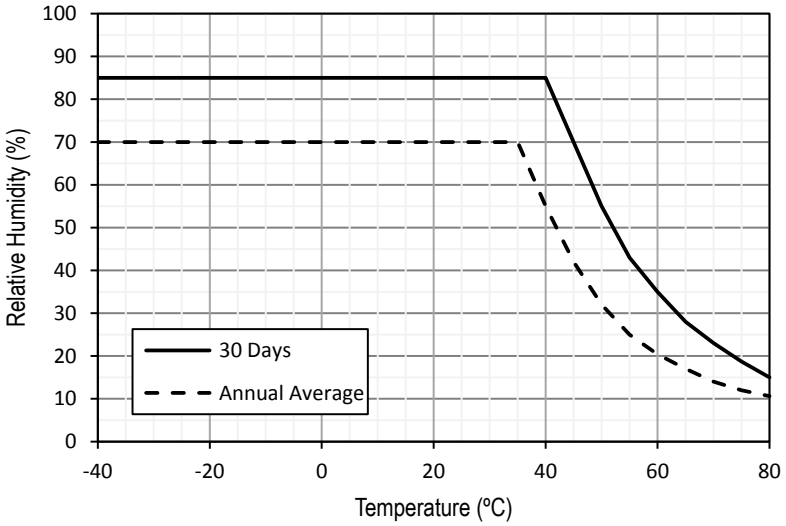
Performance Characteristics

Dielectric	Polyester film (polyethylene terephthalate).						
Plates	Metal layer deposited by evaporation under vacum.						
Winding	Non-inductive type.						
Leads	Tinned wire.						
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.						
Related Documents	IEC 60384-2						
Rated Voltage V_R (VDC)	50	63	100	250	400	500	630
Rated Voltage V_R (VAC)	30	40	63	160	200	220	220
Capacitance Range (µF)	2.2	0.1 – 1.5	0.0047 – 0.47	0.001 – 0.15	0.001 – 0.047	0.001 – 0.015	0.001 – 0.01
Capacitance Values	E6 series (IEC 60063) measured @ 1 kHz and +20 ±1°C						
Capacitance Tolerance	±5% on request, ±10%, ±20%						
Operating Temperature Range	-55°C to 125°C						
Rated Temperature T_R	+85°C						
Voltage Derating	Above +85°C DC and AC voltage derating is 1.25%/°C						
Climatic Category	55/125/56 IEC 60068-1						
Storage Conditions	Storage time: ≤ 24 months from the date marked on the label package						
	Average relative humidity per year ≤ 70%						
	RH ≤ 85% for 30 days randomly distributed throughout the year						
	Dew is absent						
	Temperature: -40 to 80°C (see "Maximum Humidity in Storage Conditions" graph below)						
Test Voltage	1.6 x V_R VDC for 2 seconds (between terminations) @ +25°C ±5°C						
Capacitance Drift	Maximum 3% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%						
Reliability (Reference MIL-HDBK-217)	Operational life >200,000 hours						
	Failure rate ≤ 1 FIT, T = +40°C, V = 0.5 x V_R						
	Failure criteria: open or short circuit, cap. change > 10%, DF 2 times the catalog limits, IR < 0.005 x initial limit						
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp <V_R), the specified dv/dt can be multiplied by the factor V_R/Vpp						
Temperature Coefficient	+400 (±200)ppm/°C at 1 kHz						
Self Inductance (Lead Length ~ 2 mm)	Approximately 7 nH. Maximum 1nH per 1 mm lead and capacitor length.						

Performance Characteristics cont'd

Dissipation Factor tanδ	Maximum Values @ 25°C ±5°C			
	Frequency		C ≤ 0.1 µF	C > 1 µF
	1 kHz		0.80%	0.80%
	10 kHz		1.20%	1.20%
	100 kHz		2.50%	–
Insulation Resistance	Measured @ +25°C ±5°C, according to IEC 60384–2			
	Minimum Values Between Terminals			
	Voltage Charge/Time	C ≤ 0.33 µF	0.33 µF < C ≤ 1.0 µF	C > 1.0 µF
	50 VDC for V_R ≤ 100 VDC 1 minute	≥ 15,000 MΩ	≥ 5,000 MΩ • µF	≥ 1,000 MΩ • µF
	100 VDC for V_R > 100 VDC 1 minute	≥ 30,000 MΩ		

Maximum Humidity in Storage Conditions

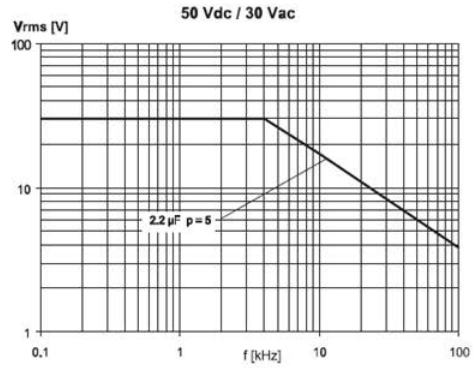


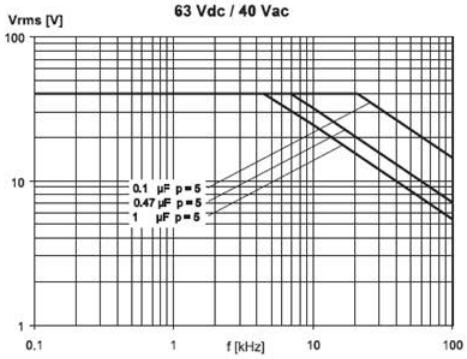
Qualification

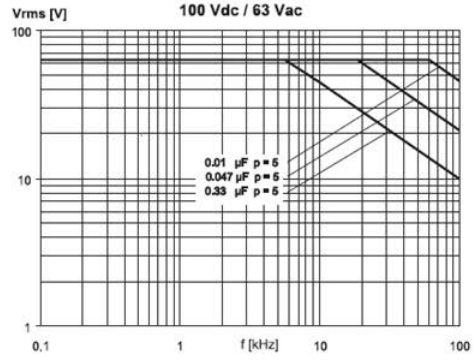
Automotive Grade products meet or exceed the requirements outlined by the Automotive Electronics Council. Details regarding test methods and conditions are referenced in document AEC–Q200, Stress Test Qualification for Passive Components. For additional information regarding the Automotive Electronics Council and AEC–Q200, please visit their website at www.aecouncil.com.

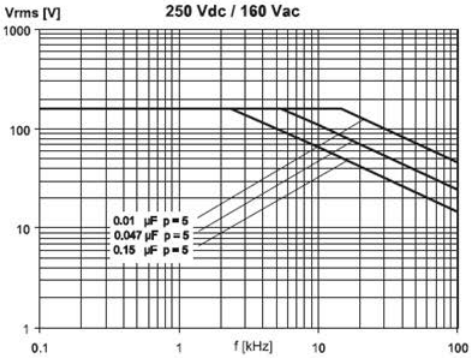
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40°C)

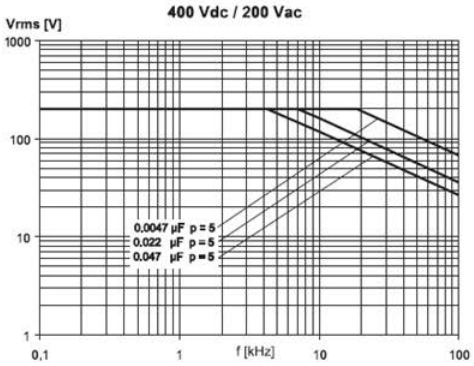
Lead Spacing 5 mm

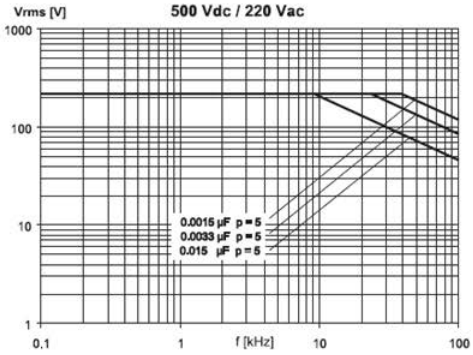


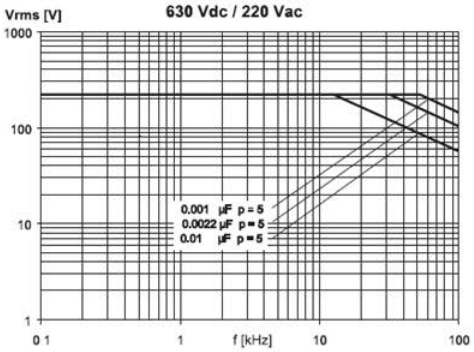






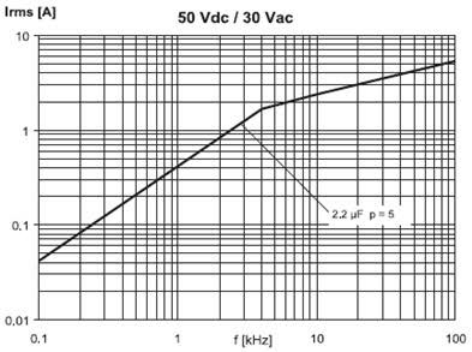


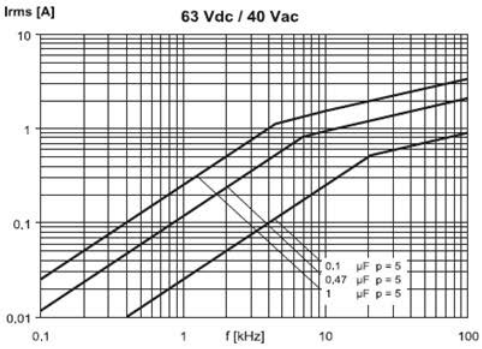


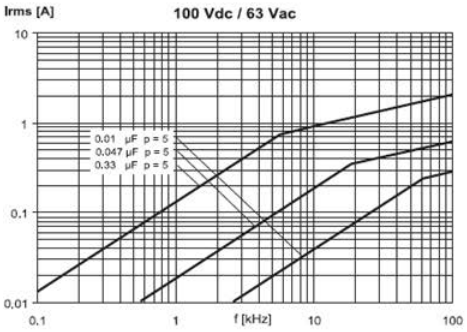


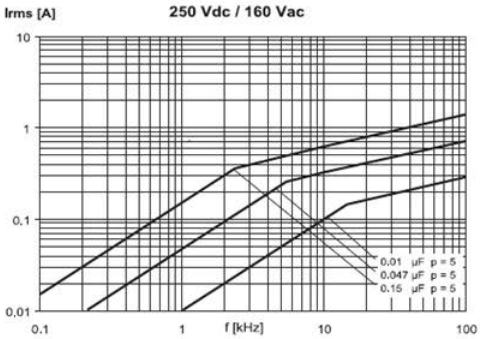
Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40°C)

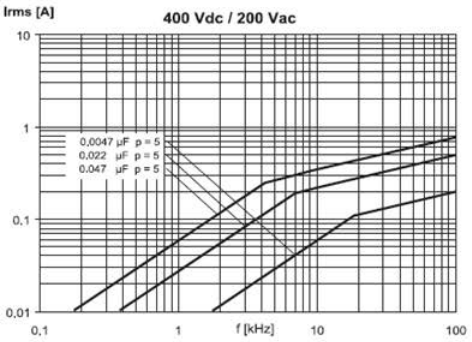
Lead Spacing 5 mm

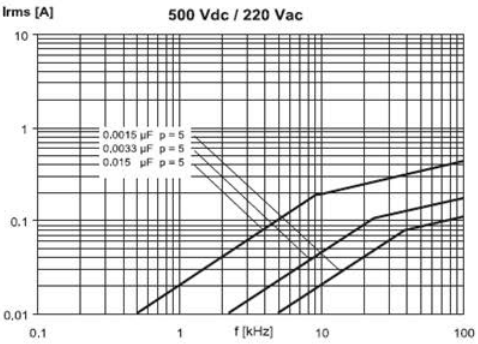


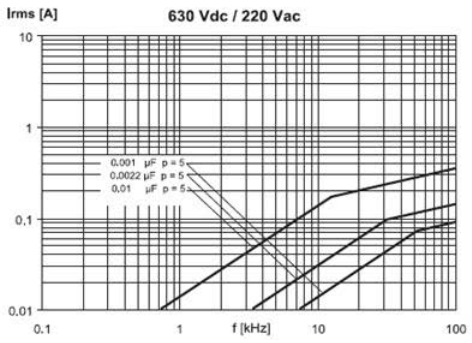












Environmental Test Data

Damp Heat, Steady State Test	Test Conditions:		Performances
	Temperature: Relative humidity (RH): Test duration:	+40°C ±2°C 93% ±2% 56 days	|Δ C/C| ≤ 5%, Δ tanδ ≤ 0.005 @ 1 kHz IR after test ≥ 50% of initial limit
Endurance Test	**Test Conditions**		**Performances**
	Temperature: Voltage applied: Test duration:	+125°C ±2°C 1.25 x V_C 2,000 hours	|Δ C/C| ≤ 5%, Δ tanδ ≤ 0.003 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.002 @ 1 kHz for C > 1µF IR after test ≥ 50% of initial limit
Resistance to Soldering Heat Test	**Test Conditions**		**Performances**
	Solder bath temperature: Dipping time (with heat screen):	260°C ±5°C 10 seconds ±1 second	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.003 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.002 @ 1 kHz for C > 1µF IR after test ≥ initial limit

Environmental Compliance

All KEMET MKT capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing	dV/dt (V/µs)	Maximum K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
50	30	2.2	6.0	11.0	7.2	5.0	200	20000	SBCC4220(1)10(2)	RSBCC4220(1)10(2)
63	40	0.10	2.5	6.5	7.2	5.0	250	31500	SBDC3100(1)00(2)	RSBDC3100(1)00(2)
63	40	0.15	2.5	6.5	7.2	5.0	250	31500	SBDC3150(1)00(2)	RSBDC3150(1)00(2)
63	40	0.22	2.5	6.5	7.2	5.0	250	31500	SBDC3220(1)10(2)	RSBDC3220(1)10(2)
63	40	0.33	3.5	7.5	7.2	5.0	250	31500	SBDC3330(1)00(2)	RSBDC3330(1)00(2)
63	40	0.47	3.5	7.5	7.2	5.0	250	31500	SBDC3470(1)10(2)	RSBDC3470(1)10(2)
63	40	0.68	4.5	9.5	7.2	5.0	250	31500	SBDC3680(1)10(2)	RSBDC3680(1)10(2)
63	40	1.0	5.0	10.0	7.2	5.0	250	31500	SBDC4100(1)10(2)	RSBDC4100(1)10(2)
63	40	1.5	6.0	11.0	7.2	5.0	250	31500	SBDC4150(1)10(2)	RSBDC4150(1)10(2)
100	63	0.0047	2.5	6.5	7.2	5.0	300	60000	SBEC1470(1)00(2)	RSBEC1470(1)00(2)
100	63	0.0068	2.5	6.5	7.2	5.0	300	60000	SBEC1680(1)00(2)	RSBEC1680(1)00(2)
100	63	0.010	2.5	6.5	7.2	5.0	300	60000	SBEC2100(1)00(2)	RSBEC2100(1)00(2)
100	63	0.015	2.5	6.5	7.2	5.0	300	60000	SBEC2150(1)00(2)	RSBEC2150(1)00(2)
100	63	0.022	2.5	6.5	7.2	5.0	300	60000	SBEC2220(1)00(2)	RSBEC2220(1)00(2)
100	63	0.033	2.5	6.5	7.2	5.0	300	60000	SBEC2330(1)00(2)	RSBEC2330(1)00(2)
100	63	0.047	2.5	6.5	7.2	5.0	300	60000	SBEC2470(1)00(2)	RSBEC2470(1)00(2)
100	63	0.07	2.5	6.5	7.2	5.0	300	60000	SBEC2680(1)10(2)	RSBEC2680(1)10(2)
100	63	0.10	3.5	7.5	7.2	5.0	300	60000	SBEC3100(1)00(2)	RSBEC3100(1)00(2)
100	63	0.15	4.5	9.5	7.2	5.0	300	60000	SBEC3150(1)00(2)	RSBEC3150(1)00(2)
100	63	0.22	5.0	10.0	7.2	5.0	300	60000	SBEC3220(1)00(2)	RSBEC3220(1)00(2)
100	63	0.33	6.0	11.0	7.2	5.0	300	60000	SBEC3330(1)00(2)	RSBEC3330(1)00(2)
100	63	0.47	6.0	11.0	7.2	5.0	300	60000	SBEC3470(1)10(2)	RSBEC3470(1)10(2)
250	160	0.0010	2.5	6.5	7.2	5.0	400	200000	SBIC1100(1)00(2)	RSBIC1100(1)00(2)
250	160	0.0015	2.5	6.5	7.2	5.0	400	200000	SBIC1150(1)00(2)	RSBIC1150(1)00(2)
250	160	0.0022	2.5	6.5	7.2	5.0	400	200000	SBIC1220(1)00(2)	RSBIC1220(1)00(2)
250	160	0.0033	2.5	6.5	7.2	5.0	400	200000	SBIC1330(1)00(2)	RSBIC1330(1)00(2)
250	160	0.0047	2.5	6.5	7.2	5.0	400	200000	SBIC1470(1)00(2)	RSBIC1470(1)00(2)
250	160	0.0068	2.5	6.5	7.2	5.0	400	200000	SBIC1680(1)00(2)	RSBIC1680(1)00(2)
250	160	0.010	2.5	6.5	7.2	5.0	400	200000	SBIC2100(1)00(2)	RSBIC2100(1)00(2)
250	160	0.015	2.5	6.5	7.2	5.0	400	200000	SBIC2150(1)00(2)	RSBIC2150(1)00(2)
250	160	0.022	3.5	7.5	7.2	5.0	400	200000	SBIC2220(1)00(2)	RSBIC2220(1)00(2)
250	160	0.033	3.5	7.5	7.2	5.0	400	200000	SBIC2330(1)00(2)	RSBIC2330(1)00(2)
250	160	0.047	4.5	9.5	7.2	5.0	400	200000	SBIC2470(1)00(2)	RSBIC2470(1)00(2)
250	160	0.068	4.5	9.5	7.2	5.0	400	200000	SBIC2680(1)00(2)	RSBIC2680(1)00(2)
250	160	0.10	5.0	10.0	7.2	5.0	400	200000	SBIC3100(1)00(2)	RSBIC3100(1)00(2)
250	160	0.15	6.0	11.0	7.2	5.0	400	200000	SBIC3150(1)00(2)	RSBIC3150(1)00(2)
400	200	0.0010	2.5	6.5	7.2	5.0	600	480000	SBMC1100(1)00(2)	RSBMC1100(1)00(2)
400	200	0.0015	2.5	6.5	7.2	5.0	600	480000	SBMC1150(1)00(2)	RSBMC1150(1)00(2)
400	200	0.0022	2.5	6.5	7.2	5.0	600	480000	SBMC1220(1)00(2)	RSBMC1220(1)00(2)
400	200	0.0033	2.5	6.5	7.2	5.0	600	480000	SBMC1330(1)00(2)	RSBMC1330(1)00(2)
400	200	0.0047	2.5	6.5	7.2	5.0	600	480000	SBMC1470(1)00(2)	RSBMC1470(1)00(2)
400	200	0.0068	3.5	7.5	7.2	5.0	600	480000	SBMC1680(1)00(2)	RSBMC1680(1)00(2)
400	200	0.010	3.5	7.5	7.2	5.0	600	480000	SBMC2100(1)00(2)	RSBMC2100(1)00(2)
400	200	0.015	3.5	7.5	7.2	5.0	600	480000	SBMC2150(1)00(2)	RSBMC2150(1)00(2)
400	200	0.022	4.5	9.5	7.2	5.0	600	480000	SBMC2220(1)00(2)	RSBMC2220(1)00(2)
400	200	0.033	5.0	10.0	7.2	5.0	600	480000	SBMC2330(1)00(2)	RSBMC2330(1)00(2)
400	200	0.047	6.0	11.0	7.2	5.0	600	480000	SBMC2470(1)00(2)	RSBMC2470(1)00(2)
500	220	0.0010	2.5	6.5	7.2	5.0	700	700000	SBWC1100(1)00(2)	RSBWC1100(1)00(2)
500	220	0.0015	2.5	6.5	7.2	5.0	700	700000	SBWC1150(1)00(2)	RSBWC1150(1)00(2)
500	220	0.0022	3.5	7.5	7.2	5.0	700	700000	SBWC1220(1)00(2)	RSBWC1220(1)00(2)
500	220	0.0033	3.5	7.5	7.2	5.0	700	700000	SBWC1330(1)00(2)	RSBWC1330(1)00(2)
500	220	0.0047	3.5	7.5	7.2	5.0	700	700000	SBWC1470(1)00(2)	RSBWC1470(1)00(2)
500	220	0.0068	4.5	9.5	7.2	5.0	700	700000	SBWC1680(1)00(2)	RSBWC1680(1)00(2)
500	220	0.010	5.0	10.0	7.2	5.0	700	700000	SBWC2100(1)00(2)	RSBWC2100(1)00(2)
500	220	0.015	6.0	11.0	7.2	5.0	700	700000	SBWC2150(1)00(2)	RSBWC2150(1)00(2)
630	220	0.0010	2.5	6.5	7.2	5.0	800	1008000	SBPC1100(1)00(2)	RSBPC1100(1)00(2)
630	220	0.0015	3.5	7.5	7.2	5.0	800	1008000	SBPC1150(1)00(2)	RSBPC1150(1)00(2)
630	220	0.0022	3.5	7.5	7.2	5.0	800	1008000	SBPC1220(1)00(2)	RSBPC1220(1)00(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) K = ±10%, M = ±20%, J = ±5% on request.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing	dV/dt (V/µs)	Maximum K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
630	220	0.0033	4.5	9.5	7.2	5.0	800	1008000	SBPC1330(1)00(2)	RSBPC1330(1)00(2)
630	220	0.0047	4.5	9.5	7.2	5.0	800	1008000	SBPC1470(1)00(2)	RSBPC1470(1)00(2)
630	220	0.0068	5.0	10.0	7.2	5.0	800	1008000	SBPC1680(1)00(2)	RSBPC1680(1)00(2)
630	220	0.010	6.0	11.0	7.2	5.0	800	1008000	SBPC2100(1)00(2)	RSBPC2100(1)00(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) K = ±10%, M = ±20%, J = ±5% on request.

Soldering Process

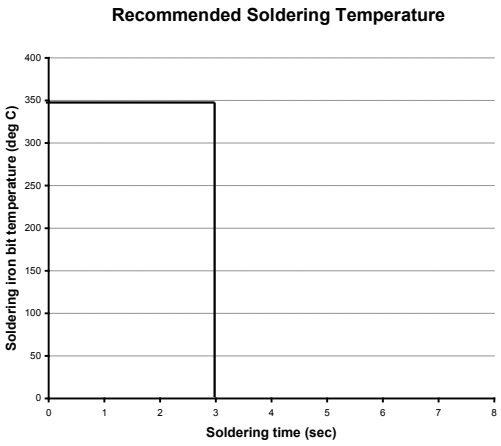
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

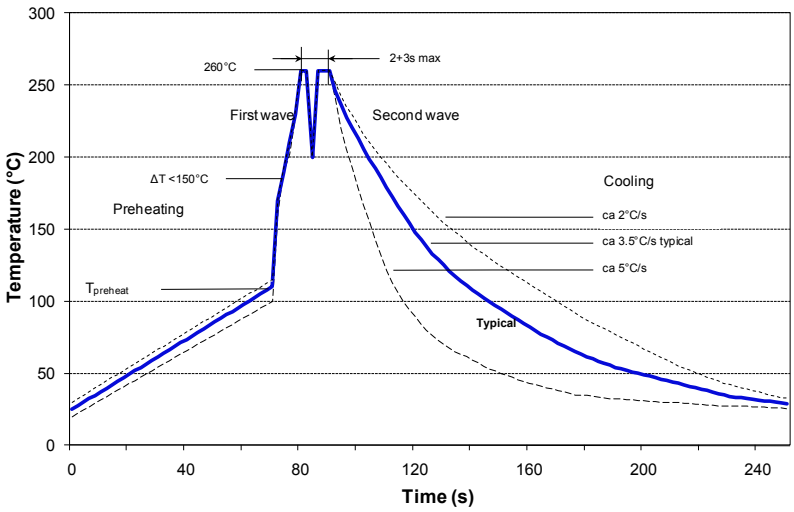
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

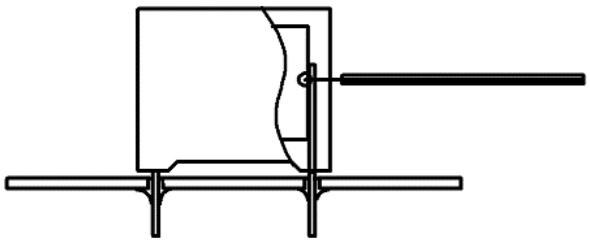
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



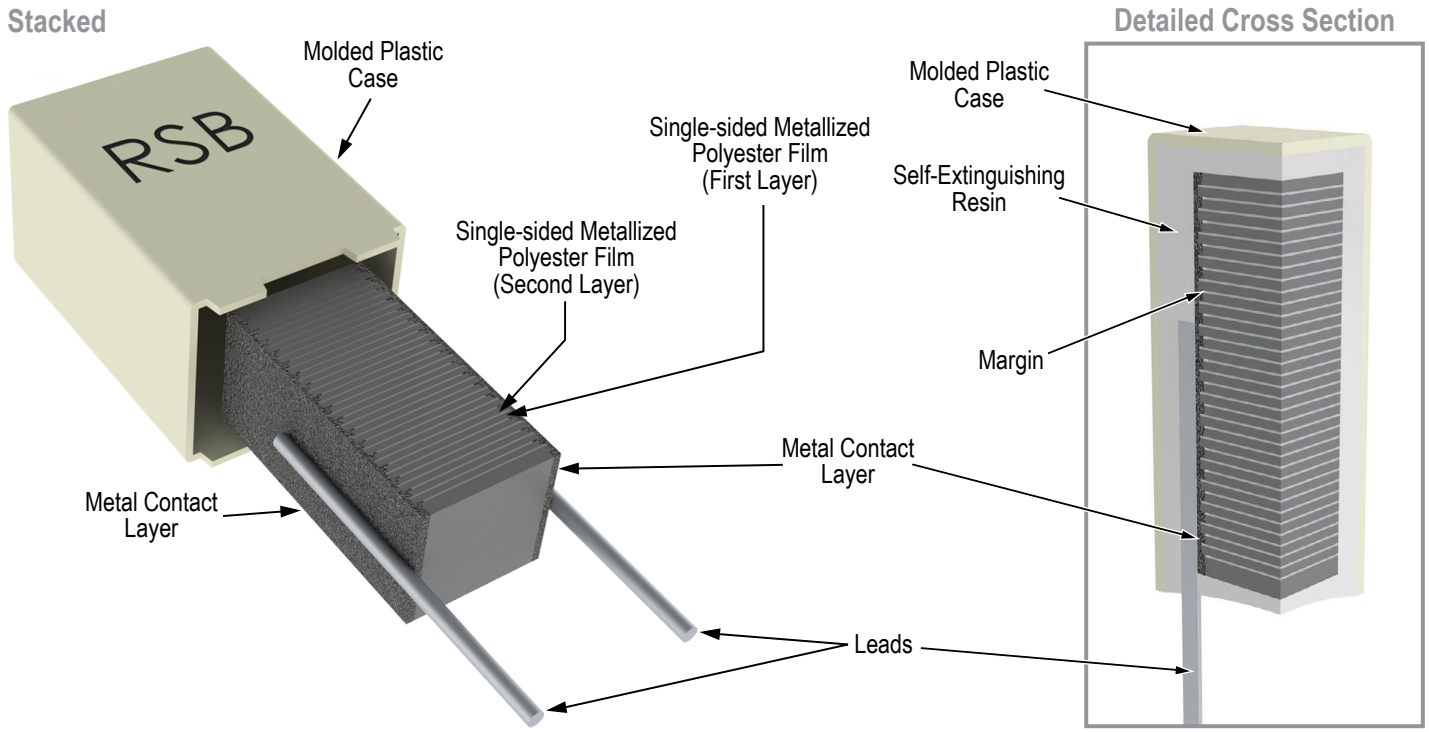
Temperature monitored inside the capacitor.

Selective Soldering Recommendations

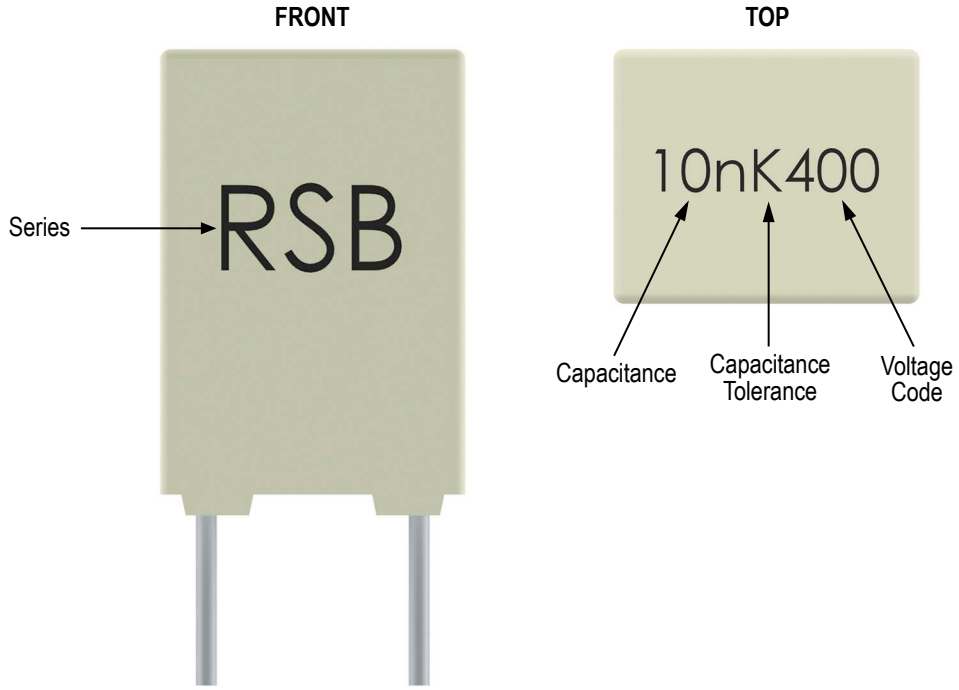
Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

Construction



Marking



Packaging Quantities

Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel 355 mm	Ammo Taped
5	2.5	6.5	7.2	3,000	4,000	2,500	3,500
	3.5	7.5	7.2	2,000	3,000	1,800	2,500
	4.5	9.5	7.2	1,500	2,000	1,400	1,900
	5.0	10.0	7.2	1,000	1,500	1,200	1,700
	6.0	11.0	7.2	2,000	1,000	1,000	1,400

R66 Series, Radial, 7.5 mm Lead Spacing, 50 – 630 VDC (Automotive Grade)

Overview

The R66 Series is constructed of metallized polyester film (wound or stacked technology) with radial leads of tinned wire. Radial leads are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated with thermosetting resin in a box of material meeting the UL 94V–0 requirements.

Automotive grade devices are available and meet the demanding Automotive Electronics Council's AEC–Q200 qualification requirements.

Applications

Typical applications include blocking, coupling, decoupling, bypassing and interference suppression in low voltage applications such as automotive. Not suitable for across-the-line application (see Suppressor Capacitors).

Benefits

- Voltage range: 50 – 630 VDC
- Capacitance range: 0.001 µF – 4.7 µF
- Lead Spacing: 7.5 mm
- Capacitance tolerance: ±5%, ±10%, ±20%
- Climatic category: 55/105/56
- Operating temperature range of -55˚C to +105˚C
- RoHS compliance and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–2
- Self-healing
- Automotive (AEC–Q200) grades available



Part Number System

R66	E	D	3100	AA	7A	J
Series	Rated Voltage (VDC)	Length (mm)	Capacitance Code (pF)	Packaging	Internal Use	Capacitance Tolerance
Metallized Polyester	C = 50 D = 63 E = 100 I = 250 M = 400 P = 630	D = 7.5	The last three digits represent significant figures. First digit specifies the number of zeros to be added.	See Ordering Options Table	10 6A 7A	J = ±5% K = ±10% M = ±20%

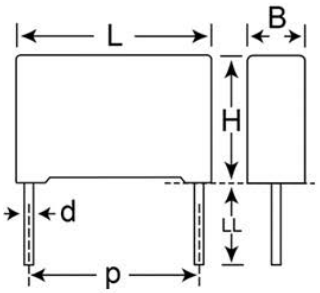
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Ordering Options Table

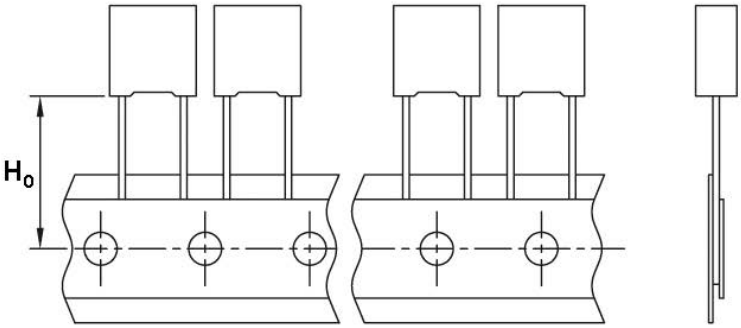
Lead Spacing Nominal (mm)	Type of Leads and Packaging	LL Lead Length (mm)	Lead and Packaging Code
7.5	**Standard Lead and Packaging Options**		
	Bulk (Bag)–Short Leads	4 +2/-0	AA
	Ammo Pack	H_0=18.5 +/- 0.5	DQ
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel)	H_0 = 18.5 +/- 0.5	CK
	Bulk (Bag)–Short Leads	2.7 +0.5/-0	JA
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	10 +/- 1	JC
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	17 +1/-2	Z3

Dimensions – Millimeters

Loose



Taped



p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
7.5	+/- 0.4	3.0	+0.1	8.0	+0.1	10.0	+0.2	0.5	+/- 0.05
7.5	+/- 0.4	4.0	+0.1	9.0	+0.1	10.0	+0.2	0.6	+/- 0.05
7.5	+/- 0.4	5.0	+0.1	10.5	+0.1	10.0	+0.2	0.6	+/- 0.05
7.5	+/- 0.4	6.0	+0.1	12.0	+0.1	10.5	+0.2	0.6	+/- 0.05

Note: See Ordering Options Table for lead length (LL/H_0) options.

Performance Characteristics

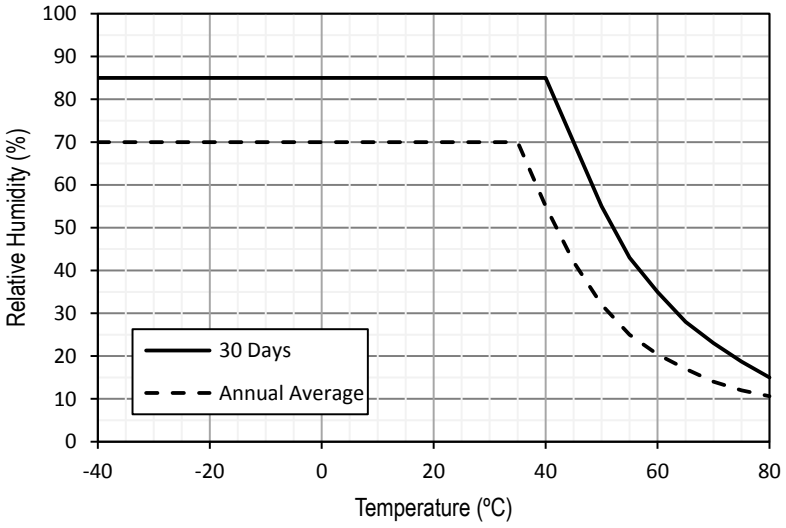
Dielectric	Polyester film (polyethylene terephthalate).					
Plates	Metal layer deposited by evaporation under vacum.					
Winding	Non-inductive type.					
Leads	Tinned wire.					
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.					
Related Documents	IEC 60384-2					
Rated Voltage V_R (VDC)	50	63	100	250	400	630
Rated Voltage V_R (VAC)	30	40	63	160	200	220
Capacitance Range (µF)	0.68 – 4.7	0.33 – 3.3	0.068 – 1.5	0.022 – 0.33	0.0068 – 0.15	0.001 – 0.047
Capacitance Values	E6 series (IEC 60063) measured @ 1 kHz and +20 ±1°C					
Capacitance Tolerance	±5%, ±10%, ±20%					
Operating Temperature Range	-55°C to +105°C Upper operating temperature of +125°C is allowed for a maximum operating time of 1,000 hours. (stacked technology only)					
Rated Temperature T_R	+85°C					
Voltage Derating	Above +85°C DC and AC voltage derating is 1.25%/°C					
Climatic Category	55/105/56 IEC 60068-1					
Storage Conditions	Storage time: ≤ 24 months from the date marked on the label package					
	Average relative humidity per year ≤ 70%					
	RH ≤ 85% for 30 days randomly distributed throughout the year					
	Dew is absent					
	Temperature: -40 to 80°C (see "Maximum Humidity in Storage Conditions" graph below)					
Test Voltage	1.6 x V_R VDC for 2 seconds (between terminations) @ +25°C ±5°C					
Capacitance Drift	Maximum 3% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%					
Reliability (Reference MIL-HDBK-217)	Operational life >200,000 hours					
	Failure rate ≤ 2 FIT, T = +40°C, V = 0.5 x V_R					
	Failure criteria: open or short circuit, cap. change > 10%, DF 2 times the catalog limits, IR < 0.005 x initial limit					
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp <V_R), the specified dv/dt can be multiplied by the factor V_R/Vpp					
Temperature Coefficient	+400 (±200)ppm/°C at 1 kHz					
Self Inductance (Lead Length ~ 2 mm)	Approximately 8 nH. Maximum 1nH per 1 mm lead and capacitor length.					

Performance Characteristics cont'd

Dissipation Factor tanδ	Maximum Values @ 25°C ±5°C		
	Frequency	For all Capacitance Values	
	1 kHz	1.00%	
	10 kHz	1.50%	
Insulation Resistance	Measured @ +25°C ±5°C, according to IEC 60384–2		
	Minimum Values Between Terminals		
	Voltage Carge / Time	C ≤ 0.33 µF	C > 0.33 µF
	50 VDC for V_R ≤100 VDC 1 minute	≥3,750 MΩ (≥50,000 MΩ) *	≥ 1,250 MΩ • µF (≥5,000 MΩ • µF) *
	100 VDC for V_R >100 VDC 1 minute	≥30,000 MΩ (≥50,000 MΩ)*	

** typical value*

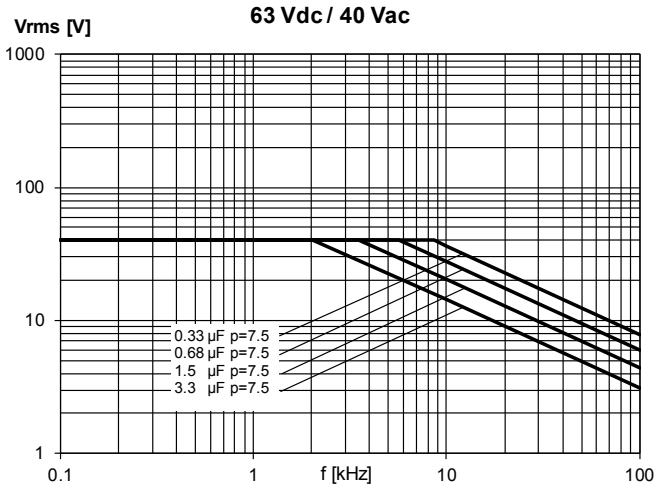
Maximum Humidity in Storage Conditions

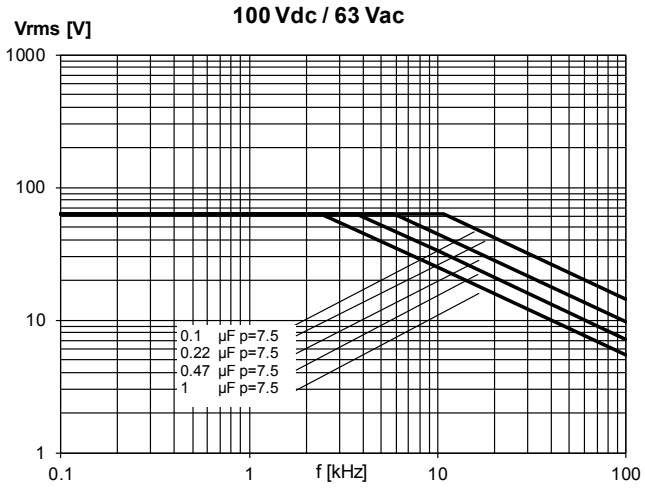


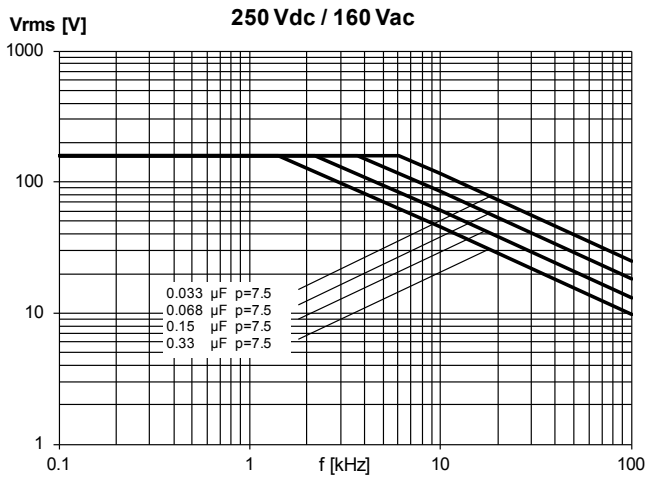
Qualification

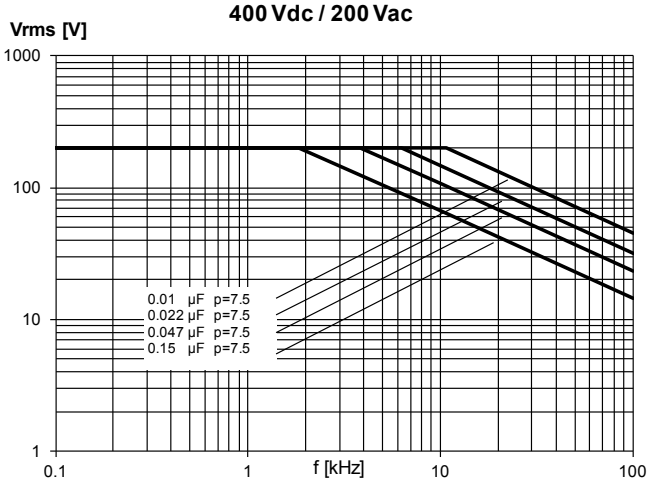
Automotive Grade products meet or exceed the requirements outlined by the Automotive Electronics Council. Details regarding test methods and conditions are referenced in document AEC–Q200, Stress Test Qualification for Passive Components. For additional information regarding the Automotive Electronics Council and AEC–Q200, please visit their website at www.aecouncil.com.

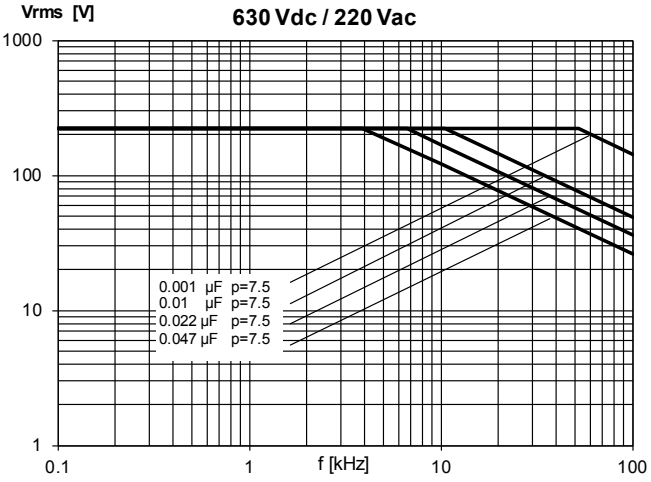
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40°C)



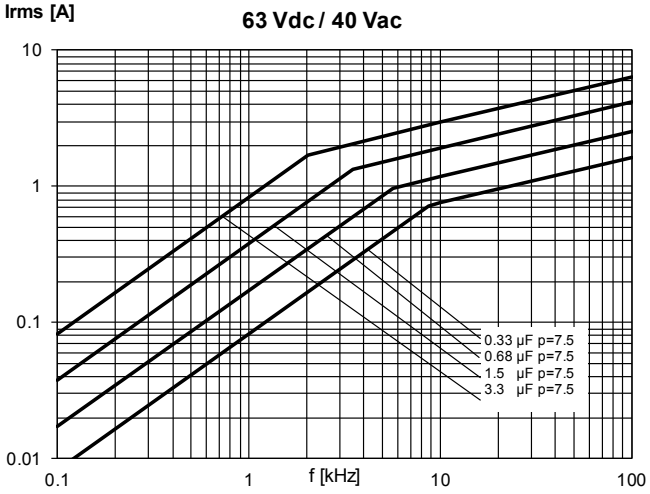


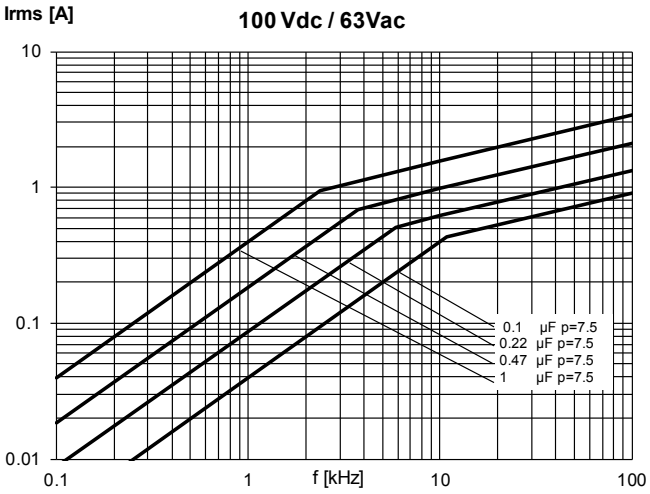


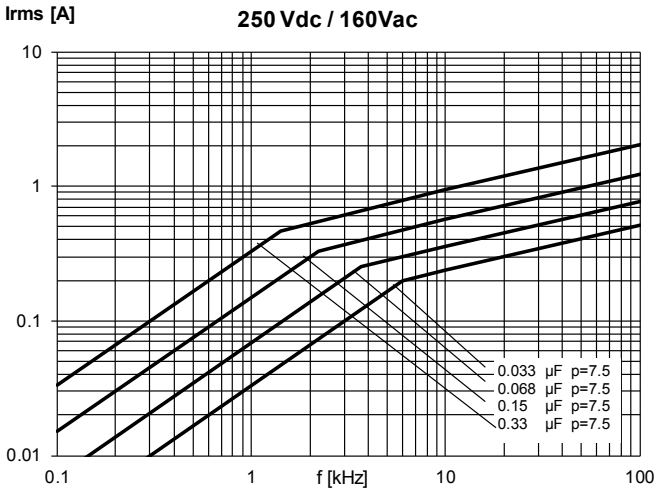


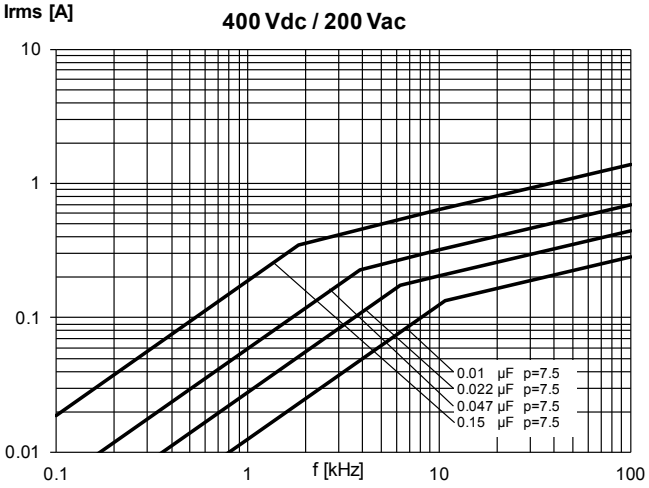


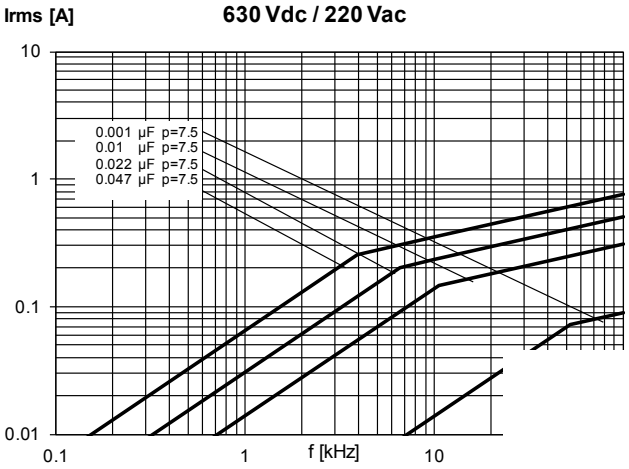
Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40°C)











Environmental Test Data

Damp Heat, Steady State Test	Test Conditions:		Performances
	Temperature: Relative humidity (RH): Test duration:	+40°C ±2°C 93% ±2% 56 days	|Δ C/C| ≤ 5%, Δ tanδ ≤ 0.005 @ 1 kHz IR after test ≥ 50% of initial limit
Endurance Test	**Test Conditions**		**Performances**
	Temperature: Voltage applied: Test duration:	+105°C ±2°C 1.25 x V_C 2,000 hours	|Δ C/C| ≤ 5%, Δ tanδ ≤ 0.005 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.003 @ 1 kHz for C > 1µF IR after test ≥ 50% of initial limit
Resistance to Soldering Heat Test	**Test Conditions**		**Performances**
	Solder bath temperature: Dipping time (with heat screen):	260°C ±5°C 10 seconds ±1 second	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.005 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.003 @ 1 kHz for C > 1µF IR after test ≥ initial limit

Environmental Compliance

All KEMET MKT capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing	dV/dt (V/µs)	Maximum K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
50	30	0.68	3.0	8.0	10.0	7.5	100	10000	66CD3680(1)6A(2)	R66CD3680(1)6A(2)
50	30	1.0	3.0	8.0	10.0	7.5	100	10000	66CD4100(1)6A(2)	R66CD4100(1)6A(2)
50	30	1.5	4.0	9.0	10.0	7.5	100	10000	66CD4150(1)6A(2)	R66CD4150(1)6A(2)
50	30	2.2	5.0	10.5	10.0	7.5	100	10000	66CD4220(1)6A(2)	R66CD4220(1)6A(2)
50	30	4.7	6.0	12.0	10.5	7.5	100	10000	66CD4470(1)6A(2)	R66CD4470(1)6A(2)
63	40	0.33	3.0	8.0	10.0	7.5	120	15120	66DD3330(1)7A(2)	R66DD3330(1)7A(2)
63	40	0.47	3.0	8.0	10.0	7.5	120	15120	66DD3470(1)6A(2)	R66DD3470(1)6A(2)
63	40	0.68	4.0	9.0	10.0	7.5	120	15120	66DD3680(1)7A(2)	R66DD3680(1)7A(2)
63	40	1.0	4.0	9.0	10.0	7.5	120	15120	66DD4100(1)7A(2)	R66DD4100(1)7A(2)
63	40	1.5	5.0	10.5	10.0	7.5	120	15120	66DD4150(1)7A(2)	R66DD4150(1)7A(2)
63	40	2.2	6.0	12.0	10.5	7.5	120	15120	66DD4220(1)6A(2)	R66DD4220(1)6A(2)
63	40	3.3	6.0	12.0	10.5	7.5	120	15120	66DD4330(1)6A(2)	R66DD4330(1)6A(2)
100	63	0.068	3.0	8.0	10.0	7.5	150	30000	66ED2680(1)7A(2)	R66ED2680(1)7A(2)
100	63	0.10	3.0	8.0	10.0	7.5	150	30000	66ED3100(1)7A(2)	R66ED3100(1)7A(2)
100	63	0.15	3.0	8.0	10.0	7.5	150	30000	66ED3150(1)7A(2)	R66ED3150(1)7A(2)
100	63	0.22	3.0	8.0	10.0	7.5	150	30000	66ED3220(1)7A(2)	R66ED3220(1)7A(2)
100	63	0.33	4.0	9.0	10.0	7.5	150	30000	66ED3330(1)7A(2)	R66ED3330(1)7A(2)
100	63	0.47	4.0	9.0	10.0	7.5	150	30000	66ED3470(1)7A(2)	R66ED3470(1)7A(2)
100	63	0.68	4.0	9.0	10.0	7.5	150	30000	66ED3680(1)7A(2)	R66ED3680(1)7A(2)
100	63	1.0	5.0	10.5	10.0	7.5	150	30000	66ED4100(1)7A(2)	R66ED4100(1)7A(2)
100	63	1.5	6.0	12.0	10.5	7.5	150	30000	66ED4150(1)6A(2)	R66ED4150(1)6A(2)
250	160	0.022	3.0	8.0	10.0	7.5	200	100000	66ID2220(1)7A(2)	R66ID2220(1)7A(2)
250	160	0.033	3.0	8.0	10.0	7.5	200	100000	66ID2330(1)7A(2)	R66ID2330(1)7A(2)
250	160	0.047	3.0	8.0	10.0	7.5	200	100000	66ID2470(1)7A(2)	R66ID2470(1)7A(2)
250	160	0.068	3.0	8.0	10.0	7.5	200	100000	66ID2680(1)6A(2)	R66ID2680(1)6A(2)
250	160	0.10	4.0	9.0	10.0	7.5	200	100000	66ID3100(1)7A(2)	R66ID3100(1)7A(2)
250	160	0.15	4.0	9.0	10.0	7.5	200	100000	66ID3150(1)7A(2)	R66ID3150(1)7A(2)
250	160	0.22	5.0	10.5	10.0	7.5	200	100000	66ID3220(1)7A(2)	R66ID3220(1)7A(2)
250	160	0.33	6.0	12.0	10.5	7.5	200	100000	66ID3330(1)6A(2)	R66ID3330(1)6A(2)
400	200	0.0068	3.0	8.0	10.0	7.5	275	220000	66MD1680(1)7A(2)	R66MD1680(1)7A(2)
400	200	0.010	3.0	8.0	10.0	7.5	275	220000	66MD2100(1)7A(2)	R66MD2100(1)7A(2)
400	200	0.015	3.0	8.0	10.0	7.5	275	220000	66MD2150(1)7A(2)	R66MD2150(1)7A(2)
400	200	0.022	3.0	8.0	10.0	7.5	275	220000	66MD2220(1)6A(2)	R66MD2220(1)6A(2)
400	200	0.033	4.0	9.0	10.0	7.5	275	220000	66MD2330(1)7A(2)	R66MD2330(1)7A(2)
400	200	0.047	4.0	9.0	10.0	7.5	275	220000	66MD2470(1)7A(2)	R66MD2470(1)7A(2)
400	200	0.068	5.0	10.5	10.0	7.5	275	220000	66MD2680(1)7A(2)	R66MD2680(1)7A(2)
400	200	0.10	6.0	12.0	10.5	7.5	275	220000	66MD3100(1)6A(2)	R66MD3100(1)6A(2)
400	200	0.15	6.0	12.0	10.5	7.5	275	220000	66MD3150(1)6A(2)	R66MD3150(1)6A(2)
630	**220**	**0.0010**	**3.0**	**8.0**	**10.0**	**7.5**	**40**	**50400**	**66PD1100(1)10(2)**	**R66PD1100(1)10(2)**
630	**220**	**0.0015**	**3.0**	**8.0**	**10.0**	**7.5**	**40**	**50400**	**66PD1150(1)10(2)**	**R66PD1150(1)10(2)**
630	**220**	**0.0022**	**3.0**	**8.0**	**10.0**	**7.5**	**40**	**50400**	**66PD1220(1)10(2)**	**R66PD1220(1)10(2)**
630	**220**	**0.0033**	**3.0**	**8.0**	**10.0**	**7.5**	**40**	**50400**	**66PD1330(1)10(2)**	**R66PD1330(1)10(2)**
630	**220**	**0.0047**	**3.0**	**8.0**	**10.0**	**7.5**	**40**	**50400**	**66PD1470(1)10(2)**	**R66PD1470(1)10(2)**
630	**220**	**0.0068**	**4.0**	**9.0**	**10.0**	**7.5**	**40**	**50400**	**66PD1680(1)10(2)**	**R66PD1680(1)10(2)**
630	220	0.010	4.0	9.0	10.0	7.5	300	378000	66PD2100(1)7A(2)	R66PD2100(1)7A(2)
630	220	0.015	4.0	9.0	10.0	7.5	300	378000	66PD2150(1)7A(2)	R66PD2150(1)7A(2)
630	220	0.022	5.0	10.5	10.0	7.5	300	378000	66PD2220(1)7A(2)	R66PD2220(1)7A(2)
630	220	0.033	6.0	12.0	10.5	7.5	300	378000	66PD2330(1)6A(2)	R66PD2330(1)6A(2)
630	220	0.047	6.0	12.0	10.5	7.5	300	378000	66PD2470(1)6A(2)	R66PD2470(1)6A(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.

(2) J = 5%, K = 10%, M = 20%

Bold denotes wound capacitor technology

Soldering Process

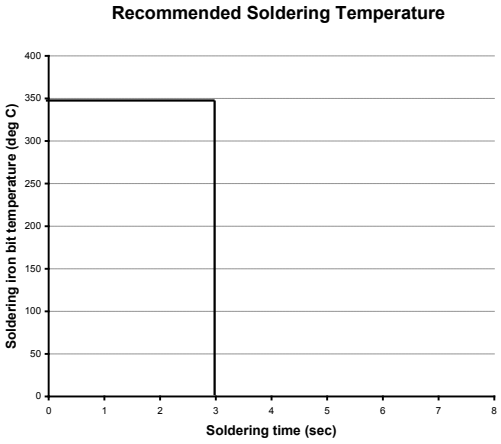
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

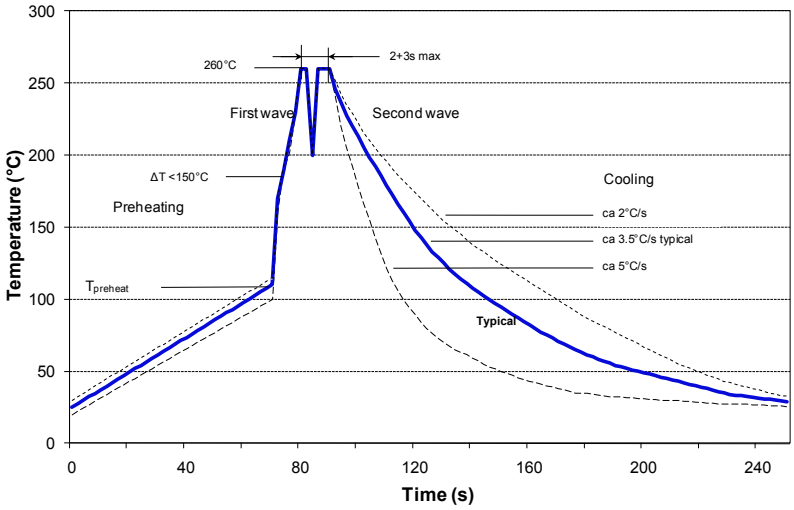
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

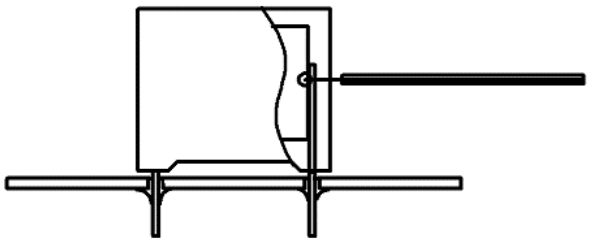
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



Temperature monitored inside the capacitor.

Selective Soldering Recommendations

Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

Marking

- KEMET's logo
- Capacitance
- Capacitance tolerance
- Rated DC voltage

Packaging Quantities

Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel 355 mm	Ammo Taped
7.5	3.0	8.0	10.0	1,500	1,750	2,100	2,800
	4.0	9.0	10.0	2,000	1,500	1,500	2,100
	5.0	10.5	10.0	1,500	1,000	1,200	1,600
	6.0	12.0	10.5	1,000	800	1,000	1,350

R60 Series, Radial, 10 – 37.5 mm Lead Spacing, 50 – 1,000 VDC (Automotive Grade)

Overview

The R60 Series is constructed of metallized polyester film (wound or stacked technology) with radial leads of tinned wire. Radial leads are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing solvent resistant plastic case with thermosetting resin material meeting the UL 94V–0 requirements.

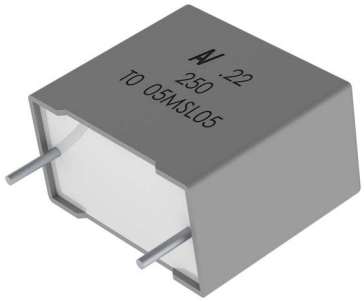
Automotive Grade devices are available (up to lead spacing 22.5 mm) and meet the demanding Automotive Electronics. Council's AEC–Q200 qualification requirements.

Applications

Typical applications include blocking, coupling, decoupling, bypassing and interference suppression in low voltage applications such as automotive. Not suitable for across-the-line application (see Suppressor Capacitors).

Benefits

- Voltage range: 50 – 1000 VDC
- Capacitance range: 0.001 µF – 150.0 µF
- Lead spacing: 10.0 – 37.5 mm
- Capacitance tolerance: ±5%, ±10%, ±20%
- Climatic category: 55/105/56
- Operating temperature range of -55˚C to +105˚C
- RoHS compliance and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–2
- Self-healing
- Automotive (AEC–Q200) grades available up to pitch 22.5 mm



Part Number System

R60	M	F	2470	AA	60	K
Series	Rated Voltage (VDC)	Length (mm)	Capacitance Code (pF)	Packaging	Internal Use	Capacitance Tolerance
Metallized Polyester	C = 50 D = 63 E = 100 G = 160 I = 250 M = 400 P = 630 Q = 1000	F = 10 I = 15 N = 22.5 R = 27.5 W = 37.5	The last three digits represent significant figures. First digit specifies the number of zeros to be added.	See Ordering Options Table	00 01 30 40 50 6A L0 L1	J = ±5% K = ±10% M = ±20%

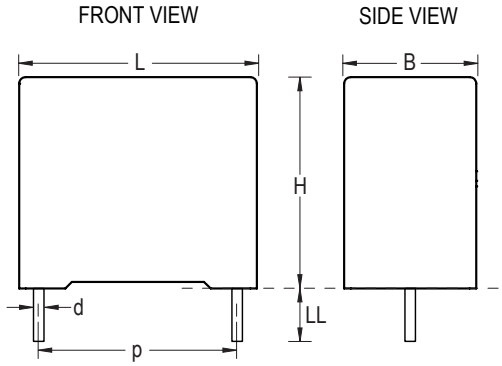
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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	LL Lead Length (mm)	Lead and Packaging Code
10 15 22.5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	AA
	Ammo Pack	H_0=18.5 +/- 0.5	DQ
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel)	H_0 = 18.5 +/- 0.5	GY
	Tape & Reel (Large Reel)	H_0=18.5 +/- 0.5	CK
	Bulk (Bag) – Short Leads	2.7 +0.5/-0	JA
	Bulk (Bag) – Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag) – Short Leads	10 +/- 1	JC
	Bulk (Bag) – Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag) – Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag) – Long Leads	18 +1/-1	JM*
	Bulk (Bag) – Long Leads	17 +1/-2	Z3**
	Bulk (Bag) – Long Leads	30 +5/-0	40
	Bulk (Bag) – Long Leads	25 +2/-1	50
27.5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	AA
	Other Lead and Packaging Options		
	T&R (Large Reel)	H_0=18.5 +/-0.5	CK
	Bulk (Bag) – Short Leads	2.7 +0.5/-0	JA
	Bulk (Bag) – Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag) – Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag) – Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag) – Long Leads	18 +1/-1	JM
	Bulk (Bag) – Long Leads	30 +5/-0	40
	Bulk (Bag) – Long Leads	25 +2/-1	50
37.5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	AA
	Other Lead and Packaging Options		
	Bulk (Bag) – Short Leads	2.7 +0.5/-0	JA
	Bulk (Bag) – Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag) – Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag) – Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag) – Long Leads	18 +1/-1	JM
	Bulk (Bag) – Long Leads	30 +5/-0	40
	Bulk (Bag) – Long Leads	25 +2/-1	50

** Only available for Lead Spacing ≥15 mm.*
*** Only available for 10 mm Lead Spacing.*

Dimensions – Millimeters



p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
10.0	+/- 0.4	4.0	+0.2	9.0	+0.1	13.0	+0.2	0.6	+/- 0.05
10.0	+/- 0.4	5.0	+0.2	11.0	+0.1	13.0	+0.2	0.6	+/- 0.05
10.0	+/-0.4	6.0	+0.2	12.0	+0.1	13.0	+0.2	0.6	+/- 0.05
15.0	+/- 0.4	5.0	+0.2	11.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	6.0	+0.2	12.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	7.5	+0.2	13.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	8.5	+0.2	14.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	9.0	+0.2	12.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	10.0	+0.2	16.0	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	11.0	+0.2	19.0	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	13.0	+0.2	12.0	+0.1	18.0	+0.5	0.8	+/- 0.05
22.5	+/- 0.4	6.0	+0.2	15.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	7.0	+0.2	16.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	8.5	+0.2	17.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	10.0	+0.2	18.5	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	11.0	+0.2	20.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	13.0	+0.2	22.0	+0.1	26.5	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	9.0	+0.2	17.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	11.0	+0.2	20.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	13.0	+0.2	22.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	14.0	+0.2	28.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	18.0	+0.2	33.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	22.0	+0.2	37.0	+0.1	32.0	+0.3	0.8	+/- 0.05
37.5	+/- 0.4	11.0	+0.3	22.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	13.0	+0.3	24.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	16.0	+0.3	28.5	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	19.0	+0.3	32.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	20.0	+0.3	40.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	24.0	+0.3	44.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	30.0	+0.3	45.0	+0.1	41.5	+0.3	1.0	+/- 0.05

Note: See Ordering Options Table for lead length (LL/H_0) options.

Performance Characteristics

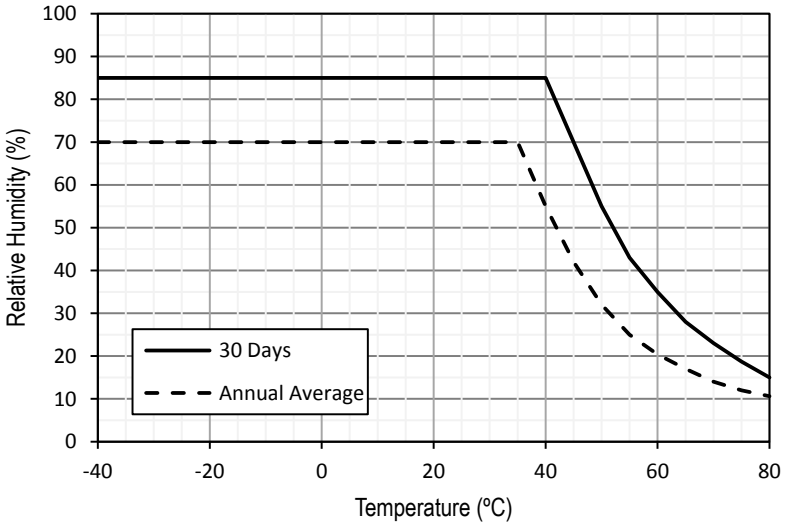
Dielectric	Polyester film (polyethylene terephthalate).							
Plates	Metal layer deposited by evaporation under vacum.							
Winding	Non-inductive type.							
Leads	Tinned wire.							
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.							
Related Documents	IEC 60384-2							
Rated Voltage V_R (VDC)	50	63	100	160	250	400	630	1000
Rated Voltage V_R (VAC)	30	40	63	90	160	200	220	250
Capacitance Range (µF)	1.5 – 5.6	0.68 – 100	0.33 – 150	0.22 – 150	0.1 – 68	0.015 – 33	0.0047 – 10	0.001 – 4.7
Capacitance Values	E6 series (IEC 60063) measured @ 1 kHz and +20 ±1°C							
Capacitance Tolerance	±5%, ±10%, ±20%							
Operating Temperature Range	-55°C to +105°C Upper operating temperature of +125°C is allowed for a maximum operating time of 1,000 hours.							
Rated Temperature T_R	+85°C							
Voltage Derating	Above +85°C DC and AC voltage derating is 1.25%/°C							
Climatic Category	55/105/56 IEC 60068-1							
Storage Conditions	Storage time: ≤ 24 months from the date marked on the label package							
	Average relative humidity per year ≤ 70%							
	RH ≤ 85% for 30 days randomly distributed throughout the year							
	Dew is absent							
	Temperature: -40 to 80°C (see "Maximum Humidity in Storage Conditions" graph below)							
Test Voltage	1.6 x V_R VDC for 2 seconds (between terminations) @ +25°C ±5°C							
Capacitance Drift	Maximum 3% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%							
Reliability (Reference MIL-HDBK-217)	Operational life >200,000 hours							
	Failure rate ≤ 5 FIT, T = +40°C, V = 0.5 x V_R							
	Failure criteria: open or short circuit, cap. change > 10%, DF 2 times the catalog limits, IR < 0.005 x initial limit							
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp <V_R), the specified dv/dt can be multiplied by the factor V_R/Vpp							
Temperature Coefficient	+400 (±200)ppm/°C at 1 kHz							
Self Inductance (Lead Length ~ 2 mm)	Lead Spacing (mm)	10	15	22.5	27.5	37.5		
	L (nH)	9	10	18	18	22		
	Maximum 1 nH per 1 mm lead and capacitor length.							

Performance Characteristics cont'd

Dissipation Factor tanδ	Maximum Values @ 25°C ±5°C		
	Frequency	C ≤ 1 µF	C > 1 µF
	1 kHz	1.00%	1.00%
	10 kHz	1.50%	–
Insulation Resistance	Measured @ +25°C ±5°C, according to IEC 60384–2		
	Minimum Values Between Terminals		
	Voltage Carge/Time	C ≤ 0.33 µF	C > 0.33 µF
	50 VDC for V_R ≤100 VDC 1 minute	≥3,750 MΩ (≥50,000 MΩ) *	≥ 1,250 MΩ • µF (≥5,000 MΩ • µF) *
	100 VDC for V_R >100 VDC 1 minute	≥ 30,000 MΩ (≥ 50,000 MΩ) *	≥ 10,000 MΩ • µF (≥ 17,000 MΩ • µF) *

** typical value*

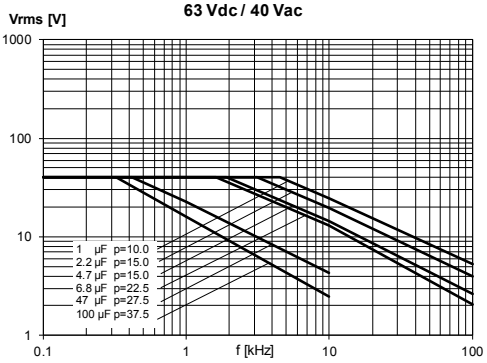
Maximum Humidity in Storage Conditions

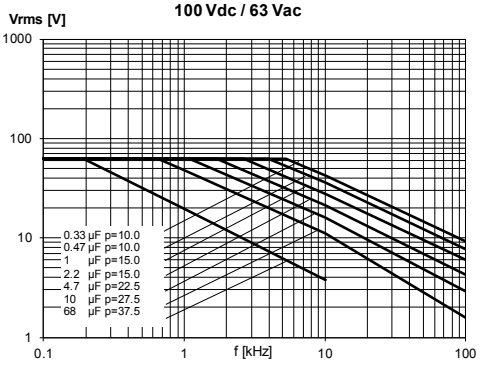


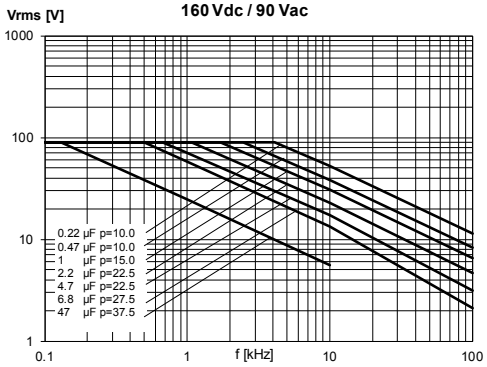
Qualification

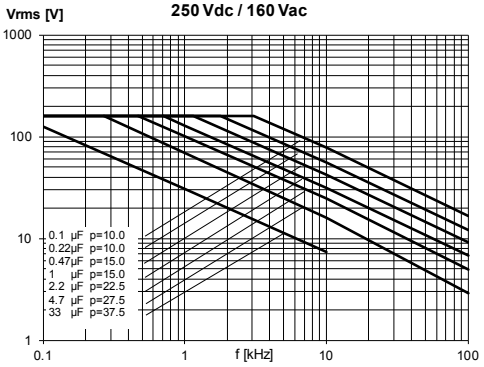
Automotive Grade products meet or exceed the requirements outlined by the Automotive Electronics Council. Details regarding test methods and conditions are referenced in document AEC–Q200, Stress Test Qualification for Passive Components. For additional information regarding the Automotive Electronics Council and AEC–Q200, please visit their website at www.aecouncil.com.

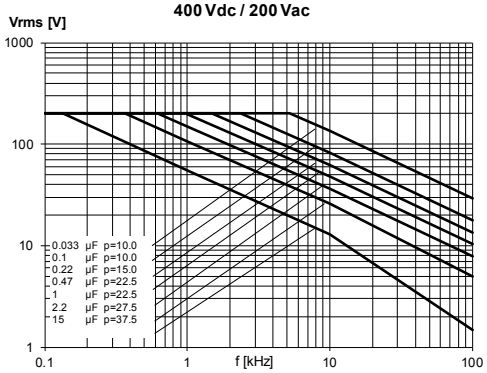
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40°C)

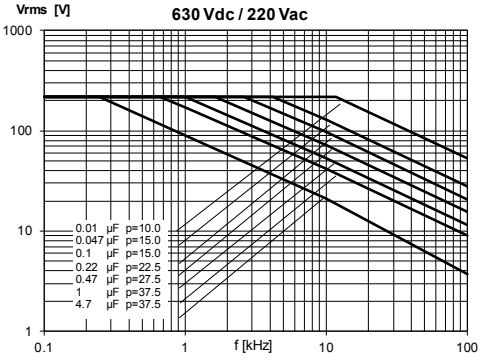


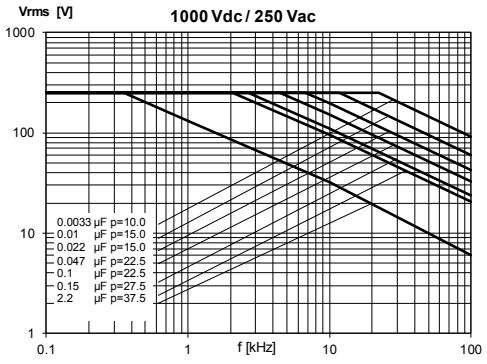




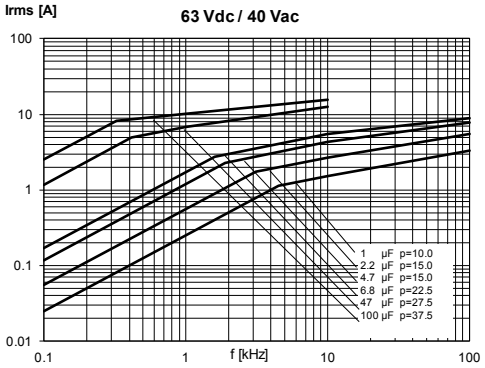


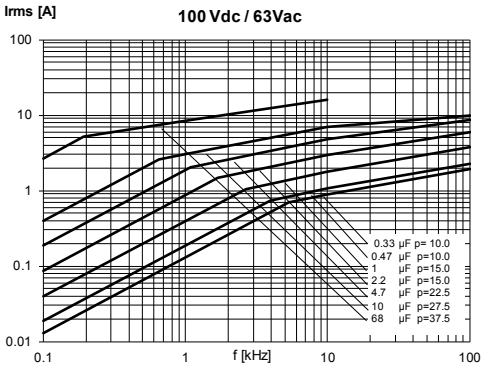


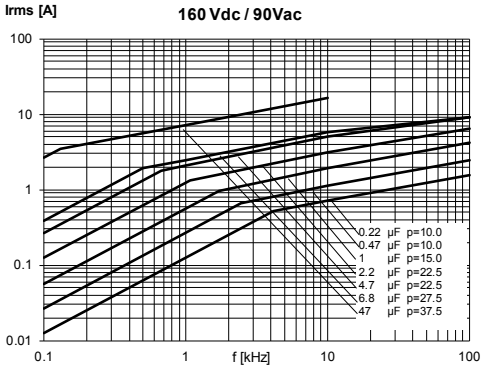


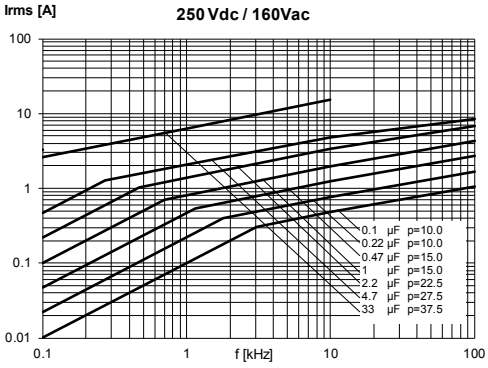


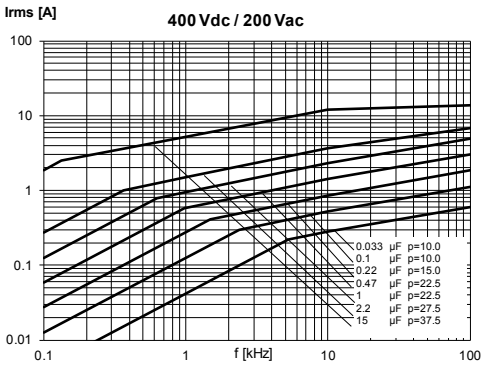
Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40°C)

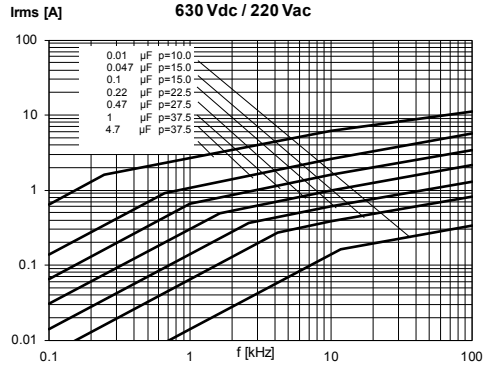


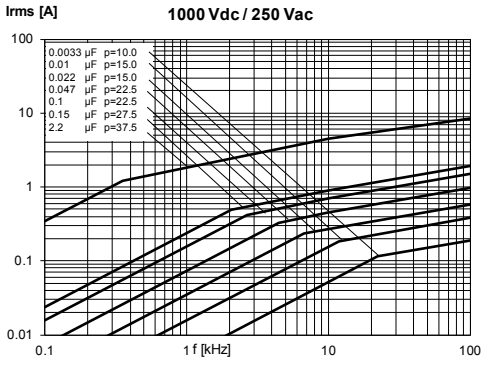












Environmental Test Data

Damp Heat, Steady State Test	Test Conditions:		Performances
	Temperature: Relative humidity (RH): Test duration:	+40°C ±2°C 93% ±2% 56 days	|Δ C/C| ≤ 5%, Δ tanδ ≤ 0.005 @ 1 kHz IR after test ≥ 50% of initial limit
Endurance Test	**Test Conditions**		**Performances**
	Temperature: Voltage applied: Test duration:	+105°C ±2°C 1.25 x V_C 2,000 hours	|Δ C/C| ≤ 5%, Δ tanδ ≤ 0.005 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.003 @ 1 kHz for C > 1µF IR after test ≥ 50% of initial limit
Resistance to Soldering Heat Test	**Test Conditions**		**Performances**
	Solder bath temperature: Dipping time (with heat screen):	260°C ±5°C 10 seconds ±1 second	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.005 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.003 @ 1 kHz for C > 1µF IR after test ≥ initial limit

Environmental Compliance

All KEMET MKT capacitors are RoHS Compliant.

Table 1A – Ratings & Part Number Reference (Stacked Capacitor Technology)

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing	dV/dt (V/µs)	Maximum K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
50	30	1.5	4.0	9.0	13.0	10.0	30	3000	60CF4150(1)6A(2)	R60CF4150(1)6A(2)
50	30	2.2	4.0	9.0	13.0	10.0	30	3000	60CF4220(1)6A(2)	R60CF4220(1)6A(2)
50	30	3.3	5.0	11.0	13.0	10.0	30	3000	60CF4330(1)6A(2)	R60CF4330(1)6A(2)
50	30	4.7	6.0	12.0	13.0	10.0	30	3000	60CF4470(1)6A(2)	R60CF4470(1)6A(2)
50	30	5.6	6.0	12.0	13.0	10.0	30	3000	60CF4560(1)6A(2)	R60CF4560(1)6A(2)
63	40	1.0	4.0	9.0	13.0	10.0	50	6300	60DF4100(1)6A(2)	R60DF4100(1)6A(2)
63	40	1.5	5.0	11.0	13.0	10.0	50	6300	60DF4150(1)6A(2)	R60DF4150(1)6A(2)
63	40	2.2	5.0	11.0	13.0	10.0	50	6300	60DF4220(1)6A(2)	R60DF4220(1)6A(2)
63	40	3.3	6.0	12.0	13.0	10.0	50	6300	60DF4330(1)6A(2)	R60DF4330(1)6A(2)
100	63	0.33	4.0	9.0	13.0	10.0	75	15000	60EF3330(1)6A(2)	R60EF3330(1)6A(2)
100	63	0.47	4.0	9.0	13.0	10.0	75	15000	60EF3470(1)6A(2)	R60EF3470(1)6A(2)
100	63	0.68	4.0	9.0	13.0	10.0	75	15000	60EF3680(1)6A(2)	R60EF3680(1)6A(2)
100	63	1.0	5.0	11.0	13.0	10.0	75	15000	60EF4100(1)6A(2)	R60EF4100(1)6A(2)
100	63	1.5	5.0	11.0	13.0	10.0	75	15000	60EF4150(1)6A(2)	R60EF4150(1)6A(2)
160	90	0.22	4.0	9.0	13.0	10.0	100	32000	60GF3220(1)6A(2)	R60GF3220(1)6A(2)
160	90	0.33	4.0	9.0	13.0	10.0	100	32000	60GF3330(1)6A(2)	R60GF3330(1)6A(2)
160	90	0.47	5.0	11.0	13.0	10.0	100	32000	60GF3470(1)6A(2)	R60GF3470(1)6A(2)
160	90	0.68	6.0	12.0	13.0	10.0	100	32000	60GF3680(1)6A(2)	R60GF3680(1)6A(2)
250	160	0.10	4.0	9.0	13.0	10.0	150	75000	60IF3100(1)6A(2)	R60IF3100(1)6A(2)
250	160	0.15	4.0	9.0	13.0	10.0	150	75000	60IF3150(1)6A(2)	R60IF3150(1)6A(2)
250	160	0.22	5.0	11.0	13.0	10.0	150	75000	60IF3220(1)6A(2)	R60IF3220(1)6A(2)
250	160	0.33	5.0	11.0	13.0	10.0	150	75000	60IF3330(1)6A(2)	R60IF3330(1)6A(2)
250	160	0.47	6.0	12.0	13.0	10.0	150	75000	60IF3470(1)6A(2)	R60IF3470(1)6A(2)
400	200	0.033	4.0	9.0	13.0	10.0	175	140000	60MF2330(1)6A(2)	R60MF2330(1)6A(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

Table 1A – Ratings & Part Number Reference (Stacked Capacitor Technology) cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing	dV/dt (V/µs)	Maximum K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
400	200	0.047	4.0	9.0	13.0	10.0	175	140000	60MF2470(1)6A(2)	R60MF2470(1)6A(2)
400	200	0.068	4.0	9.0	13.0	10.0	175	140000	60MF2680(1)6A(2)	R60MF2680(1)6A(2)
400	200	0.10	5.0	11.0	13.0	10.0	175	140000	60MF3100(1)6A(2)	R60MF3100(1)6A(2)
400	200	0.15	6.0	12.0	13.0	10.0	175	140000	60MF3150(1)6A(2)	R60MF3150(1)6A(2)
630	220	0.010	4.0	9.0	13.0	10.0	200	252000	60PF2100(1)6A(2)	R60PF2100(1)6A(2)
630	220	0.015	4.0	9.0	13.0	10.0	200	252000	60PF2150(1)6A(2)	R60PF2150(1)6A(2)
630	220	0.022	4.0	9.0	13.0	10.0	200	252000	60PF2220(1)6A(2)	R60PF2220(1)6A(2)
630	220	0.033	5.0	11.0	13.0	10.0	200	252000	60PF2330(1)6A(2)	R60PF2330(1)6A(2)
630	220	0.047	5.0	11.0	13.0	10.0	200	252000	60PF2470(1)6A(2)	R60PF2470(1)6A(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

Table 1B – Ratings & Part Number Reference (Wound Capacitor Technology)

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing	dV/dt (V/µs)	Maximum K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
63	40	0.68	5.0	11.0	18.0	15.0	2.5	315	60DI3680(1)30(2)	R60DI3680(1)30(2)
63	40	1.0	5.0	11.0	18.0	15.0	2.5	315	60DI4100(1)30(2)	R60DI4100(1)30(2)
63	40	1.5	5.0	11.0	18.0	15.0	2.5	315	60DI4150(1)30(2)	R60DI4150(1)30(2)
63	40	2.2	6.0	12.0	18.0	15.0	2.5	315	60DI4220(1)30(2)	R60DI4220(1)30(2)
63	40	3.3	7.5	13.5	18.0	15.0	2.5	315	60DI4330(1)30(2)	R60DI4330(1)30(2)
63	40	3.3	9.0	12.5	18.0	15.0	2.5	315	60DI4330(1)L0(2)	R60DI4330(1)L0(2)
63	40	4.7	8.5	14.5	18.0	15.0	2.5	315	60DI4470(1)30(2)	R60DI4470(1)30(2)
63	40	4.7	13.0	12.0	18.0	15.0	2.5	315	60DI4470(1)L0(2)	R60DI4470(1)L0(2)
63	40	6.8	10.0	16.0	18.0	15.0	2.5	315	60DI4680(1)30(2)	R60DI4680(1)30(2)
63	40	3.3	6.0	15.0	26.5	22.5	1.5	189	60DN4330(1)30(2)	R60DN4330(1)30(2)
63	40	4.7	7.0	16.0	26.5	22.5	1.5	189	60DN4470(1)30(2)	R60DN4470(1)30(2)
63	40	6.8	7.0	16.0	26.5	22.5	1.5	189	60DN4680(1)30(2)	R60DN4680(1)30(2)
63	40	10.0	8.5	17.0	26.5	22.5	1.5	189	60DN5100(1)30(2)	R60DN5100(1)30(2)
63	40	15.0	11.0	20.0	26.5	22.5	1.5	189	60DN5150(1)30(2)	R60DN5150(1)30(2)
63	40	10.0	9.0	17.0	32.0	27.5	1.0	126	60DR5100(1)30(2)	R60DR5100(1)30(2)
63	40	15.0	11.0	20.0	32.0	27.5	1.0	126	60DR5150(1)30(2)	R60DR5150(1)30(2)
63	40	22.0	13.0	22.0	32.0	27.5	1.0	126	60DR5220(1)30(2)	R60DR5220(1)30(2)
63	40	33.0	18.0	33.0	32.0	27.5	1.0	126	60DR5330(1)50(2)	R60DR5330(1)50(2)
63	40	47.0	22.0	37.0	32.0	27.5	1.0	126	60DR5470(1)50(2)	R60DR5470(1)50(2)
63	40	68.0	22.0	37.0	32.0	27.5	1.0	126	60DR5680(1)30(2)	R60DR5680(1)30(2)
63	40	22.0	11.0	22.0	41.5	37.5	0.8	101	60DW5220(1)30(2)	R60DW5220(1)30(2)
63	40	33.0	13.0	24.0	41.5	37.5	0.8	101	60DW5330(1)50(2)	R60DW5330(1)50(2)
63	40	47.0	16.0	28.5	41.5	37.5	0.8	101	60DW5470(1)50(2)	R60DW5470(1)50(2)
63	40	68.0	19.0	32.0	41.5	37.5	0.8	101	60DW5680(1)30(2)	R60DW5680(1)30(2)
63	40	100.0	20.0	40.0	41.5	37.5	0.8	101	60DW6100(1)50(2)	R60DW6100(1)50(2)
100	63	0.33	5.0	11.0	18.0	15.0	3.0	600	60EI3330(1)30(2)	R60EI3330(1)30(2)
100	63	0.47	5.0	11.0	18.0	15.0	3.0	600	60EI3470(1)30(2)	R60EI3470(1)30(2)
100	63	0.68	5.0	11.0	18.0	15.0	3.0	600	60EI3680(1)30(2)	R60EI3680(1)30(2)
100	63	1.0	5.0	11.0	18.0	15.0	3.0	600	60EI4100(1)30(2)	R60EI4100(1)30(2)
100	63	1.5	7.5	13.5	18.0	15.0	3.0	600	60EI4150(1)30(2)	R60EI4150(1)30(2)
100	63	2.2	8.5	14.5	18.0	15.0	3.0	600	60EI4220(1)30(2)	R60EI4220(1)30(2)
100	63	2.2	9.0	12.5	18.0	15.0	3.0	600	60EI4220(1)L0(2)	R60EI4220(1)L0(2)
100	63	3.3	10.0	16.0	18.0	15.0	3.0	600	60EI4330(1)30(2)	R60EI4330(1)30(2)
100	63	3.3	13.0	12.0	18.0	15.0	3.0	600	60EI4330(1)L0(2)	R60EI4330(1)L0(2)
100	63	4.7	11.0	19.0	18.0	15.0	3.0	600	60EI4470(1)30(2)	R60EI4470(1)30(2)
100	63	1.5	6.0	15.0	26.5	22.5	2.0	400	60EN4150(1)30(2)	R60EN4150(1)30(2)
100	63	2.2	6.0	15.0	26.5	22.5	2.0	400	60EN4220(1)30(2)	R60EN4220(1)30(2)
100	63	3.3	7.0	16.0	26.5	22.5	2.0	400	60EN4330(1)30(2)	R60EN4330(1)30(2)
100	63	4.7	8.5	17.0	26.5	22.5	2.0	400	60EN4470(1)30(2)	R60EN4470(1)30(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Table 1B – Ratings & Part Number Reference (Wound Capacitor Technology) cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing	dV/dt (V/µs)	Maximum K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
100	63	6.8	10.0	18.5	26.5	22.5	2.0	400	60EN4680(1)30(2)	R60EN4680(1)30(2)
100	63	10.0	13.0	22.0	26.5	22.5	2.0	400	60EN5100(1)30(2)	R60EN5100(1)30(2)
100	63	4.7	9.0	17.0	32.0	27.5	1.5	300	60ER4470(1)30(2)	R60ER4470(1)30(2)
100	63	6.8	9.0	17.0	32.0	27.5	1.5	300	60ER4680(1)30(2)	R60ER4680(1)30(2)
100	63	10.0	9.0	17.0	32.0	27.5	1.5	300	60ER5100(1)40(2)	R60ER5100(1)40(2)
100	63	15.0	11.0	20.0	32.0	27.5	1.5	300	60ER5150(1)40(2)	R60ER5150(1)40(2)
100	63	22.0	13.0	22.0	32.0	27.5	1.5	300	60ER5220(1)40(2)	R60ER5220(1)40(2)
100	63	33.0	14.0	28.0	32.0	27.5	1.5	300	60ER5330(1)40(2)	R60ER5330(1)40(2)
100	63	47.0	18.0	33.0	32.0	27.5	1.5	300	60ER5470(1)40(2)	R60ER5470(1)40(2)
100	63	68.0	22.0	37.0	32.0	27.5	1.5	300	60ER5680(1)00(2)	R60ER5680(1)00(2)
100	63	15.0	11.0	22.0	41.5	37.5	1.0	200	60EW5150(1)40(2)	R60EW5150(1)40(2)
100	63	22.0	11.0	22.0	41.5	37.5	1.0	200	60EW5220(1)40(2)	R60EW5220(1)40(2)
100	63	33.0	13.0	24.0	41.5	37.5	1.0	200	60EW5330(1)40(2)	R60EW5330(1)40(2)
100	63	47.0	16.0	28.5	41.5	37.5	1.0	200	60EW5470(1)40(2)	R60EW5470(1)40(2)
100	63	68.0	19.0	32.0	41.5	37.5	1.0	200	60EW5680(1)50(2)	R60EW5680(1)50(2)
100	63	100.0	20.0	40.0	41.5	37.5	1.0	200	60EW6100(1)00(2)	R60EW6100(1)00(2)
100	63	150.0	24.0	44.0	41.5	37.5	1.0	200	60EW6150(1)00(2)	R60EW6150(1)00(2)
160	90	0.33	5.0	11.0	18.0	15.0	9.0	2880	60GI3330(1)30(2)	R60GI3330(1)30(2)
160	90	0.47	5.0	11.0	18.0	15.0	9.0	2880	60GI3470(1)30(2)	R60GI3470(1)30(2)
160	90	0.68	5.0	11.0	18.0	15.0	9.0	2880	60GI3680(1)30(2)	R60GI3680(1)30(2)
160	90	1.0	7.5	13.5	18.0	15.0	9.0	2880	60GI4100(1)30(2)	R60GI4100(1)30(2)
160	90	1.5	8.5	14.5	18.0	15.0	9.0	2880	60GI4150(1)30(2)	R60GI4150(1)30(2)
160	90	1.5	9.0	12.5	18.0	15.0	9.0	2880	60GI4150(1)L0(2)	R60GI4150(1)L0(2)
160	90	2.2	10.0	16.0	18.0	15.0	9.0	2880	60GI4220(1)30(2)	R60GI4220(1)30(2)
160	90	2.2	13.0	12.0	18.0	15.0	9.0	2880	60GI4220(1)L0(2)	R60GI4220(1)L0(2)
160	90	3.3	11.0	19.0	18.0	15.0	9.0	2880	60GI4330(1)30(2)	R60GI4330(1)30(2)
160	90	1.5	6.0	15.0	26.5	22.5	5.5	1760	60GN4150(1)30(2)	R60GN4150(1)30(2)
160	90	2.2	7.0	16.0	26.5	22.5	5.5	1760	60GN4220(1)30(2)	R60GN4220(1)30(2)
160	90	3.3	8.5	17.0	26.5	22.5	5.5	1760	60GN4330(1)30(2)	R60GN4330(1)30(2)
160	90	4.7	11.0	20.0	26.5	22.5	5.5	1760	60GN4470(1)30(2)	R60GN4470(1)30(2)
160	90	6.8	13.0	22.0	26.5	22.5	5.5	1760	60GN4680(1)30(2)	R60GN4680(1)30(2)
160	90	3.3	9.0	17.0	32.0	27.5	3.0	960	60GR4330(1)30(2)	R60GR4330(1)30(2)
160	90	4.7	9.0	17.0	32.0	27.5	3.0	960	60GR4470(1)30(2)	R60GR4470(1)30(2)
160	90	6.8	9.0	17.0	32.0	27.5	3.0	960	60GR4680(1)40(2)	R60GR4680(1)40(2)
160	90	10.0	9.0	17.0	32.0	27.5	3.0	960	60GR5100(1)40(2)	R60GR5100(1)40(2)
160	90	15.0	11.0	20.0	32.0	27.5	3.0	960	60GR5150(1)40(2)	R60GR5150(1)40(2)
160	90	22.0	13.0	22.0	32.0	27.5	3.0	960	60GR5220(1)40(2)	R60GR5220(1)40(2)
160	90	33.0	14.0	28.0	32.0	27.5	3.0	960	60GR5330(1)00(2)	R60GR5330(1)00(2)
160	90	47.0	18.0	33.0	32.0	27.5	3.0	960	60GR5470(1)00(2)	R60GR5470(1)00(2)
160	90	68.0	22.0	37.0	32.0	27.5	3.0	960	60GR5680(1)00(2)	R60GR5680(1)00(2)
160	90	10.0	11.0	22.0	41.5	37.5	2.0	640	60GW5100(1)30(2)	R60GW5100(1)30(2)
160	90	15.0	11.0	22.0	41.5	37.5	2.0	640	60GW5150(1)40(2)	R60GW5150(1)40(2)
160	90	22.0	11.0	22.0	41.5	37.5	2.0	640	60GW5220(1)40(2)	R60GW5220(1)40(2)
160	90	33.0	13.0	24.0	41.5	37.5	2.0	640	60GW5330(1)40(2)	R60GW5330(1)40(2)
160	90	47.0	16.0	28.5	41.5	37.5	2.0	640	60GW5470(1)40(2)	R60GW5470(1)40(2)
160	90	68.00	19.0	32.0	41.5	37.5	2.0	640	60GW5680(1)00(2)	R60GW5680(1)00(2)
160	90	100.00	20.0	40.0	41.5	37.5	2.0	640	60GW6100(1)00(2)	R60GW6100(1)00(2)
160	90	150.00	30.0	45.0	41.5	37.5	2.0	640	60GW6150(1)00(2)	R60GW6150(1)00(2)
250	160	0.10	5.0	11.0	18.0	15.0	12.0	6000	60II3100(1)30(2)	R60II3100(1)30(2)
250	160	0.15	5.0	11.0	18.0	15.0	12.0	6000	60II3150(1)30(2)	R60II3150(1)30(2)
250	160	0.22	5.0	11.0	18.0	15.0	12.0	6000	60II3220(1)30(2)	R60II3220(1)30(2)
250	160	0.33	5.0	11.0	18.0	15.0	12.0	6000	60II3330(1)30(2)	R60II3330(1)30(2)
250	160	0.47	6.0	12.0	18.0	15.0	12.0	6000	60II3470(1)30(2)	R60II3470(1)30(2)
250	160	0.68	7.5	13.5	18.0	15.0	12.0	6000	60II3680(1)30(2)	R60II3680(1)30(2)
250	160	0.68	9.0	12.5	18.0	15.0	12.0	6000	60II3680(1)L0(2)	R60II3680(1)L0(2)
250	160	1.0	8.5	14.5	18.0	15.0	12.0	6000	60II4100(1)30(2)	R60II4100(1)30(2)
250	160	1.0	13.0	12.0	18.0	15.0	12.0	6000	60II4100(1)L0(2)	R60II4100(1)L0(2)
250	160	1.5	10.0	16.0	18.0	15.0	12.0	6000	60II4150(1)30(2)	R60II4150(1)30(2)
250	160	0.47	6.0	15.0	26.5	22.5	8.0	4000	60IN3470(1)30(2)	R60IN3470(1)30(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Table 1B – Ratings & Part Number Reference (Wound Capacitor Technology) cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing	dV/dt (V/µs)	Maximum K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
250	160	0.68	6.0	15.0	26.5	22.5	8.0	4000	60IN3680(1)30(2)	R60IN3680(1)30(2)
250	160	1.0	6.0	15.0	26.5	22.5	8.0	4000	60IN4100(1)30(2)	R60IN4100(1)30(2)
250	160	1.5	7.0	16.0	26.5	22.5	8.0	4000	60IN4150(1)30(2)	R60IN4150(1)30(2)
250	160	2.2	10.0	18.5	26.5	22.5	8.0	4000	60IN4220(1)30(2)	R60IN4220(1)30(2)
250	160	3.3	11.0	20.0	26.5	22.5	8.0	4000	60IN4330(1)30(2)	R60IN4330(1)30(2)
250	160	1.5	9.0	17.0	32.0	27.5	5.0	2500	60IR4150(1)30(2)	R60IR4150(1)30(2)
250	160	2.2	9.0	17.0	32.0	27.5	5.0	2500	60IR4220(1)30(2)	R60IR4220(1)30(2)
250	160	3.3	9.0	17.0	32.0	27.5	5.0	2500	60IR4330(1)40(2)	R60IR4330(1)40(2)
250	160	4.7	9.0	17.0	32.0	27.5	5.0	2500	60IR4470(1)40(2)	R60IR4470(1)40(2)
250	160	6.8	11.0	20.0	32.0	27.5	5.0	2500	60IR4680(1)40(2)	R60IR4680(1)40(2)
250	160	10.0	13.0	22.0	32.0	27.5	5.0	2500	60IR5100(1)40(2)	R60IR5100(1)40(2)
250	160	15.0	14.0	28.0	32.0	27.5	5.0	2500	60IR5150(1)40(2)	R60IR5150(1)40(2)
250	160	22.0	18.0	33.0	32.0	27.5	5.0	2500	60IR5220(1)00(2)	R60IR5220(1)00(2)
250	160	33.0	22.0	37.0	32.0	27.5	5.0	2500	60IR5330(1)00(2)	R60IR5330(1)00(2)
250	160	4.7	11.0	22.0	41.5	37.5	4.0	2000	60IW4470(1)30(2)	R60IW4470(1)30(2)
250	160	6.8	11.0	22.0	41.5	37.5	4.0	2000	60IW4680(1)40(2)	R60IW4680(1)40(2)
250	160	10.0	11.0	22.0	41.5	37.5	4.0	2000	60IW5100(1)40(2)	R60IW5100(1)40(2)
250	160	15.0	13.0	24.0	41.5	37.5	4.0	2000	60IW5150(1)40(2)	R60IW5150(1)40(2)
250	160	22.0	16.0	28.5	41.5	37.5	4.0	2000	60IW5220(1)40(2)	R60IW5220(1)40(2)
250	160	33.0	19.0	32.0	41.5	37.5	4.0	2000	60IW5330(1)40(2)	R60IW5330(1)40(2)
250	160	47.0	20.0	40.0	41.5	37.5	4.0	2000	60IW5470(1)00(2)	R60IW5470(1)00(2)
250	160	68.0	24.0	44.0	41.5	37.5	4.0	2000	60IW5680(1)00(2)	R60IW5680(1)00(2)
400	200	0.015	4.0	9.0	13.0	10.0	30.0	24000	60MF2150(1)30(2)	R60MF2150(1)30(2)
400	200	0.022	4.0	9.0	13.0	10.0	30.0	24000	60MF2220(1)30(2)	R60MF2220(1)30(2)
400	200	0.033	4.0	9.0	13.0	10.0	30.0	24000	60MF2330(1)30(2)	R60MF2330(1)30(2)
400	200	0.047	4.0	9.0	13.0	10.0	30.0	24000	60MF2470(1)30(2)	R60MF2470(1)30(2)
400	200	0.068	4.0	9.0	13.0	10.0	30.0	24000	60MF2680(1)40(2)	R60MF2680(1)40(2)
400	200	0.068	5.0	11.0	13.0	10.0	30.0	24000	60MF2680(1)30(2)	R60MF2680(1)30(2)
400	200	0.10	5.0	11.0	13.0	10.0	30.0	24000	60MF3100(1)40(2)	R60MF3100(1)40(2)
400	200	0.10	6.0	12.0	13.0	10.0	30.0	24000	60MF3100(1)30(2)	R60MF3100(1)30(2)
400	200	0.15	6.0	12.0	13.0	10.0	30.0	24000	60MF3150(1)30(2)	R60MF3150(1)30(2)
400	200	0.022	5.0	11.0	18.0	15.0	20.0	16000	60MI2220(1)30(2)	R60MI2220(1)30(2)
400	200	0.047	5.0	11.0	18.0	15.0	20.0	16000	60MI2470(1)30(2)	R60MI2470(1)30(2)
400	200	0.068	5.0	11.0	18.0	15.0	20.0	16000	60MI2680(1)30(2)	R60MI2680(1)30(2)
400	200	0.10	5.0	11.0	18.0	15.0	20.0	16000	60MI3100(1)30(2)	R60MI3100(1)30(2)
400	200	0.15	5.0	11.0	18.0	15.0	20.0	16000	60MI3150(1)30(2)	R60MI3150(1)30(2)
400	200	0.22	5.0	11.0	18.0	15.0	20.0	16000	60MI3220(1)40(2)	R60MI3220(1)40(2)
400	200	0.22	6.0	12.0	18.0	15.0	20.0	16000	60MI3220(1)30(2)	R60MI3220(1)30(2)
400	200	0.33	7.5	13.5	18.0	15.0	20.0	16000	60MI3330(1)30(2)	R60MI3330(1)30(2)
400	200	0.33	9.0	12.5	18.0	15.0	20.0	16000	60MI3330(1)L0(2)	R60MI3330(1)L0(2)
400	200	0.47	7.5	13.5	18.0	15.0	20.0	16000	60MI3470(1)40(2)	R60MI3470(1)40(2)
400	200	0.47	8.5	14.5	18.0	15.0	20.0	16000	60MI3470(1)30(2)	R60MI3470(1)30(2)
400	200	0.47	9.0	12.5	18.0	15.0	20.0	16000	60MI3470(1)L1(2)	R60MI3470(1)L1(2)
400	200	0.47	13.0	12.0	18.0	15.0	20.0	16000	60MI3470(1)L0(2)	R60MI3470(1)L0(2)
400	200	0.68	10.0	16.0	18.0	15.0	20.0	16000	60MI3680(1)40(2)	R60MI3680(1)40(2)
400	200	0.68	11.0	19.0	18.0	15.0	20.0	16000	60MI3680(1)30(2)	R60MI3680(1)30(2)
400	200	0.68	13.0	12.0	18.0	15.0	20.0	16000	60MI3680(1)L0(2)	R60MI3680(1)L0(2)
400	200	1.0	11.0	19.0	18.0	15.0	20.0	16000	60MI4100(1)30(2)	R60MI4100(1)30(2)
400	200	0.22	6.0	15.0	26.5	22.5	10.0	8000	60MN3220(1)30(2)	R60MN3220(1)30(2)
400	200	0.33	6.0	15.0	26.5	22.5	10.0	8000	60MN3330(1)30(2)	R60MN3330(1)30(2)
400	200	0.47	6.0	15.0	26.5	22.5	10.0	8000	60MN3470(1)30(2)	R60MN3470(1)30(2)
400	200	0.68	6.0	15.0	26.5	22.5	10.0	8000	60MN3680(1)40(2)	R60MN3680(1)40(2)
400	200	0.68	7.0	16.0	26.5	22.5	10.0	8000	60MN3680(1)30(2)	R60MN3680(1)30(2)
400	200	1.0	8.5	17.0	26.5	22.5	10.0	8000	60MN4100(1)40(2)	R60MN4100(1)40(2)
400	200	1.0	10.0	18.5	26.5	22.5	10.0	8000	60MN4100(1)30(2)	R60MN4100(1)30(2)
400	200	1.5	10.0	18.5	26.5	22.5	10.0	8000	60MN4150(1)40(2)	R60MN4150(1)40(2)
400	200	1.5	11.0	20.0	26.5	22.5	10.0	8000	60MN4150(1)30(2)	R60MN4150(1)30(2)
400	200	2.2	13.0	22.0	26.5	22.5	10.0	8000	60MN4220(1)30(2)	R60MN4220(1)30(2)
400	200	0.68	9.0	17.0	32.0	27.5	8.5	6800	60MR3680(1)30(2)	R60MR3680(1)30(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Table 1B – Ratings & Part Number Reference (Wound Capacitor Technology) cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing	dV/dt (V/µs)	Maximum K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
400	200	1.0	9.0	17.0	32.0	27.5	8.5	6800	60MR4100(1)30(2)	R60MR4100(1)30(2)
400	200	1.5	9.0	17.0	32.0	27.5	8.5	6800	60MR4150(1)40(2)	R60MR4150(1)40(2)
400	200	2.2	11.0	20.0	32.0	27.5	8.5	6800	60MR4220(1)40(2)	R60MR4220(1)40(2)
400	200	3.3	13.0	22.0	32.0	27.5	8.5	6800	60MR4330(1)40(2)	R60MR4330(1)40(2)
400	200	4.7	14.0	28.0	32.0	27.5	8.5	6800	60MR4470(1)40(2)	R60MR4470(1)40(2)
400	200	6.8	18.0	33.0	32.0	27.5	8.5	6800	60MR4680(1)40(2)	R60MR4680(1)40(2)
400	200	10.0	22.0	37.0	32.0	27.5	8.5	6800	60MR5100(1)40(2)	R60MR5100(1)40(2)
400	200	3.3	11.0	22.0	41.5	37.5	6.0	4800	60MW4330(1)30(2)	R60MW4330(1)30(2)
400	200	4.7	11.0	22.0	41.5	37.5	6.0	4800	60MW4470(1)40(2)	R60MW4470(1)40(2)
400	200	6.8	13.0	24.0	41.5	37.5	6.0	4800	60MW4680(1)40(2)	R60MW4680(1)40(2)
400	200	10.0	16.0	28.5	41.5	37.5	6.0	4800	60MW5100(1)40(2)	R60MW5100(1)40(2)
400	200	15.0	24.0	44.0	41.5	37.5	6.0	4800	60MW5150(1)30(2)	R60MW5150(1)30(2)
400	200	22.0	24.0	44.0	41.5	37.5	6.0	4800	60MW5220(1)40(2)	R60MW5220(1)40(2)
400	200	33.0	30.0	45.0	41.5	37.5	6.0	4800	60MW5330(1)40(2)	R60MW5330(1)40(2)
630	220	0.0047	4.0	9.0	13.0	10.0	40.0	50400	60PF1470(1)30(2)	R60PF1470(1)30(2)
630	220	0.0068	4.0	9.0	13.0	10.0	40.0	50400	60PF1680(1)30(2)	R60PF1680(1)30(2)
630	220	0.010	4.0	9.0	13.0	10.0	40.0	50400	60PF2100(1)30(2)	R60PF2100(1)30(2)
630	220	0.015	4.0	9.0	13.0	10.0	40.0	50400	60PF2150(1)30(2)	R60PF2150(1)30(2)
630	220	0.022	4.0	9.0	13.0	10.0	40.0	50400	60PF2220(1)40(2)	R60PF2220(1)40(2)
630	220	0.022	5.0	11.0	13.0	10.0	40.0	50400	60PF2220(1)30(2)	R60PF2220(1)30(2)
630	220	0.033	5.0	11.0	13.0	10.0	40.0	50400	60PF2330(1)40(2)	R60PF2330(1)40(2)
630	220	0.033	6.0	12.0	13.0	10.0	40.0	50400	60PF2330(1)30(2)	R60PF2330(1)30(2)
630	220	0.047	6.0	12.0	13.0	10.0	40.0	50400	60PF2470(1)30(2)	R60PF2470(1)30(2)
630	220	0.033	5.0	11.0	18.0	15.0	25.0	31500	60PI2330(1)30(2)	R60PI2330(1)30(2)
630	220	0.047	5.0	11.0	18.0	15.0	25.0	31500	60PI2470(1)30(2)	R60PI2470(1)30(2)
630	220	0.068	5.0	11.0	18.0	15.0	25.0	31500	60PI2680(1)40(2)	R60PI2680(1)40(2)
630	220	0.068	6.0	12.0	18.0	15.0	25.0	31500	60PI2680(1)30(2)	R60PI2680(1)30(2)
630	220	0.10	6.0	12.0	18.0	15.0	25.0	31500	60PI3100(1)40(2)	R60PI3100(1)40(2)
630	220	0.10	7.5	13.5	18.0	15.0	25.0	31500	60PI3100(1)30(2)	R60PI3100(1)30(2)
630	220	0.10	9.0	12.5	18.0	15.0	25.0	31500	60PI3100(1)L0(2)	R60PI3100(1)L0(2)
630	220	0.15	7.5	13.5	18.0	15.0	25.0	31500	60PI3150(1)40(2)	R60PI3150(1)40(2)
630	220	0.15	8.5	14.5	18.0	15.0	25.0	31500	60PI3150(1)30(2)	R60PI3150(1)30(2)
630	220	0.22	8.5	14.5	18.0	15.0	25.0	31500	60PI3220(1)40(2)	R60PI3220(1)40(2)
630	220	0.22	10.0	16.0	18.0	15.0	25.0	31500	60PI3220(1)30(2)	R60PI3220(1)30(2)
630	220	0.33	10.0	16.0	18.0	15.0	25.0	31500	60PI3330(1)30(2)	R60PI3330(1)30(2)
630	220	0.10	6.0	15.0	26.5	22.5	12.0	15120	60PN3100(1)30(2)	R60PN3100(1)30(2)
630	220	0.15	6.0	15.0	26.5	22.5	12.0	15120	60PN3150(1)30(2)	R60PN3150(1)30(2)
630	220	0.22	6.0	15.0	26.5	22.5	12.0	15120	60PN3220(1)40(2)	R60PN3220(1)40(2)
630	220	0.22	7.0	16.0	26.5	22.5	12.0	15120	60PN3220(1)30(2)	R60PN3220(1)30(2)
630	220	0.33	7.0	16.0	26.5	22.5	12.0	15120	60PN3330(1)50(2)	R60PN3330(1)50(2)
630	220	0.33	8.5	17.0	26.5	22.5	12.0	15120	60PN3330(1)40(2)	R60PN3330(1)40(2)
630	220	0.33	10.0	18.5	26.5	22.5	12.0	15120	60PN3330(1)30(2)	R60PN3330(1)30(2)
630	220	0.47	10.0	18.5	26.5	22.5	12.0	15120	60PN3470(1)40(2)	R60PN3470(1)40(2)
630	220	0.47	11.0	20.0	26.5	22.5	12.0	15120	60PN3470(1)30(2)	R60PN3470(1)30(2)
630	220	0.68	11.0	20.0	26.5	22.5	12.0	15120	60PN3680(1)40(2)	R60PN3680(1)40(2)
630	220	0.68	13.0	22.0	26.5	22.5	12.0	15120	60PN3680(1)30(2)	R60PN3680(1)30(2)
630	220	0.33	9.0	17.0	32.0	27.5	10.0	12600	60PR3330(1)30(2)	R60PR3330(1)30(2)
630	220	0.47	9.0	17.0	32.0	27.5	10.0	12600	60PR3470(1)40(2)	R60PR3470(1)40(2)
630	220	0.68	11.0	20.0	32.0	27.5	10.0	12600	60PR3680(1)40(2)	R60PR3680(1)40(2)
630	220	1.0	11.0	20.0	32.0	27.5	10.0	12600	60PR4100(1)50(2)	R60PR4100(1)50(2)
630	220	1.5	18.0	33.0	32.0	27.5	10.0	12600	60PR4150(1)30(2)	R60PR4150(1)30(2)
630	220	2.2	18.0	33.0	32.0	27.5	10.0	12600	60PR4220(1)40(2)	R60PR4220(1)40(2)
630	220	3.3	22.0	37.0	32.0	27.5	10.0	12600	60PR4330(1)40(2)	R60PR4330(1)40(2)
630	220	4.7	22.0	37.0	32.0	27.5	10.0	12600	60PR4470(1)40(2)	R60PR4470(1)40(2)
630	220	1.0	11.0	22.0	41.5	37.5	8.0	10080	60PW4100(1)30(2)	R60PW4100(1)30(2)
630	220	1.5	11.0	22.0	41.5	37.5	8.0	10080	60PW4150(1)40(2)	R60PW4150(1)40(2)
630	220	2.2	13.0	24.0	41.5	37.5	8.0	10080	60PW4220(1)40(2)	R60PW4220(1)40(2)
630	220	3.3	16.0	28.5	41.5	37.5	8.0	10080	60PW4330(1)40(2)	R60PW4330(1)40(2)
630	220	4.7	19.0	32.0	41.5	37.5	8.0	10080	60PW4470(1)40(2)	R60PW4470(1)40(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Table 1B – Ratings & Part Number Reference (Wound Capacitor Technology) cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing	dV/dt (V/µs)	Maximum K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
630	220	6.8	20.0	40.0	41.5	37.5	8.0	10080	60PW4680(1)00(2)	R60PW4680(1)00(2)
630	220	10.0	24.0	44.0	41.5	37.5	8.0	10080	60PW5100(1)40(2)	R60PW5100(1)40(2)
1000	250	0.0010	4.0	9.0	13.0	10.0	60.0	120000	60QF1100(1)01(2)	R60QF1100(1)01(2)
1000	250	0.0015	4.0	9.0	13.0	10.0	60.0	120000	60QF1150(1)01(2)	R60QF1150(1)01(2)
1000	250	0.0022	4.0	9.0	13.0	10.0	60.0	120000	60QF1220(1)01(2)	R60QF1220(1)01(2)
1000	250	0.0033	4.0	9.0	13.0	10.0	60.0	120000	60QF1330(1)01(2)	R60QF1330(1)01(2)
1000	250	0.0047	5.0	11.0	13.0	10.0	60.0	120000	60QF1470(1)01(2)	R60QF1470(1)01(2)
1000	250	0.0068	6.0	12.0	13.0	10.0	60.0	120000	60QF1680(1)01(2)	R60QF1680(1)01(2)
1000	250	0.010	5.0	11.0	18.0	15.0	30.0	60000	60QI2100(1)00(2)	R60QI2100(1)00(2)
1000	250	0.015	5.0	11.0	18.0	15.0	30.0	60000	60QI2150(1)30(2)	R60QI2150(1)30(2)
1000	250	0.022	6.0	12.0	18.0	15.0	30.0	60000	60QI2220(1)30(2)	R60QI2220(1)30(2)
1000	250	0.033	7.5	13.5	18.0	15.0	30.0	60000	60QI2330(1)30(2)	R60QI2330(1)30(2)
1000	250	0.033	9.0	12.5	18.0	15.0	30.0	60000	60QI2330(1)L0(2)	R60QI2330(1)L0(2)
1000	250	0.047	10.0	16.0	18.0	15.0	30.0	60000	60QI2470(1)00(2)	R60QI2470(1)00(2)
1000	250	0.047	13.0	12.0	18.0	15.0	30.0	60000	60QI2470(1)L0(2)	R60QI2470(1)L0(2)
1000	250	0.068	11.0	19.0	18.0	15.0	30.0	60000	60QI2680(1)00(2)	R60QI2680(1)00(2)
1000	250	0.033	6.0	15.0	26.5	22.5	15.0	30000	60QN2330(1)00(2)	R60QN2330(1)00(2)
1000	250	0.047	6.0	15.0	26.5	22.5	15.0	30000	60QN2470(1)00(2)	R60QN2470(1)00(2)
1000	250	0.068	7.0	16.0	26.5	22.5	15.0	30000	60QN2680(1)30(2)	R60QN2680(1)30(2)
1000	250	0.10	8.5	17.0	26.5	22.5	15.0	30000	60QN3100(1)30(2)	R60QN3100(1)30(2)
1000	250	0.15	13.0	22.0	26.5	22.5	15.0	30000	60QN3150(1)00(2)	R60QN3150(1)00(2)
1000	250	0.15	9.0	17.0	32.0	27.5	12.0	24000	60QR3150(1)30(2)	R60QR3150(1)30(2)
1000	250	0.22	9.0	17.0	32.0	27.5	12.0	24000	60QR3220(1)40(2)	R60QR3220(1)40(2)
1000	250	0.33	11.0	20.0	32.0	27.5	12.0	24000	60QR3330(1)40(2)	R60QR3330(1)40(2)
1000	250	0.47	13.0	22.0	32.0	27.5	12.0	24000	60QR3470(1)40(2)	R60QR3470(1)40(2)
1000	250	0.68	14.0	28.0	32.0	27.5	12.0	24000	60QR3680(1)40(2)	R60QR3680(1)40(2)
1000	250	1.0	18.0	33.0	32.0	27.5	12.0	24000	60QR4100(1)40(2)	R60QR4100(1)40(2)
1000	250	1.5	22.0	37.0	32.0	27.5	12.0	24000	60QR4150(1)40(2)	R60QR4150(1)40(2)
1000	250	0.5	11.0	22.0	41.5	37.5	10.0	20000	60QW3470(1)30(2)	R60QW3470(1)30(2)
1000	250	0.7	11.0	22.0	41.5	37.5	10.0	20000	60QW3680(1)40(2)	R60QW3680(1)40(2)
1000	250	1.0	13.0	24.0	41.5	37.5	10.0	20000	60QW4100(1)40(2)	R60QW4100(1)40(2)
1000	250	1.5	16.0	28.5	41.5	37.5	10.0	20000	60QW4150(1)40(2)	R60QW4150(1)40(2)
1000	250	2.2	19.0	32.0	41.5	37.5	10.0	20000	60QW4220(1)30(2)	R60QW4220(1)30(2)
1000	250	3.3	24.0	44.0	41.5	37.5	10.0	20000	60QW4330(1)00(2)	R60QW4330(1)00(2)
1000	250	4.7	30.0	45.0	41.5	37.5	10.0	20000	60QW4470(1)40(2)	R60QW4470(1)40(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Soldering Process

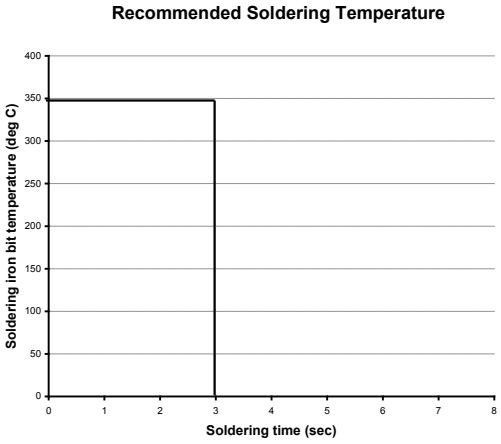
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

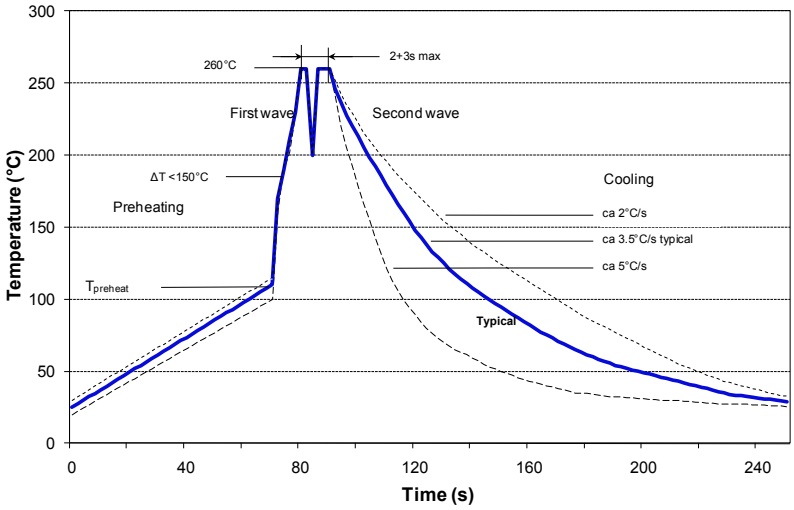
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

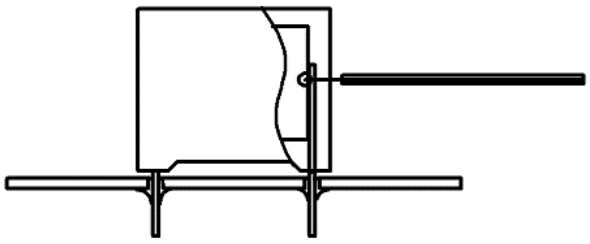
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



Temperature monitored inside the capacitor.

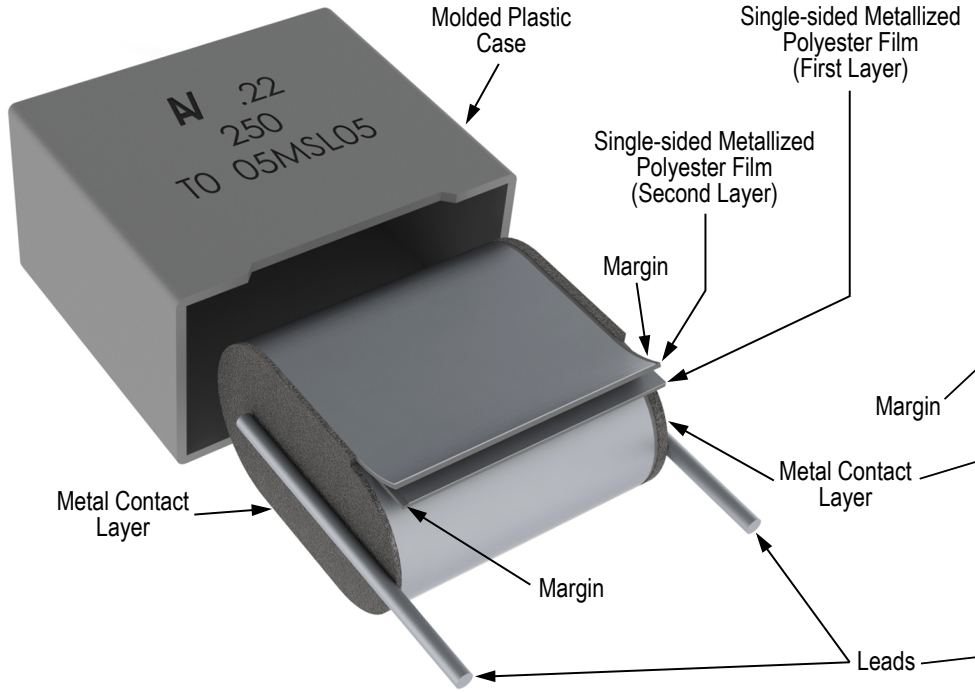
Selective Soldering Recommendations

Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

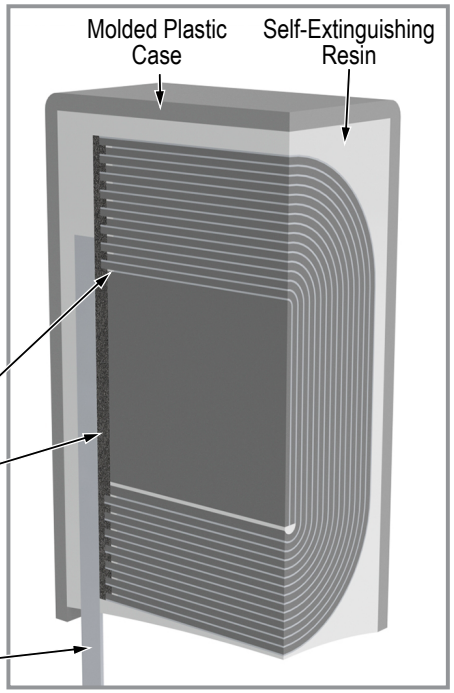
The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

Construction

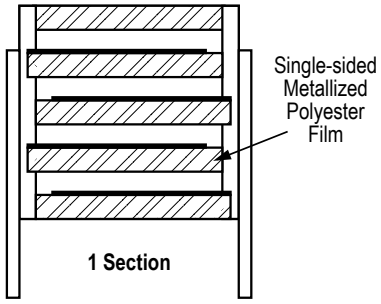
Wound



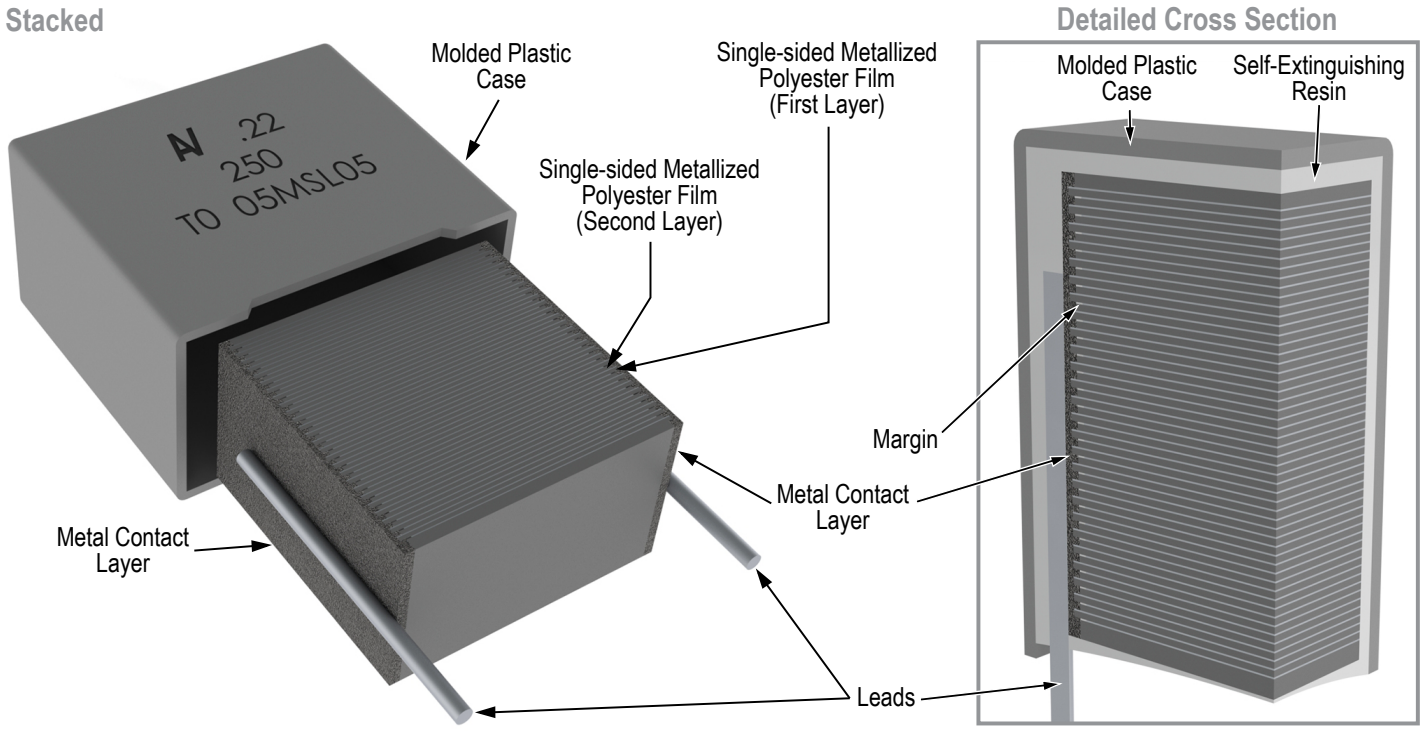
Detailed Cross Section



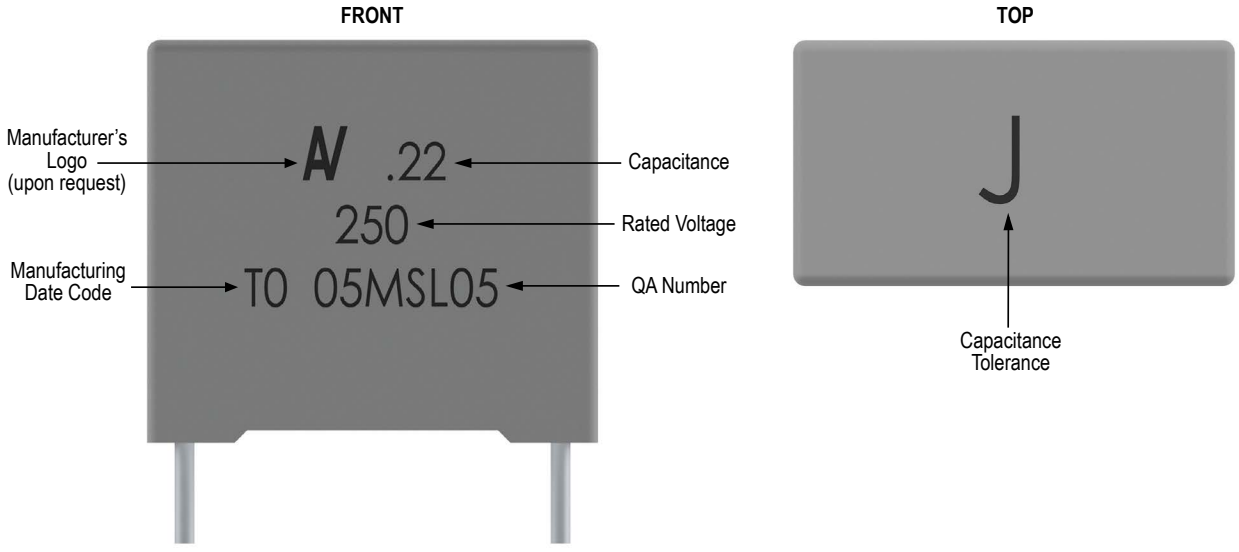
Winding Scheme



Construction cont'd



Marking



Packaging Quantities

Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Large Reel ø 500 mm	Ammo
10	4.0	9.0	13.0	2,000	1,800	750	1,500	1,000
	5.0	11.0	13.0	1,300	1,500	600	1,250	800
	6.0	12.0	13.0	1,000	1,200	500	1,000	680
15	5.0	11.0	18.0	2,000	1,000	600	1,250	800
	6.0	12.0	18.0	1,750	900	500	1,000	680
	7.5	13.5	18.0	1,000	700	350	800	500
	8.5	14.5	18.0	1,000	500	300	700	440
	9.0	12.5	18.0	1,000	520	270	650	410
	10.0	16.0	18.0	750	500	300	600	380
	11.0	19.0	18.0	450	350	-	500	340
	13.0	12.0	18.0	750	490	200	480	280
22.5	6.0	15.0	26.5	805	500		700	464
	7.0	16.0	26.5	700	500		550	380
	8.5	17.0	26.5	468	300		450	280
	10.0	18.5	26.5	396	300		350	235
	11.0	20.0	26.5	360	250		350	217
	13.0	22.0	26.5	300	200		300	–
27.5	9.0	17.0	32.0	816	408		450	
	11.0	20.0	32.0	560	336		350	
	13.0	22.0	32.0	480	288		300	
	14.0	28.0	32.0	352	176			
	18.0	33.0	32.0	256	128			
	22.0	37.0	32.0	168	112			
37.5	11.0	22.0	41.5	420	252			
	13.0	24.0	41.5	360	216			
	16.0	28.5	41.5	216	108			
	19.0	32.0	41.5	192	96			
	20.0	40.0	41.5	126	84			
	24.0	44.0	41.5	108	72			
	30.0	45.0	41.5	90	60			

Lead Taping & Packaging (IEC 60286–2)

Figure 1 – Lead Space 10 mm

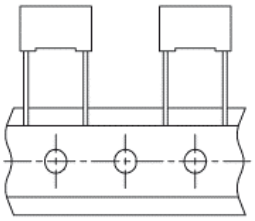


Figure 2 – Lead Spacing 15 mm

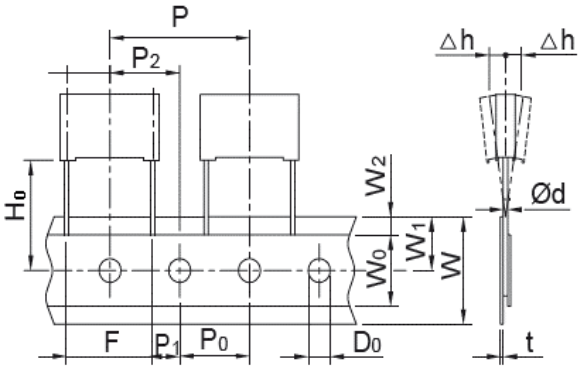
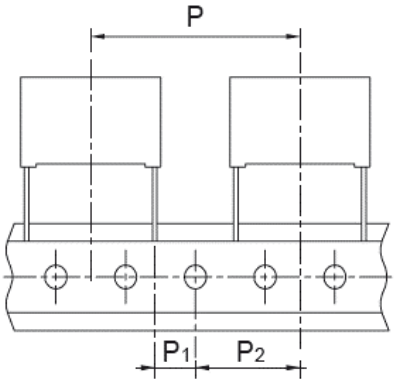


Figure 3 – Lead Spacing 22.5 & 27.5 mm



Description	Symbol	Dimensions (mm)				
		Lead Space				Tolerance
		10.0	15.0	22.5	27.5	
		Figure 1	Figure 2	Figure 3	Figure 3	
Lead wire diameter	d	0.6	0.6 - 0.8	0.8	0.8	± 0.05
Taping lead space	P	25.4	25.4	38.1	38.1	± 1
Feed hole lead space*	P_0	12.7	12.7	12.7	12.7	± 0.2 **
Centering of the lead wire	P_1	7.7	5.2	7.8	5.3	± 0.7
Centering of the body	P_2	12.7	12.7	19.05	19.05	± 1.3
Lead spacing***	F	10.0	15.0	22.5	27.5	+0.6 / -0.1
Component alignment	Δh	0	0	0	0	± 2
Height of component from tape center	H_0****	18.5	18.5	18.5	18.5	± 0.5
Carrier tape width	W	18	18	18	18	+1 / -0.5
Hold down tape width	W_0	9	10	10	10	min.
Hole position	W_1	9	9	9	9	± 0.5
Hold down tape position	W_2	3	3	3	3	max.
Feed hole diameter	D_0	4	4	4	4	± 0.2
Tape thickness	t	0.7	0.7	0.7	0.7	± 0.2

** Available also 15 mm.*

*** Maximum 1 mm on 20 lead spaces.*

**** Lead Spacing 15mm and 10mm taped to 7.5 mm (crimped leads) available upon request.*

***** H = 16.5 mm is available upon request.*

A50 Series Metallized Polyester Film, Axial, 50 – 1,000 VDC (Automotive Grade)

Overview

The A50 Series is constructed of metallized polyester film (wound technology) with axial leads of tinned wire. Axial leads are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated in polyester tape wrapping with thermosetting resin end filled.

Automotive grade devices are available and meet the demanding Automotive Electronics Council's AEC–Q200 qualification requirements.

Applications

Typical applications include blocking, coupling, decoupling, bypassing and interference suppression in low voltage applications such as automotive. Not suitable for across-the-line application (see Suppressor Capacitors).

Benefits

- Voltage range: 50 – 1,000 VDC
- Capacitance range: 0.001 – 10 µF
- Diameter: 5 – 22 mm
- Length 11 – 33 mm
- Capacitance tolerance: ±5%, ±10%, ±20%
- Climatic category: 55/105/56
- Operating temperature range of -55˚C to +105˚C
- RoHS Compliant and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–1
- Self-Healing
- Automotive (AEC–Q200) grades available



Part Number System

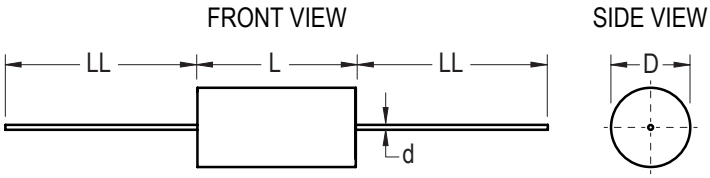
A50	C	F	3470	AA	00	J
Series	Rated Voltage (VDC)	Length (mm)	Capacitance Code (pF)	Packaging	Internal Use	Capacitance Tolerance
Metallized Polyester	C = 50 D = 63 E = 100 I = 250 M = 400 P = 630 Q = 1000	F = 11 H= 14 K = 20.5 Q = 28 T = 33	The last three digits represent significant figures. First digit specifies the number of zeros to be added.	See Ordering Options Table	00, 60 (Standard)	J = ±5% K = ±10% M = ±20%

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Ordering Options Table

Type of Leads and Packaging	LL/l Lead Length (mm)	Lead and Packaging Code
Standard Lead and Packaging Options		
Bulk (Bag) – Straight Leads	40 +/-5	AA
Tape & Reel (Standard Reel)	≥ 20	26

Dimensions – Millimeters



D		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
5.0	Maximum	11.0	Maximum	0.6	+/-0.05
5.0	Maximum	14.0	Maximum	0.6	+/-0.05
5.5	Maximum	14.0	Maximum	0.6	+/-0.05
6.0	Maximum	14.0	Maximum	0.6	+/-0.05
6.0	Maximum	20.5	Maximum	0.6	+/-0.05
6.5	Maximum	11.0	Maximum	0.6	+/-0.05
6.5	Maximum	20.5	Maximum	0.6	+/-0.05
6.5	Maximum	14.0	Maximum	0.6	+/-0.05
7.0	Maximum	14.0	Maximum	0.8	+/-0.05
7.0	Maximum	20.5	Maximum	0.8	+/-0.05
7.0	Maximum	28.0	Maximum	0.8	+/-0.05
7.5	Maximum	20.5	Maximum	0.8	+/-0.05
7.5	Maximum	14.0	Maximum	0.8	+/-0.05
8.0	Maximum	14.0	Maximum	0.8	+/-0.05
8.0	Maximum	20.5	Maximum	0.8	+/-0.05
8.0	Maximum	28.0	Maximum	0.8	+/-0.05
8.5	Maximum	20.5	Maximum	0.8	+/-0.05
8.5	Maximum	28.0	Maximum	0.8	+/-0.05
9.0	Maximum	20.5	Maximum	0.8	+/-0.05
9.0	Maximum	28.0	Maximum	0.8	+/-0.05
9.5	Maximum	20.5	Maximum	0.8	+/-0.05
9.5	Maximum	28.0	Maximum	0.8	+/-0.05

Note: See Ordering Options Table for lead length (LL/l) options.

D		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
10.0	Maximum	20.5	Maximum	0.8	+/-0.05
10.0	Maximum	33.0	Maximum	0.8	+/-0.05
10.0	Maximum	28.0	Maximum	0.8	+/-0.05
10.5	Maximum	33.0	Maximum	0.8	+/-0.05
10.5	Maximum	28.0	Maximum	0.8	+/-0.05
11.0	Maximum	28.0	Maximum	0.8	+/-0.05
11.0	Maximum	33.0	Maximum	0.8	+/-0.05
11.5	Maximum	33.0	Maximum	0.8	+/-0.05
12.0	Maximum	20.5	Maximum	0.8	+/-0.05
12.0	Maximum	33.0	Maximum	0.8	+/-0.05
12.5	Maximum	33.0	Maximum	0.8	+/-0.05
12.5	Maximum	28.0	Maximum	0.8	+/-0.05
13.0	Maximum	33.0	Maximum	0.8	+/-0.05
13.5	Maximum	33.0	Maximum	0.8	+/-0.05
14.5	Maximum	33.0	Maximum	0.8	+/-0.05
15.0	Maximum	33.0	Maximum	0.8	+/-0.05
15.5	Maximum	33.0	Maximum	0.8	+/-0.05
16.0	Maximum	33.0	Maximum	0.8	+/-0.05
17.5	Maximum	33.0	Maximum	1	+/-0.05
18.5	Maximum	33.0	Maximum	1	+/-0.05
19.0	Maximum	33.0	Maximum	1	+/-0.05
22.0	Maximum	33.0	Maximum	1	+/-0.05

Note: See Ordering Options Table for lead length (LL/l) options.

Performance Characteristics

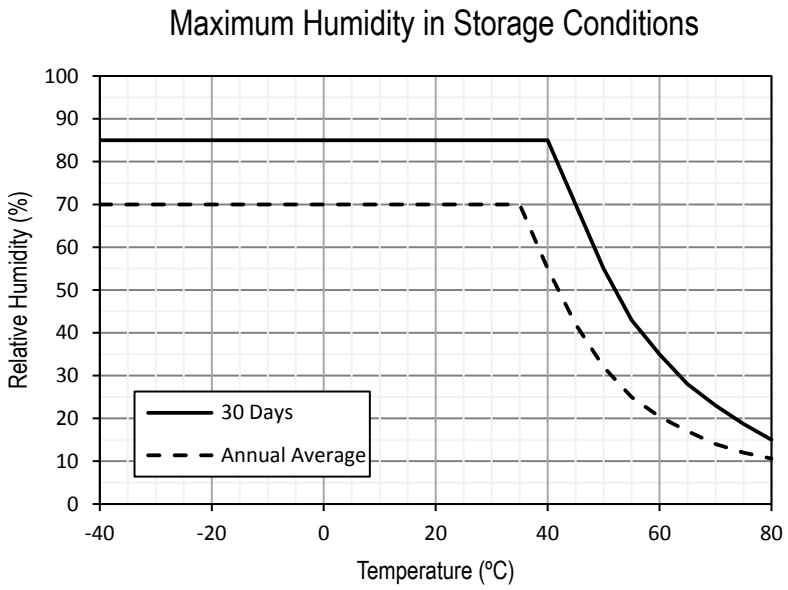
Dielectric	Polyester film (polyethylene terephthalate).						
Plates	Metal layer deposited by evaporation under vacum.						
Winding	Non-inductive type.						
Leads	Tinned wire.						
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.						
Related Documents	IEC 60384-2						
Rated Voltage V_R (VDC)	50	63	100	250	400	630	1000
Rated Voltage V_R (VAC)	30	40	63	160	200	220	250
Capacitance Range (µF)	0.47 – 10.0	0.33 – 10.0	0.1 – 10.0	0.047 – 10.0	0.01 – 3.3	0.001 – 1	0.001 – 0.47
Capacitance Values	E6 series (IEC 60063) measured @ 1 kHz and +20 ±1°C						
Capacitance Tolerance	±5%, ±10%, ±20%						
Operating Temperature Range	-55°C to 105°C						
Rated Temperature T_R	+85°C						
Voltage Derating	Above +85°C DC and AC voltage derating is 1.25%/°C						
Climatic Category	55/105/56 IEC 60068-1						
Storage Conditions	Storage time: ≤ 24 months from the date marked on the label package						
	Average relative humidity per year ≤ 70%						
	RH ≤ 85% for 30 days randomly distributed throughout the year						
	Dew is absent						
	Temperature: -40 to 80°C (see "Maximum Humidity in Storage Conditions" graph below)						
Test Voltage	1.6 x V_R VDC for 2 seconds (between terminations) @ +25°C ±5°C						
Capacitance Drift	Maximum 3% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%						
Reliability (Reference MIL-HDBK-217)	Operational life >200,000 hours						
	Failure rate ≤ 5 FIT, T = +40°C, V = 0.5 x V_R						
	Failure criteria: open or short circuit, cap. change > 10%, DF 2 times the catalog limits, IR < 0.005 x initial limit						
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp <V_R), the specified dv/dt can be multiplied by the factor V_R/Vpp						
Temperature Coefficient	+400 (±200)ppm/°C at 1 kHz						
Self Inductance (Lead Length ~ 2 mm)	Approximately 7 nH. Maximum 1nH per 1 mm lead and capacitor length.						

Performance Characteristics cont'd

Dissipation Factor tanδ	Measured at 25°C ±5°C			
	Frequency	C ≤ 0.1 µF	0.1 µF < C ≤ 1 µF	C > 1 µF
	1 kHz	0.80%	0.80%	1.00%
	10 kHz	1.50%	1.50%	–
	100 kHz	2.50%	–	–

Insulation Resistance	Measured @ +25°C ±5°C, according to IEC 60384–2		
	Minimum Values Between Terminals		
	Voltage Charge/Time	C ≤0.33 µF	C >0.33 µF
	50 VDC for V_R ≤100 VDC 1 minute	≥3,750 MΩ (≥50,000 MΩ)*	≥1,000 MΩ • µF (≥5,000 MΩ • µF)*
	100 VDC for V_R >100 VDC 1 minute	≥30,000 MΩ (≥50,000 MΩ)*	≥10,000 MΩ • µF (≥17,000 MΩ • µF)*

** typical value*

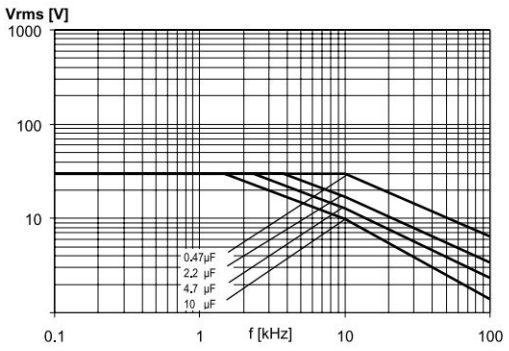


Qualification

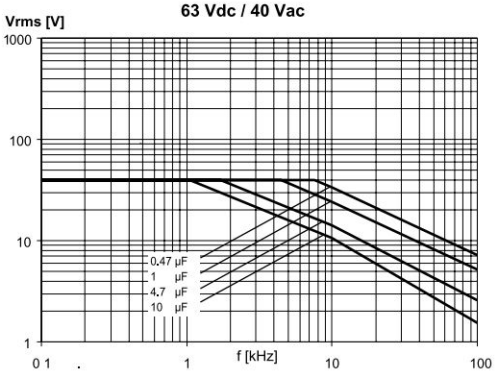
Automotive Grade products meet or exceed the requirements outlined by the Automotive Electronics Council. Details regarding test methods and conditions are referenced in document AEC–Q200, Stress Test Qualification for Passive Components. For additional information regarding the Automotive Electronics Council and AEC–Q200, please visit their website at www.aecouncil.com.

Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ +40ºC)

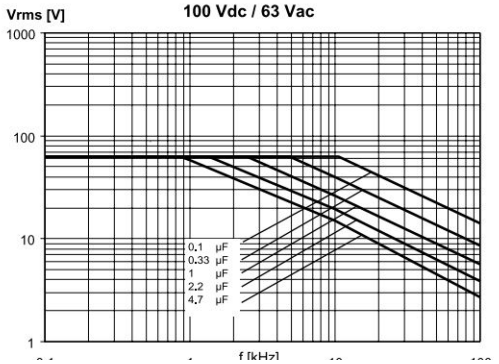
50 Vdc / 30 Vac



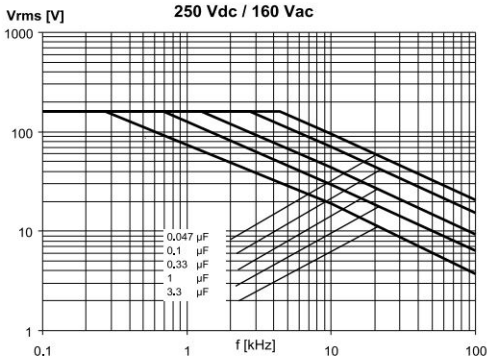
63 Vdc / 40 Vac



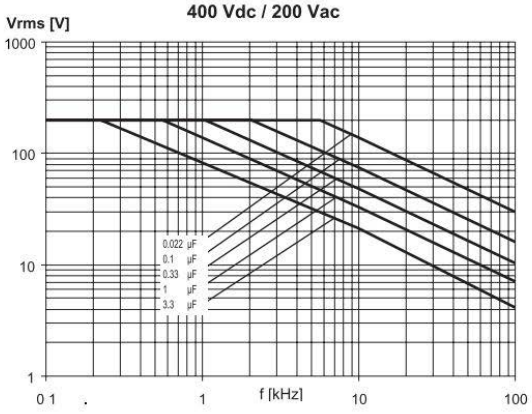
100 Vdc / 63 Vac



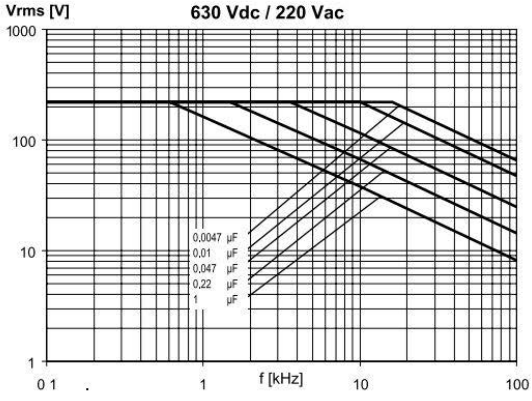
250 Vdc / 160 Vac



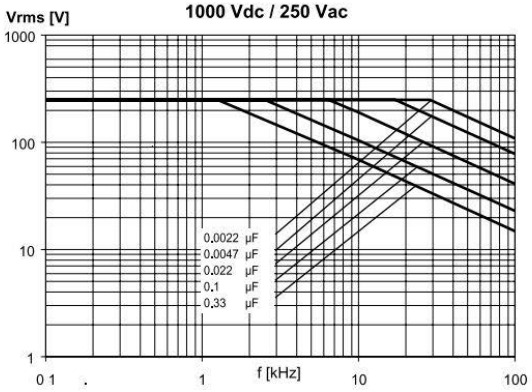
400 Vdc / 200 Vac



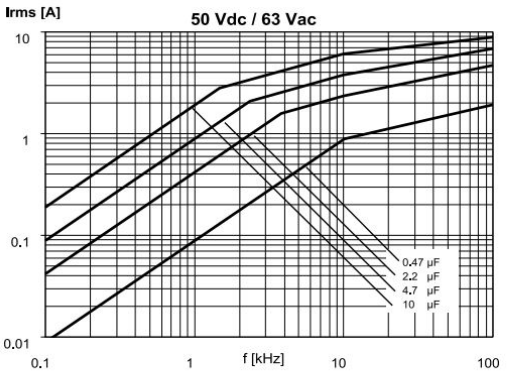
630 Vdc / 220 Vac

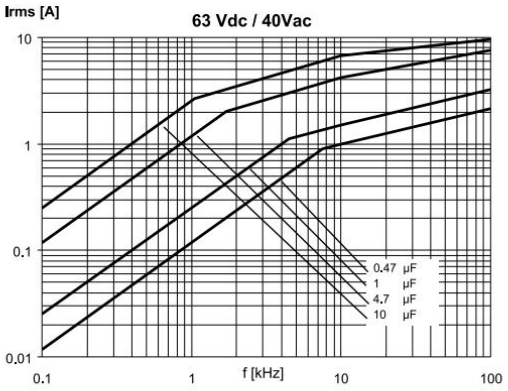


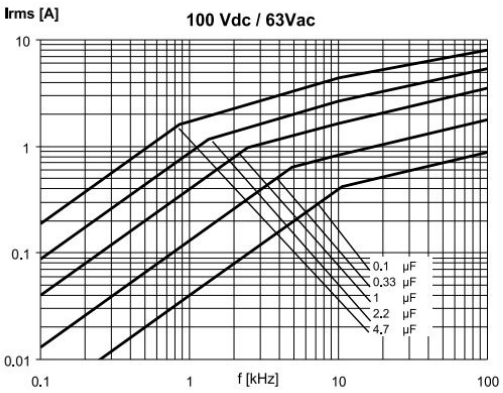
1000 Vdc / 250 Vac

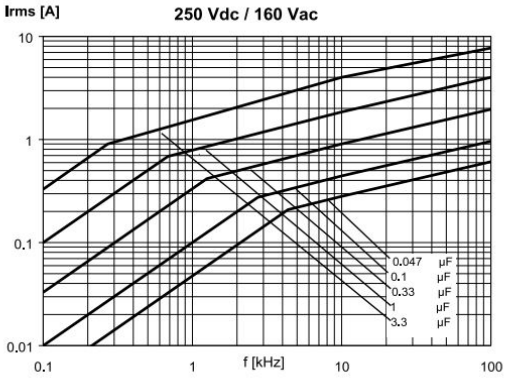


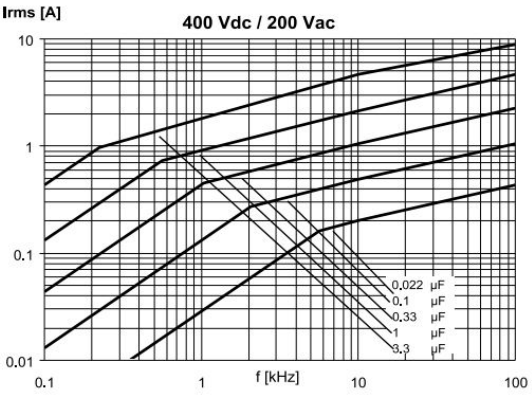
Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ +40ºC)

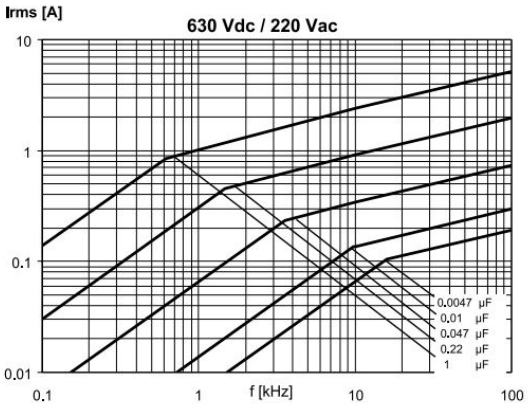


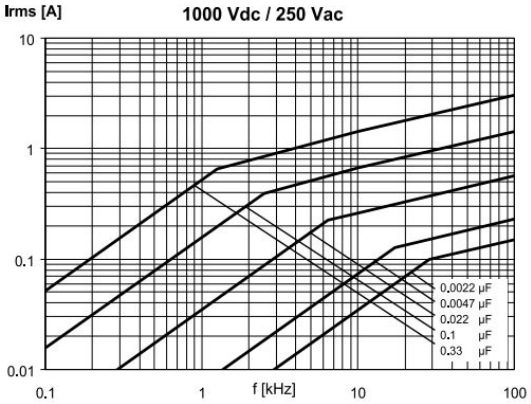












Environmental Test Data

Damp Heat, Steady State Test	Test Conditions:		Performances
	Temperature: Relative humidity (RH): Test duration:	+40°C ±2°C 93% ±2% 56 days	|Δ C/C| ≤ 5%, Δ tanδ ≤ 0.005 @ 1 kHz IR after test ≥ 50% of initial limit
Endurance Test	**Test Conditions**		**Performances**
	Temperature: Voltage applied: Test duration:	+85°C ±2°C 1.25 x V_R 2,000 hours	|Δ C/C| ≤ 5%, Δ tanδ ≤ 0.003 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.002 @ 1 kHz for C > 1µF IR after test ≥ 50% of initial limit
Resistance to Soldering Heat Test	**Test Conditions**		**Performances**
	Solder bath temperature: Dipping time (with heat screen):	260°C ±5°C 10 seconds ±1 second	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.003 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.002 @ 1 kHz for C > 1µF IR after test ≥ initial limit

Environmental Compliance

All KEMET MKT capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Dimensions in mm		dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			D	L				
50	30	0.47	5.0	11.0	4.0	400	50CF3470(1)00(2)	A50CF3470(1)00(2)
50	30	0.68	5.0	11.0	4.0	400	50CF3680(1)00(2)	A50CF3680(1)00(2)
50	30	1.0	6.5	11.0	4.0	400	50CF4100(1)00(2)	A50CF4100(1)00(2)
50	30	1.5	7.0	14.0	4.0	400	50CH4150(1)00(2)	A50CH4150(1)00(2)
50	30	2.2	8.0	14.0	4.0	400	50CH4220(1)00(2)	A50CH4220(1)00(2)
50	30	3.3	7.5	20.5	2.0	200	50CK4330(1)00(2)	A50CK4330(1)00(2)
50	30	4.7	8.5	20.5	2.0	200	50CK4470(1)00(2)	A50CK4470(1)00(2)
50	30	6.8	10.0	20.5	2.0	200	50CK4680(1)00(2)	A50CK4680(1)00(2)
50	30	10.0	12.0	20.5	2.0	200	50CK5100(1)00(2)	A50CK5100(1)00(2)
63	40	0.33	5.0	11.0	4.0	500	50DF3330(1)60(2)	A50DF3330(1)60(2)
63	40	0.47	6.0	14.0	4.0	500	50DH3470(1)60(2)	A50DH3470(1)60(2)
63	40	0.68	6.0	14.0	4.0	500	50DH3680(1)60(2)	A50DH3680(1)60(2)
63	40	1.0	7.0	14.0	4.0	500	50DH4100(1)60(2)	A50DH4100(1)60(2)
63	40	1.5	6.5	20.5	2.0	250	50DK4150(1)60(2)	A50DK4150(1)60(2)
63	40	2.2	8.0	20.5	2.0	250	50DK4220(1)60(2)	A50DK4220(1)60(2)
63	40	3.3	9.5	20.5	2.0	250	50DK4330(1)60(2)	A50DK4330(1)60(2)
63	40	4.7	9.5	28.0	1.5	190	50DQ4470(1)60(2)	A50DQ4470(1)60(2)
63	40	6.8	11.0	28.0	1.5	190	50DQ4680(1)60(2)	A50DQ4680(1)60(2)
63	40	10.0	11.5	33.0	1.0	130	50DT5100(1)60(2)	A50DT5100(1)60(2)
100	63	0.10	5.0	11.0	5.0	1000	50EF3100(1)60(2)	A50EF3100(1)60(2)
100	63	0.15	5.0	11.0	5.0	1000	50EF3150(1)60(2)	A50EF3150(1)60(2)
100	63	0.22	5.0	11.0	5.0	1000	50EF3220(1)60(2)	A50EF3220(1)60(2)
100	63	0.33	6.0	14.0	5.0	1000	50EH3330(1)60(2)	A50EH3330(1)60(2)
100	63	0.47	6.0	14.0	5.0	1000	50EH3470(1)60(2)	A50EH3470(1)60(2)
100	63	0.68	7.0	14.0	5.0	1000	50EH3680(1)60(2)	A50EH3680(1)60(2)
100	63	1.0	7.0	20.5	3.0	600	50EK4100(1)60(2)	A50EK4100(1)60(2)
100	63	1.5	8.0	20.5	3.0	600	50EK4150(1)60(2)	A50EK4150(1)60(2)
100	63	2.2	9.5	20.5	3.0	600	50EK4220(1)60(2)	A50EK4220(1)60(2)
100	63	3.3	9.5	28.0	2.0	400	50EQ4330(1)60(2)	A50EQ4330(1)60(2)
100	63	4.7	10.0	33.0	1.0	300	50ET4470(1)60(2)	A50ET4470(1)60(2)
100	63	6.8	12.0	33.0	1.0	300	50ET4680(1)60(2)	A50ET4680(1)60(2)
100	63	10.0	14.5	33.0	1.0	300	50ET5100(1)60(2)	A50ET5100(1)60(2)
250	160	0.047	5.0	11.0	10.0	5000	50IF2470(1)60(2)	A50IF2470(1)60(2)
250	160	0.068	5.0	11.0	10.0	5000	50IF2680(1)60(2)	A50IF2680(1)60(2)
250	160	0.10	5.5	14.0	10.0	5000	50IH3100(1)60(2)	A50IH3100(1)60(2)
250	160	0.15	5.5	14.0	10.0	5000	50IH3150(1)60(2)	A50IH3150(1)60(2)
250	160	0.22	6.5	14.0	10.0	5000	50IH3220(1)60(2)	A50IH3220(1)60(2)
250	160	0.33	6.0	20.5	7.0	3500	50IK3330(1)60(2)	A50IK3330(1)60(2)
250	160	0.47	7.0	20.5	7.0	3500	50IK3470(1)60(2)	A50IK3470(1)60(2)
250	160	0.68	8.5	20.5	7.0	3500	50IK3680(1)60(2)	A50IK3680(1)60(2)
250	160	1.0	8.5	28.0	4.0	2000	50IQ4100(1)60(2)	A50IQ4100(1)60(2)
250	160	1.5	10.0	28.0	4.0	2000	50IQ4150(1)60(2)	A50IQ4150(1)60(2)
250	160	2.2	11.0	33.0	2.5	1300	50IT4220(1)60(2)	A50IT4220(1)60(2)
250	160	3.3	13.0	33.0	2.5	1300	50IT4330(1)60(2)	A50IT4330(1)60(2)
250	160	4.7	15.5	33.0	2.5	1300	50IT4470(1)60(2)	A50IT4470(1)60(2)
250	160	6.8	18.5	33.0	2.5	1300	50IT4680(1)60(2)	A50IT4680(1)60(2)
250	160	10.0	22.0	33.0	2.5	1300	50IT5100(1)60(2)	A50IT5100(1)60(2)
400	200	0.010	5.0	11.0	13.5	11000	50MF2100(1)60(2)	A50MF2100(1)60(2)
400	200	0.015	5.0	11.0	13.5	11000	50MF2150(1)60(2)	A50MF2150(1)60(2)
400	200	0.022	5.0	11.0	13.5	11000	50MF2220(1)60(2)	A50MF2220(1)60(2)
400	200	0.033	5.0	11.0	13.5	11000	50MF2330(1)60(2)	A50MF2330(1)60(2)
400	200	0.047	6.0	14.0	13.5	11000	50MH2470(1)60(2)	A50MH2470(1)60(2)
400	200	0.068	6.0	14.0	13.5	11000	50MH2680(1)60(2)	A50MH2680(1)60(2)
400	200	0.10	6.5	14.0	13.5	11000	50MH3100(1)60(2)	A50MH3100(1)60(2)
400	200	0.15	6.0	20.5	10.0	8000	50MK3150(1)60(2)	A50MK3150(1)60(2)
400	200	0.22	7.5	20.5	10.0	8000	50MK3220(1)60(2)	A50MK3220(1)60(2)
400	200	0.33	8.5	20.5	10.0	8000	50MK3330(1)60(2)	A50MK3330(1)60(2)
400	200	0.47	8.5	28.0	6.5	5200	50MQ3470(1)60(2)	A50MQ3470(1)60(2)
400	200	0.68	10.0	28.0	6.5	5200	50MQ3680(1)60(2)	A50MQ3680(1)60(2)
VDC	VAC	Capacitance Value (µF)	D (mm)	L (mm)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm		dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			D	L				
400	200	1.0	10.5	33.0	4.0	3200	50MT4100(1)60(2)	A50MT4100(1)60(2)
400	200	1.5	12.5	33.0	4.0	3200	50MT4150(1)60(2)	A50MT4150(1)60(2)
400	200	2.2	15.0	33.0	4.0	3200	50MT4220(1)60(2)	A50MT4220(1)60(2)
400	200	3.3	18.5	33.0	4.0	3200	50MT4330(1)60(2)	A50MT4330(1)60(2)
630	220	0.0010	5.0	11.0	20.0	250000	50PF1100(1)60(2)	A50PF1100(1)60(2)
630	220	0.0015	5.0	11.0	20.0	250000	50PF1150(1)60(2)	A50PF1150(1)60(2)
630	220	0.0022	5.0	11.0	20.0	250000	50PF1220(1)60(2)	A50PF1220(1)60(2)
630	220	0.0033	5.0	11.0	20.0	250000	50PF1330(1)60(2)	A50PF1330(1)60(2)
630	220	0.0047	5.0	11.0	20.0	250000	50PF1470(1)60(2)	A50PF1470(1)60(2)
630	220	0.0068	5.0	11.0	20.0	250000	50PF1680(1)60(2)	A50PF1680(1)60(2)
630	220	0.010	5.0	14.0	20.0	250000	50PH2100(1)60(2)	A50PH2100(1)60(2)
630	220	0.015	5.0	14.0	20.0	250000	50PH2150(1)60(2)	A50PH2150(1)60(2)
630	220	0.022	6.0	14.0	20.0	250000	50PH2220(1)60(2)	A50PH2220(1)60(2)
630	220	0.033	6.0	20.5	15.0	190000	50PK2330(1)60(2)	A50PK2330(1)60(2)
630	220	0.047	6.0	20.5	15.0	190000	50PK2470(1)60(2)	A50PK2470(1)60(2)
630	220	0.068	7.0	20.5	15.0	190000	50PK2680(1)60(2)	A50PK2680(1)60(2)
630	220	0.10	7.0	28.0	10.0	130000	50PQ3100(1)60(2)	A50PQ3100(1)60(2)
630	220	0.15	8.5	28.0	10.0	130000	50PQ3150(1)60(2)	A50PQ3150(1)60(2)
630	220	0.22	10.0	28.0	10.0	130000	50PQ3220(1)60(2)	A50PQ3220(1)60(2)
630	220	0.33	10.5	33.0	6.0	7500	50PT3330(1)60(2)	A50PT3330(1)60(2)
630	220	0.47	12.0	33.0	6.0	7500	50PT3470(1)60(2)	A50PT3470(1)60(2)
630	220	0.68	14.5	33.0	6.0	7500	50PT3680(1)60(2)	A50PT3680(1)60(2)
630	220	1.0	17.5	33.0	6.0	7500	50PT4100(1)60(2)	A50PT4100(1)60(2)
1000	250	0.0010	6.5	14.0	50.0	100000	50QH1100(1)00(2)	A50QH1100(1)00(2)
1000	250	0.0015	6.5	14.0	50.0	100000	50QH1150(1)00(2)	A50QH1150(1)00(2)
1000	250	0.0022	6.5	14.0	50.0	100000	50QH1220(1)00(2)	A50QH1220(1)00(2)
1000	250	0.0033	6.5	14.0	50.0	100000	50QH1330(1)00(2)	A50QH1330(1)00(2)
1000	250	0.0047	7.5	14.0	50.0	100000	50QH1470(1)00(2)	A50QH1470(1)00(2)
1000	250	0.0068	8.0	14.0	50.0	100000	50QH1680(1)00(2)	A50QH1680(1)00(2)
1000	250	0.010	7.0	20.5	30.0	60000	50QK2100(1)00(2)	A50QK2100(1)00(2)
1000	250	0.015	7.5	20.5	30.0	60000	50QK2150(1)00(2)	A50QK2150(1)00(2)
1000	250	0.022	9.0	20.5	30.0	60000	50QK2220(1)00(2)	A50QK2220(1)00(2)
1000	250	0.033	8.0	28.0	15.0	30000	50QQ2330(1)00(2)	A50QQ2330(1)00(2)
1000	250	0.047	9.0	28.0	15.0	30000	50QQ2470(1)00(2)	A50QQ2470(1)00(2)
1000	250	0.068	10.5	28.0	15.0	30000	50QQ2680(1)00(2)	A50QQ2680(1)00(2)
1000	250	0.10	12.5	28.0	15.0	30000	50QQ3100(1)00(2)	A50QQ3100(1)00(2)
1000	250	0.15	13.5	33.0	10.0	20000	50QT3150(1)00(2)	A50QT3150(1)00(2)
1000	250	0.22	16.0	33.0	10.0	20000	50QT3220(1)00(2)	A50QT3220(1)00(2)
1000	250	0.33	19.0	33.0	10.0	20000	50QT3330(1)00(2)	A50QT3330(1)00(2)
1000	250	0.47	22.0	33.0	10.0	20000	50QT3470(1)00(2)	A50QT3470(1)00(2)
VDC	**VAC**	**Capacitance Value (µF)**	**D (mm)**	**L (mm)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%.

Soldering Process

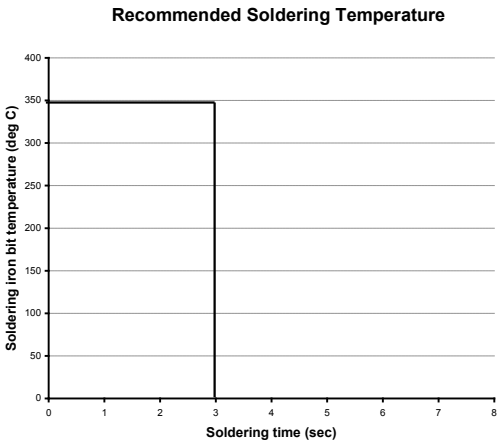
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

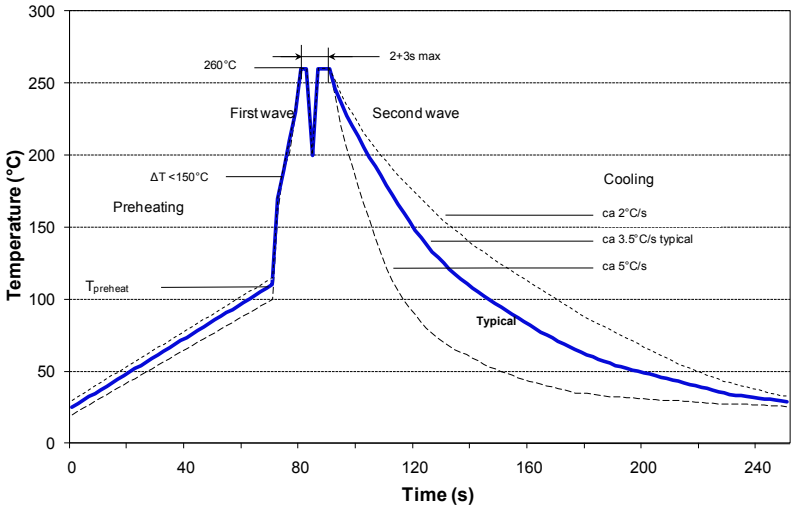
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

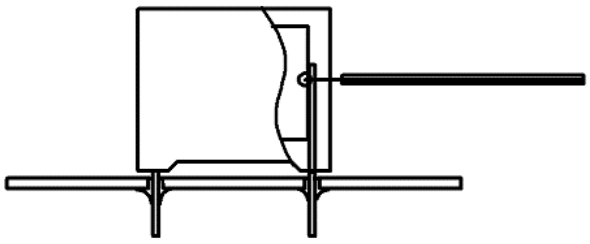
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



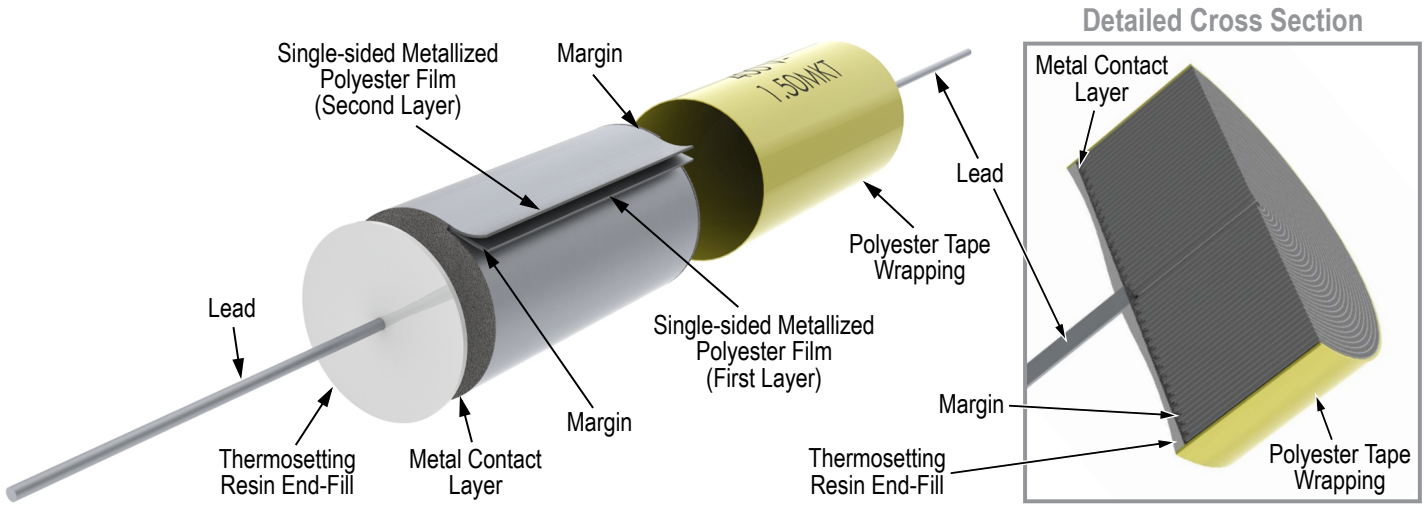
Temperature monitored inside the capacitor.

Selective Soldering Recommendations

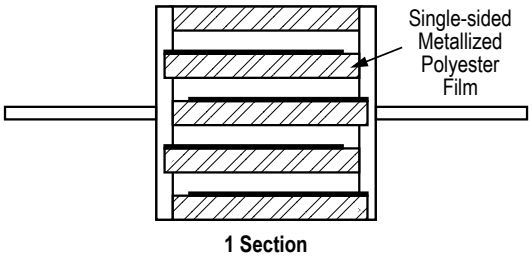
Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

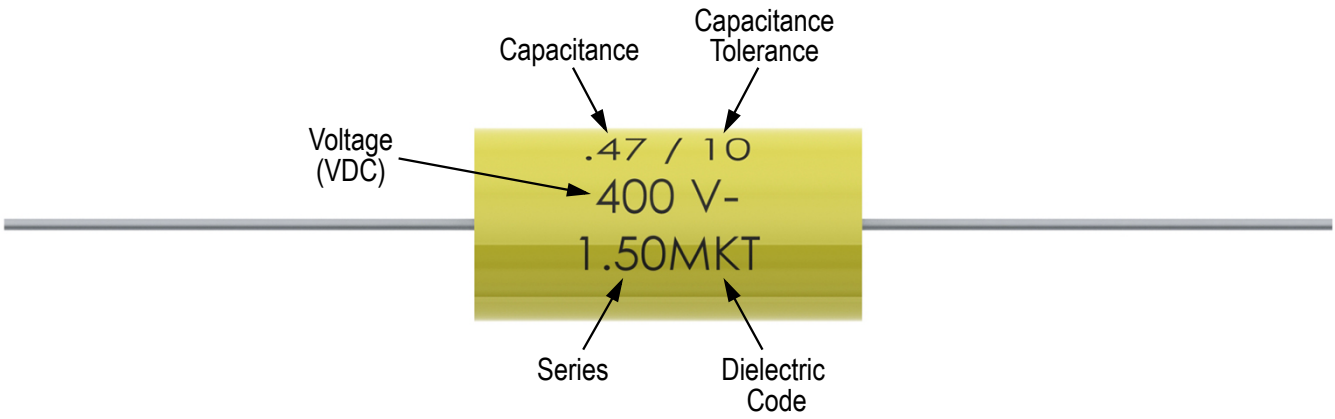
Construction



Winding Scheme



Marking



Packaging Quantities

Diameter (mm)	Length (mm)	Bulk Long Leads	Standard Reel ø 355 mm
5	11	1,500	3,000
6.5	11	1,200	1,300
5	14	2,000	1,300
5.5	14	2,000	1,300
6	14	2,000	1,300
6.5	14	2,000	1,200
7	14	1,750	1,100
7.5	14	1,500	1,000
8	14	1,250	900
6	20.5	1,500	1,300
6.5	20.5	1,250	1,200
7	20.5	1,250	1,100
7.5	20.5	1,000	1,000
8	20.5	1,000	900
8.5	20.5	750	800
9	20.5	750	800
9.5	20.5	750	600
10	20.5	750	600
12	20.5	500	400
7	28	750	1,000
8	28	500	900
8.5	28	500	800

Diameter (mm)	Length (mm)	Bulk Long Leads	Standard Reel ø 355 mm
9	28	500	800
9.5	28	500	600
10	28	500	600
10.5	28	500	400
11	28	500	400
12.5	28	300	400
10	33	400	400
10.5	33	400	400
11	33	400	400
11.5	33	400	400
12	33	300	400
12.5	33	300	400
13	33	300	400
13.5	33	300	300
14.5	33	300	300
15	33	300	300
15.5	33	200	250
16	33	200	250
17.5	33	200	200
18.5	33	150	150
19	33	150	150
22	33	100	–

MDK Series Metallized Polyester Film, Dual In-Line, Low ESR/ESL, 50 – 630 VDC

Overview

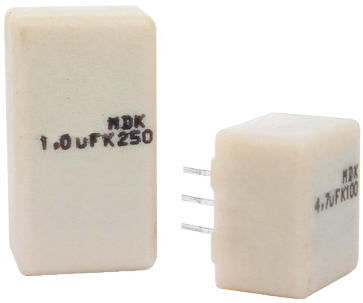
Dual in-line (DIL) metallized polyester (PET) film capacitor. Encapsulation in self-extinguishing material meeting the requirements of UL 94 V–0.

Applications

Typical applications include high frequency switched-mode power supplies, DC/DC converters and input/output filtering.

Benefits

- Rated voltage: 50 – 630 VDC
- Rated voltage: 30 – 220 VAC
- Capacitance range: 0.033 – 15 µF
- Capacitance tolerance: ±5%, ±10%, other tolerances on request
- Climatic category: 55/125/56
- RoHS Compliant and lead-free terminations
- Operating temperature range of -55˚C to +125˚C



Legacy Part Number System

MDK	10	333	K	50	A52	P3	TUBE
Series	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Size Code	Number of Leads per Side	Packaging
Dual In-Line, Metallized Polyester	10 15	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	J = ±5 K = ±10% Other tolerances on request	50 100 250 400 630	See Dimension Table	P3 = 3 leads P4 = 4 leads P5 = 5 leads P7 = 7 leads P8 = 8 leads	See Ordering Options Table

New KEMET Part Number System

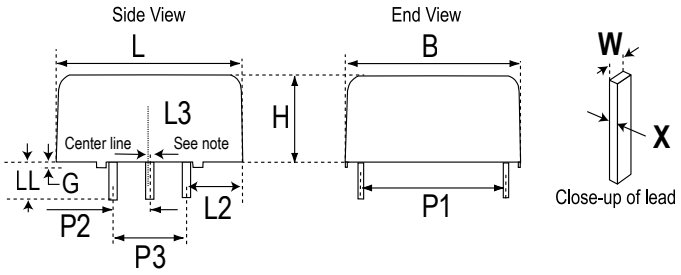
F	68	3	A	A	333	K	050	T
Capacitor Class	Series	Number of Leads per Side	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging
F = Film	Dual In-Line, Metallized Polyester	3 = 3 leads 4 = 4 leads 5 = 5 leads 7 = 7 leads 8 = 8 leads	A = 10 B = 15	A = Standard box size	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	J = ±5 K = ±10% Other tolerances on request	050 = 50 100 = 100 250 = 250 400 = 400 630 = 630	See Ordering Options Table

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Ordering Options Table

Packaging Type	KEMET Packaging Code	Legacy Packaging Code
Standard Packaging Options		
Bulk (Tube)	T	TUBE
Case Size A53 Tape & Reel (Standard Reel)	VV687	TR32

Dimensions – Millimeters



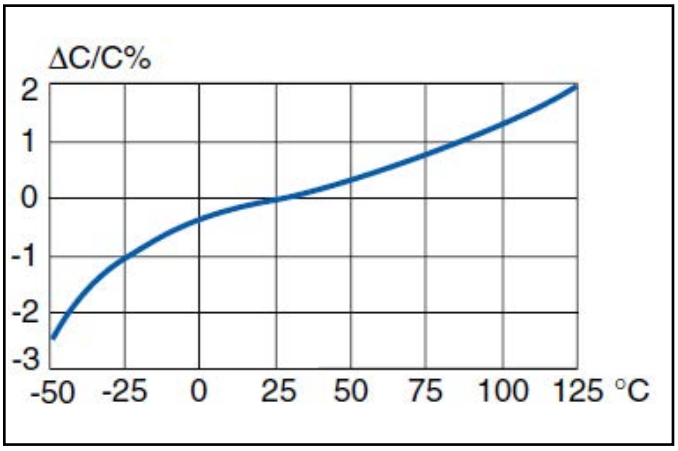
Legacy Size Code	Leads per Side	P1	P2	P3(1)	B	H	L	H1	L2	L3(2)	W	X	Y	Z	LL
		+/-0.2	+/-0.2	+/-0.2	+/-0.2	+/-0.2	+/-0.2	+/-0.4	+/-0.2	Maximum	+/-0.05	+/-0.05	+/-0.2	Nominal	+/-0.2
A52	3	10.0	2.54	5.08	12.2	6.05	11.0	7.75	2.96	0.2	0.5	0.35	1.5	0.25	1.7
A53	3	10.0	2.54	5.08	12.7	9.0	14.0	10.5	4.46	0.2	0.5	0.35	1.5	0	1.5
A54	3	10.0	2.54	5.08	12.2	6.05	13.5	7.75	4.21	0.2	0.5	0.35	1.5	0.25	1.7
A55	3	10.0	2.54	5.08	12.2	6.05	16.5	7.75	5.71	0.2	0.5	0.35	1.5	0.25	1.7
B53	3	15.0	2.54	5.08	16.5	6.05	11.0	7.75	2.96	0.2	0.5	0.35	1.5	0.6	1.7
B55	3	15.0	2.54	5.08	16.5	6.05	12.2	7.75	3.56	0.2	0.5	0.35	1.5	0.6	1.7
A53	4	10.0	2.54	7.62	12.7	9.0	14.0	10.5	3.19	0.2	0.5	0.35	1.5	0	1.5
A54	4	10.0	2.54	7.62	12.2	6.05	13.5	7.75	2.94	0.2	0.5	0.35	1.5	0.25	1.7
A55	4	10.0	2.54	7.62	12.2	6.05	16.5	7.75	4.44	0.2	0.5	0.35	1.5	0.25	1.7
B55	4	15.0	2.54	7.62	16.5	6.05	12.2	7.75	2.29	0.2	0.5	0.35	1.5	0.6	1.7
A55	5	10.0	2.54	10.16	12.2	6.05	16.5	7.75	3.17	0.2	0.5	0.35	1.5	0.25	1.7
A57	7	10.0	2.54	15.24	12.7	9.0	23.0	10.7	3.88	0.2	0.5	0.35	1.5	0	1.7
A58	7	10.0	2.54	15.24	12.7	11.0	23.0	12.5	3.88	0.2	0.5	0.35	1.5	0	1.5
A57	8	10.0	2.54	17.78	12.7	9.0	23.0	10.7	2.61	0.2	0.5	0.35	1.5	0	1.7
A58	8	10.0	2.54	17.78	12.7	11.0	23.0	12.5	2.61	0.2	0.5	0.35	1.5	0	1.5

Drawing shows MDK with three leads per side. Similar dimensional requirements apply to the 4, 5, 7, and 8 leads per side configurations.
(1) P3 represents the cumulative tolerance of all leads.
(2) L3 represents the extent to which the center line of the leads misaligns with the center line of the body. Dimension shown is the maximum such misalignment allowed.

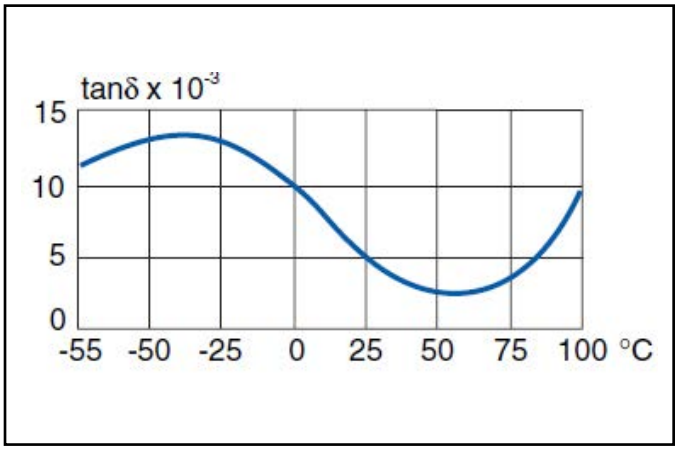
Performance Characteristics

Rated Voltage (VDC)	50	100	250	400	630
Rated Voltage (VAC)	30	63	160	200	220
Capacitance Range (µF)	0.033 – 15	0.033 – 10	0.033 – 1.5	0.033 – 0.47	0.033 – 0.18
Capacitance Tolerance	±5%, ±10%, other tolerances on request				
Category Temperature Range	-55°C to +125°C				
Rated Temperature	+85°C				
Voltage Derating	The rated voltage is decreased with 1.25%/°C from +85°C				
Climatic Category	55/125/56				
Test Voltage	1.6 x V_R, 60 seconds				
Insulation Resistance	Measured at +20°C according to IEC 60384–2				
	Minimum Value Between Terminals				
		C ≤ 0.33 µF		C > 0.33 µF	
	V_R ≤ 100	15,000 MΩ		5,000 MΩ • µF	
	V_R > 100	30,000 MΩ		10,000 MΩ • µF	
Dissipation Factor	Maximum Values at +23°C				
		C ≤ 0.1 µF	0.1 < C < 3.3 µF	3.3 ≤ C ≤ 10 µF	C > 10 µF
	1 kHz	0.8%	0.8%	0.8%	0.8%
	10 kHz	1.5%	1.5%	1.5%	2.0%
	100 kHz	2.5%	5.0%		
Self Inductance	Approximately 4 nH				

Typical Capacitance vs. Temperature at 1 kHz



Typical Dissipation Factor vs. Temperature at 1 kHz



Maximum RMS Voltage V_{rms} (V) vs. Frequency

Value	Rated Voltage	Case Size	1 kHz	10 kHz	100 kHz	500 kHz	1 MHz
1.0 µF	250 V	A57	150.0	36.0	9.2	2.9	1.3
2.2 µF	100 V	A52	50.0	25.0	5.0	1.2	0.6
3.9 µF	100 V	A52	50.0	18.0	4.0	1.0	0.3
4.7 µF	100 V	A54	50.0	16.0	3.5	0.7	0.2
6.8 µF	100 V	A57	50.0	15.5	2.2	0.5	0.2
10 µF	100 V	A58	50.0	15.0	2.0	0.4	0.2

Maximum RMS Current I_{rms} (A) vs. Frequency

Value	Rated Voltage	Case Size	1 kHz	10 kHz	100 kHz	500 kHz	1 MHz
1.0 µF	250 V	A57	1.0	2.2	5.5	9.0	10.0
2.2 µF	100 V	A52	1.5	2.3	6.0	7.5	10.0
3.9 µF	100 V	A52	2.0	4.0	10.0	11.0	11.5
4.7 µF	100 V	A54	2.0	4.5	10.0	12.5	12.5
6.8 µF	100 V	A57	3.0	6.0	11.0	13.0	13.5
10 µF	100 V	A58	4.0	9.0	13.0	14.0	14.5

Environmental Compliance

All KEMET surface mount capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Cap Value (µF)	Size Code (New/Legacy)	Dimensions in mm			Lead Spacing (p)	ESR 500 kHz (mΩ)	New KEMET Part Number	Legacy Part Number
				B	H	L				
50	30	0.033	AA/A52	12.2	6.05	11.0	10	390	F683AA333(1)050T	MDK10333(1)50A52P3TUBE
50	30	0.039	AA/A52	12.2	6.05	11.0	10	330	F683AA393(1)050T	MDK10393(1)50A52P3TUBE
50	30	0.047	AA/A52	12.2	6.05	11.0	10	270	F683AA473(1)050T	MDK10473(1)50A52P3TUBE
50	30	0.056	AA/A52	12.2	6.05	11.0	10	230	F683AA563(1)050T	MDK10563(1)50A52P3TUBE
50	30	0.068	AA/A52	12.2	6.05	11.0	10	190	F683AA683(1)050T	MDK10683(1)50A52P3TUBE
50	30	0.082	AA/A52	12.2	6.05	11.0	10	160	F683AA823(1)050T	MDK10823(1)50A52P3TUBE
50	30	0.10	AA/A52	12.2	6.05	11.0	10	130	F683AA104(1)050T	MDK10104(1)50A52P3TUBE
50	30	0.12	AA/A52	12.2	6.05	11.0	10	110	F683AA124(1)050T	MDK10124(1)50A52P3TUBE
50	30	0.15	AA/A52	12.2	6.05	11.0	10	85	F683AA154(1)050T	MDK10154(1)50A52P3TUBE
50	30	0.18	AA/A52	12.2	6.05	11.0	10	70	F683AA184(1)050T	MDK10184(1)50A52P3TUBE
50	30	0.22	AA/A52	12.2	6.05	11.0	10	58	F683AA224(1)050T	MDK10224(1)50A52P3TUBE
50	30	0.27	AA/A52	12.2	6.05	11.0	10	47	F683AA274(1)050T	MDK10274(1)50A52P3TUBE
50	30	0.33	AA/A52	12.2	6.05	11.0	10	39	F683AA334(1)050T	MDK10334(1)50A52P3TUBE
50	30	0.39	AA/A52	12.2	6.05	11.0	10	33	F683AA394(1)050T	MDK10394(1)50A52P3TUBE
50	30	0.47	AA/A52	12.2	6.05	11.0	10	30	F683AA474(1)050T	MDK10474(1)50A52P3TUBE
50	30	0.56	AA/A52	12.2	6.05	11.0	10	26	F683AA564(1)050T	MDK10564(1)50A52P3TUBE
50	30	0.68	AA/A52	12.2	6.05	11.0	10	21	F683AA684(1)050T	MDK10684(1)50A52P3TUBE
50	30	0.82	AA/A52	12.2	6.05	11.0	10	18	F683AA824(1)050T	MDK10824(1)50A52P3TUBE
50	30	1.0	AA/A52	12.2	6.05	11.0	10	15	F683AA105(1)050T	MDK10105(1)50A52P3TUBE
50	30	1.2	AA/A52	12.2	6.05	11.0	10	14	F683AA125(1)050T	MDK10125(1)50A52P3TUBE
50	30	1.5	AA/A52	12.2	6.05	11.0	10	13	F683AA155(1)050T	MDK10155(1)50A52P3TUBE
50	30	1.8	AA/A52	12.2	6.05	11.0	10	12	F683AA185(1)050T	MDK10185(1)50A52P3TUBE
50	30	2.2	AA/A52	12.2	6.05	11.0	10	11	F683AA225(1)050T	MDK10225(1)50A52P3TUBE
50	30	2.7	AA/A52	12.2	6.05	11.0	10	10	F683AA275(1)050T	MDK10275(1)50A52P3TUBE
50	30	3.3	AA/A52	12.2	6.05	11.0	10	8	F683AA335(1)050T	MDK10335(1)50A52P3TUBE
50	30	3.9	AA/A52	12.2	6.05	11.0	10	7	F683AA395(1)050T	MDK10395(1)50A52P3TUBE
50	30	4.7	AA/A52	12.2	6.05	11.0	10	6	F683AA475(1)050T	MDK10475(1)50A52P3TUBE
50	30	5.6	AA/A54	12.2	6.05	13.5	10	5	F68(2)AA565(1)050T	MDK10565(1)50A54P(2)TUBE
50	30	6.8	AA/A55	12.2	6.05	16.5	10	5	F68(3)AA685(1)050T	MDK10685(1)50A55P(3)TUBE
50	30	8.2	AA/A57	12.7	9.0	23.0	10	4	F68(4)AA825(1)050T	MDK10825(1)50A57P(4)TUBE
50	30	10	AA/A57	12.7	9.0	23.0	10	3	F68(4)AA106(1)050T	MDK10106(1)50A57P(4)TUBE
50	30	12	AA/A58	12.7	11.0	23.0	10	3	F68(4)AA126(1)050T	MDK10126(1)50A58P(4)TUBE
50	30	15	AA/A58	12.7	11.0	23.0	10	3	F68(4)AA156(1)050T	MDK10156(1)50A58P(4)TUBE
50	30	0.033	BA/B53	16.5	6.05	11.0	15	390	F683BA333(1)050T	MDK15333(1)50B53P3TUBE
50	30	0.039	BA/B53	16.5	6.05	11.0	15	330	F683BA393(1)050T	MDK15393(1)50B53P3TUBE
50	30	0.047	BA/B53	16.5	6.05	11.0	15	270	F683BA473(1)050T	MDK15473(1)50B53P3TUBE
50	30	0.056	BA/B53	16.5	6.05	11.0	15	230	F683BA563(1)050T	MDK15563(1)50B53P3TUBE
50	30	0.068	BA/B53	16.5	6.05	11.0	15	190	F683BA683(1)050T	MDK15683(1)50B53P3TUBE
50	30	0.082	BA/B53	16.5	6.05	11.0	15	160	F683BA823(1)050T	MDK15823(1)50B53P3TUBE
50	30	0.10	BA/B53	16.5	6.05	11.0	15	130	F683BA104(1)050T	MDK15104(1)50B53P3TUBE
50	30	0.12	BA/B53	16.5	6.05	11.0	15	110	F683BA124(1)050T	MDK15124(1)50B53P3TUBE
50	30	0.15	BA/B53	16.5	6.05	11.0	15	85	F683BA154(1)050T	MDK15154(1)50B53P3TUBE
50	30	0.18	BA/B53	16.5	6.05	11.0	15	70	F683BA184(1)050T	MDK15184(1)50B53P3TUBE
50	30	0.22	BA/B53	16.5	6.05	11.0	15	58	F683BA224(1)050T	MDK15224(1)50B53P3TUBE
50	30	0.27	BA/B53	16.5	6.05	11.0	15	47	F683BA274(1)050T	MDK15274(1)50B53P3TUBE
50	30	0.33	BA/B53	16.5	6.05	11.0	15	39	F683BA334(1)050T	MDK15334(1)50B53P3TUBE
50	30	0.39	BA/B53	16.5	6.05	11.0	15	39	F683BA394(1)050T	MDK15394(1)50B53P3TUBE
50	30	0.47	BA/B53	16.5	6.05	11.0	15	30	F683BA474(1)050T	MDK15474(1)50B53P3TUBE
50	30	0.56	BA/B53	16.5	6.05	11.0	15	26	F683BA564(1)050T	MDK15564(1)50B53P3TUBE
50	30	0.68	BA/B53	16.5	6.05	11.0	15	21	F683BA684(1)050T	MDK15684(1)50B53P3TUBE
50	30	0.82	BA/B53	16.5	6.05	11.0	15	18	F683BA824(1)050T	MDK15824(1)50B53P3TUBE
50	30	1.0	BA/B53	16.5	6.05	11.0	15	15	F683BA105(1)050T	MDK15105(1)50B53P3TUBE
50	30	1.2	BA/B53	16.5	6.05	11.0	15	15	F683BA125(1)050T	MDK15125(1)50B53P3TUBE
50	30	1.5	BA/B53	16.5	6.05	11.0	15	13	F683BA155(1)050T	MDK15155(1)50B53P3TUBE
50	30	1.8	BA/B53	16.5	6.05	11.0	15	13	F683BA185(1)050T	MDK15185(1)50B53P3TUBE
50	30	2.2	BA/B53	16.5	6.05	11.0	15	11	F683BA225(1)050T	MDK15225(1)50B53P3TUBE
50	30	2.7	BA/B53	16.5	6.05	11.0	15	11	F683BA275(1)050T	MDK15275(1)50B53P3TUBE
50	30	3.3	BA/B53	16.5	6.05	11.0	15	8	F683BA335(1)050T	MDK15335(1)50B53P3TUBE
50	30	3.9	BA/B53	16.5	6.05	11.0	15	8	F683BA395(1)050T	MDK15395(1)50B53P3TUBE
VDC	**VAC**	**Cap Value (µF)**	**Size Code (New/Legacy)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**ESR 500 kHz (mΩ)**	**New KEMET Part Number**	**Legacy Part Number**

(1) J = ±5%, K = ±10%, other tolerances on request.
(2) = Number of leads per side, 3 or 4.
(3) = Number of leads per side, 3, 4 or 5.
(4) = Number of leads per side, 7 or 8.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Size Code (New/Legacy)	Dimensions in mm			Lead Spacing (p)	ESR 500 kHz (mΩ)	New KEMET Part Number	Legacy Part Number
				B	H	L				
50	30	4.7	BA/B53	16.5	6.05	11.0	15	6	F683BA475(1)050T	MDK15475(1)50B53P3TUBE
50	30	5.6	BA/B53	16.5	6.05	11.0	15	5	F683BA565(1)050T	MDK15565(1)50B53P3TUBE
50	30	6.8	BA/B53	16.5	6.05	11.0	15	5	F683BA685(1)050T	MDK15685(1)50B53P3TUBE
100	63	0.033	AA/A52	12.2	6.05	11.0	10	390	F683AA333(1)100T	MDK10333(1)100A52P3TUBE
100	63	0.039	AA/A52	12.2	6.05	11.0	10	330	F683AA393(1)100T	MDK10393(1)100A52P3TUBE
100	63	0.047	AA/A52	12.2	6.05	11.0	10	270	F683AA473(1)100T	MDK10473(1)100A52P3TUBE
100	63	0.056	AA/A52	12.2	6.05	11.0	10	230	F683AA563(1)100T	MDK10563(1)100A52P3TUBE
100	63	0.068	AA/A52	12.2	6.05	11.0	10	190	F683AA683(1)100T	MDK10683(1)100A52P3TUBE
100	63	0.082	AA/A52	12.2	6.05	11.0	10	160	F683AA823(1)100T	MDK10823(1)100A52P3TUBE
100	63	0.10	AA/A52	12.2	6.05	11.0	10	130	F683AA104(1)100T	MDK10104(1)100A52P3TUBE
100	63	0.12	AA/A52	12.2	6.05	11.0	10	110	F683AA124(1)100T	MDK10124(1)100A52P3TUBE
100	63	0.15	AA/A52	12.2	6.05	11.0	10	85	F683AA154(1)100T	MDK10154(1)100A52P3TUBE
100	63	0.18	AA/A52	12.2	6.05	11.0	10	70	F683AA184(1)100T	MDK10184(1)100A52P3TUBE
100	63	0.22	AA/A52	12.2	6.05	11.0	10	58	F683AA224(1)100T	MDK10224(1)100A52P3TUBE
100	63	0.27	AA/A52	12.2	6.05	11.0	10	47	F683AA274(1)100T	MDK10274(1)100A52P3TUBE
100	63	0.33	AA/A52	12.2	6.05	11.0	10	39	F683AA334(1)100T	MDK10334(1)100A52P3TUBE
100	63	0.39	AA/A52	12.2	6.05	11.0	10	33	F683AA394(1)100T	MDK10394(1)100A52P3TUBE
100	63	0.47	AA/A52	12.2	6.05	11.0	10	30	F683AA474(1)100T	MDK10474(1)100A52P3TUBE
100	63	0.56	AA/A52	12.2	6.05	11.0	10	26	F683AA564(1)100T	MDK10564(1)100A52P3TUBE
100	63	0.68	AA/A52	12.2	6.05	11.0	10	21	F683AA684(1)100T	MDK10684(1)100A52P3TUBE
100	63	0.82	AA/A52	12.2	6.05	11.0	10	18	F683AA824(1)100T	MDK10824(1)100A52P3TUBE
100	63	1.0	AA/A52	12.2	6.05	11.0	10	15	F683AA105(1)100T	MDK10105(1)100A52P3TUBE
100	63	1.2	AA/A52	12.2	6.05	11.0	10	14	F683AA125(1)100T	MDK10125(1)100A52P3TUBE
100	63	1.5	AA/A52	12.2	6.05	11.0	10	13	F683AA155(1)100T	MDK10155(1)100A52P3TUBE
100	63	1.8	AA/A52	12.2	6.05	11.0	10	12	F683AA185(1)100T	MDK10185(1)100A52P3TUBE
100	63	2.2	AA/A52	12.2	6.05	11.0	10	11	F683AA225(1)100T	MDK10225(1)100A52P3TUBE
100	35	2.7	AA/A52	12.2	6.05	11.0	10	10	F683AA275(1)100T	MDK10275(1)100A52P3TUBE
100	35	3.3	AA/A52	12.2	6.05	11.0	10	8	F683AA335(1)100T	MDK10335(1)100A52P3TUBE
100	35	3.9	AA/A52	12.2	6.05	11.0	10	7	F683AA395(1)100T	MDK10395(1)100A52P3TUBE
100	35	4.7	AA/A54	12.2	6.05	13.5	10	6	F68(2)AA475(1)100T	MDK10475(1)100A54P(2)TUBE
100	35	4.7	AA/A53	12.7	9.0	14.0	10	6	F68(2)AA475(1)100VV687	MDK10475(1)100A53P(2)TR32
100	35	5.6	AA/A55	12.2	6.05	16.5	10	5	F68(3)AA565(1)100T	MDK10565(1)100A55P(3)TUBE
100	63	6.8	AA/A57	12.7	9.0	23.0	10	5	F68(4)AA685(1)100T	MDK10685(1)100A57P(4)TUBE
100	63	8.2	AA/A58	12.7	11.0	23.0	10	4	F68(4)AA825(1)100T	MDK10825(1)100A58P(4)TUBE
100	63	10	AA/A58	12.7	11.0	23.0	10	3	F68(4)AA106(1)100T	MDK10106(1)100A58P(4)TUBE
100	63	0.033	BA/B53	16.5	6.05	11.0	15	390	F683BA333(1)100T	MDK15333(1)100B53P3TUBE
100	63	0.039	BA/B53	16.5	6.05	11.0	15	330	F683BA393(1)100T	MDK15393(1)100B53P3TUBE
100	63	0.047	BA/B53	16.5	6.05	11.0	15	270	F683BA473(1)100T	MDK15473(1)100B53P3TUBE
100	63	0.056	BA/B53	16.5	6.05	11.0	15	230	F683BA563(1)100T	MDK15563(1)100B53P3TUBE
100	63	0.068	BA/B53	16.5	6.05	11.0	15	190	F683BA683(1)100T	MDK15683(1)100B53P3TUBE
100	63	0.082	BA/B53	16.5	6.05	11.0	15	160	F683BA823(1)100T	MDK15823(1)100B53P3TUBE
100	63	0.10	BA/B53	16.5	6.05	11.0	15	130	F683BA104(1)100T	MDK15104(1)100B53P3TUBE
100	63	0.12	BA/B53	16.5	6.05	11.0	15	110	F683BA124(1)100T	MDK15124(1)100B53P3TUBE
100	63	0.15	BA/B53	16.5	6.05	11.0	15	85	F683BA154(1)100T	MDK15154(1)100B53P3TUBE
100	63	0.18	BA/B53	16.5	6.05	11.0	15	70	F683BA184(1)100T	MDK15184(1)100B53P3TUBE
100	63	0.22	BA/B53	16.5	6.05	11.0	15	58	F683BA224(1)100T	MDK15224(1)100B53P3TUBE
100	63	0.27	BA/B53	16.5	6.05	11.0	15	47	F683BA274(1)100T	MDK15274(1)100B53P3TUBE
100	63	0.33	BA/B53	16.5	6.05	11.0	15	39	F683BA334(1)100T	MDK15334(1)100B53P3TUBE
100	63	0.39	BA/B53	16.5	6.05	11.0	15	39	F683BA394(1)100T	MDK15394(1)100B53P3TUBE
100	63	0.47	BA/B53	16.5	6.05	11.0	15	30	F683BA474(1)100T	MDK15474(1)100B53P3TUBE
100	63	0.56	BA/B53	16.5	6.05	11.0	15	26	F683BA564(1)100T	MDK15564(1)100B53P3TUBE
100	63	0.68	BA/B53	16.5	6.05	11.0	15	21	F683BA684(1)100T	MDK15684(1)100B53P3TUBE
100	63	0.82	BA/B53	16.5	6.05	11.0	15	18	F683BA824(1)100T	MDK15824(1)100B53P3TUBE
100	63	1.0	BA/B53	16.5	6.05	11.0	15	15	F683BA105(1)100T	MDK15105(1)100B53P3TUBE
100	63	1.2	BA/B53	16.5	6.05	11.0	15	15	F683BA125(1)100T	MDK15125(1)100B53P3TUBE
100	63	1.5	BA/B53	16.5	6.05	11.0	15	13	F683BA155(1)100T	MDK15155(1)100B53P3TUBE
100	63	1.8	BA/B53	16.5	6.05	11.0	15	13	F683BA185(1)100T	MDK15185(1)100B53P3TUBE
100	63	2.2	BA/B53	16.5	6.05	11.0	15	11	F683BA225(1)100T	MDK15225(1)100B53P3TUBE
100	63	2.7	BA/B53	16.5	6.05	11.0	15	11	F683BA275(1)100T	MDK15275(1)100B53P3TUBE
VDC	**VAC**	**Cap Value (µF)**	**Size Code (New/Legacy)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**ESR 500 kHz (mΩ)**	**New KEMET Part Number**	**Legacy Part Number**

(1) J = ±5%, K = ±10%, other tolerances on request.
(2) = Number of leads per side, 3 or 4.
(3) = Number of leads per side, 3, 4 or 5.
(4) = Number of leads per side, 7 or 8.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Size Code (New/Legacy)	Dimensions in mm			Lead Spacing (p)	ESR 500 kHz (mΩ)	New KEMET Part Number	Legacy Part Number
				B	H	L				
100	63	3.3	BA/B53	16.5	6.05	11.0	15	8	F683BA335(1)100T	MDK15335(1)100B53P3TUBE
100	63	3.9	BA/B53	16.5	6.05	11.0	15	8	F683BA395(1)100T	MDK15395(1)100B53P3TUBE
100	35	4.7	BA/B53	16.5	6.05	11.0	15	6	F683BA475(1)100T	MDK15475(1)100B53P3TUBE
100	35	5.6	BA/B55	16.5	6.05	12.2	15	5	F68(2)BA565(1)100T	MDK15565(1)100B55P(2)TUBE
250	160	0.033	AA/A52	12.2	6.05	11.0	10	390	F683AA333(1)250T	MDK10333(1)250A52P3TUBE
250	160	0.039	AA/A52	12.2	6.05	11.0	10	330	F683AA393(1)250T	MDK10393(1)250A52P3TUBE
250	160	0.047	AA/A52	12.2	6.05	11.0	10	270	F683AA473(1)250T	MDK10473(1)250A52P3TUBE
250	160	0.056	AA/A52	12.2	6.05	11.0	10	230	F683AA563(1)250T	MDK10563(1)250A52P3TUBE
250	160	0.068	AA/A52	12.2	6.05	11.0	10	190	F683AA683(1)250T	MDK10683(1)250A52P3TUBE
250	160	0.082	AA/A52	12.2	6.05	11.0	10	160	F683AA823(1)250T	MDK10823(1)250A52P3TUBE
250	160	0.10	AA/A52	12.2	6.05	11.0	10	130	F683AA104(1)250T	MDK10104(1)250A52P3TUBE
250	160	0.12	AA/A52	12.2	6.05	11.0	10	110	F683AA124(1)250T	MDK10124(1)250A52P3TUBE
250	160	0.15	AA/A52	12.2	6.05	11.0	10	85	F683AA154(1)250T	MDK10154(1)250A52P3TUBE
250	160	0.18	AA/A52	12.2	6.05	11.0	10	70	F683AA184(1)250T	MDK10184(1)250A52P3TUBE
250	160	0.22	AA/A52	12.2	6.05	11.0	10	58	F683AA224(1)250T	MDK10224(1)250A52P3TUBE
250	160	0.27	AA/A52	12.2	6.05	11.0	10	47	F683AA274(1)250T	MDK10274(1)250A52P3TUBE
250	160	0.33	AA/A52	12.2	6.05	11.0	10	39	F683AA334(1)250T	MDK10334(1)250A52P3TUBE
250	160	0.39	AA/A52	12.2	6.05	11.0	10	33	F683AA394(1)250T	MDK10394(1)250A52P3TUBE
250	160	0.47	AA/A52	12.2	6.05	11.0	10	30	F683AA474(1)250T	MDK10474(1)250A52P3TUBE
250	160	0.56	AA/A54	12.2	6.05	13.5	10	26	F68(2)AA564(1)250T	MDK10564(1)250A54P(2)TUBE
250	160	0.68	AA/A55	12.2	6.05	16.5	10	21	F68(3)AA684(1)250T	MDK10684(1)250A55P(3)TUBE
250	160	0.82	AA/A57	12.7	9.0	23.0	10	18	F68(4)AA824(1)250T	MDK10824(1)250A57P(4)TUBE
250	160	1.0	AA/A57	12.7	9.0	23.0	10	15	F68(4)AA105(1)250T	MDK10105(1)250A57P(4)TUBE
250	160	1.2	AA/A58	12.7	11.0	23.0	10	14	F68(4)AA125(1)250T	MDK10125(1)250A58P(4)TUBE
250	160	1.5	AA/A58	12.7	11.0	23.0	10	13	F68(4)AA155(1)250T	MDK10155(1)250A58P(4)TUBE
250	160	0.033	BA/B53	16.5	6.05	11.0	15	390	F683BA333(1)250T	MDK15333(1)250B53P3TUBE
250	160	0.039	BA/B53	16.5	6.05	11.0	15	330	F683BA393(1)250T	MDK15393(1)250B53P3TUBE
250	160	0.047	BA/B53	16.5	6.05	11.0	15	270	F683BA473(1)250T	MDK15473(1)250B53P3TUBE
250	160	0.056	BA/B53	16.5	6.05	11.0	15	230	F683BA563(1)250T	MDK15563(1)250B53P3TUBE
250	160	0.068	BA/B53	16.5	6.05	11.0	15	190	F683BA683(1)250T	MDK15683(1)250B53P3TUBE
250	160	0.082	BA/B53	16.5	6.05	11.0	15	160	F683BA823(1)250T	MDK15823(1)250B53P3TUBE
250	160	0.10	BA/B53	16.5	6.05	11.0	15	130	F683BA104(1)250T	MDK15104(1)250B53P3TUBE
250	160	0.12	BA/B53	16.5	6.05	11.0	15	110	F683BA124(1)250T	MDK15124(1)250B53P3TUBE
250	160	0.15	BA/B53	16.5	6.05	11.0	15	85	F683BA154(1)250T	MDK15154(1)250B53P3TUBE
250	160	0.18	BA/B53	16.5	6.05	11.0	15	70	F683BA184(1)250T	MDK15184(1)250B53P3TUBE
250	160	0.22	BA/B53	16.5	6.05	11.0	15	58	F683BA224(1)250T	MDK15224(1)250B53P3TUBE
250	160	0.27	BA/B53	16.5	6.05	11.0	15	47	F683BA274(1)250T	MDK15274(1)250B53P3TUBE
250	160	0.33	BA/B53	16.5	6.05	11.0	15	39	F683BA334(1)250T	MDK15334(1)250B53P3TUBE
250	160	0.39	BA/B53	16.5	6.05	11.0	15	39	F683BA394(1)250T	MDK15394(1)250B53P3TUBE
250	160	0.47	BA/B53	16.5	6.05	11.0	15	30	F683BA474(1)250T	MDK15474(1)250B53P3TUBE
250	160	0.56	BA/B53	16.5	6.05	11.0	15	26	F683BA564(1)250T	MDK15564(1)250B53P3TUBE
250	160	0.68	BA/B53	16.5	6.05	11.0	15	21	F683BA684(1)250T	MDK15684(1)250B53P3TUBE
400	200	0.033	AA/A52	12.2	6.05	11.0	10	390	F683AA333(1)400T	MDK10333(1)400A52P3TUBE
400	200	0.039	AA/A52	12.2	6.05	11.0	10	330	F683AA393(1)400T	MDK10393(1)400A52P3TUBE
400	200	0.047	AA/A52	12.2	6.05	11.0	10	270	F683AA473(1)400T	MDK10473(1)400A52P3TUBE
400	200	0.056	AA/A52	12.2	6.05	11.0	10	230	F683AA563(1)400T	MDK10563(1)400A52P3TUBE
400	200	0.068	AA/A52	12.2	6.05	11.0	10	190	F683AA683(1)400T	MDK10683(1)400A52P3TUBE
400	200	0.082	AA/A52	12.2	6.05	11.0	10	160	F683AA823(1)400T	MDK10823(1)400A52P3TUBE
400	200	0.10	AA/A52	12.2	6.05	11.0	10	130	F683AA104(1)400T	MDK10104(1)400A52P3TUBE
400	200	0.12	AA/A52	12.2	6.05	11.0	10	110	F683AA124(1)400T	MDK10124(1)400A52P3TUBE
400	200	0.15	AA/A52	12.2	6.05	11.0	10	85	F683AA154(1)400T	MDK10154(1)400A52P3TUBE
400	200	0.18	AA/A52	12.2	6.05	11.0	10	70	F683AA184(1)400T	MDK10184(1)400A52P3TUBE
400	200	0.22	AA/A57	12.7	9.0	23.0	10	58	F68(4)AA224(1)400T	MDK10224(1)400A57P(4)TUBE
400	200	0.27	AA/A57	12.7	9.0	23.0	10	47	F68(4)AA274(1)400T	MDK10274(1)400A57P(4)TUBE
400	200	0.33	AA/A57	12.7	9.0	23.0	10	39	F68(4)AA334(1)400T	MDK10334(1)400A57P(4)TUBE
400	200	0.39	AA/A58	12.7	11.0	23.0	10	33	F68(4)AA394(1)400T	MDK10394(1)400A58P(4)TUBE
400	200	0.47	AA/A58	12.7	11.0	23.0	10	30	F68(4)AA474(1)400T	MDK10474(1)400A58P(4)TUBE
400	200	0.033	BA/B53	16.5	6.05	11.0	15	390	F683BA333(1)400T	MDK15333(1)400B53P3TUBE
400	200	0.039	BA/B53	16.5	6.05	11.0	15	330	F683BA393(1)400T	MDK15393(1)400B53P3TUBE
VDC	**VAC**	**Cap Value (µF)**	**Size Code (New/Legacy)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**ESR 500 kHz (mΩ)**	**New KEMET Part Number**	**Legacy Part Number**

(1) J = ±5%, K = ±10%, other tolerances on request.
(2) = Number of Leads per side, 3 or 4.
(3) = Number of Leads per side, 3, 4 or 5.
(4) = Number of Leads per side, 7 or 8.

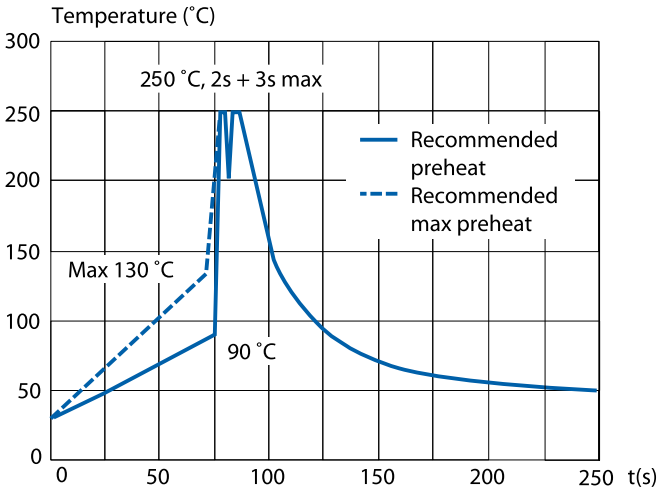
Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Size Code (New/Legacy)	Dimensions in mm			Lead Spacing (p)	ESR 500 kHz (mΩ)	New KEMET Part Number	Legacy Part Number
				B	H	L				
400	200	0.047	BA/B53	16.5	6.05	11.0	15	270	F683BA473(1)400T	MDK15473(1)400B53P3TUBE
400	200	0.056	BA/B53	16.5	6.05	11.0	15	230	F683BA563(1)400T	MDK15563(1)400B53P3TUBE
400	200	0.068	BA/B53	16.5	6.05	11.0	15	190	F683BA683(1)400T	MDK15683(1)400B53P3TUBE
400	200	0.082	BA/B53	16.5	6.05	11.0	15	160	F683BA823(1)400T	MDK15823(1)400B53P3TUBE
400	200	0.10	BA/B53	16.5	6.05	11.0	15	130	F683BA104(1)400T	MDK15104(1)400B53P3TUBE
400	200	0.12	BA/B53	16.5	6.05	11.0	15	110	F683BA124(1)400T	MDK15124(1)400B53P3TUBE
400	200	0.15	BA/B53	16.5	6.05	11.0	15	85	F683BA154(1)400T	MDK15154(1)400B53P3TUBE
400	200	0.18	BA/B53	16.5	6.05	11.0	15	70	F683BA184(1)400T	MDK15184(1)400B53P3TUBE
400	200	0.22	BA/B53	16.5	6.05	11.0	15	58	F683BA224(1)400T	MDK15224(1)400B53P3TUBE
400	200	0.27	BA/B53	16.5	6.05	11.0	15	47	F683BA274(1)400T	MDK15274(1)400B53P3TUBE
400	200	0.33	BA/B55	16.5	6.05	12.2	15	39	F68(2)BA334(1)400T	MDK15334(1)400B55P(2)TUBE
630	220	0.033	AA/A52	12.2	6.05	11.0	10	390	F683AA333(1)630T	MDK10333(1)630A52P3TUBE
630	220	0.039	AA/A52	12.2	6.05	11.0	10	330	F683AA393(1)630T	MDK10393(1)630A52P3TUBE
630	220	0.047	AA/A52	12.2	6.05	11.0	10	270	F683AA473(1)630T	MDK10473(1)630A52P3TUBE
630	220	0.056	AA/A52	12.2	6.05	11.0	10	230	F683AA563(1)630T	MDK10563(1)630A52P3TUBE
630	220	0.068	AA/A54	12.2	6.05	13.5	10	190	F68(2)AA683(1)630T	MDK10683(1)630A54P(2)TUBE
630	220	0.082	AA/A58	12.7	11.0	23.0	10	160	F68(4)AA823(1)630T	MDK10823(1)630A58P(4)TUBE
630	220	0.10	AA/A58	12.7	11.0	23.0	10	130	F68(4)AA104(1)630T	MDK10104(1)630A58P(4)TUBE
630	220	0.12	AA/A58	12.7	11.0	23.0	10	110	F68(4)AA124(1)630T	MDK10124(1)630A58P(4)TUBE
630	220	0.15	AA/A58	12.7	11.0	23.0	10	85	F68(4)AA154(1)630T	MDK10154(1)630A58P(4)TUBE
630	220	0.18	AA/A58	12.7	11.0	23.0	10	70	F68(4)AA184(1)630T	MDK10184(1)630A58P(4)TUBE
630	220	0.033	BA/B53	16.5	6.05	11.0	15	390	F683BA333(1)630T	MDK15333(1)630B53P3TUBE
630	220	0.039	BA/B53	16.5	6.05	11.0	15	330	F683BA393(1)630T	MDK15393(1)630B53P3TUBE
630	220	0.047	BA/B53	16.5	6.05	11.0	15	270	F683BA473(1)630T	MDK15473(1)630B53P3TUBE
630	220	0.056	BA/B53	16.5	6.05	11.0	15	230	F683BA563(1)630T	MDK15563(1)630B53P3TUBE
630	220	0.068	BA/B53	16.5	6.05	11.0	15	190	F683BA683(1)630T	MDK15683(1)630B53P3TUBE
630	220	0.082	BA/B53	16.5	6.05	11.0	15	160	F683BA823(1)630T	MDK15823(1)630B53P3TUBE
630	220	0.10	BA/B53	16.5	6.05	11.0	15	130	F683BA104(1)630T	MDK15104(1)630B53P3TUBE
VDC	**VAC**	**Cap Value (µF)**	**Size Code (New/Legacy)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**ESR 500 kHz (mΩ)**	**New KEMET Part Number**	**Legacy Part Number**

(1) J = ±5%, K = ±10%, other tolerances on request.
(2) = Number of leads per side, 3 or 4.
(3) = Number of leads per side, 3, 4 or 5.
(4) = Number of leads per side, 7 or 8.

Soldering Process

Wave soldering: The recommended preheating temperature is 90°C (130°C maximum). The peak temperature 250°C may be applied for 2 – 5 seconds maximum. KEMET recommends wave soldering for parts with up to 2 mm height.



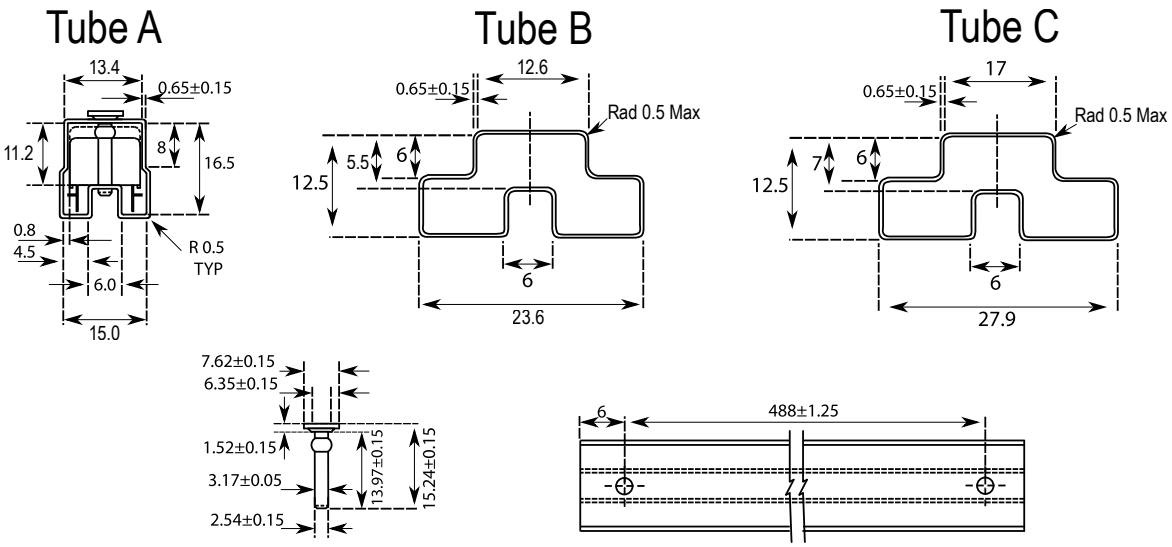
Marking

- KEMET
- Capacitance
- Capacitance tolerance code
- Rated voltage
- Capacitor family code MDK

Packaging Quantities

Size Code	Lead Spacing	Base (mm)	Height (mm)	Length (mm)	Bulk	Reel
A52	10.0	12.2	6.05	11.0	43	
A53		12.7	9.0	14.0	34	200
A54		12.2	6.05	13.5	35	
A55		12.2	6.05	16.5	28	
A57		12.7	9.0	23.0	21	
A58		12.7	11.0	23.0	21	
B53	15.0	16.5	6.05	11.0	43	
B55		16.5	6.05	12.2	39	

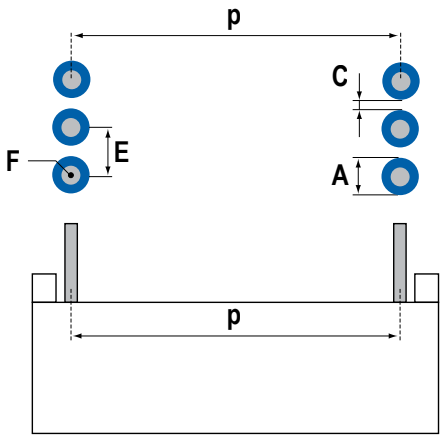
Tube Packaging



Size Code	Dimensions in mm	Tube
A52	10.0 – 12.2 x 6.05 x 11.0	Tube B
A53	10.0 – 12.7 x 9.0 x 14.0	Tube A
A54	10.0 – 12.2 x 6.05 x 13.5	Tube B
A55	10.0 – 12.2 x 6.05 x 16.5	Tube B
A57	10.0 – 12.7 x 9.0 x 23.0	Tube A
A58	10.0 – 12.7 x 11.0 x 23.0	Tube A
B53	15.0 – 16.5 x 6.05 x 11.0	Tube C
B55	15.0 – 16.5 x 6.05 x 12.2	Tube C

Landing

Size	Dimensions in mm				
	p	A	C	E	F
A52	10	2	0.54	2.54	0.7
A53	10	2	0.54	2.54	0.7
A54	10	2	0.54	2.54	0.7
A55	10	2	0.54	2.54	0.7
A57	10	2	0.54	2.54	0.7
A58	10	2	0.54	2.54	0.7
B53	15	2	0.54	2.54	0.7
B55	15	2	0.54	2.54	0.7



SMR Series Metallized Polyphenylene Sulfide Film, +150°C, 5.0 – 27.5 mm Lead Spacing, 50 – 400 VDC

Overview

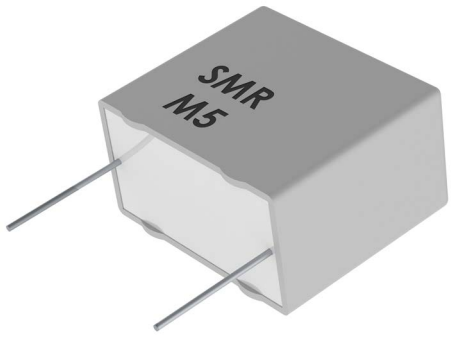
The SMR Series is a metallized polyphenylene sulfide film capacitor with vacuum-evaporated aluminum electrodes. Radial leads of tinned wire are electrically welded to the contact metal layer on the ends of the capacitor winding. The capacitor is encapsulated in self-extinguishing material meeting the requirements of UL 94 V–0.

Applications

Typical applications include automotive and other applications with high ambient temperatures, as well as those requiring high stability and low losses. The capacitor offers excellent sound quality in audio applications.

Benefits

- Voltage range: 50 – 400 VDC; 30 – 200 VAC
- Capacitance range: 0.001 – 22 µF
- Lead spacing: 5 – 27.5 mm
- Capacitance tolerance: ±10%, ±20%, ±2.5% and ±5% on request
- Climatic category: 55/150/56, IEC 60068–1
- Tape and reel packaging in accordance with IEC 60286–2
- RoHS Compliant and lead-free terminations
- Category temperature range -55 to +150°C
- Rated temperature +125°C



Legacy Part Number System

SMR	5	104	K	50	J01	L4	BULK
Series	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Size Code	Lead Length	Packaging
Metallized PPS	5 = 5.0 7.5 = 7.5 10 = 10.0 15 = 15.0 22.5 = 22.5 27.5 = 27.5	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	H = ±2.5% J = ±5% K = ±10% M = ±20%	50 = 50 63 = 63 100 = 100 250 = 250 400 = 400	See Dimension Table	Letter "L" followed by lead length in mm	See Ordering Options Table

New KEMET Part Number System

F	211	J	F	104	K	050	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging
F = Film	Metallized PPS	J = 5.0 K = 7.5 A = 10.0 B = 15.0 D = 22.5 F = 27.5	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeros.	R = ±2.5% J = ±5% K = ±10% M = ±20%	050 = 50 063 = 63 100 = 100 250 = 250 400 = 400	See Ordering Options Table

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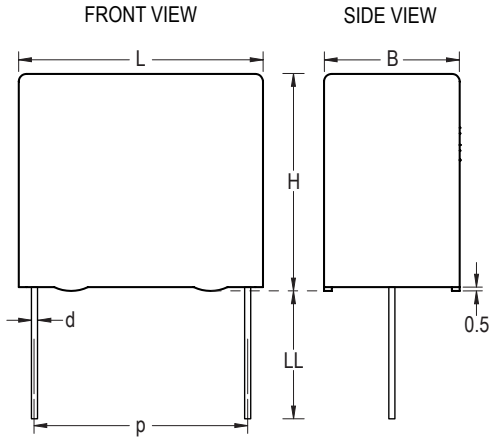
Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	KEMET Lead and Packaging Code	Legacy Lead and Packaging Code
5	**Standard Lead and Packaging Options**			
	Bulk – Straight Leads	4.0 +1/-0	C	L4BULK
	Bulk – Straight Leads	16.5 ±0.5	ALG5C	L16.5CBULK
	Tape & Reel (Standard Reel)	H_0= 18.5 ±0.5	L	L16.5TR18
	Other Lead and Packaging Options			
	Ammo Pack	H_0= 18.5 ±0.5	R	L16.5TA18
	Tape & Reel (Large Reel)	H_0= 18.5 ±0.5	P	L16.5LR18
7.5	**Standard Lead and Packaging Options**			
	Bulk – Straight Leads	4.0 +1/-0	C	L4BULK
	Bulk – Straight Leads	16.5 ±0.5	ALG5C	L16.5CBULK
	Tape & Reel (Standard Reel)	H_0= 18.5 ±0.5	L	L16.5TR18
	Other Lead and Packaging Options			
	Ammo Pack	H_0= 18.5 ±0.5	R	L16.5TA18
	Tape & Reel (Large Reel)	H_0= 18.5 ±0.5	P	L16.5LR18
	Ammo Pack (P_0 = 15 mm)	H_0= 18.5 ±0.5	XLAF1	XA18
10	**Standard Lead and Packaging Options**			
	Bulk – Straight Leads	4.0 +1/-0	C	L4BULK
	Bulk – Straight Leads	16.5 ±0.5	ALG5C	L16.5CBULK
	Tape & Reel (Standard Reel)	H_0= 18.5 ±0.5	L	L16.5TR18
	Other Lead and Packaging Options			
	Tape & Reel (Large Reel)	H_0= 18.5 ±0.5	P	L16.5LR18
Native 10 formed to 7.5	Ammo Pack	H_0= 18.5 ±0.5	XLAF1	XA18
	Tape & Reel (Standard Reel)	H_0= 18.5 ±0.5	XLTF1	XR18

Ordering Options Table cont'd

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	KEMET Lead and Packaging Code	Legacy Lead and Packaging Code
15	**Standard Lead and Packaging Options**			
	Bulk – Straight Leads	4.0 +1/-0	C	L4BULK
	Bulk – Straight Leads	16.5 ±0.5	ALG5C	L16.5CBULK
	Tape & Reel (Standard Reel)	H_0= 18.5 ±0.5	L	L16.5TR18
	Other Lead and Packaging Options			
	Tape & Reel (Large Reel)	H_0= 18.5 ±0.5	P	L16.5LR18
Native 15 formed to 7.5	Ammo Pack	H_0= 18.5 ±0.5	XLAF1	XA18
	Tape & Reel (Standard Reel)	H_0= 18.5 ±0.5	XLTF1	XR18
22.5	**Standard Lead and Packaging Options**			
	Bulk (Tray) – Short Leads	4.0 +1/-0	C	L4TRAY
27.5	**Standard Lead and Packaging Options**			
	Bulk (Tray) – Short Leads	4.0 +1/-0	C	L4TRAY

Dimensions – Millimeters



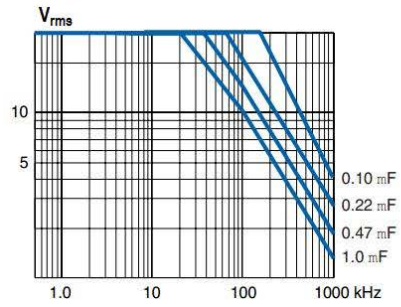
KEMET Size Code	Legacy Size Code	p		B		H		L		d	
		Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
JF	J01	5	+/-0.4	2.5	Maximum	6.5	Maximum	7.2	Maximum	0.5	+/-0.05
JJ	J02	5	+/-0.4	3.5	Maximum	8	Maximum	7.2	Maximum	0.5	+/-0.05
JL	J03	5	+/-0.4	4.5	Maximum	9	Maximum	7.2	Maximum	0.5	+/-0.05
JQ	J04	5	+/-0.4	5	Maximum	10	Maximum	7.2	Maximum	0.5	+/-0.05
JT	J05	5	+/-0.4	6	Maximum	11	Maximum	7.2	Maximum	0.5	+/-0.05
JU	J06	5	+/-0.4	7.2	Maximum	13	Maximum	7.2	Maximum	0.5	+/-0.05
KG	K01	7.5	+/-0.4	4	Maximum	8	Maximum	10	Maximum	0.6	+/-0.05
KK	K03	7.5	+/-0.4	5	Maximum	11	Maximum	10	Maximum	0.6	+/-0.05
KM	K04	7.5	+/-0.4	6	Maximum	12	Maximum	10.5	Maximum	0.6	+/-0.05
AG	A01	10	+/-0.4	4	Maximum	9	Maximum	13	Maximum	0.6	+/-0.05
AH	A02	10	+/-0.4	4.5	Maximum	10.5	Maximum	13	Maximum	0.6	+/-0.05
AK	A03	10	+/-0.4	5	Maximum	11	Maximum	13	Maximum	0.6	+/-0.05
AP	A04	10	+/-0.4	6	Maximum	12	Maximum	13	Maximum	0.6	+/-0.05
BD	B04	15	+/-0.4	5.5	Maximum	10.5	Maximum	18	Maximum	0.8	+/-0.05
BE	B05	15	+/-0.4	5.5	Maximum	12.5	Maximum	18	Maximum	0.8	+/-0.05
BL	B06	15	+/-0.4	7.5	Maximum	14.5	Maximum	18	Maximum	0.8	+/-0.05
BJ	B10	15	+/-0.4	6.5	Maximum	12.5	Maximum	18	Maximum	0.8	+/-0.05
BQ	B11	15	+/-0.4	8.5	Maximum	16	Maximum	18	Maximum	0.8	+/-0.05
BM	B12	15	+/-0.4	8	Maximum	15	Maximum	18	Maximum	0.8	+/-0.05
BV	B14	15	+/-0.4	9.5	Maximum	17.5	Maximum	18	Maximum	0.8	+/-0.05
DD	D13	22.5	+/-0.4	6.5	Maximum	14.5	Maximum	26	Maximum	0.8	+/-0.05
DH	D14	22.5	+/-0.4	8	Maximum	16	Maximum	26	Maximum	0.8	+/-0.05
DM	D15	22.5	+/-0.4	9	Maximum	18.5	Maximum	26	Maximum	0.8	+/-0.05
DT	D16	22.5	+/-0.4	11	Maximum	21.5	Maximum	26	Maximum	0.8	+/-0.05
DF	D17	22.5	+/-0.4	7	Maximum	16.5	Maximum	26	Maximum	0.8	+/-0.05
DR	D18	22.5	+/-0.4	10.5	Maximum	19	Maximum	26	Maximum	0.8	+/-0.05
FE	F11	27.5	+/-0.4	10.5	Maximum	20.5	Maximum	31.5	Maximum	0.8	+/-0.05
FG	F12	27.5	+/-0.4	11.5	Maximum	22.5	Maximum	31.5	Maximum	0.8	+/-0.05
FM	F13	27.5	+/-0.4	14.5	Maximum	24.5	Maximum	31.5	Maximum	0.8	+/-0.05
FR	F14	27.5	+/-0.4	17.5	Maximum	28	Maximum	31.5	Maximum	0.8	+/-0.05

Note: See Ordering Options Table for lead length (LL) options.

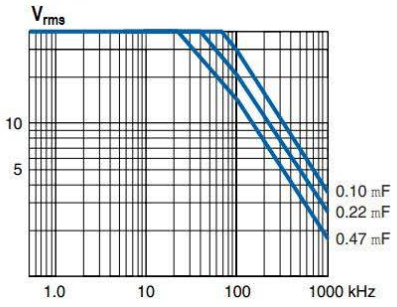
Performance Characteristics

Rated Voltage V_R (VDC)	50	63	100	250	400
Rated Voltage V_R (VAC)	30	40	63	160	200
Capacitance Range (µF)	0.001 – 22	0.001 – 22	0.001 – 12	0.001 – 3.9	0.001 – 1.8
Capacitance Tolerance	±10%, ±20%, ±2.5% and ±5% on request				
Category Temperature Range	-55 to +150°C				
Rated Temperature	+-55 to +125°C				
Voltage Derating	From +125°C, the voltage derating is 2%/°C				
Climatic Category	IEC 60068-1, 55/150/56				
	DIN 40040, FKD				
Test Voltage	1.6 x V_R for 2 seconds				
Reliability	Operational life > 200,000 hours				
	Failure rate < 3 FIT, T = +40°C, V = 0.5 x V_R				
	Failure criteria according to DIN 44122				
Capacitance Drift	Maximum 0.3% after a 2 year storage period at a temperature of +10° to +40°C and a relative humidity of 40 to 60%				
Insulation Resistance	Measured at +20°C According to IEC 60384–1				
	Minimum Values Between Terminals				
		C ≤ 0.33 µF		C > 0.33 µF	
	V_R ≤ 100 V	15,000 MΩ		5,000 MΩ • µF	
	V_R > 100 V	30,000 MΩ		10,000 MΩ • µF	
Dissipation Factor	Maximum Values at +23°C				
Lead Spacing			C ≤ 0.1 µF	0.1 µF < C ≤ 1.0 µF	C > 1.0 µF
SMR 5	1 kHz		0.15%	0.15%	0.15%
	10 kHz		0.25%	0.25%	0.35%
	100 kHz		0.50%	0.60%	
SMR 7.5 to 27.5	1 kHz		0.15%	0.15%	0.15%
	10 kHz		0.25%	0.25%	
	100 kHz		0.60%		

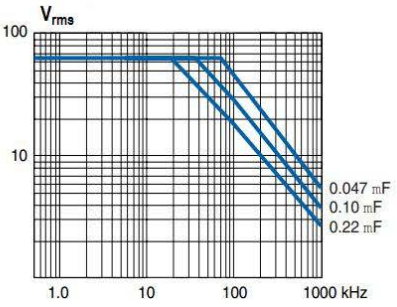
Derating of V_{rms} vs. Frequency, +100°C Ambient Temperature & 20°C Internal Heating, Typical Values



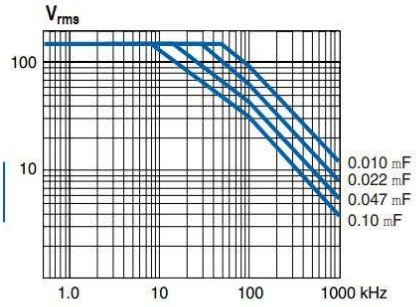
SMR5 **50/30**



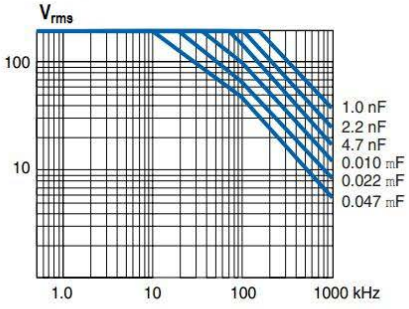
SMR5 **63/40**



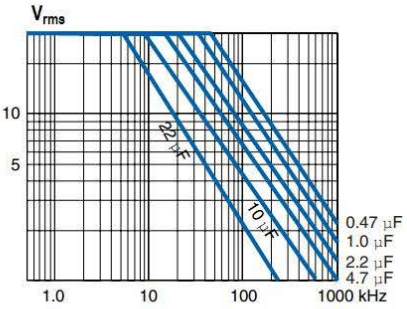
SMR5 **100/63**



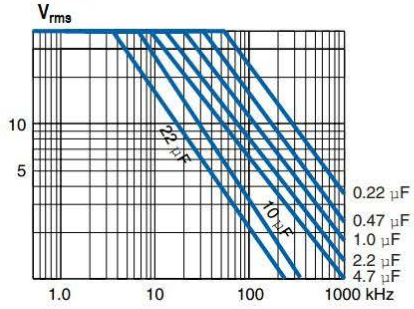
SMR5 **250/160**



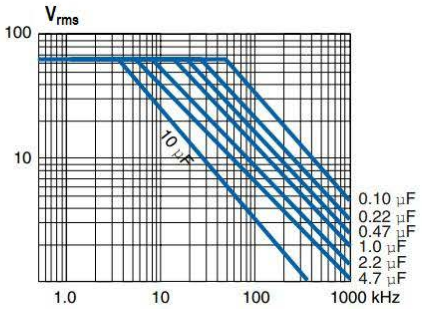
SMR5 **400/200**



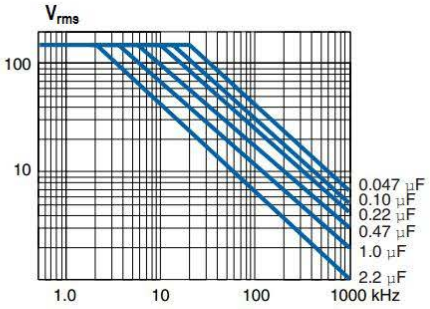
SMR7.5 ... 27.5 **50/30**



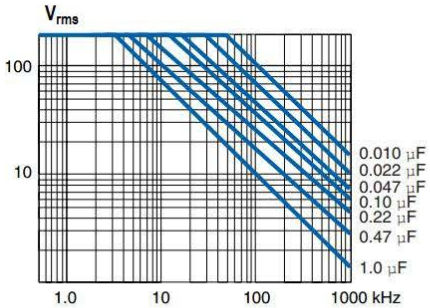
SMR7.5 ... 27.5 **63/40**



SMR7.5 ... 27.5 **100/63**



SMR7.5 ... 27.5 **250/160**



SMR7.5 ... 27.5 **400/200**

Environmental Test Data

Damp Heat Test	
Test Conditions	T = +40°C, RH = 93%, t = 56 days
Test Criteria	Δ C/C ≤ ± 3%
	Δ tanδ ≤ 0.0025 (1 kHz)
	IR after test 0.5 x IR minimum
Endurance Test	
Test Conditions	T = +125°C, V = 1.25 x (0.5 x V_R)
Test Criteria	t = 2,000 hours
	Δ C/C ≤ ±3%
	Δ tanδ ≤ 0.002 (1 kHz), C > 1 µF
	Δ tanδ ≤ 0.003 (10 kHz), C ≤ 1 µF
	IR after test 0.5 x IR minimum

Environmental Compliance

All KEMET PPS capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number
				B	H	L				
50	30	0.001	JF/J01	2.5	6.5	7.2	5	40	F211JF102(1)050(2)	SMR5102(3)50J01(2)
50	30	0.0012	JF/J01	2.5	6.5	7.2	5	40	F211JF122(1)050(2)	SMR5122(3)50J01(2)
50	30	0.0015	JF/J01	2.5	6.5	7.2	5	40	F211JF152(1)050(2)	SMR5152(3)50J01(2)
50	30	0.0018	JF/J01	2.5	6.5	7.2	5	40	F211JF182(1)050(2)	SMR5182(3)50J01(2)
50	30	0.0022	JF/J01	2.5	6.5	7.2	5	40	F211JF222(1)050(2)	SMR5222(3)50J01(2)
50	30	0.0027	JF/J01	2.5	6.5	7.2	5	40	F211JF272(1)050(2)	SMR5272(3)50J01(2)
50	30	0.0033	JF/J01	2.5	6.5	7.2	5	40	F211JF332(1)050(2)	SMR5332(3)50J01(2)
50	30	0.0039	JF/J01	2.5	6.5	7.2	5	40	F211JF392(1)050(2)	SMR5392(3)50J01(2)
50	30	0.0047	JF/J01	2.5	6.5	7.2	5	20	F211JF472(1)050(2)	SMR5472(3)50J01(2)
50	30	0.0056	JF/J01	2.5	6.5	7.2	5	20	F211JF562(1)050(2)	SMR5562(3)50J01(2)
50	30	0.0068	JF/J01	2.5	6.5	7.2	5	20	F211JF682(1)050(2)	SMR5682(3)50J01(2)
50	30	0.0082	JF/J01	2.5	6.5	7.2	5	20	F211JF822(1)050(2)	SMR5822(3)50J01(2)
50	30	0.01	JF/J01	2.5	6.5	7.2	5	20	F211JF103(1)050(2)	SMR5103(3)50J01(2)
50	30	0.012	JF/J01	2.5	6.5	7.2	5	15	F211JF123(1)050(2)	SMR5123(3)50J01(2)
50	30	0.015	JF/J01	2.5	6.5	7.2	5	15	F211JF153(1)050(2)	SMR5153(3)50J01(2)
50	30	0.018	JF/J01	2.5	6.5	7.2	5	15	F211JF183(1)050(2)	SMR5183(3)50J01(2)
50	30	0.022	JF/J01	2.5	6.5	7.2	5	15	F211JF223(1)050(2)	SMR5223(3)50J01(2)
50	30	0.027	JF/J01	2.5	6.5	7.2	5	15	F211JF273(1)050(2)	SMR5273(3)50J01(2)
50	30	0.033	JF/J01	2.5	6.5	7.2	5	15	F211JF333(1)050(2)	SMR5333(3)50J01(2)
50	30	0.039	JF/J01	2.5	6.5	7.2	5	15	F211JF393(1)050(2)	SMR5393(3)50J01(2)
50	30	0.047	JF/J01	2.5	6.5	7.2	5	6	F211JF473(1)050(2)	SMR5473(3)50J01(2)
50	30	0.056	JF/J01	2.5	6.5	7.2	5	6	F211JF563(1)050(2)	SMR5563(3)50J01(2)
50	30	0.068	JF/J01	2.5	6.5	7.2	5	6	F211JF683(1)050(2)	SMR5683(3)50J01(2)
50	30	0.082	JF/J01	2.5	6.5	7.2	5	6	F211JF823(1)050(2)	SMR5823(3)50J01(2)
50	30	0.1	JF/J01	2.5	6.5	7.2	5	6	F211JF104(1)050(2)	SMR5104(3)50J01(2)
50	30	0.12	JF/J01	2.5	6.5	7.2	5	6	F211JF124(1)050(2)	SMR5124(3)50J01(2)
50	30	0.15	JJ/J02	3.5	8	7.2	5	6	F211JJ154(1)050(2)	SMR5154(3)50J02(2)
50	30	0.18	JJ/J02	3.5	8	7.2	5	6	F211JJ184(1)050(2)	SMR5184(3)50J02(2)
50	30	0.22	JJ/J02	3.5	8	7.2	5	6	F211JJ224(1)050(2)	SMR5224(3)50J02(2)
50	30	0.27	JJ/J02	3.5	8	7.2	5	6	F211JJ274(1)050(2)	SMR5274(3)50J02(2)
50	30	0.33	JL/J03	4.5	9	7.2	5	6	F211JL334(1)050(2)	SMR5334(3)50J03(2)
50	30	0.39	JL/J03	4.5	9	7.2	5	6	F211JL394(1)050(2)	SMR5394(3)50J03(2)
50	30	0.47	JQ/J04	5	10	7.2	5	6	F211JQ474(1)050(2)	SMR5474(3)50J04(2)
50	30	0.56	JQ/J04	5	10	7.2	5	6	F211JQ564(1)050(2)	SMR5564(3)50J04(2)
50	30	0.68	JT/J05	6	11	7.2	5	6	F211JT684(1)050(2)	SMR5684(3)50J05(2)
50	30	0.82	JT/J05	6	11	7.2	5	6	F211JT824(1)050(2)	SMR5824(3)50J05(2)
50	30	1	JU/J06	7.2	13	7.2	5	6	F211JU105(1)050(2)	SMR5105(3)50J06(2)
50	30	1.2	JU/J06	7.2	13	7.2	5	6	F211JU125(1)050(2)	SMR5125(3)50J06(2)
50	30	0.001	KG/K01	4	8	10	7.5	30	F211KG102(1)050(2)	SMR7.5102(3)50K01(2)
50	30	0.0012	KG/K01	4	8	10	7.5	30	F211KG122(1)050(2)	SMR7.5122(3)50K01(2)
50	30	0.0015	KG/K01	4	8	10	7.5	30	F211KG152(1)050(2)	SMR7.5152(3)50K01(2)
50	30	0.0018	KG/K01	4	8	10	7.5	30	F211KG182(1)050(2)	SMR7.5182(3)50K01(2)
50	30	0.0022	KG/K01	4	8	10	7.5	30	F211KG222(1)050(2)	SMR7.5222(3)50K01(2)
50	30	0.0027	KG/K01	4	8	10	7.5	30	F211KG272(1)050(2)	SMR7.5272(3)50K01(2)
50	30	0.0033	KG/K01	4	8	10	7.5	30	F211KG332(1)050(2)	SMR7.5332(3)50K01(2)
50	30	0.0039	KG/K01	4	8	10	7.5	30	F211KG392(1)050(2)	SMR7.5392(3)50K01(2)
50	30	0.0047	KG/K01	4	8	10	7.5	30	F211KG472(1)050(2)	SMR7.5472(3)50K01(2)
50	30	0.0056	KG/K01	4	8	10	7.5	30	F211KG562(1)050(2)	SMR7.5562(3)50K01(2)
50	30	0.0068	KG/K01	4	8	10	7.5	30	F211KG682(1)050(2)	SMR7.5682(3)50K01(2)
50	30	0.0082	KG/K01	4	8	10	7.5	30	F211KG822(1)050(2)	SMR7.5822(3)50K01(2)
50	30	0.01	KG/K01	4	8	10	7.5	30	F211KG103(1)050(2)	SMR7.5103(3)50K01(2)
50	30	0.012	KG/K01	4	8	10	7.5	30	F211KG123(1)050(2)	SMR7.5123(3)50K01(2)
50	30	0.015	KG/K01	4	8	10	7.5	30	F211KG153(1)050(2)	SMR7.5153(3)50K01(2)
50	30	0.018	KG/K01	4	8	10	7.5	30	F211KG183(1)050(2)	SMR7.5183(3)50K01(2)
50	30	0.022	KG/K01	4	8	10	7.5	30	F211KG223(1)050(2)	SMR7.5223(3)50K01(2)
50	30	0.027	KG/K01	4	8	10	7.5	20	F211KG273(1)050(2)	SMR7.5273(3)50K01(2)
50	30	0.033	KG/K01	4	8	10	7.5	20	F211KG333(1)050(2)	SMR7.5333(3)50K01(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code (New/Legacy)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) R = ±2.5%, J = ±5%, K = ±10%, M = ±20%

(2) Insert lead and packaging code. See Ordering Options Table for available options.

(3) H = ±2.5%, J = ±5%, K = ±10%, M = ±20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number
				B	H	L				
50	30	0.039	KG/K01	4	8	10	7.5	20	F211KG393(1)050(2)	SMR7.5393(3)50K01(2)
50	30	0.047	KG/K01	4	8	10	7.5	20	F211KG473(1)050(2)	SMR7.5473(3)50K01(2)
50	30	0.056	KG/K01	4	8	10	7.5	15	F211KG563(1)050(2)	SMR7.5563(3)50K01(2)
50	30	0.068	KG/K01	4	8	10	7.5	15	F211KG683(1)050(2)	SMR7.5683(3)50K01(2)
50	30	0.082	KG/K01	4	8	10	7.5	15	F211KG823(1)050(2)	SMR7.5823(3)50K01(2)
50	30	0.1	KG/K01	4	8	10	7.5	15	F211KG104(1)050(2)	SMR7.5104(3)50K01(2)
50	30	0.12	KG/K01	4	8	10	7.5	15	F211KG124(1)050(2)	SMR7.5124(3)50K01(2)
50	30	0.15	KG/K01	4	8	10	7.5	10	F211KG154(1)050(2)	SMR7.5154(3)50K01(2)
50	30	0.18	KG/K01	4	8	10	7.5	10	F211KG184(1)050(2)	SMR7.5184(3)50K01(2)
50	30	0.22	KG/K01	4	8	10	7.5	10	F211KG224(1)050(2)	SMR7.5224(3)50K01(2)
50	30	0.27	KG/K01	4	8	10	7.5	10	F211KG274(1)050(2)	SMR7.5274(3)50K01(2)
50	30	0.33	KG/K01	4	8	10	7.5	10	F211KG334(1)050(2)	SMR7.5334(3)50K01(2)
50	30	0.39	KG/K01	4	8	10	7.5	10	F211KG394(1)050(2)	SMR7.5394(3)50K01(2)
50	30	0.47	KK/K03	5	11	10	7.5	10	F211KK474(1)050(2)	SMR7.5474(3)50K03(2)
50	30	0.56	KK/K03	5	11	10	7.5	10	F211KK564(1)050(2)	SMR7.5564(3)50K03(2)
50	30	0.68	KK/K03	5	11	10	7.5	10	F211KK684(1)050(2)	SMR7.5684(3)50K03(2)
50	30	0.82	KK/K03	5	11	10	7.5	10	F211KK824(1)050(2)	SMR7.5824(3)50K03(2)
50	30	1	KM/K04	6	12	10.5	7.5	10	F211KM105(1)050(2)	SMR7.5105(3)50K04(2)
50	30	1.2	KM/K04	6	12	10.5	7.5	10	F211KM125(1)050(2)	SMR7.5125(3)50K04(2)
50	30	0.0027	AG/A01	4	9	13	10	25	F211AG272(1)050(2)	SMR10272(3)50A01(2)
50	30	0.0033	AG/A01	4	9	13	10	25	F211AG332(1)050(2)	SMR10332(3)50A01(2)
50	30	0.0039	AG/A01	4	9	13	10	25	F211AG392(1)050(2)	SMR10392(3)50A01(2)
50	30	0.0047	AG/A01	4	9	13	10	25	F211AG472(1)050(2)	SMR10472(3)50A01(2)
50	30	0.0056	AG/A01	4	9	13	10	25	F211AG562(1)050(2)	SMR10562(3)50A01(2)
50	30	0.0068	AG/A01	4	9	13	10	25	F211AG682(1)050(2)	SMR10682(3)50A01(2)
50	30	0.0082	AG/A01	4	9	13	10	25	F211AG822(1)050(2)	SMR10822(3)50A01(2)
50	30	0.01	AG/A01	4	9	13	10	25	F211AG103(1)050(2)	SMR10103(3)50A01(2)
50	30	0.012	AG/A01	4	9	13	10	25	F211AG123(1)050(2)	SMR10123(3)50A01(2)
50	30	0.015	AG/A01	4	9	13	10	25	F211AG153(1)050(2)	SMR10153(3)50A01(2)
50	30	0.018	AG/A01	4	9	13	10	25	F211AG183(1)050(2)	SMR10183(3)50A01(2)
50	30	0.022	AG/A01	4	9	13	10	25	F211AG223(1)050(2)	SMR10223(3)50A01(2)
50	30	0.027	AG/A01	4	9	13	10	25	F211AG273(1)050(2)	SMR10273(3)50A01(2)
50	30	0.033	AG/A01	4	9	13	10	25	F211AG333(1)050(2)	SMR10333(3)50A01(2)
50	30	0.039	AG/A01	4	9	13	10	15	F211AG393(1)050(2)	SMR10393(3)50A01(2)
50	30	0.047	AG/A01	4	9	13	10	15	F211AG473(1)050(2)	SMR10473(3)50A01(2)
50	30	0.056	AG/A01	4	9	13	10	15	F211AG563(1)050(2)	SMR10563(3)50A01(2)
50	30	0.068	AG/A01	4	9	13	10	15	F211AG683(1)050(2)	SMR10683(3)50A01(2)
50	30	0.082	AG/A01	4	9	13	10	10	F211AG823(1)050(2)	SMR10823(3)50A01(2)
50	30	0.1	AG/A01	4	9	13	10	10	F211AG104(1)050(2)	SMR10104(3)50A01(2)
50	30	0.12	AG/A01	4	9	13	10	10	F211AG124(1)050(2)	SMR10124(3)50A01(2)
50	30	0.15	AG/A01	4	9	13	10	10	F211AG154(1)050(2)	SMR10154(3)50A01(2)
50	30	0.18	AG/A01	4	9	13	10	10	F211AG184(1)050(2)	SMR10184(3)50A01(2)
50	30	0.22	AG/A01	4	9	13	10	10	F211AG224(1)050(2)	SMR10224(3)50A01(2)
50	30	0.27	AG/A01	4	9	13	10	8	F211AG274(1)050(2)	SMR10274(3)50A01(2)
50	30	0.33	AG/A01	4	9	13	10	8	F211AG334(1)050(2)	SMR10334(3)50A01(2)
50	30	0.39	AG/A01	4	9	13	10	8	F211AG394(1)050(2)	SMR10394(3)50A01(2)
50	30	0.47	AG/A01	4	9	13	10	8	F211AG474(1)050(2)	SMR10474(3)50A01(2)
50	30	0.56	AG/A01	4	9	13	10	8	F211AG564(1)050(2)	SMR10564(3)50A01(2)
50	30	0.68	AG/A01	4	9	13	10	8	F211AG684(1)050(2)	SMR10684(3)50A01(2)
50	30	0.82	AH/A02	4.5	10.5	13	10	8	F211AH824(1)050(2)	SMR10824(3)50A02(2)
50	30	1	AK/A03	4.5	10.5	13	10	8	F211AK105(1)050(2)	SMR10105(3)50A03(2)
50	30	1.2	AK/A03	5	11	13	10	8	F211AK125(1)050(2)	SMR10125(3)50A03(2)
50	30	1.5	AP/A04	6	12	13	10	8	F211AP155(1)050(2)	SMR10155(3)50A04(2)
50	30	1.8	AP/A04	6	12	13	10	8	F211AP185(1)050(2)	SMR10185(3)50A04(2)
50	30	2.2	BJ/B10	6.5	12.5	18	15	6	F211BJ225(1)050(2)	SMR15225(3)50B10(2)
50	30	2.7	BL/B06	7.5	14.5	18	15	6	F211BL275(1)050(2)	SMR15275(3)50B06(2)
50	30	3.3	BL/B06	7.5	14.5	18	15	6	F211BL335(1)050(2)	SMR15335(3)50B06(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code (New/Legacy)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) R = ±2.5%, J = ±5%, K = ±10%, M = ±20%

(2) Insert lead and packaging code. See Ordering Options Table for available options.

(3) H = ±2.5%, J = ±5%, K = ±10%, M = ±20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number
				B	H	L				
50	30	3.9	BM/B12	8	15	18	15	6	F211BM395(1)050(2)	SMR15395(3)50B12(2)
50	30	4.7	BV/B14	8.5	16	18	15	6	F211BV475(1)050(2)	SMR15475(3)50B14(2)
50	30	5.6	BV/B14	9.5	17.5	18	15	6	F211BV565(1)050(2)	SMR15565(3)50B14(2)
50	30	6.8	DM/D15	9	18.5	26	22.5	3	F211DM685(1)050(2)	SMR22.5685(3)50D15(2)
50	30	8.2	DM/D15	9	18.5	26	22.5	3	F211DM825(1)050(2)	SMR22.5825(3)50D15(2)
50	30	10	DR/D18	10.5	19	26	22.5	3	F211DR106(1)050(2)	SMR22.5106(3)50D18(2)
50	30	12	DT/D16	11	21.5	26	22.5	3	F211DT126(1)050(2)	SMR22.5126(3)50D16(2)
50	30	15	FE/F11	10.5	20.5	31.5	27.5	2	F211FE156(1)050(2)	SMR27.5156(3)50F11(2)
50	30	18	FG/F12	11.5	22.5	31.5	27.5	2	F211FG186(1)050(2)	SMR27.5186(3)50F12(2)
50	30	22	FM/F13	14.5	24.5	31.5	27.5	2	F211FM226(1)050(2)	SMR27.5226(3)50F13(2)
63	40	0.001	JF/J01	2.5	6.5	7.2	5	40	F211JF102(1)063(2)	SMR5102(3)63J01(2)
63	40	0.0012	JF/J01	2.5	6.5	7.2	5	40	F211JF122(1)063(2)	SMR5122(3)63J01(2)
63	40	0.0015	JF/J01	2.5	6.5	7.2	5	40	F211JF152(1)063(2)	SMR5152(3)63J01(2)
63	40	0.0018	JF/J01	2.5	6.5	7.2	5	40	F211JF182(1)063(2)	SMR5182(3)63J01(2)
63	40	0.0022	JF/J01	2.5	6.5	7.2	5	40	F211JF222(1)063(2)	SMR5222(3)63J01(2)
63	40	0.0027	JF/J01	2.5	6.5	7.2	5	40	F211JF272(1)063(2)	SMR5272(3)63J01(2)
63	40	0.0033	JF/J01	2.5	6.5	7.2	5	40	F211JF332(1)063(2)	SMR5332(3)63J01(2)
63	40	0.0039	JF/J01	2.5	6.5	7.2	5	40	F211JF392(1)063(2)	SMR5392(3)63J01(2)
63	40	0.0047	JF/J01	2.5	6.5	7.2	5	20	F211JF472(1)063(2)	SMR5472(3)63J01(2)
63	40	0.0056	JF/J01	2.5	6.5	7.2	5	20	F211JF562(1)063(2)	SMR5562(3)63J01(2)
63	40	0.0068	JF/J01	2.5	6.5	7.2	5	20	F211JF682(1)063(2)	SMR5682(3)63J01(2)
63	40	0.0082	JF/J01	2.5	6.5	7.2	5	20	F211JF822(1)063(2)	SMR5822(3)63J01(2)
63	40	0.01	JF/J01	2.5	6.5	7.2	5	20	F211JF103(1)063(2)	SMR5103(3)63J01(2)
63	40	0.012	JF/J01	2.5	6.5	7.2	5	15	F211JF123(1)063(2)	SMR5123(3)63J01(2)
63	40	0.015	JF/J01	2.5	6.5	7.2	5	15	F211JF153(1)063(2)	SMR5153(3)63J01(2)
63	40	0.018	JF/J01	2.5	6.5	7.2	5	15	F211JF183(1)063(2)	SMR5183(3)63J01(2)
63	40	0.022	JF/J01	2.5	6.5	7.2	5	15	F211JF223(1)063(2)	SMR5223(3)63J01(2)
63	40	0.027	JF/J01	2.5	6.5	7.2	5	15	F211JF273(1)063(2)	SMR5273(3)63J01(2)
63	40	0.033	JF/J01	2.5	6.5	7.2	5	15	F211JF333(1)063(2)	SMR5333(3)63J01(2)
63	40	0.039	JF/J01	2.5	6.5	7.2	5	15	F211JF393(1)063(2)	SMR5393(3)63J01(2)
63	40	0.047	JF/J01	2.5	6.5	7.2	5	6	F211JF473(1)063(2)	SMR5473(3)63J01(2)
63	40	0.056	JF/J01	2.5	6.5	7.2	5	6	F211JF563(1)063(2)	SMR5563(3)63J01(2)
63	40	0.068	JF/J01	2.5	6.5	7.2	5	6	F211JF683(1)063(2)	SMR5683(3)63J01(2)
63	40	0.082	JJ/J02	3.5	8	7.2	5	6	F211JJ823(1)063(2)	SMR5823(3)63J02(2)
63	40	0.1	JJ/J02	3.5	8	7.2	5	6	F211JJ104(1)063(2)	SMR5104(3)63J02(2)
63	40	0.12	JJ/J02	3.5	8	7.2	5	6	F211JJ124(1)063(2)	SMR5124(3)63J02(2)
63	40	0.15	JJ/J02	3.5	8	7.2	5	6	F211JJ154(1)063(2)	SMR5154(3)63J02(2)
63	40	0.18	JL/J03	4.5	9	7.2	5	6	F211JL184(1)063(2)	SMR5184(3)63J03(2)
63	40	0.22	JL/J03	4.5	9	7.2	5	6	F211JL224(1)063(2)	SMR5224(3)63J03(2)
63	40	0.27	JQ/J04	5	10	7.2	5	6	F211JQ274(1)063(2)	SMR5274(3)63J04(2)
63	40	0.33	JQ/J04	5	10	7.2	5	6	F211JQ334(1)063(2)	SMR5334(3)63J04(2)
63	40	0.39	JT/J05	6	11	7.2	5	6	F211JT394(1)063(2)	SMR5394(3)63J05(2)
63	40	0.47	JT/J05	6	11	7.2	5	6	F211JT474(1)063(2)	SMR5474(3)63J05(2)
63	40	0.56	JU/J06	7.2	13	7.2	5	6	F211JU564(1)063(2)	SMR5564(3)63J06(2)
63	40	0.68	JU/J06	7.2	13	7.2	5	6	F211JU684(1)063(2)	SMR5684(3)63J06(2)
63	40	0.001	KG/K01	4	8	10	7.5	30	F211KG102(1)063(2)	SMR7.5102(3)63K01(2)
63	40	0.0012	KG/K01	4	8	10	7.5	30	F211KG122(1)063(2)	SMR7.5122(3)63K01(2)
63	40	0.0015	KG/K01	4	8	10	7.5	30	F211KG152(1)063(2)	SMR7.5152(3)63K01(2)
63	40	0.0018	KG/K01	4	8	10	7.5	30	F211KG182(1)063(2)	SMR7.5182(3)63K01(2)
63	40	0.0022	KG/K01	4	8	10	7.5	30	F211KG222(1)063(2)	SMR7.5222(3)63K01(2)
63	40	0.0027	KG/K01	4	8	10	7.5	30	F211KG272(1)063(2)	SMR7.5272(3)63K01(2)
63	40	0.0033	KG/K01	4	8	10	7.5	30	F211KG332(1)063(2)	SMR7.5332(3)63K01(2)
63	40	0.0039	KG/K01	4	8	10	7.5	30	F211KG392(1)063(2)	SMR7.5392(3)63K01(2)
63	40	0.0047	KG/K01	4	8	10	7.5	30	F211KG472(1)063(2)	SMR7.5472(3)63K01(2)
63	40	0.0056	KG/K01	4	8	10	7.5	30	F211KG562(1)063(2)	SMR7.5562(3)63K01(2)
63	40	0.0068	KG/K01	4	8	10	7.5	30	F211KG682(1)063(2)	SMR7.5682(3)63K01(2)
63	40	0.0082	KG/K01	4	8	10	7.5	30	F211KG822(1)063(2)	SMR7.5822(3)63K01(2)
VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number

(1) R = ±2.5%, J = ±5%, K = ±10%, M = ±20%

(2) Insert lead and packaging code. See Ordering Options Table for available options.

(3) H = ±2.5%, J = ±5%, K = ±10%, M = ±20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number
				B	H	L				
63	40	0.01	KG/K01	4	8	10	7.5	30	F211KG103(1)063(2)	SMR7.5103(3)63K01(2)
63	40	0.012	KG/K01	4	8	10	7.5	30	F211KG123(1)063(2)	SMR7.5123(3)63K01(2)
63	40	0.015	KG/K01	4	8	10	7.5	30	F211KG153(1)063(2)	SMR7.5153(3)63K01(2)
63	40	0.018	KG/K01	4	8	10	7.5	30	F211KG183(1)063(2)	SMR7.5183(3)63K01(2)
63	40	0.022	KG/K01	4	8	10	7.5	30	F211KG223(1)063(2)	SMR7.5223(3)63K01(2)
63	40	0.027	KG/K01	4	8	10	7.5	20	F211KG273(1)063(2)	SMR7.5273(3)63K01(2)
63	40	0.033	KG/K01	4	8	10	7.5	20	F211KG333(1)063(2)	SMR7.5333(3)63K01(2)
63	40	0.039	KG/K01	4	8	10	7.5	20	F211KG393(1)063(2)	SMR7.5393(3)63K01(2)
63	40	0.047	KG/K01	4	8	10	7.5	20	F211KG473(1)063(2)	SMR7.5473(3)63K01(2)
63	40	0.056	KG/K01	4	8	10	7.5	15	F211KG563(1)063(2)	SMR7.5563(3)63K01(2)
63	40	0.068	KG/K01	4	8	10	7.5	15	F211KG683(1)063(2)	SMR7.5683(3)63K01(2)
63	40	0.082	KG/K01	4	8	10	7.5	15	F211KG823(1)063(2)	SMR7.5823(3)63K01(2)
63	40	0.1	KG/K01	4	8	10	7.5	15	F211KG104(1)063(2)	SMR7.5104(3)63K01(2)
63	40	0.12	KG/K01	4	8	10	7.5	15	F211KG124(1)063(2)	SMR7.5124(3)63K01(2)
63	40	0.15	KG/K01	4	8	10	7.5	10	F211KG154(1)063(2)	SMR7.5154(3)63K01(2)
63	40	0.18	KG/K01	4	8	10	7.5	10	F211KG184(1)063(2)	SMR7.5184(3)63K01(2)
63	40	0.22	KG/K01	4	8	10	7.5	10	F211KG224(1)063(2)	SMR7.5224(3)63K01(2)
63	40	0.27	KG/K01	4	8	10	7.5	10	F211KG274(1)063(2)	SMR7.5274(3)63K01(2)
63	40	0.33	KK/K03	5	11	10	7.5	10	F211KK334(1)063(2)	SMR7.5334(3)63K03(2)
63	40	0.39	KK/K03	5	11	10	7.5	10	F211KK394(1)063(2)	SMR7.5394(3)63K03(2)
63	40	0.47	KK/K03	5	11	10	7.5	10	F211KK474(1)063(2)	SMR7.5474(3)63K03(2)
63	40	0.56	KK/K03	5	11	10	7.5	10	F211KK564(1)063(2)	SMR7.5564(3)63K03(2)
63	40	0.68	KM/K04	6	12	10.5	7.5	10	F211KM684(1)063(2)	SMR7.5684(3)63K04(2)
63	40	0.82	KM/K04	6	12	10.5	7.5	10	F211KM824(1)063(2)	SMR7.5824(3)63K04(2)
63	40	0.0027	AG/A01	4	9	13	10	25	F211AG272(1)063(2)	SMR10272(3)63A01(2)
63	40	0.0033	AG/A01	4	9	13	10	25	F211AG332(1)063(2)	SMR10332(3)63A01(2)
63	40	0.0039	AG/A01	4	9	13	10	25	F211AG392(1)063(2)	SMR10392(3)63A01(2)
63	40	0.0047	AG/A01	4	9	13	10	25	F211AG472(1)063(2)	SMR10472(3)63A01(2)
63	40	0.0056	AG/A01	4	9	13	10	25	F211AG562(1)063(2)	SMR10562(3)63A01(2)
63	40	0.0068	AG/A01	4	9	13	10	25	F211AG682(1)063(2)	SMR10682(3)63A01(2)
63	40	0.0082	AG/A01	4	9	13	10	25	F211AG822(1)063(2)	SMR10822(3)63A01(2)
63	40	0.01	AG/A01	4	9	13	10	25	F211AG103(1)063(2)	SMR10103(3)63A01(2)
63	40	0.012	AG/A01	4	9	13	10	25	F211AG123(1)063(2)	SMR10123(3)63A01(2)
63	40	0.015	AG/A01	4	9	13	10	25	F211AG153(1)063(2)	SMR10153(3)63A01(2)
63	40	0.018	AG/A01	4	9	13	10	25	F211AG183(1)063(2)	SMR10183(3)63A01(2)
63	40	0.022	AG/A01	4	9	13	10	25	F211AG223(1)063(2)	SMR10223(3)63A01(2)
63	40	0.027	AG/A01	4	9	13	10	25	F211AG273(1)063(2)	SMR10273(3)63A01(2)
63	40	0.033	AG/A01	4	9	13	10	25	F211AG333(1)063(2)	SMR10333(3)63A01(2)
63	40	0.039	AG/A01	4	9	13	10	15	F211AG393(1)063(2)	SMR10393(3)63A01(2)
63	40	0.047	AG/A01	4	9	13	10	15	F211AG473(1)063(2)	SMR10473(3)63A01(2)
63	40	0.056	AG/A01	4	9	13	10	15	F211AG563(1)063(2)	SMR10563(3)63A01(2)
63	40	0.068	AG/A01	4	9	13	10	15	F211AG683(1)063(2)	SMR10683(3)63A01(2)
63	40	0.082	AG/A01	4	9	13	10	10	F211AG823(1)063(2)	SMR10823(3)63A01(2)
63	40	0.1	AG/A01	4	9	13	10	10	F211AG104(1)063(2)	SMR10104(3)63A01(2)
63	40	0.12	AG/A01	4	9	13	10	10	F211AG124(1)063(2)	SMR10124(3)63A01(2)
63	40	0.15	AG/A01	4	9	13	10	10	F211AG154(1)063(2)	SMR10154(3)63A01(2)
63	40	0.18	AG/A01	4	9	13	10	10	F211AG184(1)063(2)	SMR10184(3)63A01(2)
63	40	0.22	AG/A01	4	9	13	10	10	F211AG224(1)063(2)	SMR10224(3)63A01(2)
63	40	0.27	AG/A01	4	9	13	10	8	F211AG274(1)063(2)	SMR10274(3)63A01(2)
63	40	0.33	AG/A01	4	9	13	10	8	F211AG334(1)063(2)	SMR10334(3)63A01(2)
63	40	0.39	AG/A01	4	9	13	10	8	F211AG394(1)063(2)	SMR10394(3)63A01(2)
63	40	0.47	AH/A02	4.5	10.5	13	10	8	F211AH474(1)063(2)	SMR10474(3)63A02(2)
63	40	0.56	AH/A02	4.5	10.5	13	10	8	F211AH564(1)063(2)	SMR10564(3)63A02(2)
63	40	0.68	AK/A03	5	11	13	10	8	F211AK684(1)063(2)	SMR10684(3)63A03(2)
63	40	0.82	AP/A04	6	12	13	10	8	F211AP824(1)063(2)	SMR10824(3)63A04(2)
63	40	1	AP/A04	6	12	13	10	8	F211AP105(1)063(2)	SMR10105(3)63A04(2)
63	40	0.68	BD/B04	5.5	10.5	18	15	8	F211BD684(1)063(2)	SMR15684(3)63B04(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code (New/Legacy)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) R = ±2.5%, J = ±5%, K = ±10%, M = ±20%

(2) Insert lead and packaging code. See Ordering Options Table for available options.

(3) H = ±2.5%, J = ±5%, K = ±10%, M = ±20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number
				B	H	L				
63	40	0.82	BD/B04	5.5	10.5	18	15	8	F211BD824(1)063(2)	SMR15824(3)63B04(2)
63	40	1	BE/B05	5.5	12.5	18	15	8	F211BE105(1)063(2)	SMR15105(3)63B05(2)
63	40	1.2	BJ/B10	6.5	12.5	18	15	6	F211BJ125(1)063(2)	SMR15125(3)63B10(2)
63	40	1.5	BJ/B10	6.5	12.5	18	15	6	F211BJ155(1)063(2)	SMR15155(3)63B10(2)
63	40	1.8	BL/B06	7.5	14.5	18	15	6	F211BL185(1)063(2)	SMR15185(3)63B06(2)
63	40	2.2	BM/B12	8	15	18	15	6	F211BM225(1)063(2)	SMR15225(3)63B12(2)
63	40	2.7	BQ/B11	8.5	16	18	15	6	F211BQ275(1)063(2)	SMR15275(3)63B11(2)
63	40	3.3	BV/B14	9.5	17.5	18	15	6	F211BV335(1)063(2)	SMR15335(3)63B14(2)
63	40	2.7	DD/D13	6.5	14.5	26	22.5	3	F211DD275(1)063(2)	SMR22.5275(3)63D13(2)
63	40	3.3	DF/D17	7	16.5	26	22.5	3	F211DF335(1)063(2)	SMR22.5335(3)63D17(2)
63	40	3.9	DH/D14	8	16	26	22.5	3	F211DH395(1)063(2)	SMR22.5395(3)63D14(2)
63	40	4.7	DM/D15	9	18.5	26	22.5	3	F211DM475(1)063(2)	SMR22.5475(3)63D15(2)
63	40	5.6	DM/D15	9	18.5	26	22.5	3	F211DM565(1)063(2)	SMR22.5565(3)63D15(2)
63	40	6.8	DR/D18	10.5	19	26	22.5	3	F211DR685(1)063(2)	SMR22.5685(3)63D18(2)
63	40	8.2	DT/D16	11	21.5	26	22.5	3	F211DT825(1)063(2)	SMR22.5825(3)63D16(2)
63	40	10	FG/F12	11.5	22.5	31.5	27.5	2	F211FG106(1)063(2)	SMR27.5106(3)63F12(2)
63	40	12	FM/F13	14.5	24.5	31.5	27.5	2	F211FM126(1)063(2)	SMR27.5126(3)63F13(2)
63	40	15	FM/F13	14.5	24.5	31.5	27.5	2	F211FM156(1)063(2)	SMR27.5156(3)63F13(2)
63	40	18	FR/F14	17.5	28	31.5	27.5	2	F211FR186(1)063(2)	SMR27.5186(3)63F14(2)
63	40	22	FR/F14	17.5	28	31.5	27.5	2	F211FR226(1)063(2)	SMR27.5226(3)63F14(2)
100	63	0.001	JF/J01	2.5	6.5	7.2	5	40	F211JF102(1)100(2)	SMR5102(3)100J01(2)
100	63	0.0012	JF/J01	2.5	6.5	7.2	5	40	F211JF122(1)100(2)	SMR5122(3)100J01(2)
100	63	0.0015	JF/J01	2.5	6.5	7.2	5	40	F211JF152(1)100(2)	SMR5152(3)100J01(2)
100	63	0.0018	JF/J01	2.5	6.5	7.2	5	40	F211JF182(1)100(2)	SMR5182(3)100J01(2)
100	63	0.0022	JF/J01	2.5	6.5	7.2	5	40	F211JF222(1)100(2)	SMR5222(3)100J01(2)
100	63	0.0027	JF/J01	2.5	6.5	7.2	5	40	F211JF272(1)100(2)	SMR5272(3)100J01(2)
100	63	0.0033	JF/J01	2.5	6.5	7.2	5	40	F211JF332(1)100(2)	SMR5332(3)100J01(2)
100	63	0.0039	JF/J01	2.5	6.5	7.2	5	40	F211JF392(1)100(2)	SMR5392(3)100J01(2)
100	63	0.0047	JF/J01	2.5	6.5	7.2	5	20	F211JF472(1)100(2)	SMR5472(3)100J01(2)
100	63	0.0056	JF/J01	2.5	6.5	7.2	5	20	F211JF562(1)100(2)	SMR5562(3)100J01(2)
100	63	0.0068	JF/J01	2.5	6.5	7.2	5	20	F211JF682(1)100(2)	SMR5682(3)100J01(2)
100	63	0.0082	JF/J01	2.5	6.5	7.2	5	20	F211JF822(1)100(2)	SMR5822(3)100J01(2)
100	63	0.01	JF/J01	2.5	6.5	7.2	5	20	F211JF103(1)100(2)	SMR5103(3)100J01(2)
100	63	0.012	JF/J01	2.5	6.5	7.2	5	15	F211JF123(1)100(2)	SMR5123(3)100J01(2)
100	63	0.015	JF/J01	2.5	6.5	7.2	5	15	F211JF153(1)100(2)	SMR5153(3)100J01(2)
100	63	0.018	JF/J01	2.5	6.5	7.2	5	15	F211JF183(1)100(2)	SMR5183(3)100J01(2)
100	63	0.022	JF/J01	2.5	6.5	7.2	5	15	F211JF223(1)100(2)	SMR5223(3)100J01(2)
100	63	0.027	JF/J01	2.5	6.5	7.2	5	15	F211JF273(1)100(2)	SMR5273(3)100J01(2)
100	63	0.033	JF/J01	2.5	6.5	7.2	5	15	F211JF333(1)100(2)	SMR5333(3)100J01(2)
100	63	0.039	JF/J01	2.5	6.5	7.2	5	15	F211JF393(1)100(2)	SMR5393(3)100J01(2)
100	63	0.047	JJ/J02	3.5	8	7.2	5	15	F211JJ473(1)100(2)	SMR5473(3)100J02(2)
100	63	0.056	JL/J03	4.5	9	7.2	5	15	F211JL563(1)100(2)	SMR5563(3)100J03(2)
100	63	0.068	JL/J03	4.5	9	7.2	5	15	F211JL683(1)100(2)	SMR5683(3)100J03(2)
100	63	0.082	JL/J03	4.5	9	7.2	5	15	F211JL823(1)100(2)	SMR5823(3)100J03(2)
100	63	0.1	JL/J03	4.5	9	7.2	5	15	F211JL104(1)100(2)	SMR5104(3)100J03(2)
100	63	0.12	JQ/J04	5	10	7.2	5	15	F211JQ124(1)100(2)	SMR5124(3)100J04(2)
100	63	0.15	JT/J05	6	11	7.2	5	15	F211JT154(1)100(2)	SMR5154(3)100J05(2)
100	63	0.18	JT/J05	6	11	7.2	5	15	F211JT184(1)100(2)	SMR5184(3)100J05(2)
100	63	0.22	JU/J06	7.2	13	7.2	5	15	F211JU224(1)100(2)	SMR5224(3)100J06(2)
100	63	0.27	JU/J06	7.2	13	7.2	5	15	F211JU274(1)100(2)	SMR5274(3)100J06(2)
100	63	0.33	JU/J06	7.2	13	7.2	5	15	F211JU334(1)100(2)	SMR5334(3)100J06(2)
100	63	0.001	KG/K01	4	8	10	7.5	30	F211KG102(1)100(2)	SMR7.5102(3)100K01(2)
100	63	0.0012	KG/K01	4	8	10	7.5	30	F211KG122(1)100(2)	SMR7.5122(3)100K01(2)
100	63	0.0015	KG/K01	4	8	10	7.5	30	F211KG152(1)100(2)	SMR7.5152(3)100K01(2)
100	63	0.0018	KG/K01	4	8	10	7.5	30	F211KG182(1)100(2)	SMR7.5182(3)100K01(2)
100	63	0.0022	KG/K01	4	8	10	7.5	30	F211KG222(1)100(2)	SMR7.5222(3)100K01(2)
100	63	0.0027	KG/K01	4	8	10	7.5	30	F211KG272(1)100(2)	SMR7.5272(3)100K01(2)
VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number

(1) R = ±2.5%, J = ±5%, K = ±10%, M = ±20%

(2) Insert lead and packaging code. See Ordering Options Table for available options.

(3) H = ±2.5%, J = ±5%, K = ±10%, M = ±20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number
				B	H	L				
100	63	0.0033	KG/K01	4	8	10	7.5	30	F211KG332(1)100(2)	SMR7.5332(3)100K01(2)
100	63	0.0039	KG/K01	4	8	10	7.5	30	F211KG392(1)100(2)	SMR7.5392(3)100K01(2)
100	63	0.0047	KG/K01	4	8	10	7.5	30	F211KG472(1)100(2)	SMR7.5472(3)100K01(2)
100	63	0.0056	KG/K01	4	8	10	7.5	30	F211KG562(1)100(2)	SMR7.5562(3)100K01(2)
100	63	0.0068	KG/K01	4	8	10	7.5	30	F211KG682(1)100(2)	SMR7.5682(3)100K01(2)
100	63	0.0082	KG/K01	4	8	10	7.5	30	F211KG822(1)100(2)	SMR7.5822(3)100K01(2)
100	63	0.01	KG/K01	4	8	10	7.5	30	F211KG103(1)100(2)	SMR7.5103(3)100K01(2)
100	63	0.012	KG/K01	4	8	10	7.5	30	F211KG123(1)100(2)	SMR7.5123(3)100K01(2)
100	63	0.015	KG/K01	4	8	10	7.5	30	F211KG153(1)100(2)	SMR7.5153(3)100K01(2)
100	63	0.018	KG/K01	4	8	10	7.5	30	F211KG183(1)100(2)	SMR7.5183(3)100K01(2)
100	63	0.022	KG/K01	4	8	10	7.5	30	F211KG223(1)100(2)	SMR7.5223(3)100K01(2)
100	63	0.027	KG/K01	4	8	10	7.5	20	F211KG273(1)100(2)	SMR7.5273(3)100K01(2)
100	63	0.033	KG/K01	4	8	10	7.5	20	F211KG333(1)100(2)	SMR7.5333(3)100K01(2)
100	63	0.039	KG/K01	4	8	10	7.5	20	F211KG393(1)100(2)	SMR7.5393(3)100K01(2)
100	63	0.047	KG/K01	4	8	10	7.5	20	F211KG473(1)100(2)	SMR7.5473(3)100K01(2)
100	63	0.056	KG/K01	4	8	10	7.5	15	F211KG563(1)100(2)	SMR7.5563(3)100K01(2)
100	63	0.068	KG/K01	4	8	10	7.5	15	F211KG683(1)100(2)	SMR7.5683(3)100K01(2)
100	63	0.082	KG/K01	4	8	10	7.5	15	F211KG823(1)100(2)	SMR7.5823(3)100K01(2)
100	63	0.1	KG/K01	4	8	10	7.5	15	F211KG104(1)100(2)	SMR7.5104(3)100K01(2)
100	63	0.12	KG/K01	4	8	10	7.5	15	F211KG124(1)100(2)	SMR7.5124(3)100K01(2)
100	63	0.15	KK/K03	5	11	10	7.5	15	F211KK154(1)100(2)	SMR7.5154(3)100K03(2)
100	63	0.18	KK/K03	5	11	10	7.5	15	F211KK184(1)100(2)	SMR7.5184(3)100K03(2)
100	63	0.22	KK/K03	5	11	10	7.5	15	F211KK224(1)100(2)	SMR7.5224(3)100K03(2)
100	63	0.27	KK/K03	5	11	10	7.5	15	F211KK274(1)100(2)	SMR7.5274(3)100K03(2)
100	63	0.33	KM/K04	6	12	10.5	7.5	15	F211KM334(1)100(2)	SMR7.5334(3)100K04(2)
100	63	0.39	KM/K04	6	12	10.5	7.5	15	F211KM394(1)100(2)	SMR7.5394(3)100K04(2)
100	63	0.47	KM/K04	6	12	10.5	7.5	15	F211KM474(1)100(2)	SMR7.5474(3)100K04(2)
100	63	0.0027	AG/A01	4	9	13	10	25	F211AG272(1)100(2)	SMR10272(3)100A01(2)
100	63	0.0033	AG/A01	4	9	13	10	25	F211AG332(1)100(2)	SMR10332(3)100A01(2)
100	63	0.0039	AG/A01	4	9	13	10	25	F211AG392(1)100(2)	SMR10392(3)100A01(2)
100	63	0.0047	AG/A01	4	9	13	10	25	F211AG472(1)100(2)	SMR10472(3)100A01(2)
100	63	0.0056	AG/A01	4	9	13	10	25	F211AG562(1)100(2)	SMR10562(3)100A01(2)
100	63	0.0068	AG/A01	4	9	13	10	25	F211AG682(1)100(2)	SMR10682(3)100A01(2)
100	63	0.0082	AG/A01	4	9	13	10	25	F211AG822(1)100(2)	SMR10822(3)100A01(2)
100	63	0.01	AG/A01	4	9	13	10	25	F211AG103(1)100(2)	SMR10103(3)100A01(2)
100	63	0.012	AG/A01	4	9	13	10	25	F211AG123(1)100(2)	SMR10123(3)100A01(2)
100	63	0.015	AG/A01	4	9	13	10	25	F211AG153(1)100(2)	SMR10153(3)100A01(2)
100	63	0.018	AG/A01	4	9	13	10	25	F211AG183(1)100(2)	SMR10183(3)100A01(2)
100	63	0.022	AG/A01	4	9	13	10	25	F211AG223(1)100(2)	SMR10223(3)100A01(2)
100	63	0.027	AG/A01	4	9	13	10	25	F211AG273(1)100(2)	SMR10273(3)100A01(2)
100	63	0.033	AG/A01	4	9	13	10	25	F211AG333(1)100(2)	SMR10333(3)100A01(2)
100	63	0.039	AG/A01	4	9	13	10	15	F211AG393(1)100(2)	SMR10393(3)100A01(2)
100	63	0.047	AG/A01	4	9	13	10	15	F211AG473(1)100(2)	SMR10473(3)100A01(2)
100	63	0.056	AG/A01	4	9	13	10	15	F211AG563(1)100(2)	SMR10563(3)100A01(2)
100	63	0.068	AG/A01	4	9	13	10	15	F211AG683(1)100(2)	SMR10683(3)100A01(2)
100	63	0.082	AG/A01	4	9	13	10	10	F211AG823(1)100(2)	SMR10823(3)100A01(2)
100	63	0.1	AG/A01	4	9	13	10	10	F211AG104(1)100(2)	SMR10104(3)100A01(2)
100	63	0.12	AG/A01	4	9	13	10	10	F211AG124(1)100(2)	SMR10124(3)100A01(2)
100	63	0.15	AG/A01	4	9	13	10	10	F211AG154(1)100(2)	SMR10154(3)100A01(2)
100	63	0.18	AG/A01	4	9	13	10	10	F211AG184(1)100(2)	SMR10184(3)100A01(2)
100	63	0.22	AG/A01	4	9	13	10	10	F211AG224(1)100(2)	SMR10224(3)100A01(2)
100	63	0.27	AH/A02	4.5	10.5	13	10	10	F211AH274(1)100(2)	SMR10274(3)100A02(2)
100	63	0.33	AK/A03	5	11	13	10	10	F211AK334(1)100(2)	SMR10334(3)100A03(2)
100	63	0.39	AK/A03	5	11	13	10	10	F211AK394(1)100(2)	SMR10394(3)100A03(2)
100	63	0.47	AP/A04	6	12	13	10	10	F211AP474(1)100(2)	SMR10474(3)100A04(2)
100	63	0.56	AP/A04	6	12	13	10	10	F211AP564(1)100(2)	SMR10564(3)100A04(2)
100	63	0.27	BD/B04	5.5	10.5	18	15	8	F211BD274(1)100(2)	SMR15274(3)100B04(2)
VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number

(1) R = ±2.5%, J = ±5%, K = ±10%, M = ±20%

(2) Insert lead and packaging code. See Ordering Options Table for available options.

(3) H = ±2.5%, J = ±5%, K = ±10%, M = ±20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number
				B	H	L				
100	63	0.33	BD/B04	5.5	10.5	18	15	8	F211BD334(1)100(2)	SMR15334(3)100B04(2)
100	63	0.39	BD/B04	5.5	10.5	18	15	8	F211BD394(1)100(2)	SMR15394(3)100B04(2)
100	63	0.47	BD/B04	5.5	10.5	18	15	8	F211BD474(1)100(2)	SMR15474(3)100B04(2)
100	63	0.56	BE/B05	5.5	12.5	18	15	8	F211BE564(1)100(2)	SMR15564(3)100B05(2)
100	63	0.68	BJ/B10	6.5	12.5	18	15	8	F211BJ684(1)100(2)	SMR15684(3)100B10(2)
100	63	0.82	BL/B06	7.5	14.5	18	15	8	F211BL824(1)100(2)	SMR15824(3)100B06(2)
100	63	1	BL/B06	7.5	14.5	18	15	8	F211BL105(1)100(2)	SMR15105(3)100B06(2)
100	63	1.2	BM/B12	8	15	18	15	8	F211BM125(1)100(2)	SMR15125(3)100B12(2)
100	63	1.5	BQ/B11	8.5	16	18	15	8	F211BQ155(1)100(2)	SMR15155(3)100B11(2)
100	63	1.8	BV/B14	9.5	17.5	18	15	8	F211BV185(1)100(2)	SMR15185(3)100B14(2)
100	63	1.5	DD/D13	6.5	14.5	26	22.5	4	F211DD155(1)100(2)	SMR22.5155(3)100D13(2)
100	63	1.8	DF/D17	7	16.5	26	22.5	4	F211DF185(1)100(2)	SMR22.5185(3)100D17(2)
100	63	2.2	DH/D14	8	16	26	22.5	4	F211DH225(1)100(2)	SMR22.5225(3)100D14(2)
100	63	2.7	DM/D15	9	18.5	26	22.5	4	F211DM275(1)100(2)	SMR22.5275(3)100D15(2)
100	63	3.3	DR/D18	10.5	19	26	22.5	4	F211DR335(1)100(2)	SMR22.5335(3)100D18(2)
100	63	3.9	DR/D18	10.5	19	26	22.5	4	F211DR395(1)100(2)	SMR22.5395(3)100D18(2)
100	63	4.7	DT/D16	11	21.5	26	22.5	4	F211DT475(1)100(2)	SMR22.5475(3)100D16(2)
100	63	5.6	FG/F12	11.5	22.5	31.5	27.5	3	F211FG565(1)100(2)	SMR27.5565(3)100F12(2)
100	63	6.8	FM/F13	14.5	24.5	31.5	27.5	3	F211FM685(1)100(2)	SMR27.5685(3)100F13(2)
100	63	8.2	FM/F13	14.5	24.5	31.5	27.5	3	F211FM825(1)100(2)	SMR27.5825(3)100F13(2)
100	63	10	FR/F14	17.5	28	31.5	27.5	3	F211FR106(1)100(2)	SMR27.5106(3)100F14(2)
100	63	12	FR/F14	17.5	28	31.5	27.5	3	F211FR126(1)100(2)	SMR27.5126(3)100F14(2)
250	160	0.001	JF/J01	2.5	6.5	7.2	5	40	F211JF102(1)250(2)	SMR5102(3)250J01(2)
250	160	0.0012	JF/J01	2.5	6.5	7.2	5	40	F211JF122(1)250(2)	SMR5122(3)250J01(2)
250	160	0.0015	JF/J01	2.5	6.5	7.2	5	40	F211JF152(1)250(2)	SMR5152(3)250J01(2)
250	160	0.0018	JF/J01	2.5	6.5	7.2	5	40	F211JF182(1)250(2)	SMR5182(3)250J01(2)
250	160	0.0022	JF/J01	2.5	6.5	7.2	5	40	F211JF222(1)250(2)	SMR5222(3)250J01(2)
250	160	0.0027	JF/J01	2.5	6.5	7.2	5	40	F211JF272(1)250(2)	SMR5272(3)250J01(2)
250	160	0.0033	JF/J01	2.5	6.5	7.2	5	40	F211JF332(1)250(2)	SMR5332(3)250J01(2)
250	160	0.0039	JF/J01	2.5	6.5	7.2	5	40	F211JF392(1)250(2)	SMR5392(3)250J01(2)
250	160	0.0047	JF/J01	2.5	6.5	7.2	5	20	F211JF472(1)250(2)	SMR5472(3)250J01(2)
250	160	0.0056	JF/J01	2.5	6.5	7.2	5	20	F211JF562(1)250(2)	SMR5562(3)250J01(2)
250	160	0.0068	JF/J01	2.5	6.5	7.2	5	20	F211JF682(1)250(2)	SMR5682(3)250J01(2)
250	160	0.0082	JF/J01	2.5	6.5	7.2	5	20	F211JF822(1)250(2)	SMR5822(3)250J01(2)
250	160	0.01	JF/J01	2.5	6.5	7.2	5	20	F211JF103(1)250(2)	SMR5103(3)250J01(2)
250	160	0.012	JF/J01	2.5	6.5	7.2	5	20	F211JF123(1)250(2)	SMR5123(3)250J01(2)
250	160	0.015	JJ/J02	3.5	8	7.2	5	20	F211JJ153(1)250(2)	SMR5153(3)250J02(2)
250	160	0.018	JJ/J02	3.5	8	7.2	5	20	F211JJ183(1)250(2)	SMR5183(3)250J02(2)
250	160	0.022	JJ/J02	3.5	8	7.2	5	20	F211JJ223(1)250(2)	SMR5223(3)250J02(2)
250	160	0.027	JJ/J02	3.5	8	7.2	5	20	F211JJ273(1)250(2)	SMR5273(3)250J02(2)
250	160	0.033	JL/J03	4.5	9	7.2	5	20	F211JL333(1)250(2)	SMR5333(3)250J03(2)
250	160	0.039	JL/J03	4.5	9	7.2	5	20	F211JL393(1)250(2)	SMR5393(3)250J03(2)
250	160	0.047	JL/J03	4.5	9	7.2	5	20	F211JL473(1)250(2)	SMR5473(3)250J03(2)
250	160	0.056	JQ/J04	5	10	7.2	5	20	F211JQ563(1)250(2)	SMR5563(3)250J04(2)
250	160	0.068	JT/J05	6	11	7.2	5	20	F211JT683(1)250(2)	SMR5683(3)250J05(2)
250	160	0.082	JT/J05	6	11	7.2	5	20	F211JT823(1)250(2)	SMR5823(3)250J05(2)
250	160	0.1	JU/J06	7.2	13	7.2	5	20	F211JU104(1)250(2)	SMR5104(3)250J06(2)
250	160	0.12	JU/J06	7.2	13	7.2	5	20	F211JU124(1)250(2)	SMR5124(3)250J06(2)
250	160	0.001	KG/K01	4	8	10	7.5	30	F211KG102(1)250(2)	SMR7.5102(3)250K01(2)
250	160	0.0012	KG/K01	4	8	10	7.5	30	F211KG122(1)250(2)	SMR7.5122(3)250K01(2)
250	160	0.0015	KG/K01	4	8	10	7.5	30	F211KG152(1)250(2)	SMR7.5152(3)250K01(2)
250	160	0.0018	KG/K01	4	8	10	7.5	30	F211KG182(1)250(2)	SMR7.5182(3)250K01(2)
250	160	0.0022	KG/K01	4	8	10	7.5	30	F211KG222(1)250(2)	SMR7.5222(3)250K01(2)
250	160	0.0027	KG/K01	4	8	10	7.5	30	F211KG272(1)250(2)	SMR7.5272(3)250K01(2)
250	160	0.0033	KG/K01	4	8	10	7.5	30	F211KG332(1)250(2)	SMR7.5332(3)250K01(2)
250	160	0.0039	KG/K01	4	8	10	7.5	30	F211KG392(1)250(2)	SMR7.5392(3)250K01(2)
250	160	0.0047	KG/K01	4	8	10	7.5	30	F211KG472(1)250(2)	SMR7.5472(3)250K01(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code (New/Legacy)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) R = ±2.5%, J = ±5%, K = ±10%, M = ±20%

(2) Insert lead and packaging code. See Ordering Options Table for available options.

(3) H = ±2.5%, J = ±5%, K = ±10%, M = ±20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number
				B	H	L				
250	160	0.0056	KG/K01	4	8	10	7.5	30	F211KG562(1)250(2)	SMR7.5562(3)250K01(2)
250	160	0.0068	KG/K01	4	8	10	7.5	30	F211KG682(1)250(2)	SMR7.5682(3)250K01(2)
250	160	0.0082	KG/K01	4	8	10	7.5	30	F211KG822(1)250(2)	SMR7.5822(3)250K01(2)
250	160	0.01	KG/K01	4	8	10	7.5	30	F211KG103(1)250(2)	SMR7.5103(3)250K01(2)
250	160	0.012	KG/K01	4	8	10	7.5	30	F211KG123(1)250(2)	SMR7.5123(3)250K01(2)
250	160	0.015	KG/K01	4	8	10	7.5	30	F211KG153(1)250(2)	SMR7.5153(3)250K01(2)
250	160	0.018	KG/K01	4	8	10	7.5	30	F211KG183(1)250(2)	SMR7.5183(3)250K01(2)
250	160	0.022	KG/K01	4	8	10	7.5	30	F211KG223(1)250(2)	SMR7.5223(3)250K01(2)
250	160	0.027	KG/K01	4	8	10	7.5	20	F211KG273(1)250(2)	SMR7.5273(3)250K01(2)
250	160	0.033	KG/K01	4	8	10	7.5	20	F211KG333(1)250(2)	SMR7.5333(3)250K01(2)
250	160	0.039	KG/K01	4	8	10	7.5	20	F211KG393(1)250(2)	SMR7.5393(3)250K01(2)
250	160	0.047	KG/K01	4	8	10	7.5	20	F211KG473(1)250(2)	SMR7.5473(3)250K01(2)
250	160	0.056	KK/K03	5	11	10	7.5	20	F211KK563(1)250(2)	SMR7.5563(3)250K03(2)
250	160	0.068	KK/K03	5	11	10	7.5	20	F211KK683(1)250(2)	SMR7.5683(3)250K03(2)
250	160	0.082	KK/K03	5	11	10	7.5	20	F211KK823(1)250(2)	SMR7.5823(3)250K03(2)
250	160	0.1	KK/K03	5	11	10	7.5	20	F211KK104(1)250(2)	SMR7.5104(3)250K03(2)
250	160	0.12	KM/K04	6	12	10.5	7.5	20	F211KM124(1)250(2)	SMR7.5124(3)250K04(2)
250	160	0.15	KM/K04	6	12	10.5	7.5	20	F211KM154(1)250(2)	SMR7.5154(3)250K04(2)
250	160	0.0027	AG/A01	4	9	13	10	25	F211AG272(1)250(2)	SMR10272(3)250A01(2)
250	160	0.0033	AG/A01	4	9	13	10	25	F211AG332(1)250(2)	SMR10332(3)250A01(2)
250	160	0.0039	AG/A01	4	9	13	10	25	F211AG392(1)250(2)	SMR10392(3)250A01(2)
250	160	0.0047	AG/A01	4	9	13	10	25	F211AG472(1)250(2)	SMR10472(3)250A01(2)
250	160	0.0056	AG/A01	4	9	13	10	25	F211AG562(1)250(2)	SMR10562(3)250A01(2)
250	160	0.0068	AG/A01	4	9	13	10	25	F211AG682(1)250(2)	SMR10682(3)250A01(2)
250	160	0.0082	AG/A01	4	9	13	10	25	F211AG822(1)250(2)	SMR10822(3)250A01(2)
250	160	0.01	AG/A01	4	9	13	10	15	F211AG103(1)250(2)	SMR10103(3)250A01(2)
250	160	0.012	AG/A01	4	9	13	10	15	F211AG123(1)250(2)	SMR10123(3)250A01(2)
250	160	0.015	AG/A01	4	9	13	10	15	F211AG153(1)250(2)	SMR10153(3)250A01(2)
250	160	0.018	AG/A01	4	9	13	10	15	F211AG183(1)250(2)	SMR10183(3)250A01(2)
250	160	0.022	AG/A01	4	9	13	10	15	F211AG223(1)250(2)	SMR10223(3)250A01(2)
250	160	0.027	AG/A01	4	9	13	10	15	F211AG273(1)250(2)	SMR10273(3)250A01(2)
250	160	0.033	AG/A01	4	9	13	10	15	F211AG333(1)250(2)	SMR10333(3)250A01(2)
250	160	0.039	AG/A01	4	9	13	10	15	F211AG393(1)250(2)	SMR10393(3)250A01(2)
250	160	0.047	AG/A01	4	9	13	10	15	F211AG473(1)250(2)	SMR10473(3)250A01(2)
250	160	0.056	AG/A01	4	9	13	10	15	F211AG563(1)250(2)	SMR10563(3)250A01(2)
250	160	0.068	AG/A01	4	9	13	10	15	F211AG683(1)250(2)	SMR10683(3)250A01(2)
250	160	0.082	AH/A02	4.5	10.5	13	10	15	F211AH823(1)250(2)	SMR10823(3)250A02(2)
250	160	0.1	AH/A02	4.5	10.5	13	10	15	F211AH104(1)250(2)	SMR10104(3)250A02(2)
250	160	0.12	AK/A03	5	11	13	10	15	F211AK124(1)250(2)	SMR10124(3)250A03(2)
250	160	0.15	AP/A04	6	12	13	10	15	F211AP154(1)250(2)	SMR10154(3)250A04(2)
250	160	0.18	AP/A04	6	12	13	10	15	F211AP184(1)250(2)	SMR10184(3)250A04(2)
250	160	0.1	BD/B04	5.5	10.5	18	15	10	F211BD104(1)250(2)	SMR15104(3)250B04(2)
250	160	0.12	BD/B04	5.5	10.5	18	15	10	F211BD124(1)250(2)	SMR15124(3)250B04(2)
250	160	0.15	BD/B04	5.5	10.5	18	15	10	F211BD154(1)250(2)	SMR15154(3)250B04(2)
250	160	0.18	BE/B05	5.5	12.5	18	15	10	F211BE184(1)250(2)	SMR15184(3)250B05(2)
250	160	0.22	BJ/B10	6.5	12.5	18	15	10	F211BJ224(1)250(2)	SMR15224(3)250B10(2)
250	160	0.27	BL/B06	7.5	14.5	18	15	10	F211BL274(1)250(2)	SMR15274(3)250B06(2)
250	160	0.33	BL/B06	7.5	14.5	18	15	10	F211BL334(1)250(2)	SMR15334(3)250B06(2)
250	160	0.39	BM/B12	8	15	18	15	10	F211BM394(1)250(2)	SMR15394(3)250B12(2)
250	160	0.47	BQ/B11	8.5	16	18	15	10	F211BQ474(1)250(2)	SMR15474(3)250B11(2)
250	160	0.56	BV/B14	9.5	17.5	18	15	10	F211BV564(1)250(2)	SMR15564(3)250B14(2)
250	160	0.47	DD/D13	6.5	14.5	26	22.5	8	F211DD474(1)250(2)	SMR22.5474(3)250D13(2)
250	160	0.56	DF/D17	7	16.5	26	22.5	8	F211DF564(1)250(2)	SMR22.5564(3)250D17(2)
250	160	0.68	DF/D17	7	16.5	26	22.5	8	F211DF684(1)250(2)	SMR22.5684(3)250D17(2)
250	160	0.82	DM/D15	9	18.5	26	22.5	8	F211DM824(1)250(2)	SMR22.5824(3)250D15(2)
250	160	1	DM/D15	9	18.5	26	22.5	8	F211DM105(1)250(2)	SMR22.5105(3)250D15(2)
250	160	1.2	DR/D18	10.5	19	26	22.5	8	F211DR125(1)250(2)	SMR22.5125(3)250D18(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code (New/Legacy)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) R = ±2.5%, J = ±5%, K = ±10%, M = ±20%

(2) Insert lead and packaging code. See Ordering Options Table for available options.

(3) H = ±2.5%, J = ±5%, K = ±10%, M = ±20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number
				B	H	L				
250	160	1.5	DT/D16	11	21.5	26	22.5	8	F211DT155(1)250(2)	SMR22.5155(3)250D16(2)
250	160	1.5	FE/F11	10.5	20.5	31.5	27.5	6	F211FE155(1)250(2)	SMR27.5155(3)250F11(2)
250	160	1.8	FE/F11	10.5	20.5	31.5	27.5	6	F211FE185(1)250(2)	SMR27.5185(3)250F11(2)
250	160	2.2	FG/F12	11.5	22.5	31.5	27.5	6	F211FG225(1)250(2)	SMR27.5225(3)250F12(2)
250	160	2.7	FM/F13	14.5	24.5	31.5	27.5	6	F211FM275(1)250(2)	SMR27.5275(3)250F13(2)
250	160	3.3	FR/F14	17.5	28	31.5	27.5	6	F211FR335(1)250(2)	SMR27.5335(3)250F14(2)
250	160	3.9	FR/F14	17.5	28	31.5	27.5	6	F211FR395(1)250(2)	SMR27.5395(3)250F14(2)
400	200	0.001	JF/J01	2.5	6.5	7.2	5	40	F211JF102(1)400(2)	SMR5102(3)400J01(2)
400	200	0.0012	JF/J01	2.5	6.5	7.2	5	40	F211JF122(1)400(2)	SMR5122(3)400J01(2)
400	200	0.0015	JF/J01	2.5	6.5	7.2	5	40	F211JF152(1)400(2)	SMR5152(3)400J01(2)
400	200	0.0018	JF/J01	2.5	6.5	7.2	5	40	F211JF182(1)400(2)	SMR5182(3)400J01(2)
400	200	0.0022	JF/J01	2.5	6.5	7.2	5	40	F211JF222(1)400(2)	SMR5222(3)400J01(2)
400	200	0.0027	JF/J01	2.5	6.5	7.2	5	40	F211JF272(1)400(2)	SMR5272(3)400J01(2)
400	200	0.0033	JF/J01	2.5	6.5	7.2	5	40	F211JF332(1)400(2)	SMR5332(3)400J01(2)
400	200	0.0039	JF/J01	2.5	6.5	7.2	5	40	F211JF392(1)400(2)	SMR5392(3)400J01(2)
400	200	0.0047	JJ/J02	3.5	8	7.2	5	40	F211JJ472(1)400(2)	SMR5472(3)400J02(2)
400	200	0.0056	JJ/J02	3.5	8	7.2	5	40	F211JJ562(1)400(2)	SMR5562(3)400J02(2)
400	200	0.0068	JJ/J02	3.5	8	7.2	5	40	F211JJ682(1)400(2)	SMR5682(3)400J02(2)
400	200	0.0082	JJ/J02	3.5	8	7.2	5	40	F211JJ822(1)400(2)	SMR5822(3)400J02(2)
400	200	0.01	JJ/J02	3.5	8	7.2	5	40	F211JJ103(1)400(2)	SMR5103(3)400J02(2)
400	200	0.012	JJ/J02	3.5	8	7.2	5	40	F211JJ123(1)400(2)	SMR5123(3)400J02(2)
400	200	0.015	JL/J03	4.5	9	7.2	5	40	F211JL153(1)400(2)	SMR5153(3)400J03(2)
400	200	0.018	JL/J03	4.5	9	7.2	5	40	F211JL183(1)400(2)	SMR5183(3)400J03(2)
400	200	0.022	JQ/J04	5	10	7.2	5	40	F211JQ223(1)400(2)	SMR5223(3)400J04(2)
400	200	0.027	JQ/J04	5	10	7.2	5	40	F211JQ273(1)400(2)	SMR5273(3)400J04(2)
400	200	0.033	JT/J05	6	11	7.2	5	40	F211JT333(1)400(2)	SMR5333(3)400J05(2)
400	200	0.039	JT/J05	6	11	7.2	5	40	F211JT393(1)400(2)	SMR5393(3)400J05(2)
400	200	0.047	JU/J06	7.2	13	7.2	5	40	F211JU473(1)400(2)	SMR5473(3)400J06(2)
400	200	0.056	JU/J06	7.2	13	7.2	5	40	F211JU563(1)400(2)	SMR5563(3)400J06(2)
400	200	0.001	KG/K01	4	8	10	7.5	30	F211KG102(1)400(2)	SMR7.5102(3)400K01(2)
400	200	0.0012	KG/K01	4	8	10	7.5	30	F211KG122(1)400(2)	SMR7.5122(3)400K01(2)
400	200	0.0015	KG/K01	4	8	10	7.5	30	F211KG152(1)400(2)	SMR7.5152(3)400K01(2)
400	200	0.0018	KG/K01	4	8	10	7.5	30	F211KG182(1)400(2)	SMR7.5182(3)400K01(2)
400	200	0.0022	KG/K01	4	8	10	7.5	30	F211KG222(1)400(2)	SMR7.5222(3)400K01(2)
400	200	0.0027	KG/K01	4	8	10	7.5	30	F211KG272(1)400(2)	SMR7.5272(3)400K01(2)
400	200	0.0033	KG/K01	4	8	10	7.5	30	F211KG332(1)400(2)	SMR7.5332(3)400K01(2)
400	200	0.0039	KG/K01	4	8	10	7.5	30	F211KG392(1)400(2)	SMR7.5392(3)400K01(2)
400	200	0.0047	KG/K01	4	8	10	7.5	30	F211KG472(1)400(2)	SMR7.5472(3)400K01(2)
400	200	0.0056	KG/K01	4	8	10	7.5	30	F211KG562(1)400(2)	SMR7.5562(3)400K01(2)
400	200	0.0068	KG/K01	4	8	10	7.5	30	F211KG682(1)400(2)	SMR7.5682(3)400K01(2)
400	200	0.0082	KG/K01	4	8	10	7.5	30	F211KG822(1)400(2)	SMR7.5822(3)400K01(2)
400	200	0.01	KG/K01	4	8	10	7.5	30	F211KG103(1)400(2)	SMR7.5103(3)400K01(2)
400	200	0.012	KG/K01	4	8	10	7.5	30	F211KG123(1)400(2)	SMR7.5123(3)400K01(2)
400	200	0.015	KG/K01	4	8	10	7.5	30	F211KG153(1)400(2)	SMR7.5153(3)400K01(2)
400	200	0.018	KG/K01	4	8	10	7.5	30	F211KG183(1)400(2)	SMR7.5183(3)400K01(2)
400	200	0.022	KG/K01	4	8	10	7.5	30	F211KG223(1)400(2)	SMR7.5223(3)400K01(2)
400	200	0.027	KK/K03	5	11	10	7.5	30	F211KK273(1)400(2)	SMR7.5273(3)400K03(2)
400	200	0.033	KK/K03	5	11	10	7.5	30	F211KK333(1)400(2)	SMR7.5333(3)400K03(2)
400	200	0.039	KK/K03	5	11	10	7.5	30	F211KK393(1)400(2)	SMR7.5393(3)400K03(2)
400	200	0.047	KK/K03	5	11	10	7.5	30	F211KK473(1)400(2)	SMR7.5473(3)400K03(2)
400	200	0.056	KM/K04	6	12	10.5	7.5	30	F211KM563(1)400(2)	SMR7.5563(3)400K04(2)
400	200	0.068	KM/K04	6	12	10.5	7.5	30	F211KM683(1)400(2)	SMR7.5683(3)400K04(2)
400	200	0.0027	AG/A01	4	9	13	10	25	F211AG272(1)400(2)	SMR10272(3)400A01(2)
400	200	0.0033	AG/A01	4	9	13	10	25	F211AG332(1)400(2)	SMR10332(3)400A01(2)
400	200	0.0039	AG/A01	4	9	13	10	25	F211AG392(1)400(2)	SMR10392(3)400A01(2)
400	200	0.0047	AG/A01	4	9	13	10	25	F211AG472(1)400(2)	SMR10472(3)400A01(2)
400	200	0.0068	AG/A01	4	9	13	10	25	F211AG682(1)400(2)	SMR10682(3)400A01(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code (New/Legacy)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) R = ±2.5%, J = ±5%, K = ±10%, M = ±20%

(2) Insert lead and packaging code. See Ordering Options Table for available options.

(3) H = ±2.5%, J = ±5%, K = ±10%, M = ±20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code (New/Legacy)	Maximum Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	New KEMET Part Number	Legacy Part Number
				B	H	L				
400	200	0.0082	AG/A01	4	9	13	10	25	F211AG822(1)400(2)	SMR10822(3)400A01(2)
400	200	0.01	AG/A01	4	9	13	10	25	F211AG103(1)400(2)	SMR10103(3)400A01(2)
400	200	0.012	AG/A01	4	9	13	10	25	F211AG123(1)400(2)	SMR10123(3)400A01(2)
400	200	0.015	AG/A01	4	9	13	10	25	F211AG153(1)400(2)	SMR10153(3)400A01(2)
400	200	0.018	AG/A01	4	9	13	10	25	F211AG183(1)400(2)	SMR10183(3)400A01(2)
400	200	0.022	AG/A01	4	9	13	10	25	F211AG223(1)400(2)	SMR10223(3)400A01(2)
400	200	0.027	AG/A01	4	9	13	10	25	F211AG273(1)400(2)	SMR10273(3)400A01(2)
400	200	0.033	AG/A01	4	9	13	10	25	F211AG333(1)400(2)	SMR10333(3)400A01(2)
400	200	0.039	AH/A02	4.5	10.5	13	10	25	F211AH393(1)400(2)	SMR10393(3)400A02(2)
400	200	0.047	AK/A03	5	11	13	10	25	F211AK473(1)400(2)	SMR10473(3)400A03(2)
400	200	0.056	AK/A03	5	11	13	10	25	F211AK563(1)400(2)	SMR10563(3)400A03(2)
400	200	0.068	AP/A04	6	12	13	10	25	F211AP683(1)400(2)	SMR10683(3)400A04(2)
400	200	0.082	AP/A04	6	12	13	10	25	F211AP823(1)400(2)	SMR10823(3)400A04(2)
400	200	0.047	BD/B04	5.5	10.5	18	15	15	F211BD473(1)400(2)	SMR15473(3)400B04(2)
400	200	0.056	BD/B04	5.5	10.5	18	15	15	F211BD563(1)400(2)	SMR15563(3)400B04(2)
400	200	0.068	BD/B04	5.5	10.5	18	15	15	F211BD683(1)400(2)	SMR15683(3)400B04(2)
400	200	0.082	BE/B05	5.5	12.5	18	15	15	F211BE823(1)400(2)	SMR15823(3)400B05(2)
400	200	0.1	BJ/B10	6.5	12.5	18	15	15	F211BJ104(1)400(2)	SMR15104(3)400B10(2)
400	200	0.12	BL/B06	7.5	14.5	18	15	15	F211BL124(1)400(2)	SMR15124(3)400B06(2)
400	200	0.15	BL/B06	7.5	14.5	18	15	15	F211BL154(1)400(2)	SMR15154(3)400B06(2)
400	200	0.18	BM/B12	8	15	18	15	15	F211BM184(1)400(2)	SMR15184(3)400B12(2)
400	200	0.22	BQ/B11	8.5	16	18	15	15	F211BQ224(1)400(2)	SMR15224(3)400B11(2)
400	200	0.27	BV/B14	9.5	17.5	18	15	15	F211BV274(1)400(2)	SMR15274(3)400B14(2)
400	200	0.15	DD/D13	6.5	14.5	26	22.5	10	F211DD154(1)400(2)	SMR22.5154(3)400D13(2)
400	200	0.18	DD/D13	6.5	14.5	26	22.5	10	F211DD184(1)400(2)	SMR22.5184(3)400D13(2)
400	200	0.22	DD/D13	6.5	14.5	26	22.5	10	F211DD224(1)400(2)	SMR22.5224(3)400D13(2)
400	200	0.27	DF/D17	7	16.5	26	22.5	10	F211DF274(1)400(2)	SMR22.5274(3)400D17(2)
400	200	0.33	DH/D14	8	16	26	22.5	10	F211DH334(1)400(2)	SMR22.5334(3)400D14(2)
400	200	0.39	DM/D15	9	18.5	26	22.5	10	F211DM394(1)400(2)	SMR22.5394(3)400D15(2)
400	200	0.47	DM/D15	9	18.5	26	22.5	10	F211DM474(1)400(2)	SMR22.5474(3)400D15(2)
400	200	0.56	DR/D18	10.5	19	26	22.5	10	F211DR564(1)400(2)	SMR22.5564(3)400D18(2)
400	200	0.68	DT/D16	11	21.5	26	22.5	10	F211DT684(1)400(2)	SMR22.5684(3)400D16(2)
400	200	0.47	FE/F11	10.5	20.5	31.5	27.5	8	F211FE474(1)400(2)	SMR27.5474(3)400F11(2)
400	200	0.56	FE/F11	10.5	20.5	31.5	27.5	8	F211FE564(1)400(2)	SMR27.5564(3)400F11(2)
400	200	0.68	FE/F11	10.5	20.5	31.5	27.5	8	F211FE684(1)400(2)	SMR27.5684(3)400F11(2)
400	200	0.82	FG/F12	11.5	22.5	31.5	27.5	8	F211FG824(1)400(2)	SMR27.5824(3)400F12(2)
400	200	1	FG/F12	11.5	22.5	31.5	27.5	8	F211FG105(1)400(2)	SMR27.5105(3)400F12(2)
400	200	1.2	FM/F13	14.5	24.5	31.5	27.5	8	F211FM125(1)400(2)	SMR27.5125(3)400F13(2)
400	200	1.5	FR/F14	17.5	28	31.5	27.5	8	F211FR155(1)400(2)	SMR27.5155(3)400F14(2)
400	200	1.8	FR/F14	17.5	28	31.5	27.5	8	F211FR185(1)400(2)	SMR27.5185(3)400F14(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code (New/Legacy)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) R = ±2.5%, J = ±5%, K = ±10%, M = ±20%

(2) Insert lead and packaging code. See Ordering Options Table for available options.

(3) H = ±2.5%, J = ±5%, K = ±10%, M = ±20%

Soldering Process

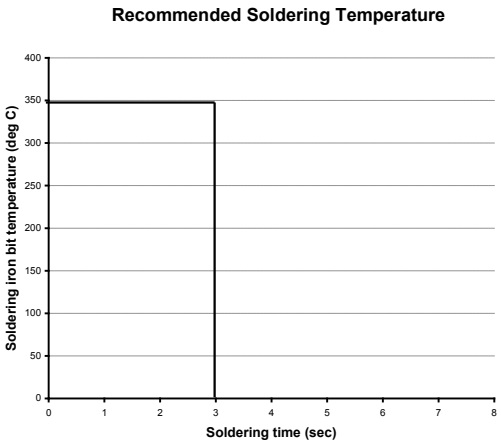
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

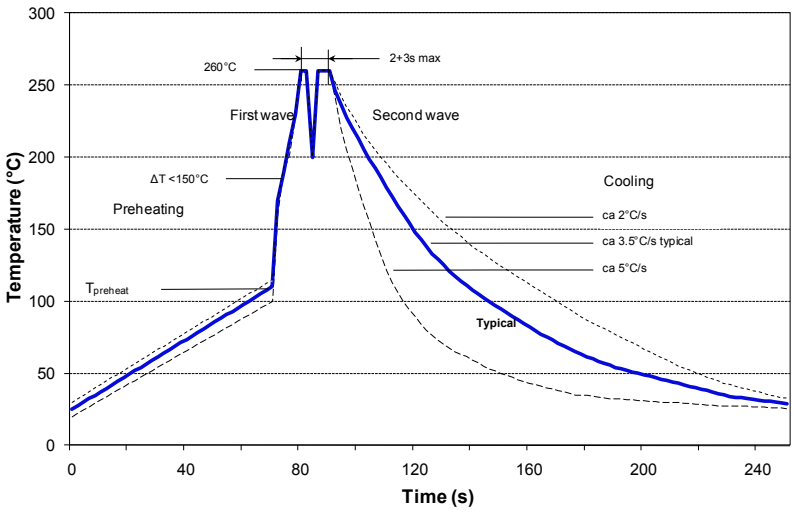
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

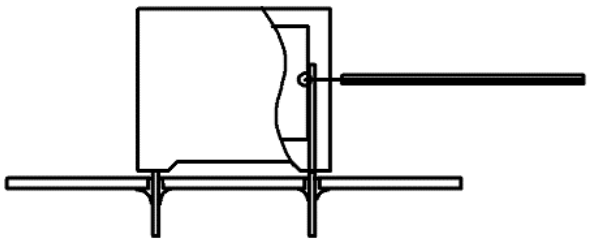
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



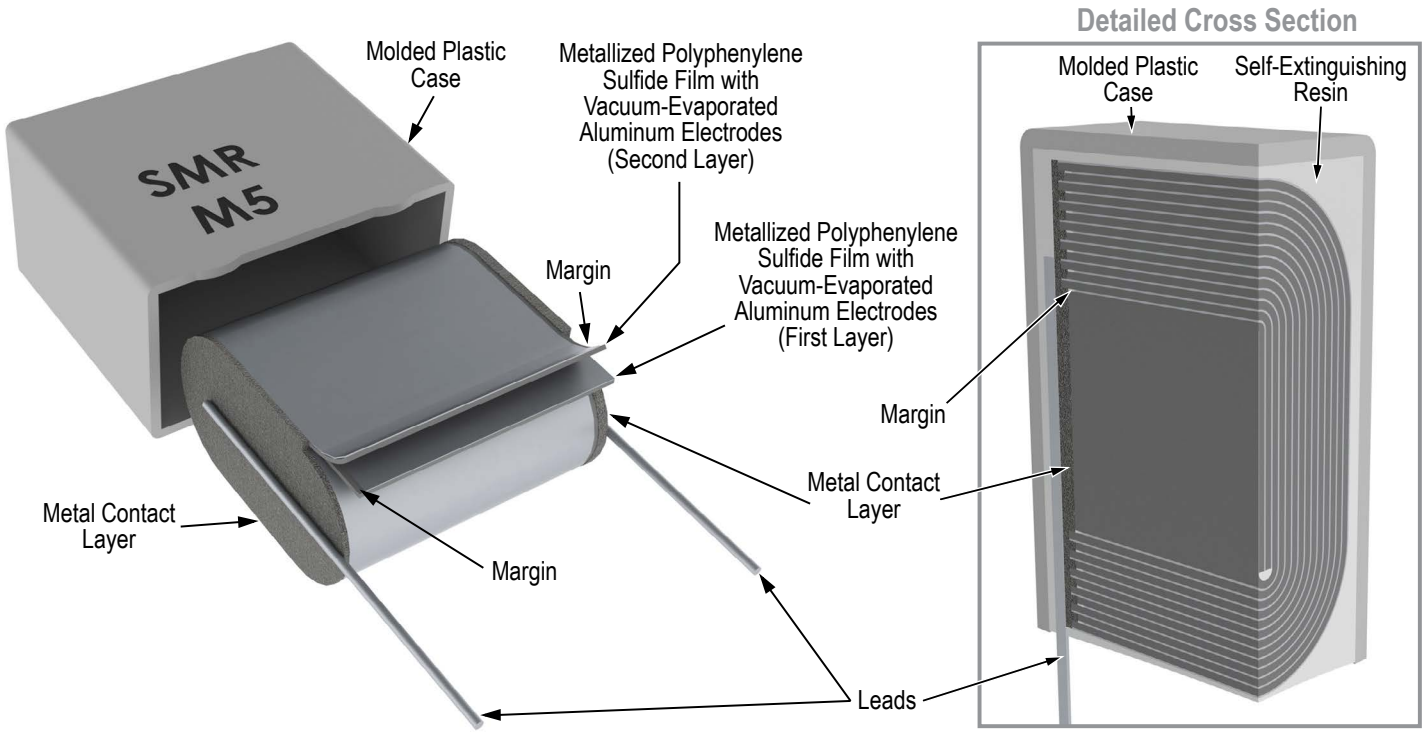
Temperature monitored inside the capacitor.

Selective Soldering Recommendations

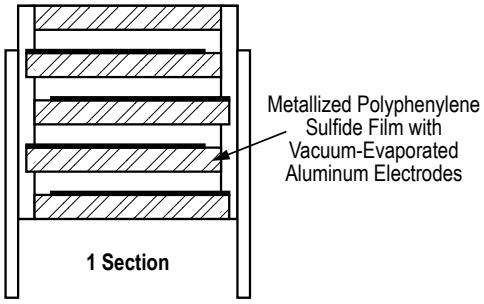
Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

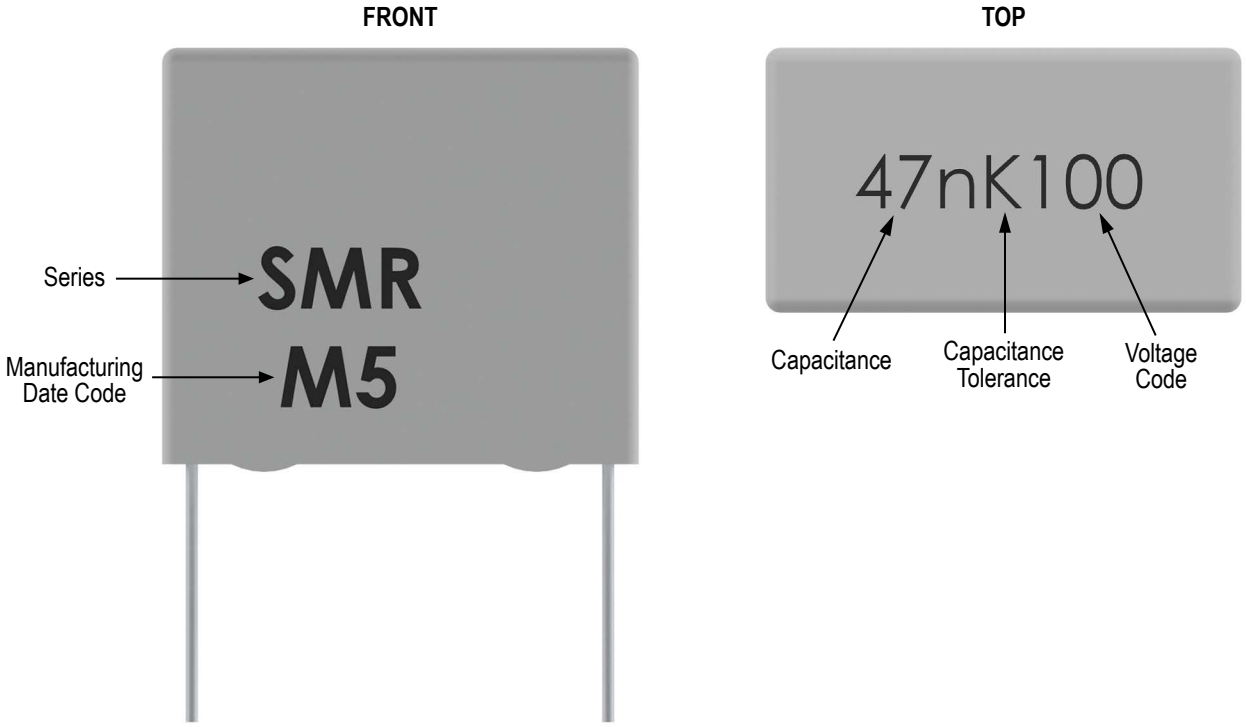
Construction



Winding Scheme



Marking



Packaging Quantities

KEMET Size Code	Legacy Size Code	Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 360 mm	Large Reel ø 500 mm	Ammo	Standard Reel Formed	Ammo Formed
JF	J01	5	2.5	6.5	7.2	2000	2000	2500	5000	3000		
JJ	J02		3.5	8	7.2	2000	2000	2000	4000	2000		
JL	J03		4.5	9	7.2	1000	1000	1500	3000	1700		
JQ	J04		5	10	7.2	1000	1000	1300	2600	1500		
JT	J05		6	11	7.2	1000	1000	1000	2000	1200		
JU	J06		7.2	13	7.2	1000	1000	800	1600			
JH	J11		4.5	6	7.2	1000	1000	1500	3000	1700		
JK	J12		5.5	7	7.2	1000	1000	1200	2400	1300		
JR	J13		6.5	8	7.2	1000	1000	900	1800	1100		
KE	K00	7.5	2.5	6	10	2000	2000	2500	5000	3000		
KG	K01		4	8	10	1000	1000	1700	3400	1900		
KK	K03		5	11	10	1000	1000	1300	2600	1500		1200
KM	K04		6	12	10	1000	1000	1000	2000	1200		

PME261 Series Metallized Impregnated Paper, 10.2 – 25.4 mm Lead Spacing, 400 – 1,000 VDC

Overview

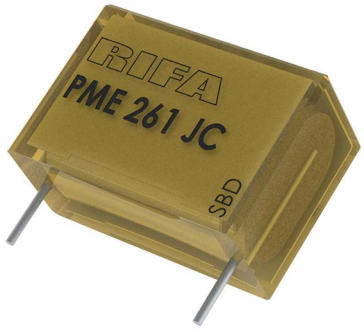
The PME261 Series is constructed of multilayer metallized paper, encapsulated and impregnated in self-extinguishing material meeting the requirements of UL 94 V–0.

Applications

For general use in DC and low frequency pulse applications.

Benefits

- Voltage range: 400 – 1,000 VDC; 220 – 500 VAC
- Capacitance range: 0.001 – 1 µF
- Lead spacing: 10.2 – 25.4 mm
- Capacitance tolerance: ±10%, ±20%, ±5% on request
- Climatic category: 40/70/56, IEC 60068–1
- Tape and reel packaging in accordance with IEC 60286–2
- RoHS Compliant and lead-free terminations
- Operating temperature range of -40˚C to +70˚C in AC applications
- Operating temperature range of -40˚C to +100˚C in DC applications
- Excellent self-healing properties. Ensures long life even when subjected to frequent over-voltages.
- Good resistance to ionization due to impregnated dielectric



Legacy Part Number System

PME261	K	A	5100	K	R30
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Packaging
Metallized Paper	K = 220 E = 300 J = 500	A = 10.2 B = 15.2 C = 20.3 E = 25.4	The last three digits represent significant figures. First digit specifies the total number of digits in the capacitiance value.	J = ±5% K = ±10% M = ±20%	See Ordering Options Table

New KEMET Part Number System

P	561	H	E	103	K	220	A
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VAC)	Packaging
P = Paper	Metallized Paper General Purpose	H = 10.2 Q = 15.2 C = 20.3 E = 25.4	See Dimension Table	First two digits indicate the two most significant digits of the capacitance value in picofarads. The third digit is the number of following zeroes.	J = ±5% K = ±10% M = ±20%	220 = 220 300 = 300 500 = 500	See Ordering Options Table

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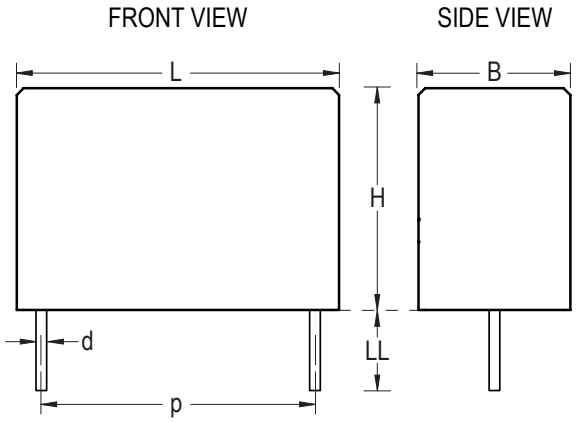
Benefits cont'd

- IEC Publication 166 Type 1
- High dV/dt capability
- Approved according to SE–MIL–QPL
- The capacitors meet the most stringent IEC humidity class, 56 days
- The impregnated paper ensures excellent stability giving outstanding reliability properties, especially in applications having continuous operation

Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	KEMET Lead and Packaging Code	Legacy Lead and Packaging Code
10.2	**Standard Lead and Packaging Options**			
	Bulk (Bag) – Short Leads	6 +0/-1	C	R06
	Bulk (Bag) – Max Length Leads	17 +0/-1	A	R17
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L	R19T0
	Other Lead and Packaging Options			
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P	R19T1
Native 10.2 formed to 7.5	Ammo Pack	H_0= 16.5 +/-0.5	LAF3	R30XA
15.2	**Standard Lead and Packaging Options**			
	Bulk (Bag) – Short Leads	6 +0/-1	C	R06
	Bulk (Bag) – Max Length Leads	30 +5/-0	A	R30
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L	R19T0
	Other Lead and Packaging Options			
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P	R19T1
20.3	**Standard Lead and Packaging Options**			
	Bulk (Tray) – Short Leads	6 +0/-1	C	R06
	Bulk (Bag) – Max Length Leads	30 +5/-0	A	R30
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L	R19T0
	Other Lead and Packaging Options			
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P	R19T1
25.4	**Standard Lead and Packaging Options**			
	Bulk (Tray) – Short Leads	6 +0/-1	C	R06
	Bulk (Bag) – Max Length Leads	30 +5/-0	A	R30

Dimensions – Millimeters



Size Code	p		B		H		L		d	
	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
HE	10.2	+/-0.4	3.9	Maximum	7.5	Maximum	13.5	Maximum	0.6	+/-0.05
HL	10.2	+/-0.4	5.1	Maximum	10.5	Maximum	13.5	Maximum	0.6	+/-0.05
QE	15.2	+/-0.4	5.2	Maximum	10.5	Maximum	18.5	Maximum	0.8	+/-0.05
QM	15.2	+/-0.4	7.3	Maximum	13.0	Maximum	18.5	Maximum	0.8	+/-0.05
QP	15.2	+/-0.4	7.8	Maximum	13.5	Maximum	18.5	Maximum	0.8	+/-0.05
CE	20.3	+/-0.4	7.6	Maximum	14.0	Maximum	24.0	Maximum	0.8	+/-0.05
CG	20.3	+/-0.4	8.4	Maximum	14.0	Maximum	24.0	Maximum	0.8	+/-0.05
CJ	20.3	+/-0.4	9.0	Maximum	15.0	Maximum	24.0	Maximum	0.8	+/-0.05
CP	20.3	+/-0.4	11.3	Maximum	16.5	Maximum	24.0	Maximum	0.8	+/-0.05
EH	25.4	+/-0.4	10.6	Maximum	17.3	Maximum	30.5	Maximum	1	+/-0.05
EL	25.4	+/-0.4	15.3	Maximum	22.0	Maximum	30.5	Maximum	1	+/-0.05

Note: See Ordering Options Table for lead length (LL) options.

Performance Characteristics

Rated Voltage V_R (VDC)	400	630	1000
Rated Voltage V_R (VAC)	220	300	500
Capacitance Range (µF)	0.0082 – 1.0	0.001 – 0.15	0.001 – 0.1
Capacitance Tolerance	±10%, ±20%, ±5% on request		
Temperature Range	-40 to +70°C		
	-40 to +100°C		
Climatic Category	40/070/56		
Dissipation Factor tanδ	Maximum Values at +23°C		
	1 kHz		1.3%
Insulation Resistance	Measured at +20°C, According to IEC 60384–2		
	Minimum Values Between Terminals		
	C ≤ 0.33 µF		≥ 12,000 MΩ
	C > 0.33 µF		≥ 4,000 MΩ • µF
	PME261 K measured at 100 VDC after 60 seconds, +23°C		
	PME261 E and J measured at 500 VDC after 60 seconds, +23°C		

Environmental Test Data

Test	IEC Publication	Procedure
Vibration	IEC 60068–2–6 Test Fc	3 directions at 2 hours each 10 – 55 Hz at 0.75 mm or 98 m/s^2
Bump	IEC 60068–2–29 Test Eb	4,000 bumps at 390 m/s^2
Solderability	IEC 60068–2–20 Test Ta	Solder globule method Wetting time for d ≤ 0.8 < 1 second for d > 0.8 < 1.5 seconds
Passive Flammability	IEC 60695–2–2	
Damp Heat Steady State	IEC 60068-2-3 Test Ca	+40°C and 90 – 95% RH, 56 days

Environmental Compliance

All KEMET Metallized Impregnated Paper capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

Capacitance Value (µF)	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	New Kemet Part Number	Legacy Part Number
	B	H	L				
0.0082	3.9	7.5	13.5	10.2	2000	P561HE822(1)220(2)	PME261KA4820(1)(2)
0.010	3.9	7.5	13.5	10.2	2000	P561HE103(1)220(2)	PME261KA5100(1)(2)
0.015	5.1	10.5	13.5	10.2	2000	P561HL153(1)220(2)	PME261KA5150(1)(2)
0.022	5.1	10.5	13.5	10.2	2000	P561HL223(1)220(2)	PME261KA5220(1)(2)
0.033	5.2	10.5	18.5	15.2	1600	P561QE333(1)220(2)	PME261KB5330(1)(2)
0.047	5.2	10.5	18.5	15.2	1300	P561QE473(1)220(2)	PME261KB5470(1)(2)
0.068	7.3	13.0	18.5	15.2	1100	P561QM683(1)220(2)	PME261KB5680(1)(2)
0.1	7.3	13.0	18.5	15.2	850	P561QM104(1)220(2)	PME261KB6100(1)(2)
0.15	7.6	14.0	24.0	20.3	700	P561CE154(1)220(2)	PME261KC6150(1)(2)
0.22	8.4	14.0	24.0	20.3	560	P561CG224(1)220(2)	PME261KC6220(1)(2)
0.33	11.3	16.5	24.0	20.3	430	P561CP334(1)220(2)	PME261KC6330(1)(2)
0.47	10.6	17.3	30.5	25.4	370	P561EH474(1)220(2)	PME261KE6470(1)(2)
0.68	15.3	22.0	30.5	25.4	300	P561EL684(1)220(2)	PME261KE6680(1)(2)
1	15.3	22.0	30.5	25.4	220	P561EL105(1)220(2)	PME261KE7100(1)(2)
0.001	3.9	7.5	13.5	10.2	2000	P561HE102(1)300(2)	PME261EA4100(1)(2)
0.0015	3.9	7.5	13.5	10.2	2000	P561HE152(1)300(2)	PME261EA4150(1)(2)
0.0022	3.9	7.5	13.5	10.2	2000	P561HE222(1)300(2)	PME261EA4220(1)(2)
0.0033	3.9	7.5	13.5	10.2	2000	P561HE332(1)300(2)	PME261EA4330(1)(2)
0.0047	3.9	7.5	13.5	10.2	2000	P561HE472(1)300(2)	PME261EA4470(1)(2)
0.0068	3.9	7.5	13.5	10.2	2000	P561HE682(1)300(2)	PME261EA4680(1)(2)
0.01	5.1	10.5	13.5	10.2	2000	P561HL103(1)300(2)	PME261EA5100(1)(2)
0.015	5.1	10.5	13.5	10.2	2000	P561HL153(1)300(2)	PME261EA5150(1)(2)
0.022	5.2	10.5	18.5	15.2	2000	P561QE223(1)300(2)	PME261EB5220(1)(2)
0.033	5.2	10.5	18.5	15.2	2000	P561QE333(1)300(2)	PME261EB5330(1)(2)
0.047	7.3	13.0	18.5	15.2	1600	P561QM473(1)300(2)	PME261EB5470(1)(2)
0.068	7.3	13.0	18.5	15.2	1200	P561QM683(1)300(2)	PME261EB5680(1)(2)
0.1	7.6	14.0	24.0	20.3	900	P561CE104(1)300(2)	PME261EC6100(1)(2)
0.15	9.0	15.0	24.0	20.3	650	P561CJ154(1)300(2)	PME261EC6150(1)(2)
0.001	3.9	7.5	13.5	10.2	2000	P561HE102(1)500(2)	PME261JA4100(1)(2)
0.0015	3.9	7.5	13.5	10.2	2000	P561HE152(1)500(2)	PME261JA4150(1)(2)
0.0022	3.9	7.5	13.5	10.2	2000	P561HE222(1)500(2)	PME261JA4220(1)(2)
0.0033	3.9	7.5	13.5	10.2	2000	P561HE332(1)500(2)	PME261JA4330(1)(2)
0.0047	5.1	10.5	13.5	10.2	2000	P561HL472(1)500(2)	PME261JA4470(1)(2)
0.0068	5.1	10.5	13.5	10.2	2000	P561HL682(1)500(2)	PME261JA4680(1)(2)
0.01	5.2	10.5	18.5	15.2	2000	P561QE103(1)500(2)	PME261JB5100(1)(2)
0.015	5.2	10.5	18.5	15.2	2000	P561QE153(1)500(2)	PME261JB5150(1)(2)
0.022	7.3	13.0	18.5	15.2	2000	P561QM223(1)500(2)	PME261JB5220(1)(2)
0.033	7.8	13.5	18.5	15.2	2000	P561QP333(1)500(2)	PME261JB5330(1)(2)
0.047	7.6	14.0	24.0	20.3	2000	P561CE473(1)500(2)	PME261JC5470(1)(2)
0.068	9.0	15.0	24.0	20.3	1400	P561CJ683(1)500(2)	PME261JC5680(1)(2)
0.1	11.3	16.5	24.0	20.3	950	P561CP104(1)500(2)	PME261JC6100(1)(2)
Capacitance Value (µF)	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) K = ±10%, M = ±20%, J = ±5% on request.

(2) Insert lead and packaging code. See Ordering Options Table for available options.

Soldering Process

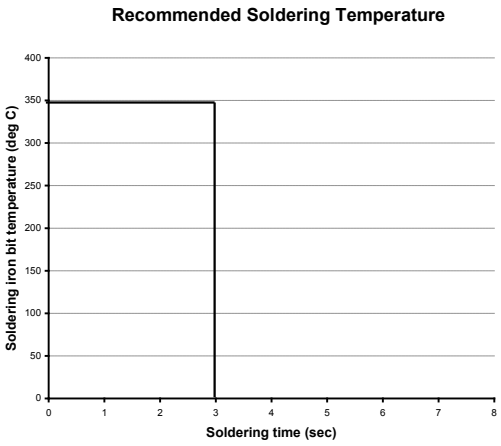
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

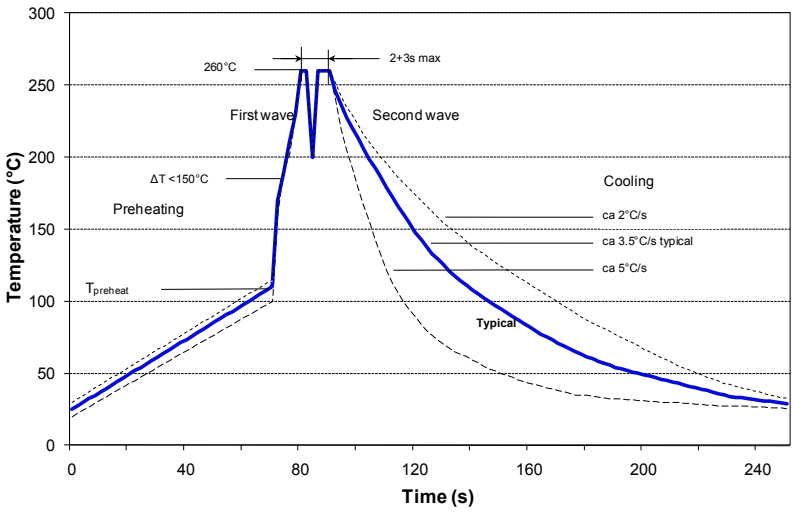
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

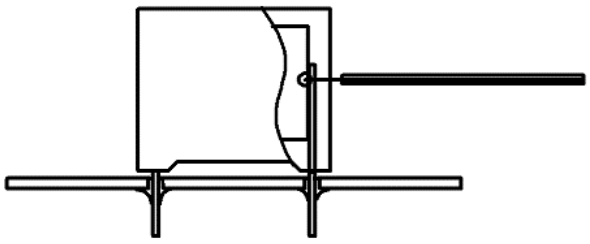
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



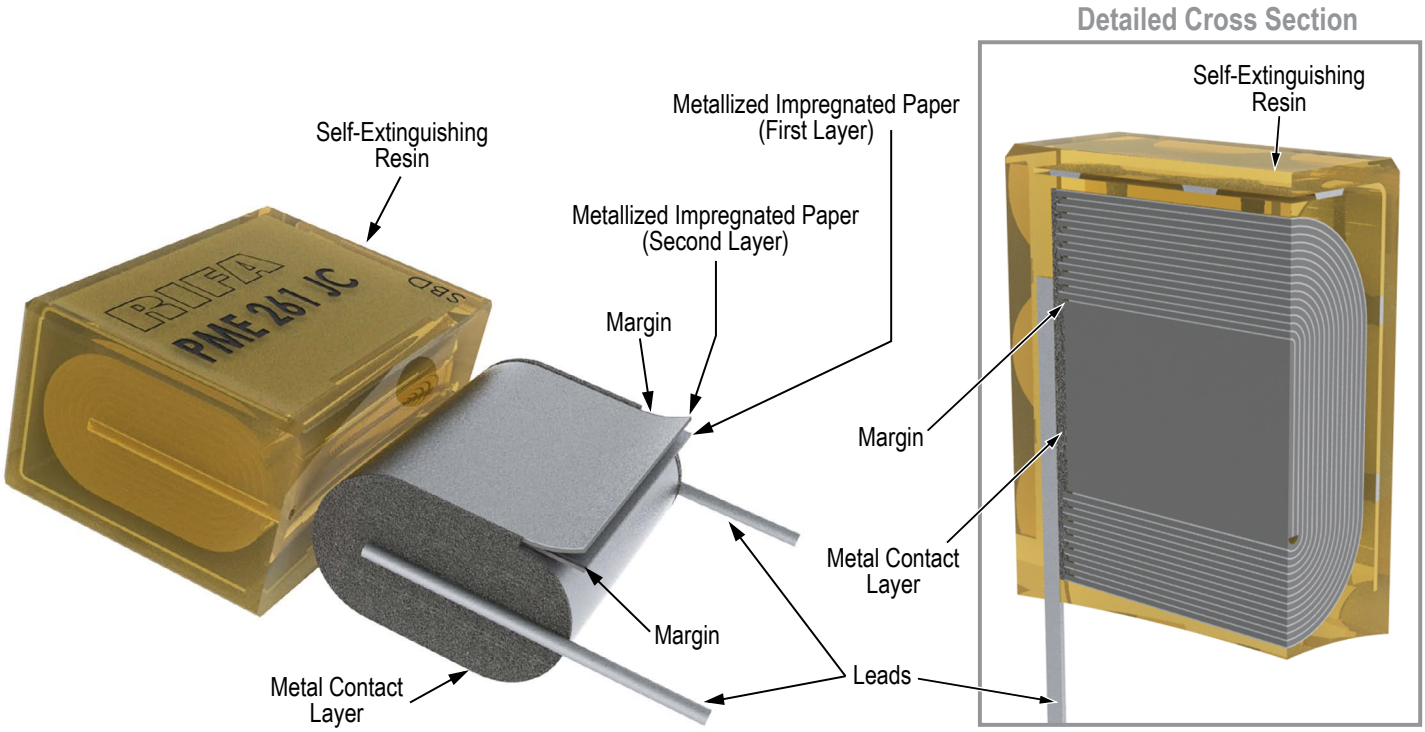
Temperature monitored inside the capacitor.

Selective Soldering Recommendations

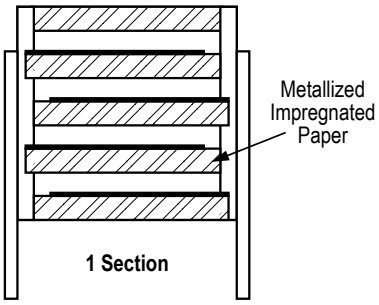
Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

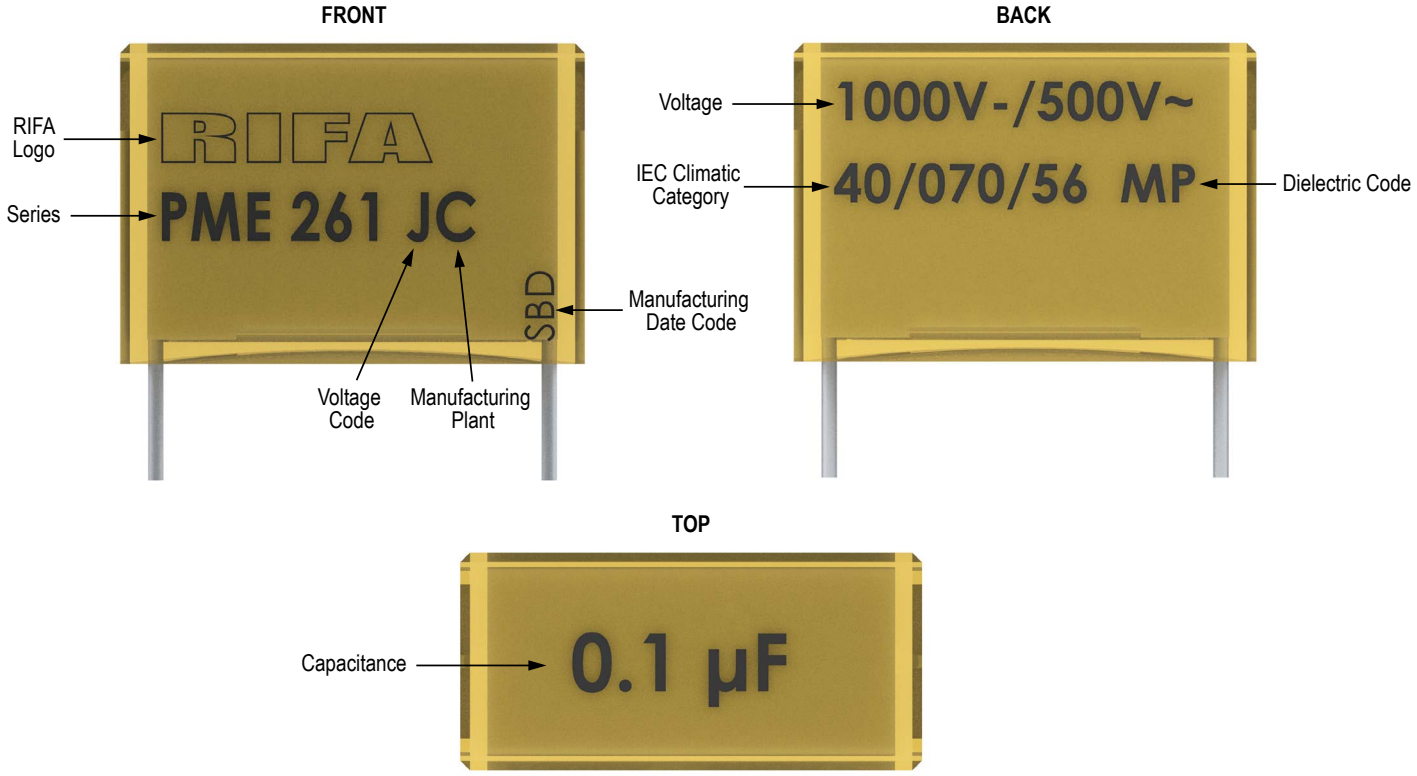
Construction



Winding Scheme



Marking


FRONT
BACK
RIFA
Logo
Series
RIFA
PME 261 JC
SBD
Voltage
Code
Manufacturing
Plant
Manufacturing
Date Code
Voltage
IEC Climatic
Category
1000V-/500V~
40/070/56 MP
Dielectric Code
TOP
Capacitance
0.1 µF

Packaging Quantities

Lead Spacing (mm)	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 360 mm	Large Reel ø 500 mm	Ammo Formed
10.2	3.9	7.5	13.5	2000	1000	700	1400	800
	4.1	8.2	13.5	2000	1000	600		780
	5.1	10.5	13.5	1600	800	600	1200	630
15.2	5.5	12.5	18	1000	500	600		
	6.5	12.5	18	600	400	400		
	7.5	14.5	18	600	400	400		
	8.5	16	18	400	250	400		
	5.2	10.5	18.5	1000	500	600		
	5.5	11	18.5	1000	500	500		
	6	12.5	18.5	600	400	400		
	7.3	13	18.5	600	400	400	800	
	7.8	13.5	18.5	600	400	400		
	8.5	14.3	18.5	500	300	350		
20.3	7.6	14	24	1500	250	250	500	
	8.4	14	24	1200	200	250	500	
	9	15	24	1500	200	250		
	11.3	16.5	24	1000	150	180	400	
25.4	10.6	16.1	30.5	1000	150			
	10.5	17.3	30.5	1000	100			
	12.1	19	30.5	800	100			
	15.3	22	30.5	600	75			

F461 – 464 Series Single Metallized Polypropylene Film

Overview

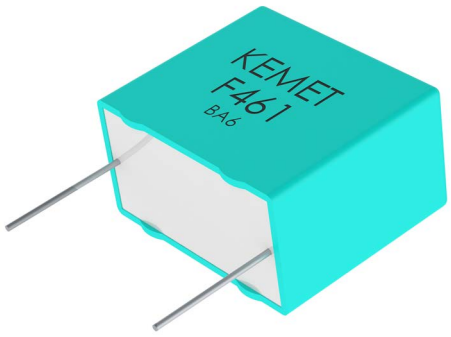
The F461 – 464 Series is a metallized polypropylene film encapsulated with self-extinguishing resin in a box of material meeting the requirements of UL 94 V–0. Four different winding constructions are used depending on voltage and lead spacing. Please see Table 1 for more information.

Applications

Typical applications include pulse operation in switched mode power supply (SMPS), televisions, computer monitors, electrical ballasts and other high frequency applications demanding stable operation.

Benefits

- Rated voltage: 160 – 2,500 VDC
- Rated voltage: 90 – 900 VAC
- Capacitance range: 0.001 – 56 µF
- Lead spacing: 5 – 37.5 mm
- Capacitance tolerance: ±5%, ±10%, other tolerances on request
- Climatic category: 55/105/56, IEC 60068–1
- Tape and reel packaging in accordance with IEC 60286–2
- RoHS Compliant and lead-free terminations
- Category temperature range of -55˚C to +105˚C
- Rated temperature +85˚C



Part Number System

F	46x	K	E	223	J	160	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging
F = Film	Metallized Polypropylene x = sections in construction	J = 5 K = 7.5 A = 10 B = 15 D = 22.5 F = 27.5 R = 37.5	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% K = ±10% Other tolerances on request	160 = 160 250 = 250 400 = 400 630 = 630 1K0 = 1000 1L2 = 1250 1K6 = 1600 2K0 = 2000 2K5 = 2500	See Ordering Options Table

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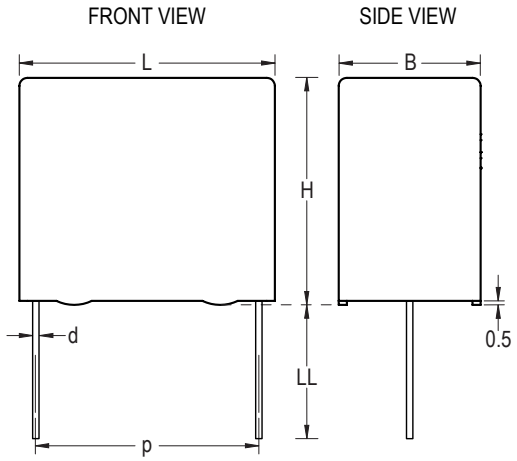
Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	C
	Bulk (Bag) – Long Leads	17 +0/-1	A
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L
	Other Lead and Packaging Options		
	Bulk (Bag) – Max Length Leads	20 +5/-0	ALL0L
	Ammo Pack	H_0= 18.5 +/-0.5	R
7.5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	C
	Bulk (Bag) – Long Leads	17 +0/-1	A
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L
	Other Lead and Packaging Options		
	Bulk (Bag) – Max Length Leads	20 +5/-0	ALL0L
	Ammo Pack	H_0= 18.5 +/-0.5	R
10	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	C
	Bulk (Bag) – Long Leads	17 +0/-1	A
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L
	Other Lead and Packaging Options		
	Bulk (Bag) – Max Length Leads	20 +5/-0	ALL0L
	Ammo Pack	H_0= 18.5 +/-0.5	R
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P
15	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	C
	Bulk (Bag) – Long Leads	17 +0/-1	A
	Pizza Pack	4 +2/-0	Z
	Other Lead and Packaging Options		
	Pizza – Short Leads	3.2 +0.3/-0.2	ZL32K
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P
	Bulk (Bag) – Max Length Leads	25 +5/-0	ALR0L
	Ammo Pack	H_0= 18.5 +/-0.5	R

Ordering Options Table cont'd

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
22.5	**Standard Lead and Packaging Options**		
	Pizza – Long Leads	17 +0/-1	ZLH0J
	Pizza Pack	4 +2/-0	Z
	Other Lead and Packaging Options		
	Pizza – Short Leads	3.2 +0.3/-0.2	ZL32K
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P
	Ammo Pack	H_0= 18.5 +/-0.5	R
27.5	**Standard Lead and Packaging Options**		
	Pizza – Long Leads	17 +0/-1	ZLH0J
	Other Lead and Packaging Options		
	Pizza Pack	4 +2/-0	Z
	Pizza – Short Leads	3.2 +0.3/-0.2	ZL32K
37.5	**Standard Lead and Packaging Options**		
	Pizza – Long Leads	17 +0/-1	ZLH0J
	Other Lead and Packaging Options		
	Pizza Pack	4 +2/-0	Z
	Pizza – Short Leads	3.2 +0.3/-0.2	ZL32K

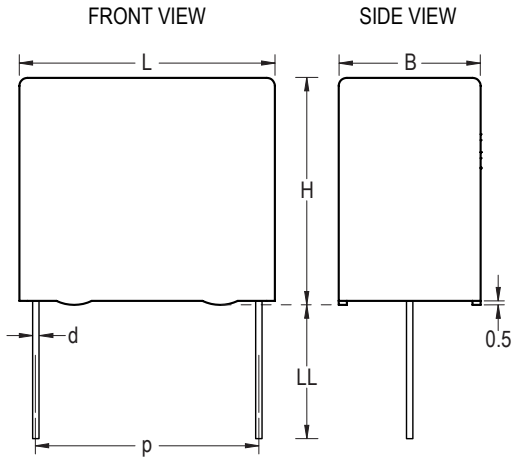
Dimensions – Millimeters



Size Code	p		B		H		L		d	
	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
JF	5.0	+/-0.4	2.5	Maximum	6.5	Maximum	7.2	Maximum	0.5	+/-0.05
JG	5.0	+/-0.4	3.5	Maximum	7.5	Maximum	7.2	Maximum	0.5	+/-0.05
JM	5.0	+/-0.4	4.5	Maximum	9.5	Maximum	7.2	Maximum	0.5	+/-0.05
JQ	5.0	+/-0.4	5.0	Maximum	10.0	Maximum	7.2	Maximum	0.5	+/-0.05
JT	5.0	+/-0.4	6.0	Maximum	11.0	Maximum	7.2	Maximum	0.5	+/-0.05
JU	5.0	+/-0.4	7.2	Maximum	13.0	Maximum	7.2	Maximum	0.5	+/-0.05
KE	7.5	+/-0.4	2.5	Maximum	6.0	Maximum	10.0	Maximum	0.6	+/-0.05
KF	7.5	+/-0.4	3.0	Maximum	8.0	Maximum	10.0	Maximum	0.6	+/-0.05
KG	7.5	+/-0.4	4.0	Maximum	8.0	Maximum	10.0	Maximum	0.6	+/-0.05
KJ	7.5	+/-0.4	5.0	Maximum	10.5	Maximum	10.0	Maximum	0.6	+/-0.05
KM	7.5	+/-0.4	6.0	Maximum	12.0	Maximum	10.5	Maximum	0.6	+/-0.05
AG	10.0	+/-0.4	4.0	Maximum	9.0	Maximum	13.0	Maximum	0.6	+/-0.05
AK	10.0	+/-0.4	5.0	Maximum	11.0	Maximum	13.0	Maximum	0.6	+/-0.05
AP	10.0	+/-0.4	6.0	Maximum	12.0	Maximum	13.0	Maximum	0.6	+/-0.05
BB	15.0	+/-0.4	4.0	Maximum	10.0	Maximum	18.0	Maximum	0.8	+/-0.05
BC	15.0	+/-0.4	5.0	Maximum	11.0	Maximum	18.0	Maximum	0.8	+/-0.05
BE	15.0	+/-0.4	5.5	Maximum	12.5	Maximum	18.0	Maximum	0.8	+/-0.05
BG	15.0	+/-0.4	6.0	Maximum	12.0	Maximum	18.0	Maximum	0.8	+/-0.05
BK	15.0	+/-0.4	7.5	Maximum	13.5	Maximum	18.0	Maximum	0.8	+/-0.05
BI	15.0	+/-0.4	6.0	Maximum	17.5	Maximum	18.0	Maximum	0.8	+/-0.05
BP	15.0	+/-0.4	8.5	Maximum	14.5	Maximum	18.0	Maximum	0.8	+/-0.05
BS	15.0	+/-0.4	10.0	Maximum	16.0	Maximum	18.0	Maximum	0.8	+/-0.05
BY	15.0	+/-0.4	11.0	Maximum	19.0	Maximum	18.0	Maximum	0.8	+/-0.05
DB	22.5	+/-0.4	6.0	Maximum	14.5	Maximum	26.0	Maximum	0.8	+/-0.05
DI	22.5	+/-0.4	7.0	Maximum	16.0	Maximum	26.0	Maximum	0.8	+/-0.05
DH	22.5	+/-0.4	8.0	Maximum	16.0	Maximum	26.0	Maximum	0.8	+/-0.05
DJ	22.5	+/-0.4	8.5	Maximum	17.0	Maximum	26.0	Maximum	0.8	+/-0.05
DM	22.5	+/-0.4	9.0	Maximum	18.5	Maximum	26.0	Maximum	0.8	+/-0.05
DO	22.5	+/-0.4	10.0	Maximum	18.5	Maximum	26.0	Maximum	0.8	+/-0.05

Note: See Ordering Options Table for lead length (LL) options.

Dimensions – Millimeters cont'd



Size Code	p		B		H		L		d	
	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
DP	22.5	+/-0.4	11.0	Maximum	20.0	Maximum	26.0	Maximum	0.8	+/-0.05
DU	22.5	+/-0.4	13.0	Maximum	22.0	Maximum	26.0	Maximum	0.8	+/-0.05
DY	22.5	+/-0.4	15.5	Maximum	24.5	Maximum	26.0	Maximum	0.8	+/-0.05
FB	27.5	+/-0.4	9.0	Maximum	17.0	Maximum	31.5	Maximum	0.8	+/-0.05
FC	27.5	+/-0.4	11.0	Maximum	20.0	Maximum	31.5	Maximum	0.8	+/-0.05
FI	27.5	+/-0.4	13.0	Maximum	25.0	Maximum	31.5	Maximum	0.8	+/-0.05
FN	27.5	+/-0.4	14.0	Maximum	28.0	Maximum	31.5	Maximum	0.8	+/-0.05
FR	27.5	+/-0.4	17.5	Maximum	28.0	Maximum	31.5	Maximum	0.8	+/-0.05
FS	27.5	+/-0.4	19.0	Maximum	29.0	Maximum	31.5	Maximum	0.8	+/-0.05
FY	27.5	+/-0.4	22.0	Maximum	37.0	Maximum	31.5	Maximum	0.8	+/-0.05
RB	37.5	+/-0.5	11.0	Maximum	22.0	Maximum	41.0	Maximum	1	+/-0.05
RF	37.5	+/-0.5	13.0	Maximum	24.0	Maximum	41.0	Maximum	1	+/-0.05
RH	37.5	+/-0.5	15.0	Maximum	26.0	Maximum	41.0	Maximum	1	+/-0.05
RC	37.5	+/-0.5	16.0	Maximum	28.5	Maximum	41.0	Maximum	1	+/-0.05
RD	37.5	+/-0.5	19.0	Maximum	32.0	Maximum	41.0	Maximum	1	+/-0.05
RP	37.5	+/-0.5	21.0	Maximum	38.0	Maximum	41.0	Maximum	1	+/-0.05
RO	37.5	+/-0.5	24.0	Maximum	44.0	Maximum	41.0	Maximum	1	+/-0.05
RU	37.5	+/-0.5	30.0	Maximum	45.0	Maximum	41.0	Maximum	1	+/-0.05

Note: See Ordering Options Table for lead length (LL) options.

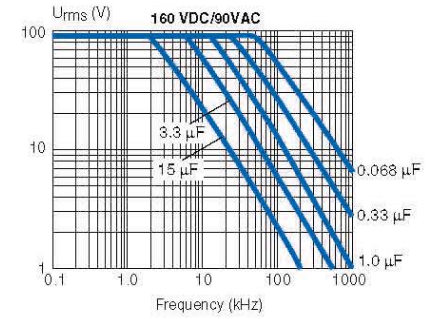
Performance Characteristics

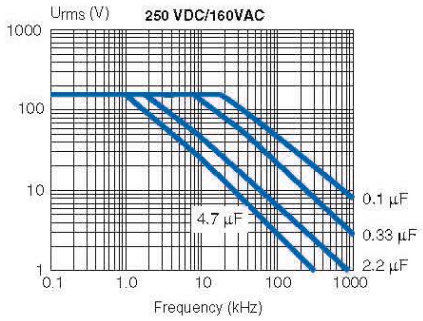
Series	F461	F461	F461	F461	F462	F462	F463	F462	F463	F463	F464
Sections	1	1	1	1	2	2	3	2	3	3	4
Voltage Range (VDC)	160	250	400	630	1000	1250	1250	1600	1600	2000	2500
Voltage Range (VAC)	90	160	220	250	300	400	500	500	650	700	900
Capacitance Range (µF)	0.01 – 56	0.01 – 39	0.0033 – 18	0.0015 – 8.2	0.0047 – 3.9	0.0033 – 2.7	0.0047 – 2.2	0.001 – 1.5	0.0033 – 1.5	0.0010 – 0.82	0.001 – 0.56
Capacitance Values	In accordance with IEC E12 series										
Capacitance Tolerance	±5%, ±10%, other tolerances on request										
Category Temperature Range	-55°C to +105°C										
Rated Temperature	+85°C										
Voltage Derating DC	The rated voltage is decreased with 2.0%/°C between +85°C and +105°C										
Voltage Derating AC	The voltage is decreased with 1.25%/°C between +85°C and +105°C										
Climatic Category	IEC 60068–1, 55/105/56										
Passive Flammability	Category B or C according to IEC 60384–1 depending on size										
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage ($V_{PP} < V_R$), the specified dV/dt can be multiplied by the factor V_R/V_{PP}.										
Temperature Coefficient	-200 (+50, -100) ppm/°C (at 1 kHz)										
Self-Inductance	Approximately 6 nH/cm for the total length of capacitor winding and the leads										

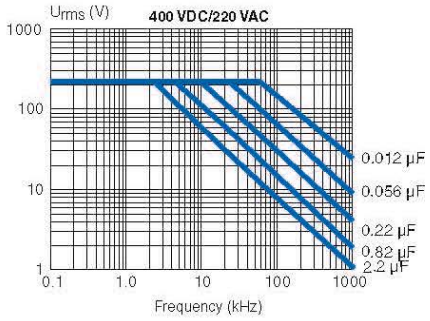
Dissipation Factor tand	Maximum Values at +23°C			
		C ≤ 0.1 µF	0.1 µF < C ≤ 1.0 µF	C > 1.0 µF
	1 kHz	0.0005	0.0005	0.001
	10 kHz	0.0006	0.0008	–
	100 kHz	0.0025	–	–

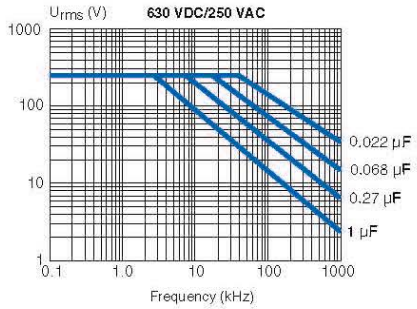
Insulation Resistance	Measured at +23°C, 100 VDC 60 seconds for $V_R < 500$ VDC and at 500 VDC for $V_R \geq 500$ VDC	
	Minimum Values Between Terminals	
	C ≤ 0.33 µF	≥ 100,000 MΩ
	C > 0.33 µF	≥ 30,000 MΩ • µF
	Minimum Values Between Terminals and Case	
		≥ 100,000 MΩ

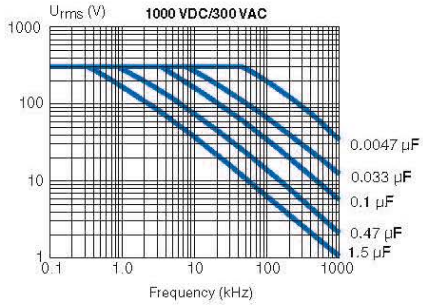
Derating of V_{rms} vs. Frequency, +85ºC Ambient Temperature and 10ºC Internal Heating, Typical Values

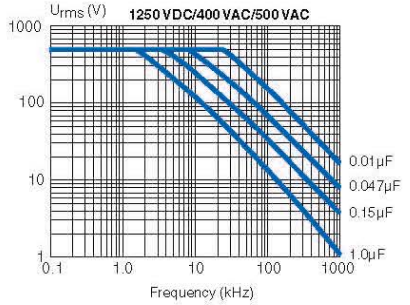


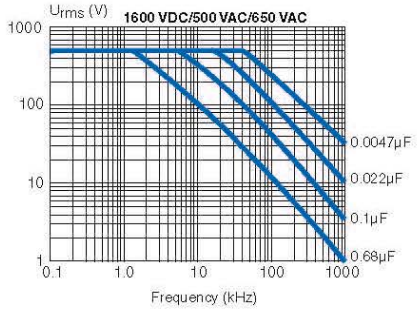


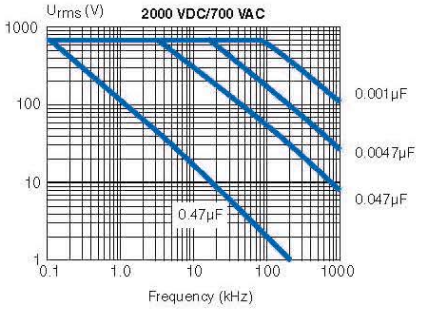


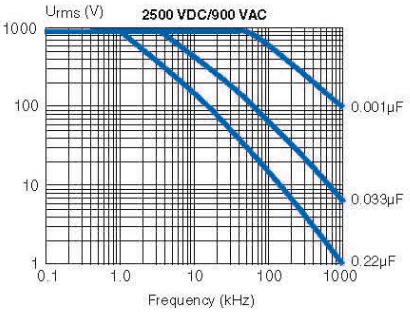












Environmental Test Data

Test	IEC Publication	Procedure	Requirements
Voltage Proof	60384–1 Clause 4.6	1.6 x V_R after 60 seconds	The capacitors must withstand the voltage without breakdowns or flashovers and without decreased insulation resistance below the value in each detail specification. No visible damage
	Clause 4.6 2.3	2 x V_R (minimum 400 VDC to case) after 60 seconds	As above
Vibration	60068–2–6 Test Fc	6 hours with 10 – 500 Hz and 0.75 mm amplitude or 98 m/s^2 depending on frequency	No visible damage tanδ ≤ 1.2 x stated value at 100 kHz Δ C/C ≤ ±0.5%
Bump	60068–2–29 Test Eb	4,000 bumps with 390 m/s^2 mounted on PCB	Δ C/C ≤ ±0.5% tanδ ≤ 1.2 x stated value at 100 kHz Insulation resistance: ≥ 100,000 MΩ for C_R ≤ 0.33 µF ≥ 30,000 MΩ • µF for C_R > 0.33 µF
Resistance to Soldering Heat	60068–2–20 Method 1A	Solder bath at + 260°C ±5°C with screening	Immersion of the terminations into the solder bath shall be completed in a time not exceeding 1 second and the terminations shall remain immersed to the specified depth for 10 + 1 second and then be withdrawn. Δ C/C ≤ ±1.0% tanδ increase < 0.001 No visible damage
Climatic Sequence	60384–1 Paragraph 4:21	60068–2.2 dry heat 16 hours 60068–2–34 damp heat, one cycle, 60068–2–1 Test Aa 2 hours	Insulation resistance: ≥ 100,000 MΩ for C_R ≤ 0.33 µF ≥ 30,000 MΩ • µF for C_R > 0.33 µF Δ C/C ≤ ±0.5% tanδ ≤ 1.2 x stated value at 100 kHz
Damp Heat Steady State	60068–2–3 Test Ca	+40°C and 90 – 95% RH	56 days no visible damage Insulation resistance: ≥ 50,000 MΩ for C_R ≤ 0.33 µF ≥ 15,000 MΩ • µF for C_R > 0.33 µF Δ C/C ≤ ±1% tanδ ≤ 1.2 x stated value at 100 kHz
Endurance, AC		1,000 hours at +85°C and 1.25 x V_R AC	No visible damage Δ C/C ≤ ±3% tanδ ≤ 1.5 x stated value at 100 kHz Insulation resistance: ≥ 100,000 MΩ for C_R ≤ 0.33 µF ≥ 30,000 MΩ • µF for C_R > 0.33 µF
Charge and Discharge	60384–17 Paragraph 4.13	10,000 pulses and with (2 x) dV/dt according to detail specification	tanδ (100 kHz) ≤ 2 x stated value (100 kHz) Δ C/C ≤ ±0.5% Insulation resistance: ≥ 50,000 MΩ for C_R ≤ 0.33 µF ≥ 15,000 MΩ • µF for C_R > 0.33 µF

Environmental Compliance

All KEMET MKP capacitors are RoHS Compliant and Halogen Free.

HF
Halogen Free

Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
160	90	0.01	JF	2.5	6.5	7.2	5.0	100	F461JF103(1)160(2)
160	90	0.012	JF	2.5	6.5	7.2	5.0	100	F461JF123(1)160(2)
160	90	0.015	JF	2.5	6.5	7.2	5.0	100	F461JF153(1)160(2)
160	90	0.018	JF	2.5	6.5	7.2	5.0	100	F461JF183(1)160(2)
160	90	0.022	JG	3.5	7.5	7.2	5.0	100	F461JG223(1)160(2)
160	90	0.027	JG	3.5	7.5	7.2	5.0	100	F461JG273(1)160(2)
160	90	0.033	JG	3.5	7.5	7.2	5.0	100	F461JG333(1)160(2)
160	90	0.039	JG	3.5	7.5	7.2	5.0	100	F461JG393(1)160(2)
160	90	0.047	JM	4.5	9.5	7.2	5.0	100	F461JM473(1)160(2)
160	90	0.056	JM	4.5	9.5	7.2	5.0	100	F461JM563(1)160(2)
160	90	0.068	JM	4.5	9.5	7.2	5.0	100	F461JM683(1)160(2)
160	90	0.082	JM	4.5	9.5	7.2	5.0	100	F461JM823(1)160(2)
160	90	0.1	JT	6.0	11.0	7.2	5.0	100	F461JT104(1)160(2)
160	90	0.12	JT	6.0	11.0	7.2	5.0	100	F461JT124(1)160(2)
160	90	0.15	JU	7.2	13.0	7.2	5.0	100	F461JU154(1)160(2)
160	90	0.18	JU	7.2	13.0	7.2	5.0	100	F461JU184(1)160(2)
160	90	0.22	JU	7.2	13.0	7.2	5.0	100	F461JU224(1)160(2)
160	90	0.015	KE	2.5	6.0	10.0	7.5	300	F461KE153(1)160(2)
160	90	0.018	KE	2.5	6.0	10.0	7.5	300	F461KE183(1)160(2)
160	90	0.022	KE	2.5	6.0	10.0	7.5	300	F461KE223(1)160(2)
160	90	0.027	KF	3.0	8.0	10.0	7.5	300	F461KF273(1)160(2)
160	90	0.033	KF	3.0	8.0	10.0	7.5	300	F461KF333(1)160(2)
160	90	0.039	KF	3.0	8.0	10.0	7.5	300	F461KF393(1)160(2)
160	90	0.047	KF	3.0	8.0	10.0	7.5	300	F461KF473(1)160(2)
160	90	0.056	KF	3.0	8.0	10.0	7.5	300	F461KF563(1)160(2)
160	90	0.068	KG	4.0	8.0	10.0	7.5	300	F461KG683(1)160(2)
160	90	0.082	KG	4.0	8.0	10.0	7.5	300	F461KG823(1)160(2)
160	90	0.1	KJ	5.0	10.5	10.0	7.5	300	F461KJ104(1)160(2)
160	90	0.12	KJ	5.0	10.5	10.0	7.5	300	F461KJ124(1)160(2)
160	90	0.15	KJ	5.0	10.5	10.0	7.5	300	F461KJ154(1)160(2)
160	90	0.18	KJ	5.0	10.5	10.0	7.5	300	F461KJ184(1)160(2)
160	90	0.22	KM	6.0	12.0	10.5	7.5	300	F461KM224(1)160(2)
160	90	0.27	KM	6.0	12.0	10.5	7.5	300	F461KM274(1)160(2)
160	90	0.1	AG	4.0	9.0	13.0	10.0	180	F461AG104(1)160(2)
160	90	0.12	AG	4.0	9.0	13.0	10.0	180	F461AG124(1)160(2)
160	90	0.15	AG	4.0	9.0	13.0	10.0	180	F461AG154(1)160(2)
160	90	0.18	AK	5.0	11.0	13.0	10.0	180	F461AK184(1)160(2)
160	90	0.22	AK	5.0	11.0	13.0	10.0	180	F461AK224(1)160(2)
160	90	0.27	AK	5.0	11.0	13.0	10.0	180	F461AK274(1)160(2)
160	90	0.33	AP	6.0	12.0	13.0	10.0	180	F461AP334(1)160(2)
160	90	0.39	AP	6.0	12.0	13.0	10.0	180	F461AP394(1)160(2)
160	90	0.47	AP	6.0	12.0	13.0	10.0	180	F461AP474(1)160(2)
160	90	0.15	BB	4.0	10.0	18.0	15.0	100	F461BB154(1)160(2)
160	90	0.18	BB	4.0	10.0	18.0	15.0	100	F461BB184(1)160(2)
160	90	0.22	BB	4.0	10.0	18.0	15.0	100	F461BB224(1)160(2)
160	90	0.27	BB	4.0	10.0	18.0	15.0	100	F461BB274(1)160(2)
160	90	0.33	BC	5.0	11.0	18.0	15.0	100	F461BC334(1)160(2)
160	90	0.39	BC	5.0	11.0	18.0	15.0	100	F461BC394(1)160(2)
160	90	0.47	BE	5.5	12.5	18.0	15.0	100	F461BE474(1)160(2)
160	90	0.56	BE	5.5	12.5	18.0	15.0	100	F461BE564(1)160(2)
160	90	0.68	BK	7.5	13.5	18.0	15.0	100	F461BK684(1)160(2)
160	90	0.82	BK	7.5	13.5	18.0	15.0	100	F461BK824(1)160(2)
160	90	1.0	BK	7.5	13.5	18.0	15.0	100	F461BK105(1)160(2)
160	90	1.2	BP	8.5	14.5	18.0	15.0	100	F461BP125(1)160(2)
160	90	1.5	BS	10.0	16.0	18.0	15.0	100	F461BS155(1)160(2)
160	90	2.2	BY	11.0	19.0	18.0	15.0	100	F461BY225(1)160(2)
160	90	2.7	BY	11.0	19.0	18.0	15.0	100	F461BY275(1)160(2)
160	90	1.0	DB	6.0	14.5	26.0	22.5	60	F461DB105(1)160(2)
160	90	1.2	DB	6.0	14.5	26.0	22.5	60	F461DB125(1)160(2)
160	90	1.5	DI	7.0	16.0	26.0	22.5	60	F461DI155(1)160(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) J = 5%, K = 10%, other tolerances on request.

(2) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
160	90	1.8	DI	7.0	16.0	26.0	22.5	60	F461DI185(1)160(2)
160	90	2.2	DJ	8.5	17.0	26.0	22.5	60	F461DJ225(1)160(2)
160	90	2.7	DM	9.0	18.5	26.0	22.5	60	F461DM275(1)160(2)
160	90	3.3	DM	9.0	18.5	26.0	22.5	60	F461DM335(1)160(2)
160	90	3.9	DP	11.0	20.0	26.0	22.5	60	F461DP395(1)160(2)
160	90	4.7	DU	13.0	22.0	26.0	22.5	60	F461DU475(1)160(2)
160	90	5.6	DU	13.0	22.0	26.0	22.5	60	F461DU565(1)160(2)
160	90	6.8	DY	15.5	24.5	26.0	22.5	60	F461DY685(1)160(2)
160	90	8.2	DY	15.5	24.5	26.0	22.5	60	F461DY825(1)160(2)
160	90	2.2	FB	9.0	17.0	31.5	27.5	50	F461FB225(1)160(2)
160	90	2.7	FB	9.0	17.0	31.5	27.5	50	F461FB275(1)160(2)
160	90	3.3	FB	9.0	17.0	31.5	27.5	50	F461FB335(1)160(2)
160	90	3.9	FC	11.0	20.0	31.5	27.5	50	F461FC395(1)160(2)
160	90	4.7	FC	11.0	20.0	31.5	27.5	50	F461FC475(1)160(2)
160	90	5.6	FI	13.0	25.0	31.5	27.5	50	F461FI565(1)160(2)
160	90	6.8	FI	13.0	25.0	31.5	27.5	50	F461FI685(1)160(2)
160	90	8.2	FI	13.0	25.0	31.5	27.5	50	F461FI825(1)160(2)
160	90	10.0	FR	17.5	28.0	31.5	27.5	50	F461FR106(1)160(2)
160	90	12.0	FR	17.5	28.0	31.5	27.5	50	F461FR126(1)160(2)
160	90	15.0	FY	22.0	37.0	31.5	27.5	50	F461FY156(1)160(2)
160	90	18.0	FY	22.0	37.0	31.5	27.5	50	F461FY186(1)160(2)
160	90	22.0	FY	22.0	37.0	31.5	27.5	50	F461FY226(1)160(2)
160	90	6.8	RB	11.0	22.0	41.0	37.5	35	F461RB685(1)160(2)
160	90	8.2	RB	11.0	22.0	41.0	37.5	35	F461RB825(1)160(2)
160	90	10.0	RF	13.0	24.0	41.0	37.5	35	F461RF106(1)160(2)
160	90	12.0	RH	15.0	26.0	41.0	37.5	35	F461RH126(1)160(2)
160	90	15.0	RC	16.0	28.5	41.0	37.5	35	F461RC156(1)160(2)
160	90	18.0	RD	19.0	32.0	41.0	37.5	35	F461RD186(1)160(2)
160	90	22.0	RD	19.0	32.0	41.0	37.5	35	F461RD226(1)160(2)
160	90	27.0	RP	21.0	38.0	41.0	37.5	35	F461RP276(1)160(2)
160	90	33.0	RO	24.0	44.0	41.0	37.5	35	F461RO336(1)160(2)
160	90	39.0	RO	24.0	44.0	41.0	37.5	35	F461RO396(1)160(2)
160	90	47.0	RU	30.0	45.0	41.0	37.5	35	F461RU476(1)160(2)
160	90	56.0	RU	30.0	45.0	41.0	37.5	35	F461RU566(1)160(2)
250	160	0.01	JF	2.5	6.5	7.2	5.0	250	F461JF103(1)250(2)
250	160	0.012	JF	2.5	6.5	7.2	5.0	250	F461JF123(1)250(2)
250	160	0.015	JF	2.5	6.5	7.2	5.0	250	F461JF153(1)250(2)
250	160	0.022	JG	3.5	7.5	7.2	5.0	250	F461JG223(1)250(2)
250	160	0.027	JG	3.5	7.5	7.2	5.0	250	F461JG273(1)250(2)
250	160	0.033	JM	4.5	9.5	7.2	5.0	250	F461JM333(1)250(2)
250	160	0.039	JM	4.5	9.5	7.2	5.0	250	F461JM393(1)250(2)
250	160	0.047	JQ	5.0	10.0	7.2	5.0	250	F461JQ473(1)250(2)
250	160	0.056	JQ	5.0	10.0	7.2	5.0	250	F461JQ563(1)250(2)
250	160	0.068	JT	6.0	11.0	7.2	5.0	250	F461JT683(1)250(2)
250	160	0.082	JT	6.0	11.0	7.2	5.0	250	F461JT823(1)250(2)
250	160	0.1	JU	7.2	13.0	7.2	5.0	250	F461JU104(1)250(2)
250	160	0.12	JU	7.2	13.0	7.2	5.0	250	F461JU124(1)250(2)
250	160	0.15	JU	7.2	13.0	7.2	5.0	250	F461JU154(1)250(2)
250	160	0.01	KE	2.5	6.0	10.0	7.5	650	F461KE103(1)250(2)
250	160	0.012	KE	2.5	6.0	10.0	7.5	650	F461KE123(1)250(2)
250	160	0.015	KF	3.0	8.0	10.0	7.5	650	F461KF153(1)250(2)
250	160	0.018	KF	3.0	8.0	10.0	7.5	650	F461KF183(1)250(2)
250	160	0.022	KF	3.0	8.0	10.0	7.5	650	F461KF223(1)250(2)
250	160	0.027	KF	3.0	8.0	10.0	7.5	650	F461KF273(1)250(2)
250	160	0.033	KF	3.0	8.0	10.0	7.5	650	F461KF333(1)250(2)
250	160	0.039	KG	4.0	8.0	10.0	7.5	650	F461KG393(1)250(2)
250	160	0.047	KG	4.0	8.0	10.0	7.5	650	F461KG473(1)250(2)
250	160	0.056	KG	4.0	8.0	10.0	7.5	650	F461KG563(1)250(2)
250	160	0.068	KJ	5.0	10.5	10.0	7.5	650	F461KJ683(1)250(2)
250	160	0.082	KJ	5.0	10.5	10.0	7.5	650	F461KJ823(1)250(2)
VDC	VAC	Capacitance Value (µF)	Size Code	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Part Number

(1) J = 5%, K = 10%, other tolerances on request.

(2) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
250	160	0.1	KJ	5.0	10.5	10.0	7.5	650	F461KJ104(1)250(2)
250	160	0.12	KM	6.0	12.0	10.5	7.5	650	F461KM124(1)250(2)
250	160	0.15	KM	6.0	12.0	10.5	7.5	650	F461KM154(1)250(2)
250	160	0.068	AG	4.0	9.0	13.0	10.0	550	F461AG683(1)250(2)
250	160	0.082	AG	4.0	9.0	13.0	10.0	550	F461AG823(1)250(2)
250	160	0.1	AG	4.0	9.0	13.0	10.0	550	F461AG104(1)250(2)
250	160	0.12	AK	5.0	11.0	13.0	10.0	550	F461AK124(1)250(2)
250	160	0.15	AK	5.0	11.0	13.0	10.0	550	F461AK154(1)250(2)
250	160	0.18	AK	5.0	11.0	13.0	10.0	550	F461AK184(1)250(2)
250	160	0.22	AK	5.0	11.0	13.0	10.0	550	F461AK224(1)250(2)
250	160	0.27	AP	6.0	12.0	13.0	10.0	550	F461AP274(1)250(2)
250	160	0.1	BB	4.0	10.0	18.0	15.0	300	F461BB104(1)250(2)
250	160	0.12	BB	4.0	10.0	18.0	15.0	300	F461BB124(1)250(2)
250	160	0.15	BB	4.0	10.0	18.0	15.0	300	F461BB154(1)250(2)
250	160	0.18	BB	4.0	10.0	18.0	15.0	300	F461BB184(1)250(2)
250	160	0.22	BC	5.0	11.0	18.0	15.0	300	F461BC224(1)250(2)
250	160	0.27	BC	5.0	11.0	18.0	15.0	300	F461BC274(1)250(2)
250	160	0.33	BG	6.0	12.0	18.0	15.0	300	F461BG334(1)250(2)
250	160	0.39	BK	7.5	13.5	18.0	15.0	300	F461BK394(1)250(2)
250	160	0.47	BK	7.5	13.5	18.0	15.0	300	F461BK474(1)250(2)
250	160	0.56	BK	7.5	13.5	18.0	15.0	300	F461BK564(1)250(2)
250	160	0.68	BP	8.5	14.5	18.0	15.0	300	F461BP684(1)250(2)
250	160	0.82	BP	8.5	14.5	18.0	15.0	300	F461BP824(1)250(2)
250	160	1.0	BS	10.0	16.0	18.0	15.0	300	F461BS105(1)250(2)
250	160	1.2	BY	11.0	19.0	18.0	15.0	300	F461BY125(1)250(2)
250	160	1.5	BY	11.0	19.0	18.0	15.0	300	F461BY155(1)250(2)
250	160	1.8	BY	11.0	19.0	18.0	15.0	300	F461BY185(1)250(2)
250	160	0.47	DB	6.0	14.5	26.0	22.5	125	F461DB474(1)250(2)
250	160	0.56	DB	6.0	14.5	26.0	22.5	125	F461DB564(1)250(2)
250	160	0.68	DB	6.0	14.5	26.0	22.5	125	F461DB684(1)250(2)
250	160	0.82	DI	7.0	16.0	26.0	22.5	125	F461DI824(1)250(2)
250	160	1.0	DI	7.0	16.0	26.0	22.5	125	F461DI105(1)250(2)
250	160	1.2	DH	8.0	16.0	26.0	22.5	125	F461DH125(1)250(2)
250	160	1.5	DM	9.0	18.5	26.0	22.5	125	F461DM155(1)250(2)
250	160	1.8	DM	9.0	18.5	26.0	22.5	125	F461DM185(1)250(2)
250	160	2.2	DO	10.0	18.5	26.0	22.5	125	F461DO225(1)250(2)
250	160	2.7	DU	13.0	22.0	26.0	22.5	125	F461DU275(1)250(2)
250	160	3.3	DU	13.0	22.0	26.0	22.5	125	F461DU335(1)250(2)
250	160	3.9	DY	15.5	24.5	26.0	22.5	125	F461DY395(1)250(2)
250	160	4.7	DY	15.5	24.5	26.0	22.5	125	F461DY475(1)250(2)
250	160	5.6	DY	15.5	24.5	26.0	22.5	125	F461DY565(1)250(2)
250	160	1.5	FB	9.0	17.0	31.5	27.5	100	F461FB155(1)250(2)
250	160	1.8	FB	9.0	17.0	31.5	27.5	100	F461FB185(1)250(2)
250	160	2.2	FC	11.0	20.0	31.5	27.5	100	F461FC225(1)250(2)
250	160	2.7	FC	11.0	20.0	31.5	27.5	100	F461FC275(1)250(2)
250	160	3.3	FC	11.0	20.0	31.5	27.5	100	F461FC335(1)250(2)
250	160	3.9	FI	13.0	25.0	31.5	27.5	100	F461FI395(1)250(2)
250	160	4.7	FI	13.0	25.0	31.5	27.5	100	F461FI475(1)250(2)
250	160	5.6	FN	14.0	28.0	31.5	27.5	100	F461FN565(1)250(2)
250	160	6.8	FR	17.5	28.0	31.5	27.5	100	F461FR685(1)250(2)
250	160	8.2	FS	19.0	29.0	31.5	27.5	100	F461FS825(1)250(2)
250	160	10.0	FY	22.0	37.0	31.5	27.5	100	F461FY106(1)250(2)
250	160	12.0	FY	22.0	37.0	31.5	27.5	100	F461FY126(1)250(2)
250	160	15.0	FY	22.0	37.0	31.5	27.5	100	F461FY156(1)250(2)
250	160	3.3	RB	11.0	22.0	41.0	37.5	40	F461RB335(1)250(2)
250	160	3.9	RB	11.0	22.0	41.0	37.5	40	F461RB395(1)250(2)
250	160	4.7	RB	11.0	22.0	41.0	37.5	40	F461RB475(1)250(2)
250	160	5.6	RF	13.0	24.0	41.0	37.5	40	F461RF565(1)250(2)
250	160	6.8	RF	13.0	24.0	41.0	37.5	40	F461RF685(1)250(2)
250	160	8.2	RH	15.0	26.0	41.0	37.5	40	F461RH825(1)250(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) J = 5%, K = 10%, other tolerances on request.

(2) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
250	160	10.0	RC	16.0	28.5	41.0	37.5	40	F461RC106(1)250(2)
250	160	12.0	RD	19.0	32.0	41.0	37.5	40	F461RD126(1)250(2)
250	160	15.0	RD	19.0	32.0	41.0	37.5	40	F461RD156(1)250(2)
250	160	18.0	RP	21.0	38.0	41.0	37.5	40	F461RP186(1)250(2)
250	160	22.0	RO	24.0	44.0	41.0	37.5	40	F461RO226(1)250(2)
250	160	27.0	RO	24.0	44.0	41.0	37.5	40	F461RO276(1)250(2)
250	160	33.0	RU	30.0	45.0	41.0	37.5	40	F461RU336(1)250(2)
250	160	39.0	RU	30.0	45.0	41.0	37.5	40	F461RU396(1)250(2)
400	220	0.0033	JF	2.5	6.5	7.2	5.0	400	F461JF332(1)400(2)
400	220	0.0039	JF	2.5	6.5	7.2	5.0	400	F461JF392(1)400(2)
400	220	0.0047	JF	2.5	6.5	7.2	5.0	400	F461JF472(1)400(2)
400	220	0.0056	JF	2.5	6.5	7.2	5.0	400	F461JF562(1)400(2)
400	220	0.0068	JG	3.5	7.5	7.2	5.0	400	F461JG682(1)400(2)
400	220	0.0082	JG	3.5	7.5	7.2	5.0	400	F461JG822(1)400(2)
400	220	0.01	JG	3.5	7.5	7.2	5.0	400	F461JG103(1)400(2)
400	220	0.012	JG	3.5	7.5	7.2	5.0	400	F461JG123(1)400(2)
400	220	0.015	JM	4.5	9.5	7.2	5.0	400	F461JM153(1)400(2)
400	220	0.018	JM	4.5	9.5	7.2	5.0	400	F461JM183(1)400(2)
400	220	0.022	JM	4.5	9.5	7.2	5.0	400	F461JM223(1)400(2)
400	220	0.027	JQ	5.0	10.0	7.2	5.0	400	F461JQ273(1)400(2)
400	220	0.033	JT	6.0	11.0	7.2	5.0	400	F461JT333(1)400(2)
400	220	0.039	JT	6.0	11.0	7.2	5.0	400	F461JT393(1)400(2)
400	220	0.047	JU	7.2	13.0	7.2	5.0	400	F461JU473(1)400(2)
400	220	0.056	JU	7.2	13.0	7.2	5.0	400	F461JU563(1)400(2)
400	220	0.0033	KE	2.5	6.0	10.0	7.5	1500	F461KE332(1)400(2)
400	220	0.0039	KE	2.5	6.0	10.0	7.5	1500	F461KE392(1)400(2)
400	220	0.0047	KE	2.5	6.0	10.0	7.5	1500	F461KE472(1)400(2)
400	220	0.0056	KF	3.0	8.0	10.0	7.5	1500	F461KF562(1)400(2)
400	220	0.0068	KF	3.0	8.0	10.0	7.5	1500	F461KF682(1)400(2)
400	220	0.0082	KF	3.0	8.0	10.0	7.5	1500	F461KF822(1)400(2)
400	220	0.01	KF	3.0	8.0	10.0	7.5	1500	F461KF103(1)400(2)
400	220	0.012	KF	3.0	8.0	10.0	7.5	1500	F461KF123(1)400(2)
400	220	0.015	KG	4.0	8.0	10.0	7.5	1500	F461KG153(1)400(2)
400	220	0.018	KG	4.0	8.0	10.0	7.5	1500	F461KG183(1)400(2)
400	220	0.022	KG	4.0	8.0	10.0	7.5	1500	F461KG223(1)400(2)
400	220	0.027	KJ	5.0	10.5	10.0	7.5	1500	F461KJ273(1)400(2)
400	220	0.033	KJ	5.0	10.5	10.0	7.5	1500	F461KJ333(1)400(2)
400	220	0.039	KJ	5.0	10.5	10.0	7.5	1500	F461KJ393(1)400(2)
400	220	0.047	KJ	5.0	10.5	10.0	7.5	1500	F461KJ473(1)400(2)
400	220	0.056	KM	6.0	12.0	10.5	7.5	1500	F461KM563(1)400(2)
400	220	0.068	KM	6.0	12.0	10.5	7.5	1500	F461KM683(1)400(2)
400	220	0.022	AG	4.0	9.0	13.0	10.0	1300	F461AG223(1)400(2)
400	220	0.027	AG	4.0	9.0	13.0	10.0	1300	F461AG273(1)400(2)
400	220	0.033	AG	4.0	9.0	13.0	10.0	1300	F461AG333(1)400(2)
400	220	0.039	AG	4.0	9.0	13.0	10.0	1300	F461AG393(1)400(2)
400	220	0.047	AK	5.0	11.0	13.0	10.0	1300	F461AK473(1)400(2)
400	220	0.056	AK	5.0	11.0	13.0	10.0	1300	F461AK563(1)400(2)
400	220	0.068	AK	5.0	11.0	13.0	10.0	1300	F461AK683(1)400(2)
400	220	0.082	AK	5.0	11.0	13.0	10.0	1300	F461AK823(1)400(2)
400	220	0.1	AK	5.0	11.0	13.0	10.0	1300	F461AK104(1)400(2)
400	220	0.12	AP	6.0	12.0	13.0	10.0	1300	F461AP124(1)400(2)
400	220	0.047	BB	4.0	10.0	18.0	15.0	900	F461BB473(1)400(2)
400	220	0.056	BB	4.0	10.0	18.0	15.0	900	F461BB563(1)400(2)
400	220	0.068	BB	4.0	10.0	18.0	15.0	900	F461BB683(1)400(2)
400	220	0.082	BC	5.0	11.0	18.0	15.0	900	F461BC823(1)400(2)
400	220	0.1	BC	5.0	11.0	18.0	15.0	900	F461BC104(1)400(2)
400	220	0.12	BE	5.5	12.5	18.0	15.0	900	F461BE124(1)400(2)
400	220	0.15	BE	5.5	12.5	18.0	15.0	900	F461BE154(1)400(2)
400	220	0.18	BK	7.5	13.5	18.0	15.0	900	F461BK184(1)400(2)
400	220	0.22	BK	7.5	13.5	18.0	15.0	900	F461BK224(1)400(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) J = 5%, K = 10%, other tolerances on request.

(2) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
400	220	0.27	BK	7.5	13.5	18.0	15.0	900	F461BK274(1)400(2)
400	220	0.33	BI	6.0	17.5	18.0	15.0	900	F461BI334(1)400(2)
400	220	0.39	BS	10.0	16.0	18.0	15.0	900	F461BS394(1)400(2)
400	220	0.47	BS	10.0	16.0	18.0	15.0	900	F461BS474(1)400(2)
400	220	0.56	BY	11.0	19.0	18.0	15.0	900	F461BY564(1)400(2)
400	220	0.68	BY	11.0	19.0	18.0	15.0	900	F461BY684(1)400(2)
400	220	0.82	BY	11.0	19.0	18.0	15.0	900	F461BY824(1)400(2)
400	220	0.22	DB	6.0	14.5	26.0	22.5	300	F461DB224(1)400(2)
400	220	0.27	DB	6.0	14.5	26.0	22.5	300	F461DB274(1)400(2)
400	220	0.33	DB	6.0	14.5	26.0	22.5	300	F461DB334(1)400(2)
400	220	0.39	DI	7.0	16.0	26.0	22.5	300	F461DI394(1)400(2)
400	220	0.47	DI	7.0	16.0	26.0	22.5	300	F461DI474(1)400(2)
400	220	0.56	DH	8.0	16.0	26.0	22.5	300	F461DH564(1)400(2)
400	220	0.68	DM	9.0	18.5	26.0	22.5	300	F461DM684(1)400(2)
400	220	0.82	DM	9.0	18.5	26.0	22.5	300	F461DM824(1)400(2)
400	220	1.0	DP	11.0	20.0	26.0	22.5	300	F461DP105(1)400(2)
400	220	1.2	DP	11.0	20.0	26.0	22.5	300	F461DP125(1)400(2)
400	220	1.5	DU	13.0	22.0	26.0	22.5	300	F461DU155(1)400(2)
400	220	1.8	DY	15.5	24.5	26.0	22.5	300	F461DY185(1)400(2)
400	220	2.2	DY	15.5	24.5	26.0	22.5	300	F461DY225(1)400(2)
400	220	0.56	FB	9.0	17.0	31.5	27.5	130	F461FB564(1)400(2)
400	220	0.68	FB	9.0	17.0	31.5	27.5	130	F461FB684(1)400(2)
400	220	0.82	FB	9.0	17.0	31.5	27.5	130	F461FB824(1)400(2)
400	220	1.0	FC	11.0	20.0	31.5	27.5	130	F461FC105(1)400(2)
400	220	1.2	FC	11.0	20.0	31.5	27.5	130	F461FC125(1)400(2)
400	220	1.5	FC	11.0	20.0	31.5	27.5	130	F461FC155(1)400(2)
400	220	1.8	FI	13.0	25.0	31.5	27.5	130	F461FI185(1)400(2)
400	220	2.2	FI	13.0	25.0	31.5	27.5	130	F461FI225(1)400(2)
400	220	2.7	FN	14.0	28.0	31.5	27.5	130	F461FN275(1)400(2)
400	220	3.3	FR	17.5	28.0	31.5	27.5	130	F461FR335(1)400(2)
400	220	3.9	FS	19.0	29.0	31.5	27.5	130	F461FS395(1)400(2)
400	220	4.7	FY	22.0	37.0	31.5	27.5	130	F461FY475(1)400(2)
400	220	5.6	FY	22.0	37.0	31.5	27.5	130	F461FY565(1)400(2)
400	220	6.8	FY	22.0	37.0	31.5	27.5	130	F461FY685(1)400(2)
400	220	1.5	RB	11.0	22.0	41.0	37.5	70	F461RB155(1)400(2)
400	220	1.8	RB	11.0	22.0	41.0	37.5	70	F461RB185(1)400(2)
400	220	2.2	RB	11.0	22.0	41.0	37.5	70	F461RB225(1)400(2)
400	220	2.7	RF	13.0	24.0	41.0	37.5	70	F461RF275(1)400(2)
400	220	3.3	RF	13.0	24.0	41.0	37.5	70	F461RF335(1)400(2)
400	220	3.9	RH	15.0	26.0	41.0	37.5	70	F461RH395(1)400(2)
400	220	4.7	RC	16.0	28.5	41.0	37.5	70	F461RC475(1)400(2)
400	220	5.6	RD	19.0	32.0	41.0	37.5	70	F461RD565(1)400(2)
400	220	6.8	RD	19.0	32.0	41.0	37.5	70	F461RD685(1)400(2)
400	220	8.2	RP	21.0	38.0	41.0	37.5	70	F461RP825(1)400(2)
400	220	10.0	RO	24.0	44.0	41.0	37.5	70	F461RO106(1)400(2)
400	220	12.0	RO	24.0	44.0	41.0	37.5	70	F461RO126(1)400(2)
400	220	15.0	RU	30.0	45.0	41.0	37.5	70	F461RU156(1)400(2)
400	220	18.0	RU	30.0	45.0	41.0	37.5	70	F461RU186(1)400(2)
630	250	0.0015	JF	2.5	6.5	7.2	5.0	500	F461JF152(1)630(2)
630	250	0.0018	JF	2.5	6.5	7.2	5.0	500	F461JF182(1)630(2)
630	250	0.0022	JF	2.5	6.5	7.2	5.0	500	F461JF222(1)630(2)
630	250	0.0027	JF	2.5	6.5	7.2	5.0	500	F461JF272(1)630(2)
630	250	0.0033	JF	2.5	6.5	7.2	5.0	500	F461JF332(1)630(2)
630	250	0.0039	JG	3.5	7.5	7.2	5.0	500	F461JG392(1)630(2)
630	250	0.0047	JG	3.5	7.5	7.2	5.0	500	F461JG472(1)630(2)
630	250	0.0056	JG	3.5	7.5	7.2	5.0	500	F461JG562(1)630(2)
630	250	0.0068	JM	4.5	9.5	7.2	5.0	500	F461JM682(1)630(2)
630	250	0.0082	JM	4.5	9.5	7.2	5.0	500	F461JM822(1)630(2)
630	250	0.01	JM	4.5	9.5	7.2	5.0	500	F461JM103(1)630(2)
630	250	0.012	JQ	5.0	10.0	7.2	5.0	500	F461JQ123(1)630(2)
VDC	VAC	Capacitance Value (µF)	Size Code	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Part Number

(1) J = 5%, K = 10%, other tolerances on request.
(2) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
630	250	0.015	JT	6.0	11.0	7.2	5.0	500	F461JT153(1)630(2)
630	250	0.018	JT	6.0	11.0	7.2	5.0	500	F461JT183(1)630(2)
630	250	0.022	JT	6.0	11.0	7.2	5.0	500	F461JT223(1)630(2)
630	250	0.027	JU	7.2	13.0	7.2	5.0	500	F461JU273(1)630(2)
630	250	0.033	JU	7.2	13.0	7.2	5.0	500	F461JU333(1)630(2)
630	250	0.0015	KE	2.5	6.0	10.0	7.5	2400	F461KE152(1)630(2)
630	250	0.0018	KE	2.5	6.0	10.0	7.5	2400	F461KE182(1)630(2)
630	250	0.0022	KE	2.5	6.0	10.0	7.5	2400	F461KE222(1)630(2)
630	250	0.0027	KF	3.0	8.0	10.0	7.5	2400	F461KF272(1)630(2)
630	250	0.0033	KF	3.0	8.0	10.0	7.5	2400	F461KF332(1)630(2)
630	250	0.0039	KF	3.0	8.0	10.0	7.5	2400	F461KF392(1)630(2)
630	250	0.0047	KF	3.0	8.0	10.0	7.5	2400	F461KF472(1)630(2)
630	250	0.0056	KF	3.0	8.0	10.0	7.5	2400	F461KF562(1)630(2)
630	250	0.0068	KF	3.0	8.0	10.0	7.5	2400	F461KF682(1)630(2)
630	250	0.0082	KG	4.0	8.0	10.0	7.5	2400	F461KG822(1)630(2)
630	250	0.01	KG	4.0	8.0	10.0	7.5	2400	F461KG103(1)630(2)
630	250	0.012	KJ	5.0	10.5	10.0	7.5	2400	F461KJ123(1)630(2)
630	250	0.015	KJ	5.0	10.5	10.0	7.5	2400	F461KJ153(1)630(2)
630	250	0.018	KJ	5.0	10.5	10.0	7.5	2400	F461KJ183(1)630(2)
630	250	0.022	KJ	5.0	10.5	10.0	7.5	2400	F461KJ223(1)630(2)
630	250	0.027	KM	6.0	12.0	10.5	7.5	2400	F461KM273(1)630(2)
630	250	0.033	KM	6.0	12.0	10.5	7.5	2400	F461KM333(1)630(2)
630	250	0.039	KM	6.0	12.0	10.5	7.5	2400	F461KM393(1)630(2)
630	250	0.01	AG	4.0	9.0	13.0	10.0	2000	F461AG103(1)630(2)
630	250	0.012	AG	4.0	9.0	13.0	10.0	2000	F461AG123(1)630(2)
630	250	0.015	AG	4.0	9.0	13.0	10.0	2000	F461AG153(1)630(2)
630	250	0.018	AG	4.0	9.0	13.0	10.0	2000	F461AG183(1)630(2)
630	250	0.022	AG	4.0	9.0	13.0	10.0	2000	F461AG223(1)630(2)
630	250	0.027	AK	5.0	11.0	13.0	10.0	2000	F461AK273(1)630(2)
630	250	0.033	AK	5.0	11.0	13.0	10.0	2000	F461AK333(1)630(2)
630	250	0.039	AK	5.0	11.0	13.0	10.0	2000	F461AK393(1)630(2)
630	250	0.047	AP	6.0	12.0	13.0	10.0	2000	F461AP473(1)630(2)
630	250	0.056	AP	6.0	12.0	13.0	10.0	2000	F461AP563(1)630(2)
630	250	0.068	AP	6.0	12.0	13.0	10.0	2000	F461AP683(1)630(2)
630	250	0.022	BB	4.0	10.0	18.0	15.0	1000	F461BB223(1)630(2)
630	250	0.027	BB	4.0	10.0	18.0	15.0	1000	F461BB273(1)630(2)
630	250	0.033	BB	4.0	10.0	18.0	15.0	1000	F461BB333(1)630(2)
630	250	0.039	BB	4.0	10.0	18.0	15.0	1000	F461BB393(1)630(2)
630	250	0.047	BC	5.0	11.0	18.0	15.0	1000	F461BC473(1)630(2)
630	250	0.056	BC	5.0	11.0	18.0	15.0	1000	F461BC563(1)630(2)
630	250	0.063	BC	5.0	11.0	18.0	15.0	1000	F461BC633(1)630(2)
630	250	0.068	BE	5.5	12.5	18.0	15.0	1000	F461BE683(1)630(2)
630	250	0.082	BE	5.5	12.5	18.0	15.0	1000	F461BE823(1)630(2)
630	250	0.1	BK	7.5	13.5	18.0	15.0	1000	F461BK104(1)630(2)
630	250	0.12	BK	7.5	13.5	18.0	15.0	1000	F461BK124(1)630(2)
630	250	0.15	BK	7.5	13.5	18.0	15.0	1000	F461BK154(1)630(2)
630	250	0.18	BP	8.5	14.5	18.0	15.0	1000	F461BP184(1)630(2)
630	250	0.22	BS	10.0	16.0	18.0	15.0	1000	F461BS224(1)630(2)
630	250	0.27	BY	11.0	19.0	18.0	15.0	1000	F461BY274(1)630(2)
630	250	0.33	BY	11.0	19.0	18.0	15.0	1000	F461BY334(1)630(2)
630	250	0.39	BY	11.0	19.0	18.0	15.0	1000	F461BY394(1)630(2)
630	250	0.1	DB	6.0	14.5	26.0	22.5	400	F461DB104(1)630(2)
630	250	0.12	DB	6.0	14.5	26.0	22.5	400	F461DB124(1)630(2)
630	250	0.15	DB	6.0	14.5	26.0	22.5	400	F461DB154(1)630(2)
630	250	0.18	DI	7.0	16.0	26.0	22.5	400	F461DI184(1)630(2)
630	250	0.22	DI	7.0	16.0	26.0	22.5	400	F461DI224(1)630(2)
630	250	0.27	DH	8.0	16.0	26.0	22.5	400	F461DH274(1)630(2)
630	250	0.33	DJ	8.5	17.0	26.0	22.5	400	F461DJ334(1)630(2)
630	250	0.39	DM	9.0	18.5	26.0	22.5	400	F461DM394(1)630(2)
630	250	0.47	DM	9.0	18.5	26.0	22.5	400	F461DM474(1)630(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) J = 5%, K = 10%, other tolerances on request.
(2) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
630	250	0.56	DP	11.0	20.0	26.0	22.5	400	F461DP564(1)630(2)
630	250	0.68	DU	13.0	22.0	26.0	22.5	400	F461DU684(1)630(2)
630	250	0.82	DU	13.0	22.0	26.0	22.5	400	F461DU824(1)630(2)
630	250	1.0	DY	15.5	24.5	26.0	22.5	400	F461DY105(1)630(2)
630	250	1.2	DY	15.5	24.5	26.0	22.5	400	F461DY125(1)630(2)
630	250	0.33	FB	9.0	17.0	31.5	27.5	180	F461FB334(1)630(2)
630	250	0.39	FB	9.0	17.0	31.5	27.5	180	F461FB394(1)630(2)
630	250	0.47	FB	9.0	17.0	31.5	27.5	180	F461FB474(1)630(2)
630	250	0.56	FC	11.0	20.0	31.5	27.5	180	F461FC564(1)630(2)
630	250	0.68	FC	11.0	20.0	31.5	27.5	180	F461FC684(1)630(2)
630	250	0.82	FC	11.0	20.0	31.5	27.5	180	F461FC824(1)630(2)
630	250	1.0	FI	13.0	25.0	31.5	27.5	180	F461FI105(1)630(2)
630	250	1.2	FI	13.0	25.0	31.5	27.5	180	F461FI125(1)630(2)
630	250	1.5	FN	14.0	28.0	31.5	27.5	180	F461FN155(1)630(2)
630	250	1.8	FR	17.5	28.0	31.5	27.5	180	F461FR185(1)630(2)
630	250	2.2	FS	19.0	29.0	31.5	27.5	180	F461FS225(1)630(2)
630	250	2.7	FY	22.0	37.0	31.5	27.5	180	F461FY275(1)630(2)
630	250	3.3	FY	22.0	37.0	31.5	27.5	180	F461FY335(1)630(2)
630	250	3.9	FY	22.0	37.0	31.5	27.5	180	F461FY395(1)630(2)
630	250	0.68	RB	11.0	22.0	41.0	37.5	90	F461RB684(1)630(2)
630	250	0.82	RB	11.0	22.0	41.0	37.5	90	F461RB824(1)630(2)
630	250	1.0	RB	11.0	22.0	41.0	37.5	90	F461RB105(1)630(2)
630	250	1.2	RB	11.0	22.0	41.0	37.5	90	F461RB125(1)630(2)
630	250	1.5	RF	13.0	24.0	41.0	37.5	90	F461RF155(1)630(2)
630	250	1.8	RF	13.0	24.0	41.0	37.5	90	F461RF185(1)630(2)
630	250	2.2	RH	15.0	26.0	41.0	37.5	90	F461RH225(1)630(2)
630	250	2.7	RC	16.0	28.5	41.0	37.5	90	F461RC275(1)630(2)
630	250	3.3	RD	19.0	32.0	41.0	37.5	90	F461RD335(1)630(2)
630	250	3.9	RP	21.0	38.0	41.0	37.5	90	F461RP395(1)630(2)
630	250	4.7	RP	21.0	38.0	41.0	37.5	90	F461RP475(1)630(2)
630	250	5.6	RO	24.0	44.0	41.0	37.5	90	F461RO565(1)630(2)
630	250	6.8	RO	24.0	44.0	41.0	37.5	90	F461RO685(1)630(2)
630	250	8.2	RU	30.0	45.0	41.0	37.5	90	F461RU825(1)630(2)
1000	300	0.0047	AG	4.0	9.0	13.0	10.0	2000	F462AG472(1)1K0(2)
1000	300	0.0056	AG	4.0	9.0	13.0	10.0	2000	F462AG562(1)1K0(2)
1000	300	0.0068	AG	4.0	9.0	13.0	10.0	2000	F462AG682(1)1K0(2)
1000	300	0.0082	AK	5.0	11.0	13.0	10.0	2000	F462AK822(1)1K0(2)
1000	300	0.01	AK	5.0	11.0	13.0	10.0	2000	F462AK103(1)1K0(2)
1000	300	0.012	AK	5.0	11.0	13.0	10.0	2000	F462AK123(1)1K0(2)
1000	300	0.015	AK	5.0	11.0	13.0	10.0	2000	F462AK153(1)1K0(2)
1000	300	0.018	AK	5.0	11.0	13.0	10.0	2000	F462AK183(1)1K0(2)
1000	300	0.022	AP	6.0	12.0	13.0	10.0	2000	F462AP223(1)1K0(2)
1000	300	0.01	BB	4.0	10.0	18.0	15.0	1600	F462BB103(1)1K0(2)
1000	300	0.012	BB	4.0	10.0	18.0	15.0	1600	F462BB123(1)1K0(2)
1000	300	0.015	BB	4.0	10.0	18.0	15.0	1600	F462BB153(1)1K0(2)
1000	300	0.018	BC	5.0	11.0	18.0	15.0	1600	F462BC183(1)1K0(2)
1000	300	0.022	BC	5.0	11.0	18.0	15.0	1600	F462BC223(1)1K0(2)
1000	300	0.027	BE	5.5	12.5	18.0	15.0	1600	F462BE273(1)1K0(2)
1000	300	0.033	BE	5.5	12.5	18.0	15.0	1600	F462BE333(1)1K0(2)
1000	300	0.039	BK	7.5	13.5	18.0	15.0	1600	F462BK393(1)1K0(2)
1000	300	0.047	BK	7.5	13.5	18.0	15.0	1600	F462BK473(1)1K0(2)
1000	300	0.056	BK	7.5	13.5	18.0	15.0	1600	F462BK563(1)1K0(2)
1000	300	0.068	BP	8.5	14.5	18.0	15.0	1600	F462BP683(1)1K0(2)
1000	300	0.082	BS	10.0	16.0	18.0	15.0	1600	F462BS823(1)1K0(2)
1000	300	0.1	BS	10.0	16.0	18.0	15.0	1600	F462BS104(1)1K0(2)
1000	300	0.12	BY	11.0	19.0	18.0	15.0	1600	F462BY124(1)1K0(2)
1000	300	0.15	BY	11.0	19.0	18.0	15.0	1600	F462BY154(1)1K0(2)
1000	300	0.047	DB	6.0	14.5	26.0	22.5	600	F462DB473(1)1K0(2)
1000	300	0.056	DB	6.0	14.5	26.0	22.5	600	F462DB563(1)1K0(2)
1000	300	0.068	DB	6.0	14.5	26.0	22.5	600	F462DB683(1)1K0(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) J = 5%, K = 10%, other tolerances on request.
(2) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
1000	300	0.082	DI	7.0	16.0	26.0	22.5	600	F462DI823(1)1K0(2)
1000	300	0.1	DI	7.0	16.0	26.0	22.5	600	F462DI104(1)1K0(2)
1000	300	0.12	DH	8.0	16.0	26.0	22.5	600	F462DH124(1)1K0(2)
1000	300	0.15	DM	9.0	18.5	26.0	22.5	600	F462DM154(1)1K0(2)
1000	300	0.18	DO	10.0	18.5	26.0	22.5	600	F462DO184(1)1K0(2)
1000	300	0.22	DO	10.0	18.5	26.0	22.5	600	F462DO224(1)1K0(2)
1000	300	0.27	DU	13.0	22.0	26.0	22.5	600	F462DU274(1)1K0(2)
1000	300	0.33	DU	13.0	22.0	26.0	22.5	600	F462DU334(1)1K0(2)
1000	300	0.39	DY	15.5	24.5	26.0	22.5	600	F462DY394(1)1K0(2)
1000	300	0.47	DY	15.5	24.5	26.0	22.5	600	F462DY474(1)1K0(2)
1000	300	0.56	DY	15.5	24.5	26.0	22.5	600	F462DY564(1)1K0(2)
1000	300	0.15	FB	9.0	17.0	31.5	27.5	200	F462FB154(1)1K0(2)
1000	300	0.18	FB	9.0	17.0	31.5	27.5	200	F462FB184(1)1K0(2)
1000	300	0.22	FB	9.0	17.0	31.5	27.5	200	F462FB224(1)1K0(2)
1000	300	0.27	FC	11.0	20.0	31.5	27.5	200	F462FC274(1)1K0(2)
1000	300	0.33	FC	11.0	20.0	31.5	27.5	200	F462FC334(1)1K0(2)
1000	300	0.39	FI	13.0	25.0	31.5	27.5	200	F462FI394(1)1K0(2)
1000	300	0.47	FI	13.0	25.0	31.5	27.5	200	F462FI474(1)1K0(2)
1000	300	0.56	FN	14.0	28.0	31.5	27.5	200	F462FN564(1)1K0(2)
1000	300	0.68	FN	14.0	28.0	31.5	27.5	200	F462FN684(1)1K0(2)
1000	300	0.82	FR	17.5	28.0	31.5	27.5	200	F462FR824(1)1K0(2)
1000	300	1.0	FY	22.0	37.0	31.5	27.5	200	F462FY105(1)1K0(2)
1000	300	1.2	FY	22.0	37.0	31.5	27.5	200	F462FY125(1)1K0(2)
1000	300	1.5	FY	22.0	37.0	31.5	27.5	200	F462FY155(1)1K0(2)
1000	300	0.33	RB	11.0	22.0	41.0	37.5	150	F462RB334(1)1K0(2)
1000	300	0.39	RB	11.0	22.0	41.0	37.5	150	F462RB394(1)1K0(2)
1000	300	0.47	RB	11.0	22.0	41.0	37.5	150	F462RB474(1)1K0(2)
1000	300	0.56	RB	11.0	22.0	41.0	37.5	150	F462RB564(1)1K0(2)
1000	300	0.68	RF	13.0	24.0	41.0	37.5	150	F462RF684(1)1K0(2)
1000	300	0.82	RH	15.0	26.0	41.0	37.5	150	F462RH824(1)1K0(2)
1000	300	1.0	RC	16.0	28.5	41.0	37.5	150	F462RC105(1)1K0(2)
1000	300	1.2	RD	19.0	32.0	41.0	37.5	150	F462RD125(1)1K0(2)
1000	300	1.5	RD	19.0	32.0	41.0	37.5	150	F462RD155(1)1K0(2)
1000	300	1.8	RP	21.0	38.0	41.0	37.5	150	F462RP185(1)1K0(2)
1000	300	2.2	RP	21.0	38.0	41.0	37.5	150	F462RP225(1)1K0(2)
1000	300	2.7	RO	24.0	44.0	41.0	37.5	150	F462RO275(1)1K0(2)
1000	300	3.3	RU	30.0	45.0	41.0	37.5	150	F462RU335(1)1K0(2)
1000	300	3.9	RU	30.0	45.0	41.0	37.5	150	F462RU395(1)1K0(2)
1250	400	0.0033	AG	4.0	9.0	13.0	10.0	2200	F462AG332(1)1L2(2)
1250	400	0.0047	AG	4.0	9.0	13.0	10.0	2200	F462AG472(1)1L2(2)
1250	400	0.0056	AG	4.0	9.0	13.0	10.0	2200	F462AG562(1)1L2(2)
1250	400	0.0068	AK	5.0	11.0	13.0	10.0	2200	F462AK682(1)1L2(2)
1250	400	0.0082	AK	5.0	11.0	13.0	10.0	2200	F462AK822(1)1L2(2)
1250	400	0.01	AK	5.0	11.0	13.0	10.0	2200	F462AK103(1)1L2(2)
1250	400	0.012	AK	5.0	11.0	13.0	10.0	2200	F462AK123(1)1L2(2)
1250	400	0.015	AP	6.0	12.0	13.0	10.0	2200	F462AP153(1)1L2(2)
1250	400	0.0068	BB	4.0	10.0	18.0	15.0	2000	F462BB682(1)1L2(2)
1250	400	0.0082	BB	4.0	10.0	18.0	15.0	2000	F462BB822(1)1L2(2)
1250	400	0.01	BB	4.0	10.0	18.0	15.0	2000	F462BB103(1)1L2(2)
1250	400	0.012	BC	5.0	11.0	18.0	15.0	2000	F462BC123(1)1L2(2)
1250	400	0.015	BC	5.0	11.0	18.0	15.0	2000	F462BC153(1)1L2(2)
1250	400	0.018	BE	5.5	12.5	18.0	15.0	2000	F462BE183(1)1L2(2)
1250	400	0.022	BE	5.5	12.5	18.0	15.0	2000	F462BE223(1)1L2(2)
1250	400	0.027	BK	7.5	13.5	18.0	15.0	2000	F462BK273(1)1L2(2)
1250	400	0.033	BK	7.5	13.5	18.0	15.0	2000	F462BK333(1)1L2(2)
1250	400	0.039	BK	7.5	13.5	18.0	15.0	2000	F462BK393(1)1L2(2)
1250	400	0.047	BK	7.5	13.5	18.0	15.0	2000	F462BK473(1)1L2(2)
1250	400	0.056	BP	8.5	14.5	18.0	15.0	2000	F462BP563(1)1L2(2)
1250	400	0.068	BS	10.0	16.0	18.0	15.0	2000	F462BS683(1)1L2(2)
1250	400	0.082	BY	11.0	19.0	18.0	15.0	2000	F462BY823(1)1L2(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) J = 5%, K = 10%, other tolerances on request.
(2) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
1250	400	0.1	BY	11.0	19.0	18.0	15.0	2000	F462BY104(1)1L2(2)
1250	400	0.12	BY	11.0	19.0	18.0	15.0	2000	F462BY124(1)1L2(2)
1250	400	0.033	DB	6.0	14.5	26.0	22.5	800	F462DB333(1)1L2(2)
1250	400	0.039	DB	6.0	14.5	26.0	22.5	800	F462DB393(1)1L2(2)
1250	400	0.047	DB	6.0	14.5	26.0	22.5	800	F462DB473(1)1L2(2)
1250	400	0.056	DB	6.0	14.5	26.0	22.5	800	F462DB563(1)1L2(2)
1250	400	0.068	DI	7.0	16.0	26.0	22.5	800	F462DI683(1)1L2(2)
1250	400	0.082	DI	7.0	16.0	26.0	22.5	800	F462DI823(1)1L2(2)
1250	400	0.1	DJ	8.5	17.0	26.0	22.5	800	F462DJ104(1)1L2(2)
1250	400	0.12	DM	9.0	18.5	26.0	22.5	800	F462DM124(1)1L2(2)
1250	400	0.15	DM	9.0	18.5	26.0	22.5	800	F462DM154(1)1L2(2)
1250	400	0.18	DP	11.0	20.0	26.0	22.5	800	F462DP184(1)1L2(2)
1250	400	0.22	DU	13.0	22.0	26.0	22.5	800	F462DU224(1)1L2(2)
1250	400	0.27	DY	15.5	24.5	26.0	22.5	800	F462DY274(1)1L2(2)
1250	400	0.33	DY	15.5	24.5	26.0	22.5	800	F462DY334(1)1L2(2)
1250	400	0.39	DY	15.5	24.5	26.0	22.5	800	F462DY394(1)1L2(2)
1250	400	0.1	FB	9.0	17.0	31.5	27.5	380	F462FB104(1)1L2(2)
1250	400	0.12	FB	9.0	17.0	31.5	27.5	380	F462FB124(1)1L2(2)
1250	400	0.15	FB	9.0	17.0	31.5	27.5	380	F462FB154(1)1L2(2)
1250	400	0.18	FC	11.0	20.0	31.5	27.5	380	F462FC184(1)1L2(2)
1250	400	0.22	FC	11.0	20.0	31.5	27.5	380	F462FC224(1)1L2(2)
1250	400	0.27	FI	13.0	25.0	31.5	27.5	380	F462FI274(1)1L2(2)
1250	400	0.33	FI	13.0	25.0	31.5	27.5	380	F462FI334(1)1L2(2)
1250	400	0.39	FI	13.0	25.0	31.5	27.5	380	F462FI394(1)1L2(2)
1250	400	0.47	FN	14.0	28.0	31.5	27.5	380	F462FN474(1)1L2(2)
1250	400	0.56	FR	17.5	28.0	31.5	27.5	380	F462FR564(1)1L2(2)
1250	400	0.68	FS	19.0	29.0	31.5	27.5	380	F462FS684(1)1L2(2)
1250	400	0.82	FY	22.0	37.0	31.5	27.5	380	F462FY824(1)1L2(2)
1250	400	1.0	FY	22.0	37.0	31.5	27.5	380	F462FY105(1)1L2(2)
1250	400	1.2	FY	22.0	37.0	31.5	27.5	380	F462FY125(1)1L2(2)
1250	400	0.22	RB	11.0	22.0	41.0	37.5	180	F462RB224(1)1L2(2)
1250	400	0.27	RB	11.0	22.0	41.0	37.5	180	F462RB274(1)1L2(2)
1250	400	0.33	RB	11.0	22.0	41.0	37.5	180	F462RB334(1)1L2(2)
1250	400	0.39	RB	11.0	22.0	41.0	37.5	180	F462RB394(1)1L2(2)
1250	400	0.47	RF	13.0	24.0	41.0	37.5	180	F462RF474(1)1L2(2)
1250	400	0.56	RF	13.0	24.0	41.0	37.5	180	F462RF564(1)1L2(2)
1250	400	0.68	RH	15.0	26.0	41.0	37.5	180	F462RH684(1)1L2(2)
1250	400	0.82	RC	16.0	28.5	41.0	37.5	180	F462RC824(1)1L2(2)
1250	400	1.0	RD	19.0	32.0	41.0	37.5	180	F462RD105(1)1L2(2)
1250	400	1.2	RP	21.0	38.0	41.0	37.5	180	F462RP125(1)1L2(2)
1250	400	1.5	RP	21.0	38.0	41.0	37.5	180	F462RP155(1)1L2(2)
1250	400	1.8	RO	24.0	44.0	41.0	37.5	180	F462RO185(1)1L2(2)
1250	400	2.2	RU	30.0	45.0	41.0	37.5	180	F462RU225(1)1L2(2)
1250	400	2.7	RU	30.0	45.0	41.0	37.5	180	F462RU275(1)1L2(2)
1250	500	0.0047	BB	4.0	10.0	18.0	15.0	3500	F463BB472(1)1L2(2)
1250	500	0.0056	BB	4.0	10.0	18.0	15.0	3500	F463BB562(1)1L2(2)
1250	500	0.0068	BB	4.0	10.0	18.0	15.0	3500	F463BB682(1)1L2(2)
1250	500	0.0082	BC	5.0	11.0	18.0	15.0	3500	F463BC822(1)1L2(2)
1250	500	0.01	BC	5.0	11.0	18.0	15.0	3500	F463BC103(1)1L2(2)
1250	500	0.012	BE	5.5	12.5	18.0	15.0	3500	F463BE123(1)1L2(2)
1250	500	0.015	BG	6.0	12.0	18.0	15.0	3500	F463BG153(1)1L2(2)
1250	500	0.018	BK	7.5	13.5	18.0	15.0	3500	F463BK183(1)1L2(2)
1250	500	0.022	BK	7.5	13.5	18.0	15.0	3500	F463BK223(1)1L2(2)
1250	500	0.027	BK	7.5	13.5	18.0	15.0	3500	F463BK273(1)1L2(2)
1250	500	0.033	BP	8.5	14.5	18.0	15.0	3500	F463BP333(1)1L2(2)
1250	500	0.039	BS	10.0	16.0	18.0	15.0	3500	F463BS393(1)1L2(2)
1250	500	0.047	BS	10.0	16.0	18.0	15.0	3500	F463BS473(1)1L2(2)
1250	500	0.056	BY	11.0	19.0	18.0	15.0	3500	F463BY563(1)1L2(2)
1250	500	0.068	BY	11.0	19.0	18.0	15.0	3500	F463BY683(1)1L2(2)
1250	500	0.022	DB	6.0	14.5	26.0	22.5	2000	F463DB223(1)1L2(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) J = 5%, K = 10%, other tolerances on request.
(2) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
1250	500	0.027	DB	6.0	14.5	26.0	22.5	2000	F463DB273(1)1L2(2)
1250	500	0.033	DB	6.0	14.5	26.0	22.5	2000	F463DB333(1)1L2(2)
1250	500	0.039	DB	6.0	14.5	26.0	22.5	2000	F463DB393(1)1L2(2)
1250	500	0.047	DI	7.0	16.0	26.0	22.5	2000	F463DI473(1)1L2(2)
1250	500	0.056	DI	7.0	16.0	26.0	22.5	2000	F463DI563(1)1L2(2)
1250	500	0.068	DJ	8.5	17.0	26.0	22.5	2000	F463DJ683(1)1L2(2)
1250	500	0.082	DM	9.0	18.5	26.0	22.5	2000	F463DM823(1)1L2(2)
1250	500	0.1	DO	10.0	18.5	26.0	22.5	2000	F463DO104(1)1L2(2)
1250	500	0.12	DP	11.0	20.0	26.0	22.5	2000	F463DP124(1)1L2(2)
1250	500	0.15	DU	13.0	22.0	26.0	22.5	2000	F463DU154(1)1L2(2)
1250	500	0.18	DU	13.0	22.0	26.0	22.5	2000	F463DU184(1)1L2(2)
1250	500	0.22	DY	15.5	24.5	26.0	22.5	2000	F463DY224(1)1L2(2)
1250	500	0.27	DY	15.5	24.5	26.0	22.5	2000	F463DY274(1)1L2(2)
1250	500	0.068	FB	9.0	17.0	31.5	27.5	800	F463FB683(1)1L2(2)
1250	500	0.082	FB	9.0	17.0	31.5	27.5	800	F463FB823(1)1L2(2)
1250	500	0.1	FB	9.0	17.0	31.5	27.5	800	F463FB104(1)1L2(2)
1250	500	0.12	FB	9.0	17.0	31.5	27.5	800	F463FB124(1)1L2(2)
1250	500	0.15	FC	11.0	20.0	31.5	27.5	800	F463FC154(1)1L2(2)
1250	500	0.18	FC	11.0	20.0	31.5	27.5	800	F463FC184(1)1L2(2)
1250	500	0.22	FI	13.0	25.0	31.5	27.5	800	F463FI224(1)1L2(2)
1250	500	0.27	FI	13.0	25.0	31.5	27.5	800	F463FI274(1)1L2(2)
1250	500	0.33	FN	14.0	28.0	31.5	27.5	800	F463FN334(1)1L2(2)
1250	500	0.39	FR	17.5	28.0	31.5	27.5	800	F463FR394(1)1L2(2)
1250	500	0.47	FR	17.5	28.0	31.5	27.5	800	F463FR474(1)1L2(2)
1250	500	0.56	FY	22.0	37.0	31.5	27.5	800	F463FY564(1)1L2(2)
1250	500	0.68	FY	22.0	37.0	31.5	27.5	800	F463FY684(1)1L2(2)
1250	500	0.82	FY	22.0	37.0	31.5	27.5	800	F463FY824(1)1L2(2)
1250	500	0.22	RB	11.0	22.0	41.0	37.5	400	F463RB224(1)1L2(2)
1250	500	0.27	RB	11.0	22.0	41.0	37.5	400	F463RB274(1)1L2(2)
1250	500	0.33	RB	11.0	22.0	41.0	37.5	400	F463RB334(1)1L2(2)
1250	500	0.39	RF	13.0	24.0	41.0	37.5	400	F463RF394(1)1L2(2)
1250	500	0.47	RH	15.0	26.0	41.0	37.5	400	F463RH474(1)1L2(2)
1250	500	0.56	RC	16.0	28.5	41.0	37.5	400	F463RC564(1)1L2(2)
1250	500	0.68	RC	16.0	28.5	41.0	37.5	400	F463RC684(1)1L2(2)
1250	500	0.82	RD	19.0	32.0	41.0	37.5	400	F463RD824(1)1L2(2)
1250	500	1.0	RP	21.0	38.0	41.0	37.5	400	F463RP105(1)1L2(2)
1250	500	1.2	RP	21.0	38.0	41.0	37.5	400	F463RP125(1)1L2(2)
1250	500	1.5	RO	24.0	44.0	41.0	37.5	400	F463RO155(1)1L2(2)
1250	500	1.8	RU	30.0	45.0	41.0	37.5	400	F463RU185(1)1L2(2)
1250	500	2.2	RU	30.0	45.0	41.0	37.5	400	F463RU225(1)1L2(2)
1600	500	0.001	AG	4.0	9.0	13.0	10.0	6000	F462AG102(1)1K6(2)
1600	500	0.0012	AG	4.0	9.0	13.0	10.0	6000	F462AG122(1)1K6(2)
1600	500	0.0015	AG	4.0	9.0	13.0	10.0	6000	F462AG152(1)1K6(2)
1600	500	0.0018	AG	4.0	9.0	13.0	10.0	6000	F462AG182(1)1K6(2)
1600	500	0.0022	AG	4.0	9.0	13.0	10.0	6000	F462AG222(1)1K6(2)
1600	500	0.0027	AK	5.0	11.0	13.0	10.0	6000	F462AK272(1)1K6(2)
1600	500	0.0033	AK	5.0	11.0	13.0	10.0	6000	F462AK332(1)1K6(2)
1600	500	0.0039	AK	5.0	11.0	13.0	10.0	6000	F462AK392(1)1K6(2)
1600	500	0.0047	AK	5.0	11.0	13.0	10.0	6000	F462AK472(1)1K6(2)
1600	500	0.0056	AP	6.0	12.0	13.0	10.0	6000	F462AP562(1)1K6(2)
1600	500	0.0068	AP	6.0	12.0	13.0	10.0	6000	F462AP682(1)1K6(2)
1600	500	0.0033	BB	4.0	10.0	18.0	15.0	4500	F462BB332(1)1K6(2)
1600	500	0.0039	BB	4.0	10.0	18.0	15.0	4500	F462BB392(1)1K6(2)
1600	500	0.0047	BB	4.0	10.0	18.0	15.0	4500	F462BB472(1)1K6(2)
1600	500	0.0056	BB	4.0	10.0	18.0	15.0	4500	F462BB562(1)1K6(2)
1600	500	0.0068	BC	5.0	11.0	18.0	15.0	4500	F462BC682(1)1K6(2)
1600	500	0.0082	BC	5.0	11.0	18.0	15.0	4500	F462BC822(1)1K6(2)
1600	500	0.01	BE	5.5	12.5	18.0	15.0	4500	F462BE103(1)1K6(2)
1600	500	0.012	BG	6.0	12.0	18.0	15.0	4500	F462BG123(1)1K6(2)
1600	500	0.015	BK	7.5	13.5	18.0	15.0	4500	F462BK153(1)1K6(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) J = 5%, K = 10%, other tolerances on request.
(2) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
1600	500	0.018	BK	7.5	13.5	18.0	15.0	4500	F462BK183(1)1K6(2)
1600	500	0.022	BK	7.5	13.5	18.0	15.0	4500	F462BK223(1)1K6(2)
1600	500	0.027	BP	8.5	14.5	18.0	15.0	4500	F462BP273(1)1K6(2)
1600	500	0.033	BS	10.0	16.0	18.0	15.0	4500	F462BS333(1)1K6(2)
1600	500	0.039	BY	11.0	19.0	18.0	15.0	4500	F462BY393(1)1K6(2)
1600	500	0.047	BY	11.0	19.0	18.0	15.0	4500	F462BY473(1)1K6(2)
1600	500	0.056	BY	11.0	19.0	18.0	15.0	4500	F462BY563(1)1K6(2)
1600	500	0.015	DB	6.0	14.5	26.0	22.5	1800	F462DB153(1)1K6(2)
1600	500	0.018	DB	6.0	14.5	26.0	22.5	1800	F462DB183(1)1K6(2)
1600	500	0.022	DB	6.0	14.5	26.0	22.5	1800	F462DB223(1)1K6(2)
1600	500	0.027	DB	6.0	14.5	26.0	22.5	1800	F462DB273(1)1K6(2)
1600	500	0.033	DI	7.0	16.0	26.0	22.5	1800	F462DI333(1)1K6(2)
1600	500	0.039	DI	7.0	16.0	26.0	22.5	1800	F462DI393(1)1K6(2)
1600	500	0.047	DH	8.0	16.0	26.0	22.5	1800	F462DH473(1)1K6(2)
1600	500	0.056	DM	9.0	18.5	26.0	22.5	1800	F462DM563(1)1K6(2)
1600	500	0.068	DO	10.0	18.5	26.0	22.5	1800	F462DO683(1)1K6(2)
1600	500	0.082	DP	11.0	20.0	26.0	22.5	1800	F462DP823(1)1K6(2)
1600	500	0.1	DP	11.0	20.0	26.0	22.5	1800	F462DP104(1)1K6(2)
1600	500	0.12	DU	13.0	22.0	26.0	22.5	1800	F462DU124(1)1K6(2)
1600	500	0.15	DY	15.5	24.5	26.0	22.5	1800	F462DY154(1)1K6(2)
1600	500	0.18	DY	15.5	24.5	26.0	22.5	1800	F462DY184(1)1K6(2)
1600	500	0.22	DY	15.5	24.5	26.0	22.5	1800	F462DY224(1)1K6(2)
1600	500	0.047	FB	9.0	17.0	31.5	27.5	500	F462FB473(1)1K6(2)
1600	500	0.056	FB	9.0	17.0	31.5	27.5	500	F462FB563(1)1K6(2)
1600	500	0.068	FB	9.0	17.0	31.5	27.5	500	F462FB683(1)1K6(2)
1600	500	0.082	FB	9.0	17.0	31.5	27.5	500	F462FB823(1)1K6(2)
1600	500	0.1	FC	11.0	20.0	31.5	27.5	500	F462FC104(1)1K6(2)
1600	500	0.12	FC	11.0	20.0	31.5	27.5	500	F462FC124(1)1K6(2)
1600	500	0.15	FI	13.0	25.0	31.5	27.5	500	F462FI154(1)1K6(2)
1600	500	0.18	FI	13.0	25.0	31.5	27.5	500	F462FI184(1)1K6(2)
1600	500	0.22	FN	14.0	28.0	31.5	27.5	500	F462FN224(1)1K6(2)
1600	500	0.27	FR	17.5	28.0	31.5	27.5	500	F462FR274(1)1K6(2)
1600	500	0.33	FR	17.5	28.0	31.5	27.5	500	F462FR334(1)1K6(2)
1600	500	0.39	FS	19.0	29.0	31.5	27.5	500	F462FS394(1)1K6(2)
1600	500	0.47	FY	22.0	37.0	31.5	27.5	500	F462FY474(1)1K6(2)
1600	500	0.56	FY	22.0	37.0	31.5	27.5	500	F462FY564(1)1K6(2)
1600	500	0.68	FY	22.0	37.0	31.5	27.5	500	F462FY684(1)1K6(2)
1600	500	0.15	RB	11.0	22.0	41.0	37.5	300	F462RB154(1)1K6(2)
1600	500	0.18	RB	11.0	22.0	41.0	37.5	300	F462RB184(1)1K6(2)
1600	500	0.22	RB	11.0	22.0	41.0	37.5	300	F462RB224(1)1K6(2)
1600	500	0.27	RF	13.0	24.0	41.0	37.5	300	F462RF274(1)1K6(2)
1600	500	0.33	RH	15.0	26.0	41.0	37.5	300	F462RH334(1)1K6(2)
1600	500	0.39	RC	16.0	28.5	41.0	37.5	300	F462RC394(1)1K6(2)
1600	500	0.47	RC	16.0	28.5	41.0	37.5	300	F462RC474(1)1K6(2)
1600	500	0.56	RD	19.0	32.0	41.0	37.5	300	F462RD564(1)1K6(2)
1600	500	0.68	RP	21.0	38.0	41.0	37.5	300	F462RP684(1)1K6(2)
1600	500	0.82	RP	21.0	38.0	41.0	37.5	300	F462RP824(1)1K6(2)
1600	500	1.0	RO	24.0	44.0	41.0	37.5	300	F462RO105(1)1K6(2)
1600	500	1.2	RO	24.0	44.0	41.0	37.5	300	F462RO125(1)1K6(2)
1600	500	1.5	RU	30.0	45.0	41.0	37.5	300	F462RU155(1)1K6(2)
1600	650	0.0033	BB	4.0	10.0	18.0	15.0	6000	F463BB332(1)1K6(2)
1600	650	0.0039	BB	4.0	10.0	18.0	15.0	6000	F463BB392(1)1K6(2)
1600	650	0.0047	BB	4.0	10.0	18.0	15.0	6000	F463BB472(1)1K6(2)
1600	650	0.0056	BC	5.0	11.0	18.0	15.0	6000	F463BC562(1)1K6(2)
1600	650	0.0068	BC	5.0	11.0	18.0	15.0	6000	F463BC682(1)1K6(2)
1600	650	0.0082	BE	5.5	12.5	18.0	15.0	6000	F463BE822(1)1K6(2)
1600	650	0.01	BG	6.0	12.0	18.0	15.0	6000	F463BG103(1)1K6(2)
1600	650	0.012	BK	7.5	13.5	18.0	15.0	6000	F463BK123(1)1K6(2)
1600	650	0.015	BK	7.5	13.5	18.0	15.0	6000	F463BK153(1)1K6(2)
1600	650	0.018	BP	8.5	14.5	18.0	15.0	6000	F463BP183(1)1K6(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) J = 5%, K = 10%, other tolerances on request.
(2) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
1600	650	0.022	BP	8.5	14.5	18.0	15.0	6000	F463BP223(1)1K6(2)
1600	650	0.027	BS	10.0	16.0	18.0	15.0	6000	F463BS273(1)1K6(2)
1600	650	0.033	BY	11.0	19.0	18.0	15.0	6000	F463BY333(1)1K6(2)
1600	650	0.039	BY	11.0	19.0	18.0	15.0	6000	F463BY393(1)1K6(2)
1600	650	0.047	BY	11.0	19.0	18.0	15.0	6000	F463BY473(1)1K6(2)
1600	650	0.015	DB	6.0	14.5	26.0	22.5	3000	F463DB153(1)1K6(2)
1600	650	0.018	DB	6.0	14.5	26.0	22.5	3000	F463DB183(1)1K6(2)
1600	650	0.022	DB	6.0	14.5	26.0	22.5	3000	F463DB223(1)1K6(2)
1600	650	0.027	DB	6.0	14.5	26.0	22.5	3000	F463DB273(1)1K6(2)
1600	650	0.033	DI	7.0	16.0	26.0	22.5	3000	F463DI333(1)1K6(2)
1600	650	0.039	DI	7.0	16.0	26.0	22.5	3000	F463DI393(1)1K6(2)
1600	650	0.047	DJ	8.5	17.0	26.0	22.5	3000	F463DJ473(1)1K6(2)
1600	650	0.056	DM	9.0	18.5	26.0	22.5	3000	F463DM563(1)1K6(2)
1600	650	0.068	DO	10.0	18.5	26.0	22.5	3000	F463DO683(1)1K6(2)
1600	650	0.082	DP	11.0	20.0	26.0	22.5	3000	F463DP823(1)1K6(2)
1600	650	0.1	DU	13.0	22.0	26.0	22.5	3000	F463DU104(1)1K6(2)
1600	650	0.12	DU	13.0	22.0	26.0	22.5	3000	F463DU124(1)1K6(2)
1600	650	0.15	DY	15.5	24.5	26.0	22.5	3000	F463DY154(1)1K6(2)
1600	650	0.18	DY	15.5	24.5	26.0	22.5	3000	F463DY184(1)1K6(2)
1600	650	0.047	FB	9.0	17.0	31.5	27.5	1500	F463FB473(1)1K6(2)
1600	650	0.056	FB	9.0	17.0	31.5	27.5	1500	F463FB563(1)1K6(2)
1600	650	0.068	FB	9.0	17.0	31.5	27.5	1500	F463FB683(1)1K6(2)
1600	650	0.082	FB	9.0	17.0	31.5	27.5	1500	F463FB823(1)1K6(2)
1600	650	0.1	FC	11.0	20.0	31.5	27.5	1500	F463FC104(1)1K6(2)
1600	650	0.12	FC	11.0	20.0	31.5	27.5	1500	F463FC124(1)1K6(2)
1600	650	0.15	FI	13.0	25.0	31.5	27.5	1500	F463FI154(1)1K6(2)
1600	650	0.18	FI	13.0	25.0	31.5	27.5	1500	F463FI184(1)1K6(2)
1600	650	0.22	FN	14.0	28.0	31.5	27.5	1500	F463FN224(1)1K6(2)
1600	650	0.27	FR	17.5	28.0	31.5	27.5	1500	F463FR274(1)1K6(2)
1600	650	0.33	FS	19.0	29.0	31.5	27.5	1500	F463FS334(1)1K6(2)
1600	650	0.39	FY	22.0	37.0	31.5	27.5	1500	F463FY394(1)1K6(2)
1600	650	0.47	FY	22.0	37.0	31.5	27.5	1500	F463FY474(1)1K6(2)
1600	650	0.56	FY	22.0	37.0	31.5	27.5	1500	F463FY564(1)1K6(2)
1600	650	0.15	RB	11.0	22.0	41.0	37.5	750	F463RB154(1)1K6(2)
1600	650	0.18	RB	11.0	22.0	41.0	37.5	750	F463RB184(1)1K6(2)
1600	650	0.22	RB	11.0	22.0	41.0	37.5	750	F463RB224(1)1K6(2)
1600	650	0.27	RF	13.0	24.0	41.0	37.5	750	F463RF274(1)1K6(2)
1600	650	0.33	RH	15.0	26.0	41.0	37.5	750	F463RH334(1)1K6(2)
1600	650	0.39	RC	16.0	28.5	41.0	37.5	750	F463RC394(1)1K6(2)
1600	650	0.47	RD	19.0	32.0	41.0	37.5	750	F463RD474(1)1K6(2)
1600	650	0.56	RD	19.0	32.0	41.0	37.5	750	F463RD564(1)1K6(2)
1600	650	0.68	RP	21.0	38.0	41.0	37.5	750	F463RP684(1)1K6(2)
1600	650	0.82	RP	21.0	38.0	41.0	37.5	750	F463RP824(1)1K6(2)
1600	650	1.0	RO	24.0	44.0	41.0	37.5	750	F463RO105(1)1K6(2)
1600	650	1.2	RO	24.0	44.0	41.0	37.5	750	F463RO125(1)1K6(2)
1600	650	1.5	RU	30.0	45.0	41.0	37.5	750	F463RU155(1)1K6(2)
2000	700	0.001	AG	4.0	9.0	13.0	10.0	10000	F463AG102(1)2K0(2)
2000	700	0.0012	AG	4.0	9.0	13.0	10.0	10000	F463AG122(1)2K0(2)
2000	700	0.0015	AG	4.0	9.0	13.0	10.0	10000	F463AG152(1)2K0(2)
2000	700	0.0018	AG	4.0	9.0	13.0	10.0	10000	F463AG182(1)2K0(2)
2000	700	0.0022	AK	4.0	9.0	13.0	10.0	10000	F463AG222(1)2K0(2)
2000	700	0.0027	AK	5.0	11.0	13.0	10.0	10000	F463AK272(1)2K0(2)
2000	700	0.0033	AK	5.0	11.0	13.0	10.0	10000	F463AK332(1)2K0(2)
2000	700	0.0039	AK	5.0	11.0	13.0	10.0	10000	F463AK392(1)2K0(2)
2000	700	0.0047	AP	5.0	11.0	13.0	10.0	10000	F463AK472(1)2K0(2)
2000	700	0.0056	AP	6.0	12.0	13.0	10.0	10000	F463AP562(1)2K0(2)
2000	700	0.001	BB	4.0	10.0	18.0	15.0	9500	F463BB102(1)2K0(2)
2000	700	0.0012	BB	4.0	10.0	18.0	15.0	9500	F463BB122(1)2K0(2)
2000	700	0.0015	BB	4.0	10.0	18.0	15.0	9500	F463BB152(1)2K0(2)
2000	700	0.0018	BB	4.0	10.0	18.0	15.0	9500	F463BB182(1)2K0(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) J = 5%, K = 10%, other tolerances on request.
(2) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
2000	700	0.0022	BB	4.0	10.0	18.0	15.0	9500	F463BB222(1)2K0(2)
2000	700	0.0027	BC	5.0	11.0	18.0	15.0	9500	F463BC272(1)2K0(2)
2000	700	0.0033	BC	5.0	11.0	18.0	15.0	9500	F463BC332(1)2K0(2)
2000	700	0.0039	BC	5.0	11.0	18.0	15.0	9500	F463BC392(1)2K0(2)
2000	700	0.0047	BE	5.5	12.5	18.0	15.0	9500	F463BE472(1)2K0(2)
2000	700	0.0056	BE	5.5	12.5	18.0	15.0	9500	F463BE562(1)2K0(2)
2000	700	0.0068	BK	7.5	13.5	18.0	15.0	9500	F463BK682(1)2K0(2)
2000	700	0.0082	BK	7.5	13.5	18.0	15.0	9500	F463BK822(1)2K0(2)
2000	700	0.01	BK	7.5	13.5	18.0	15.0	9500	F463BK103(1)2K0(2)
2000	700	0.012	BP	8.5	14.5	18.0	15.0	9500	F463BP123(1)2K0(2)
2000	700	0.015	BS	10.0	16.0	18.0	15.0	9500	F463BS153(1)2K0(2)
2000	700	0.018	BY	11.0	19.0	18.0	15.0	9500	F463BY183(1)2K0(2)
2000	700	0.022	BY	11.0	19.0	18.0	15.0	9500	F463BY223(1)2K0(2)
2000	700	0.027	BY	11.0	19.0	18.0	15.0	9500	F463BY273(1)2K0(2)
2000	700	0.01	DB	6.0	14.5	26.0	22.5	4500	F463DB103(1)2K0(2)
2000	700	0.012	DB	6.0	14.5	26.0	22.5	4500	F463DB123(1)2K0(2)
2000	700	0.015	DI	7.0	16.0	26.0	22.5	4500	F463DI153(1)2K0(2)
2000	700	0.018	DI	7.0	16.0	26.0	22.5	4500	F463DI183(1)2K0(2)
2000	700	0.022	DH	8.0	16.0	26.0	22.5	4500	F463DH223(1)2K0(2)
2000	700	0.027	DJ	8.5	17.0	26.0	22.5	4500	F463DJ273(1)2K0(2)
2000	700	0.033	DO	10.0	18.5	26.0	22.5	4500	F463DO333(1)2K0(2)
2000	700	0.039	DO	10.0	18.5	26.0	22.5	4500	F463DO393(1)2K0(2)
2000	700	0.047	DP	11.0	20.0	26.0	22.5	4500	F463DP473(1)2K0(2)
2000	700	0.056	DU	13.0	22.0	26.0	22.5	4500	F463DU563(1)2K0(2)
2000	700	0.068	DU	13.0	22.0	26.0	22.5	4500	F463DU683(1)2K0(2)
2000	700	0.082	DY	15.5	24.5	26.0	22.5	4500	F463DY823(1)2K0(2)
2000	700	0.1	DY	15.5	24.5	26.0	22.5	4500	F463DY104(1)2K0(2)
2000	700	0.022	FB	9.0	17.0	31.5	27.5	1000	F463FB223(1)2K0(2)
2000	700	0.027	FB	9.0	17.0	31.5	27.5	1000	F463FB273(1)2K0(2)
2000	700	0.033	FB	9.0	17.0	31.5	27.5	1000	F463FB333(1)2K0(2)
2000	700	0.039	FB	9.0	17.0	31.5	27.5	1000	F463FB393(1)2K0(2)
2000	700	0.047	FC	11.0	20.0	31.5	27.5	1000	F463FC473(1)2K0(2)
2000	700	0.056	FC	11.0	20.0	31.5	27.5	1000	F463FC563(1)2K0(2)
2000	700	0.068	FC	11.0	20.0	31.5	27.5	1000	F463FC683(1)2K0(2)
2000	700	0.082	FI	13.0	25.0	31.5	27.5	1000	F463FI823(1)2K0(2)
2000	700	0.1	FI	13.0	25.0	31.5	27.5	1000	F463FI104(1)2K0(2)
2000	700	0.12	FN	14.0	28.0	31.5	27.5	1000	F463FN124(1)2K0(2)
2000	700	0.15	FR	17.5	28.0	31.5	27.5	1000	F463FR154(1)2K0(2)
2000	700	0.18	FS	19.0	29.0	31.5	27.5	1000	F463FS184(1)2K0(2)
2000	700	0.22	FY	22.0	37.0	31.5	27.5	1000	F463FY224(1)2K0(2)
2000	700	0.27	FY	22.0	37.0	31.5	27.5	1000	F463FY274(1)2K0(2)
2000	700	0.33	FY	22.0	37.0	31.5	27.5	1000	F463FY334(1)2K0(2)
2000	700	0.068	RB	11.0	22.0	41.0	37.5	500	F463RB683(1)2K0(2)
2000	700	0.082	RB	11.0	22.0	41.0	37.5	500	F463RB823(1)2K0(2)
2000	700	0.1	RB	11.0	22.0	41.0	37.5	500	F463RB104(1)2K0(2)
2000	700	0.12	RB	11.0	22.0	41.0	37.5	500	F463RB124(1)2K0(2)
2000	700	0.15	RF	13.0	24.0	41.0	37.5	500	F463RF154(1)2K0(2)
2000	700	0.18	RH	15.0	26.0	41.0	37.5	500	F463RH184(1)2K0(2)
2000	700	0.22	RC	16.0	28.5	41.0	37.5	500	F463RC224(1)2K0(2)
2000	700	0.27	RD	19.0	32.0	41.0	37.5	500	F463RD274(1)2K0(2)
2000	700	0.33	RD	19.0	32.0	41.0	37.5	500	F463RD334(1)2K0(2)
2000	700	0.39	RP	21.0	38.0	41.0	37.5	500	F463RP394(1)2K0(2)
2000	700	0.47	RP	21.0	38.0	41.0	37.5	500	F463RP474(1)2K0(2)
2000	700	0.56	RO	24.0	44.0	41.0	37.5	500	F463RO564(1)2K0(2)
2000	700	0.68	RU	30.0	45.0	41.0	37.5	500	F463RU684(1)2K0(2)
2000	700	0.82	RU	30.0	45.0	41.0	37.5	500	F463RU824(1)2K0(2)
2500	900	0.001	BB	4.0	10.0	18.0	15.0	4500	F464BB102(1)2K5(2)
2500	900	0.0012	BB	4.0	10.0	18.0	15.0	4500	F464BB122(1)2K5(2)
2500	900	0.0015	BB	4.0	10.0	18.0	15.0	4500	F464BB152(1)2K5(2)
2500	900	0.0018	BB	4.0	10.0	18.0	15.0	4500	F464BB182(1)2K5(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) J = 5%, K = 10%, other tolerances on request.

(2) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Size Code	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Part Number
				B	H	L			
2500	900	0.0022	BB	4.0	10.0	18.0	15.0	4500	F464BB222(1)2K5(2)
2500	900	0.0027	BC	5.0	11.0	18.0	15.0	4500	F464BC272(1)2K5(2)
2500	900	0.0033	BC	5.0	11.0	18.0	15.0	4500	F464BC332(1)2K5(2)
2500	900	0.0039	BE	5.5	12.5	18.0	15.0	4500	F464BE392(1)2K5(2)
2500	900	0.0047	BE	5.5	12.5	18.0	15.0	4500	F464BE472(1)2K5(2)
2500	900	0.0056	BK	7.5	13.5	18.0	15.0	4500	F464BK562(1)2K5(2)
2500	900	0.0068	BK	7.5	13.5	18.0	15.0	4500	F464BK682(1)2K5(2)
2500	900	0.0082	BK	7.5	13.5	18.0	15.0	4500	F464BK822(1)2K5(2)
2500	900	0.01	BP	8.5	14.5	18.0	15.0	4500	F464BP103(1)2K5(2)
2500	900	0.012	BS	10.0	16.0	18.0	15.0	4500	F464BS123(1)2K5(2)
2500	900	0.015	BS	10.0	16.0	18.0	15.0	4500	F464BS153(1)2K5(2)
2500	900	0.018	BY	11.0	19.0	18.0	15.0	4500	F464BY183(1)2K5(2)
2500	900	0.022	BY	11.0	19.0	18.0	15.0	4500	F464BY223(1)2K5(2)
2500	900	0.0047	DB	6.0	14.5	26.0	22.5	2500	F464DB472(1)2K5(2)
2500	900	0.0056	DB	6.0	14.5	26.0	22.5	2500	F464DB562(1)2K5(2)
2500	900	0.0068	DB	6.0	14.5	26.0	22.5	2500	F464DB682(1)2K5(2)
2500	900	0.0082	DB	6.0	14.5	26.0	22.5	2500	F464DB822(1)2K5(2)
2500	900	0.01	DI	7.0	16.0	26.0	22.5	2500	F464DI103(1)2K5(2)
2500	900	0.012	DI	7.0	16.0	26.0	22.5	2500	F464DI123(1)2K5(2)
2500	900	0.015	DJ	8.5	17.0	26.0	22.5	2500	F464DJ153(1)2K5(2)
2500	900	0.018	DM	9.0	18.5	26.0	22.5	2500	F464DM183(1)2K5(2)
2500	900	0.022	DM	9.0	18.5	26.0	22.5	2500	F464DM223(1)2K5(2)
2500	900	0.027	DP	11.0	20.0	26.0	22.5	2500	F464DP273(1)2K5(2)
2500	900	0.033	DU	13.0	22.0	26.0	22.5	2500	F464DU333(1)2K5(2)
2500	900	0.039	DY	15.5	24.5	26.0	22.5	2500	F464DY393(1)2K5(2)
2500	900	0.047	DY	15.5	24.5	26.0	22.5	2500	F464DY473(1)2K5(2)
2500	900	0.056	DY	15.5	24.5	26.0	22.5	2500	F464DY563(1)2K5(2)
2500	900	0.015	FB	9.0	17.0	31.5	27.5	1500	F464FB153(1)2K5(2)
2500	900	0.018	FB	9.0	17.0	31.5	27.5	1500	F464FB183(1)2K5(2)
2500	900	0.022	FB	9.0	17.0	31.5	27.5	1500	F464FB223(1)2K5(2)
2500	900	0.027	FB	9.0	17.0	31.5	27.5	1500	F464FB273(1)2K5(2)
2500	900	0.033	FC	11.0	20.0	31.5	27.5	1500	F464FC333(1)2K5(2)
2500	900	0.039	FC	11.0	20.0	31.5	27.5	1500	F464FC393(1)2K5(2)
2500	900	0.047	FI	13.0	25.0	31.5	27.5	1500	F464FI473(1)2K5(2)
2500	900	0.056	FI	13.0	25.0	31.5	27.5	1500	F464FI563(1)2K5(2)
2500	900	0.068	FI	13.0	25.0	31.5	27.5	1500	F464FI683(1)2K5(2)
2500	900	0.082	FN	14.0	28.0	31.5	27.5	1500	F464FN823(1)2K5(2)
2500	900	0.1	FR	17.5	28.0	31.5	27.5	1500	F464FR104(1)2K5(2)
2500	900	0.12	FS	19.0	29.0	31.5	27.5	1500	F464FS124(1)2K5(2)
2500	900	0.15	FY	22.0	37.0	31.5	27.5	1500	F464FY154(1)2K5(2)
2500	900	0.18	FY	22.0	37.0	31.5	27.5	1500	F464FY184(1)2K5(2)
2500	900	0.047	RB	11.0	22.0	41.0	37.5	900	F464RB473(1)2K5(2)
2500	900	0.056	RB	11.0	22.0	41.0	37.5	900	F464RB563(1)2K5(2)
2500	900	0.068	RB	11.0	22.0	41.0	37.5	900	F464RB683(1)2K5(2)
2500	900	0.082	RF	13.0	24.0	41.0	37.5	900	F464RF823(1)2K5(2)
2500	900	0.1	RF	13.0	24.0	41.0	37.5	900	F464RF104(1)2K5(2)
2500	900	0.12	RH	15.0	26.0	41.0	37.5	900	F464RH124(1)2K5(2)
2500	900	0.15	RC	16.0	28.5	41.0	37.5	900	F464RC154(1)2K5(2)
2500	900	0.18	RD	19.0	32.0	41.0	37.5	900	F464RD184(1)2K5(2)
2500	900	0.22	RD	19.0	32.0	41.0	37.5	900	F464RD224(1)2K5(2)
2500	900	0.27	RP	21.0	38.0	41.0	37.5	900	F464RP274(1)2K5(2)
2500	900	0.33	RO	24.0	44.0	41.0	37.5	900	F464RO334(1)2K5(2)
2500	900	0.39	RO	24.0	44.0	41.0	37.5	900	F464RO394(1)2K5(2)
2500	900	0.47	RU	30.0	45.0	41.0	37.5	900	F464RU474(1)2K5(2)
2500	900	0.56	RU	30.0	45.0	41.0	37.5	900	F464RU564(1)2K5(2)
VDC	**VAC**	**Capacitance Value (µF)**	**Size Code**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Part Number**

(1) J = 5%, K = 10%, other tolerances on request.

(2) Insert lead and packaging code. See Ordering Options Table for available options.

Soldering Process

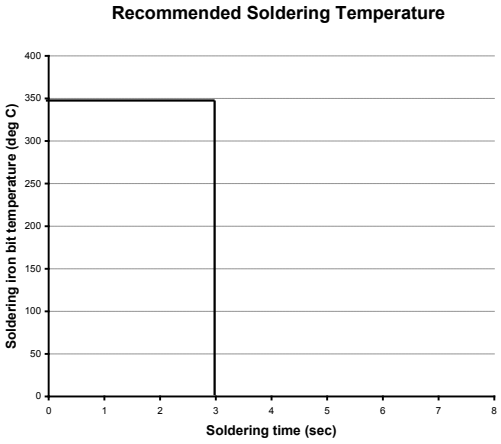
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

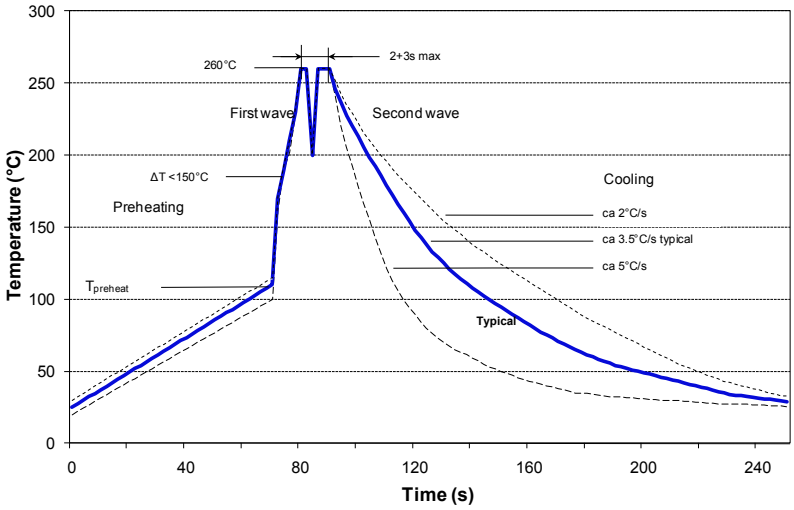
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

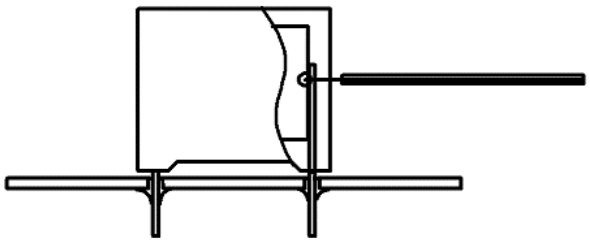
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



Temperature monitored inside the capacitor.

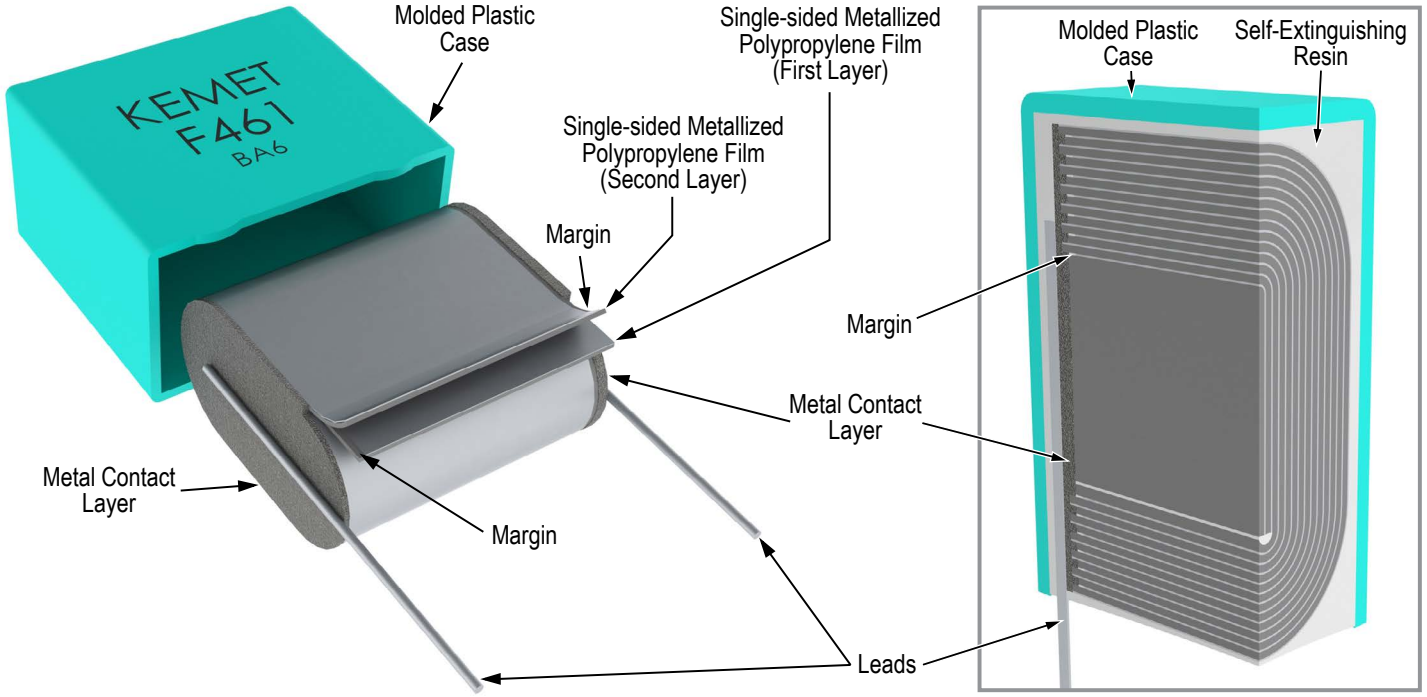
Selective Soldering Recommendations

Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

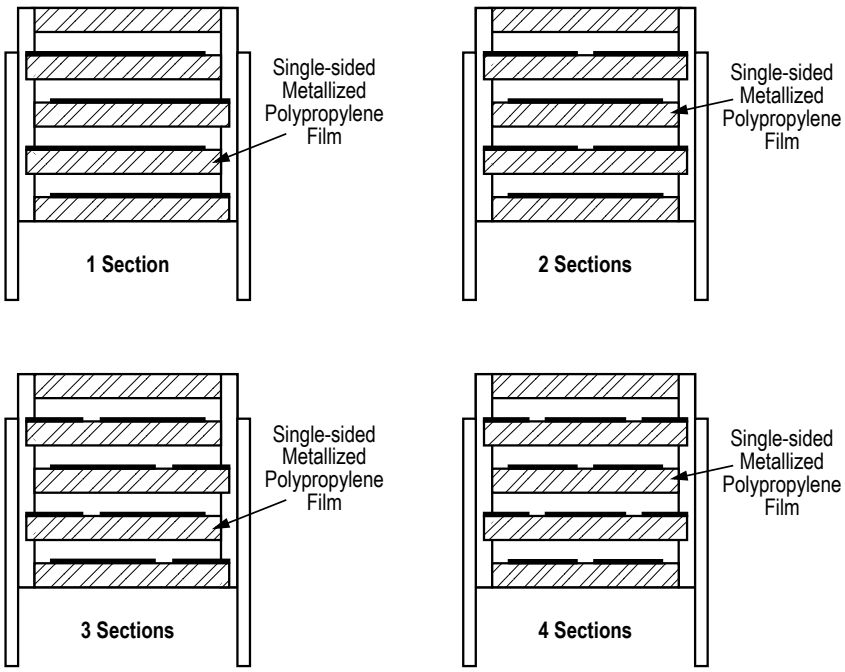
Construction

1 Section

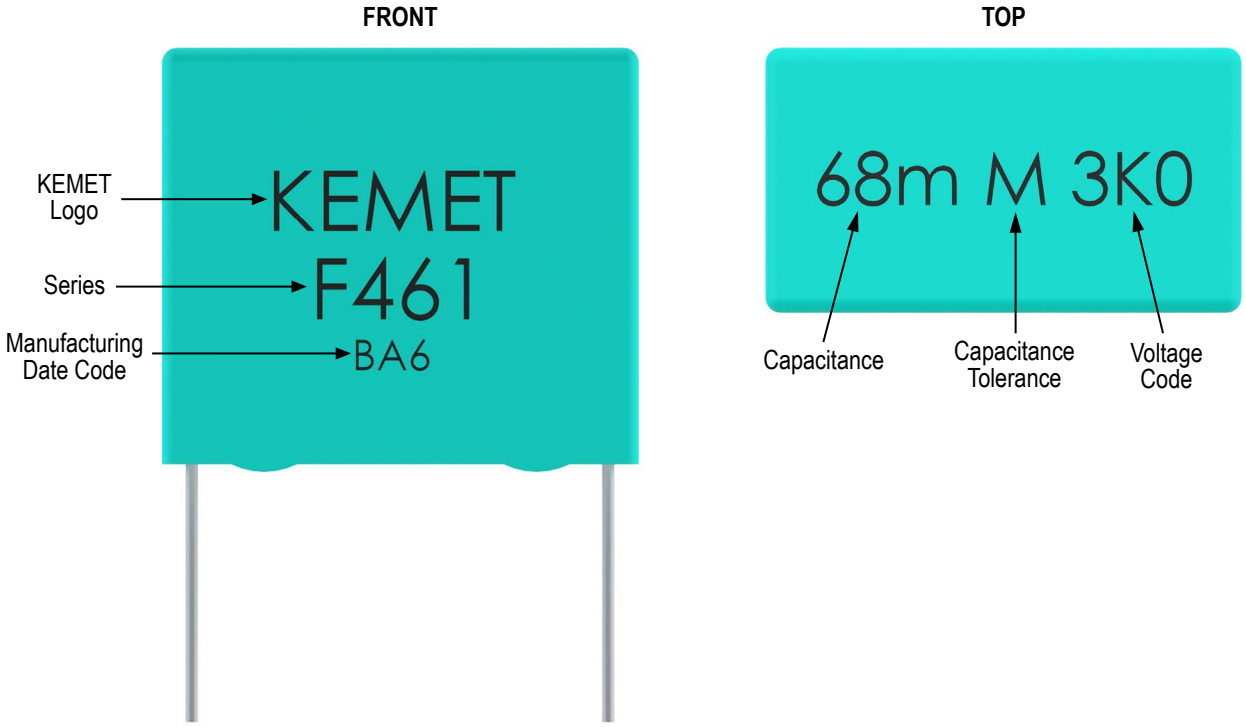


Detailed Cross Section

Winding Schemes



Marking


FRONT
KEMET Logo
KEMET
Series
F461
Manufacturing Date Code
BA6
TOP
68m M 3K0
Capacitance
Capacitance Tolerance
Voltage Code

Packaging Quantities

Size Code	Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Large Reel ø 500 mm	Ammo	Pizza
JF	5	2.5	6.5	7.2	3000	4000	2500		3500	
JG		3.5	7.5	7.2	2000	3000	1800		2500	
JM		4.5	9.5	7.2	1500	2000	1400		1900	
JQ		5.0	10.0	7.2	1000	1500	1200		1700	
JT		6	11	7.2	2000	1000	1000		1400	
JU		7.2	13	7.2	1500	750	800		1150	
KE	7.5	2.5	6	10	2000	3000	2500		3500	
KF		3	8	10	1500	1750	2100		2800	
KG		4	8	10	2000	1500	1500		2100	
KJ		5	10.5	10	1500	1000	1200		1600	
KM		6	12	10.5	1000	800	1000		1350	
KH		4	9	10	2000	1500	1500		2100	
AN	10	3.5	9	13	2200	3200	850	1700	1150	
AG		4	9	13	2000	2200	750	1500	1000	
AK		5	11	13	1300	2000	600	1250	800	
AP		6	12	13	1000	1800	500	1000	680	
AO		7	17	13	600	900	450	900	580	
AL		9.5	7.5	13	1100	2000	300	600	430	
AE		4	8	13	2000	2200	750	1500	1000	
BB	15	4	10	18	1300	1500	750	1500	1000	1411
BC		5	11	18	1000	1250	600	1250	800	1139
BE		5.5	12.5	18	800	1100	550	1100	750	1020
BG		6	12	18	1750	1000	500	1000	680	935
BK		7.5	13.5	18	1000	800	350	800	500	748
BI		6	17.5	18	1000	800	500	1000	680	935
BP		8.5	14.5	18	1000	650	300	700	440	663
BT		9	12.5	18	1000	700	270	650	410	629
BO		7.5	18.5	18	900	600	350	800	500	748
BS		10	16	18	750	550	300	600	380	561
BR		13	12	18	750	520	200	480	280	425
BY		11	19	18	450	400	250	500	340	510
BA		8.5	12.5	18	1000	650	300	700	440	663
BZ		12	20	18	350	300	220	450	330	459

Packaging Quantities cont'd

Size Code	Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Large Reel ø 500 mm	Ammo	Pizza
DB	22.5	6	14.5	26	1638	702	300	700	464	660
DI		7	16	26	1188	594	250	550	380	564
DH		8.0	16.0	26	1026	513	240	500	330	492
DJ		8.5	17	26	972	486	250	450	280	468
DM		9	18.5	26	918	459	200	400	300	444
DO		10	18.5	26	810	405	160	350	235	396
DP		11	20	26	756	378	190	350	217	360
DU		13	22	26	540	324	150	300	200	300
DY		15.5	24.5	26	450	270	120	250	170	252
FB	27.5	9.0	17.0	31.5	816	408				370
FC		11.0	20.0	31.5	672	336				300
FI		13.0	25.0	31.5	480	288				250
FN		14.0	28.0	31.5	352	176				230
FO		17.0	40.0	31.5	216	144				190
FR		17.5	28.0	31.5	256	128				190
FS		19.0	29.0	31.5	256	128				170
FY		22.0	37.0	31.5	168	112				150
FH		21.0	12.5	31.5	392	168				150
FQ		27.5	16.0	31.5	280	120				120
FT		31.0	19.0	31.5	240	120				100
RB	37.5	11.0	22.0	41.0	420	252				210
RF		13.0	24.0	41.0	360	216				175
RH		15.0	26.0	41.0	300	180				154
RC		16.0	28.5	41.0	216	108				140
RD		19.0	32.0	41.0	192	96				119
RP		21.0	38.0	41.0	126	84				105
RO		24.0	44.0	41.0	108	72				91
RU		30.0	45.0	41.0	90	60				77
RV		24.0	15.0	41.0	252	108				91
RW		24.0	19.0	41.0	216	108				91

R71 Series Single Metallized Polypropylene Film, Radial, SMPS PFC Applications

Overview

The R71 Series is constructed of metallized polypropylene film with radial leads of tinned wire. The radial leads are electrically welded to the metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing solvent resistant plastic case with thermosetting resin material meeting UL 94V–0 requirements.

Applications

Typical applications include power factor correction and pulse applications. Not suitable for across-the-line application (see Suppressor Capacitors).

Benefits

- Voltage range: 420 – 1,000 VDC
- Capacitance range: 0.01 µF – 22 µF
- Lead Spacing: 10 – 37.5 mm
- Capacitance tolerance: ±10%, ±20%, ±5% (on request)
- Climatic category: 55/105/56 IEC 60068-1
- Operating temperature range of -55˚C to +105˚C
- RoHS compliance and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–2
- Self-healing



Part Number System

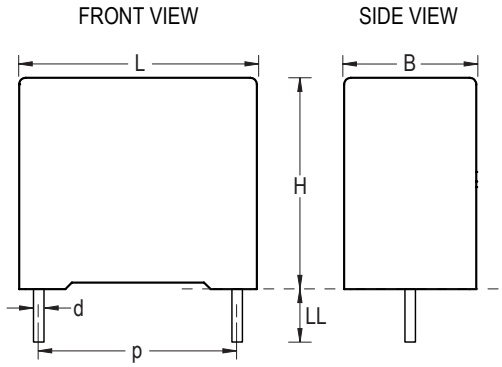
R71	M	F	2100	AA	00	J
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Packaging	Internal Use	Capacitance Tolerance
Metallized Polypropylene	M = 420 V = 520 P = 630 Q = 1,000	F = 10.0 I = 15.0 N = 22.5 R = 27.5 W = 37.5	The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.	See Ordering Options Table	00, 10, 20, 30, 40 (Standard)	J = ±5% K = ±10% M = ±20%

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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
10 15 22.5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	AA
	Ammo Pack	H_0= 18.5 +/-0.5	DQ
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel)	H_0=18.5 +/- 0.5	GY
	Tape & Reel (Large Reel)	H_0=18.5 +/- 0.5	CK
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag)–Long Leads	25 +2/-1	50
27.5	**Standard Lead and Packaging Options**		
	Bulk (Tray) – Straight Leads	4 +2/-0	AA
	Other Lead and Packaging Options		
	Tape & Reel (Large Reel)	H_0=18.5 +/-0.5	CK
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag) – Long Leads	25 +2/-1	50
37.5	**Standard Lead and Packaging Options**		
	Bulk (Tray) – Straight Leads	4 +2/-0	AA
	Other Lead and Packaging Options		
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag) – Long Leads	25 +2/-1	50

Dimensions – Millimeters



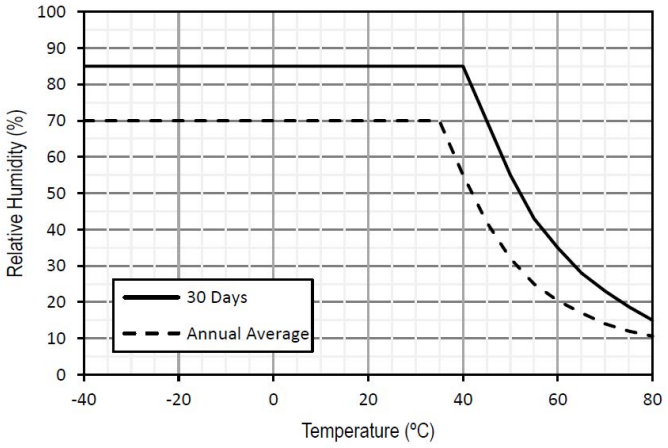
p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
10.0	+/- 0.4	4.0	+0.2	9.0	+0.1	13.0	+0.2	0.6	+/- 0.05
10.0	+/- 0.4	5.0	+0.2	11.0	+0.1	13.0	+0.2	0.6	+/- 0.05
10.0	+/-0.4	6.0	+0.2	12.0	+0.1	13.0	+0.2	0.6	+/- 0.05
15.0	+/- 0.4	5.0	+0.2	11.0	+0.1	18.0	+0.3	0.6	+/- 0.05
15.0	+/- 0.4	6.0	+0.2	12.0	+0.1	18.0	+0.3	0.6	+/- 0.05
15.0	+/- 0.4	6.0	+0.2	17.5	+0.1	18.0	+0.3	0.6	+/- 0.05
15.0	+/- 0.4	7.5	+0.2	13.5	+0.1	18.0	+0.5	0.6	+/- 0.05
15.0	+/- 0.4	7.5	+0.2	18.5	+0.1	18.0	+0.5	0.6	+/- 0.05
15.0	+/- 0.4	8.5	+0.2	14.5	+0.1	18.0	+0.5	0.6	+/- 0.05
15.0	+/- 0.4	9.0	+0.2	12.5	+0.1	18.0	+0.5	0.6	+/- 0.05
15.0	+/- 0.4	10.0	+0.2	16.0	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	11.0	+0.2	19.0	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	13.0	+0.2	12.0	+0.1	18.0	+0.5	0.8	+/- 0.05
22.5	+/- 0.4	6.0	+0.2	15.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	7.0	+0.2	16.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	8.5	+0.2	17.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	10.0	+0.2	18.5	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	11.0	+0.2	20.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	13.0	+0.2	22.0	+0.1	26.5	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	9.0	+0.2	17.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	11.0	+0.2	20.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	13.0	+0.2	22.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	13.0	+0.2	25.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	14.0	+0.2	28.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	18.0	+0.2	33.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	22.0	+0.2	37.0	+0.1	32.0	+0.3	0.8	+/- 0.05
37.5	+/- 0.4	11.0	+0.3	22.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	13.0	+0.3	24.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	16.0	+0.3	28.5	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	19.0	+0.3	32.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	20.0	+0.3	40.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	24.0	+0.3	44.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	30.0	+0.3	45.0	+0.1	41.5	+0.3	1.0	+/- 0.05

Note: See Ordering Options Table for lead length (LL/Ho) options.

Performance Characteristics

Dielectric	Polypropylene film				
Plates	Metal layer deposited by evaporation under vacuum				
Winding	Non-inductive type				
Leads	Tinned wire				
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.				
Rated Voltage V_R (VDC)	420	520	630	1000	
Rated Voltage V_R (VAC)	220	250	275	275	
Capacitance Range (µF)	0.01 – 22	0.01 – 22	0.01 – 15	0.22 – 10	
Capacitance Values	E12 series (IEC 60063) measured @ 1 kHz and +20 ±1°C				
Capacitance Tolerance	±10%, ±20%, ±5% on request				
Operating Temperature Range	-40°C to +110°C				
Rated Temperature T_R	+105°C				
Voltage Derating	Above +105°C DC and AC voltage derating is 4%/°C				
Climatic Category	40/110/56 IEC 60068-1				
Storage Conditions	Storage time: ≤ 24 months from the date marked on the label package				
	Average relative humidity per year ≤ 70%				
	RH ≤ 85% for 30 days randomly distributed throughout the year				
	Dew is absent				
	Temperature: -40 to 80°C (see "Maximum Humidity in Storage Conditions" graph below)				

Maximum Humidity in Storage Conditions



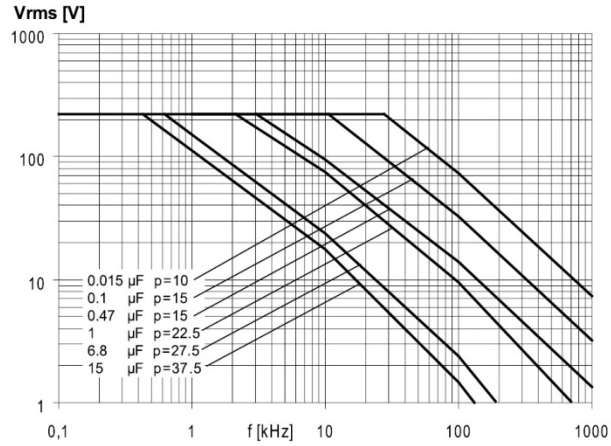
Performance Characteristics cont'd

Test Voltage	1.6 x V_R VDC for 2 seconds (between terminations) @ +25°C ±5°C					
Capacitance Drift	Maximum 0.5% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%					
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp <V_R), the specified dv/dt can be multiplied by the factor V_R/Vpp					
Temperature Coefficient	-(200 ±100) ppm/°C at 1 kHz					
Self Inductance (Lead Length ~ 2 mm)	Lead Spacing (mm)	10	15	22.5	27.5	37.5
	L (nH) ≈	9	10	18	18	20
	Maximum 1 nH per 1 mm lead and capacitor length.					
Dissipation Factor tanδ	≤ 0.1% (0.06%)* @ 25°C ±5°C (* typical value)					
Insulation Resistance	Measured @ +25°C ±5°C, 100 VDC 60 seconds					
	Minimum Values Between Terminals					
	C ≤ 0.33 µF			C > 0.33 µF		
	≥ 100,000 MΩ (≥ 500,000 MΩ)*			≥ 30,000 MΩ • µF (≥ 150,000 MΩ • µF)*		

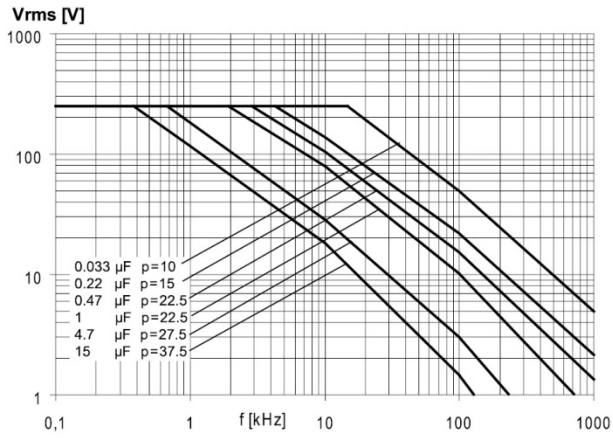
** typical value*

Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40ºC)

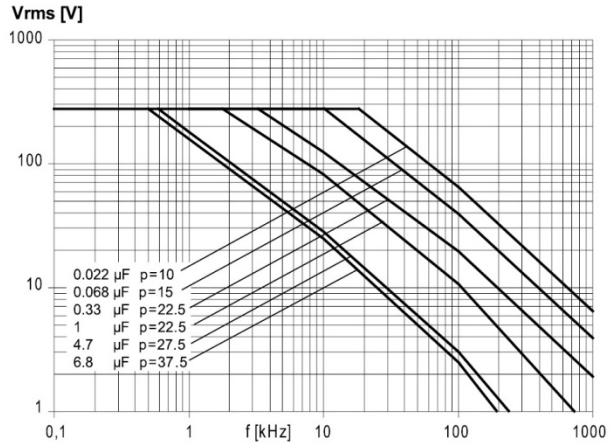
420Vdc / 220Vac



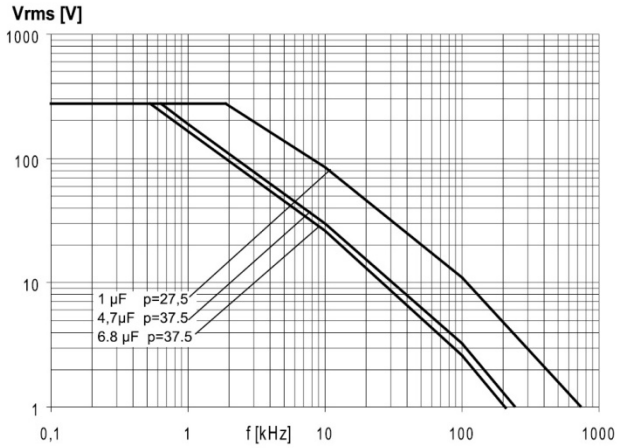
520Vdc / 250Vac



630Vdc / 275Vac

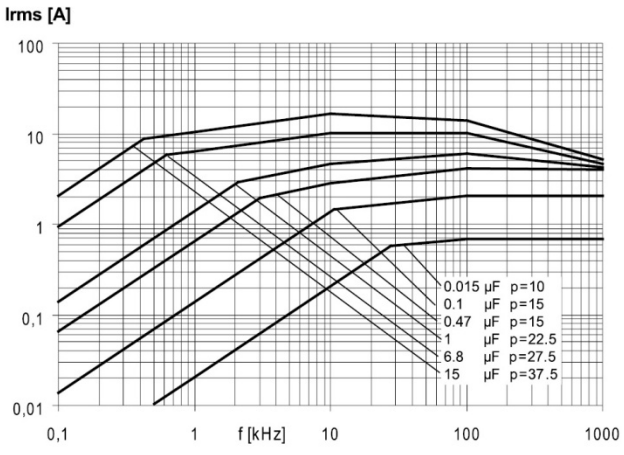


1000Vdc / 275Vac

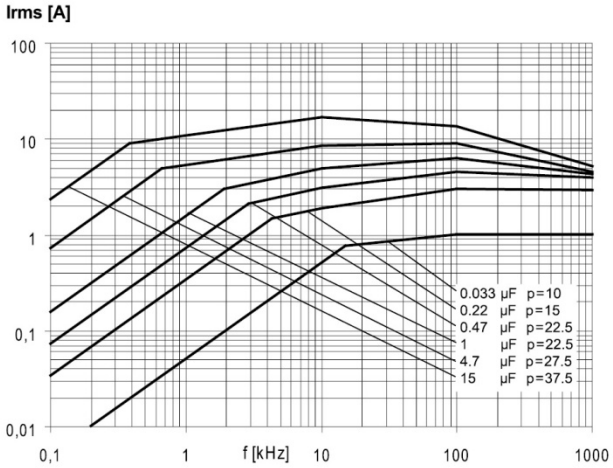


Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40ºC)

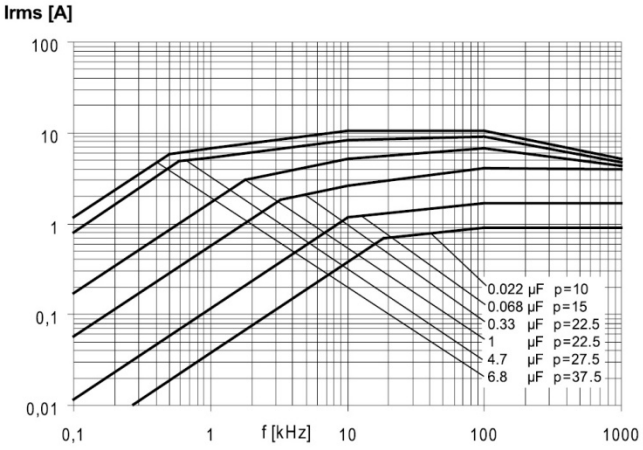
420Vdc / 220Vac



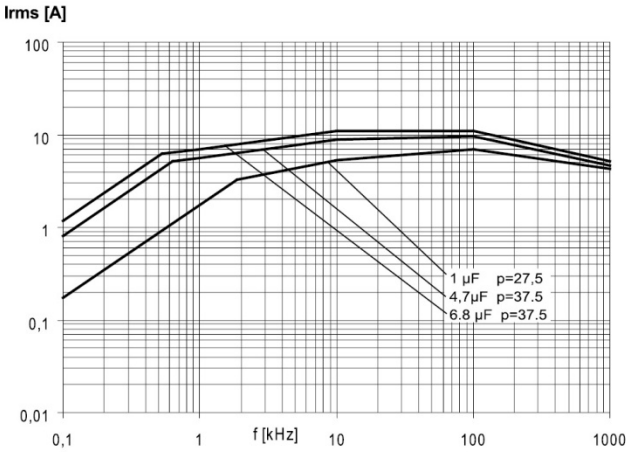
520Vdc / 250Vac



630Vdc / 275Vac



1000Vdc / 275Vac



Environmental Test Data

Damp Heat, Steady State Test	Test Conditions:		Performances
Test 1st	Temperature: Relative humidity (RH): Test duration:	+40°C ± 2°C 93% ± 2% 56 days	|Δ C/C| ≤ 5%, IR after test ≥ 50% of initial limit
Test 2nd	Temperature: Relative humidity (RH): Test duration:	+60°C ± 2°C 95% ± 2% 500 hours	
Endurance Test	**Test Conditions**		**Performances**
	Temperature: Voltage applied: Test duration:	+105°C ±2°C 1.25 x V_R (DC) 2,000 hours	|Δ C/C| ≤ 5%, IR after test ≥ 50% of initial limit
Resistance to Soldering Heat Test	**Test Conditions**		**Performances**
	Solder bath temperature: Dipping time (with heat screen):	260°C ±5°C 10 seconds ±1 second	|Δ C/C| ≤ 2%

Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	Φ d (mm)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L						
420	220	0.010	4	9	13	10	0.6	250	210000	71MF2100(1)00(2)	R71MF2100(1)00(2)
420	220	0.015	4.0	9.0	13.0	10.0	0.6	250	210,000	71MF2150(1)00(2)	R71MF2150(1)00(2)
420	220	0.022	4.0	9.0	13.0	10.0	0.6	250	210,000	71MF2220(1)00(2)	R71MF2220(1)00(2)
420	220	0.033	4.0	9.0	13.0	10.0	0.6	250	210,000	71MF2330(1)00(2)	R71MF2330(1)00(2)
420	220	0.047	4.0	9.0	13.0	10.0	0.6	250	210,000	71MF2470(1)00(2)	R71MF2470(1)00(2)
420	220	0.068	4.0	9.0	13.0	10.0	0.6	250	210,000	71MF2680(1)30(2)	R71MF2680(1)30(2)
420	220	0.10	4.0	9.0	13.0	10.0	0.6	250	210,000	71MF3100(1)30(2)	R71MF3100(1)30(2)
420	220	0.15	5.0	11.0	13.0	10.0	0.6	250	210,000	71MF3150(1)30(2)	R71MF3150(1)30(2)
420	220	0.22	6.0	12.0	13.0	10.0	0.6	250	210,000	71MF3220(1)30(2)	R71MF3220(1)30(2)
420	220	0.10	5.0	11.0	18.0	15.0	0.6	160	134,400	71MI3100(1)00(2)	R71MI3100(1)00(2)
420	220	0.15	5.0	11.0	18.0	15.0	0.6	160	134,400	71MI3150(1)00(2)	R71MI3150(1)00(2)
420	220	0.22	5.0	11.0	18.0	15.0	0.6	160	134,400	71MI3220(1)00(2)	R71MI3220(1)00(2)
420	220	0.33	6.0	12.0	18.0	15.0	0.6	160	134,400	71MI3330(1)00(2)	R71MI3330(1)00(2)
420	220	0.47	7.5	13.5	18.0	15.0	0.6	160	134,400	71MI3470(1)00(2)	R71MI3470(1)00(2)
420	220	0.47	6.0	17.5	18.0	15.0	0.6	160	134,400	71MI3470(1)10(2)	R71MI3470(1)10(2)
420	220	0.47	9.0	12.5	18.0	15.0	0.6	160	134,400	71MI3470(1)20(2)	R71MI3470(1)20(2)
420	220	0.68	6.0	17.5	18.0	15.0	0.6	160	134,400	71MI3680(1)40(2)	R71MI3680(1)40(2)
420	220	0.68	8.5	14.5	18.0	15.0	0.6	160	134,400	71MI3680(1)30(2)	R71MI3680(1)30(2)
420	220	0.68	13.0	12.0	18.0	15.0	0.8	160	134,400	71MI3680(1)20(2)	R71MI3680(1)20(2)
420	220	1.0	7.5	18.5	18.0	15.0	0.8	160	134,400	71MI4100(1)40(3)	R71MI4100(1)40(3)
420	220	1.0	10.0	16.0	18.0	15.0	0.8	160	134,400	71MI4100(1)30(2)	R71MI4100(1)30(2)
420	220	1.5	11.0	19.0	18.0	15.0	0.8	160	134,400	71MI4150(1)30(2)	R71MI4150(1)30(2)
420	220	0.22	6.0	15.0	26.5	22.5	0.8	100	84,000	71MN3220(1)00(2)	R71MN3220(1)00(2)
420	220	0.33	6.0	15.0	26.5	22.5	0.8	100	84,000	71MN3330(1)00(2)	R71MN3330(1)00(2)
420	220	0.47	6.0	15.0	26.5	22.5	0.8	100	84,000	71MN3470(1)00(2)	R71MN3470(1)00(2)
420	220	0.68	6.0	15.0	26.5	22.5	0.8	100	84,000	71MN3680(1)00(2)	R71MN3680(1)00(2)
420	220	1.0	7.0	16.0	26.5	22.5	0.8	100	84,000	71MN4100(1)30(2)	R71MN4100(1)30(2)
420	220	1.5	8.5.	17.0	26.5	22.5	0.8	100	84,000	71MN4150(1)30(3)	R71MN4150(1)30(3)
420	220	1.5	10.0	18.5	26.5	22.5	0.8	100	84,000	71MN4150(1)00(2)	R71MN4150(1)00(2)
420	220	2.2	10.0	18.5	26.5	22.5	0.8	100	84,000	71MN4220(1)40(3)	R71MN4220(1)40(3)
420	220	2.2	11.0	20.0	26.5	22.5	0.8	100	84,000	71MN4220(1)30(2)	R71MN4220(1)30(2)
420	220	3.3	13.0	22.0	26.5	22.5	0.8	100	84,000	71MN4330(1)30(2)	R71MN4330(1)30(2)
420	220	0.68	9.0	17.0	32.0	27.5	0.8	80	67,200	71MR3680(1)00(2)	R71MR3680(1)00(2)
420	220	1.0	9.0	17.0	32.0	27.5	0.8	80	67,200	71MR4100(1)00(2)	R71MR4100(1)00(2)
420	220	1.5	11.0	20.0	32.0	27.5	0.8	80	67,200	71MR4150(1)00(2)	R71MR4150(1)00(2)
420	220	2.2	13.0	22.0	32.0	27.5	0.8	80	67,200	71MR4220(1)00(2)	R71MR4220(1)00(2)
420	220	3.3	13.0	25.0	32.0	27.5	0.8	80	67,200	71MR4330(1)40(2)	R71MR4330(1)40(2)
420	220	4.7	18.0	33.0	32.0	27.5	0.8	80	67,200	71MR4470(1)00(2)	R71MR4470(1)00(2)
420	220	6.8	22.0	37.0	32.0	27.5	0.8	80	67,200	71MR4680(1)00(2)	R71MR4680(1)00(2)
420	220	3.3	13.0	24.0	41.5	37.5	1.0	60	50,400	71MW4330(1)20(2)	R71MW4330(1)20(2)
420	220	4.7	16.0	28.5	41.5	37.5	1.0	60	50,400	71MW4470(1)00(2)	R71MW4470(1)00(2)
420	220	6.8	19.0	32.0	41.5	37.5	1.0	60	50,400	71MW4680(1)00(2)	R71MW4680(1)00(2)
420	220	10	20.0	40.0	41.5	37.5	1.0	60	50,400	71MW5100(1)00(2)	R71MW5100(1)00(2)
420	220	15	24.0	44.0	41.5	37.5	1.0	60	50,400	71MW5150(1)00(2)	R71MW5150(1)00(2)
420	220	22	30.0	45.0	41.5	37.5	1.0	60	50,400	71MW5220(1)00(2)	R71MW5220(1)00(2)
520	250	0.010	4.0	9.0	13.0	10.0	0.6	300	312,000	71VF2100(1)00(2)	R71VF2100(1)00(2)
520	250	0.015	4.0	9.0	13.0	10.0	0.6	300	312,000	71VF2150(1)00(2)	R71VF2150(1)00(2)
520	250	0.022	4.0	9.0	13.0	10.0	0.6	300	312,000	71VF2220(1)00(2)	R71VF2220(1)00(2)
520	250	0.033	4.0	9.0	13.0	10.0	0.6	300	312,000	71VF2330(1)00(2)	R71VF2330(1)00(2)
520	250	0.047	4.0	9.0	13.0	10.0	0.6	300	312,000	71VF2470(1)30(2)	R71VF2470(1)30(2)
520	250	0.068	4.0	9.0	13.0	10.0	0.6	300	312,000	71VF2680(1)30(2)	R71VF2680(1)30(2)
520	250	0.10	5.0	11.0	13.0	10.0	0.6	300	312,000	71VF3100(1)30(2)	R71VF3100(1)30(2)
520	250	0.15	6.0	12.0	13.0	10.0	0.6	300	312,000	71VF3150(1)30(2)	R71VF3150(1)30(2)
520	250	0.10	5.0	11.0	18.0	15.0	0.6	200	208,000	71VI3100(1)00(2)	R71VI3100(1)00(2)
520	250	0.15	5.0	11.0	18.0	15.0	0.6	200	208,000	71VI3150(1)30(2)	R71VI3150(1)30(2)
520	250	0.22	6.0	12.0	18.0	15.0	0.6	200	208,000	71VI3220(1)30(2)	R71VI3220(1)30(2)
520	250	0.22	6.0	17.5	18.0	15.0	0.6	200	208,000	71VI3220(1)10(2)	R71VI3220(1)10(2)
520	250	0.33	6.0	17.5	18.0	15.0	0.6	200	208,000	71VI3330(1)40(2)	R71VI3330(1)40(2)
520	250	0.33	7.5	13.5	18.0	15.0	0.6	200	208,000	71VI3330(1)30(2)	R71VI3330(1)30(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Φ d (mm)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%.
(3) M = ±20% (only available tolerance)

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	Φ d (mm)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L						
520	250	0.33	9.0	12.5	18.0	15.0	0.6	200	208,000	71VI3330(1)20(2)	R71VI3330(1)20(2)
520	250	0.47	8.5	14.5	18.0	15.0	0.6	200	208,000	71VI3470(1)30(2)	R71VI3470(1)30(2)
520	250	0.47	7.5	18.5	18.0	15.0	0.8	200	208,000	71VI3470(1)10(2)	R71VI3470(1)10(2)
520	250	0.47	13.0	12.0	18.0	15.0	0.8	200	208,000	71VI3470(1)20(2)	R71VI3470(1)20(2)
520	250	0.68	10.0	16.0	18.0	15.0	0.8	200	208,000	71VI3680(1)30(2)	R71VI3680(1)30(2)
520	250	1.0	11.0	19.0	18.0	15.0	0.8	200	208,000	71VI4100(1)30(3)	R71VI4100(1)30(3)
520	250	0.22	6.0	15.0	26.5	22.5	0.8	120	124,800	71VN3220(1)00(2)	R71VN3220(1)00(2)
520	250	0.33	6.0	15.0	26.5	22.5	0.8	120	124,800	71VN3330(1)00(2)	R71VN3330(1)00(2)
520	250	0.47	6.0	15.0	26.5	22.5	0.8	120	124,800	71VN3470(1)30(2)	R71VN3470(1)30(2)
520	250	0.68	7.0	16.0	26.5	22.5	0.8	120	124,800	71VN3680(1)30(2)	R71VN3680(1)30(2)
520	250	1.0	10.0	18.5	26.5	22.5	0.8	120	124,800	71VN4100(1)30(2)	R71VN4100(1)30(2)
520	250	1.5	11.0	20.0	26.5	22.5	0.8	120	124,800	71VN4150(1)30(2)	R71VN4150(1)30(2)
520	250	2.2	13.0	22.0	26.5	22.5	0.8	120	124,800	71VN4220(1)30(2)	R71VN4220(1)30(2)
520	250	0.68	9.0	17.0	32.0	27.5	0.8	100	104,000	71VR3680(1)00(2)	R71VR3680(1)00(2)
520	250	1.0	9.0	17.0	32.0	27.5	0.8	100	104,000	71VR4100(1)30(2)	R71VR4100(1)30(2)
520	250	1.0	11.0	20.0	32.0	27.5	0.8	100	104,000	71VR4100(1)00(2)	R71VR4100(1)00(2)
520	250	1.5	11.0	20.0	32.0	27.5	0.8	100	104,000	71VR4150(1)00(2)	R71VR4150(1)00(2)
520	250	2.2	13.0	25.0	32.0	27.5	0.8	100	104,000	71VR4220(1)30(2)	R71VR4220(1)30(2)
520	250	2.2	14.0	28.0	32.0	27.5	0.8	100	104,000	71VR4220(1)00(2)	R71VR4220(1)00(2)
520	250	3.3	14.0	28.0	32.0	27.5	0.8	100	104,000	71VR4330(1)30(2)	R71VR4330(1)30(2)
520	250	3.3	18.0	33.0	32.0	27.5	0.8	100	104,000	71VR4330(1)00(2)	R71VR4330(1)00(2)
520	250	4.7	18.0	33.0	32.0	27.5	0.8	100	104,000	71VR4470(1)30(2)	R71VR4470(1)30(2)
520	250	4.7	22.0	37.0	32.0	27.5	0.8	100	104,000	71VR4470(1)00(2)	R71VR4470(1)00(2)
520	250	6.8	22.0	37.0	32.0	27.5	0.8	100	104,000	71VR4680(1)30(2)	R71VR4680(1)30(2)
520	250	2.2	11.0	22.0	41.5	37.5	1.0	70	72,800	71VW4220(1)00(2)	R71VW4220(1)00(2)
520	250	3.3	13.0	24.0	41.5	37.5	1.0	70	72,800	71VW4330(1)30(2)	R71VW4330(1)30(2)
520	250	3.3	16.0	28.5	41.5	37.5	1.0	70	72,800	71VW4330(1)00(2)	R71VW4330(1)00(2)
520	250	4.7	16.0	28.5	41.5	37.5	1.0	70	72,800	71VW4470(1)00(2)	R71VW4470(1)00(2)
520	250	6.8	19.0	32.0	41.5	37.5	1.0	70	72,800	71VW4680(1)30(2)	R71VW4680(1)30(2)
520	250	6.8	20.0	40.0	41.5	37.5	1.0	70	72,800	71VW4680(1)00(2)	R71VW4680(1)00(2)
520	250	10	20.0	40.0	41.5	37.5	1.0	70	72,800	71VW5100(1)30(2)	R71VW5100(1)30(2)
520	250	10	24.0	44.0	41.5	37.5	1.0	70	72,800	71VW5100(1)00(2)	R71VW5100(1)00(2)
520	250	15	24.0	44.0	41.5	37.5	1.0	70	72,800	71VW5150(1)30(2)	R71VW5150(1)30(2)
520	250	15	30.0	45.0	41.5	37.5	1.0	70	72,800	71VW5150(1)00(2)	R71VW5150(1)00(2)
520	250	22	30.0	45.0	41.5	37.5	1.0	70	72,800	71VW5220(1)00(2)	R71VW5220(1)00(2)
630	275	0.010	4.0	9.0	13.0	10.0	0.6	400	504,000	71PF2100(1)30(2)	R71PF2100(1)30(2)
630	275	0.015	4.0	9.0	13.0	10.0	0.6	400	504,000	71PF2150(1)30(2)	R71PF2150(1)30(2)
630	275	0.022	4.0	9.0	13.0	10.0	0.6	400	504,000	71PF2220(1)30(2)	R71PF2220(1)30(2)
630	275	0.033	5.0	11.0	13.0	10.0	0.6	400	504,000	71PF2330(1)00(2)	R71PF2330(1)00(2)
630	275	0.047	5.0	11.0	13.0	10.0	0.6	400	504,000	71PF2470(1)30(2)	R71PF2470(1)30(2)
630	275	0.068	6.0	12.0	13.0	10.0	0.6	400	504,000	71PF2680(1)30(2)	R71PF2680(1)30(2)
630	275	0.10	6.0	12.0	13.0	10.0	0.6	400	504,000	71PF3100(1)30(3)	R71PF3100(1)30(3)
630	275	0.010	5.0	11.0	18.0	15.0	0.6	250	315,000	71PI2100(1)00(2)	R71PI2100(1)00(2)
630	275	0.015	5.0	11.0	18.0	15.0	0.6	250	315,000	71PI2150(1)00(2)	R71PI2150(1)00(2)
630	275	0.022	5.0	11.0	18.0	15.0	0.6	250	315,000	71PI2220(1)00(2)	R71PI2220(1)00(2)
630	275	0.033	5.0	11.0	18.0	15.0	0.6	250	315,000	71PI2330(1)00(2)	R71PI2330(1)00(2)
630	275	0.047	5.0	11.0	18.0	15.0	0.6	250	315,000	71PI2470(1)00(2)	R71PI2470(1)00(2)
630	275	0.068	5.0	11.0	18.0	15.0	0.6	250	315,000	71PI2680(1)00(2)	R71PI2680(1)00(2)
630	275	0.10	5.0	11.0	18.0	15.0	0.6	250	315,000	71PI3100(1)30(2)	R71PI3100(1)30(2)
630	275	0.15	6.0	12.0	18.0	15.0	0.6	250	315,000	71PI3150(1)30(2)	R71PI3150(1)30(2)
630	275	0.15	6.0	17.5	18.0	15.0	0.6	250	315,000	71PI3150(1)40(2)	R71PI3150(1)40(2)
630	275	0.22	7.5	13.5	18.0	15.0	0.6	250	315,000	71PI3220(1)30(2)	R71PI3220(1)30(2)
630	275	0.22	6.0	17.5	18.0	15.0	0.6	250	315,000	71PI3220(1)10(2)	R71PI3220(1)10(2)
630	275	0.22	9.0	12.5	18.0	15.0	0.6	250	315,000	71PI3220(1)20(2)	R71PI3220(1)20(2)
630	275	0.33	8.5	14.5	18.0	15.0	0.6	250	315,000	71PI3330(1)30(2)	R71PI3330(1)30(2)
630	275	0.33	7.5	18.5	18.0	15.0	0.8	250	315,000	71PI3330(1)10(2)	R71PI3330(1)10(2)
630	275	0.33	9.0	12.5	18.0	15.0	0.6	250	315,000	71PI3330(1)40(3)	R71PI3330(1)40(3)
630	275	0.33	13.0	12.0	18.0	15.0	0.8	250	315,000	71PI3330(1)20(2)	R71PI3330(1)20(2)
630	275	0.47	7.5	18.5	18.0	15.0	0.8	250	315,000	71PI3470(1)40(3)	R71PI3470(1)40(3)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	Φ d (mm)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%.
(3) M = ±20% (only available tolerance)

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	Φ d (mm)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L						
630	275	0.47	10.0	16.0	18.0	15.0	0.8	250	315,000	71PI3470(1)30(3)	R71PI3470(1)30(3)
630	275	0.68	11.0	19.0	18.0	15.0	0.8	250	315,000	71PI3680(1)30(3)	R71PI3680(1)30(3)
630	275	0.15	6.0	15.0	26.5	22.5	0.8	160	201,600	71PN3150(1)00(2)	R71PN3150(1)00(2)
630	275	0.22	6.0	15.0	26.5	22.5	0.8	160	201,600	71PN3220(1)00(2)	R71PN3220(1)00(2)
630	275	0.33	6.0	15.0	26.5	22.5	0.8	160	201,600	71PN3330(1)30(2)	R71PN3330(1)30(2)
630	275	0.47	7.0	16.0	26.5	22.5	0.8	160	201,600	71PN3470(1)30(2)	R71PN3470(1)30(2)
630	275	0.68	10.0	18.5	26.5	22.5	0.8	160	201,600	71PN3680(1)30(2)	R71PN3680(1)30(2)
630	275	1.0	10.0	18.5	26.5	22.5	0.8	160	201,600	71PN4100(1)40(3)	R71PN4100(1)40(3)
630	275	1.0	11.0	20.0	26.5	22.5	0.8	160	201,600	71PN4100(1)30(2)	R71PN4100(1)30(2)
630	275	0.68	9.0	17.0	32.0	27.5	0.8	115	144,900	71PR3680(1)00(2)	R71PR3680(1)00(2)
630	275	1.0	11.0	20.0	32.0	27.5	0.8	115	144,900	71PR4100(1)00(2)	R71PR4100(1)00(2)
630	275	1.5	13.0	22.0	32.0	27.5	0.8	115	144,900	71PR4150(1)00(2)	R71PR4150(1)00(2)
630	275	2.2	14.0	28.0	32.0	27.5	0.8	115	144,900	71PR4220(1)00(2)	R71PR4220(1)00(2)
630	275	3.3	18.0	33.0	32.0	27.5	0.8	115	144,900	71PR4330(1)00(2)	R71PR4330(1)00(2)
630	275	4.7	22.0	37.0	32.0	27.5	0.8	115	144,900	71PR4470(1)00(2)	R71PR4470(1)00(2)
630	275	1.5	11.0	22.0	41.5	37.5	1.0	80	100,800	71PW4150(1)00(2)	R71PW4150(1)00(2)
630	275	2.2	13.0	24.0	41.5	37.5	1.0	80	100,800	71PW4220(1)00(2)	R71PW4220(1)00(2)
630	275	3.3	16.0	28.5	41.5	37.5	1.0	80	100,800	71PW4330(1)00(2)	R71PW4330(1)00(2)
630	275	4.7	19.0	32.0	41.5	37.5	1.0	80	100,800	71PW4470(1)00(2)	R71PW4470(1)00(2)
630	275	6.8	20.0	40.0	41.5	37.5	1.0	80	100,800	71PW4680(1)00(2)	R71PW4680(1)00(2)
630	275	10	24.0	44.0	41.5	37.5	1.0	80	100,800	71PW5100(1)00(2)	R71PW5100(1)00(2)
630	275	15	30.0	45.0	41.5	37.5	1.0	80	100,800	71PW5150(1)00(2)	R71PW5150(1)00(2)
1,000	275	0.22	9.0	17.0	32.0	27.5	0.8	180	360,000	71QR3220(1)00(2)	R71QR3220(1)00(2)
1,000	275	0.27	9.0	17.0	32.0	27.5	0.8	180	360,000	71QR3270(1)00(2)	R71QR3270(1)00(2)
1,000	275	0.33	9.0	17.0	32.0	27.5	0.8	180	360,000	71QR3330(1)10(2)	R71QR3330(1)10(2)
1,000	275	0.33	11.0	20.0	32.0	27.5	0.8	180	360,000	71QR3330(1)00(2)	R71QR3330(1)00(2)
1,000	275	0.39	9.0	17.0	32.0	27.5	0.8	180	360,000	71QR3390(1)10(2)	R71QR3390(1)10(2)
1,000	275	0.39	11.0	20.0	32.0	27.5	0.8	180	360,000	71QR3390(1)00(2)	R71QR3390(1)00(2)
1,000	275	0.47	9.0	17.0	32.0	27.5	0.8	180	360,000	71QR3470(1)10(2)	R71QR3470(1)10(2)
1,000	275	0.47	13.0	22.0	32.0	27.5	0.8	180	360,000	71QR3470(1)00(2)	R71QR3470(1)00(2)
1,000	275	0.56	9.0	17.0	32.0	27.5	0.8	180	360,000	71QR3560(1)10(2)	R71QR3560(1)10(2)
1,000	275	0.56	13.0	22.0	32.0	27.5	0.8	180	360,000	71QR3560(1)00(2)	R71QR3560(1)00(2)
1,000	275	0.68	11.0	20.0	32.0	27.5	0.8	180	360,000	71QR3680(1)10(2)	R71QR3680(1)10(2)
1,000	275	0.68	14.0	28.0	32.0	27.5	0.8	180	360,000	71QR3680(1)00(2)	R71QR3680(1)00(2)
1,000	275	0.82	11.0	20.0	32.0	27.5	0.8	180	360,000	71QR3820(1)10(2)	R71QR3820(1)10(2)
1,000	275	0.82	14.0	28.0	32.0	27.5	0.8	180	360,000	71QR3820(1)00(2)	R71QR3820(1)00(2)
1,000	275	1.0	13.0	22.0	32.0	27.5	0.8	180	360,000	71QR4100(1)10(2)	R71QR4100(1)10(2)
1,000	275	1.0	18.0	33.0	32.0	27.5	0.8	180	360,000	71QR4100(1)00(2)	R71QR4100(1)00(2)
1,000	275	1.2	13.0	25.0	32.0	27.5	0.8	180	360,000	71QR4120(1)10(2)	R71QR4120(1)10(2)
1,000	275	1.2	18.0	33.0	32.0	27.5	0.8	180	360,000	71QR4120(1)00(2)	R71QR4120(1)00(2)
1,000	275	1.5	14.0	28.0	32.0	27.5	0.8	180	360,000	71QR4150(1)10(2)	R71QR4150(1)10(2)
1,000	275	1.5	18.0	33.0	32.0	27.5	0.8	180	360,000	71QR4150(1)00(2)	R71QR4150(1)00(2)
1,000	275	1.8	14.0	28.0	32.0	27.5	0.8	180	360,000	71QR4180(1)10(2)	R71QR4180(1)10(2)
1,000	275	1.8	22.0	37.0	32.0	27.5	0.8	180	360,000	71QR4180(1)00(2)	R71QR4180(1)00(2)
1,000	275	2.2	18.0	33.0	32.0	27.5	0.8	180	360,000	71QR4220(1)10(2)	R71QR4220(1)10(2)
1,000	275	2.2	22.0	37.0	32.0	27.5	0.8	180	360,000	71QR4220(1)00(2)	R71QR4220(1)00(2)
1,000	275	2.7	18.0	33.0	32.0	27.5	0.8	180	360,000	71QR4270(1)10(2)	R71QR4270(1)10(2)
1,000	275	3.3	22.0	37.0	32.0	27.5	0.8	180	360,000	71QR4330(1)10(2)	R71QR4330(1)10(2)
1,000	275	3.9	22.0	37.0	32.0	27.5	0.8	180	360,000	71QR4390(1)10(2)	R71QR4390(1)10(2)
1,000	275	0.68	11.0	22.0	41.5	37.5	1.0	150	300,000	71QW3680(1)00(2)	R71QW3680(1)00(2)
1,000	275	0.82	13.0	24.0	41.5	37.5	1.0	150	300,000	71QW3820(1)00(2)	R71QW3820(1)00(2)
1,000	275	1.0	11.0	22.0	41.5	37.5	1.0	150	300,000	71QW4100(1)10(2)	R71QW4100(1)10(2)
1,000	275	1.0	13.0	24.0	41.5	37.5	1.0	150	300,000	71QW4100(1)00(2)	R71QW4100(1)00(2)
1,000	275	1.2	11.0	22.0	41.5	37.5	1.0	150	300,000	71QW4120(1)10(2)	R71QW4120(1)10(2)
1,000	275	1.2	16.0	28.5	41.5	37.5	1.0	150	300,000	71QW4120(1)00(2)	R71QW4120(1)00(2)
1,000	275	1.5	11.0	22.0	41.5	37.5	1.0	150	300,000	71QW4150(1)10(2)	R71QW4150(1)10(2)
1,000	275	1.5	16.0	28.5	41.5	37.5	1.0	150	300,000	71QW4150(1)00(2)	R71QW4150(1)00(2)
1,000	275	1.8	13.0	24.0	41.5	37.5	1.0	150	300,000	71QW4180(1)10(2)	R71QW4180(1)10(2)
1,000	275	1.8	19.0	32.0	41.5	37.5	1.0	150	300,000	71QW4180(1)00(2)	R71QW4180(1)00(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	Φ d (mm)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%.
(3) M = ±20% (only available tolerance)

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	Φ d (mm)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L						
1,000	275	2.2	16.0	28.5	41.5	37.5	1.0	120	240,000	71QW4220(1)10(2)	R71QW4220(1)10(2)
1,000	275	2.2	20.0	40.0	41.5	37.5	1.0	120	240,000	71QW4220(1)20(2)	R71QW4220(1)20(2)
1,000	275	2.7	16.0	28.5	41.5	37.5	1.0	120	240,000	71QW4270(1)10(2)	R71QW4270(1)10(2)
1,000	275	2.7	24.0	44.0	41.5	37.5	1.0	120	240,000	71QW4270(1)20(2)	R71QW4270(1)20(2)
1,000	275	3.3	19.0	32.0	41.5	37.5	1.0	120	240,000	71QW4330(1)10(2)	R71QW4330(1)10(2)
1,000	275	3.3	24.0	44.0	41.5	37.5	1.0	120	240,000	71QW4330(1)00(2)	R71QW4330(1)00(2)
1,000	275	3.9	19.0	32.0	41.5	37.5	1.0	120	240,000	71QW4390(1)10(2)	R71QW4390(1)10(2)
1,000	275	3.9	24.0	44.0	41.5	37.5	1.0	120	240,000	71QW4390(1)00(2)	R71QW4390(1)00(2)
1,000	275	4.7	20.0	40.0	41.5	37.5	1.0	80	160,000	71QW4470(1)10(2)	R71QW4470(1)10(2)
1,000	275	4.7	24.0	44.0	41.5	37.5	1.0	80	160,000	71QW4470(1)00(2)	R71QW4470(1)00(2)
1,000	275	5.6	24.0	44.0	41.5	37.5	1.0	80	160,000	71QW4560(1)20(2)	R71QW4560(1)20(2)
1,000	275	5.6	30.0	45.0	41.5	37.5	1.0	80	160,000	71QW4560(1)00(2)	R71QW4560(1)00(2)
1,000	275	6.8	24.0	44.0	41.5	37.5	1.0	80	160,000	71QW4680(1)10(2)	R71QW4680(1)10(2)
1,000	275	8.2	24.0	44.0	41.5	37.5	1.0	80	160,000	71QW4820(1)10(2)	R71QW4820(1)10(2)
1,000	275	10.0	30.0	45.0	41.5	37.5	1.0	80	160,000	71QW5100(1)10(2)	R71QW5100(1)10(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Φ d (mm)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%.
(3) M = ±20% (only available tolerance)

Soldering Process

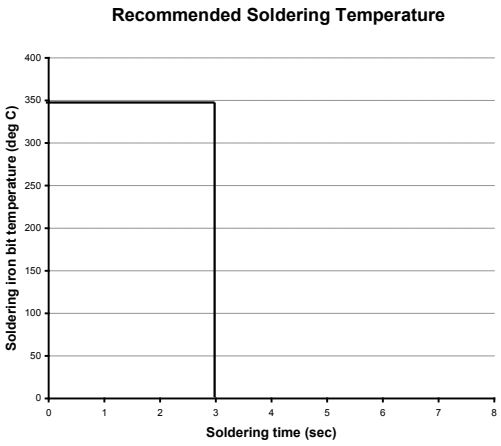
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

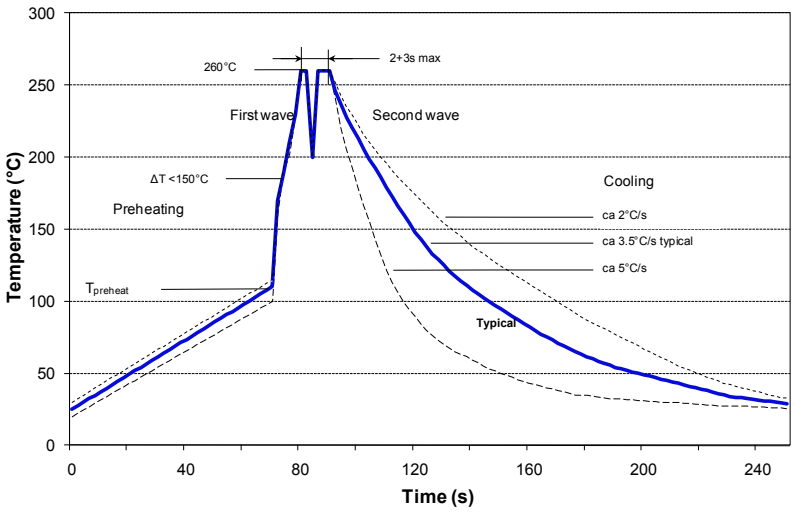
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

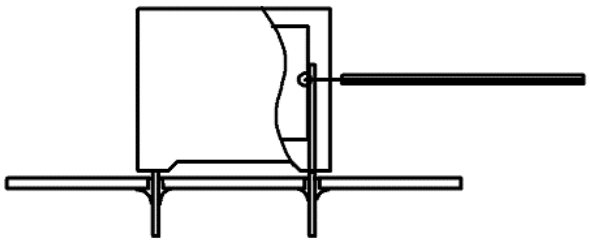
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



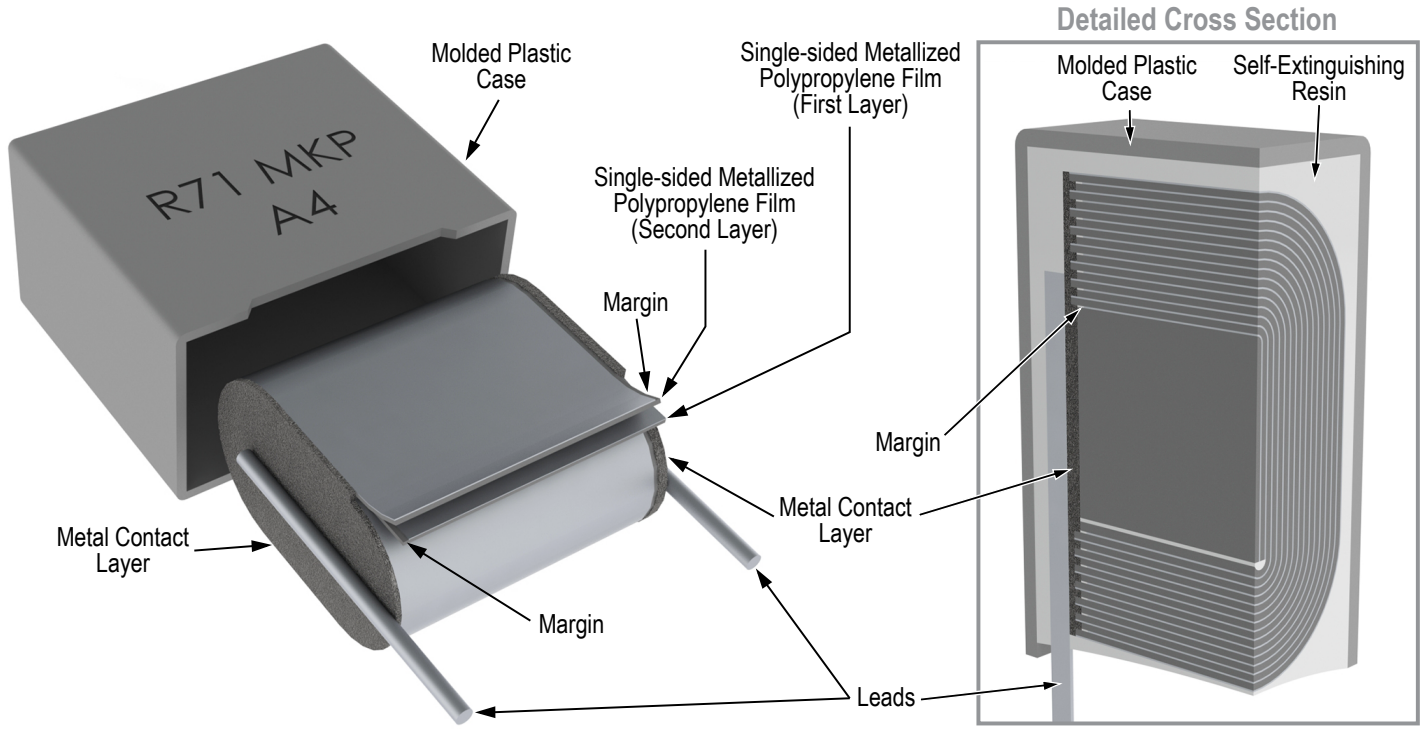
Temperature monitored inside the capacitor.

Selective Soldering Recommendations

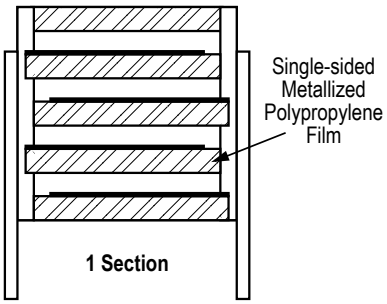
Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

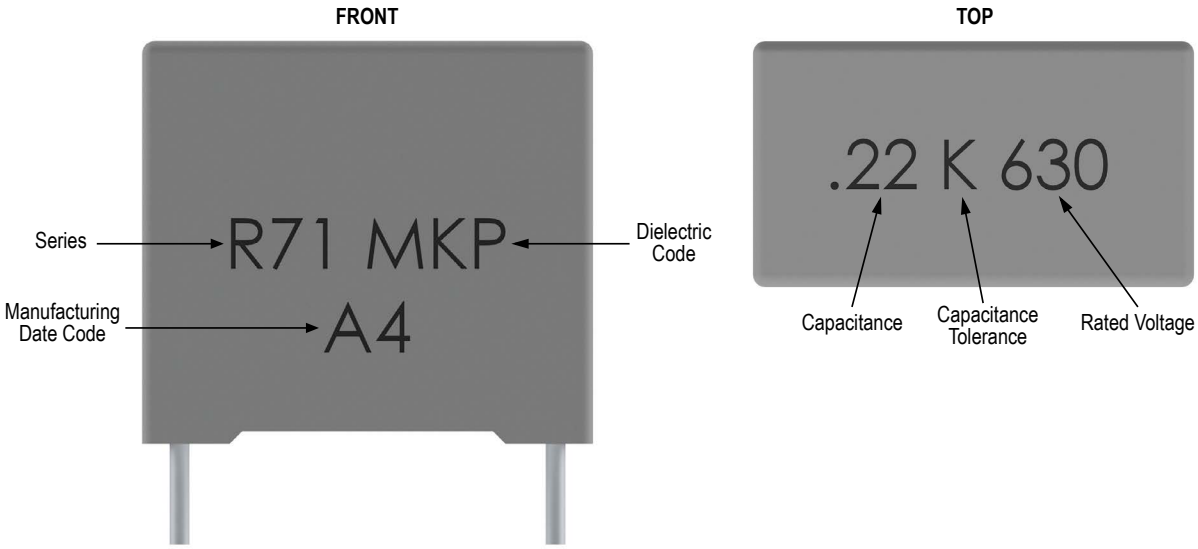
Construction



Winding Scheme



Marking


FRONT
TOP
Series
R71 MKP
Dielectric Code
Manufacturing Date Code
A4
.22 K 630
Capacitance
Capacitance Tolerance
Rated Voltage

Packaging Quantities

Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Large Reel ø 500 mm	Ammo Taped
10	4.0	9.0	13.0	2,000	1,800	750	1,500	1,000
	5.0	11.0	13.0	1,300	1,500	600	1,250	800
	6.0	12.0	13.0	1,000	1,200	500	1,000	680
15	5.0	11.0	18.0	2,000	1,000	600	1,250	800
	6.0	12.0	18.0	1,750	900	500	1,000	680
	6.0	17.5	18.0	1,000	700	500	1,000	680
	7.5	13.5	18.0	1,000	700	350	800	500
	7.5	18.5	18.0	900	500	-	800	500
	8.5	14.5	18.0	1,000	500	300	700	440
	9.0	12.5	18.0	1,000	520	270	650	410
	10.0	16.0	18.0	750	500	300	600	380
	11.0	19.0	18.0	450	350	-	500	340
	13.0	12.0	18.0	750	490	200	480	280
22.5	6.0	15.0	26.5	805	500		700	464
	7.0	16.0	26.5	700	500		550	380
	8.5	17.0	26.5	468	300		450	280
	10.0	18.5	26.5	396	300		350	235
	11.0	20.0	26.5	360	250		350	217
	13.0	22.0	26.5	300	200		300	-
27.5	9.0	17.0	32.0	816	408		450	
	11.0	20.0	32.0	560	336		350	
	13.0	22.0	32.0	480	288		300	
	13.0	25.0	32.0	480	288			
	14.0	28.0	32.0	352	176			
	18.0	33.0	32.0	256	128			
	22.0	37.0	32.0	168	112			
37.5	11.0	22.0	41.5	420	252			
	13.0	24.0	41.5	360	216			
	16.0	28.5	41.5	216	108			
	19.0	32.0	41.5	192	96			
	20.0	40.0	41.5	126	84			
	24.0	44.0	41.5	108	72			
	30.0	45.0	41.5	90	60			

R74 Series Single Metallized Polypropylene Film, Radial, AC Applications (Automotive Grade)

Overview

The R74 Series is constructed of metallized polypropylene film with radial leads of tinned wire. The radial leads are electrically welded to the metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing solvent resistant plastic case with thermosetting resin material meeting the UL 94V–0 requirements. Four different winding constructions are used depending on voltage parameters. Please see the Performance Characteristics for more information.

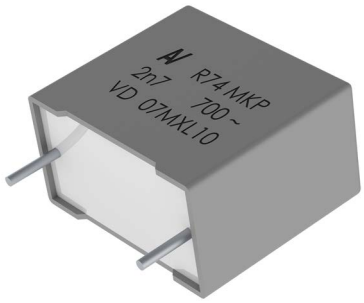
Automotive Grade devices are available (up to lead spacing 22.5 mm) and meet the demanding Automotive Electronics Council's AEC–Q200 qualification requirements.

Applications

Typical applications include electronic lighting such as automotive headlamps and ballasts, as well as pulse applications with high AC voltage and high current. Not suitable for across-the-line application (see Suppressor Capacitors).

Benefits

- Voltage range: 250 – 900 VAC
- Capacitance range: 470 pF – 3.3 µF
- Lead Spacing: 10 – 37.5 mm
- Capacitance tolerance: ±5%, ±10%
- Climatic category: 55/105/56 IEC 60068-1
- Operating temperature range of -55˚C to +105˚C
- RoHS compliance and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–2
- Self-healing
- Automotive (AEC–Q200) grades available up to lead spacing 22.5 mm



Part Number System

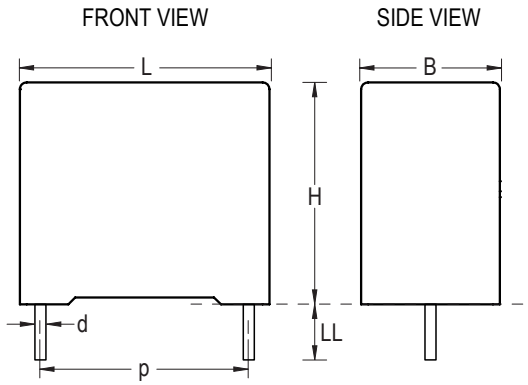
R74	5	N	2180	AA	00	J
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Packaging	Internal Use	Capacitance Tolerance
Metallized Polypropylene	L = 250 N = 400 5 = 500 6 = 600 7 = 700 9 = 900	F = 10 I = 15 N = 22.5 R = 27.5 W = 37.5	The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.	See Ordering Options Table	00 30 60	J = ±5% K = ±10%

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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
10 15 22.5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	AA
	Ammo Pack	H_0= 18.5 +/-0.5	DQ
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel)	H_0=18.5 +/- 0.5	GY
	Tape & Reel (Large Reel)	H_0=18.5 +/- 0.5	CK
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag)–Long Leads	25 +2/-1	50
27.5	**Standard Lead and Packaging Options**		
	Bulk (Tray) – Straight Leads	4 +2/-0	AA
	Other Lead and Packaging Options		
	Tape & Reel (Large Reel)	H_0=18.5 +/-0.5	CK
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag) – Long Leads	25 +2/-1	50
37.5	**Standard Lead and Packaging Options**		
	Bulk (Tray) – Straight Leads	4 +2/-0	AA
	Other Lead and Packaging Options		
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag) – Long Leads	25 +2/-1	50

Dimensions – Millimeters



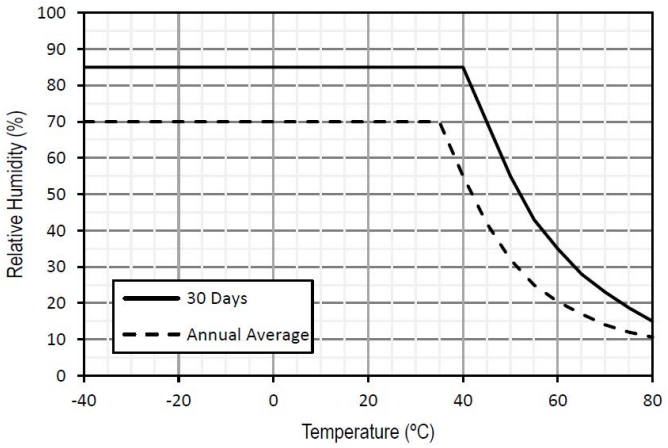
p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
10.0	+/- 0.4	4.0	+0.2	9.0	+0.1	13.0	+0.2	0.6	+/- 0.05
10.0	+/- 0.4	5.0	+0.2	11.0	+0.1	13.0	+0.2	0.6	+/- 0.05
10.0	+/-0.4	6.0	+0.2	12.0	+0.1	13.0	+0.2	0.6	+/- 0.05
15.0	+/- 0.4	4.0	+0.2	10.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	5.0	+0.2	11.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	6.0	+0.2	12.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	7.5	+0.2	13.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	8.5	+0.2	14.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	9.0	+0.2	12.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	10.0	+0.2	16.0	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	11.0	+0.2	19.0	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	13.0	+0.2	12.0	+0.1	18.0	+0.5	0.8	+/- 0.05
22.5	+/- 0.4	6.0	+0.2	15.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	7.0	+0.2	16.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	8.5	+0.2	17.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	10.0	+0.2	18.5	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	11.0	+0.2	20.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	13.0	+0.2	22.0	+0.1	26.5	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	9.0	+0.2	17.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	11.0	+0.2	20.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	13.0	+0.2	22.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	14.0	+0.2	28.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	18.0	+0.2	33.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	22.0	+0.2	37.0	+0.1	32.0	+0.3	0.8	+/- 0.05
37.5	+/- 0.4	11.0	+0.3	22.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	13.0	+0.3	24.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	16.0	+0.3	28.5	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	19.0	+0.3	32.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	20.0	+0.3	40.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	24.0	+0.3	44.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	30.0	+0.3	45.0	+0.1	41.5	+0.3	1.0	+/- 0.05

Note: See Ordering Options Table for lead length (LL/Ho) options.

Performance Characteristics

Dielectric	Polypropylene film					
Plates	Metal layer deposited by evaporation under vacuum					
Winding	Non-inductive type					
Leads	Tinned wire					
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.					
Related Documents	IEC 60384-16, IEC 60384-17					
Sections	1	2		3		4
Rated Voltage V_R (VDC)	630	1300	1600	2000	2000	2200
Rated Voltage V_R (VAC)	250	400	500	600	700	900
Capacitance Range (µF)	0.01 – 0.15	0.0022 – 3.3	0.001 – 2.2	0.00047 – 1	0.001 –0.47	0.001 –0.47
Capacitance Values	E12 series (IEC 60063) measured @ 1kHz and +20 ±1°C					
Capacitance Tolerance	±5%, ±10%					
Operating Temperature Range	-55°C to +105°C					
Rated Temperature T_R	+85°C					
Voltage Derating	Above +85°C DC and AC voltage derating is 1.25%/°C					
Climatic Category	55/105/56 IEC 60068-1					
Storage Conditions	Storage time: ≤ 24 months from the date marked on the label package					
	Average relative humidity per year ≤ 70%					
	RH ≤ 85% for 30 days randomly distributed throughout the year					
	Dew is absent					
	Temperature: -40 to 80°C (see "Maximum Humidity in Storage Conditions" graph below)					

Maximum Humidity in Storage Conditions



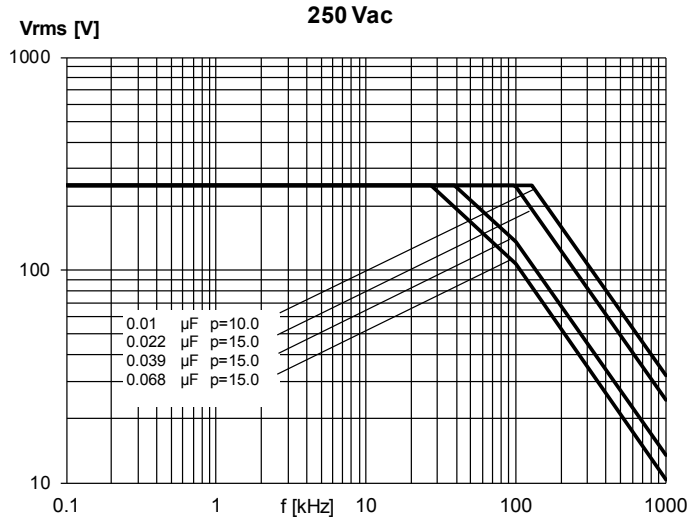
Performance Characteristics cont'd

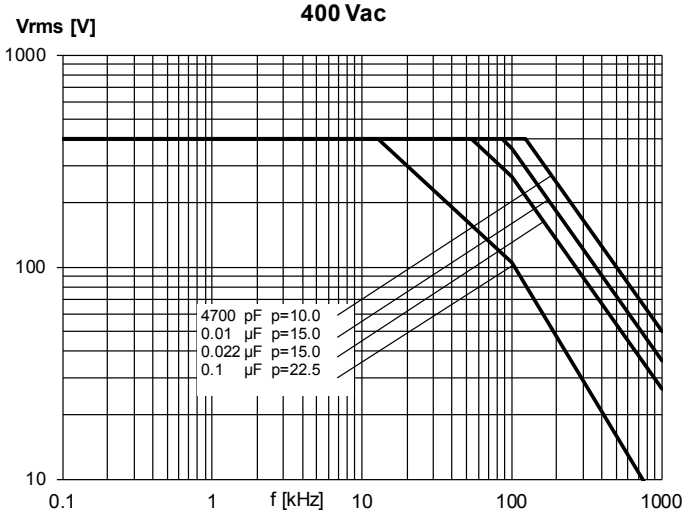
Test Voltage	1.6 x V_R VDC for 2 seconds (between terminations) @ +25°C ±5°C					
Capacitance Drift	Maximum 0.5% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%					
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp <V_R), the specified dv/dt can be multiplied by the factor V_R/Vpp					
Temperature Coefficient	-(200 ±100) ppm/°C at 1 kHz					
Self Inductance (Lead Length ~ 2 mm)	Lead Spacing (mm)	10	15	22.5	27.5	37.5
	L (nH) ≈	9	10	18	18	20
	Maximum 1 nH per 1 mm lead and capacitor length.					
Dissipation Factor tanδ	Maximum Values @ 25°C ±5°C					
	Frequency	C ≤ 2.2 nF	2.2 nF < C ≤ 0.027 µF	0.027 µF < C ≤ 0.1 µF	0.1 µF < C ≤ 1 µF	C > 1 µF
	1 kHz	0.01%	0.01%	0.04%	0.05%	0.06%
	10 kHz	0.02%	0.02%	0.06%	0.08%	-
	100 kHz	0.03%	0.08%	0.25%	-	-
Insulation Resistance	Measured @ +25°C ±5°C, 100 VDC 60 seconds					
	Minimum Values Between Terminals					
	C ≤ 0.33 µF			C > 0.33 µF		
	≥ 100,000 MΩ			≥ 30,000 MΩ • µF		

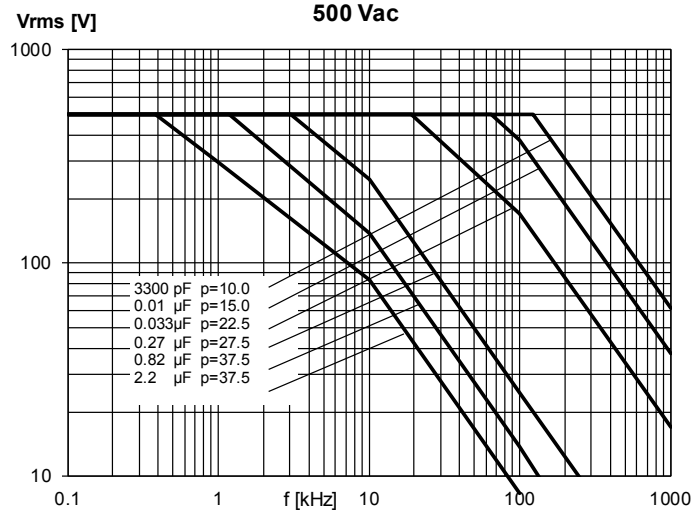
Qualification

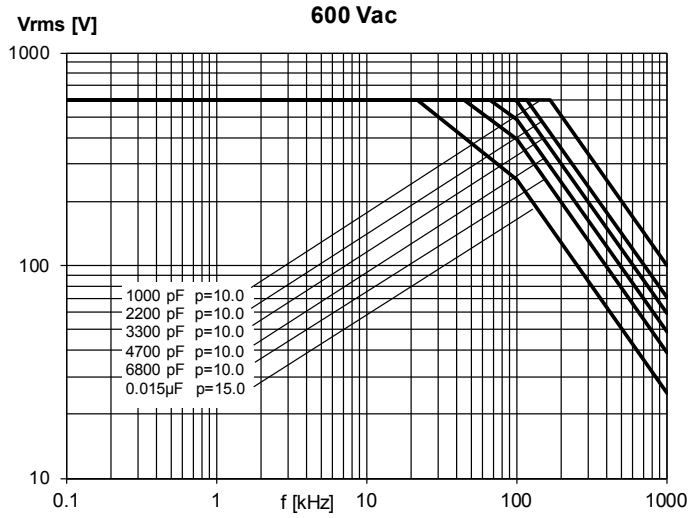
Automotive Grade products meet or exceed the requirements outlined by the Automotive Electronics Council. Details regarding test methods and conditions are referenced in document AEC–Q200, Stress Test Qualification for Passive Components. For additional information regarding the Automotive Electronics Council and AEC–Q200, please visit their website at www.aecouncil.com.

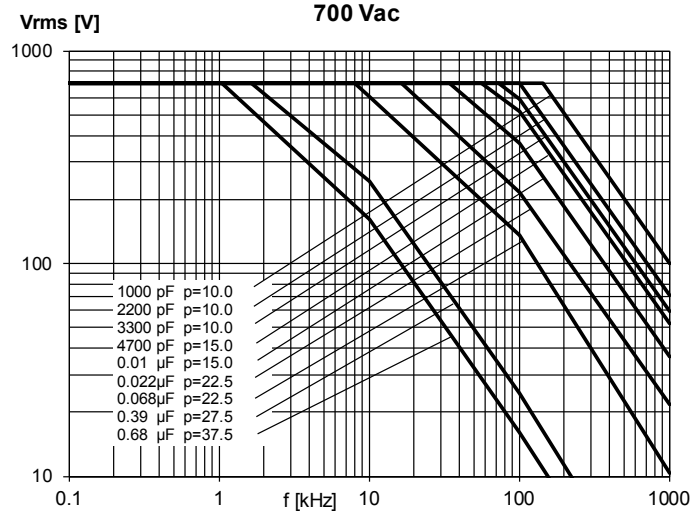
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 85ºC)

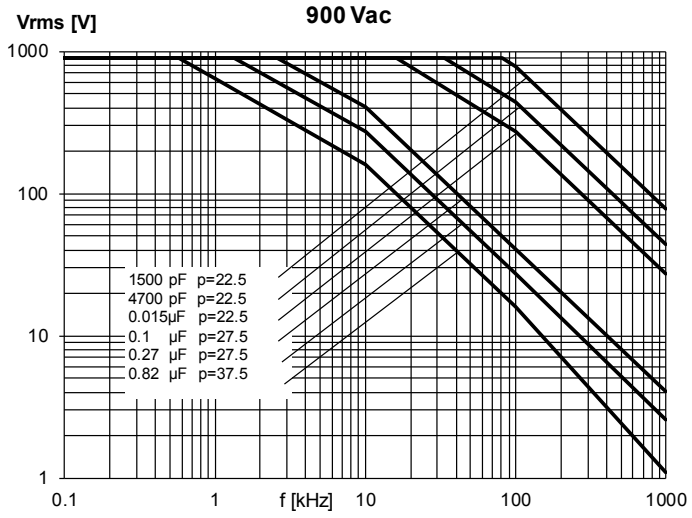




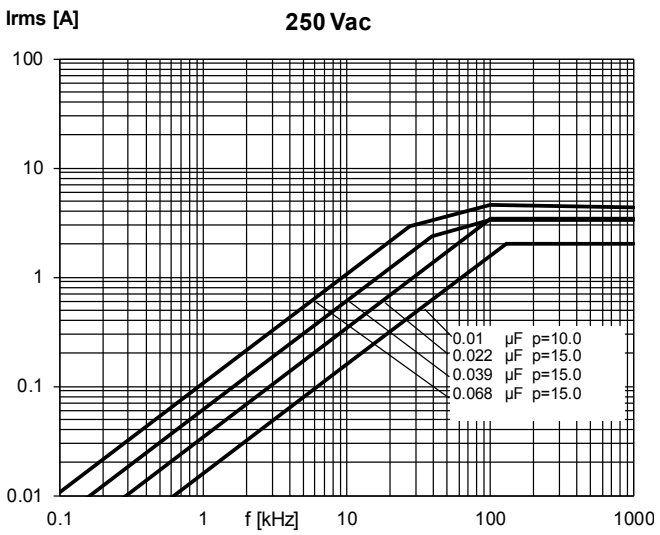


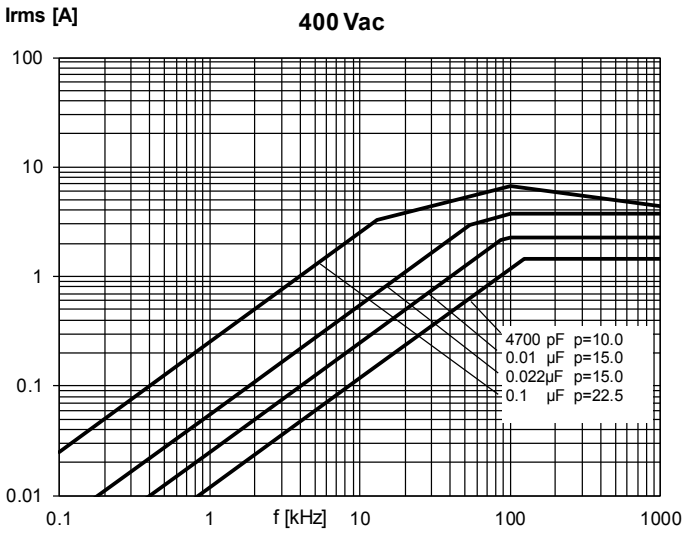


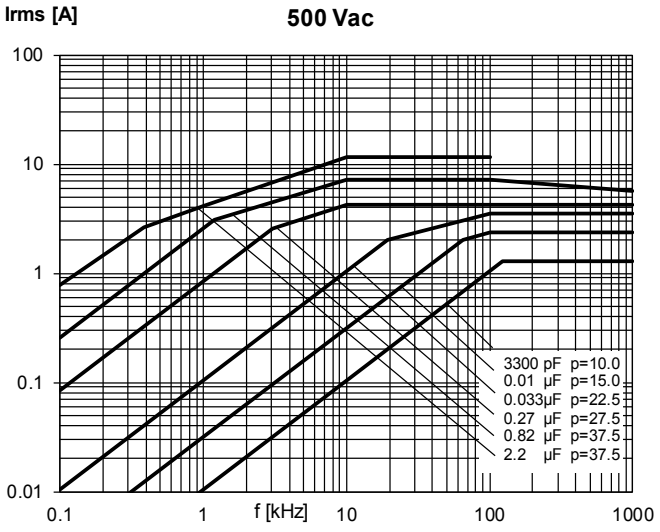


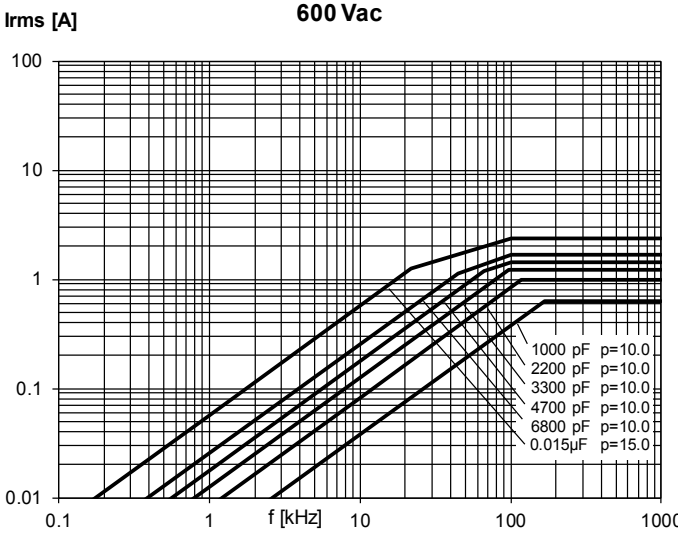


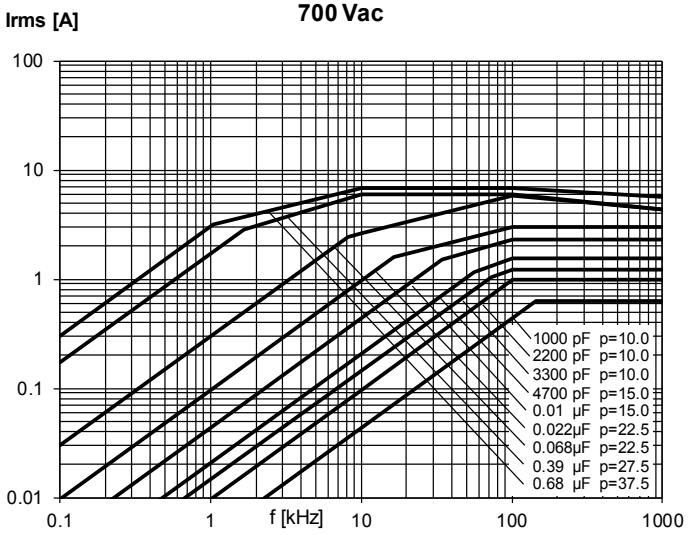
Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 85ºC)

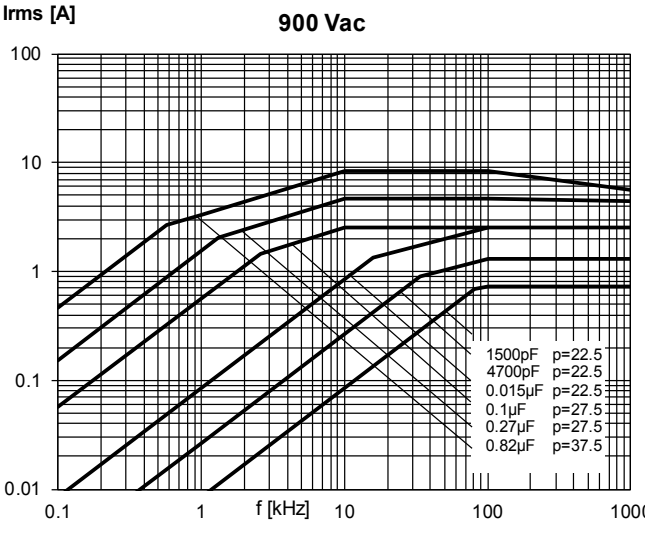












Environmental Test Data

Damp Heat, Steady State Test	Test Conditions:		Performances
	Temperature: Relative humidity (RH): Test duration:	+40°C ± 2°C 93% ± 2% 56 days	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.001 @ 1 kHz IR after test ≥ 50% of initial limit
Endurance Test	**Test Conditions**		**Performances**
	Temperature: Voltage applied: Test duration:	+85°C ±2°C 1.25 x V_R (AC) @ 50 Hz 2,000 hours	|Δ C/C| ≤ 5%, Δ tanδ ≤ 0.0015 @ 1 kHz IR after test ≥ 50% of initial limit
Resistance to Soldering Heat Test	**Test Conditions**		**Performances**
	Solder bath temperature: Dipping time (with heat screen):	260°C ±5°C 10 seconds ±1 second	|Δ C/C| ≤ 1%, Δ tanδ ≤ 0.001 @ 1 kHz IR after test ≥ initial limit

Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VAC	VDC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
250	630	0.010	4.0	9.0	13.0	10.0	300	378,000	74LF2100(1)00(2)	R74LF2100(1)00(2)
250	630	0.012	4.0	9.0	13.0	10.0	300	378,000	74LF2120(1)00(2)	R74LF2120(1)00(2)
250	630	0.015	5.0	11.0	13.0	10.0	300	378,000	74LF2150(1)00(2)	R74LF2150(1)00(2)
250	630	0.018	5.0	11.0	13.0	10.0	300	378,000	74LF2180(1)00(2)	R74LF2180(1)00(2)
250	630	0.022	6.0	12.0	13.0	10.0	300	378,000	74LF2220(1)00(2)	R74LF2220(1)00(2)
250	630	0.027	6.0	12.0	13.0	10.0	300	378,000	74LF2270(1)00(2)	R74LF2270(1)00(2)
250	630	0.015	5.0	11.0	18.0	15.0	250	315,000	74LI2150(1)00(2)	R74LI2150(1)00(2)
250	630	0.018	5.0	11.0	18.0	15.0	250	315,000	74LI2180(1)00(2)	R74LI2180(1)00(2)
250	630	0.022	5.0	11.0	18.0	15.0	250	315,000	74LI2220(1)00(2)	R74LI2220(1)00(2)
250	630	0.027	5.0	11.0	18.0	15.0	250	315,000	74LI2270(1)00(2)	R74LI2270(1)00(2)
250	630	0.033	5.0	11.0	18.0	15.0	250	315,000	74LI2330(1)00(2)	R74LI2330(1)00(2)
250	630	0.039	6.0	12.0	18.0	15.0	250	315,000	74LI2390(1)00(2)	R74LI2390(1)00(2)
250	630	0.047	6.0	12.0	18.0	15.0	250	315,000	74LI2470(1)00(2)	R74LI2470(1)00(2)
250	630	0.056	7.5	13.5	18.0	15.0	250	315,000	74LI2560(1)00(2)	R74LI2560(1)00(2)
250	630	0.068	7.5	13.5	18.0	15.0	250	315,000	74LI2680(1)00(2)	R74LI2680(1)00(2)
250	630	0.068	9.0	12.5	18.0	15.0	250	315,000	74LI2680(1)60(2)	R74LI2680(1)60(2)
250	630	0.082	8.5	14.5	18.0	15.0	250	315,000	74LI2820(1)00(2)	R74LI2820(1)00(2)
250	630	0.082	13.0	12.0	18.0	15.0	250	315,000	74LI2820(1)60(2)	R74LI2820(1)60(2)
250	630	0.10	8.5	14.5	18.0	15.0	250	315,000	74LI3100(1)00(2)	R74LI3100(1)00(2)
250	630	0.10	13.0	12.0	18.0	15.0	250	315,000	74LI3100(1)60(2)	R74LI3100(1)60(2)
250	630	0.12	10.0	16.0	18.0	15.0	250	315,000	74LI3120(1)00(2)	R74LI3120(1)00(2)
250	630	0.15	11.0	19.0	18.0	15.0	250	315,000	74LI3150(1)00(2)	R74LI3150(1)00(2)
400	1,300	0.0022	4.0	9.0	13.0	10.0	2,200	5,720,000	74NF1220(1)00(2)	R74NF1220(1)00(2)
400	1,300	0.0027	4.0	9.0	13.0	10.0	2,200	5,720,000	74NF1270(1)00(2)	R74NF1270(1)00(2)
400	1,300	0.0033	4.0	9.0	13.0	10.0	2,200	5,720,000	74NF1330(1)00(2)	R74NF1330(1)00(2)
400	1,300	0.0039	5.0	11.0	13.0	10.0	2,200	5,720,000	74NF1390(1)00(2)	R74NF1390(1)00(2)
400	1,300	0.0047	5.0	11.0	13.0	10.0	2,200	5,720,000	74NF1470(1)00(2)	R74NF1470(1)00(2)
400	1,300	0.0056	5.0	11.0	13.0	10.0	2,200	5,720,000	74NF1560(1)00(2)	R74NF1560(1)00(2)
400	1,300	0.0068	6.0	12.0	13.0	10.0	2,200	5,720,000	74NF1680(1)00(2)	R74NF1680(1)00(2)
400	1,300	0.0082	6.0	12.0	13.0	10.0	2,200	5,720,000	74NF1820(1)00(2)	R74NF1820(1)00(2)
400	1,300	0.0068	5.0	11.0	18.0	15.0	2,000	5,200,000	74NI1680(1)00(2)	R74NI1680(1)00(2)
400	1,300	0.0082	5.0	11.0	18.0	15.0	2,000	5,200,000	74NI1820(1)00(2)	R74NI1820(1)00(2)
400	1,300	0.010	5.0	11.0	18.0	15.0	2,000	5,200,000	74NI2100(1)00(2)	R74NI2100(1)00(2)
400	1,300	0.012	6.0	12.0	18.0	15.0	2,000	5,200,000	74NI2120(1)00(2)	R74NI2120(1)00(2)
400	1,300	0.015	6.0	12.0	18.0	15.0	2,000	5,200,000	74NI2150(1)00(2)	R74NI2150(1)00(2)
400	1,300	0.018	7.5	13.5	18.0	15.0	2,000	5,200,000	74NI2180(1)00(2)	R74NI2180(1)00(2)
400	1,300	0.022	7.5	13.5	18.0	15.0	2,000	5,200,000	74NI2220(1)00(2)	R74NI2220(1)00(2)
400	1,300	0.022	9.0	12.5	18.0	15.0	2,000	5,200,000	74NI2220(1)60(2)	R74NI2220(1)60(2)
400	1,300	0.027	8.5	14.5	18.0	15.0	2,000	5,200,000	74NI2270(1)00(2)	R74NI2270(1)00(2)
400	1,300	0.027	13.0	12.0	18.0	15.0	2,000	5,200,000	74NI2270(1)60(2)	R74NI2270(1)60(2)
400	1,300	0.033	8.5	14.5	18.0	15.0	2,000	5,200,000	74NI2330(1)00(2)	R74NI2330(1)00(2)
400	1,300	0.033	13.0	12.0	18.0	15.0	2,000	5,200,000	74NI2330(1)60(2)	R74NI2330(1)60(2)
400	1,300	0.039	10.0	16.0	18.0	15.0	2,000	5,200,000	74NI2390(1)00(2)	R74NI2390(1)00(2)
400	1,300	0.039	13.0	12.0	18.0	15.0	2,000	5,200,000	74NI2390(1)60(2)	R74NI2390(1)60(2)
400	1,300	0.047	10.0	16.0	18.0	15.0	2,000	5,200,000	74NI2470(1)00(2)	R74NI2470(1)00(2)
400	1,300	0.056	11.0	19.0	18.0	15.0	2,000	5,200,000	74NI2560(1)00(2)	R74NI2560(1)00(2)
400	1,300	0.039	6.0	15.0	26.5	22.5	800	2,080,000	74NN2390(1)00(2)	R74NN2390(1)00(2)
400	1,300	0.047	7.0	16.0	26.5	22.5	800	2,080,000	74NN2470(1)00(2)	R74NN2470(1)00(2)
400	1,300	0.056	7.0	16.0	26.5	22.5	800	2,080,000	74NN2560(1)00(2)	R74NN2560(1)00(2)
400	1,300	0.068	8.5	17.0	26.5	22.5	800	2,080,000	74NN2680(1)00(2)	R74NN2680(1)00(2)
400	1,300	0.082	10.0	18.5	26.5	22.5	800	2,080,000	74NN2820(1)00(2)	R74NN2820(1)00(2)
400	1,300	0.10	10.0	18.5	26.5	22.5	800	2,080,000	74NN3100(1)00(2)	R74NN3100(1)00(2)
400	1,300	0.12	11.0	20.0	26.5	22.5	800	2,080,000	74NN3120(1)00(2)	R74NN3120(1)00(2)
400	1,300	0.15	13.0	22.0	26.5	22.5	800	2,080,000	74NN3150(1)00(2)	R74NN3150(1)00(2)
400	1,300	0.15	9.0	17.0	32.0	27.5	380	988,000	74NR3150(1)00(2)	R74NR3150(1)00(2)
400	1,300	0.18	9.0	17.0	32.0	27.5	380	988,000	74NR3180(1)00(2)	R74NR3180(1)00(2)
400	1,300	0.22	11.0	20.0	32.0	27.5	380	988,000	74NR3220(1)00(2)	R74NR3220(1)00(2)
400	1,300	0.27	11.0	20.0	32.0	27.5	380	988,000	74NR3270(1)00(2)	R74NR3270(1)00(2)
400	1,300	0.33	13.0	22.0	32.0	27.5	380	988,000	74NR3330(1)00(2)	R74NR3330(1)00(2)
400	1,300	0.39	13.0	22.0	32.0	27.5	380	988,000	74NR3390(1)00(2)	R74NR3390(1)00(2)
VAC	**VDC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = ±10%

Table 1 – Ratings & Part Number Reference cont'd

VAC	VDC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
400	1,300	0.47	14.0	28.0	32.0	27.5	380	988,000	74NR3470(1)00(2)	R74NR3470(1)00(2)
400	1,300	0.56	14.0	28.0	32.0	27.5	380	988,000	74NR3560(1)00(2)	R74NR3560(1)00(2)
400	1,300	0.68	14.0	28.0	32.0	27.5	380	988,000	74NR3680(1)00(2)	R74NR3680(1)00(2)
400	1,300	0.82	18.0	33.0	32.0	27.5	380	988,000	74NR3820(1)00(2)	R74NR3820(1)00(2)
400	1,300	1.0	18.0	33.0	32.0	27.5	380	988,000	74NR4100(1)00(2)	R74NR4100(1)00(2)
400	1,300	0.47	11.0	22.0	41.5	37.5	180	468,000	74NW3470(1)00(2)	R74NW3470(1)00(2)
400	1,300	0.56	13.0	24.0	41.5	37.5	180	468,000	74NW3560(1)20(2)	R74NW3560(1)20(2)
400	1,300	0.68	13.0	24.0	41.5	37.5	180	468,000	74NW3680(1)00(2)	R74NW3680(1)00(2)
400	1,300	0.82	16.0	28.5	41.5	37.5	180	468,000	74NW3820(1)00(2)	R74NW3820(1)00(2)
400	1,300	1.0	16.0	28.5	41.5	37.5	180	468,000	74NW4100(1)00(2)	R74NW4100(1)00(2)
400	1,300	1.2	19.0	32.0	41.5	37.5	180	468,000	74NW4120(1)00(2)	R74NW4120(1)00(2)
400	1,300	1.5	20.0	40.0	41.5	37.5	180	468,000	74NW4150(1)20(2)	R74NW4150(1)20(2)
400	1,300	1.8	20.0	40.0	41.5	37.5	180	468,000	74NW4180(1)00(2)	R74NW4180(1)00(2)
400	1,300	2.2	24.0	44.0	41.5	37.5	180	468,000	74NW4220(1)00(2)	R74NW4220(1)00(2)
400	1,300	2.7	24.0	44.0	41.5	37.5	180	468,000	74NW4270(1)00(2)	R74NW4270(1)00(2)
400	1,300	3.3	30.0	45.0	41.5	37.5	180	468,000	74NW4330(1)00(2)	R74NW4330(1)00(2)
500	1,600	0.0010	4.0	9.0	13.0	10.0	6,000	19,200,000	745F1100(1)00(2)	R745F1100(1)00(2)
500	1,600	0.0012	4.0	9.0	13.0	10.0	6,000	19,200,000	745F1120(1)00(2)	R745F1120(1)00(2)
500	1,600	0.0015	4.0	9.0	13.0	10.0	6,000	19,200,000	745F1150(1)00(2)	R745F1150(1)00(2)
500	1,600	0.0018	4.0	9.0	13.0	10.0	6,000	19,200,000	745F1180(1)00(2)	R745F1180(1)00(2)
500	1,600	0.0022	5.0	11.0	13.0	10.0	6,000	19,200,000	745F1220(1)00(2)	R745F1220(1)00(2)
500	1,600	0.0027	5.0	11.0	13.0	10.0	6,000	19,200,000	745F1270(1)00(2)	R745F1270(1)00(2)
500	1,600	0.0033	6.0	12.0	13.0	10.0	6,000	19,200,000	745F1330(1)00(2)	R745F1330(1)00(2)
500	1,600	0.0039	6.0	12.0	13.0	10.0	6,000	19,200,000	745F1390(1)00(2)	R745F1390(1)00(2)
500	1,600	0.0047	6.0	12.0	13.0	10.0	6,000	19,200,000	745F1470(1)00(2)	R745F1470(1)00(2)
500	1,600	0.0056	6.0	12.0	13.0	10.0	6,000	19,200,000	745F1560(1)00(2)	R745F1560(1)00(2)
500	1,600	0.0068	6.0	12.0	13.0	10.0	6,000	19,200,000	745F1680(1)00(2)	R745F1680(1)00(2)
500	1,600	0.0082	6.0	12.0	13.0	10.0	6,000	19,200,000	745F1820(1)00(2)	R745F1820(1)00(2)
500	1,600	0.0015	4.0	10.0	18.0	15.0	4,500	14,400,000	745I1150(1)30(2)	R745I1150(1)30(2)
500	1,600	0.0015	5.0	11.0	18.0	15.0	4,500	14,400,000	745I1150(1)00(2)	R745I1150(1)00(2)
500	1,600	0.0018	4.0	10.0	18.0	15.0	4,500	14,400,000	745I1180(1)30(2)	R745I1180(1)30(2)
500	1,600	0.0018	5.0	11.0	18.0	15.0	4,500	14,400,000	745I1180(1)00(2)	R745I1180(1)00(2)
500	1,600	0.0022	4.0	10.0	18.0	15.0	4,500	14,400,000	745I1220(1)30(2)	R745I1220(1)30(2)
500	1,600	0.0022	5.0	11.0	18.0	15.0	4,500	14,400,000	745I1220(1)00(2)	R745I1220(1)00(2)
500	1,600	0.0027	4.0	10.0	18.0	15.0	4,500	14,400,000	745I1270(1)30(2)	R745I1270(1)30(2)
500	1,600	0.0027	5.0	11.0	18.0	15.0	4,500	14,400,000	745I1270(1)00(2)	R745I1270(1)00(2)
500	1,600	0.0033	4.0	10.0	18.0	15.0	4,500	14,400,000	745I1330(1)30(2)	R745I1330(1)30(2)
500	1,600	0.0033	5.0	11.0	18.0	15.0	4,500	14,400,000	745I1330(1)00(2)	R745I1330(1)00(2)
500	1,600	0.0039	4.0	10.0	18.0	15.0	4,500	14,400,000	745I1390(1)30(2)	R745I1390(1)30(2)
500	1,600	0.0039	5.0	11.0	18.0	15.0	4,500	14,400,000	745I1390(1)00(2)	R745I1390(1)00(2)
500	1,600	0.0047	4.0	10.0	18.0	15.0	4,500	14,400,000	745I1470(1)30(2)	R745I1470(1)30(2)
500	1,600	0.0047	5.0	11.0	18.0	15.0	4,500	14,400,000	745I1470(1)00(2)	R745I1470(1)00(2)
500	1,600	0.0056	5.0	11.0	18.0	15.0	4,500	14,400,000	745I1560(1)00(2)	R745I1560(1)00(2)
500	1,600	0.0068	6.0	12.0	18.0	15.0	4,500	14,400,000	745I1680(1)00(2)	R745I1680(1)00(2)
500	1,600	0.0082	6.0	12.0	18.0	15.0	4,500	14,400,000	745I1820(1)00(2)	R745I1820(1)00(2)
500	1,600	0.010	6.0	12.0	18.0	15.0	4,500	14,400,000	745I2100(1)00(2)	R745I2100(1)00(2)
500	1,600	0.012	7.5	13.5	18.0	15.0	4,500	14,400,000	745I2120(1)00(2)	R745I2120(1)00(2)
500	1,600	0.015	7.5	13.5	18.0	15.0	4,500	14,400,000	745I2150(1)00(2)	R745I2150(1)00(2)
500	1,600	0.015	13.0	12.0	18.0	15.0	4,500	14,400,000	745I2150(1)60(2)	R745I2150(1)60(2)
500	1,600	0.018	8.5	14.5	18.0	15.0	4,500	14,400,000	745I2180(1)00(2)	R745I2180(1)00(2)
500	1,600	0.018	13.0	12.0	18.0	15.0	4,500	14,400,000	745I2180(1)60(2)	R745I2180(1)60(2)
500	1,600	0.022	10.0	16.0	18.0	15.0	4,500	14,400,000	745I2220(1)00(2)	R745I2220(1)00(2)
500	1,600	0.022	13.0	12.0	18.0	15.0	4,500	14,400,000	745I2220(1)60(2)	R745I2220(1)60(2)
500	1,600	0.027	10.0	16.0	18.0	15.0	4,500	14,400,000	745I2270(1)00(2)	R745I2270(1)00(2)
500	1,600	0.033	11.0	19.0	18.0	15.0	4,500	14,400,000	745I2330(1)00(2)	R745I2330(1)00(2)
500	1,600	0.018	6.0	15.0	26.5	22.5	1,800	5,760,000	745N2180(1)00(2)	R745N2180(1)00(2)
500	1,600	0.022	6.0	15.0	26.5	22.5	1,800	5,760,000	745N2220(1)00(2)	R745N2220(1)00(2)
500	1,600	0.027	7.0	16.0	26.5	22.5	1,800	5,760,000	745N2270(1)00(2)	R745N2270(1)00(2)
500	1,600	0.033	7.0	16.0	26.5	22.5	1,800	5,760,000	745N2330(1)00(2)	R745N2330(1)00(2)
500	1,600	0.039	8.5	17.0	26.5	22.5	1,800	5,760,000	745N2390(1)00(2)	R745N2390(1)00(2)
VAC	**VDC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = ±10%

Table 1 – Ratings & Part Number Reference cont'd

VAC	VDC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
500	1,600	0.047	10.0	18.5	26.5	22.5	1,800	5,760,000	745N2470(1)00(2)	R745N2470(1)00(2)
500	1,600	0.056	10.0	18.5	26.5	22.5	1,800	5,760,000	745N2560(1)00(2)	R745N2560(1)00(2)
500	1,600	0.068	11.0	20.0	26.5	22.5	1,800	5,760,000	745N2680(1)00(2)	R745N2680(1)00(2)
500	1,600	0.082	13.0	22.0	26.5	22.5	1,800	5,760,000	745N2820(1)00(2)	R745N2820(1)00(2)
500	1,600	0.10	13.0	22.0	26.5	22.5	1,800	5,760,000	745N3100(1)00(2)	R745N3100(1)00(2)
500	1,600	0.10	9.0	17.0	32.0	27.5	500	1,600,000	745R3100(1)00(2)	R745R3100(1)00(2)
500	1,600	0.12	9.0	17.0	32.0	27.5	500	1,600,000	745R3120(1)00(2)	R745R3120(1)00(2)
500	1,600	0.15	9.0	17.0	32.0	27.5	500	1,600,000	745R3150(1)00(2)	R745R3150(1)00(2)
500	1,600	0.18	11.0	20.0	32.0	27.5	500	1,600,000	745R3180(1)00(2)	R745R3180(1)00(2)
500	1,600	0.22	11.0	20.0	32.0	27.5	500	1,600,000	745R3220(1)00(2)	R745R3220(1)00(2)
500	1,600	0.27	13.0	22.0	32.0	27.5	500	1,600,000	745R3270(1)00(2)	R745R3270(1)00(2)
500	1,600	0.33	14.0	28.0	32.0	27.5	500	1,600,000	745R3330(1)00(2)	R745R3330(1)00(2)
500	1,600	0.39	14.0	28.0	32.0	27.5	500	1,600,000	745R3390(1)00(2)	R745R3390(1)00(2)
500	1,600	0.47	14.0	28.0	32.0	27.5	500	1,600,000	745R3470(1)00(2)	R745R3470(1)00(2)
500	1,600	0.56	18.0	33.0	32.0	27.5	500	1,600,000	745R3560(1)00(2)	R745R3560(1)00(2)
500	1,600	0.68	18.0	33.0	32.0	27.5	500	1,600,000	745R3680(1)00(2)	R745R3680(1)00(2)
500	1,600	0.82	22.0	37.0	32.0	27.5	500	1,600,000	745R3820(1)00(2)	R745R3820(1)00(2)
500	1,600	1.0	22.0	37.0	32.0	27.5	500	1,600,000	745R4100(1)00(2)	R745R4100(1)00(2)
500	1,600	0.33	11.0	22.0	41.5	37.5	300	960,000	745W3330(1)00(2)	R745W3330(1)00(2)
500	1,600	0.39	13.0	24.0	41.5	37.5	300	960,000	745W3390(1)20(2)	R745W3390(1)20(2)
500	1,600	0.47	13.0	24.0	41.5	37.5	300	960,000	745W3470(1)00(2)	R745W3470(1)00(2)
500	1,600	0.56	16.0	28.5	41.5	37.5	300	960,000	745W3560(1)20(2)	R745W3560(1)20(2)
500	1,600	0.68	16.0	28.5	41.5	37.5	300	960,000	745W3680(1)00(2)	R745W3680(1)00(2)
500	1,600	0.82	19.0	32.0	41.5	37.5	300	960,000	745W3820(1)20(2)	R745W3820(1)20(2)
500	1,600	1.0	19.0	32.0	41.5	37.5	300	960,000	745W4100(1)00(2)	R745W4100(1)00(2)
500	1,600	1.2	20.0	40.0	41.5	37.5	300	960,000	745W4120(1)20(2)	R745W4120(1)20(2)
500	1,600	1.5	20.0	40.0	41.5	37.5	300	960,000	745W4150(1)00(2)	R745W4150(1)00(2)
500	1,600	1.8	24.0	44.0	41.5	37.5	300	960,000	745W4180(1)00(2)	R745W4180(1)00(2)
500	1,600	2.2	30.0	45.0	41.5	37.5	300	960,000	745W4220(1)20(2)	R745W4220(1)20(2)
600	2,000	0.00047	4.0	9.0	13.0	10.0	10,000	40,000,000	746F0470(1)00(2)	R746F0470(1)00(2)
600	2,000	0.00068	4.0	9.0	13.0	10.0	10,000	40,000,000	746F0680(1)00(2)	R746F0680(1)00(2)
600	2,000	0.00082	4.0	9.0	13.0	10.0	10,000	40,000,000	746F0820(1)00(2)	R746F0820(1)00(2)
600	2,000	0.0010	4.0	9.0	13.0	10.0	10,000	40,000,000	746F1100(1)00(2)	R746F1100(1)00(2)
600	2,000	0.0012	4.0	9.0	13.0	10.0	10,000	40,000,000	746F1120(1)00(2)	R746F1120(1)00(2)
600	2,000	0.0015	4.0	9.0	13.0	10.0	10,000	40,000,000	746F1150(1)00(2)	R746F1150(1)00(2)
600	2,000	0.0018	4.0	9.0	13.0	10.0	10,000	40,000,000	746F1180(1)00(2)	R746F1180(1)00(2)
600	2,000	0.0022	5.0	11.0	13.0	10.0	10,000	40,000,000	746F1220(1)00(2)	R746F1220(1)00(2)
600	2,000	0.0027	5.0	11.0	13.0	10.0	10,000	40,000,000	746F1270(1)00(2)	R746F1270(1)00(2)
600	2,000	0.0033	6.0	12.0	13.0	10.0	10,000	40,000,000	746F1330(1)00(2)	R746F1330(1)00(2)
600	2,000	0.0039	6.0	12.0	13.0	10.0	10,000	40,000,000	746F1390(1)00(2)	R746F1390(1)00(2)
600	2,000	0.0047	6.0	12.0	13.0	10.0	10,000	40,000,000	746F1470(1)00(2)	R746F1470(1)00(2)
600	2,000	0.0056	6.0	12.0	13.0	10.0	10,000	40,000,000	746F1560(1)00(2)	R746F1560(1)00(2)
600	2,000	0.0068	6.0	12.0	13.0	10.0	10,000	40,000,000	746F1680(1)00(2)	R746F1680(1)00(2)
600	2,000	0.0082	6.0	12.0	13.0	10.0	10,000	40,000,000	746F1820(1)00(2)	R746F1820(1)00(2)
600	2,000	0.0023	4.0	10.0	18.0	15.0	9,500	38,000,000	746I1230(1)00(2)	R746I1230(1)00(2)
600	2,000	0.0027	4.0	10.0	18.0	15.0	9,500	38,000,000	746I1270(1)00(2)	R746I1270(1)00(2)
600	2,000	0.0039	5.0	11.0	18.0	15.0	9,500	38,000,000	746I1390(1)00(2)	R746I1390(1)00(2)
600	2,000	0.0047	5.0	11.0	18.0	15.0	9,500	38,000,000	746I1470(1)00(2)	R746I1470(1)00(2)
600	2,000	0.0068	6.0	12.0	18.0	15.0	9,500	38,000,000	746I1680(1)00(2)	R746I1680(1)00(2)
600	2,000	0.012	8.5	14.5	18.0	15.0	9,500	38,000,000	746I2120(1)00(2)	R746I2120(1)00(2)
600	2,000	0.015	8.5	14.5	18.0	15.0	9,500	38,000,000	746I2150(1)00(2)	R746I2150(1)00(2)
600	2,000	0.018	10.0	16.0	18.0	15.0	9,500	38,000,000	746I2180(1)00(2)	R746I2180(1)00(2)
700	2,000	0.00047	4.0	9.0	13.0	10.0	10,000	40,000,000	747F0470(1)00(2)	R747F0470(1)00(2)
700	2,000	0.00056	4.0	9.0	13.0	10.0	10,000	40,000,000	747F0560(1)00(2)	R747F0560(1)00(2)
700	2,000	0.00062	4.0	9.0	13.0	10.0	10,000	40,000,000	747F0620(1)00(2)	R747F0620(1)00(2)
700	2,000	0.00068	4.0	9.0	13.0	10.0	10,000	40,000,000	747F0680(1)00(2)	R747F0680(1)00(2)
700	2,000	0.00082	4.0	9.0	13.0	10.0	10,000	40,000,000	747F0820(1)00(2)	R747F0820(1)00(2)
700	2,000	0.00091	4.0	9.0	13.0	10.0	10,000	40,000,000	747F0910(1)00(2)	R747F0910(1)00(2)
700	2,000	0.0010	4.0	9.0	13.0	10.0	10,000	40,000,000	747F1100(1)00(2)	R747F1100(1)00(2)
700	2,000	0.0012	4.0	9.0	13.0	10.0	10,000	40,000,000	747F1120(1)00(2)	R747F1120(1)00(2)
VAC	**VDC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = ±10%

Table 1 – Ratings & Part Number Reference cont'd

VAC	VDC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
700	2,000	0.0015	4.0	9.0	13.0	10.0	10,000	40,000,000	747F1150(1)00(2)	R747F1150(1)00(2)
700	2,000	0.0018	4.0	9.0	13.0	10.0	10,000	40,000,000	747F1180(1)00(2)	R747F1180(1)00(2)
700	2,000	0.0022	5.0	11.0	13.0	10.0	10,000	40,000,000	747F1220(1)00(2)	R747F1220(1)00(2)
700	2,000	0.0027	5.0	11.0	13.0	10.0	10,000	40,000,000	747F1270(1)00(2)	R747F1270(1)00(2)
700	2,000	0.0033	6.0	12.0	13.0	10.0	10,000	40,000,000	747F1330(1)00(2)	R747F1330(1)00(2)
700	2,000	0.0036	6.0	12.0	13.0	10.0	10,000	40,000,000	747F1360(1)00(2)	R747F1360(1)00(2)
700	2,000	0.0039	6.0	12.0	13.0	10.0	10,000	40,000,000	747F1390(1)00(2)	R747F1390(1)00(2)
700	2,000	0.0047	6.0	12.0	13.0	10.0	10,000	40,000,000	747F1470(1)00(2)	R747F1470(1)00(2)
700	2,000	0.0056	6.0	12.0	13.0	10.0	10,000	40,000,000	747F1560(1)00(2)	R747F1560(1)00(2)
700	2,000	0.00047	4.0	10.0	18.0	15.0	9,500	38,000,000	747I0470(1)30(2)	R747I0470(1)30(2)
700	2,000	0.00068	4.0	10.0	18.0	15.0	9,500	38,000,000	747I0680(1)30(2)	R747I0680(1)30(2)
700	2,000	0.00082	4.0	10.0	18.0	15.0	9,500	38,000,000	747I0820(1)30(2)	R747I0820(1)30(2)
700	2,000	0.0010	4.0	10.0	18.0	15.0	9,500	38,000,000	747I1100(1)30(2)	R747I1100(1)30(2)
700	2,000	0.0010	5.0	11.0	18.0	15.0	9,500	38,000,000	747I1100(1)00(2)	R747I1100(1)00(2)
700	2,000	0.0012	4.0	10.0	18.0	15.0	9,500	38,000,000	747I1120(1)30(2)	R747I1120(1)30(2)
700	2,000	0.0012	5.0	11.0	18.0	15.0	9,500	38,000,000	747I1120(1)00(2)	R747I1120(1)00(2)
700	2,000	0.0015	4.0	10.0	18.0	15.0	9,500	38,000,000	747I1150(1)30(2)	R747I1150(1)30(2)
700	2,000	0.0015	5.0	11.0	18.0	15.0	9,500	38,000,000	747I1150(1)00(2)	R747I1150(1)00(2)
700	2,000	0.0018	4.0	10.0	18.0	15.0	9,500	38,000,000	747I1180(1)30(2)	R747I1180(1)30(2)
700	2,000	0.0018	5.0	11.0	18.0	15.0	9,500	38,000,000	747I1180(1)00(2)	R747I1180(1)00(2)
700	2,000	0.0022	4.0	10.0	18.0	15.0	9,500	38,000,000	747I1220(1)30(2)	R747I1220(1)30(2)
700	2,000	0.0022	5.0	11.0	18.0	15.0	9,500	38,000,000	747I1220(1)00(2)	R747I1220(1)00(2)
700	2,000	0.0027	5.0	11.0	18.0	15.0	9,500	38,000,000	747I1270(1)00(2)	R747I1270(1)00(2)
700	2,000	0.0033	5.0	11.0	18.0	15.0	9,500	38,000,000	747I1330(1)00(2)	R747I1330(1)00(2)
700	2,000	0.0039	6.0	12.0	18.0	15.0	9,500	38,000,000	747I1390(1)00(2)	R747I1390(1)00(2)
700	2,000	0.0047	6.0	12.0	18.0	15.0	9,500	38,000,000	747I1470(1)00(2)	R747I1470(1)00(2)
700	2,000	0.0056	6.0	12.0	18.0	15.0	9,500	38,000,000	747I1560(1)00(2)	R747I1560(1)00(2)
700	2,000	0.0068	7.5	13.5	18.0	15.0	9,500	38,000,000	747I1680(1)00(2)	R747I1680(1)00(2)
700	2,000	0.0082	7.5	13.5	18.0	15.0	9,500	38,000,000	747I1820(1)00(2)	R747I1820(1)00(2)
700	2,000	0.0082	9.0	12.5	18.0	15.0	9,500	38,000,000	747I1820(1)60(2)	R747I1820(1)60(2)
700	2,000	0.010	8.5	14.5	18.0	15.0	9,500	38,000,000	747I2100(1)00(2)	R747I2100(1)00(2)
700	2,000	0.010	13.0	12.0	18.0	15.0	9,500	38,000,000	747I2100(1)60(2)	R747I2100(1)60(2)
700	2,000	0.012	10.0	16.0	18.0	15.0	9,500	38,000,000	747I2120(1)00(2)	R747I2120(1)00(2)
700	2,000	0.012	13.0	12.0	18.0	15.0	9,500	38,000,000	747I2120(1)60(2)	R747I2120(1)60(2)
700	2,000	0.015	10.0	16.0	18.0	15.0	9,500	38,000,000	747I2150(1)00(2)	R747I2150(1)00(2)
700	2,000	0.018	11.0	19.0	18.0	15.0	9,500	38,000,000	747I2180(1)00(2)	R747I2180(1)00(2)
700	2,000	0.0082	6.0	15.0	26.5	22.5	4,500	18,000,000	747N1820(1)00(2)	R747N1820(1)00(2)
700	2,000	0.010	6.0	15.0	26.5	22.5	4,500	18,000,000	747N2100(1)00(2)	R747N2100(1)00(2)
700	2,000	0.012	6.0	15.0	26.5	22.5	4,500	18,000,000	747N2120(1)00(2)	R747N2120(1)00(2)
700	2,000	0.015	6.0	15.0	26.5	22.5	4,500	18,000,000	747N2150(1)00(2)	R747N2150(1)00(2)
700	2,000	0.018	7.0	16.0	26.5	22.5	4,500	18,000,000	747N2180(1)00(2)	R747N2180(1)00(2)
700	2,000	0.022	8.5	17.0	26.5	22.5	4,500	18,000,000	747N2220(1)00(2)	R747N2220(1)00(2)
700	2,000	0.027	8.5	17.0	26.5	22.5	4,500	18,000,000	747N2270(1)00(2)	R747N2270(1)00(2)
700	2,000	0.033	10.0	18.5	26.5	22.5	4,500	18,000,000	747N2330(1)00(2)	R747N2330(1)00(2)
700	2,000	0.039	10.0	18.5	26.5	22.5	4,500	18,000,000	747N2390(1)00(2)	R747N2390(1)00(2)
700	2,000	0.047	11.0	20.0	26.5	22.5	4,500	18,000,000	747N2470(1)00(2)	R747N2470(1)00(2)
700	2,000	0.056	13.0	22.0	26.5	22.5	4,500	18,000,000	747N2560(1)00(2)	R747N2560(1)00(2)
700	2,000	0.068	13.0	22.0	26.5	22.5	4,500	18,000,000	747N2680(1)00(2)	R747N2680(1)00(2)
700	2,000	0.039	9.0	17.0	32.0	27.5	700	2,800,000	747R2390(1)00(2)	R747R2390(1)00(2)
700	2,000	0.047	9.0	17.0	32.0	27.5	700	2,800,000	747R2470(1)00(2)	R747R2470(1)00(2)
700	2,000	0.056	9.0	17.0	32.0	27.5	700	2,800,000	747R2560(1)00(2)	R747R2560(1)00(2)
700	2,000	0.068	11.0	20.0	32.0	27.5	700	2,800,000	747R2680(1)00(2)	R747R2680(1)00(2)
700	2,000	0.082	11.0	20.0	32.0	27.5	700	2,800,000	747R2820(1)00(2)	R747R2820(1)00(2)
700	2,000	0.10	13.0	22.0	32.0	27.5	700	2,800,000	747R3100(1)00(2)	R747R3100(1)00(2)
700	2,000	0.12	13.0	22.0	32.0	27.5	700	2,800,000	747R3120(1)00(2)	R747R3120(1)00(2)
700	2,000	0.15	14.0	28.0	32.0	27.5	700	2,800,000	747R3150(1)00(2)	R747R3150(1)00(2)
700	2,000	0.18	14.0	28.0	32.0	27.5	700	2,800,000	747R3180(1)00(2)	R747R3180(1)00(2)
700	2,000	0.22	18.0	33.0	32.0	27.5	700	2,800,000	747R3220(1)00(2)	R747R3220(1)00(2)
700	2,000	0.27	18.0	33.0	32.0	27.5	700	2,800,000	747R3270(1)00(2)	R747R3270(1)00(2)
700	2,000	0.33	22.0	37.0	32.0	27.5	700	2,800,000	747R3330(1)00(2)	R747R3330(1)00(2)
VAC	**VDC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = ±10%

Table 1 – Ratings & Part Number Reference cont'd

VAC	VDC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
700	2,000	0.15	11.0	22.0	41.5	37.5	400	1,600,000	747W3150(1)00(2)	R747W3150(1)00(2)
700	2,000	0.18	13.0	24.0	41.5	37.5	400	1,600,000	747W3180(1)00(2)	R747W3180(1)00(2)
700	2,000	0.22	16.0	28.5	41.5	37.5	400	1,600,000	747W3220(1)20(2)	R747W3220(1)20(2)
700	2,000	0.27	16.0	28.5	41.5	37.5	400	1,600,000	747W3270(1)00(2)	R747W3270(1)00(2)
700	2,000	0.33	19.0	32.0	41.5	37.5	400	1,600,000	747W3330(1)20(2)	R747W3330(1)20(2)
700	2,000	0.39	19.0	32.0	41.5	37.5	400	1,600,000	747W3390(1)00(2)	R747W3390(1)00(2)
700	2,000	0.47	20.0	40.0	41.5	37.5	400	1,600,000	747W3470(1)20(2)	R747W3470(1)20(2)
700	2,000	0.56	20.0	40.0	41.5	37.5	400	1,600,000	747W3560(1)00(2)	R747W3560(1)00(2)
700	2,000	0.68	24.0	44.0	41.5	37.5	400	1,600,000	747W3680(1)00(2)	R747W3680(1)00(2)
700	2,000	0.82	24.0	44.0	41.5	37.5	400	1,600,000	747W3820(1)00(2)	R747W3820(1)00(2)
700	2,000	1.0	30.0	45.0	41.5	37.5	400	1,600,000	747W4100(1)00(2)	R747W4100(1)00(2)
900	2,200	0.0010	6.0	15.0	26.5	22.5	2,500	11,000,000	749N1100(1)00(2)	R749N1100(1)00(2)
900	2,200	0.0012	6.0	15.0	26.5	22.5	2,500	11,000,000	749N1120(1)00(2)	R749N1120(1)00(2)
900	2,200	0.0015	6.0	15.0	26.5	22.5	2,500	11,000,000	749N1150(1)00(2)	R749N1150(1)00(2)
900	2,200	0.0018	6.0	15.0	26.5	22.5	2,500	11,000,000	749N1180(1)00(2)	R749N1180(1)00(2)
900	2,200	0.0022	6.0	15.0	26.5	22.5	2,500	11,000,000	749N1220(1)00(2)	R749N1220(1)00(2)
900	2,200	0.0027	6.0	15.0	26.5	22.5	2,500	11,000,000	749N1270(1)00(2)	R749N1270(1)00(2)
900	2,200	0.0033	6.0	15.0	26.5	22.5	2,500	11,000,000	749N1330(1)00(2)	R749N1330(1)00(2)
900	2,200	0.0039	6.0	15.0	26.5	22.5	2,500	11,000,000	749N1390(1)00(2)	R749N1390(1)00(2)
900	2,200	0.0047	6.0	15.0	26.5	22.5	2,500	11,000,000	749N1470(1)00(2)	R749N1470(1)00(2)
900	2,200	0.0056	6.0	15.0	26.5	22.5	2,500	11,000,000	749N1560(1)00(2)	R749N1560(1)00(2)
900	2,200	0.0068	6.0	15.0	26.5	22.5	2,500	11,000,000	749N1680(1)00(2)	R749N1680(1)00(2)
900	2,200	0.0082	7.0	16.0	26.5	22.5	2,500	11,000,000	749N1820(1)00(2)	R749N1820(1)00(2)
900	2,200	0.010	7.0	16.0	26.5	22.5	2,500	11,000,000	749N2100(1)00(2)	R749N2100(1)00(2)
900	2,200	0.012	8.5	17.0	26.5	22.5	2,500	11,000,000	749N2120(1)00(2)	R749N2120(1)00(2)
900	2,200	0.015	10.0	18.5	26.5	22.5	2,500	11,000,000	749N2150(1)00(2)	R749N2150(1)00(2)
900	2,200	0.018	10.0	18.5	26.5	22.5	2,500	11,000,000	749N2180(1)00(2)	R749N2180(1)00(2)
900	2,200	0.022	11.0	20.0	26.5	22.5	2,500	11,000,000	749N2220(1)00(2)	R749N2220(1)00(2)
900	2,200	0.027	13.0	22.0	26.5	22.5	2,500	11,000,000	749N2270(1)00(2)	R749N2270(1)00(2)
900	2,200	0.033	13.0	22.0	26.5	22.5	2,500	11,000,000	749N2330(1)00(2)	R749N2330(1)00(2)
900	2,200	0.022	9.0	17.0	32.0	27.5	1,500	6,600,000	749R2220(1)00(2)	R749R2220(1)00(2)
900	2,200	0.027	9.0	17.0	32.0	27.5	1,500	6,600,000	749R2270(1)00(2)	R749R2270(1)00(2)
900	2,200	0.033	11.0	20.0	32.0	27.5	1,500	6,600,000	749R2330(1)00(2)	R749R2330(1)00(2)
900	2,200	0.039	11.0	20.0	32.0	27.5	1,500	6,600,000	749R2390(1)00(2)	R749R2390(1)00(2)
900	2,200	0.047	13.0	22.0	32.0	27.5	1,500	6,600,000	749R2470(1)00(2)	R749R2470(1)00(2)
900	2,200	0.056	13.0	22.0	32.0	27.5	1,500	6,600,000	749R2560(1)00(2)	R749R2560(1)00(2)
900	2,200	0.068	14.0	28.0	32.0	27.5	1,500	6,600,000	749R2680(1)00(2)	R749R2680(1)00(2)
900	2,200	0.082	14.0	28.0	32.0	27.5	1,500	6,600,000	749R2820(1)00(2)	R749R2820(1)00(2)
900	2,200	0.10	18.0	33.0	32.0	27.5	1,500	6,600,000	749R3100(1)00(2)	R749R3100(1)00(2)
900	2,200	0.12	18.0	33.0	32.0	27.5	1,500	6,600,000	749R3120(1)00(2)	R749R3120(1)00(2)
900	2,200	0.15	18.0	33.0	32.0	27.5	1,500	6,600,000	749R3150(1)00(2)	R749R3150(1)00(2)
900	2,200	0.068	11.0	22.0	41.5	37.5	900	3,960,000	749W2680(1)00(2)	R749W2680(1)00(2)
900	2,200	0.082	13.0	24.0	41.5	37.5	900	3,960,000	749W2820(1)20(2)	R749W2820(1)20(2)
900	2,200	0.10	13.0	24.0	41.5	37.5	900	3,960,000	749W3100(1)00(2)	R749W3100(1)00(2)
900	2,200	0.12	16.0	28.5	41.5	37.5	900	3,960,000	749W3120(1)20(2)	R749W3120(1)20(2)
900	2,200	0.15	16.0	28.5	41.5	37.5	900	3,960,000	749W3150(1)00(2)	R749W3150(1)00(2)
900	2,200	0.18	19.0	32.0	41.5	37.5	900	3,960,000	749W3180(1)20(2)	R749W3180(1)20(2)
900	2,200	0.22	19.0	32.0	41.5	37.5	900	3,960,000	749W3220(1)00(2)	R749W3220(1)00(2)
900	2,200	0.27	20.0	40.0	41.5	37.5	900	3,960,000	749W3270(1)00(2)	R749W3270(1)00(2)
900	2,200	0.33	20.0	40.0	41.5	37.5	900	3,960,000	749W3330(1)00(2)	R749W3330(1)00(2)
900	2,200	0.39	24.0	44.0	41.5	37.5	900	3,960,000	749W3390(1)00(2)	R749W3390(1)00(2)
900	2,200	0.47	24.0	44.0	41.5	37.5	900	3,960,000	749W3470(1)00(2)	R749W3470(1)00(2)
VAC	**VDC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = ±10%

Soldering Process

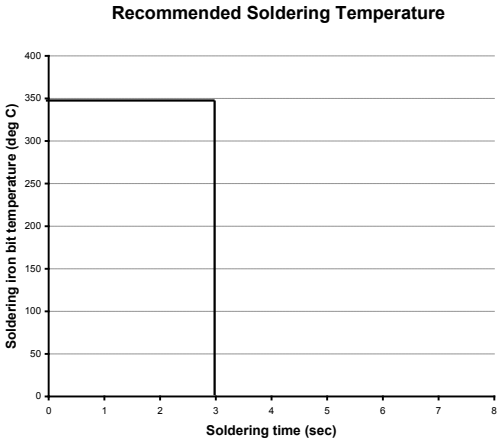
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

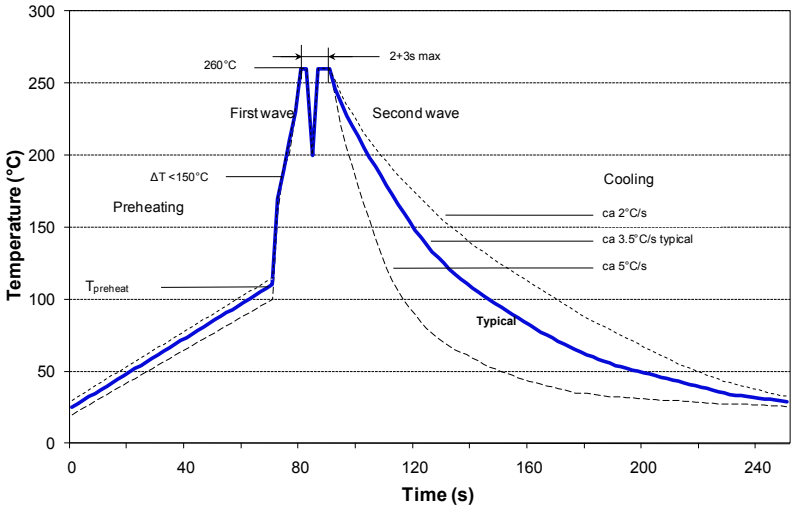
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

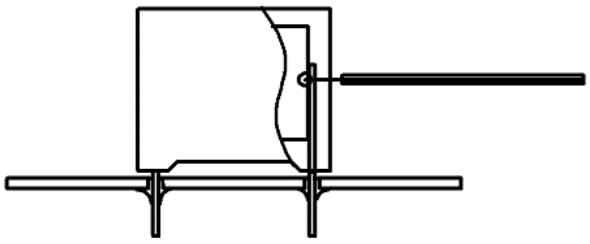
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



Temperature monitored inside the capacitor.

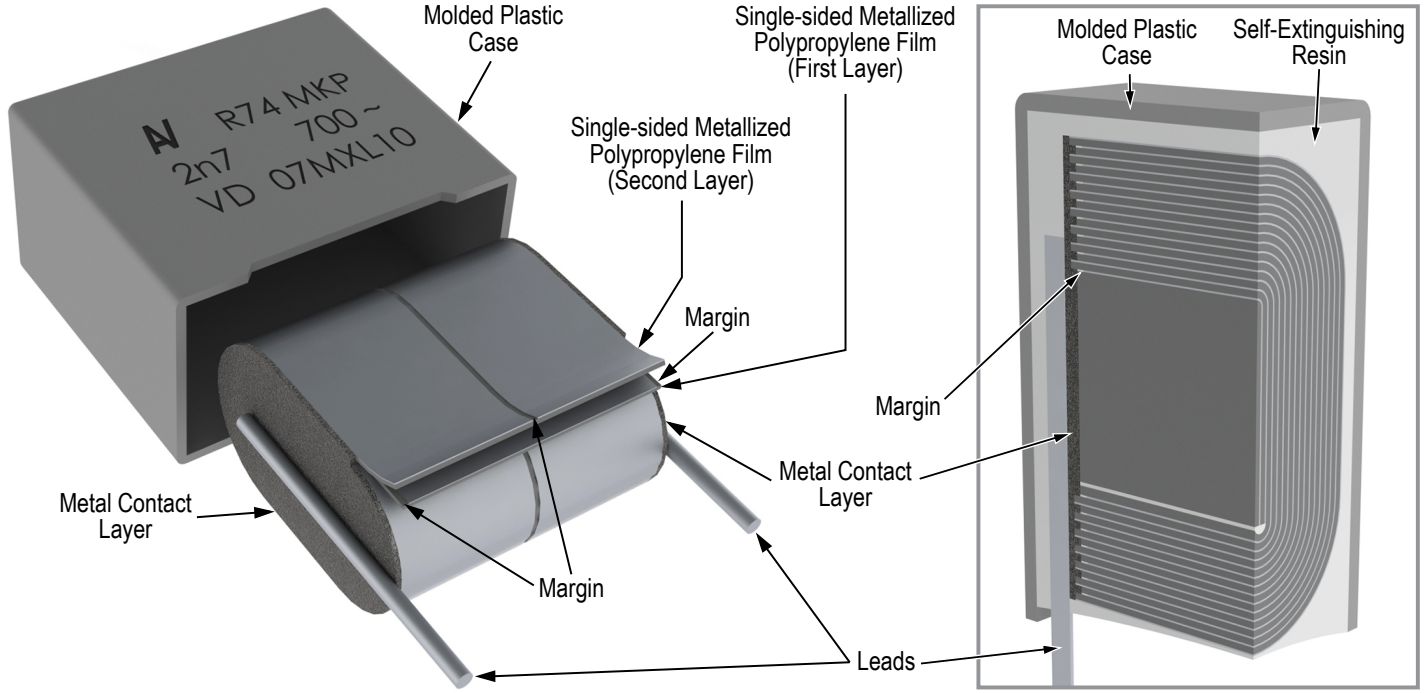
Selective Soldering Recommendations

Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

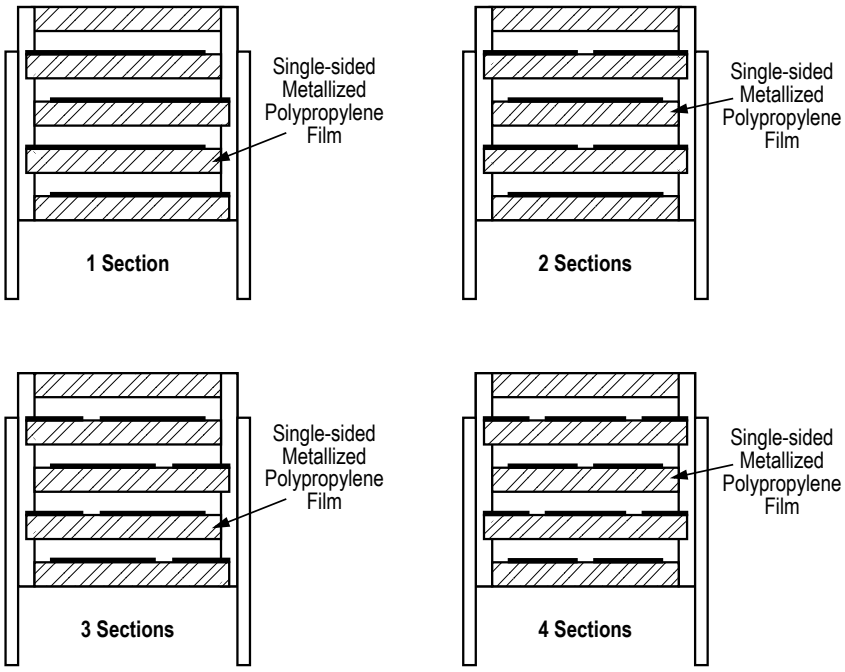
Construction

2 Sections

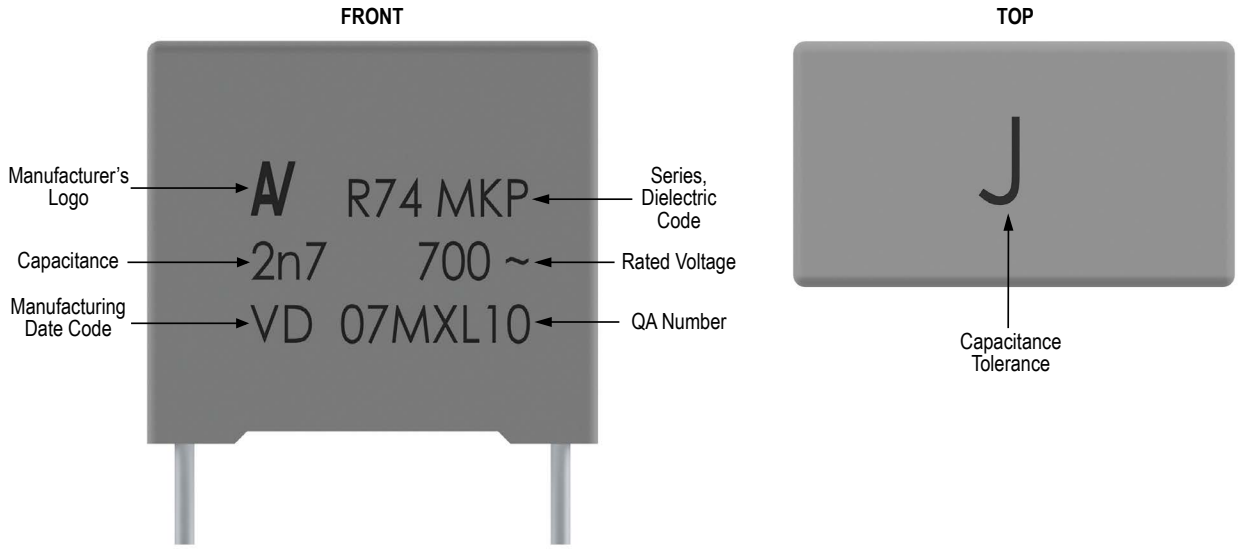


Detailed Cross Section

Winding Schemes



Marking

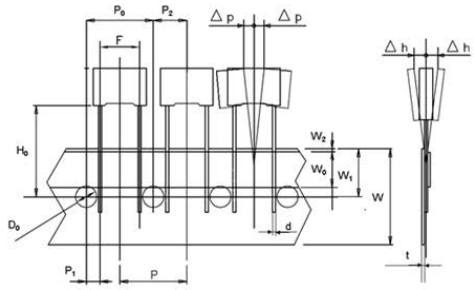

FRONT
TOP
Manufacturer's Logo
R74 MKP
Series, Dielectric Code
Capacitance
2n7
700 ~
Rated Voltage
Manufacturing Date Code
VD 07MXL10
QA Number
J
Capacitance Tolerance

Packaging Quantities

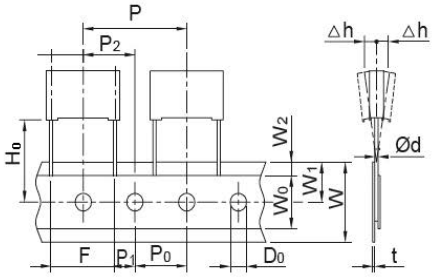
Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Large Reel ø 500 mm	Ammo Taped
10	4.0	9.0	13.0	2,000	1,800	750	1,500	1,000
	5.0	11.0	13.0	1,300	1,500	600	1,250	800
	6.0	12.0	13.0	1,000	1,200	500	1,000	680
15	4.0	10.0	18.0	2,500	1,500	-	1,500	1,000
	5.0	11.0	18.0	2,000	1,000	600	1,250	800
	6.0	12.0	18.0	1,750	900	500	1,000	680
	7.5	13.5	18.0	1,000	700	350	800	500
	8.5	14.5	18.0	1,000	500	300	700	440
	9.0	12.5	18.0	1,000	520	270	650	410
	10.0	16.0	18.0	750	500	300	600	380
	11.0	19.0	18.0	450	350	-	500	340
	13.0	12.0	18.0	750	490	200	480	280
22.5	6.0	15.0	26.5	805	500		700	464
	7.0	16.0	26.5	700	500		550	380
	8.5	17.0	26.5	468	300		450	280
	10.0	18.5	26.5	396	300		350	235
	11.0	20.0	26.5	360	250		350	217
	13.0	22.0	26.5	300	200		300	-
27.5	9.0	17.0	32.0	816	408		450	
	11.0	20.0	32.0	560	336		350	
	13.0	22.0	32.0	480	288		300	
	14.0	28.0	32.0	352	176			
	18.0	33.0	32.0	256	128			
	22.0	37.0	32.0	168	112			
37.5	11.0	22.0	41.5	420	252			
	13.0	24.0	41.5	360	216			
	16.0	28.5	41.5	216	108			
	19.0	32.0	41.5	192	96			
	20.0	40.0	41.5	126	84			
	24.0	44.0	41.5	108	72			
	30.0	45.0	41.5	90	60			

Lead Taping & Packaging (IEC 60286–2)

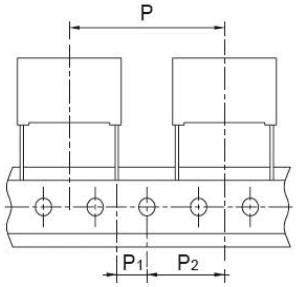
Lead Spacing 7.5 mm



Lead Spacing 10 & 15 mm



Lead Spacing 22.5 & 27.5



Taping Specification

Description	Symbol	Dimensions (mm)				
		Lead Spacing				Tolerance
		10.0	15.0	22.5	27.5	
Lead wire diameter	d	0.6	0.6 - 0.8	0.8	0.8	±0.05
Taping lead space	P	25.4	25.4	38.1	38.1	±1
Feed hole lead space *	P_0	12.7	12.7	12.7	12.7	±0.2 **
Centering of the lead wire	P_1	7.7	5.2	7.8	5.3	±0.7
Centering of the body	P_2	12.7	12.7	19.05	19.05	±1.3
Lead spacing ***	F	10.0	15.0	22.5	27.5	+0.6/-0.1
Component alignment	Δh	0	0	0	0	±2
Component deviation	Δp	0	0	0	0	±1
Height of component from tape center	H_0****	18.5	18.5	18.5	18.5	±0.5
Carrier tape width	W	18	18	18	18	+1/-0.5
Hold down tape width	W_0	9	10	10	10	Minimum
Hole position	W_1	9	9	9	9	±0.5
Hold down tape position	W_2	3	3	3	3	Maximum
Feed hole diameter	D_0	4	4	4	4	±0.2
Tape thickness	t	0.7	0.7	0.7	0.7	±0.2

** Available also 15 mm.*

*** Maximum 1 mm on 20 lead spacing.*

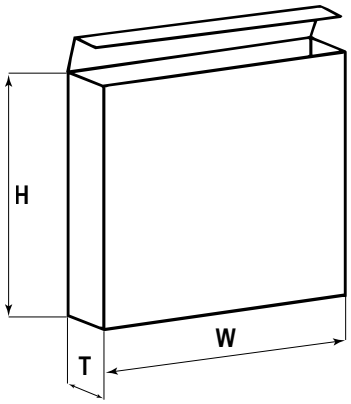
**** 15 mm and 10 mm taped to 7.5 mm (crimped leads) available upon request.*

***** H_0 = 16.5 mm is available upon request.*

Lead Taping & Packaging (IEC 60286–2) cont'd

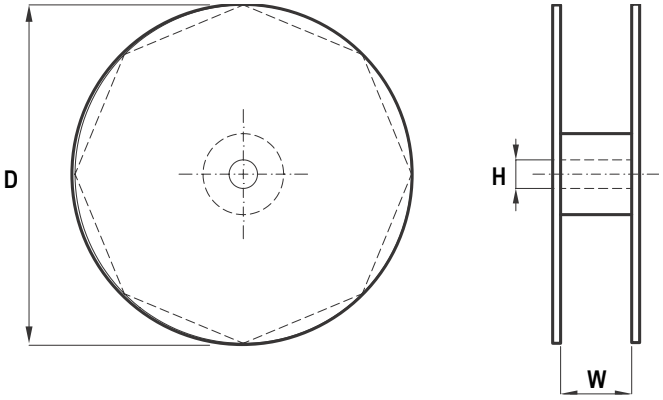
Ammo Specifications

Dimensions (mm)		
H	W	T
360	340	59



Reel Specifications

Dimensions (mm)		
D	H	W
355 500	30 25	55 Maximum



Manufacturing Date Code (IEC–60062)

Y = Year, Z = Month			
Year	Code	Month	Code
2000	M	January	1
2001	N	February	2
2002	P	March	3
2003	R	April	4
2004	S	May	5
2005	T	June	6
2006	U	July	7
2007	V	August	8
2008	W	September	9
2009	X	October	O
2010	A	November	N
2011	B	December	D
2012	C		
2013	D		
2014	E		
2015	F		
2016	H		
2017	J		
2018	K		
2019	L		
2020	M		

R74 Series 125°C Single Metallized Polypropylene Film, Radial, AC Applications (Automotive Grade)

Overview

The R74 Series 125°C is constructed of metallized polypropylene film with radial leads of tinned wire. The radial leads are electrically welded to the metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing solvent resistant plastic case with thermosetting resin material meeting the UL 94V–0 requirements. Two different winding constructions are used depending on voltage parameters. Please see the Performance Characteristics for more information.

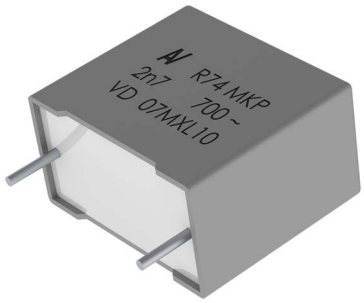
Automotive grade devices are available and meet the demanding Automotive Electronics Council's AEC–Q200 qualification requirements.

Applications

Typical applications include electronic lighting such as automotive headlamps and ballasts, as well as pulse applications with high AC voltage and high current. Not suitable for across-the-line application (see Suppressor Capacitors).

Benefits

- Voltage range: 500 – 700 VAC
- Capacitance range: 470 pF – 0.018 µF
- Lead Spacing: 10.0 – 22.5 mm
- Capacitance tolerance: ±5%, ±10%
- Climatic category: 55/125/56 IEC 60068-1
- Operating temperature range of -55˚C to +125˚C
- RoHS compliance and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–2
- Self-healing
- Automotive (AEC–Q200) grades available



Part Number System

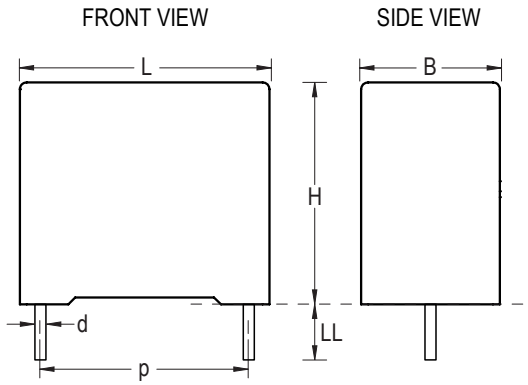
R74	5	F	1100	AA	H0	J
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Packaging	Internal Use	Capacitance Tolerance
Metallized Polypropylene	5 = 500 7 = 700	F = 10 I = 15 N = 22.5	The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.	See Ordering Options Table	H0 H1 H3 (Hx = 125°C)	J = ±5% K = ±10%

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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
10 15 22.5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	AA
	Ammo Pack	H_0= 18.5 +/-0.5	DQ
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel)	H_0=18.5 +/- 0.5	GY
	Tape & Reel (Large Reel)	H_0=18.5 +/- 0.5	CK
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag)–Long Leads	25 +2/-1	50

Dimensions – Millimeters



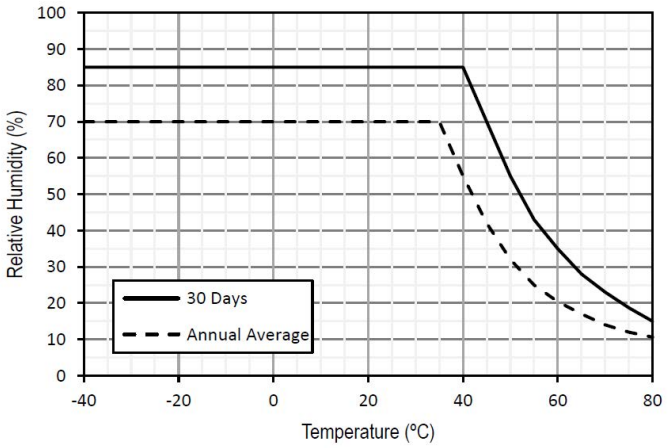
p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
10.0	+/- 0.4	4.0	+0.2	9.0	+0.1	13.0	+0.2	0.6	+/- 0.05
10.0	+/- 0.4	5.0	+0.2	11.0	+0.1	13.0	+0.2	0.6	+/- 0.05
10.0	+/-0.4	6.0	+0.2	12.0	+0.1	13.0	+0.2	0.6	+/- 0.05
15.0	+/- 0.4	4.0	+0.2	10.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	5.0	+0.2	11.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	6.0	+0.2	12.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	7.5	+0.2	13.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	8.5	+0.2	14.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	9.0	+0.2	12.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	10.0	+0.2	16.0	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	11.0	+0.2	19.0	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	13.0	+0.2	12.0	+0.1	18.0	+0.5	0.8	+/- 0.05
22.5	+/- 0.4	6.0	+0.2	15.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	7.0	+0.2	16.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	8.5	+0.2	17.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	10.0	+0.2	18.5	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	11.0	+0.2	20.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	13.0	+0.2	22.0	+0.1	26.5	+0.3	0.8	+/- 0.05

Note: See Ordering Options Table for lead length (LL/Ho) options.

Performance Characteristics

Dielectric	Polypropylene film	
Plates	Metal layer deposited by evaporation under vacum	
Winding	Non-inductive type	
Leads	Tinned wire	
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.	
Related Documents	IEC 60384-16, IEC 60384-17	
Sections	2	3
Voltage Range (VAC)	500	700
Voltage Range (VDC)	1600	2000
Capacitance Range (µF)	0.001 – 0.1	0.00068 – 0.068
Capacitance Values	E12 series (IEC 60063) measured @ 1 kHz and +20 ±1°C	
Capacitance Tolerance	±5%, ±10%	
Category Temperature Range	-55°C to +125°C	
Rated Temperature T_R	+105°C	
Voltage Derating	Above +105°C DC and AC voltage derating is 1.25%/°C	
Climatic Category	55/125/56 IEC 60068-1	
Storage Conditions	Storage time: ≤ 24 months from the date marked on the label package	
	Average relative humidity per year ≤ 70%	
	RH ≤ 85% for 30 days randomly distributed throughout the year	
	Dew is absent	
	Temperature: -40 to 80°C (see “Maximum Humidity in Storage Conditions” graph below)	

Maximum Humidity in Storage Conditions



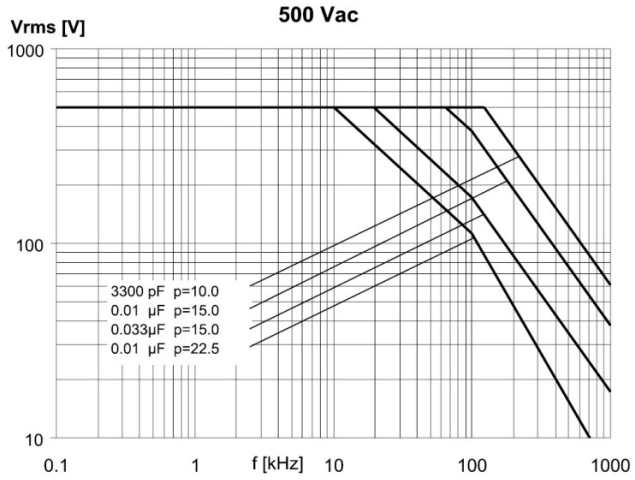
Performance Characteristics cont'd

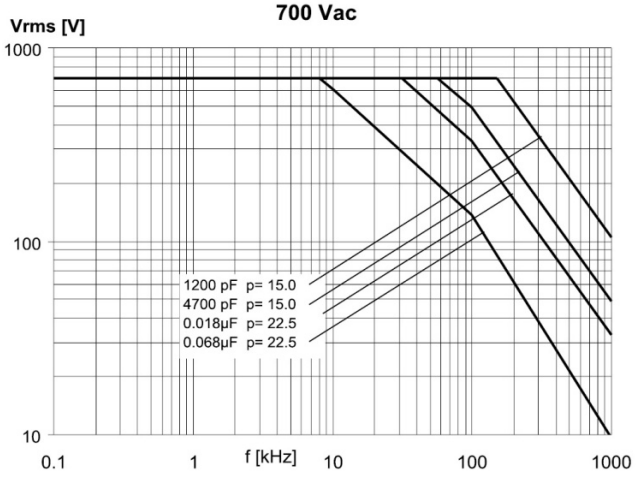
Test Voltage	1.6 x V_R VDC for 2 seconds (between terminations) @ +25°C ±5°C			
Capacitance Drift	Maximum 1% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%			
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp<V_R), the specified dv/dt can be multiplied by the factor V_R/Vpp			
Temperature Coefficient	-(200 ±100) ppm/°C at 1 kHz			
Self Inductance (Lead Length ~ 2 mm)	Lead Spacing (mm)	10	15	22.5
	L (nH) ≈	9	10	18
	Maximum 1 nH per 1 mm lead and capacitor length.			
Dissipation Factor tanδ	Measured at 25°C ± 5°C			
	Frequency	C ≤ 2.2 nF	2.2 nF < C ≤ 0.027 µF	0.027 µF < C ≤ 0.1 µF
	1 kHz	0.01%	0.01%	0.04%
	10 kHz	0.02%	0.02%	0.06%
	100 kHz	0.03%	0.08%	0.25%
Insulation Resistance	Measured @ +25°C ±5°C, 100 VDC 60 seconds			
	Minimum Values Between Terminals			
	All Capacitance Values			
	≥ 100,000 MΩ			

Qualification

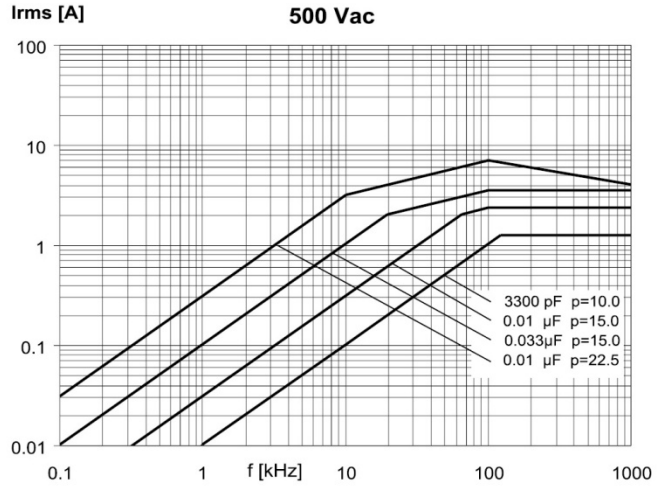
Automotive Grade products meet or exceed the requirements outlined by the Automotive Electronics Council. Details regarding test methods and conditions are referenced in document AEC–Q200, Stress Test Qualification for Passive Components. For additional information regarding the Automotive Electronics Council and AEC–Q200, please visit their website at www.aecouncil.com.

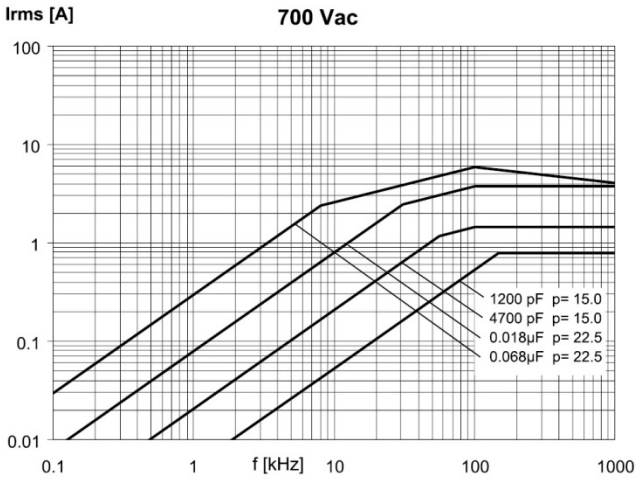
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 85ºC)





Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 85ºC)





Environmental Test Data

Damp Heat, Steady State Test	Test Conditions:		Performances
	Temperature: Relative humidity (RH): Test duration:	+40°C ±2°C 93% ±2% 56 days	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.001 @ 1 kHz IR after test ≥ 50% of initial limit
Endurance Test	**Test Conditions**		**Performances**
Test 1st	Temperature: Voltage applied: Test duration:	+125°C +0/-2°C 0.94 x V_R (AC) @ 50Hz 2,000 hours	|Δ C/C| ≤ 5%, Δ tanδ ≤ 0.0015 @ 1 kHz IR after test ≥ 50% of initial limit
Test 2nd	Temperature: Voltage applied: Test duration:	+105°C ±2°C 1.25 x V_R (AC) @ 50Hz 2,000 hours	
Resistance to Soldering Heat Test	**Test Conditions**		**Performances**
	Solder bath temperature: Dipping time (with heat screen):	260°C ±5°C 10 seconds ±1 second	|Δ C/C| ≤ 1%, Δ tanδ ≤ 0.001 @ 1 kHz IR after test ≥ initial limit

Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VAC	VDC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
500	1,600	0.0010	4.0	9.0	13.0	10.0	6,000	19,200,000	745F1100(1)H0(2)	R745F1100(1)H0(2)
500	1,600	0.0012	4.0	9.0	13.0	10.0	6,000	19,200,000	745F1120(1)H0(2)	R745F1120(1)H0(2)
500	1,600	0.0015	4.0	9.0	13.0	10.0	6,000	19,200,000	745F1150(1)H0(2)	R745F1150(1)H0(2)
500	1,600	0.0018	5.0	11.0	13.0	10.0	6,000	19,200,000	745F1180(1)H0(2)	R745F1180(1)H0(2)
500	1,600	0.0022	5.0	11.0	13.0	10.0	6,000	19,200,000	745F1220(1)H0(2)	R745F1220(1)H0(2)
500	1,600	0.0027	5.0	11.0	13.0	10.0	6,000	19,200,000	745F1270(1)H0(2)	R745F1270(1)H0(2)
500	1,600	0.0033	6.0	12.0	13.0	10.0	6,000	19,200,000	745F1330(1)H0(2)	R745F1330(1)H0(2)
500	1,600	0.0039	6.0	12.0	13.0	10.0	6,000	19,200,000	745F1390(1)H0(2)	R745F1390(1)H0(2)
500	1,600	0.0027	4.0	10.0	18.0	15.0	4,500	14,400,000	745I1270(1)H3(2)	R745I1270(1)H3(2)
500	1,600	0.0033	4.0	10.0	18.0	15.0	4,500	14,400,000	745I1330(1)H3(2)	R745I1330(1)H3(2)
500	1,600	0.0039	4.0	10.0	18.0	15.0	4,500	14,400,000	745I1390(1)H3(2)	R745I1390(1)H3(2)
500	1,600	0.0047	5.0	11.0	18.0	15.0	4,500	14,400,000	745I1470(1)H0(2)	R745I1470(1)H0(2)
500	1,600	0.0056	5.0	11.0	18.0	15.0	4,500	14,400,000	745I1560(1)H0(2)	R745I1560(1)H0(2)
500	1,600	0.0068	6.0	12.0	18.0	15.0	4,500	14,400,000	745I1680(1)H0(2)	R745I1680(1)H0(2)
500	1,600	0.0082	6.0	12.0	18.0	15.0	4,500	14,400,000	745I1820(1)H0(2)	R745I1820(1)H0(2)
500	1,600	0.010	6.0	12.0	18.0	15.0	4,500	14,400,000	745I2100(1)H0(2)	R745I2100(1)H0(2)
500	1,600	0.012	7.5	13.5	18.0	15.0	4,500	14,400,000	745I2120(1)H0(2)	R745I2120(1)H0(2)
500	1,600	0.015	7.5	13.5	18.0	15.0	4,500	14,400,000	745I2150(1)H0(2)	R745I2150(1)H0(2)
500	1,600	0.015	13.0	12.0	18.0	15.0	4,500	14,400,000	745I2150(1)H1(2)	R745I2150(1)H1(2)
500	1,600	0.018	8.5	14.5	18.0	15.0	4,500	14,400,000	745I2180(1)H0(2)	R745I2180(1)H0(2)
500	1,600	0.018	13.0	12.0	18.0	15.0	4,500	14,400,000	745I2180(1)H1(2)	R745I2180(1)H1(2)
500	1,600	0.022	10.0	16.0	18.0	15.0	4,500	14,400,000	745I2220(1)H0(2)	R745I2220(1)H0(2)
500	1,600	0.022	13.0	12.0	18.0	15.0	4,500	14,400,000	745I2220(1)H1(2)	R745I2220(1)H1(2)
500	1,600	0.027	10.0	16.0	18.0	15.0	4,500	14,400,000	745I2270(1)H0(2)	R745I2270(1)H0(2)
500	1,600	0.033	11.0	19.0	18.0	15.0	4,500	14,400,000	745I2330(1)H0(2)	R745I2330(1)H0(2)
500	1,600	0.018	6.0	15.0	26.5	22.5	1,200	3,840,000	745N2180(1)H0(2)	R745N2180(1)H0(2)
500	1,600	0.022	6.0	15.0	26.5	22.5	1,200	3,840,000	745N2220(1)H0(2)	R745N2220(1)H0(2)
500	1,600	0.027	7.0	16.0	26.5	22.5	1,200	3,840,000	745N2270(1)H0(2)	R745N2270(1)H0(2)
500	1,600	0.033	7.0	16.0	26.5	22.5	1,200	3,840,000	745N2330(1)H0(2)	R745N2330(1)H0(2)
500	1,600	0.039	8.5	17.0	26.5	22.5	1,200	3,840,000	745N2390(1)H0(2)	R745N2390(1)H0(2)
500	1,600	0.047	10.0	18.5	26.5	22.5	1,200	3,840,000	745N2470(1)H0(2)	R745N2470(1)H0(2)
500	1,600	0.056	10.0	18.5	26.5	22.5	1,200	3,840,000	745N2560(1)H0(2)	R745N2560(1)H0(2)
500	1,600	0.068	11.0	20.0	26.5	22.5	1,200	3,840,000	745N2680(1)H0(2)	R745N2680(1)H0(2)
500	1,600	0.082	13.0	22.0	26.5	22.5	1,200	3,840,000	745N2820(1)H0(2)	R745N2820(1)H0(2)
500	1,600	0.10	13.0	22.0	26.5	22.5	1,200	3,840,000	745N3100(1)H0(2)	R745N3100(1)H0(2)
700	2,000	0.00068	4.0	10.0	18.0	15.0	9,500	38,000,000	747I0680(1)H3(2)	R747I0680(1)H3(2)
700	2,000	0.00082	4.0	10.0	18.0	15.0	9,500	38,000,000	747I0820(1)H3(2)	R747I0820(1)H3(2)
700	2,000	0.0010	4.0	10.0	18.0	15.0	9,500	38,000,000	747I1100(1)H3(2)	R747I1100(1)H3(2)
700	2,000	0.0012	4.0	10.0	18.0	15.0	9,500	38,000,000	747I1120(1)H3(2)	R747I1120(1)H3(2)
700	2,000	0.0013	4.0	10.0	18.0	15.0	9,500	38,000,000	747I1130(1)H3(2)	R747I1130(1)H3(2)
700	2,000	0.0018	4.0	10.0	18.0	15.0	9,500	38,000,000	747I1180(1)H3(2)	R747I1180(1)H3(2)
700	2,000	0.0022	4.0	10.0	18.0	15.0	9,500	38,000,000	747I1220(1)H3(2)	R747I1220(1)H3(2)
700	2,000	0.0025	4.0	10.0	18.0	15.0	9,500	38,000,000	747I1250(1)H3(2)	R747I1250(1)H3(2)
700	2,000	0.0027	5.0	11.0	18.0	15.0	9,500	38,000,000	747I1270(1)H0(2)	R747I1270(1)H0(2)
700	2,000	0.0033	5.0	11.0	18.0	15.0	9,500	38,000,000	747I1330(1)H0(2)	R747I1330(1)H0(2)
700	2,000	0.0036	6.0	12.0	18.0	15.0	9,500	38,000,000	747I1360(1)H0(2)	R747I1360(1)H0(2)
700	2,000	0.0039	6.0	12.0	18.0	15.0	9,500	38,000,000	747I1390(1)H0(2)	R747I1390(1)H0(2)
700	2,000	0.0043	6.0	12.0	18.0	15.0	9,500	38,000,000	747I1430(1)H0(2)	R747I1430(1)H0(2)
700	2,000	0.0047	6.0	12.0	18.0	15.0	9,500	38,000,000	747I1470(1)H0(2)	R747I1470(1)H0(2)
700	2,000	0.0052	6.0	12.0	18.0	15.0	9,500	38,000,000	747I1520(1)H0(2)	R747I1520(1)H0(2)
700	2,000	0.0056	6.0	12.0	18.0	15.0	9,500	38,000,000	747I1560(1)H0(2)	R747I1560(1)H0(2)
700	2,000	0.0062	7.5	13.5	18.0	15.0	9,500	38,000,000	747I1620(1)H0(2)	R747I1620(1)H0(2)
700	2,000	0.0068	7.5	13.5	18.0	15.0	9,500	38,000,000	747I1680(1)H0(2)	R747I1680(1)H0(2)
700	2,000	0.0082	7.5	13.5	18.0	15.0	9,500	38,000,000	747I1820(1)H0(2)	R747I1820(1)H0(2)
700	2,000	0.0082	9.0	12.5	18.0	15.0	9,500	38,000,000	747I1820(1)H1(2)	R747I1820(1)H1(2)
700	2,000	0.010	8.5	14.5	18.0	15.0	9,500	38,000,000	747I2100(1)H0(2)	R747I2100(1)H0(2)
700	2,000	0.010	13.0	12.0	18.0	15.0	9,500	38,000,000	747I2100(1)H1(2)	R747I2100(1)H1(2)
700	2,000	0.012	10.0	16.0	18.0	15.0	9,500	38,000,000	747I2120(1)H0(2)	R747I2120(1)H0(2)
700	2,000	0.012	13.0	12.0	18.0	15.0	9,500	38,000,000	747I2120(1)H1(2)	R747I2120(1)H1(2)
700	2,000	0.015	10.0	16.0	18.0	15.0	9,500	38,000,000	747I2150(1)H0(2)	R747I2150(1)H0(2)
VAC	VDC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%.

Table 1 – Ratings & Part Number Reference cont'd

VAC	VDC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
700	2,000	0.018	11.0	19.0	18.0	15.0	9,500	38,000,000	747I2180(1)H0(2)	R747I2180(1)H0(2)
700	2,000	0.0062	6.0	15.0	26.5	22.5	4,500	18,000,000	747N1620(1)H0(2)	R747N1620(1)H0(2)
700	2,000	0.0068	6.0	15.0	26.5	22.5	4,500	18,000,000	747N1680(1)H0(2)	R747N1680(1)H0(2)
700	2,000	0.0075	6.0	15.0	26.5	22.5	4,500	18,000,000	747N1750(1)H0(2)	R747N1750(1)H0(2)
700	2,000	0.0082	6.0	15.0	26.5	22.5	4,500	18,000,000	747N1820(1)H0(2)	R747N1820(1)H0(2)
700	2,000	0.010	6.0	15.0	26.5	22.5	4,500	18,000,000	747N2100(1)H0(2)	R747N2100(1)H0(2)
700	2,000	0.012	6.0	15.0	26.5	22.5	4,500	18,000,000	747N2120(1)H0(2)	R747N2120(1)H0(2)
700	2,000	0.015	6.0	15.0	26.5	22.5	4,500	18,000,000	747N2150(1)H0(2)	R747N2150(1)H0(2)
700	2,000	0.018	7.0	16.0	26.5	22.5	4,500	18,000,000	747N2180(1)H0(2)	R747N2180(1)H0(2)
700	2,000	0.022	8.5	17.0	26.5	22.5	4,500	18,000,000	747N2220(1)H0(2)	R747N2220(1)H0(2)
700	2,000	0.027	8.5	17.0	26.5	22.5	4,500	18,000,000	747N2270(1)H0(2)	R747N2270(1)H0(2)
700	2,000	0.033	10.0	18.5	26.5	22.5	4,500	18,000,000	747N2330(1)H0(2)	R747N2330(1)H0(2)
700	2,000	0.039	10.0	18.5	26.5	22.5	4,500	18,000,000	747N2390(1)H0(2)	R747N2390(1)H0(2)
700	2,000	0.047	11.0	20.0	26.5	22.5	4,500	18,000,000	747N2470(1)H0(2)	R747N2470(1)H0(2)
700	2,000	0.056	13.0	22.0	26.5	22.5	4,500	18,000,000	747N2560(1)H0(2)	R747N2560(1)H0(2)
700	2,000	0.062	13.0	22.0	26.5	22.5	4,500	18,000,000	747N2620(1)H0(2)	R747N2620(1)H0(2)
700	2,000	0.068	13.0	22.0	26.5	22.5	4,500	18,000,000	747N2680(1)H0(2)	R747N2680(1)H0(2)
VAC	**VDC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%.

Soldering Process

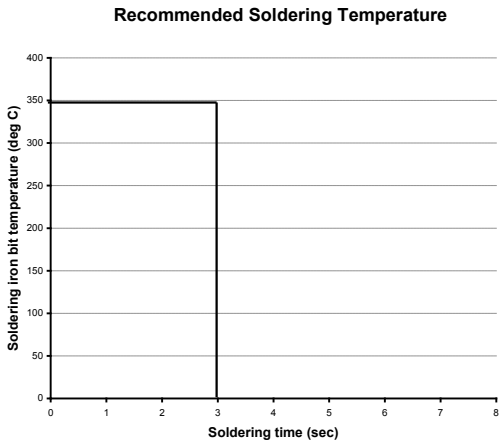
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

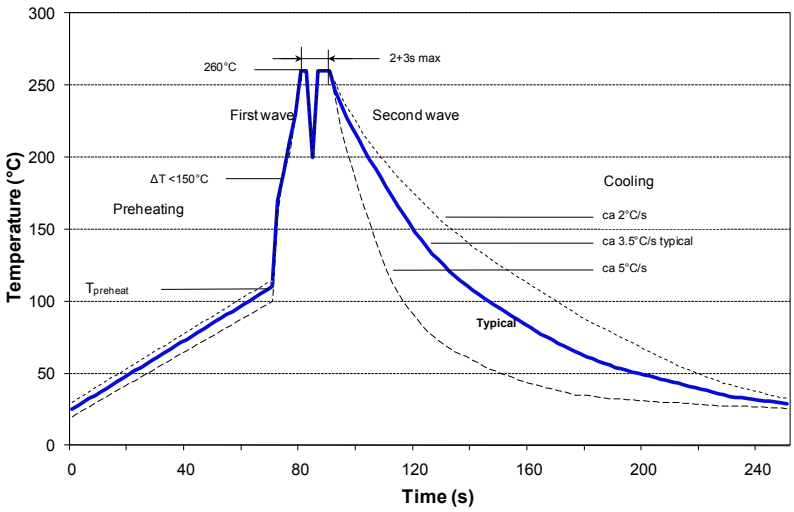
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

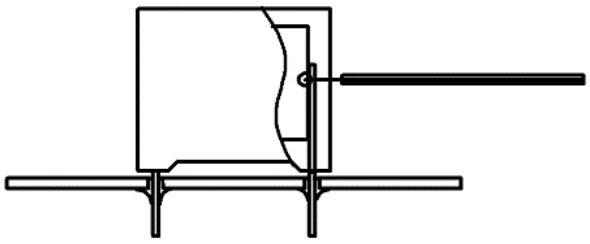
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



Temperature monitored inside the capacitor.

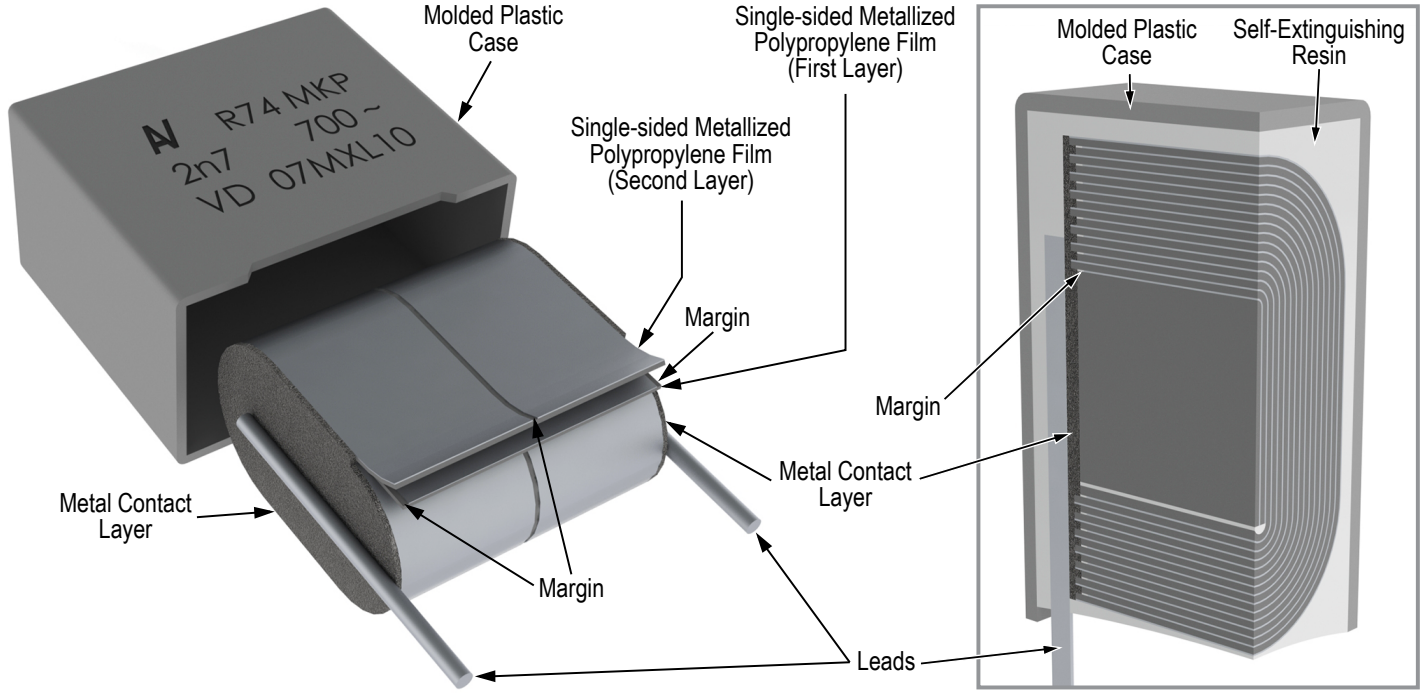
Selective Soldering Recommendations

Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

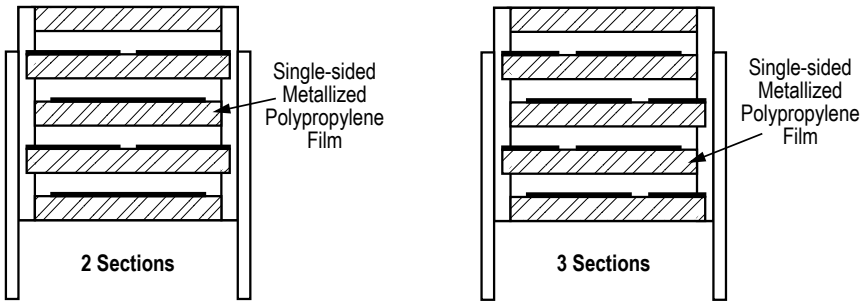
Construction

2 Sections



Detailed Cross Section

Winding Schemes



Packaging Quantities

Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Large Reel ø 500 mm	Ammo Taped
10	4.0	9.0	13.0	2,000	1,800	750	1,500	1,000
	5.0	11.0	13.0	1,300	1,500	600	1,250	800
	6.0	12.0	13.0	1,000	1,200	500	1,000	680
15	4.0	10.0	18.0	2,500	1,500	-	1,500	1,000
	5.0	11.0	18.0	2,000	1,000	600	1,250	800
	6.0	12.0	18.0	1,750	900	500	1,000	680
	7.5	13.5	18.0	1,000	700	350	800	500
	8.5	14.5	18.0	1,000	500	300	700	440
	9.0	12.5	18.0	1,000	520	270	650	410
	10.0	16.0	18.0	750	500	300	600	380
	11.0	19.0	18.0	450	350	-	500	340
	13.0	12.0	18.0	750	490	200	480	280
22.5	6.0	15.0	26.5	805	500		700	464
	7.0	16.0	26.5	700	500		550	380
	8.5	17.0	26.5	468	300		450	280
	10.0	18.5	26.5	396	300		350	235
	11.0	20.0	26.5	360	250		350	217
	13.0	22.0	26.5	300	200		300	-
27.5	9.0	17.0	32.0	816	408		450	
	11.0	20.0	32.0	560	336		350	
	13.0	22.0	32.0	480	288		300	
	14.0	28.0	32.0	352	176			
	18.0	33.0	32.0	256	128			
	22.0	37.0	32.0	168	112			
37.5	11.0	22.0	41.5	420	252			
	13.0	24.0	41.5	360	216			
	16.0	28.5	41.5	216	108			
	19.0	32.0	41.5	192	96			
	20.0	40.0	41.5	126	84			
	24.0	44.0	41.5	108	72			
	30.0	45.0	41.5	90	60			

R75 Series Single Metallized Polypropylene Film, Radial, DC and Pulse Applications (Automotive Grade)

Overview

The R75 Series is constructed of metallized polypropylene film with radial leads of tinned wire. The radial leads are electrically welded to the metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing solvent resistant plastic case with thermosetting resin material meeting the UL 94V–0 requirements. Two different winding constructions are used depending on voltage parameters and lead spacing. Please see the Performance Characteristics for more information.

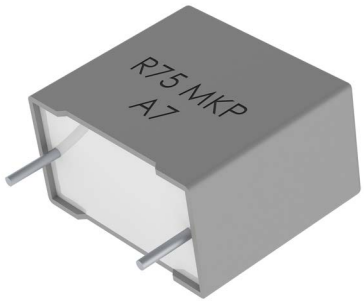
Automotive grade devices are available (up to lead spacing 22.5 mm) and meet the demanding Automotive Electronics Council's AEC–Q200 qualification requirements.

Applications

Typical applications include deflection circuits in televisions (S-correction), resonant capacitor in electronic ballast and compact lamp, power factor correction and coupling capacitor in switched mode power supply (SMPS), timing and oscillator circuits. Not suitable for across-the-line application (see Suppressor Capacitors).

Benefits

- Voltage range: 160 – 2,000 VDC
- Capacitance range: 220 pF – 33 µF
- Lead Spacing: 7.5 – 37.5 mm
- Capacitance tolerance: ±5%, ±10%, ±20%
- Climatic category: 55/105/56 IEC 60068-1
- Operating temperature range of -55˚C to +105˚C
- RoHS compliance and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–2
- Self-healing
- Automotive (AEC–Q200) grades available up to lead spacing 22.5mm



Part Number System

R75	P	N	2820	AA	30	K
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Packaging	Internal Use	Capacitance Tolerance
Metallized Polypropylene	G = 160 I = 250 M = 400 P = 630 Q = 1,000 R = 1,250 T = 1,600 U = 2,000	D = 7.5 F = 10 I = 15 N = 22.5 R = 27.5 W = 37.5	The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.	See Ordering Options Table	00 10 30 40 50 60 70 80	J = ±5% K = ±10% M = ±20%

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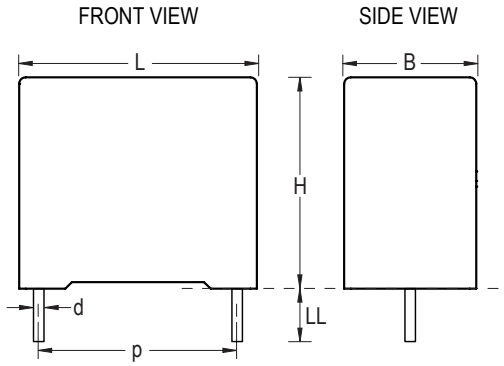
Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
7.5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	AA
	Ammo Pack	H_0= 18.5 +/-0.5	DQ
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel)	H_0=18.5 +/- 0.5	CK
	Bulk (Bag)–Short Leads	2.7 +0.5/-0	JA
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	10 +/- 1	JC
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	17 +1/-2	Z3
10 15 22.5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	AA
	Ammo Pack	H_0= 18.5 +/-0.5	DQ
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel)	H_0=18.5 +/- 0.5	GY
	Tape & Reel (Large Reel)	H_0=18.5 +/- 0.5	CK
	Bulk (Bag)–Short Leads	2.7 +0.5/-0	JA
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	10 +/- 1	JC
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag)–Long Leads	25 +2/-1	50
27.5	**Standard Lead and Packaging Options**		
	Bulk (Bag)–Short Leads	4 +2/-0	AA
	Other Lead and Packaging Options		
	Tape & Reel (Large Reel)	H_0=18.5 +/-0.5	CK
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag) – Long Leads	25 +2/-1	50

Ordering Options Table cont'd

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
37.5	**Standard Lead and Packaging Options**		
	Bulk (Tray) – Straight Leads	4 +2/-0	AA
	Other Lead and Packaging Options		
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag) – Long Leads	25 +2/-1	50

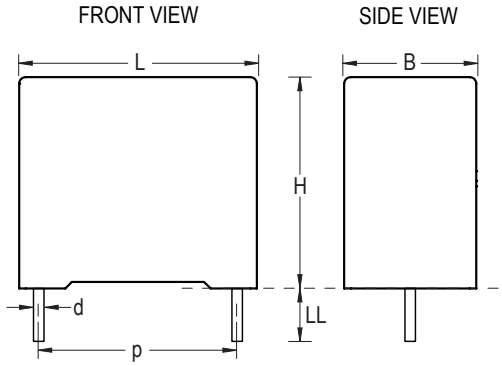
Dimensions – Millimeters



p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
7.5	+/- 0.4	3.0	+0.1	8.0	+0.1	10.0	+0.2	0.5	+/- 0.05
7.5	+/- 0.4	4.0	+0.1	9.0	+0.1	10.0	+0.2	0.5	+/- 0.05
7.5	+/- 0.4	5.0	+0.1	10.5	+0.1	10.0	+0.2	0.5	+/- 0.05
7.5	+/-0.4	6.0	+0.1	12.0	+0.1	10.0	+0.2	0.5	+/- 0.05
10.0	+/- 0.4	4.0	+0.2	9.0	+0.1	13.0	+0.2	0.6	+/- 0.05
10.0	+/- 0.4	5.0	+0.2	11.0	+0.1	13.0	+0.2	0.6	+/- 0.05
10.0	+/-0.4	6.0	+0.2	12.0	+0.1	13.0	+0.2	0.6	+/- 0.05
15.0	+/- 0.4	4.0	+0.2	10.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	5.0	+0.2	11.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	6.0	+0.2	12.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	7.5	+0.2	13.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	8.5	+0.2	14.5	+0.1	18.0	+0.5	0.8	+/- 0.05

Note: See Ordering Options Table for lead length (LL/Ho) options.

Dimensions – Millimeters



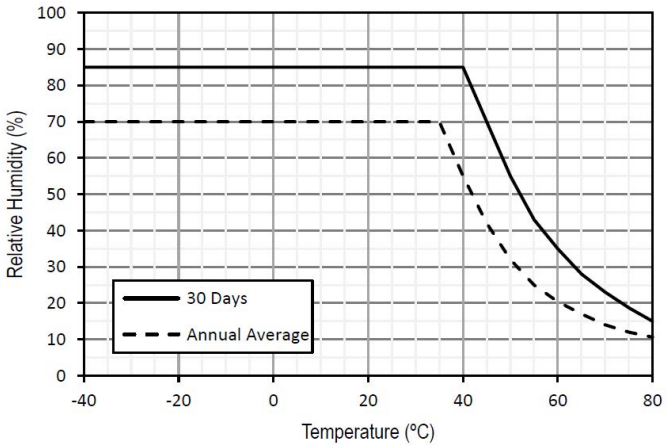
p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
15.0	+/- 0.4	9.0	+0.2	12.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	10.0	+0.2	16.0	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	11.0	+0.2	19.0	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	13.0	+0.2	12.0	+0.1	18.0	+0.5	0.8	+/- 0.05
22.5	+/- 0.4	6.0	+0.2	15.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	7.0	+0.2	16.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	8.5	+0.2	17.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	10.0	+0.2	18.5	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	11.0	+0.2	20.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	13.0	+0.2	22.0	+0.1	26.5	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	9.0	+0.2	17.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	11.0	+0.2	20.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	13.0	+0.2	22.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	13.0	+0.2	25.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	14.0	+0.2	28.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	18.0	+0.2	33.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	22.0	+0.2	37.0	+0.1	32.0	+0.3	0.8	+/- 0.05
37.5	+/- 0.4	11.0	+0.3	22.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	13.0	+0.3	24.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	16.0	+0.3	28.5	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	19.0	+0.3	32.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	20.0	+0.3	40.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	24.0	+0.3	44.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	30.0	+0.3	45.0	+0.1	41.5	+0.3	1.0	+/- 0.05

Note: See Ordering Options Table for lead length (LL/Ho) options.

Performance Characteristics

Dielectric	Polypropylene film												
Plates	Metal layer deposited by evaporation under vacuum												
Winding	Non-inductive type												
Leads	Tinned wire												
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.												
Related Documents	IEC 60384-16												
Sections	1									3			
Rated Voltage V_R (VDC)	160	160	250	250	400	400	630	630	1000	1000	1250	1600	2000
Rated Voltage V_R (VAC)	70	90	140	160	200	220	220	250	250	400	600	650	700
Capacitance Range (µF)	0.1 – 0.33	0.068 – 33	0.068 – 0.22	0.027 – 33	0.027 – 0.068	0.01 – 15	0.01 – 0.027	0.001 – 8.2	0.012 – 3.9	0.00022 – 0.0082	0.0082 – 2.2	0.0039 – 1.5	0.001 – 1
Capacitance Values	E12 series (IEC 60063) measured @ 1 kHz and +20 ±1°C												
Capacitance Tolerance	±5%, ±10%, ±20%												
Operating Temperature Range	-55°C to +105°C												
Rated Temperature T_R	+85°C												
Voltage Derating	Above +85°C DC and AC voltage derating is 1.25%/°C												
Climatic Category	55/105/56 IEC 60068-1												
Storage Conditions	Storage time: ≤ 24 months from the date marked on the label package												
	Average relative humidity per year ≤ 70%												
	RH ≤ 85% for 30 days randomly distributed throughout the year												
	Dew is absent												
	Temperature: -40 to 80°C (see "Maximum Humidity in Storage Conditions" graph below)												

Maximum Humidity in Storage Conditions



Performance Characteristics cont'd

Test Voltage	1.6 x V_R VDC for 2 seconds (between terminations) @ +25°C ±5°C						
Capacitance Drift	Maximum 0.5% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%						
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp <V_R), the specified dv/dt can be multiplied by the factor V_R/Vpp						
Temperature Coefficient	-(200 ±100) ppm/°C at 1 kHz						
Self Inductance (Lead Length ~ 2 mm)	Lead Spacing (mm)	7.5	10	15	22.5	27.5	37.5
	L (nH) ≈	8	9	10	18	18	20
	Maximum 1 nH per 1 mm lead and capacitor length.						

Dissipation Factor tanδ	Maximum Values @ 25°C ±5°C				
	Frequency	C ≤ 0.1 µF	0.1 µF < C ≤ 1.0 µF	1.0 µF < C ≤ 4.7 µF	C > 4.7 µF
	1 kHz	0.04%	0.05%	0.06%	0.10%
	10 kHz	0.06%	0.08%	-	-
	100 kHz	0.25%	-	-	-

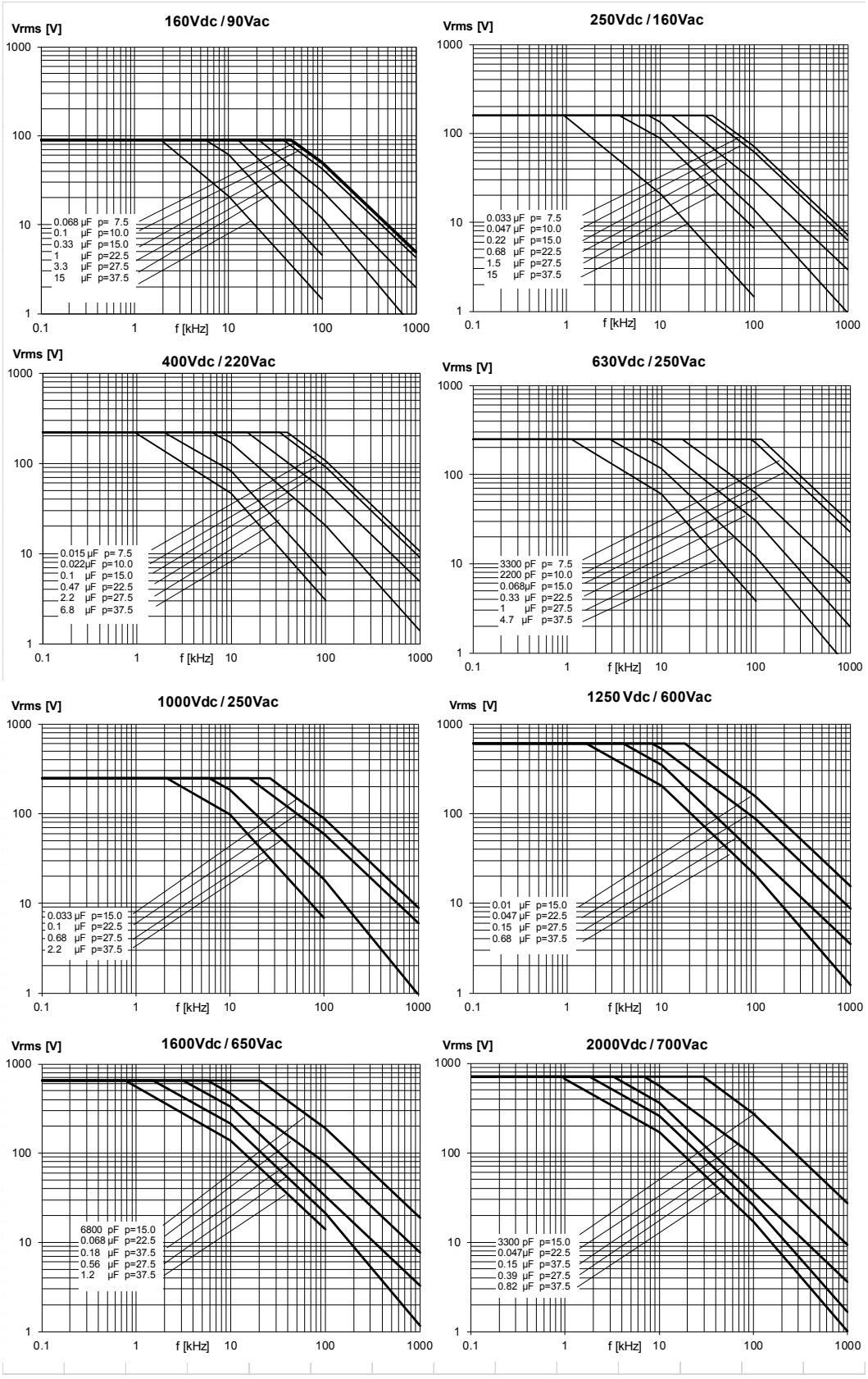
Insulation Resistance	Measured @ +25°C ±5°C, 100 VDC 60 seconds	
	Minimum Values Between Terminals	
	C ≤ 0.33 µF	C > 0.33 µF
	≥ 100,000 MΩ (≥ 500,000 MΩ)*	≥ 30,000 MΩ • µF (≥ 150,000 MΩ • µF)*

* typical value

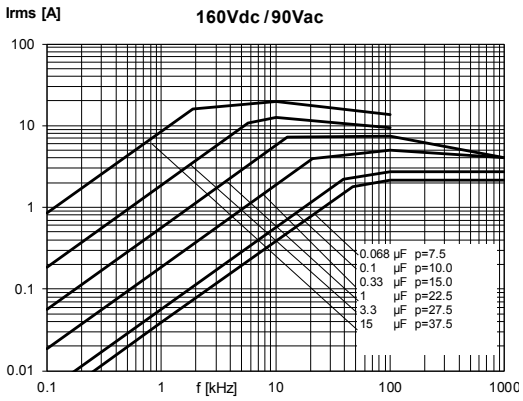
Qualification

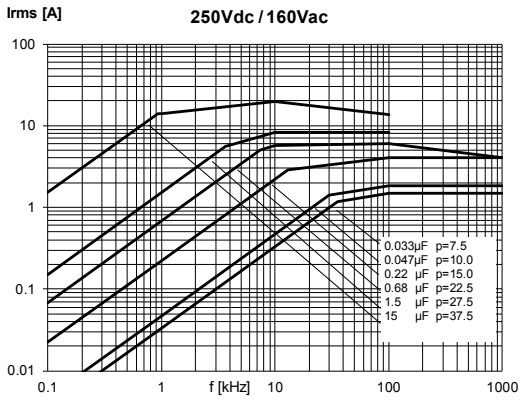
Automotive Grade products meet or exceed the requirements outlined by the Automotive Electronics Council. Details regarding test methods and conditions are referenced in document AEC–Q200, Stress Test Qualification for Passive Components. For additional information regarding the Automotive Electronics Council and AEC–Q200, please visit their website at www.aecouncil.com.

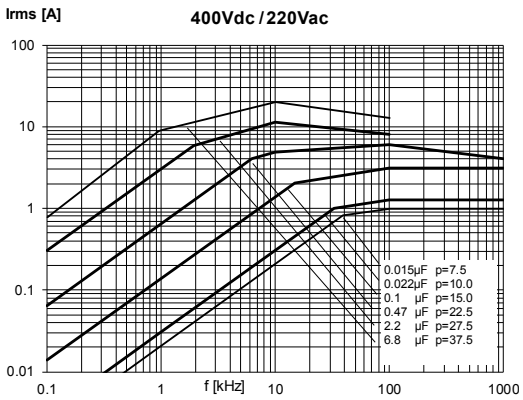
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40ºC)

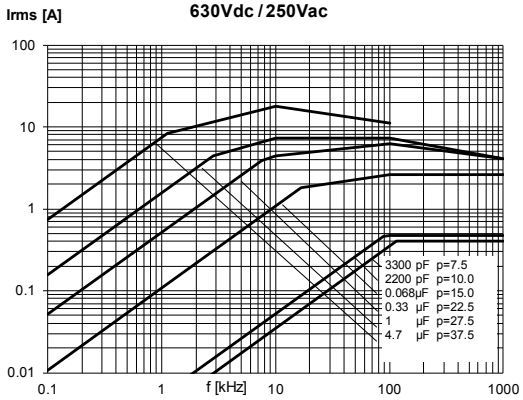


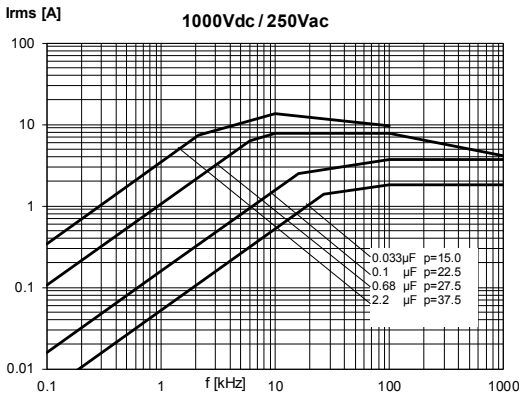
Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40ºC)

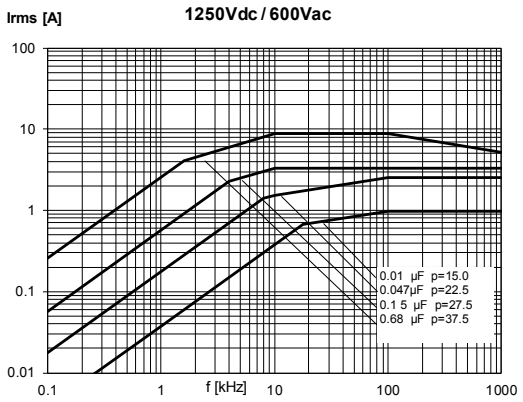


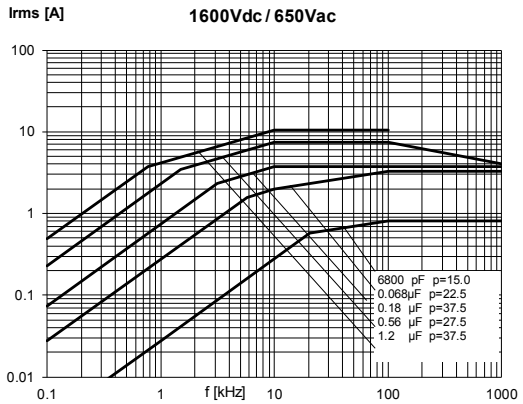


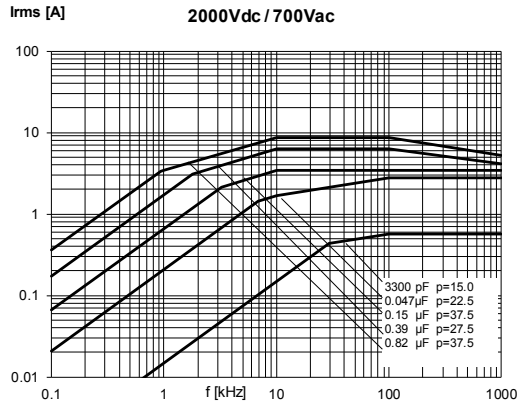












Environmental Test Data

Damp Heat, Steady State Test	Test Conditions:		Performances
	Temperature: Relative humidity (RH): Test duration:	+40°C ± 2°C 93% ± 2% 56 days	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.001 @ 1 kHz IR after test ≥ 50% of initial limit
Endurance Test	**Test Conditions**		**Performances**
	Temperature: Voltage applied: Test duration:	+85°C ±2°C 1.25 x V_R (DC) 2,000 hours	|Δ C/C| ≤ 3%, Δ tanδ ≤ 0.001 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.001 @ 1 kHz for C > 1µF IR after test ≥ 50% of initial limit
Resistance to Soldering Heat Test	**Test Conditions**		**Performances**
	Solder bath temperature: Dipping time (with heat screen):	260°C ±5°C 10 seconds ±1 second	|Δ C/C| ≤ 1%, Δ tanδ ≤ 0.001 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.001 @ 1 kHz for C > 1µF IR after test ≥ initial limit

Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
160	70	0.10	4.0	9.0	10.0	7.5	100	32,000	75GD3100(1)B0(2)	R75GD3100(1)B0(2)
160	70	0.12	5.0	10.5	10.0	7.5	100	32,000	75GD3120(1)B0(2)	R75GD3120(1)B0(2)
160	70	0.15	5.0	10.5	10.0	7.5	100	32,000	75GD3150(1)B0(2)	R75GD3150(1)B0(2)
160	70	0.18	6.0	12.0	10.5	7.5	100	32,000	75GD3180(1)A0(2)	R75GD3180(1)A0(2)
160	70	0.22	6.0	12.0	10.5	7.5	100	32,000	75GD3220(1)A0(2)	R75GD3220(1)A0(2)
160	70	0.12	4.0	9.0	13.0	10.0	90	28,800	75GF3120(1)A0(2)	R75GF3120(1)A0(2)
160	70	0.15	4.0	9.0	13.0	10.0	90	28,800	75GF3150(1)A0(2)	R75GF3150(1)A0(2)
160	70	0.18	5.0	11.0	13.0	10.0	90	28,800	75GF3180(1)A0(2)	R75GF3180(1)A0(2)
160	70	0.22	5.0	11.0	13.0	10.0	90	28,800	75GF3220(1)A0(2)	R75GF3220(1)A0(2)
160	70	0.27	6.0	12.0	13.0	10.0	90	28,800	75GF3270(1)A0(2)	R75GF3270(1)A0(2)
160	70	0.33	6.0	12.0	13.0	10.0	90	28,800	75GF3330(1)A0(2)	R75GF3330(1)A0(2)
160	90	0.068	4.0	9.0	10.0	7.5	300	96,000	75GD2680(1)40(2)	R75GD2680(1)40(2)
160	90	0.082	4.0	9.0	10.0	7.5	300	96,000	75GD2820(1)40(2)	R75GD2820(1)40(2)
160	90	0.10	5.0	10.5	10.0	7.5	300	96,000	75GD3100(1)40(2)	R75GD3100(1)40(2)
160	90	0.12	5.0	10.5	10.0	7.5	300	96,000	75GD3120(1)40(2)	R75GD3120(1)40(2)
160	90	0.15	6.0	12.0	10.5	7.5	300	96,000	75GD3150(1)00(2)	R75GD3150(1)00(2)
160	90	0.18	6.0	12.0	10.5	7.5	300	96,000	75GD3180(1)30(2)	R75GD3180(1)30(2)
160	90	0.082	4.0	9.0	13.0	10.0	180	57,600	75GF2820(1)00(2)	R75GF2820(1)00(2)
160	90	0.10	4.0	9.0	13.0	10.0	180	57,600	75GF3100(1)30(2)	R75GF3100(1)30(2)
160	90	0.12	5.0	11.0	13.0	10.0	180	57,600	75GF3120(1)00(2)	R75GF3120(1)00(2)
160	90	0.15	5.0	11.0	13.0	10.0	180	57,600	75GF3150(1)00(2)	R75GF3150(1)00(2)
160	90	0.18	6.0	12.0	13.0	10.0	180	57,600	75GF3180(1)00(2)	R75GF3180(1)00(2)
160	90	0.22	6.0	12.0	13.0	10.0	180	57,600	75GF3220(1)30(2)	R75GF3220(1)30(2)
160	90	0.18	5.0	11.0	18.0	15.0	100	32,000	75GI3180(1)00(2)	R75GI3180(1)00(2)
160	90	0.22	5.0	11.0	18.0	15.0	100	32,000	75GI3220(1)00(2)	R75GI3220(1)00(2)
160	90	0.27	6.0	12.0	18.0	15.0	100	32,000	75GI3270(1)00(2)	R75GI3270(1)00(2)
160	90	0.33	6.0	12.0	18.0	15.0	100	32,000	75GI3330(1)00(2)	R75GI3330(1)00(2)
160	90	0.39	7.5	13.5	18.0	15.0	100	32,000	75GI3390(1)00(2)	R75GI3390(1)00(2)
160	90	0.47	7.5	13.5	18.0	15.0	100	32,000	75GI3470(1)00(2)	R75GI3470(1)00(2)
160	90	0.47	9.0	12.5	18.0	15.0	100	32,000	75GI3470(1)60(2)	R75GI3470(1)60(2)
160	90	0.56	8.5	14.5	18.0	15.0	100	32,000	75GI3560(1)00(2)	R75GI3560(1)00(2)
160	90	0.56	9.0	12.5	18.0	15.0	100	32,000	75GI3560(1)60(2)	R75GI3560(1)60(2)
160	90	0.68	8.5	14.5	18.0	15.0	100	32,000	75GI3680(1)00(2)	R75GI3680(1)00(2)
160	90	0.68	13.0	12.0	18.0	15.0	100	32,000	75GI3680(1)60(2)	R75GI3680(1)60(2)
160	90	0.82	10.0	16.0	18.0	15.0	100	32,000	75GI3820(1)00(2)	R75GI3820(1)00(2)
160	90	1.0	10.0	16.0	18.0	15.0	100	32,000	75GI4100(1)00(2)	R75GI4100(1)00(2)
160	90	0.82	7.0	16.0	26.5	22.5	60	19,200	75GN3820(1)00(2)	R75GN3820(1)00(2)
160	90	1.0	7.0	16.0	26.5	22.5	60	19,200	75GN4100(1)00(2)	R75GN4100(1)00(2)
160	90	1.2	8.5	17.0	26.5	22.5	60	19,200	75GN4120(1)00(2)	R75GN4120(1)00(2)
160	90	1.5	10.0	18.5	26.5	22.5	60	19,200	75GN4150(1)00(2)	R75GN4150(1)00(2)
160	90	1.8	10.0	18.5	26.5	22.5	60	19,200	75GN4180(1)00(2)	R75GN4180(1)00(2)
160	90	1.5	9.0	17.0	32.0	27.5	50	16,000	75GR4150(1)00(2)	R75GR4150(1)00(2)
160	90	1.8	9.0	17.0	32.0	27.5	50	16,000	75GR4180(1)00(2)	R75GR4180(1)00(2)
160	90	2.2	11.0	20.0	32.0	27.5	50	16,000	75GR4220(1)30(2)	R75GR4220(1)30(2)
160	90	2.7	11.0	20.0	32.0	27.5	50	16,000	75GR4270(1)00(2)	R75GR4270(1)00(2)
160	90	3.3	13.0	22.0	32.0	27.5	50	16,000	75GR4330(1)00(2)	R75GR4330(1)00(2)
160	90	3.9	13.0	22.0	32.0	27.5	50	16,000	75GR4390(1)00(2)	R75GR4390(1)00(2)
160	90	4.7	13.0	25.0	32.0	27.5	50	16,000	75GR4470(1)30(2)	R75GR4470(1)30(2)
160	90	5.6	14.0	28.0	32.0	27.5	50	16,000	75GR4560(1)00(2)	R75GR4560(1)00(2)
160	90	6.8	18.0	33.0	32.0	27.5	50	16,000	75GR4680(1)00(2)	R75GR4680(1)00(2)
160	90	8.2	18.0	33.0	32.0	27.5	50	16,000	75GR4820(1)00(2)	R75GR4820(1)00(2)
160	90	10	22.0	37.0	32.0	27.5	50	16,000	75GR5100(1)00(2)	R75GR5100(1)00(2)
160	90	12	22.0	37.0	32.0	27.5	50	16,000	75GR5120(1)00(2)	R75GR5120(1)00(2)
160	90	3.3	11.0	22.0	41.5	37.5	35	11,200	75GW4330(1)00(2)	R75GW4330(1)00(2)
160	90	3.9	11.0	22.0	41.5	37.5	35	11,200	75GW4390(1)00(2)	R75GW4390(1)00(2)
160	90	4.7	11.0	22.0	41.5	37.5	35	11,200	75GW4470(1)00(2)	R75GW4470(1)00(2)
160	90	5.6	13.0	24.0	41.5	37.5	35	11,200	75GW4560(1)00(2)	R75GW4560(1)00(2)
160	90	6.8	16.0	28.5	41.5	37.5	35	11,200	75GW4680(1)00(2)	R75GW4680(1)00(2)
160	90	8.2	16.0	28.5	41.5	37.5	35	11,200	75GW4820(1)00(2)	R75GW4820(1)00(2)
160	90	10	19.0	32.0	41.5	37.5	35	11,200	75GW5100(1)00(2)	R75GW5100(1)00(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
160	90	12	19.0	32.0	41.5	37.5	35	11,200	75GW5120(1)00(2)	R75GW5120(1)00(2)
160	90	15	20.0	40.0	41.5	37.5	35	11,200	75GW5150(1)00(2)	R75GW5150(1)00(2)
160	90	18	20.0	40.0	41.5	37.5	35	11,200	75GW5180(1)00(2)	R75GW5180(1)00(2)
160	90	22	24.0	44.0	41.5	37.5	35	11,200	75GW5220(1)00(2)	R75GW5220(1)00(2)
160	90	27	30.0	45.0	41.5	37.5	35	11,200	75GW5270(1)00(2)	R75GW5270(1)00(2)
160	90	33	30.0	45.0	41.5	37.5	35	11,200	75GW5330(1)00(2)	R75GW5330(1)00(2)
250	140	0.068	4.0	9.0	10.0	7.5	180	90,000	75ID2680(1)B0(2)	R75ID2680(1)B0(2)
250	140	0.082	4.0	9.0	10.0	7.5	180	90,000	75ID2820(1)B0(2)	R75ID2820(1)B0(2)
250	140	0.10	5.0	10.5	10.0	7.5	180	90,000	75ID3100(1)B0(2)	R75ID3100(1)B0(2)
250	140	0.12	5.0	10.5	10.0	7.5	180	90,000	75ID3120(1)B0(2)	R75ID3120(1)B0(2)
250	140	0.15	6.0	12.0	10.5	7.5	180	90,000	75ID3150(1)A0(2)	R75ID3150(1)A0(2)
250	140	0.18	6.0	12.0	10.5	7.5	180	90,000	75ID3180(1)A0(2)	R75ID3180(1)A0(2)
250	140	0.08	4.0	9.0	13.0	10.0	150	75,000	75IF2820(1)A0(2)	R75IF2820(1)A0(2)
250	140	0.10	4.0	9.0	13.0	10.0	150	75,000	75IF3100(1)A0(2)	R75IF3100(1)A0(2)
250	140	0.12	5.0	11.0	13.0	10.0	150	75,000	75IF3120(1)A0(2)	R75IF3120(1)A0(2)
250	140	0.15	5.0	11.0	13.0	10.0	150	75,000	75IF3150(1)A0(2)	R75IF3150(1)A0(2)
250	140	0.18	6.0	12.0	13.0	10.0	150	75,000	75IF3180(1)A0(2)	R75IF3180(1)A0(2)
250	140	0.22	6.0	12.0	13.0	10.0	150	75,000	75IF3220(1)A0(2)	R75IF3220(1)A0(2)
250	160	0.027	4.0	9.0	10.0	7.5	650	325,000	75ID2270(1)40(2)	R75ID2270(1)40(2)
250	160	0.033	4.0	9.0	10.0	7.5	650	325,000	75ID2330(1)40(2)	R75ID2330(1)40(2)
250	160	0.039	4.0	9.0	10.0	7.5	650	325,000	75ID2390(1)40(2)	R75ID2390(1)40(2)
250	160	0.047	4.0	9.0	10.0	7.5	650	325,000	75ID2470(1)40(2)	R75ID2470(1)40(2)
250	160	0.056	4.0	9.0	10.0	7.5	650	325,000	75ID2560(1)40(2)	R75ID2560(1)40(2)
250	160	0.068	5.0	10.5	10.0	7.5	650	325,000	75ID2680(1)40(2)	R75ID2680(1)40(2)
250	160	0.082	5.0	10.5	10.0	7.5	650	325,000	75ID2820(1)40(2)	R75ID2820(1)40(2)
250	160	0.10	6.0	12.0	10.5	7.5	650	325,000	75ID3100(1)30(2)	R75ID3100(1)30(2)
250	160	0.12	6.0	12.0	10.5	7.5	650	325,000	75ID3120(1)30(2)	R75ID3120(1)30(2)
250	160	0.033	4.0	9.0	13.0	10.0	550	275,000	75IF2330(1)00(2)	R75IF2330(1)00(2)
250	160	0.039	4.0	9.0	13.0	10.0	550	275,000	75IF2390(1)00(2)	R75IF2390(1)00(2)
250	160	0.047	4.0	9.0	13.0	10.0	550	275,000	75IF2470(1)30(2)	R75IF2470(1)30(2)
250	160	0.056	4.0	9.0	13.0	10.0	550	275,000	75IF2560(1)30(2)	R75IF2560(1)30(2)
250	160	0.068	4.0	9.0	13.0	10.0	550	275,000	75IF2680(1)30(2)	R75IF2680(1)30(2)
250	160	0.082	5.0	11.0	13.0	10.0	550	275,000	75IF2820(1)30(2)	R75IF2820(1)30(2)
250	160	0.10	5.0	11.0	13.0	10.0	550	275,000	75IF3100(1)30(2)	R75IF3100(1)30(2)
250	160	0.12	6.0	12.0	13.0	10.0	550	275,000	75IF3120(1)30(2)	R75IF3120(1)30(2)
250	160	0.15	6.0	12.0	13.0	10.0	550	275,000	75IF3150(1)30(2)	R75IF3150(1)30(2)
250	160	0.12	5.0	11.0	18.0	15.0	300	150,000	75II3120(1)30(2)	R75II3120(1)30(2)
250	160	0.15	5.0	11.0	18.0	15.0	300	150,000	75II3150(1)30(2)	R75II3150(1)30(2)
250	160	0.18	5.0	11.0	18.0	15.0	300	150,000	75II3180(1)40(2)	R75II3180(1)40(2)
250	160	0.22	5.0	11.0	18.0	15.0	300	150,000	75II3220(1)40(2)	R75II3220(1)40(2)
250	160	0.27	6.0	12.0	18.0	15.0	300	150,000	75II3270(1)40(2)	R75II3270(1)40(2)
250	160	0.33	6.0	12.0	18.0	15.0	300	150,000	75II3330(1)40(2)	R75II3330(1)40(2)
250	160	0.39	7.5	13.5	18.0	15.0	300	150,000	75II3390(1)40(2)	R75II3390(1)40(2)
250	160	0.39	9.0	12.5	18.0	15.0	300	150,000	75II3390(1)70(2)	R75II3390(1)70(2)
250	160	0.47	7.5	13.5	18.0	15.0	300	150,000	75II3470(1)40(2)	R75II3470(1)40(2)
250	160	0.47	9.0	12.5	18.0	15.0	300	150,000	75II3470(1)80(2)	R75II3470(1)80(2)
250	160	0.56	7.5	13.5	18.0	15.0	300	150,000	75II3560(1)40(2)	R75II3560(1)40(2)
250	160	0.56	9.0	12.5	18.0	15.0	300	150,000	75II3560(1)80(2)	R75II3560(1)80(2)
250	160	0.68	8.5	14.5	18.0	15.0	300	150,000	75II3680(1)40(2)	R75II3680(1)40(2)
250	160	0.68	13.0	12.0	18.0	15.0	300	150,000	75II3680(1)80(2)	R75II3680(1)80(2)
250	160	0.82	10.0	16.0	18.0	15.0	300	150,000	75II3820(1)40(2)	R75II3820(1)40(2)
250	160	0.82	13.0	12.0	18.0	15.0	300	150,000	75II3820(1)80(2)	R75II3820(1)80(2)
250	160	1.0	10.0	16.0	18.0	15.0	300	150,000	75II4100(1)40(2)	R75II4100(1)40(2)
250	160	1.2	11.0	19.0	18.0	15.0	300	150,000	75II4120(1)40(2)	R75II4120(1)40(2)
250	160	0.39	6.0	15.0	26.5	22.5	125	62,500	75IN3390(1)30(2)	R75IN3390(1)30(2)
250	160	0.47	6.0	15.0	26.5	22.5	125	62,500	75IN3470(1)30(2)	R75IN3470(1)30(2)
250	160	0.56	6.0	15.0	26.5	22.5	125	62,500	75IN3560(1)40(2)	R75IN3560(1)40(2)
250	160	0.68	6.0	15.0	26.5	22.5	125	62,500	75IN3680(1)40(2)	R75IN3680(1)40(2)
250	160	0.82	7.0	16.0	26.5	22.5	125	62,500	75IN3820(1)40(2)	R75IN3820(1)40(2)
250	160	1.0	7.0	16.0	26.5	22.5	125	62,500	75IN4100(1)40(2)	R75IN4100(1)40(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
250	160	1.2	8.5	17.0	26.5	22.5	125	62,500	75IN4120(1)40(2)	R75IN4120(1)40(2)
250	160	1.5	10.0	18.5	26.5	22.5	125	62,500	75IN4150(1)40(2)	R75IN4150(1)40(2)
250	160	1.8	10.0	18.5	26.5	22.5	125	62,500	75IN4180(1)40(2)	R75IN4180(1)40(2)
250	160	2.2	11.0	20.0	26.5	22.5	125	62,500	75IN4220(1)40(2)	R75IN4220(1)40(2)
250	160	2.7	13.0	22.0	26.5	22.5	125	62,500	75IN4270(1)40(2)	R75IN4270(1)40(2)
250	160	3.3	13.0	22.0	26.5	22.5	125	62,500	75IN4330(1)40(2)	R75IN4330(1)40(2)
250	160	1.0	9.0	17.0	32.0	27.5	100	50,000	75IR4100(1)30(2)	R75IR4100(1)30(2)
250	160	1.2	9.0	17.0	32.0	27.5	100	50,000	75IR4120(1)30(2)	R75IR4120(1)30(2)
250	160	1.5	9.0	17.0	32.0	27.5	100	50,000	75IR4150(1)40(2)	R75IR4150(1)40(2)
250	160	1.8	9.0	17.0	32.0	27.5	100	50,000	75IR4180(1)40(2)	R75IR4180(1)40(2)
250	160	2.2	11.0	20.0	32.0	27.5	100	50,000	75IR4220(1)50(2)	R75IR4220(1)50(2)
250	160	2.7	11.0	20.0	32.0	27.5	100	50,000	75IR4270(1)40(2)	R75IR4270(1)40(2)
250	160	3.3	13.0	22.0	32.0	27.5	100	50,000	75IR4330(1)40(2)	R75IR4330(1)40(2)
250	160	3.9	13.0	22.0	32.0	27.5	100	50,000	75IR4390(1)40(2)	R75IR4390(1)40(2)
250	160	4.7	13.0	25.0	32.0	27.5	100	50,000	75IR4470(1)50(2)	R75IR4470(1)50(2)
250	160	5.6	14.0	28.0	32.0	27.5	100	50,000	75IR4560(1)40(2)	R75IR4560(1)40(2)
250	160	6.8	18.0	33.0	32.0	27.5	100	50,000	75IR4680(1)40(2)	R75IR4680(1)40(2)
250	160	8.2	18.0	33.0	32.0	27.5	100	50,000	75IR4820(1)40(2)	R75IR4820(1)40(2)
250	160	10	22.0	37.0	32.0	27.5	100	50,000	75IR5100(1)40(2)	R75IR5100(1)40(2)
250	160	12	22.0	37.0	32.0	27.5	100	50,000	75IR5120(1)40(2)	R75IR5120(1)40(2)
250	160	3.3	11.0	22.0	41.5	37.5	40	20,000	75IW4330(1)40(2)	R75IW4330(1)40(2)
250	160	3.9	11.0	22.0	41.5	37.5	40	20,000	75IW4390(1)40(2)	R75IW4390(1)40(2)
250	160	4.7	11.0	22.0	41.5	37.5	40	20,000	75IW4470(1)40(2)	R75IW4470(1)40(2)
250	160	5.6	13.0	24.0	41.5	37.5	40	20,000	75IW4560(1)40(2)	R75IW4560(1)40(2)
250	160	6.8	16.0	28.5	41.5	37.5	40	20,000	75IW4680(1)40(2)	R75IW4680(1)40(2)
250	160	8.2	16.0	28.5	41.5	37.5	40	20,000	75IW4820(1)40(2)	R75IW4820(1)40(2)
250	160	10	19.0	32.0	41.5	37.5	40	20,000	75IW5100(1)40(2)	R75IW5100(1)40(2)
250	160	12	19.0	32.0	41.5	37.5	40	20,000	75IW5120(1)40(2)	R75IW5120(1)40(2)
250	160	15	20.0	40.0	41.5	37.5	40	20,000	75IW5150(1)40(2)	R75IW5150(1)40(2)
250	160	18	20.0	40.0	41.5	37.5	40	20,000	75IW5180(1)40(2)	R75IW5180(1)40(2)
250	160	22	24.0	44.0	41.5	37.5	40	20,000	75IW5220(1)40(2)	R75IW5220(1)40(2)
250	160	27	24.0	44.0	41.5	37.5	40	20,000	75IW5270(1)40(2)	R75IW5270(1)40(2)
250	160	33	30.0	45.0	41.5	37.5	40	20,000	75IW5330(1)40(2)	R75IW5330(1)40(2)
400	200	0.027	4.0	9.0	10.0	7.5	390	312,000	75MD2270(1)B0(2)	R75MD2270(1)B0(2)
400	200	0.033	5.0	10.5	10.0	7.5	390	312,000	75MD2330(1)B0(2)	R75MD2330(1)B0(2)
400	200	0.039	5.0	10.5	10.0	7.5	390	312,000	75MD2390(1)B0(2)	R75MD2390(1)B0(2)
400	200	0.047	5.0	10.5	10.0	7.5	390	312,000	75MD2470(1)B0(2)	R75MD2470(1)B0(2)
400	200	0.056	6.0	12.0	10.5	7.5	390	312,000	75MD2560(1)A0(2)	R75MD2560(1)A0(2)
400	200	0.068	6.0	12.0	10.5	7.5	390	312,000	75MD2680(1)A0(2)	R75MD2680(1)A0(2)
400	220	0.010	4.0	9.0	10.0	7.5	1,500	1,200,000	75MD2100(1)40(2)	R75MD2100(1)40(2)
400	220	0.012	4.0	9.0	10.0	7.5	1,500	1,200,000	75MD2120(1)40(2)	R75MD2120(1)40(2)
400	220	0.015	4.0	9.0	10.0	7.5	1,500	1,200,000	75MD2150(1)40(2)	R75MD2150(1)40(2)
400	220	0.018	4.0	9.0	10.0	7.5	1,500	1,200,000	75MD2180(1)40(2)	R75MD2180(1)40(2)
400	220	0.022	4.0	9.0	10.0	7.5	1,500	1,200,000	75MD2220(1)40(2)	R75MD2220(1)40(2)
400	220	0.027	5.0	10.5	10.0	7.5	1,500	1,200,000	75MD2270(1)40(2)	R75MD2270(1)40(2)
400	220	0.033	5.0	10.5	10.0	7.5	1,500	1,200,000	75MD2330(1)40(2)	R75MD2330(1)40(2)
400	220	0.039	6.0	12.0	10.5	7.5	1,500	1,200,000	75MD2390(1)30(2)	R75MD2390(1)30(2)
400	220	0.047	6.0	12.0	10.5	7.5	1,500	1,200,000	75MD2470(1)30(2)	R75MD2470(1)30(2)
400	220	0.015	4.0	9.0	13.0	10.0	1,300	1,040,000	75MF2150(1)00(2)	R75MF2150(1)00(2)
400	220	0.018	4.0	9.0	13.0	10.0	1,300	1,040,000	75MF2180(1)00(2)	R75MF2180(1)00(2)
400	220	0.022	4.0	9.0	13.0	10.0	1,300	1,040,000	75MF2220(1)30(2)	R75MF2220(1)30(2)
400	220	0.027	4.0	9.0	13.0	10.0	1,300	1,040,000	75MF2270(1)30(2)	R75MF2270(1)30(2)
400	220	0.033	5.0	11.0	13.0	10.0	1,300	1,040,000	75MF2330(1)30(2)	R75MF2330(1)30(2)
400	220	0.039	5.0	11.0	13.0	10.0	1,300	1,040,000	75MF2390(1)30(2)	R75MF2390(1)30(2)
400	220	0.047	5.0	11.0	13.0	10.0	1,300	1,040,000	75MF2470(1)30(2)	R75MF2470(1)30(2)
400	220	0.056	6.0	12.0	13.0	10.0	1,300	1,040,000	75MF2560(1)30(2)	R75MF2560(1)30(2)
400	220	0.068	6.0	12.0	13.0	10.0	1,300	1,040,000	75MF2680(1)30(2)	R75MF2680(1)30(2)
400	220	0.068	5.0	11.0	18.0	15.0	900	720,000	75MI2680(1)30(2)	R75MI2680(1)30(2)
400	220	0.082	5.0	11.0	18.0	15.0	900	720,000	75MI2820(1)30(2)	R75MI2820(1)30(2)
400	220	0.10	5.0	11.0	18.0	15.0	900	720,000	75MI3100(1)30(2)	R75MI3100(1)30(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
400	220	0.12	6.0	12.0	18.0	15.0	900	720,000	75MI3120(1)30(2)	R75MI3120(1)30(2)
400	220	0.15	6.0	12.0	18.0	15.0	900	720,000	75MI3150(1)30(2)	R75MI3150(1)30(2)
400	220	0.18	7.5	13.5	18.0	15.0	900	720,000	75MI3180(1)30(2)	R75MI3180(1)30(2)
400	220	0.22	7.5	13.5	18.0	15.0	900	720,000	75MI3220(1)30(2)	R75MI3220(1)30(2)
400	220	0.22	9.0	12.5	18.0	15.0	900	720,000	75MI3220(1)70(2)	R75MI3220(1)70(2)
400	220	0.27	8.5	14.5	18.0	15.0	900	720,000	75MI3270(1)30(2)	R75MI3270(1)30(2)
400	220	0.27	9.0	12.5	18.0	15.0	900	720,000	75MI3270(1)70(2)	R75MI3270(1)70(2)
400	220	0.33	10.0	16.0	18.0	15.0	900	720,000	75MI3330(1)30(2)	R75MI3330(1)30(2)
400	220	0.33	13.0	12.0	18.0	15.0	900	720,000	75MI3330(1)70(2)	R75MI3330(1)70(2)
400	220	0.39	10.0	16.0	18.0	15.0	900	720,000	75MI3390(1)30(2)	R75MI3390(1)30(2)
400	220	0.47	10.0	16.0	18.0	15.0	900	720,000	75MI3470(1)30(2)	R75MI3470(1)30(2)
400	220	0.56	11.0	19.0	18.0	15.0	900	720,000	75MI3560(1)30(2)	R75MI3560(1)30(2)
400	220	0.18	6.0	15.0	26.5	22.5	300	240,000	75MN3180(1)30(2)	R75MN3180(1)30(2)
400	220	0.22	6.0	15.0	26.5	22.5	300	240,000	75MN3220(1)30(2)	R75MN3220(1)30(2)
400	220	0.27	6.0	15.0	26.5	22.5	300	240,000	75MN3270(1)30(2)	R75MN3270(1)30(2)
400	220	0.33	6.0	15.0	26.5	22.5	300	240,000	75MN3330(1)30(2)	R75MN3330(1)30(2)
400	220	0.39	7.0	16.0	26.5	22.5	300	240,000	75MN3390(1)30(2)	R75MN3390(1)30(2)
400	220	0.47	7.0	16.0	26.5	22.5	300	240,000	75MN3470(1)30(2)	R75MN3470(1)30(2)
400	220	0.56	8.5	17.0	26.5	22.5	300	240,000	75MN3560(1)30(2)	R75MN3560(1)30(2)
400	220	0.68	10.0	18.5	26.5	22.5	300	240,000	75MN3680(1)30(2)	R75MN3680(1)30(2)
400	220	0.82	10.0	18.5	26.5	22.5	300	240,000	75MN3820(1)30(2)	R75MN3820(1)30(2)
400	220	1.0	11.0	20.0	26.5	22.5	300	240,000	75MN4100(1)30(2)	R75MN4100(1)30(2)
400	220	1.2	13.0	22.0	26.5	22.5	300	240,000	75MN4120(1)30(2)	R75MN4120(1)30(2)
400	220	1.5	13.0	22.0	26.5	22.5	300	240,000	75MN4150(1)30(2)	R75MN4150(1)30(2)
400	220	0.56	9.0	17.0	32.0	27.5	130	104,000	75MR3560(1)30(2)	R75MR3560(1)30(2)
400	220	0.68	9.0	17.0	32.0	27.5	130	104,000	75MR3680(1)30(2)	R75MR3680(1)30(2)
400	220	0.82	9.0	17.0	32.0	27.5	130	104,000	75MR3820(1)30(2)	R75MR3820(1)30(2)
400	220	1.0	11.0	20.0	32.0	27.5	130	104,000	75MR4100(1)40(2)	R75MR4100(1)40(2)
400	220	1.2	11.0	20.0	32.0	27.5	130	104,000	75MR4120(1)30(2)	R75MR4120(1)30(2)
400	220	1.5	13.0	22.0	32.0	27.5	130	104,000	75MR4150(1)30(2)	R75MR4150(1)30(2)
400	220	1.8	13.0	22.0	32.0	27.5	130	104,000	75MR4180(1)30(2)	R75MR4180(1)30(2)
400	220	2.2	13.0	25.0	32.0	27.5	130	104,000	75MR4220(1)40(2)	R75MR4220(1)40(2)
400	220	2.7	14.0	28.0	32.0	27.5	130	104,000	75MR4270(1)30(2)	R75MR4270(1)30(2)
400	220	3.3	18.0	33.0	32.0	27.5	130	104,000	75MR4330(1)30(2)	R75MR4330(1)30(2)
400	220	3.9	18.0	33.0	32.0	27.5	130	104,000	75MR4390(1)30(2)	R75MR4390(1)30(2)
400	220	4.7	22.0	37.0	32.0	27.5	130	104,000	75MR4470(1)30(2)	R75MR4470(1)30(2)
400	220	5.6	22.0	37.0	32.0	27.5	130	104,000	75MR4560(1)30(2)	R75MR4560(1)30(2)
400	220	1.2	11.0	22.0	41.5	37.5	70	56,000	75MW4120(1)30(2)	R75MW4120(1)30(2)
400	220	1.5	11.0	22.0	41.5	37.5	70	56,000	75MW4150(1)30(2)	R75MW4150(1)30(2)
400	220	1.8	11.0	22.0	41.5	37.5	70	56,000	75MW4180(1)30(2)	R75MW4180(1)30(2)
400	220	2.2	11.0	22.0	41.5	37.5	70	56,000	75MW4220(1)30(2)	R75MW4220(1)30(2)
400	220	2.7	13.0	24.0	41.5	37.5	70	56,000	75MW4270(1)30(2)	R75MW4270(1)30(2)
400	220	3.3	16.0	28.5	41.5	37.5	70	56,000	75MW4330(1)30(2)	R75MW4330(1)30(2)
400	220	3.9	16.0	28.5	41.5	37.5	70	56,000	75MW4390(1)30(2)	R75MW4390(1)30(2)
400	220	4.7	19.0	32.0	41.5	37.5	70	56,000	75MW4470(1)30(2)	R75MW4470(1)30(2)
400	220	5.6	19.0	32.0	41.5	37.5	70	56,000	75MW4560(1)30(2)	R75MW4560(1)30(2)
400	220	6.8	20.0	40.0	41.5	37.5	70	56,000	75MW4680(1)20(2)	R75MW4680(1)20(2)
400	220	8.2	20.0	40.0	41.5	37.5	70	56,000	75MW4820(1)30(2)	R75MW4820(1)30(2)
400	220	10	24.0	44.0	41.5	37.5	70	56,000	75MW5100(1)30(2)	R75MW5100(1)30(2)
400	220	12	30.0	45.0	41.5	37.5	70	56,000	75MW5120(1)20(2)	R75MW5120(1)20(2)
400	220	15	30.0	45.0	41.5	37.5	70	56,000	75MW5150(1)30(2)	R75MW5150(1)30(2)
630	220	0.010	4.0	9.0	10.0	7.5	600	756,000	75PD2100(1)B0(2)	R75PD2100(1)B0(2)
630	220	0.012	4.0	9.0	10.0	7.5	600	756,000	75PD2120(1)B0(2)	R75PD2120(1)B0(2)
630	220	0.015	5.0	10.5	10.0	7.5	600	756,000	75PD2150(1)B0(2)	R75PD2150(1)B0(2)
630	220	0.018	5.0	10.5	10.0	7.5	600	756,000	75PD2180(1)B0(2)	R75PD2180(1)B0(2)
630	220	0.022	6.0	12.0	10.5	7.5	600	756,000	75PD2220(1)A0(2)	R75PD2220(1)A0(2)
630	220	0.027	6.0	12.0	10.5	7.5	600	756,000	75PD2270(1)A0(2)	R75PD2270(1)A0(2)
630	250	0.0033	4.0	9.0	10.0	7.5	2,400	3,024,000	75PD1330(1)40(2)	R75PD1330(1)40(2)
630	250	0.0039	4.0	9.0	10.0	7.5	2,400	3,024,000	75PD1390(1)40(2)	R75PD1390(1)40(2)
630	250	0.0047	4.0	9.0	10.0	7.5	2,400	3,024,000	75PD1470(1)40(2)	R75PD1470(1)40(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
630	250	0.0056	4.0	9.0	10.0	7.5	2,400	3,024,000	75PD1560(1)40(2)	R75PD1560(1)40(2)
630	250	0.0068	4.0	9.0	10.0	7.5	2,400	3,024,000	75PD1680(1)40(2)	R75PD1680(1)40(2)
630	250	0.0082	4.0	9.0	10.0	7.5	2,400	3,024,000	75PD1820(1)40(2)	R75PD1820(1)40(2)
630	250	0.010	5.0	10.5	10.0	7.5	2,400	3,024,000	75PD2100(1)40(2)	R75PD2100(1)40(2)
630	250	0.012	5.0	10.5	10.0	7.5	2,400	3,024,000	75PD2120(1)40(2)	R75PD2120(1)40(2)
630	250	0.015	6.0	12.0	10.5	7.5	2,400	3,024,000	75PD2150(1)30(2)	R75PD2150(1)30(2)
630	250	0.018	6.0	12.0	10.5	7.5	2,400	3,024,000	75PD2180(1)30(2)	R75PD2180(1)30(2)
630	250	0.0010	4.0	9.0	13.0	10.0	2,000	2,520,000	75PF1100(1)00(2)	R75PF1100(1)00(2)
630	250	0.0012	4.0	9.0	13.0	10.0	2,000	2,520,000	75PF1120(1)00(2)	R75PF1120(1)00(2)
630	250	0.0015	4.0	9.0	13.0	10.0	2,000	2,520,000	75PF1150(1)00(2)	R75PF1150(1)00(2)
630	250	0.0018	4.0	9.0	13.0	10.0	2,000	2,520,000	75PF1180(1)00(2)	R75PF1180(1)00(2)
630	250	0.0022	4.0	9.0	13.0	10.0	2,000	2,520,000	75PF1220(1)00(2)	R75PF1220(1)00(2)
630	250	0.0027	4.0	9.0	13.0	10.0	2,000	2,520,000	75PF1270(1)00(2)	R75PF1270(1)00(2)
630	250	0.0033	4.0	9.0	13.0	10.0	2,000	2,520,000	75PF1330(1)00(2)	R75PF1330(1)00(2)
630	250	0.0039	4.0	9.0	13.0	10.0	2,000	2,520,000	75PF1390(1)00(2)	R75PF1390(1)00(2)
630	250	0.0047	4.0	9.0	13.0	10.0	2,000	2,520,000	75PF1470(1)00(2)	R75PF1470(1)00(2)
630	250	0.0056	4.0	9.0	13.0	10.0	2,000	2,520,000	75PF1560(1)00(2)	R75PF1560(1)00(2)
630	250	0.0068	4.0	9.0	13.0	10.0	2,000	2,520,000	75PF1680(1)00(2)	R75PF1680(1)00(2)
630	250	0.0082	4.0	9.0	13.0	10.0	2,000	2,520,000	75PF1820(1)00(2)	R75PF1820(1)00(2)
630	250	0.010	4.0	9.0	13.0	10.0	2,000	2,520,000	75PF2100(1)30(2)	R75PF2100(1)30(2)
630	250	0.012	4.0	9.0	13.0	10.0	2,000	2,520,000	75PF2120(1)30(2)	R75PF2120(1)30(2)
630	250	0.015	5.0	11.0	13.0	10.0	2,000	2,520,000	75PF2150(1)30(2)	R75PF2150(1)30(2)
630	250	0.018	5.0	11.0	13.0	10.0	2,000	2,520,000	75PF2180(1)30(2)	R75PF2180(1)30(2)
630	250	0.022	6.0	12.0	13.0	10.0	2,000	2,520,000	75PF2220(1)30(2)	R75PF2220(1)30(2)
630	250	0.027	5.0	11.0	18.0	15.0	1,000	1,260,000	75PI2270(1)00(2)	R75PI2270(1)00(2)
630	250	0.033	5.0	11.0	18.0	15.0	1,000	1,260,000	75PI2330(1)00(2)	R75PI2330(1)00(2)
630	250	0.039	5.0	11.0	18.0	15.0	1,000	1,260,000	75PI2390(1)30(2)	R75PI2390(1)30(2)
630	250	0.047	5.0	11.0	18.0	15.0	1,000	1,260,000	75PI2470(1)30(2)	R75PI2470(1)30(2)
630	250	0.056	5.0	11.0	18.0	15.0	1,000	1,260,000	75PI2560(1)30(2)	R75PI2560(1)30(2)
630	250	0.068	6.0	12.0	18.0	15.0	1,000	1,260,000	75PI2680(1)30(2)	R75PI2680(1)30(2)
630	250	0.082	6.0	12.0	18.0	15.0	1,000	1,260,000	75PI2820(1)30(2)	R75PI2820(1)30(2)
630	250	0.10	7.5	13.5	18.0	15.0	1,000	1,260,000	75PI3100(1)30(2)	R75PI3100(1)30(2)
630	250	0.10	9.0	12.5	18.0	15.0	1,000	1,260,000	75PI3100(1)70(2)	R75PI3100(1)70(2)
630	250	0.12	7.5	13.5	18.0	15.0	1,000	1,260,000	75PI3120(1)30(2)	R75PI3120(1)30(2)
630	250	0.12	9.0	12.5	18.0	15.0	1,000	1,260,000	75PI3120(1)70(2)	R75PI3120(1)70(2)
630	250	0.15	8.5	14.5	18.0	15.0	1,000	1,260,000	75PI3150(1)30(2)	R75PI3150(1)30(2)
630	250	0.15	13.0	12.0	18.0	15.0	1,000	1,260,000	75PI3150(1)70(2)	R75PI3150(1)70(2)
630	250	0.18	10.0	16.0	18.0	15.0	1,000	1,260,000	75PI3180(1)30(2)	R75PI3180(1)30(2)
630	250	0.18	13.0	12.0	18.0	15.0	1,000	1,260,000	75PI3180(1)70(2)	R75PI3180(1)70(2)
630	250	0.22	10.0	16.0	18.0	15.0	1,000	1,260,000	75PI3220(1)30(2)	R75PI3220(1)30(2)
630	250	0.27	11.0	19.0	18.0	15.0	1,000	1,260,000	75PI3270(1)30(2)	R75PI3270(1)30(2)
630	250	0.33	11.0	19.0	18.0	15.0	1,000	1,260,000	75PI3330(1)30(2)	R75PI3330(1)30(2)
630	250	0.082	6.0	15.0	26.5	22.5	400	504,000	75PN2820(1)30(2)	R75PN2820(1)30(2)
630	250	0.10	6.0	15.0	26.5	22.5	400	504,000	75PN3100(1)30(2)	R75PN3100(1)30(2)
630	250	0.12	6.0	15.0	26.5	22.5	400	504,000	75PN3120(1)30(2)	R75PN3120(1)30(2)
630	250	0.15	6.0	15.0	26.5	22.5	400	504,000	75PN3150(1)30(2)	R75PN3150(1)30(2)
630	250	0.18	7.0	16.0	26.5	22.5	400	504,000	75PN3180(1)30(2)	R75PN3180(1)30(2)
630	250	0.22	7.0	16.0	26.5	22.5	400	504,000	75PN3220(1)30(2)	R75PN3220(1)30(2)
630	250	0.27	8.5	17.0	26.5	22.5	400	504,000	75PN3270(1)30(2)	R75PN3270(1)30(2)
630	250	0.33	10.0	18.5	26.5	22.5	400	504,000	75PN3330(1)30(2)	R75PN3330(1)30(2)
630	250	0.39	10.0	18.5	26.5	22.5	400	504,000	75PN3390(1)30(2)	R75PN3390(1)30(2)
630	250	0.47	11.0	20.0	26.5	22.5	400	504,000	75PN3470(1)30(2)	R75PN3470(1)30(2)
630	250	0.56	11.0	20.0	26.5	22.5	400	504,000	75PN3560(1)30(2)	R75PN3560(1)30(2)
630	250	0.68	13.0	22.0	26.5	22.5	400	504,000	75PN3680(1)30(2)	R75PN3680(1)30(2)
630	250	0.39	9.0	17.0	32.0	27.5	180	226,800	75PR3390(1)30(2)	R75PR3390(1)30(2)
630	250	0.47	9.0	17.0	32.0	27.5	180	226,800	75PR3470(1)40(2)	R75PR3470(1)40(2)
630	250	0.56	11.0	20.0	32.0	27.5	180	226,800	75PR3560(1)30(2)	R75PR3560(1)30(2)
630	250	0.68	11.0	20.0	32.0	27.5	180	226,800	75PR3680(1)30(2)	R75PR3680(1)30(2)
630	250	0.82	13.0	22.0	32.0	27.5	180	226,800	75PR3820(1)30(2)	R75PR3820(1)30(2)
630	250	1.0	13.0	22.0	32.0	27.5	180	226,800	75PR4100(1)30(2)	R75PR4100(1)30(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
630	250	1.2	14.0	28.0	32.0	27.5	180	226,800	75PR4120(1)40(2)	R75PR4120(1)40(2)
630	250	1.5	14.0	28.0	32.0	27.5	180	226,800	75PR4150(1)30(2)	R75PR4150(1)30(2)
630	250	1.8	18.0	33.0	32.0	27.5	180	226,800	75PR4180(1)30(2)	R75PR4180(1)30(2)
630	250	2.2	18.0	33.0	32.0	27.5	180	226,800	75PR4220(1)30(2)	R75PR4220(1)30(2)
630	250	2.7	22.0	37.0	32.0	27.5	180	226,800	75PR4270(1)30(2)	R75PR4270(1)30(2)
630	250	3.3	22.0	37.0	32.0	27.5	180	226,800	75PR4330(1)30(2)	R75PR4330(1)30(2)
630	250	0.68	11.0	22.0	41.5	37.5	90	113,400	75PW3680(1)30(2)	R75PW3680(1)30(2)
630	250	0.82	11.0	22.0	41.5	37.5	90	113,400	75PW3820(1)30(2)	R75PW3820(1)30(2)
630	250	1.0	11.0	22.0	41.5	37.5	90	113,400	75PW4100(1)30(2)	R75PW4100(1)30(2)
630	250	1.2	13.0	24.0	41.5	37.5	90	113,400	75PW4120(1)30(2)	R75PW4120(1)30(2)
630	250	1.5	13.0	24.0	41.5	37.5	90	113,400	75PW4150(1)30(2)	R75PW4150(1)30(2)
630	250	1.8	16.0	28.5	41.5	37.5	90	113,400	75PW4180(1)30(2)	R75PW4180(1)30(2)
630	250	2.2	16.0	28.5	41.5	37.5	90	113,400	75PW4220(1)30(2)	R75PW4220(1)30(2)
630	250	2.7	19.0	32.0	41.5	37.5	90	113,400	75PW4270(1)30(2)	R75PW4270(1)30(2)
630	250	3.3	19.0	32.0	41.5	37.5	90	113,400	75PW4330(1)30(2)	R75PW4330(1)30(2)
630	250	3.9	20.0	40.0	41.5	37.5	90	113,400	75PW4390(1)30(2)	R75PW4390(1)30(2)
630	250	4.7	20.0	40.0	41.5	37.5	90	113,400	75PW4470(1)30(2)	R75PW4470(1)30(2)
630	250	5.6	24.0	44.0	41.5	37.5	90	113,400	75PW4560(1)30(2)	R75PW4560(1)30(2)
630	250	6.8	30.0	45.0	41.5	37.5	90	113,400	75PW4680(1)20(2)	R75PW4680(1)20(2)
630	250	8.2	30.0	45.0	41.5	37.5	90	113,400	75PW4820(1)30(2)	R75PW4820(1)30(2)
1,000	250	0.012	5.0	11.0	18.0	15.0	2,000	4,000,000	75QI2120(1)00(2)	R75QI2120(1)00(2)
1,000	250	0.015	5.0	11.0	18.0	15.0	2,000	4,000,000	75QI2150(1)00(2)	R75QI2150(1)00(2)
1,000	250	0.018	5.0	11.0	18.0	15.0	2,000	4,000,000	75QI2180(1)00(2)	R75QI2180(1)00(2)
1,000	250	0.022	5.0	11.0	18.0	15.0	2,000	4,000,000	75QI2220(1)00(2)	R75QI2220(1)00(2)
1,000	250	0.027	6.0	12.0	18.0	15.0	2,000	4,000,000	75QI2270(1)00(2)	R75QI2270(1)00(2)
1,000	250	0.033	6.0	12.0	18.0	15.0	2,000	4,000,000	75QI2330(1)00(2)	R75QI2330(1)00(2)
1,000	250	0.039	7.5	13.5	18.0	15.0	2,000	4,000,000	75QI2390(1)00(2)	R75QI2390(1)00(2)
1,000	250	0.047	7.5	13.5	18.0	15.0	2,000	4,000,000	75QI2470(1)00(2)	R75QI2470(1)00(2)
1,000	250	0.047	9.0	12.5	18.0	15.0	2,000	4,000,000	75QI2470(1)60(2)	R75QI2470(1)60(2)
1,000	250	0.056	8.5	14.5	18.0	15.0	2,000	4,000,000	75QI2560(1)00(2)	R75QI2560(1)00(2)
1,000	250	0.056	9.0	12.5	18.0	15.0	2,000	4,000,000	75QI2560(1)60(2)	R75QI2560(1)60(2)
1,000	250	0.068	8.5	14.5	18.0	15.0	2,000	4,000,000	75QI2680(1)00(2)	R75QI2680(1)00(2)
1,000	250	0.068	13.0	12.0	18.0	15.0	2,000	4,000,000	75QI2680(1)60(2)	R75QI2680(1)60(2)
1,000	250	0.082	10.0	16.0	18.0	15.0	2,000	4,000,000	75QI2820(1)00(2)	R75QI2820(1)00(2)
1,000	250	0.10	11.0	19.0	18.0	15.0	2,000	4,000,000	75QI3100(1)00(2)	R75QI3100(1)00(2)
1,000	250	0.047	6.0	15.0	26.5	22.5	600	1,200,000	75QN2470(1)00(2)	R75QN2470(1)00(2)
1,000	250	0.056	6.0	15.0	26.5	22.5	600	1,200,000	75QN2560(1)00(2)	R75QN2560(1)00(2)
1,000	250	0.068	6.0	15.0	26.5	22.5	600	1,200,000	75QN2680(1)00(2)	R75QN2680(1)00(2)
1,000	250	0.082	7.0	16.0	26.5	22.5	600	1,200,000	75QN2820(1)00(2)	R75QN2820(1)00(2)
1,000	250	0.10	7.0	16.0	26.5	22.5	600	1,200,000	75QN3100(1)00(2)	R75QN3100(1)00(2)
1,000	250	0.12	8.5	17.0	26.5	22.5	600	1,200,000	75QN3120(1)00(2)	R75QN3120(1)00(2)
1,000	250	0.15	10.0	18.5	26.5	22.5	600	1,200,000	75QN3150(1)00(2)	R75QN3150(1)00(2)
1,000	250	0.18	10.0	18.5	26.5	22.5	600	1,200,000	75QN3180(1)00(2)	R75QN3180(1)00(2)
1,000	250	0.22	11.0	20.0	26.5	22.5	600	1,200,000	75QN3220(1)00(2)	R75QN3220(1)00(2)
1,000	250	0.15	9.0	17.0	32.0	27.5	200	400,000	75QR3150(1)00(2)	R75QR3150(1)00(2)
1,000	250	0.18	9.0	17.0	32.0	27.5	200	400,000	75QR3180(1)00(2)	R75QR3180(1)00(2)
1,000	250	0.22	11.0	20.0	32.0	27.5	200	400,000	75QR3220(1)10(2)	R75QR3220(1)10(2)
1,000	250	0.27	11.0	20.0	32.0	27.5	200	400,000	75QR3270(1)00(2)	R75QR3270(1)00(2)
1,000	250	0.33	13.0	22.0	32.0	27.5	200	400,000	75QR3330(1)00(2)	R75QR3330(1)00(2)
1,000	250	0.39	13.0	22.0	32.0	27.5	200	400,000	75QR3390(1)00(2)	R75QR3390(1)00(2)
1,000	250	0.47	13.0	25.0	32.0	27.5	200	400,000	75QR3470(1)10(2)	R75QR3470(1)10(2)
1,000	250	0.56	14.0	28.0	32.0	27.5	200	400,000	75QR3560(1)10(2)	R75QR3560(1)10(2)
1,000	250	0.68	18.0	33.0	32.0	27.5	200	400,000	75QR3680(1)00(2)	R75QR3680(1)00(2)
1,000	250	0.82	18.0	33.0	32.0	27.5	200	400,000	75QR3820(1)00(2)	R75QR3820(1)00(2)
1,000	250	1.0	18.0	33.0	32.0	27.5	200	400,000	75QR4100(1)00(2)	R75QR4100(1)00(2)
1,000	250	1.2	22.0	37.0	32.0	27.5	200	400,000	75QR4120(1)00(2)	R75QR4120(1)00(2)
1,000	250	1.5	22.0	37.0	32.0	27.5	200	400,000	75QR4150(1)00(2)	R75QR4150(1)00(2)
1,000	250	0.27	11.0	22.0	41.5	37.5	150	300,000	75QW3270(1)00(2)	R75QW3270(1)00(2)
1,000	250	0.33	11.0	22.0	41.5	37.5	150	300,000	75QW3330(1)00(2)	R75QW3330(1)00(2)
1,000	250	0.39	11.0	22.0	41.5	37.5	150	300,000	75QW3390(1)00(2)	R75QW3390(1)00(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
1,000	250	0.47	11.0	22.0	41.5	37.5	150	300,000	75QW3470(1)00(2)	R75QW3470(1)00(2)
1,000	250	0.56	13.0	24.0	41.5	37.5	150	300,000	75QW3560(1)00(2)	R75QW3560(1)00(2)
1,000	250	0.68	13.0	24.0	41.5	37.5	150	300,000	75QW3680(1)00(2)	R75QW3680(1)00(2)
1,000	250	0.82	16.0	28.5	41.5	37.5	150	300,000	75QW3820(1)00(2)	R75QW3820(1)00(2)
1,000	250	1.0	16.0	28.5	41.5	37.5	150	300,000	75QW4100(1)00(2)	R75QW4100(1)00(2)
1,000	250	1.2	19.0	32.0	41.5	37.5	150	300,000	75QW4120(1)00(2)	R75QW4120(1)00(2)
1,000	250	1.5	19.0	32.0	41.5	37.5	150	300,000	75QW4150(1)00(2)	R75QW4150(1)00(2)
1,000	250	1.8	20.0	40.0	41.5	37.5	150	300,000	75QW4180(1)00(2)	R75QW4180(1)00(2)
1,000	250	2.2	24.0	44.0	41.5	37.5	150	300,000	75QW4220(1)30(2)	R75QW4220(1)30(2)
1,000	250	2.7	24.0	44.0	41.5	37.5	150	300,000	75QW4270(1)00(2)	R75QW4270(1)00(2)
1,000	250	3.3	30.0	45.0	41.5	37.5	150	300,000	75QW4330(1)00(2)	R75QW4330(1)00(2)
1,000	250	3.9	30.0	45.0	41.5	37.5	150	300,000	75QW4390(1)00(2)	R75QW4390(1)00(2)
1,000	400	0.00022	3.0	8.0	10.0	7.5	4,000	8,000,000	75QD0220(1)30(2)	R75QD0220(1)30(2)
1,000	400	0.00027	3.0	8.0	10.0	7.5	4,000	8,000,000	75QD0270(1)30(2)	R75QD0270(1)30(2)
1,000	400	0.00033	3.0	8.0	10.0	7.5	4,000	8,000,000	75QD0330(1)30(2)	R75QD0330(1)30(2)
1,000	400	0.00039	3.0	8.0	10.0	7.5	4,000	8,000,000	75QD0390(1)30(2)	R75QD0390(1)30(2)
1,000	400	0.00047	3.0	8.0	10.0	7.5	4,000	8,000,000	75QD0470(1)30(2)	R75QD0470(1)30(2)
1,000	400	0.00056	3.0	8.0	10.0	7.5	4,000	8,000,000	75QD0560(1)30(2)	R75QD0560(1)30(2)
1,000	400	0.00068	3.0	8.0	10.0	7.5	4,000	8,000,000	75QD0680(1)30(2)	R75QD0680(1)30(2)
1,000	400	0.00082	3.0	8.0	10.0	7.5	4,000	8,000,000	75QD0820(1)30(2)	R75QD0820(1)30(2)
1,000	400	0.0010	3.0	8.0	10.0	7.5	4,000	8,000,000	75QD1100(1)30(2)	R75QD1100(1)30(2)
1,000	400	0.0012	4.0	9.0	10.0	7.5	4,000	8,000,000	75QD1120(1)30(2)	R75QD1120(1)30(2)
1,000	400	0.0015	4.0	9.0	10.0	7.5	4,000	8,000,000	75QD1150(1)30(2)	R75QD1150(1)30(2)
1,000	400	0.0018	4.0	9.0	10.0	7.5	4,000	8,000,000	75QD1180(1)30(2)	R75QD1180(1)30(2)
1,000	400	0.0022	4.0	9.0	10.0	7.5	4,000	8,000,000	75QD1220(1)30(2)	R75QD1220(1)30(2)
1,000	400	0.0027	4.0	9.0	10.0	7.5	4,000	8,000,000	75QD1270(1)30(2)	R75QD1270(1)30(2)
1,000	400	0.0033	4.0	9.0	10.0	7.5	4,000	8,000,000	75QD1330(1)30(2)	R75QD1330(1)30(2)
1,000	400	0.0039	5.0	10.5	10.0	7.5	4,000	8,000,000	75QD1390(1)30(2)	R75QD1390(1)30(2)
1,000	400	0.0047	5.0	10.5	10.0	7.5	4,000	8,000,000	75QD1470(1)30(2)	R75QD1470(1)30(2)
1,000	400	0.0056	5.0	10.5	10.0	7.5	4,000	8,000,000	75QD1560(1)30(2)	R75QD1560(1)30(2)
1,000	400	0.0068	6.0	12.0	10.5	7.5	4,000	8,000,000	75QD1680(1)30(2)	R75QD1680(1)30(2)
1,000	400	0.0082	6.0	12.0	10.5	7.5	4,000	8,000,000	75QD1820(1)30(2)	R75QD1820(1)30(2)
1,250	600	0.0082	5.0	11.0	18.0	15.0	3,300	8,250,000	75RI1820(1)30(2)	R75RI1820(1)30(2)
1,250	600	0.010	5.0	11.0	18.0	15.0	3,300	8,250,000	75RI2100(1)30(2)	R75RI2100(1)30(2)
1,250	600	0.012	6.0	12.0	18.0	15.0	3,300	8,250,000	75RI2120(1)30(2)	R75RI2120(1)30(2)
1,250	600	0.015	6.0	12.0	18.0	15.0	3,300	8,250,000	75RI2150(1)30(2)	R75RI2150(1)30(2)
1,250	600	0.018	7.5	13.5	18.0	15.0	3,300	8,250,000	75RI2180(1)30(2)	R75RI2180(1)30(2)
1,250	600	0.022	7.5	13.5	18.0	15.0	3,300	8,250,000	75RI2220(1)30(2)	R75RI2220(1)30(2)
1,250	600	0.022	9.0	12.5	18.0	15.0	3,300	8,250,000	75RI2220(1)70(2)	R75RI2220(1)70(2)
1,250	600	0.027	8.5	14.5	18.0	15.0	3,300	8,250,000	75RI2270(1)30(2)	R75RI2270(1)30(2)
1,250	600	0.027	13.0	12.0	18.0	15.0	3,300	8,250,000	75RI2270(1)70(2)	R75RI2270(1)70(2)
1,250	600	0.033	10.0	16.0	18.0	15.0	3,300	8,250,000	75RI2330(1)30(2)	R75RI2330(1)30(2)
1,250	600	0.033	13.0	12.0	18.0	15.0	3,300	8,250,000	75RI2330(1)70(2)	R75RI2330(1)70(2)
1,250	600	0.039	10.0	16.0	18.0	15.0	3,300	8,250,000	75RI2390(1)30(2)	R75RI2390(1)30(2)
1,250	600	0.047	11.0	19.0	18.0	15.0	3,300	8,250,000	75RI2470(1)30(2)	R75RI2470(1)30(2)
1,250	600	0.056	11.0	19.0	18.0	15.0	3,300	8,250,000	75RI2560(1)30(2)	R75RI2560(1)30(2)
1,250	600	0.033	6.0	15.0	26.5	22.5	2,100	5,250,000	75RN2330(1)30(2)	R75RN2330(1)30(2)
1,250	600	0.039	6.0	15.0	26.5	22.5	2,100	5,250,000	75RN2390(1)30(2)	R75RN2390(1)30(2)
1,250	600	0.047	7.0	16.0	26.5	22.5	2,100	5,250,000	75RN2470(1)30(2)	R75RN2470(1)30(2)
1,250	600	0.056	7.0	16.0	26.5	22.5	2,100	5,250,000	75RN2560(1)30(2)	R75RN2560(1)30(2)
1,250	600	0.068	8.5	17.0	26.5	22.5	2,100	5,250,000	75RN2680(1)30(2)	R75RN2680(1)30(2)
1,250	600	0.082	10.0	18.5	26.5	22.5	2,100	5,250,000	75RN2820(1)30(2)	R75RN2820(1)30(2)
1,250	600	0.10	10.0	18.5	26.5	22.5	2,100	5,250,000	75RN3100(1)30(2)	R75RN3100(1)30(2)
1,250	600	0.12	11.0	20.0	26.5	22.5	2,100	5,250,000	75RN3120(1)30(2)	R75RN3120(1)30(2)
1,250	600	0.15	13.0	22.0	26.5	22.5	2,100	5,250,000	75RN3150(1)30(2)	R75RN3150(1)30(2)
1,250	600	0.10	9.0	17.0	32.0	27.5	500	1,250,000	75RR3100(1)40(2)	R75RR3100(1)40(2)
1,250	600	0.12	9.0	17.0	32.0	27.5	500	1,250,000	75RR3120(1)40(2)	R75RR3120(1)40(2)
1,250	600	0.15	11.0	20.0	32.0	27.5	500	1,250,000	75RR3150(1)40(2)	R75RR3150(1)40(2)
1,250	600	0.18	11.0	20.0	32.0	27.5	500	1,250,000	75RR3180(1)40(2)	R75RR3180(1)40(2)
1,250	600	0.22	13.0	22.0	32.0	27.5	500	1,250,000	75RR3220(1)40(2)	R75RR3220(1)40(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
1,250	600	0.27	13.0	25.0	32.0	27.5	500	1,250,000	75RR3270(1)40(2)	R75RR3270(1)40(2)
1,250	600	0.33	14.0	28.0	32.0	27.5	500	1,250,000	75RR3330(1)30(2)	R75RR3330(1)30(2)
1,250	600	0.39	18.0	33.0	32.0	27.5	500	1,250,000	75RR3390(1)40(2)	R75RR3390(1)40(2)
1,250	600	0.47	18.0	33.0	32.0	27.5	500	1,250,000	75RR3470(1)40(2)	R75RR3470(1)40(2)
1,250	600	0.56	18.0	33.0	32.0	27.5	500	1,250,000	75RR3560(1)40(2)	R75RR3560(1)40(2)
1,250	600	0.68	22.0	37.0	32.0	27.5	500	1,250,000	75RR3680(1)40(2)	R75RR3680(1)40(2)
1,250	600	0.82	22.0	37.0	32.0	27.5	500	1,250,000	75RR3820(1)40(2)	R75RR3820(1)40(2)
1,250	600	0.27	11.0	22.0	41.5	37.5	360	900,000	75RW3270(1)30(2)	R75RW3270(1)30(2)
1,250	600	0.33	13.0	24.0	41.5	37.5	360	900,000	75RW3330(1)20(2)	R75RW3330(1)20(2)
1,250	600	0.39	13.0	24.0	41.5	37.5	360	900,000	75RW3390(1)30(2)	R75RW3390(1)30(2)
1,250	600	0.47	16.0	28.5	41.5	37.5	360	900,000	75RW3470(1)40(2)	R75RW3470(1)40(2)
1,250	600	0.56	16.0	28.5	41.5	37.5	360	900,000	75RW3560(1)40(2)	R75RW3560(1)40(2)
1,250	600	0.68	19.0	32.0	41.5	37.5	360	900,000	75RW3680(1)30(2)	R75RW3680(1)30(2)
1,250	600	0.82	19.0	32.0	41.5	37.5	360	900,000	75RW3820(1)40(2)	R75RW3820(1)40(2)
1,250	600	1.0	20.0	40.0	41.5	37.5	360	900,000	75RW4100(1)30(2)	R75RW4100(1)30(2)
1,250	600	1.2	20.0	40.0	41.5	37.5	360	900,000	75RW4120(1)40(2)	R75RW4120(1)40(2)
1,250	600	1.5	24.0	44.0	41.5	37.5	360	900,000	75RW4150(1)40(2)	R75RW4150(1)40(2)
1,250	600	1.8	24.0	44.0	41.5	37.5	360	900,000	75RW4180(1)30(2)	R75RW4180(1)30(2)
1,250	600	2.2	30.0	45.0	41.5	37.5	360	900,000	75RW4220(1)30(2)	R75RW4220(1)30(2)
1,600	650	0.0039	4.0	10.0	18.0	15.0	6,000	19,200,000	75TI1390(1)30(2)	R75TI1390(1)30(2)
1,600	650	0.0047	4.0	10.0	18.0	15.0	6,000	19,200,000	75TI1470(1)30(2)	R75TI1470(1)30(2)
1,600	650	0.0056	5.0	11.0	18.0	15.0	6,000	19,200,000	75TI1560(1)30(2)	R75TI1560(1)30(2)
1,600	650	0.0068	5.0	11.0	18.0	15.0	6,000	19,200,000	75TI1680(1)30(2)	R75TI1680(1)30(2)
1,600	650	0.0082	6.0	12.0	18.0	15.0	6,000	19,200,000	75TI1820(1)30(2)	R75TI1820(1)30(2)
1,600	650	0.010	6.0	12.0	18.0	15.0	6,000	19,200,000	75TI2100(1)30(2)	R75TI2100(1)30(2)
1,600	650	0.012	7.5	13.5	18.0	15.0	6,000	19,200,000	75TI2120(1)30(2)	R75TI2120(1)30(2)
1,600	650	0.015	7.5	13.5	18.0	15.0	6,000	19,200,000	75TI2150(1)30(2)	R75TI2150(1)30(2)
1,600	650	0.018	8.5	14.5	18.0	15.0	6,000	19,200,000	75TI2180(1)30(2)	R75TI2180(1)30(2)
1,600	650	0.018	9.0	12.5	18.0	15.0	6,000	19,200,000	75TI2180(1)70(2)	R75TI2180(1)70(2)
1,600	650	0.022	10.0	16.0	18.0	15.0	6,000	19,200,000	75TI2220(1)30(2)	R75TI2220(1)30(2)
1,600	650	0.022	13.0	12.0	18.0	15.0	6,000	19,200,000	75TI2220(1)70(2)	R75TI2220(1)70(2)
1,600	650	0.027	10.0	16.0	18.0	15.0	6,000	19,200,000	75TI2270(1)30(2)	R75TI2270(1)30(2)
1,600	650	0.033	11.0	19.0	18.0	15.0	6,000	19,200,000	75TI2330(1)30(2)	R75TI2330(1)30(2)
1,600	650	0.027	6.0	15.0	26.5	22.5	3,000	9,600,000	75TN2270(1)30(2)	R75TN2270(1)30(2)
1,600	650	0.033	7.0	16.0	26.5	22.5	3,000	9,600,000	75TN2330(1)30(2)	R75TN2330(1)30(2)
1,600	650	0.039	7.0	16.0	26.5	22.5	3,000	9,600,000	75TN2390(1)30(2)	R75TN2390(1)30(2)
1,600	650	0.047	8.5	17.0	26.5	22.5	3,000	9,600,000	75TN2470(1)30(2)	R75TN2470(1)30(2)
1,600	650	0.056	10.0	18.5	26.5	22.5	3,000	9,600,000	75TN2560(1)30(2)	R75TN2560(1)30(2)
1,600	650	0.068	10.0	18.5	26.5	22.5	3,000	9,600,000	75TN2680(1)30(2)	R75TN2680(1)30(2)
1,600	650	0.082	11.0	20.0	26.5	22.5	3,000	9,600,000	75TN2820(1)30(2)	R75TN2820(1)30(2)
1,600	650	0.10	13.0	22.0	26.5	22.5	3,000	9,600,000	75TN3100(1)30(2)	R75TN3100(1)30(2)
1,600	650	0.12	13.0	22.0	26.5	22.5	3,000	9,600,000	75TN3120(1)30(2)	R75TN3120(1)30(2)
1,600	650	0.068	9.0	17.0	32.0	27.5	1,500	4,800,000	75TR2680(1)30(2)	R75TR2680(1)30(2)
1,600	650	0.082	9.0	17.0	32.0	27.5	1,500	4,800,000	75TR2820(1)30(2)	R75TR2820(1)30(2)
1,600	650	0.10	11.0	20.0	32.0	27.5	1,500	4,800,000	75TR3100(1)40(2)	R75TR3100(1)40(2)
1,600	650	0.12	11.0	20.0	32.0	27.5	1,500	4,800,000	75TR3120(1)30(2)	R75TR3120(1)30(2)
1,600	650	0.15	13.0	22.0	32.0	27.5	1,500	4,800,000	75TR3150(1)30(2)	R75TR3150(1)30(2)
1,600	650	0.18	13.0	25.0	32.0	27.5	1,500	4,800,000	75TR3180(1)20(2)	R75TR3180(1)20(2)
1,600	650	0.22	13.0	25.0	32.0	27.5	1,500	4,800,000	75TR3220(1)40(2)	R75TR3220(1)40(2)
1,600	650	0.27	18.0	33.0	32.0	27.5	1,500	4,800,000	75TR3270(1)30(2)	R75TR3270(1)30(2)
1,600	650	0.33	18.0	33.0	32.0	27.5	1,500	4,800,000	75TR3330(1)30(2)	R75TR3330(1)30(2)
1,600	650	0.39	18.0	33.0	32.0	27.5	1,500	4,800,000	75TR3390(1)30(2)	R75TR3390(1)30(2)
1,600	650	0.47	22.0	37.0	32.0	27.5	1,500	4,800,000	75TR3470(1)30(2)	R75TR3470(1)30(2)
1,600	650	0.56	22.0	37.0	32.0	27.5	1,500	4,800,000	75TR3560(1)30(2)	R75TR3560(1)30(2)
1,600	650	0.18	11.0	22.0	41.5	37.5	750	2,400,000	75TW3180(1)30(2)	R75TW3180(1)30(2)
1,600	650	0.22	13.0	24.0	41.5	37.5	750	2,400,000	75TW3220(1)20(2)	R75TW3220(1)20(2)
1,600	650	0.27	13.0	24.0	41.5	37.5	750	2,400,000	75TW3270(1)30(2)	R75TW3270(1)30(2)
1,600	650	0.33	16.0	28.5	41.5	37.5	750	2,400,000	75TW3330(1)30(2)	R75TW3330(1)30(2)
1,600	650	0.39	16.0	28.5	41.5	37.5	750	2,400,000	75TW3390(1)30(2)	R75TW3390(1)30(2)
1,600	650	0.47	19.0	32.0	41.5	37.5	750	2,400,000	75TW3470(1)20(2)	R75TW3470(1)20(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
1,600	650	0.56	19.0	32.0	41.5	37.5	750	2,400,000	75TW3560(1)30(2)	R75TW3560(1)30(2)
1,600	650	0.68	20.0	40.0	41.5	37.5	750	2,400,000	75TW3680(1)20(2)	R75TW3680(1)20(2)
1,600	650	0.82	20.0	40.0	41.5	37.5	750	2,400,000	75TW3820(1)30(2)	R75TW3820(1)30(2)
1,600	650	1.0	24.0	44.0	41.5	37.5	750	2,400,000	75TW4100(1)30(2)	R75TW4100(1)30(2)
1,600	650	1.2	24.0	44.0	41.5	37.5	750	2,400,000	75TW4120(1)30(2)	R75TW4120(1)30(2)
1,600	650	1.5	30.0	45.0	41.5	37.5	750	2,400,000	75TW4150(1)30(2)	R75TW4150(1)30(2)
2,000	700	0.0010	4.0	10.0	18.0	15.0	9,500	38,000,000	75UI1100(1)40(2)	R75UI1100(1)40(2)
2,000	700	0.0012	4.0	10.0	18.0	15.0	9,500	38,000,000	75UI1120(1)40(2)	R75UI1120(1)40(2)
2,000	700	0.0015	4.0	10.0	18.0	15.0	9,500	38,000,000	75UI1150(1)40(2)	R75UI1150(1)40(2)
2,000	700	0.0018	4.0	10.0	18.0	15.0	9,500	38,000,000	75UI1180(1)40(2)	R75UI1180(1)40(2)
2,000	700	0.0022	4.0	10.0	18.0	15.0	9,500	38,000,000	75UI1220(1)40(2)	R75UI1220(1)40(2)
2,000	700	0.0027	4.0	10.0	18.0	15.0	9,500	38,000,000	75UI1270(1)40(2)	R75UI1270(1)40(2)
2,000	700	0.0033	4.0	10.0	18.0	15.0	9,500	38,000,000	75UI1330(1)40(2)	R75UI1330(1)40(2)
2,000	700	0.0039	5.0	11.0	18.0	15.0	9,500	38,000,000	75UI1390(1)30(2)	R75UI1390(1)30(2)
2,000	700	0.0047	5.0	11.0	18.0	15.0	9,500	38,000,000	75UI1470(1)30(2)	R75UI1470(1)30(2)
2,000	700	0.0056	6.0	12.0	18.0	15.0	9,500	38,000,000	75UI1560(1)30(2)	R75UI1560(1)30(2)
2,000	700	0.0068	6.0	12.0	18.0	15.0	9,500	38,000,000	75UI1680(1)30(2)	R75UI1680(1)30(2)
2,000	700	0.0082	7.5	13.5	18.0	15.0	9,500	38,000,000	75UI1820(1)30(2)	R75UI1820(1)30(2)
2,000	700	0.010	7.5	13.5	18.0	15.0	9,500	38,000,000	75UI2100(1)30(2)	R75UI2100(1)30(2)
2,000	700	0.012	8.5	14.5	18.0	15.0	9,500	38,000,000	75UI2120(1)30(2)	R75UI2120(1)30(2)
2,000	700	0.012	9.0	12.5	18.0	15.0	9,500	38,000,000	75UI2120(1)70(2)	R75UI2120(1)70(2)
2,000	700	0.015	8.5	14.5	18.0	15.0	9,500	38,000,000	75UI2150(1)30(2)	R75UI2150(1)30(2)
2,000	700	0.015	13.0	12.0	18.0	15.0	9,500	38,000,000	75UI2150(1)70(2)	R75UI2150(1)70(2)
2,000	700	0.018	10.0	16.0	18.0	15.0	9,500	38,000,000	75UI2180(1)30(2)	R75UI2180(1)30(2)
2,000	700	0.018	13.0	12.0	18.0	15.0	9,500	38,000,000	75UI2180(1)70(2)	R75UI2180(1)70(2)
2,000	700	0.022	11.0	19.0	18.0	15.0	9,500	38,000,000	75UI2220(1)30(2)	R75UI2220(1)30(2)
2,000	700	0.027	11.0	19.0	18.0	15.0	9,500	38,000,000	75UI2270(1)30(2)	R75UI2270(1)30(2)
2,000	700	0.0047	6.0	15.0	26.5	22.5	3,500	14,000,000	75UN1470(1)30(2)	R75UN1470(1)30(2)
2,000	700	0.0056	6.0	15.0	26.5	22.5	3,500	14,000,000	75UN1560(1)30(2)	R75UN1560(1)30(2)
2,000	700	0.0068	6.0	15.0	26.5	22.5	3,500	14,000,000	75UN1680(1)30(2)	R75UN1680(1)30(2)
2,000	700	0.0082	6.0	15.0	26.5	22.5	3,500	14,000,000	75UN1820(1)30(2)	R75UN1820(1)30(2)
2,000	700	0.010	6.0	15.0	26.5	22.5	3,500	14,000,000	75UN2100(1)30(2)	R75UN2100(1)30(2)
2,000	700	0.012	6.0	15.0	26.5	22.5	3,500	14,000,000	75UN2120(1)30(2)	R75UN2120(1)30(2)
2,000	700	0.015	6.0	15.0	26.5	22.5	3,500	14,000,000	75UN2150(1)30(2)	R75UN2150(1)30(2)
2,000	700	0.018	6.0	15.0	26.5	22.5	3,500	14,000,000	75UN2180(1)30(2)	R75UN2180(1)30(2)
2,000	700	0.022	6.0	15.0	26.5	22.5	3,500	14,000,000	75UN2220(1)30(2)	R75UN2220(1)30(2)
2,000	700	0.027	7.0	16.0	26.5	22.5	3,500	14,000,000	75UN2270(1)30(2)	R75UN2270(1)30(2)
2,000	700	0.033	8.5	17.0	26.5	22.5	3,500	14,000,000	75UN2330(1)30(2)	R75UN2330(1)30(2)
2,000	700	0.039	10.0	18.5	26.5	22.5	3,500	14,000,000	75UN2390(1)30(2)	R75UN2390(1)30(2)
2,000	700	0.047	10.0	18.5	26.5	22.5	3,500	14,000,000	75UN2470(1)30(2)	R75UN2470(1)30(2)
2,000	700	0.056	11.0	20.0	26.5	22.5	3,500	14,000,000	75UN2560(1)30(2)	R75UN2560(1)30(2)
2,000	700	0.068	13.0	22.0	26.5	22.5	3,500	14,000,000	75UN2680(1)30(2)	R75UN2680(1)30(2)
2,000	700	0.047	9.0	17.0	32.0	27.5	1,000	4,000,000	75UR2470(1)30(2)	R75UR2470(1)30(2)
2,000	700	0.056	9.0	17.0	32.0	27.5	1,000	4,000,000	75UR2560(1)30(2)	R75UR2560(1)30(2)
2,000	700	0.068	11.0	20.0	32.0	27.5	1,000	4,000,000	75UR2680(1)20(2)	R75UR2680(1)20(2)
2,000	700	0.082	11.0	20.0	32.0	27.5	1,000	4,000,000	75UR2820(1)40(2)	R75UR2820(1)40(2)
2,000	700	0.10	13.0	22.0	32.0	27.5	1,000	4,000,000	75UR3100(1)20(2)	R75UR3100(1)20(2)
2,000	700	0.12	13.0	22.0	32.0	27.5	1,000	4,000,000	75UR3120(1)30(2)	R75UR3120(1)30(2)
2,000	700	0.15	13.0	25.0	32.0	27.5	1,000	4,000,000	75UR3150(1)40(2)	R75UR3150(1)40(2)
2,000	700	0.18	14.0	28.0	32.0	27.5	1,000	4,000,000	75UR3180(1)30(2)	R75UR3180(1)30(2)
2,000	700	0.22	18.0	33.0	32.0	27.5	1,000	4,000,000	75UR3220(1)30(2)	R75UR3220(1)30(2)
2,000	700	0.27	18.0	33.0	32.0	27.5	1,000	4,000,000	75UR3270(1)30(2)	R75UR3270(1)30(2)
2,000	700	0.33	22.0	37.0	32.0	27.5	1,000	4,000,000	75UR3330(1)30(2)	R75UR3330(1)30(2)
2,000	700	0.39	22.0	37.0	32.0	27.5	1,000	4,000,000	75UR3390(1)30(2)	R75UR3390(1)30(2)
2,000	700	0.15	11.0	22.0	41.5	37.5	500	2,000,000	75UW3150(1)30(2)	R75UW3150(1)30(2)
2,000	700	0.18	13.0	24.0	41.5	37.5	500	2,000,000	75UW3180(1)30(2)	R75UW3180(1)30(2)
2,000	700	0.22	16.0	28.5	41.5	37.5	500	2,000,000	75UW3220(1)20(2)	R75UW3220(1)20(2)
2,000	700	0.27	16.0	28.5	41.5	37.5	500	2,000,000	75UW3270(1)30(2)	R75UW3270(1)30(2)
2,000	700	0.33	19.0	32.0	41.5	37.5	500	2,000,000	75UW3330(1)20(2)	R75UW3330(1)20(2)
2,000	700	0.39	19.0	32.0	41.5	37.5	500	2,000,000	75UW3390(1)30(2)	R75UW3390(1)30(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
2,000	700	0.47	20.0	40.0	41.5	37.5	500	2,000,000	75UW3470(1)20(2)	R75UW3470(1)20(2)
2,000	700	0.56	20.0	40.0	41.5	37.5	500	2,000,000	75UW3560(1)40(2)	R75UW3560(1)40(2)
2,000	700	0.68	24.0	44.0	41.5	37.5	500	2,000,000	75UW3680(1)20(2)	R75UW3680(1)20(2)
2,000	700	0.82	24.0	44.0	41.5	37.5	500	2,000,000	75UW3820(1)40(2)	R75UW3820(1)40(2)
2,000	700	1.00	30.0	45.0	41.5	37.5	500	2,000,000	75UW4100(1)20(2)	R75UW4100(1)20(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Soldering Process

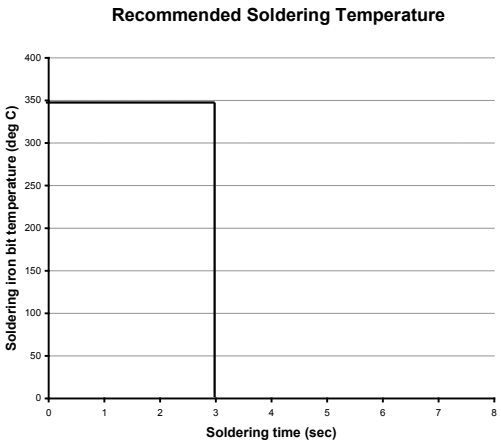
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

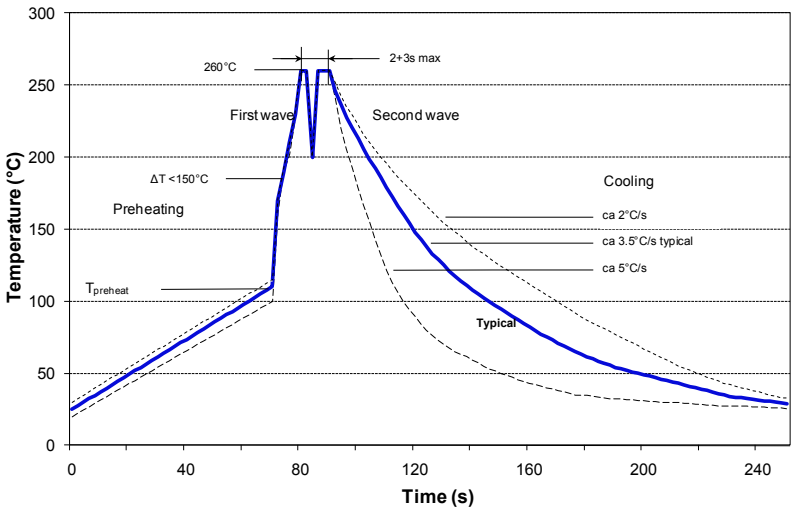
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

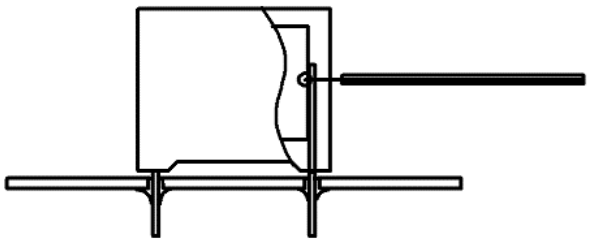
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



Temperature monitored inside the capacitor.

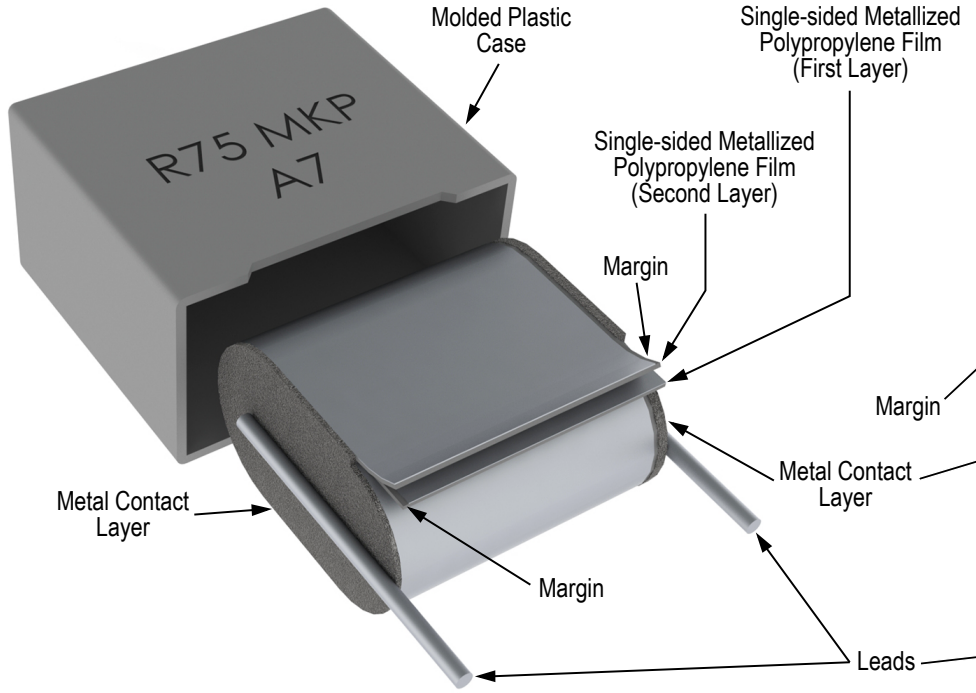
Selective Soldering Recommendations

Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

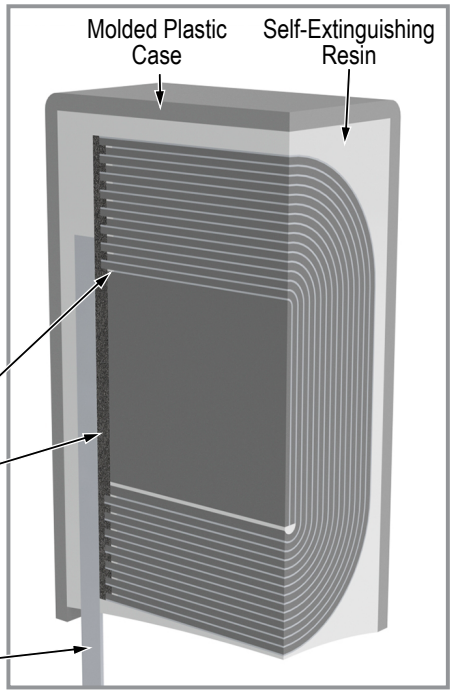
The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

Construction

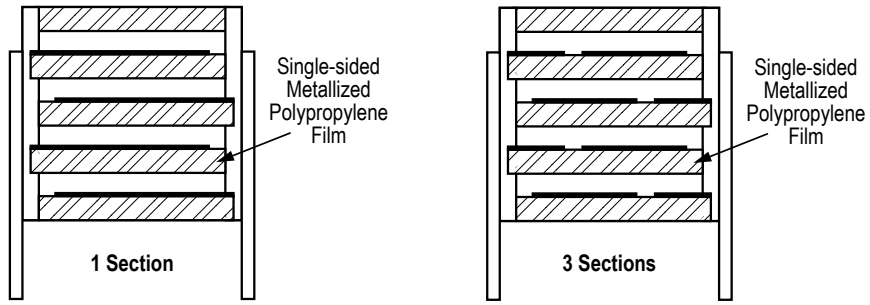
1 Section



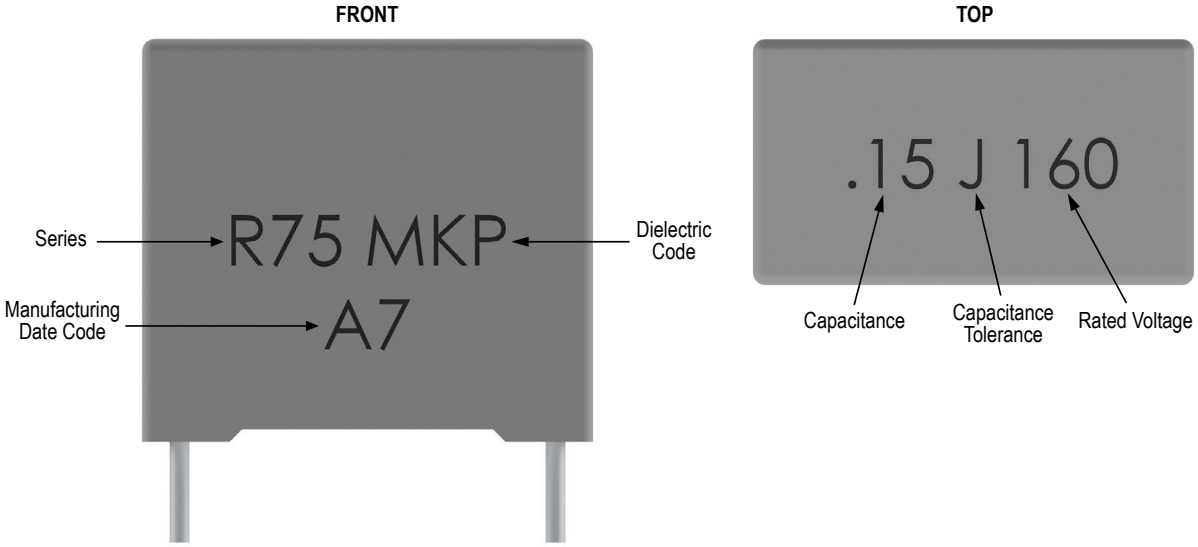
Detailed Cross Section



Winding Scheme



Marking

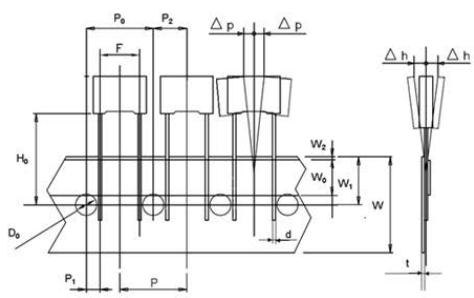

FRONT
TOP
Series
R75 MKP
Dielectric Code
Manufacturing Date Code
A7
.15 J 160
Capacitance
Capacitance Tolerance
Rated Voltage

Packaging Quantities

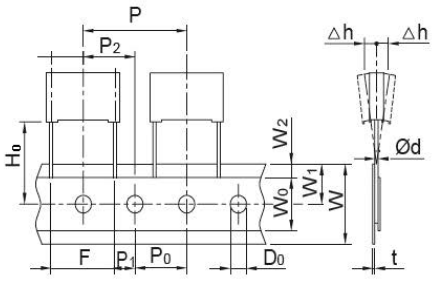
Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Large Reel ø 500 mm	Ammo Taped
7.5	3.0	8.0	10.0	1,500	1,750	2,100		2,800
	4.0	9.0	10.0	2,000	1,500	1,500		2,100
	5.0	10.5	10.0	1,500	1,000	1,200		1,600
	6.0	12.0	10.5	1,000	800	1,000		1,350
10	4.0	9.0	13.0	2,000	1,800	750	1,500	1,000
	5.0	11.0	13.0	1,300	1,500	600	1,250	800
	6.0	12.0	13.0	1,000	1,200	500	1,000	680
15	4.0	10.0	18.0	2,500	1,500	-	1,500	1,000
	5.0	11.0	18.0	2,000	1,000	600	1,250	800
	6.0	12.0	18.0	1,750	900	500	1,000	680
	7.5	13.5	18.0	1,000	700	350	800	500
	8.5	14.5	18.0	1,000	500	300	700	440
	9.0	12.5	18.0	1,000	520	270	650	410
	10.0	16.0	18.0	750	500	300	600	380
	11.0	19.0	18.0	450	350	-	500	340
	13.0	12.0	18.0	750	490	200	480	280
22.5	6.0	15.0	26.5	805	500		700	464
	7.0	16.0	26.5	700	500		550	380
	8.5	17.0	26.5	468	300		450	280
	10.0	18.5	26.5	396	300		350	235
	11.0	20.0	26.5	360	250		350	217
	13.0	22.0	26.5	300	200		300	-
27.5	9.0	17.0	32.0	816	408		450	
	11.0	20.0	32.0	560	336		350	
	13.0	22.0	32.0	480	288		300	
	13.0	25.0	32.0	480	288			
	14.0	28.0	32.0	352	176			
	18.0	33.0	32.0	256	128			
	22.0	37.0	32.0	168	112			
37.5	11.0	22.0	41.5	420	252			
	13.0	24.0	41.5	360	216			
	16.0	28.5	41.5	216	108			
	19.0	32.0	41.5	192	96			
	20.0	40.0	41.5	126	84			
	24.0	44.0	41.5	108	72			
	30.0	45.0	41.5	90	60			

Lead Taping & Packaging (IEC 60286–2)

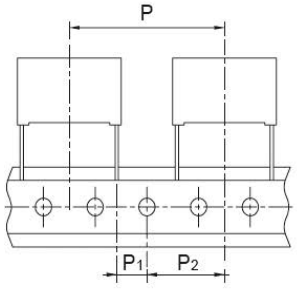
Lead Spacing 7.5 mm



Lead Spacing 10 & 15 mm



Lead Spacing 22.5 & 27.5



Taping Specification

Description	Symbol	Dimensions (mm)					
		Lead Spacing					Tolerance
		7.5	10.0	15.0	22.5	27.5	
Lead wire diameter	d	0.5 - 0.6	0.6	0.6 - 0.8	0.8	0.8	±0.05
Taping lead space	P	12.7	25.4	25.4	38.1	38.1	±1
Feed hole lead space *	P_0	12.7	12.7	12.7	12.7	12.7	±0.2 **
Centering of the lead wire	P_1	2.6	7.7	5.2	7.8	5.3	±0.7
Centering of the body	P_2	6.35	12.7	12.7	19.05	19.05	±1.3
Lead spacing ***	F	7.5	10.0	15.0	22.5	27.5	+0.6/-0.1
Component alignment	Δh	0	0	0	0	0	±2
Component deviation	Δp	0	0	0	0	0	±1
Height of component from tape center	H_0****	18.5	18.5	18.5	18.5	18.5	±0.5
Carrier tape width	W	18	18	18	18	18	+1/-0.5
Hold down tape width	W_0	6	9	10	10	10	Minimum
Hole position	W_1	9	9	9	9	9	±0.5
Hold down tape position	W_2	3	3	3	3	3	Maximum
Feed hole diameter	D_0	4	4	4	4	4	±0.2
Tape thickness	t	0.7	0.7	0.7	0.7	0.7	±0.2

** Available also 15 mm.*

*** Maximum 1 mm on 20 lead spacing.*

**** 15 mm and 10 mm taped to 7.5 mm (crimped leads) available upon request.*

***** H_0 = 16.5 mm is available upon request.*

R79 Series Single Metallized Polypropylene Film, Radial, 5 mm Lead Spacing, Multipurpose Applications

Overview

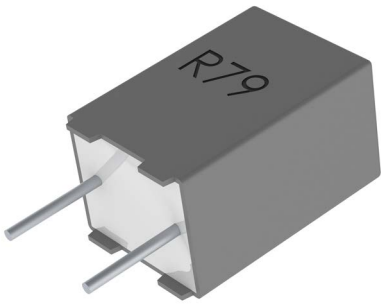
The R79 Series is constructed of metallized polypropylene film with radial leads of tinned wire. The radial leads are electrically welded to the metal layer on the ends of the capacitor winding. The capacitor is encapsulated with a self-extinguishing thermosetting resin in a box material meeting the UL 94V–0 requirements.

Applications

Typical applications include timing, oscillator circuits, high frequency coupling and decoupling applications. Not suitable for across-the-line application (see Suppressor Capacitors).

Benefits

- Voltage range: 160 – 630 VDC
- Capacitance range: 0.001 – 0.22 µF
- Lead Spacing: 5 mm
- Capacitance tolerance: ±5%, ±10%, ±20%
- Climatic category: 55/105/56 IEC 60068-1
- Operating temperature range of -55˚C to +105˚C
- RoHS compliance and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–2
- Self-healing



Part Number System

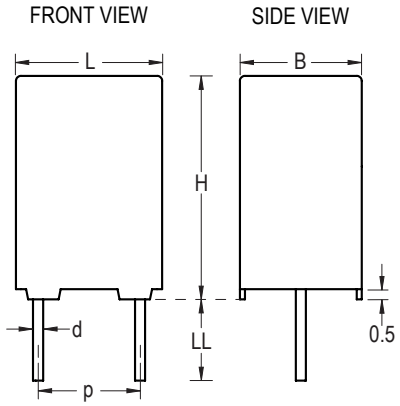
R79	G	C	2390	AA	40	K
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Packaging	Internal Use	Capacitance Tolerance
Metallized Polypropylene	G = 160 I = 250 M = 400 P = 630	C = 5	The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.	See Ordering Options Table	40 45	H = 2.5% J = ±5% K = ±10%

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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
5	**Standard Lead and Packaging Options**		
	Bulk (Bag)–Short Leads	4 +1.5/-0	AA
	Ammo Pack	H_0=18.5 +/- 0.5	DQ
	Other Lead and Packaging Options		
	Tape &Reel (Standard Reel)	H_0=18.5 +/- 0.5	CK
	Bulk (Bag)–Short Leads	10 +/- 1	JC
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	17 +1/-2	Z3

Dimensions – Millimeters



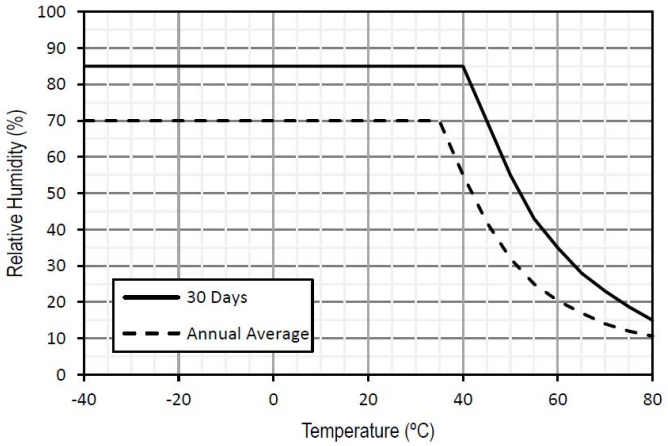
p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
5.0	+/-0.4	3.5	+0.1	7.5	+0.1	7.2	+0.2	0.6	+/-0.05
5.0	+/-0.4	4.5	+0.1	9.5	+0.1	7.2	+0.3	0.6	+/-0.05
5.0	+/-0.4	5.0	+0.1	10.0	+0.1	7.2	+0.3	0.6	+/-0.05
5.0	+/-0.4	6.0	+0.1	11.0	+0.1	7.2	+0.3	0.6	+/-0.05
5.0	+/-0.4	7.2	+0.1	13.0	+0.1	7.2	+0.3	0.6	+/-0.05

Note: See Ordering Options Table for lead length (LL/Ho) options.

Performance Characteristics

Dielectric	Polypropylene film				
Plates	Metal layer deposited by evaporation under vacuum				
Winding	Non-inductive type				
Leads	Tinned wire				
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.				
Related Documents	IEC 60384-16				
Rated Voltage V_R (VDC)	160	250	400	630	
Rated Voltage V_R (VAC)	70	160	200	220	
Capacitance Range (µF)	0.039 – 0.22	0.012 – 0.15	0.0039 – 0.047	0.001 – 0.018	
Capacitance Values	E12 series (IEC 60063) measured @ 1 kHz and +20 ±1°C				
Capacitance Tolerance	±2.5%, ±5%, ±10%				
Operating Temperature Range	-55°C to +105°C				
Rated Temperature T_R	+85°C				
Voltage Derating	Above +85°C DC and AC voltage derating is 1.25%/°C				
Climatic Category	55/105/56 IEC 60068-1				
Storage Conditions	Storage time: ≤ 24 months from the date marked on the label package				
	Average relative humidity per year ≤ 70%				
	RH ≤ 85% for 30 days randomly distributed throughout the year				
	Dew is absent				
	Temperature: -40 to 80°C (see "Maximum Humidity in Storage Conditions" graph below)				

Maximum Humidity in Storage Conditions

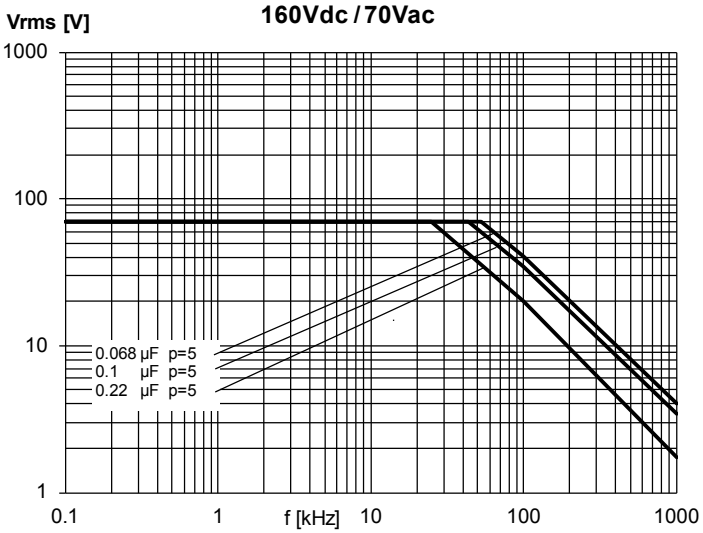


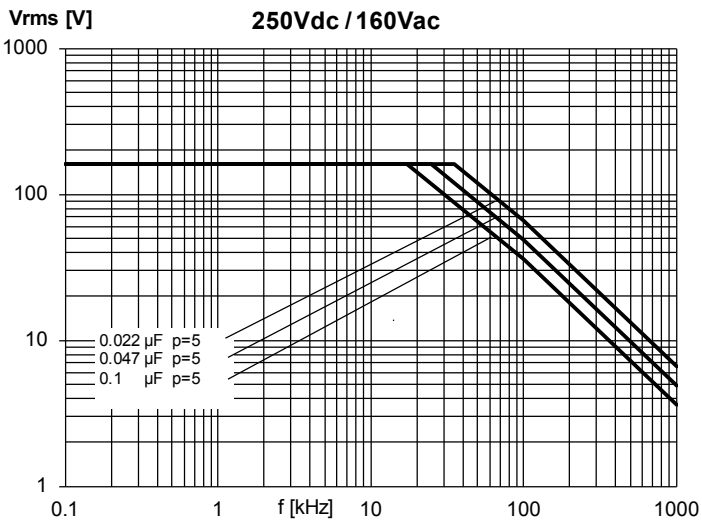
Performance Characteristics cont'd

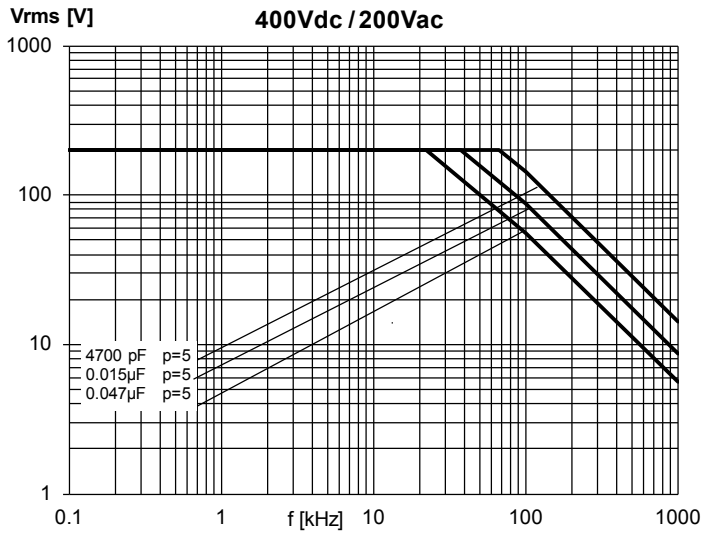
Test Voltage	1.6 x V_R VDC for 2 seconds (between terminations) @ +25°C ±5°C		
Capacitance Drift	Maximum 0.5% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%		
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp <V_R), the specified dv/dt can be multiplied by the factor V_R/Vpp		
Temperature Coefficient	-(200 ±100) ppm/°C at 1 kHz		
Self Inductance	Approximately 6 nH. Maximum 1 nH per 1 mm lead and capacitor length.		
Dissipation Factor tanδ	Maximum Values @ 25°C ±5°C		
	Frequency	C ≤ 0.1 µF	C > 1 µF
	1 kHz	0.06%	0.06%
	10 kHz	0.10%	0.10%
	100 kHz	0.30%	-
Insulation Resistance	Measured @ +25°C ±5°C, 100 VDC 60 seconds		
	Minimum Values Between Terminals		
	All Capacitance Values		
	≥ 100,000 MΩ (≥ 500,000 MΩ)*		

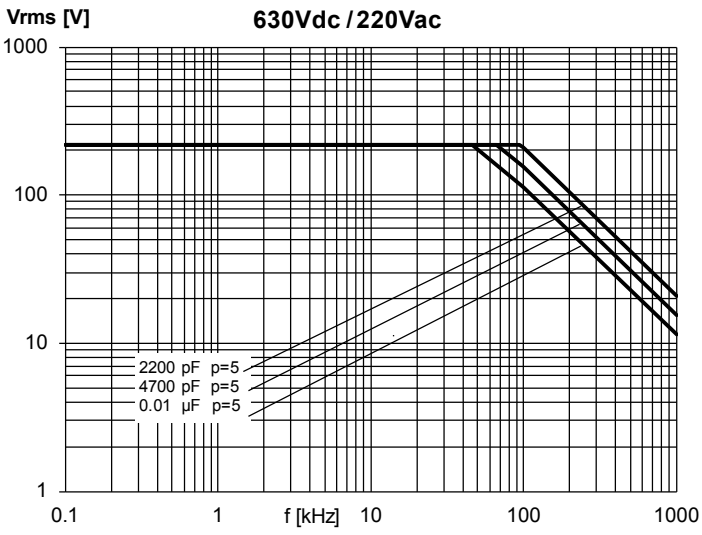
** typical value*

Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40ºC)

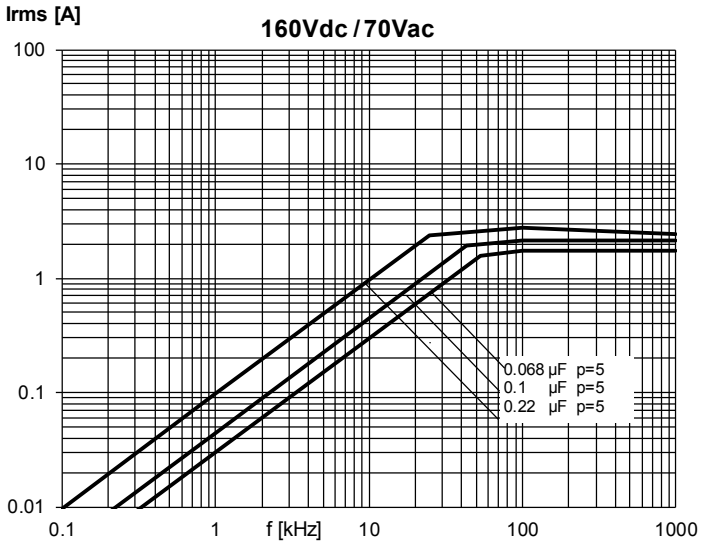


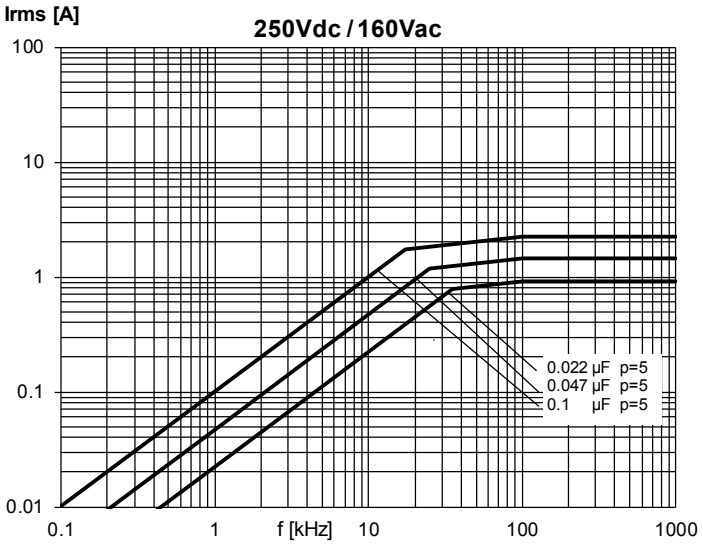


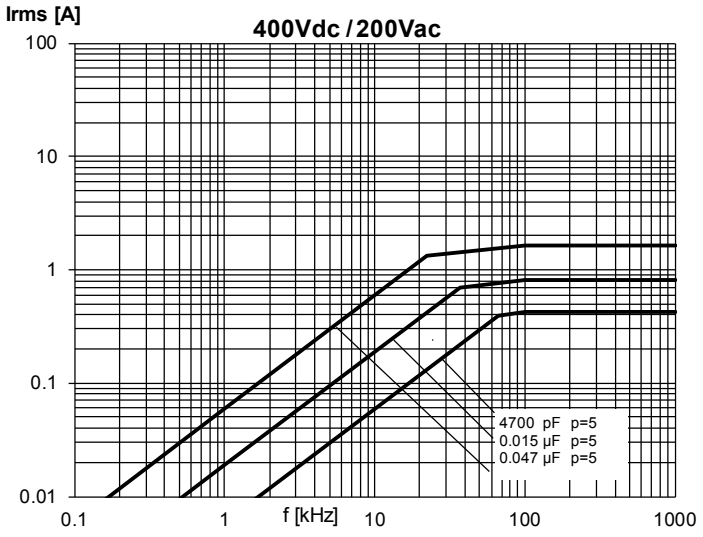


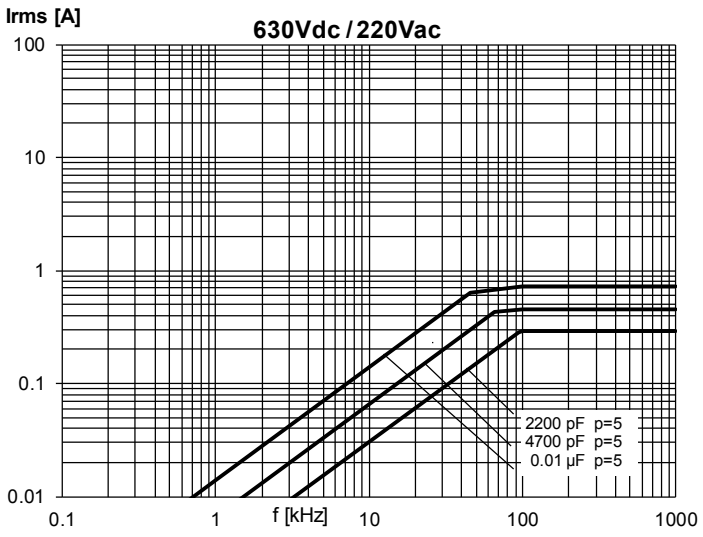


Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40ºC)









Environmental Test Data

Damp Heat, Steady State Test	Test Conditions:		Performances
	Temperature: Relative humidity (RH): Test duration:	+40°C ± 2°C 93% ± 2% 56 days	|Δ C/C| ≤ 3%, Δ tanδ ≤ 0.001 @ 1 kHz IR after test ≥ 50% of initial limit
Endurance Test	**Test Conditions**		**Performances**
	Temperature: Voltage applied: Test duration:	+85°C ±2°C 1.25 x V_R (DC) 2,000 hours	|Δ C/C| ≤ 3%, Δ tanδ ≤ 0.001 @10 kHz IR after test ≥ 50% of initial limit
Resistance to Soldering Heat Test	**Test Conditions**		**Performances**
	Solder bath temperature: Dipping time (with heat screen):	260°C ±5°C 10 seconds ±1 second	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.001 @10 kHz for C ≤ 1µF IR after test ≥ initial limit

Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
160	70	0.039	3.5	7.5	7.2	5.0	100	32,000	79GC2390(1)40(2)	R79GC2390(1)40(2)
160	70	0.047	4.5	9.5	7.2	5.0	100	32,000	79GC2470(1)40(2)	R79GC2470(1)40(2)
160	70	0.056	4.5	9.5	7.2	5.0	100	32,000	79GC2560(1)40(2)	R79GC2560(1)40(2)
160	70	0.068	4.5	9.5	7.2	5.0	100	32,000	79GC2680(1)40(2)	R79GC2680(1)40(2)
160	70	0.082	5.0	10.0	7.2	5.0	100	32,000	79GC2820(1)40(2)	R79GC2820(1)40(2)
160	70	0.10	5.0	10.0	7.2	5.0	100	32,000	79GC3100(1)40(2)	R79GC3100(1)40(2)
160	70	0.12	6.0	11.0	7.2	5.0	100	32,000	79GC3120(1)40(2)	R79GC3120(1)40(2)
160	70	0.15	6.0	11.0	7.2	5.0	100	32,000	79GC3150(1)40(2)	R79GC3150(1)40(2)
160	70	0.18	7.2	13.0	7.2	5.0	100	32,000	79GC3180(1)40(2)	R79GC3180(1)40(2)
160	70	0.22	7.2	13.0	7.2	5.0	100	32,000	79GC3220(1)40(2)	R79GC3220(1)40(2)
250	160	0.012	3.5	7.5	7.2	5.0	250	125,000	79IC2120(1)45(2)	R79IC2120(1)45(2)
250	160	0.015	3.5	7.5	7.2	5.0	250	125,000	79IC2150(1)45(2)	R79IC2150(1)45(2)
250	160	0.018	3.5	7.5	7.2	5.0	250	125,000	79IC2180(1)45(2)	R79IC2180(1)45(2)
250	160	0.022	3.5	7.5	7.2	5.0	250	125,000	79IC2220(1)45(2)	R79IC2220(1)45(2)
250	160	0.027	3.5	7.5	7.2	5.0	250	125,000	79IC2270(1)45(2)	R79IC2270(1)45(2)
250	160	0.033	3.5	7.5	7.2	5.0	250	125,000	79IC2330(1)40(2)	R79IC2330(1)40(2)
250	160	0.039	4.5	9.5	7.2	5.0	250	125,000	79IC2390(1)40(2)	R79IC2390(1)40(2)
250	160	0.047	4.5	9.5	7.2	5.0	250	125,000	79IC2470(1)40(2)	R79IC2470(1)40(2)
250	160	0.056	4.5	9.5	7.2	5.0	250	125,000	79IC2560(1)40(2)	R79IC2560(1)40(2)
250	160	0.068	5.0	10.0	7.2	5.0	250	125,000	79IC2680(1)40(2)	R79IC2680(1)40(2)
250	160	0.082	6.0	11.0	7.2	5.0	250	125,000	79IC2820(1)40(2)	R79IC2820(1)40(2)
250	160	0.10	6.0	11.0	7.2	5.0	250	125,000	79IC3100(1)40(2)	R79IC3100(1)40(2)
250	160	0.12	7.2	13.0	7.2	5.0	250	125,000	79IC3120(1)40(2)	R79IC3120(1)40(2)
250	160	0.15	7.2	13.0	7.2	5.0	250	125,000	79IC3150(1)40(2)	R79IC3150(1)40(2)
400	200	0.0039	3.5	7.5	7.2	5.0	400	320,000	79MC1390(1)40(2)	R79MC1390(1)40(2)
400	200	0.0047	3.5	7.5	7.2	5.0	400	320,000	79MC1470(1)40(2)	R79MC1470(1)40(2)
400	200	0.0056	3.5	7.5	7.2	5.0	400	320,000	79MC1560(1)40(2)	R79MC1560(1)40(2)
400	200	0.0068	3.5	7.5	7.2	5.0	400	320,000	79MC1680(1)40(2)	R79MC1680(1)40(2)
400	200	0.0082	3.5	7.5	7.2	5.0	400	320,000	79MC1820(1)40(2)	R79MC1820(1)40(2)
400	200	0.010	3.5	7.5	7.2	5.0	400	320,000	79MC2100(1)40(2)	R79MC2100(1)40(2)
400	200	0.012	4.5	9.5	7.2	5.0	400	320,000	79MC2120(1)40(2)	R79MC2120(1)40(2)
400	200	0.015	4.5	9.5	7.2	5.0	400	320,000	79MC2150(1)40(2)	R79MC2150(1)40(2)
400	200	0.018	5.0	10.0	7.2	5.0	400	320,000	79MC2180(1)40(2)	R79MC2180(1)40(2)
400	200	0.022	5.0	10.0	7.2	5.0	400	320,000	79MC2220(1)40(2)	R79MC2220(1)40(2)
400	200	0.027	6.0	11.0	7.2	5.0	400	320,000	79MC2270(1)40(2)	R79MC2270(1)40(2)
400	200	0.033	6.0	11.0	7.2	5.0	400	320,000	79MC2330(1)40(2)	R79MC2330(1)40(2)
400	200	0.039	7.2	13.0	7.2	5.0	400	320,000	79MC2390(1)40(2)	R79MC2390(1)40(2)
400	200	0.047	7.2	13.0	7.2	5.0	400	320,000	79MC2470(1)40(2)	R79MC2470(1)40(2)
630	220	0.0010	3.5	7.5	7.2	5.0	500	630,000	79PC1100(1)40(2)	R79PC1100(1)40(2)
630	220	0.0012	3.5	7.5	7.2	5.0	500	630,000	79PC1120(1)40(2)	R79PC1120(1)40(2)
630	220	0.0015	3.5	7.5	7.2	5.0	500	630,000	79PC1150(1)40(2)	R79PC1150(1)40(2)
630	220	0.0018	3.5	7.5	7.2	5.0	500	630,000	79PC1180(1)40(2)	R79PC1180(1)40(2)
630	220	0.0022	3.5	7.5	7.2	5.0	500	630,000	79PC1220(1)40(2)	R79PC1220(1)40(2)
630	220	0.0027	3.5	7.5	7.2	5.0	500	630,000	79PC1270(1)40(2)	R79PC1270(1)40(2)
630	220	0.0033	3.5	7.5	7.2	5.0	500	630,000	79PC1330(1)40(2)	R79PC1330(1)40(2)
630	220	0.0039	4.5	9.5	7.2	5.0	600	756,000	79PC1390(1)40(2)	R79PC1390(1)40(2)
630	220	0.0047	4.5	9.5	7.2	5.0	600	756,000	79PC1470(1)40(2)	R79PC1470(1)40(2)
630	220	0.006	4.5	9.5	7.2	5.0	600	756,000	79PC1560(1)40(2)	R79PC1560(1)40(2)
630	220	0.007	5.0	10.0	7.2	5.0	600	756,000	79PC1680(1)40(2)	R79PC1680(1)40(2)
630	220	0.008	5.0	10.0	7.2	5.0	600	756,000	79PC1820(1)40(2)	R79PC1820(1)40(2)
630	220	0.010	6.0	11.0	7.2	5.0	600	756,000	79PC2100(1)40(2)	R79PC2100(1)40(2)
630	220	0.012	6.0	11.0	7.2	5.0	600	756,000	79PC2120(1)40(2)	R79PC2120(1)40(2)
630	220	0.015	7.2	13.0	7.2	5.0	600	756,000	79PC2150(1)40(2)	R79PC2150(1)40(2)
630	220	0.018	7.2	13.0	7.2	5.0	600	756,000	79PC2180(1)40(2)	R79PC2180(1)40(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%

Soldering Process

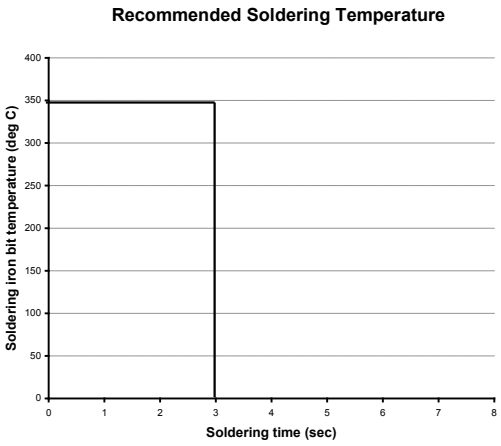
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

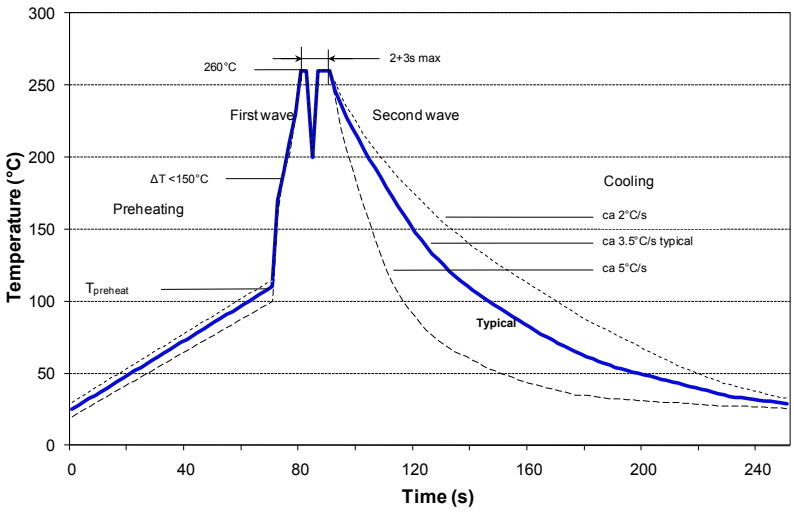
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

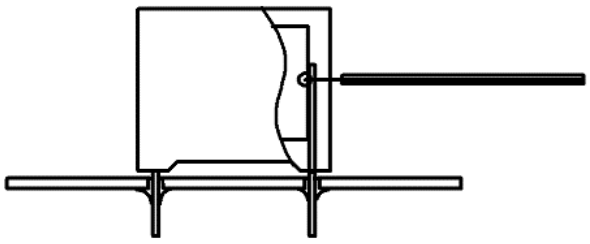
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



Temperature monitored inside the capacitor.

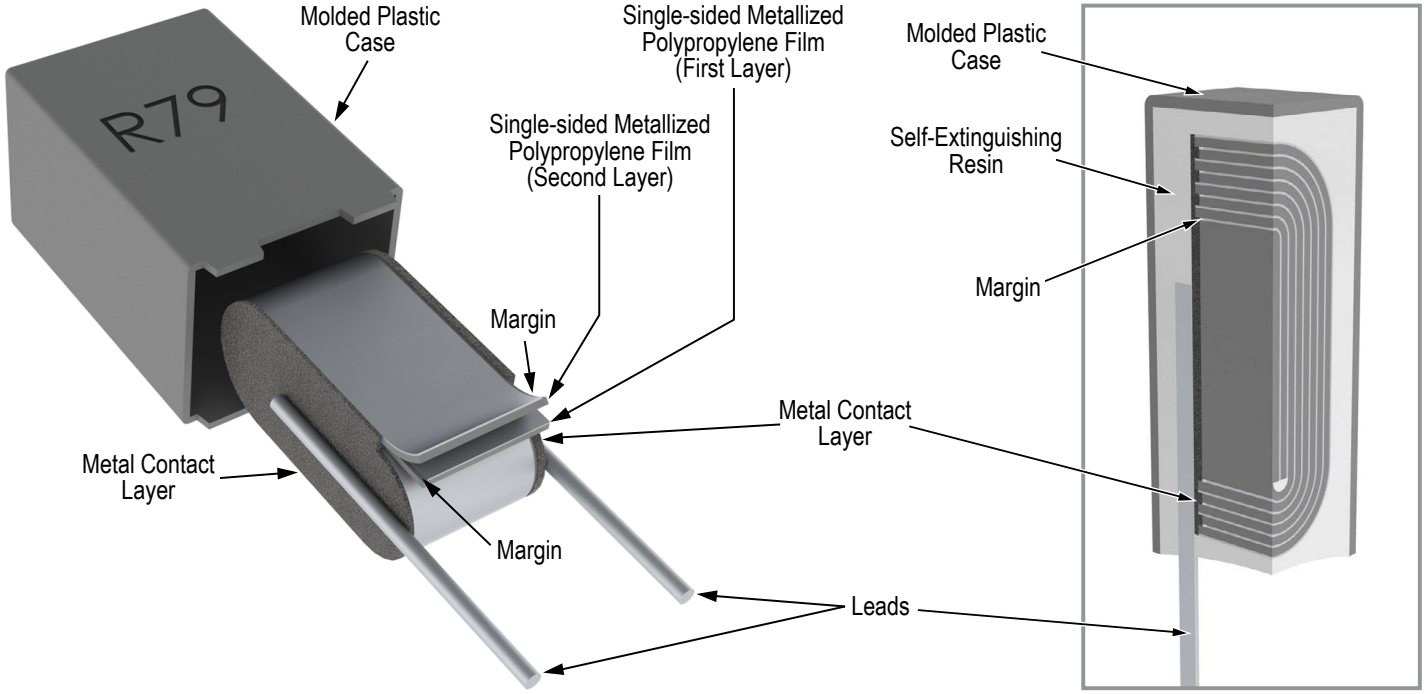
Selective Soldering Recommendations

Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

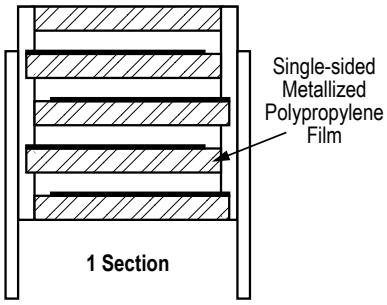
Construction

Wound

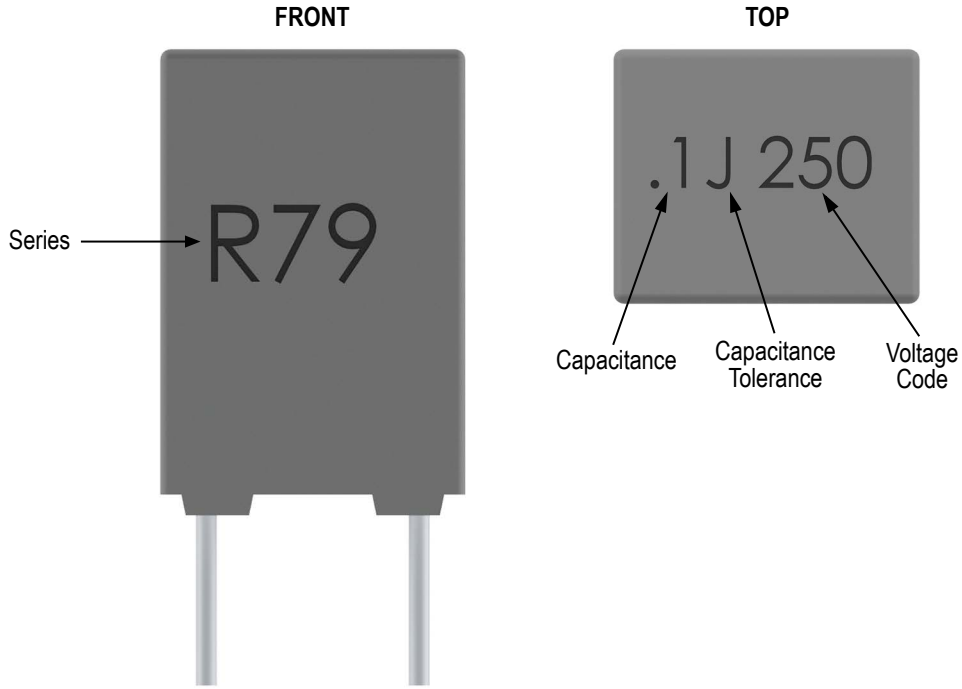


Detailed Cross Section

Winding Scheme



Marking



Packaging Quantities

Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Large Reel ø 500 mm	Ammo Taped
5	3.5	7.5	7.2	2,000	3,000	1,800		2,500
	4.5	9.5	7.2	1,500	2,000	1,400		1,900
	5.0	10	7.2	1,000	1,500	1,200		1,700
	6.0	11	7.2	2,000	1,000	1,000		1,400
	7.2	13	7.2	1,500	750	800		1,150

A70 Series Single Metallized Polypropylene Film, Axial

Overview

The A70 Series is constructed of metallized polypropylene film with axial leads of tinned wire. The axial leads are electrically welded to the metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a polyester tape wrapping case with thermosetting resin material.

Applications

Typical applications include temperature compensation circuits, timing, oscillator circuits, power factor correction and coupling capacitors in switched mode power supply (SMPS) applications. Not suitable for across-the-line application (see Suppressor Capacitors).

Benefits

- Voltage range: 160 – 630 VDC
- Capacitance range: 0.001 µF – 4.7 µF
- Diameter: 5 – 21.5 mm
- Length: 11 – 33 mm
- Capacitance tolerance: ±5%, ±10%, ±20%
- Climatic category: 55/105/56 IEC 60068-1
- Operating temperature range of -55˚C to +105˚C
- RoHS compliance and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–1
- Self-healing



Part Number System

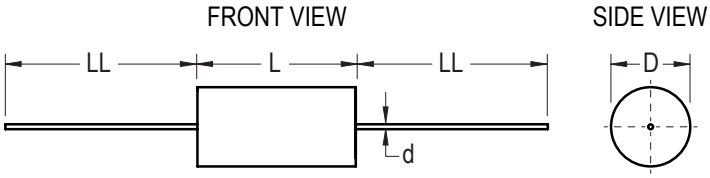
A70	G	F	2220	AA	00	J
Series	Rated Voltage (VDC)	Length (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Metallized Polypropylene	G = 160 I = 250 M = 400 P = 630	F = 11 H= 14 K = 20.5 Q = 28 T = 33	The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.	See Ordering Options Table	00 (Standard)	J = ±5% K = ±10% M = ±20%

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Ordering Options Table

Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
Bulk (Bag) – Straight Leads	40 +/-5	AA
Tape & Reel (Standard Reel)		26

Dimensions – Millimeters



D		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
5.0	Maximum	11.0	Maximum	0.5	±0.05
5.5	Maximum	14.0	Maximum	0.6	±0.05
6.0	Maximum	14.0	Maximum	0.6	±0.05
6.5	Maximum	14.0	Maximum	0.6	±0.05
7.0	Maximum	14.0	Maximum	0.8	±0.05
7.0	Maximum	20.5	Maximum	0.8	±0.05
7.5	Maximum	14.0	Maximum	0.8	±0.05
7.5	Maximum	20.5	Maximum	0.8	±0.05
8.0	Maximum	20.5	Maximum	0.8	±0.05
8.0	Maximum	28.0	Maximum	0.8	±0.05
8.5	Maximum	14.0	Maximum	0.8	±0.05
8.5	Maximum	20.5	Maximum	0.8	±0.05
8.5	Maximum	28.0	Maximum	0.8	±0.05
9.0	Maximum	20.5	Maximum	0.8	±0.05
9.5	Maximum	28.0	Maximum	0.8	±0.05
10.0	Maximum	28.0	Maximum	0.8	±0.05

Note: See Ordering Options Table for lead length (LL / l) options.

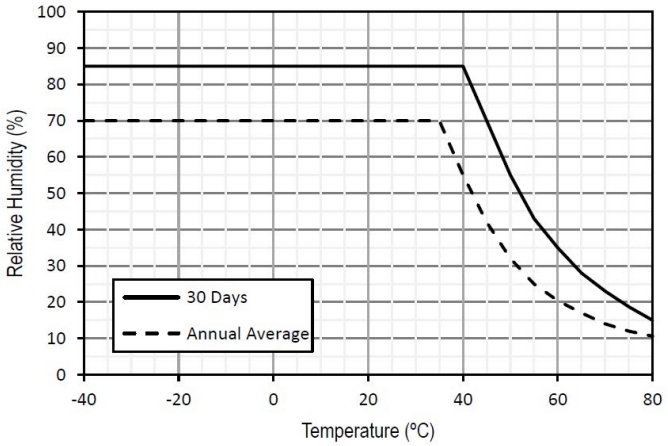
D		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
11.0	Maximum	28.0	Maximum	0.8	±0.05
11.5	Maximum	28.0	Maximum	0.8	±0.05
12.0	Maximum	33.0	Maximum	0.8	±0.05
12.5	Maximum	33.0	Maximum	0.8	±0.05
13.0	Maximum	28.0	Maximum	0.8	±0.05
13.5	Maximum	33.0	Maximum	0.8	±0.05
14.5	Maximum	33.0	Maximum	0.8	±0.05
15.0	Maximum	33.0	Maximum	0.8	±0.05
16.5	Maximum	33.0	Maximum	1.0	±0.05
17.0	Maximum	33.0	Maximum	1.0	±0.05
17.5	Maximum	33.0	Maximum	1.0	±0.05
18.0	Maximum	33.0	Maximum	1.0	±0.05
20.0	Maximum	33.0	Maximum	1.0	±0.05
21.0	Maximum	33.0	Maximum	1.0	±0.05
21.5	Maximum	33.0	Maximum	1.0	±0.05

Note: See Ordering Options Table for lead length (LL / l) options.

Performance Characteristics

Dielectric	Polypropylene film			
Plates	Metal layer deposited by evaporation under vacuum			
Winding	Non-inductive type			
Leads	Tinned wire			
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.			
Related Documents	IEC 60384-16			
Rated Voltage V_R (VDC)	160	250	400	630
Rated Voltage V_R (VAC)	90	200	220	250
Capacitance Range (µF)	0.022 – 4.7	0.01 – 3.3	0.0068 – 1.5	0.001 – 0.68
Capacitance Values	E6 series (IEC 60063) measured @ 1 kHz and +20 ±1°C			
Capacitance Tolerance	±5%, ±10%, ±20%			
Operating Temperature Range	-55°C to +105°C			
Rated Temperature T_R	+85°C			
Voltage Derating	Above +85°C DC and AC voltage derating is 1.25%/°C			
Climatic Category	55/105/56 IEC 60068-1			
Storage Conditions	Storage time: ≤ 24 months from the date marked on the label package			
	Average relative humidity per year ≤ 70%			
	RH ≤ 85% for 30 days randomly distributed throughout the year			
	Dew is absent			
	Temperature: -40 to 80°C (see "Maximum Humidity in Storage Conditions" graph below)			

Maximum Humidity in Storage Conditions

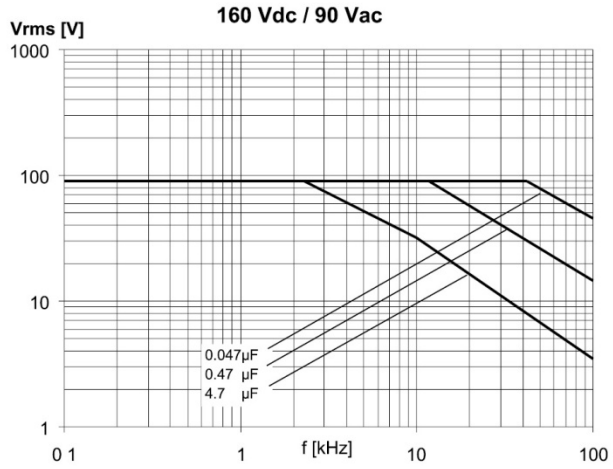


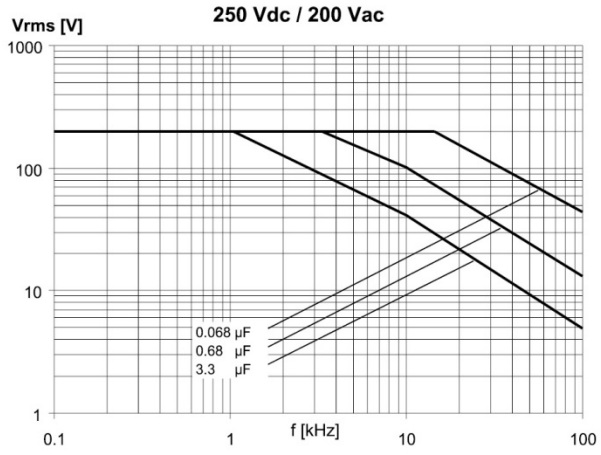
Performance Characteristics cont'd

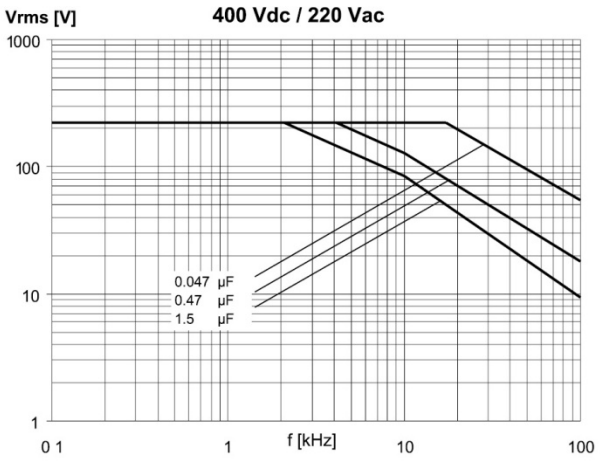
<table>
<tr><td>Test Voltage</td><td colspan="4">1.6 x V_R VDC for 2 seconds (between terminations) @ +25°C ±5°C</td></tr>
<tr><td>Capacitance Drift</td><td colspan="4">Maximum 0.5% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%</td></tr>
<tr><td>Maximum Pulse Steepness</td><td colspan="4">dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp <V_R), the specified dv/dt can be multiplied by the factor V_R/Vpp</td></tr>
<tr><td>Temperature Coefficient</td><td colspan="4">-(200 ±100) ppm/°C at 1 kHz</td></tr>
<tr><td>Self Inductance (Lead Length ~ 2 mm)</td><td colspan="4">Maximum 1 nH per 1 mm lead and capacitor length</td></tr>
<tr><td rowspan="5">Dissipation Factor tanδ</td><td colspan="4">Maximum Values @ 25°C ±5°C</td></tr>
<tr><td>Frequency</td><td>C ≤ 0.1 µF</td><td>0.1 µF < C ≤ 1 µF</td><td>C > 1 µF</td></tr>
<tr><td>1 kHz</td><td>0.06%</td><td>0.06%</td><td>0.06%</td></tr>
<tr><td>10 kHz</td><td>0.10%</td><td>0.20%</td><td>–</td></tr>
<tr><td>100 kHz</td><td>0.30%</td><td>–</td><td>–</td></tr>
<tr><td rowspan="4">Insulation Resistance</td><td colspan="4">Measured @ +25°C ±5°C, 100 VDC 60 seconds</td></tr>
<tr><td colspan="4">Minimum Values Between Terminals</td></tr>
<tr><td colspan="2">C ≤ 0.33 µF</td><td colspan="2">C > 0.33 µF</td></tr>
<tr><td colspan="2">≥ 100,000 MΩ
(≥ 500,000 MΩ) *</td><td colspan="2">≥ 30,000 MΩ • µF
(≥ 150,000 MΩ • µF) *</td></tr>
</table>

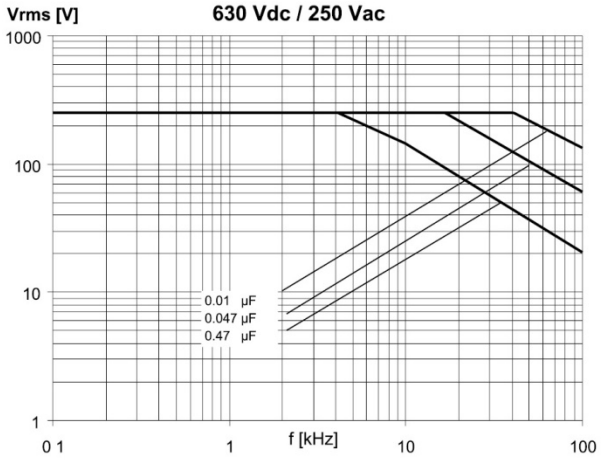
** typical value*

Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40ºC)

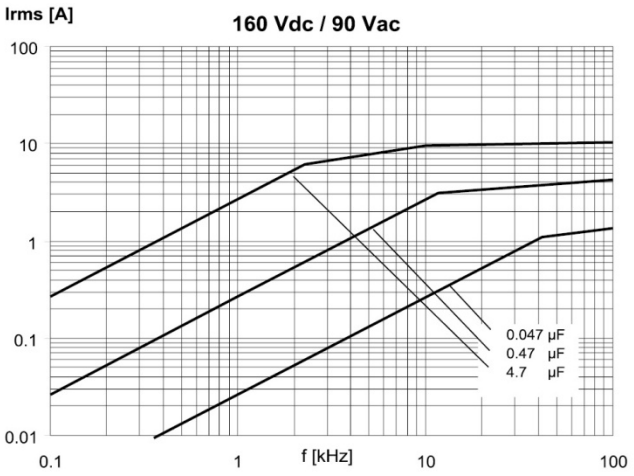


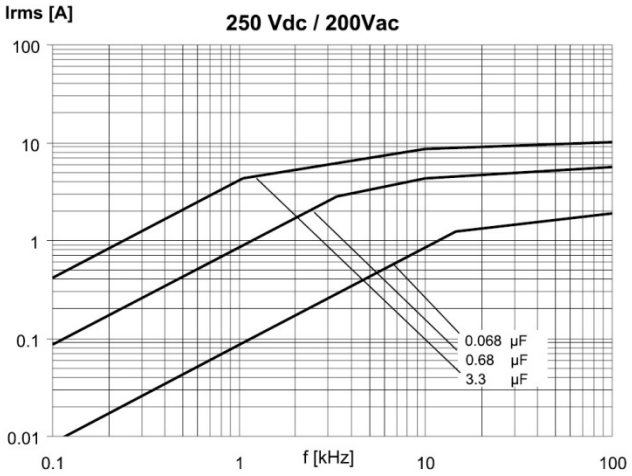


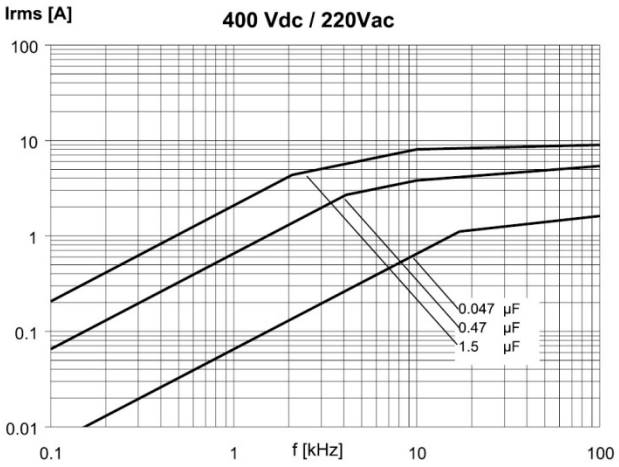


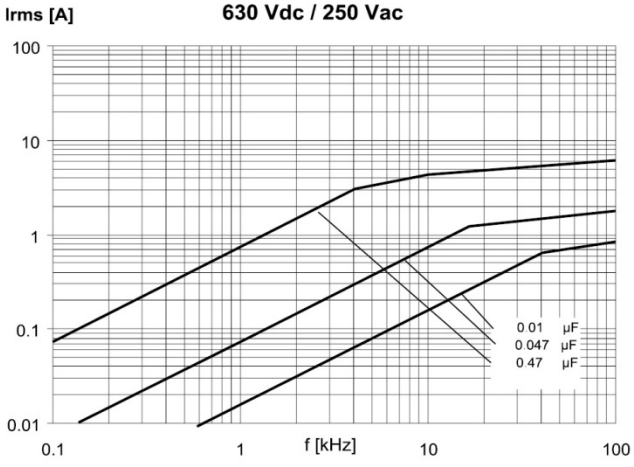


Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40ºC)









Environmental Test Data

Damp Heat, Steady State Test	Test Conditions:		Performances
	Temperature: Relative humidity (RH): Test duration:	+40°C ±2°C 93% ±2% 56 days	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.001 @ 1 kHz IR after test ≥ 50% of initial limit
Endurance Test	**Test Conditions**		**Performances**
	Temperature: Voltage applied: Test duration:	+85°C ±2°C 1.25 x V_R (DC) 2,000 hours	|Δ C/C| ≤ 3%, Δ tanδ ≤ 0.001 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.001 @ 1 kHz for C > 1µF IR after test ≥ 50% of initial limit
Resistance to Soldering Heat Test	**Test Conditions**		**Performances**
	Solder bath temperature: Dipping time (with heat screen):	260°C ±5°C 10 seconds ±1 second	|Δ C/C| ≤ 1%, Δ tanδ ≤ 0.001 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.001 @ 1 kHz for C > 1µF IR after test ≥ initial limit

Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Dimensions in mm		dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			D	L				
160	90	0.022	5.0	11.0	5	1,600	70GF2220(1)00(2)	A70GF2220(1)00(2)
160	90	0.033	5.0	11.0	5	1,600	70GF2330(1)00(2)	A70GF2330(1)00(2)
160	90	0.047	5.0	11.0	5	1,600	70GF2470(1)00(2)	A70GF2470(1)00(2)
160	90	0.068	5.5	14.0	5	1,600	70GH2680(1)00(2)	A70GH2680(1)00(2)
160	90	0.10	5.5	14.0	5	1,600	70GH3100(1)00(2)	A70GH3100(1)00(2)
160	90	0.15	6.5	14.0	5	1,600	70GH3150(1)00(2)	A70GH3150(1)00(2)
160	90	0.22	7.5	14.0	5	1,600	70GH3220(1)00(2)	A70GH3220(1)00(2)
160	90	0.33	7.0	20.5	3	960	70GK3330(1)00(2)	A70GK3330(1)00(2)
160	90	0.47	8.0	20.5	3	960	70GK3470(1)00(2)	A70GK3470(1)00(2)
160	90	0.68	8.0	28.0	2	640	70GQ3680(1)00(2)	A70GQ3680(1)00(2)
160	90	1.0	9.5	28.0	2	640	70GQ4100(1)00(2)	A70GQ4100(1)00(2)
160	90	1.5	11.0	28.0	2	640	70GQ4150(1)00(2)	A70GQ4150(1)00(2)
160	90	2.2	12.0	33.0	1	320	70GT4220(1)00(2)	A70GT4220(1)00(2)
160	90	3.3	14.5	33.0	1	320	70GT4330(1)00(2)	A70GT4330(1)00(2)
160	90	4.7	17.0	33.0	1	320	70GT4470(1)00(2)	A70GT4470(1)00(2)
250	200	0.010	5.0	11.0	11	5,500	70IF2100(1)00(2)	A70IF2100(1)00(2)
250	200	0.015	5.0	11.0	11	5,500	70IF2150(1)00(2)	A70IF2150(1)00(2)
250	200	0.022	5.5	14.0	10	5,000	70IH2220(1)00(2)	A70IH2220(1)00(2)
250	200	0.033	5.5	14.0	10	5,000	70IH2330(1)00(2)	A70IH2330(1)00(2)
250	200	0.047	6.0	14.0	10	5,000	70IH2470(1)00(2)	A70IH2470(1)00(2)
250	200	0.068	7.0	14.0	10	5,000	70IH2680(1)00(2)	A70IH2680(1)00(2)
250	200	0.10	8.5	14.0	10	5,000	70IH3100(1)00(2)	A70IH3100(1)00(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm		dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			D	L				
250	200	0.15	7.5	20.5	7	3,500	70IK3150(1)00(2)	A70IK3150(1)00(2)
250	200	0.22	9.0	20.5	7	3,500	70IK3220(1)00(2)	A70IK3220(1)00(2)
250	200	0.33	8.5	28.0	4	2,000	70IQ3330(1)00(2)	A70IQ3330(1)00(2)
250	200	0.47	10.0	28.0	4	2,000	70IQ3470(1)00(2)	A70IQ3470(1)00(2)
250	200	0.68	11.5	28.0	4	2,000	70IQ3680(1)00(2)	A70IQ3680(1)00(2)
250	200	1.0	12.5	33.0	2.5	1,250	70IT4100(1)00(2)	A70IT4100(1)00(2)
250	200	1.5	15.0	33.0	2.5	1,250	70IT4150(1)00(2)	A70IT4150(1)00(2)
250	200	2.2	18.0	33.0	2.5	1,250	70IT4220(1)00(2)	A70IT4220(1)00(2)
250	200	3.3	21.5	33.0	2.5	1,250	70IT4330(1)00(2)	A70IT4330(1)00(2)
400	220	0.0068	5.0	11.0	25	20,000	70MF1680(1)00(2)	A70MF1680(1)00(2)
400	220	0.010	5.5	14.0	13.5	10,800	70MH2100(1)00(2)	A70MH2100(1)00(2)
400	220	0.015	6.0	14.0	13.5	10,800	70MH2150(1)00(2)	A70MH2150(1)00(2)
400	220	0.022	6.0	14.0	13.5	10,800	70MH2220(1)00(2)	A70MH2220(1)00(2)
400	220	0.033	6.5	14.0	13.5	10,800	70MH2330(1)00(2)	A70MH2330(1)00(2)
400	220	0.047	8.0	14.0	13.5	10,800	70MH2470(1)00(2)	A70MH2470(1)00(2)
400	220	0.068	7.0	20.5	10	8,000	70MK2680(1)00(2)	A70MK2680(1)00(2)
400	220	0.10	8.0	20.5	10	8,000	70MK3100(1)00(2)	A70MK3100(1)00(2)
400	220	0.15	8.0	28.0	6.5	5,200	70MQ3150(1)00(2)	A70MQ3150(1)00(2)
400	220	0.22	9.5	28.0	6.5	5,200	70MQ3220(1)00(2)	A70MQ3220(1)00(2)
400	220	0.33	11.0	28.0	6.5	5,200	70MQ3330(1)00(2)	A70MQ3330(1)00(2)
400	220	0.47	13.0	28.0	6.5	5,200	70MQ3470(1)00(2)	A70MQ3470(1)00(2)
400	220	0.68	13.5	33.0	4	3,200	70MT3680(1)00(2)	A70MT3680(1)00(2)
400	220	1.0	16.5	33.0	4	3,200	70MT4100(1)00(2)	A70MT4100(1)00(2)
400	220	1.5	20.0	33.0	4	3,200	70MT4150(1)00(2)	A70MT4150(1)00(2)
630	250	0.0010	5.0	11.0	30	37,800	70PF1100(1)00(2)	A70PF1100(1)00(2)
630	250	0.0015	5.0	11.0	30	37,800	70PF1150(1)00(2)	A70PF1150(1)00(2)
630	250	0.0022	5.0	11.0	30	37,800	70PF1220(1)00(2)	A70PF1220(1)00(2)
630	250	0.0033	5.0	11.0	30	37,800	70PF1330(1)00(2)	A70PF1330(1)00(2)
630	250	0.0047	5.0	11.0	30	37,800	70PF1470(1)00(2)	A70PF1470(1)00(2)
630	250	0.0068	5.5	14.0	20	25,200	70PH1680(1)00(2)	A70PH1680(1)00(2)
630	250	0.010	6.0	14.0	20	25,200	70PH2100(1)00(2)	A70PH2100(1)00(2)
630	250	0.015	7.0	14.0	20	25,200	70PH2150(1)00(2)	A70PH2150(1)00(2)
630	250	0.022	8.5	14.0	20	25,200	70PH2220(1)00(2)	A70PH2220(1)00(2)
630	250	0.033	7.5	20.5	15	18,900	70PK2330(1)00(2)	A70PK2330(1)00(2)
630	250	0.047	8.5	20.5	15	18,900	70PK2470(1)00(2)	A70PK2470(1)00(2)
630	250	0.068	8.5	28.0	10	12,600	70PQ2680(1)00(2)	A70PQ2680(1)00(2)
630	250	0.10	10.0	28.0	10	12,600	70PQ3100(1)00(2)	A70PQ3100(1)00(2)
630	250	0.15	11.5	28.0	10	12,600	70PQ3150(1)00(2)	A70PQ3150(1)00(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%.

Soldering Process

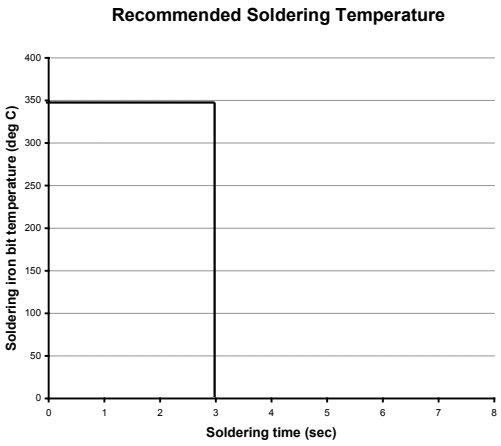
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

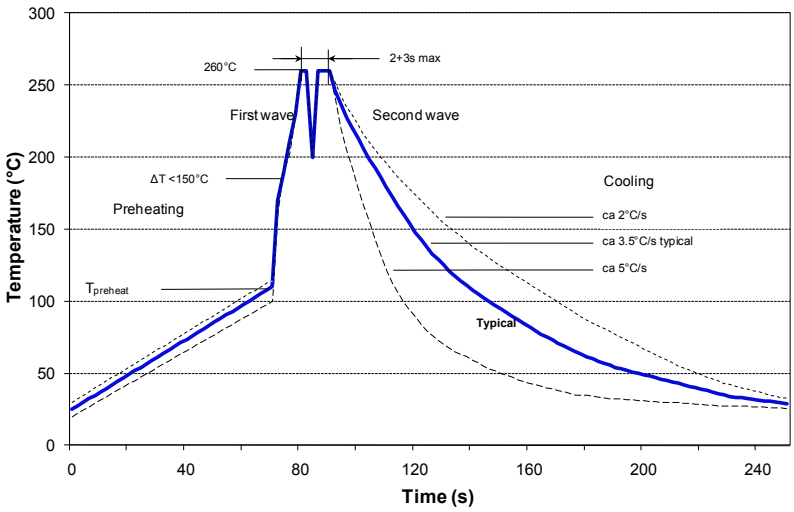
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

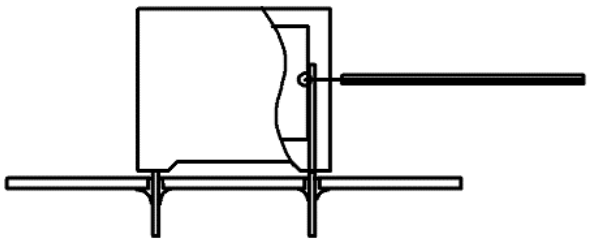
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



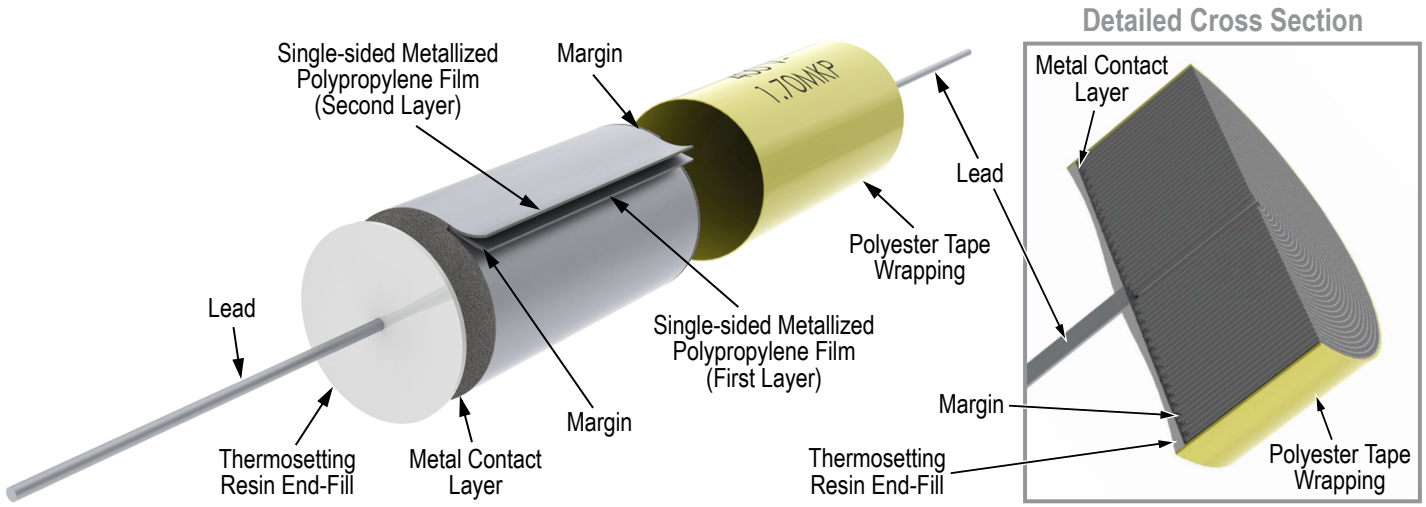
Temperature monitored inside the capacitor.

Selective Soldering Recommendations

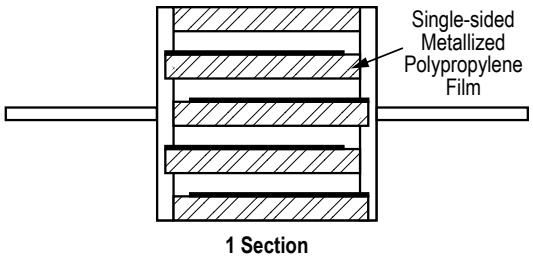
Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

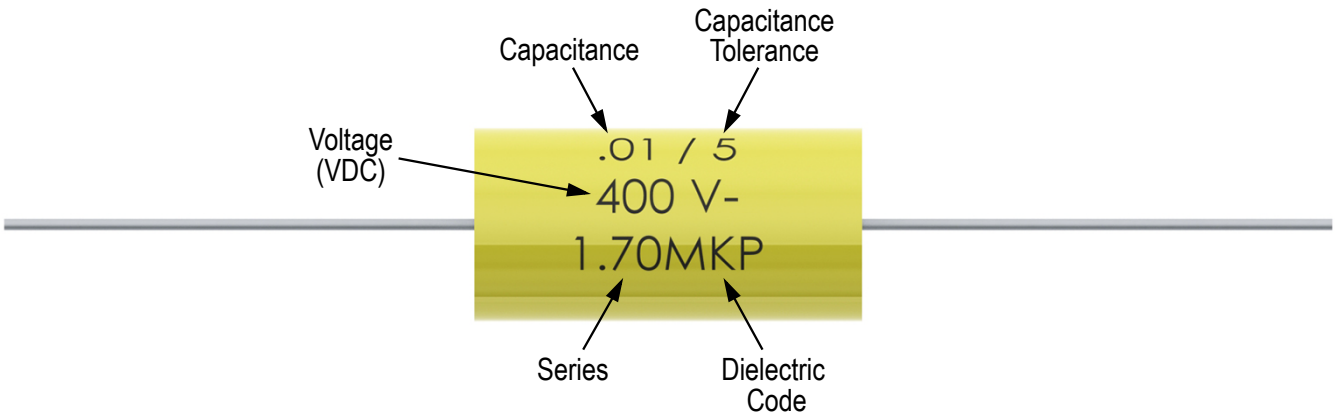
Construction



Winding Scheme



Marking



Packaging Quantities

Diameter	Length	Bulk Long Leads	Standard Reel ø 355 mm
5.0	11.0	1,500	3,000
5.5	14.0	2,000	1,300
6.0	14.0	2,000	1,300
6.5	14.0	2,000	1,200
7.0	14.0	1,750	1,100
7.0	20.5	1,250	1,100
7.5	14.0	1,500	1,000
7.5	20.5	1,000	1,000
8.0	20.5	1,000	900
8.0	28.0	500	900
8.5	14.0	1,000	800
8.5	20.5	750	800
8.5	28.0	500	800
9.0	20.5	750	800
9.5	28.0	500	600
10.0	28.0	500	600

Diameter	Length	Bulk Long Leads	Standard Reel ø 355 mm
11.0	28.0	500	400
11.5	28.0	300	400
12.0	33.0	300	400
12.5	33.0	300	400
13.0	28.0	300	400
13.5	33.0	300	300
14.5	33.0	300	300
15.0	33.0	300	300
16.5	33.0	200	250
17.0	33.0	200	200
17.5	33.0	200	200
18.0	33.0	200	200
20.0	33.0	150	150
21.0	33.0	100	–
21.5	33.0	100	–

General Purpose, Pulse and DC Transient Suppression

PHE429 Series Single Metallized Polypropylene Film, Optimized for SMPS PFC Applications

Electronic Components
KEMET
CHARGED.

Overview

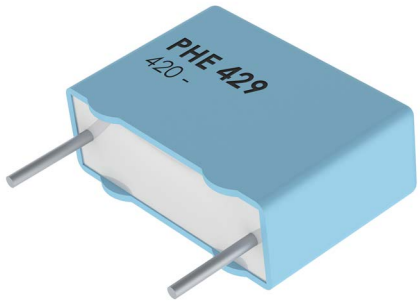
The PHE429 Series is a metallized polypropylene film encapsulated with self-extinguishing resin in a box of material meeting the requirements of UL 94 V–0.

Applications

Typical applications include power factor correction and pulse applications.

Benefits

- Rated voltage: 420 – 630 VDC
- Rated voltage: 220 – 275 VAC
- Capacitance range: 0.047 – 0.47 µF
- Lead spacing: 15 mm
- Capacitance tolerance: ±10%, other tolerances on request
- Climatic category: 55/110/56, IEC 60068–1
- Tape and reel packaging in accordance with IEC 60286–2
- RoHS Compliant and lead-free terminations
- Category temperature range of -55˚C to +110˚C



Legacy Part Number System

PHE429	K	B	6100	K	R06
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Packaging
Metallized Polypropylene	K = 420 M = 630	B = 15.0	The last three digits represent significant figures. First digit specifies the number of zeros to be added.	K = ±10% Other tolerances on request	See Ordering Options Table

New KEMET Part Number System

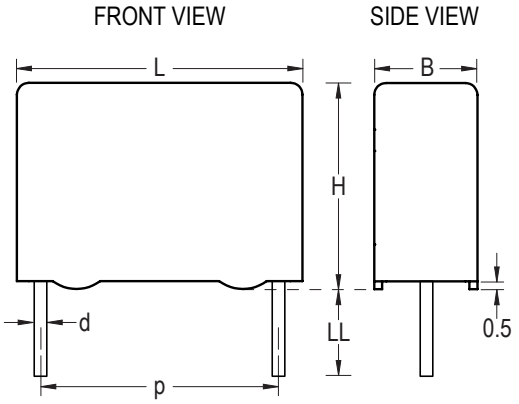
F	429	B	D	104	K	420	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging
F = Film	Metallized Polypropylene	B = 15.0	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	K = ±10% Other tolerances on request	420 = 420 630 = 630	See Ordering Options Table

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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	KEMET Lead and Packaging Code	Legacy Lead and Packaging Code
15	**Standard Lead and Packaging Options**			
	Bulk (Bag) – Short Leads	6 +0/-1	C	R06
	Bulk (Bag) – Max Length Leads	30 +5/-0	A	R30
	Other Lead and Packaging Options			
	Bulk (Bag) – Max Length Leads	30 +5/-0	ALW0L	R30
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L	R17T0
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P	R17T1
Native 15 formed to 7.5	Ammo Pack	H_0= 16.5 +/-0.5	XLAF1	R25XA
	Tape & Reel (Standard Reel)	H_0= 16.5 +/-0.5	XLTF1	R25X2

Dimensions – Millimeters



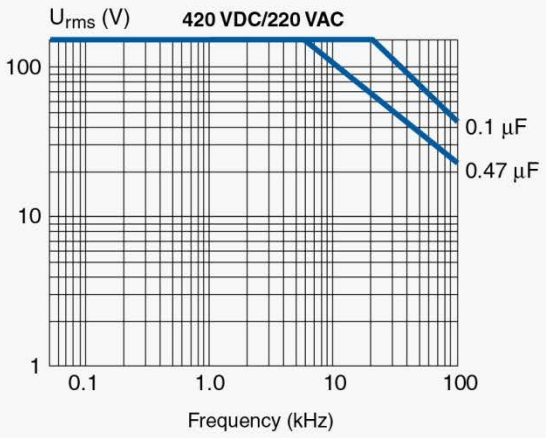
KEMET Size Code	Legacy Size Code	p		B		H		L		d	
		Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
BD	B04	15	+/-0.4	5.5	Maximum	10.5	Maximum	18	Maximum	0.8	+/-0.05
BG	B15	15	+/-0.4	6	Maximum	12	Maximum	18	Maximum	0.8	+/-0.05
BJ	B10	15	+/-0.4	6.5	Maximum	12.5	Maximum	18	Maximum	0.8	+/-0.05
BL	B06	15	+/-0.4	7.5	Maximum	14.5	Maximum	18	Maximum	0.8	+/-0.05
BM	B12	15	+/-0.4	8	Maximum	15	Maximum	18	Maximum	0.8	+/-0.05

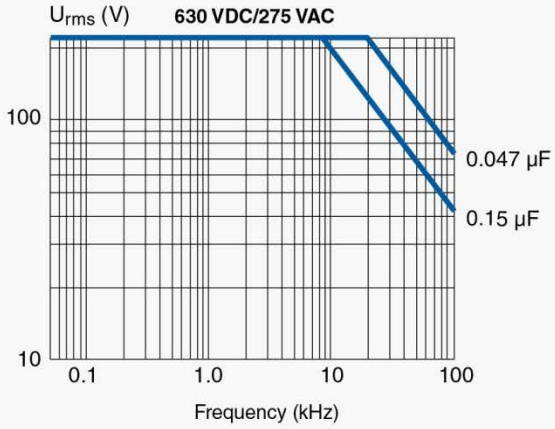
Note: See Ordering Options Table for lead length (LL) options.

Performance Characteristics

Voltage Range (VDC)	420	630
Voltage Range (VAC)	220	275
Capacitance Range (µF)	0.1 – 0.47	0.047 – 0.15
Capacitance Tolerance	±10%, other tolerances on request	
Category Temperature Range	-55°C to +110°C	
Rated Temperature	+85°C	
Voltage Derating	The rated voltage is decreased with 1.3%/°C between +85°C and +110°C	
Climatic Category	IEC 60068–1, 55/110/56	
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage ($V_{PP} < V_R$), the specified dV/dt can be multiplied by the factor V_R/V_{PP}.	
Self-Inductance	Approximately 6 nH/cm for the total length of capacitor winding and the leads	
Dissipation Factor tanδ	Maximum Values at +23°C	
	1 kHz	0.001
Insulation Resistance	Measured at +23°C, 100 VDC 60 seconds for V_R < 500 VDC and at 500 VDC for V_R ≥ 500 VDC	
	Minimum Values Between Terminals	
	C ≤ 0.33 µF	≥ 100,000 MΩ
	C > 0.33 µF	≥ 30,000 MΩ • µF
	Minimum Values Between Terminals and Case	
		≥ 100,000 MΩ

Derating of V_{RMS} vs. Frequency, +85ºC Ambient Temperature and 10ºC Internal Heating, Typical Values





Environmental Test Data

Test	IEC Publication	Procedure	Requirements
Voltage Proof	60384–1 Clause 4.6	1.6 x V_R after 60 seconds	The capacitors must withstand the voltage without breakdowns or flashovers and without decreased insulation resistance below the value in each detail specification. No visible damage
	Clause 4.6 2.3	2 x V_R (minimum 400 VDC to case) after 60 seconds	As above
Vibration	60068–2–6 Test Fc	6 hours with 10 – 500 Hz and 0.75 mm amplitude or 98 m/s^2 depending on frequency	No visible damage tanδ ≤ 1.2 x stated value at 100 kHz Δ C/C ≤ ±0.5 %
Bump	60068–2–29 Test Eb	4,000 bumps with 390 m/s^2 mounted on PCB	Δ C/C ≤ ±0.5% tanδ ≤ 1.2 x stated value at 100 kHz Insulation resistance: ≥ 100,000 MΩ for C_R ≤ 0.33 µF ≥ 30,000 MΩ • µF for C_R > 0.33 µF
Resistance to Soldering Heat	60068–2–20 Method 1A	Solder bath at + 260°C ±5°C with screening	Immersion of the terminations into the solder bath shall be completed in a time not exceeding 1 second and the terminations shall remain immersed to the specified depth for 10 + 1 second and then be withdrawn. Δ C/C ≤ ±1.0% tanδ increase < 0.001 No visible damage
Climatic Sequence	60384–1 Paragraph 4:21	60068–2.2 dry heat 16 hours 60068–2–34 damp heat, one cycle 60068–2–1 Test Aa 2 hours	Insulation resistance: ≥ 100,000 MΩ for C_R ≤ 0.33 µF ≥ 30,000 MΩ • µF for C_R > 0.33 µF Δ C/C ≤ ±0.5% tanδ ≤ 1.2 x stated value at 100 kHz
Damp Heat Steady State	60068–2–3 Test Ca	+40°C and 90 – 95% RH	56 days no visible damage Insulation resistance: ≥ 50,000 MΩ for C_R ≤ 0.33 µF ≥ 15,000 MΩ • µF for C_R > 0.33 µF Δ C/C ≤ ±1% tanδ ≤ 1.2 x stated value at 100 kHz
Endurance, AC		1,000 hours at +85°C and 1.25 x V_R AC	No visible damage Δ C/C ≤ ±3% tanδ ≤ 1.5 x stated value at 100 kHz Insulation resistance: ≥ 100,000 MΩ for C_R ≤ 0.33 µF ≥ 30,000 MΩ • µF for C_R > 0.33 µF
Charge and Discharge	60384–17 Paragraph 4.13	10,000 pulses and with (2 x) dV/dt according to detail specification	tanδ (100 kHz) ≤ 2 x stated value (100 kHz) Δ C/C ≤ ±0.5% Insulation resistance: ≥ 50,000 MΩ for C_R ≤ 0.33 µF ≥ 15,000 MΩ • µF for C_R > 0.33 µF

Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Cap Value (µF)	Dimensions in mm			Lead Space	dV/dt (V/µs)	Size Code (New/Legacy)	R_{thha} °C/W 85°C 0.2m/s	New Kemet Part Number	Legacy Part Number
			B	H	L						
420	220	0.10	5.5	10.5	18.0	15	150	BD/B04	99	F429BD104K420(1)	PHE429KB6100K(1)
420	220	0.15	5.5	10.5	18.0	15	150	BD/B04	99	F429BD154K420(1)	PHE429KB6150K(1)
420	220	0.22	6.0	12.0	18.0	15	150	BG/B15	83	F429BG224K420(1)	PHE429KB6220K(1)
420	220	0.33	7.5	14.5	18.0	15	150	BL/B06	74	F429BL334K420(1)	PHE429KB6330K(1)
420	220	0.47	8.0	15.0	18.0	15	150	BM/B12	71	F429BM474K420(1)	PHE429KB6470K(1)
630	275	0.047	5.5	10.5	18.0	15	250	BD/B04	99	F429BD473K630(1)	PHE429MB5470K(1)
630	275	0.068	5.5	10.5	18.0	15	250	BD/B04	99	F429BD683K630(1)	PHE429MB5680K(1)
630	275	0.10	5.5	10.5	18.0	15	250	BD/B04	99	F429BD104K630(1)	PHE429MB6100K(1)
630	275	0.15	6.5	12.5	18.0	15	250	BJ/B10	84	F429BJ154K630(1)	PHE429MB6150K(1)
VDC	**VAC**	**Cap Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Space**	**dV/dt (V/µs)**	**Size Code (New/Legacy)**	**R_{thha} °C/W 85°C 0.2m/s**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.

Soldering Process

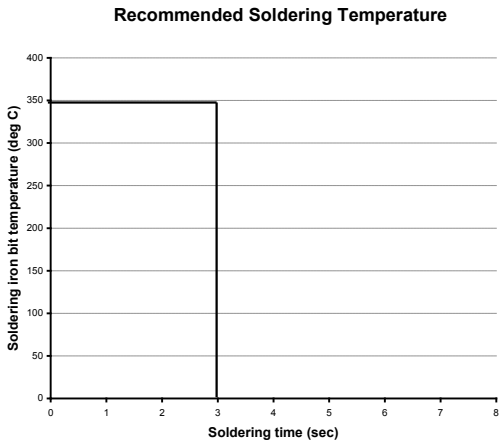
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

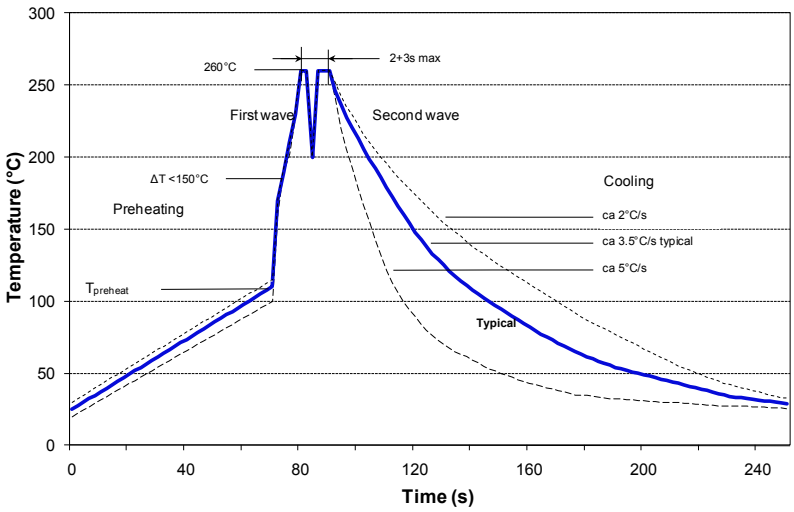
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

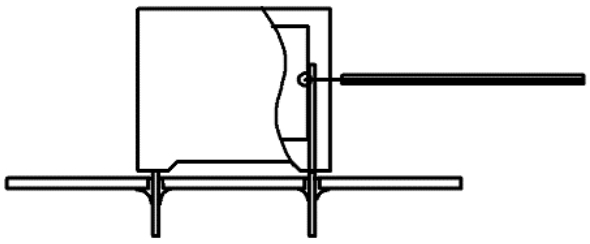
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



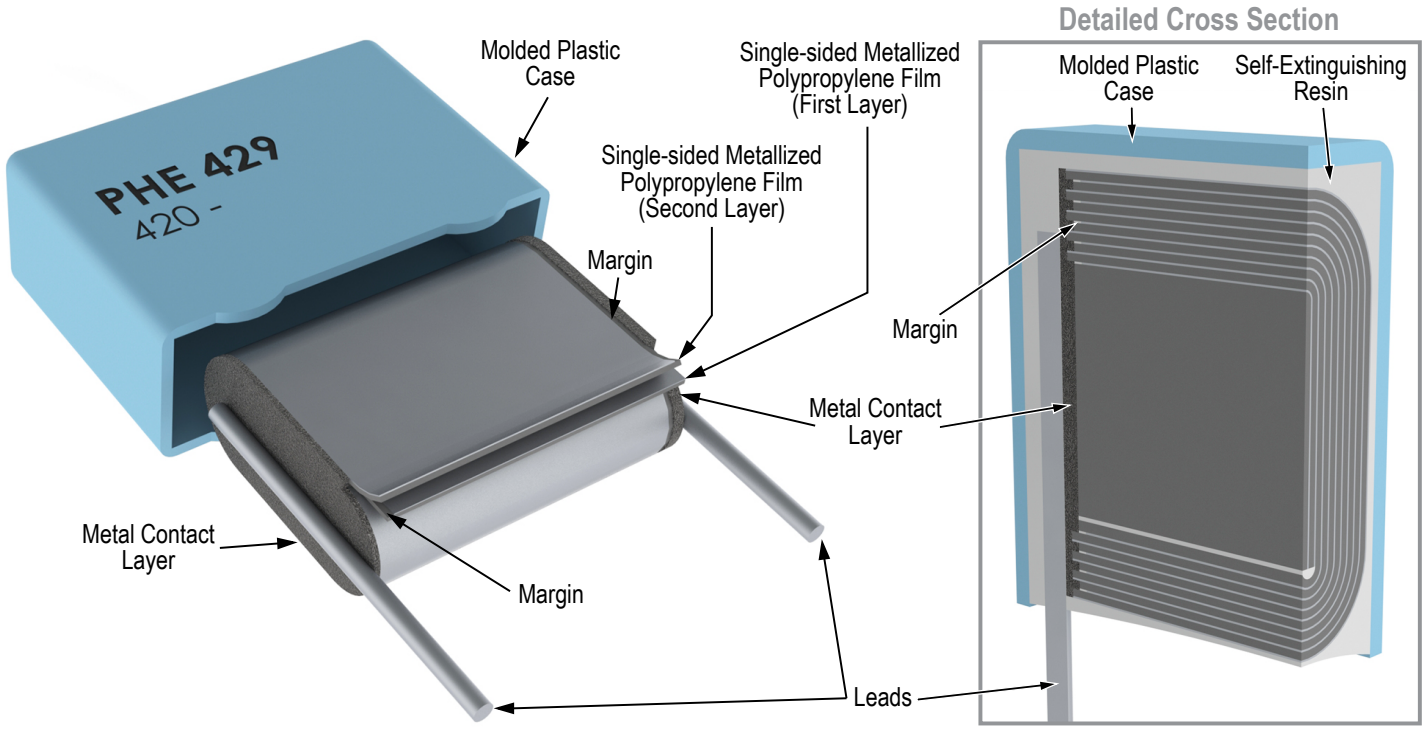
Temperature monitored inside the capacitor.

Selective Soldering Recommendations

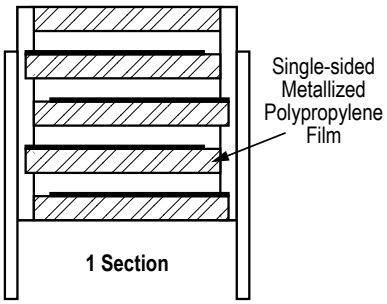
Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

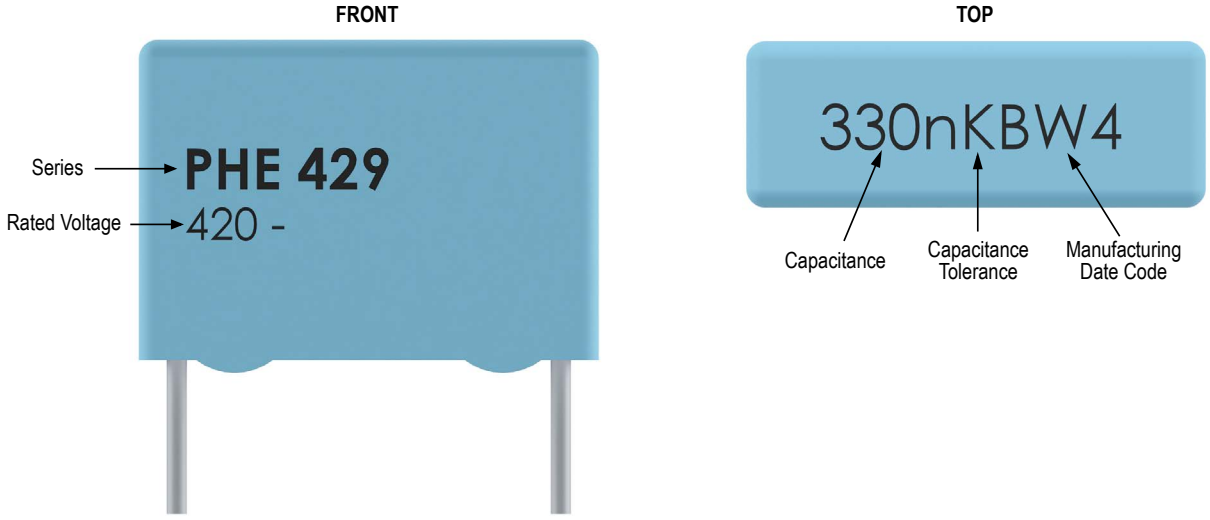
Construction



Winding Scheme



Marking



Packaging Quantities

KEMET Size Code	Legacy Size Code	Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 360 mm	Large Reel ø 500 mm	Standard Reel Formed	Ammo Formed
BD	B04	15	5.5	10.5	18	1000	800	600	1200	550	570
BE	B05		5.5	12.5	18	1000	800	600	1200	550	570
BL	B06		7.5	14.5	18	800	400	400	800	350	378
BJ	B10		6.5	12.5	18	1000	600	500	1000	450	480
BQ	B11		8.5	16	18	600	400	400	800	350	324
BM	B12		8	15	18	600	400	400	800	350	351
BV	B14		9.5	17.5	18	500	300	350	700	250	297
BG	B15		6	12	18	1000	800	500	1000	450	520
BY	B16		11	19	18	450	250	300	600	250	252
BU	B17		13	12.5	18	400	300	250	500	200	216

R76 Series Double Metallized Polypropylene Film, Radial, DC and Pulse Applications (Automotive Grade)

Overview

The R76 Series is constructed of polypropylene film and double metallized polyester film as electrodes with radial leads of tinned wire. The radial leads are electrically welded to the metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing solvent resistant plastic case with thermosetting resin material meeting the UL 94V–0 requirements. Two different winding constructions are used depending on voltage parameters. Please see the Performance Characteristics for more information.

Automotive grade devices are available (up to lead spacing 22.5 mm) and meet the demanding Automotive Electronics Council's AEC–Q200 qualification requirements.

Applications

Typical applications include deflection circuits in televisions (S-correction and flyback tuning) and monitors, switching spikes suppression in switched mode power supplies (SMPS), lamp capacitors for electronic ballasts and compact lamps, and snubber and silicon-controlled rectifier (SCR) commutation circuits as well as applications with high voltage and high current. Not suitable for across-the-line application (see Suppressor Capacitors).

Benefits

- Voltage range: 250 – 2,000 VDC
- Capacitance range: 100 pF – 15 µF
- Lead Spacing: 7.5 mm – 37.5 mm
- Capacitance tolerance: ±5%, ±10%, ±20%
- Climatic category: 55/105/56 IEC 60068-1
- Operating temperature range of -55˚C to +105˚C
- RoHS compliance and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–2
- Self-healing
- Automotive (AEC–Q200) grades available up to lead spacing 22.5mm



Part Number System

R76	I	D	1680	SE	30	K
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Packaging	Internal Use	Capacitance Tolerance
Double Metallized Polypropylene	I = 250 M = 400 P = 630 Q = 1,000 T = 1,600 U = 2,000	D = 7.5 F = 10 I = 15 N = 22.5 R = 27.5 W = 37.5	The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.	See Ordering Options Table	00 10 30 40 50 60 70 80	H = 2.5% J = ±5% K = ±10%

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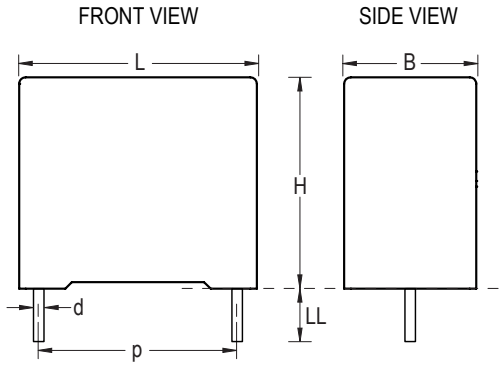
Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
7.5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	SE
	Ammo Pack	H_0= 18.5 +/-0.5	DQ
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel)	H_0=18.5 +/- 0.5	CK
	Bulk (Bag)–Short Leads	2.7 +0.5/-0	JA
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	10 +/- 1	JC
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	17 +1/-2	Z3
10 15 22.5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	SE
	Ammo Pack	H_0= 18.5 +/-0.5	DQ
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel)	H_0=18.5 +/- 0.5	GY
	Tape & Reel (Large Reel)	H_0=18.5 +/- 0.5	CK
	Bulk (Bag)–Short Leads	2.7 +0.5/-0	JA
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	10 +/- 1	JC
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag)–Long Leads	25 +2/-1	50
27.5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	SE
	Other Lead and Packaging Options		
	Tape & Reel (Large Reel)	H_0=18.5 +/-0.5	CK
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag) – Long Leads	25 +2/-1	50

Ordering Options Table cont'd

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
37.5	**Standard Lead and Packaging Options**		
	Bulk (Bag)–Short Leads	4 +2/-0	SE
	Other Lead and Packaging Options		
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag) – Long Leads	25 +2/-1	50

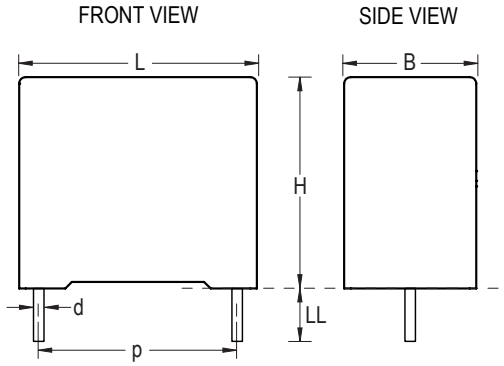
Dimensions – Millimeters



p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
7.5	+/- 0.4	3.0	+0.1	8.0	+0.1	10.0	+0.2	0.5	+/- 0.05
7.5	+/- 0.4	4.0	+0.1	9.0	+0.1	10.0	+0.2	0.6	+/- 0.05
7.5	+/- 0.4	5.0	+0.1	10.5	+0.1	10.0	+0.2	0.6	+/- 0.05
7.5	+/-0.4	6.0	+0.1	12.0	+0.1	10.0	+0.2	0.6	+/- 0.05
10.0	+/- 0.4	4.0	+0.2	9.0	+0.1	13.0	+0.2	0.6	+/- 0.05
10.0	+/- 0.4	5.0	+0.2	11.0	+0.1	13.0	+0.2	0.6	+/- 0.05
10.0	+/-0.4	6.0	+0.2	12.0	+0.1	13.0	+0.2	0.6	+/- 0.05
15.0	+/- 0.4	4.0	+0.2	10.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	5.0	+0.2	11.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	6.0	+0.2	12.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	7.5	+0.2	13.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	8.5	+0.2	14.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	9.0	+0.2	12.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	10.0	+0.2	16.0	+0.1	18.0	+0.5	0.8	+/- 0.05

Note: See Ordering Options Table for lead length (LL/Ho) options.

Dimensions – Millimeters cont'd



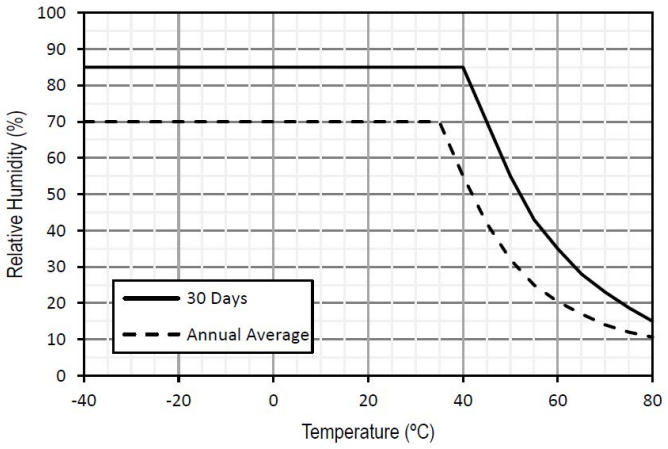
p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
15.0	+/- 0.4	11.0	+0.2	19.0	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	13.0	+0.2	12.0	+0.1	18.0	+0.5	0.8	+/- 0.05
22.5	+/- 0.4	6.0	+0.2	15.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	7.0	+0.2	16.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	8.5	+0.2	17.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	10.0	+0.2	18.5	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	11.0	+0.2	20.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	13.0	+0.2	22.0	+0.1	26.5	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	9.0	+0.2	17.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	11.0	+0.2	20.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	13.0	+0.2	22.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	13.0	+0.2	25.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	14.0	+0.2	28.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	18.0	+0.2	33.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	22.0	+0.2	37.0	+0.1	32.0	+0.3	0.8	+/- 0.05
37.5	+/- 0.4	11.0	+0.3	22.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	13.0	+0.3	24.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	16.0	+0.3	28.5	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	19.0	+0.3	32.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	20.0	+0.3	40.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	24.0	+0.3	44.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	30.0	+0.3	45.0	+0.1	41.5	+0.3	1.0	+/- 0.05

Note: See Ordering Options Table for lead length (LL/Ho) options.

Performance Characteristic

Dielectric	Polypropylene film							
Plates	Double sided metallized polyester film							
Winding	Non-inductive type							
Leads	Tinned wire							
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.							
Related Documents	IEC 60384-16							
Sections	1			2				
Voltage Range (VDC)	250	400	630	630	1000	1000	1600	2000
Voltage Range (VAC)	180	250	250	400	400	600	650	700
Capacitance Range (µF)	0.0068 – 12	0.0027 – 8.2	0.00068 – 0.012	0.00039 – 4.7	0.00022 – 0.0033	0.00047 – 2.2	0.0033 – 1.2	0.0001 – 0.68
Capacitance Values	E12 series (IEC 60063) measured @ 1 kHz and +20 ±1°C							
Capacitance Tolerance	±2.5%, ±5%, ±10%							
Operating Temperature Range	-55°C to +105°C							
Rated Temperature T_R	+85°C for V_R (DC) +75°C for V_R (AC)							
Voltage Derating	The following decreasing factor has to be applied on the rated voltage: +85°C to +105°C: 1.25% per °C for V_R (DC) +75°C to +105°C: 1.35% per °C for V_R (AC)							
Climatic Category	55/105/56 IEC 60068-1							
Storage Conditions	Storage time: ≤ 24 months from the date marked on the label package							
	Average relative humidity per year ≤ 70%							
	RH ≤ 85% for 30 days randomly distributed throughout the year							
	Dew is absent							
	Temperature: -40 to 80°C (see "Maximum Humidity in Storage Conditions" graph below)							

Maximum Humidity in Storage Conditions



Performance Characteristics cont'd

Test Voltage	1.6 x V_R VDC for 2 seconds (between terminations) @ +25°C ±5°C						
Capacitance Drift	Maximum 0.5% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%						
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp<V_R), the specified dv/dt can be multiplied by the factor V_R/Vpp						
Temperature Coefficient	-(200 ±100) ppm/°C at 1 kHz						
Self-Inductance L (Lead Length ~ 2 mm)	Lead Spacing (mm)	7.5	10	15	22.5	27.5	37.5
	L (nH) ≈	8	9	10	18	18	20

Dissipation Factor tanδ	Measured at 25°C ± 5°C				
	Frequency	C ≤ 0.1 µF	0.1 µF < C ≤ 1.0 µF	1.0 µF < C ≤ 4.7 µF	C > 4.7 µF
	1 kHz	0.04%	0.05%	0.06%	0.10%
	10 kHz	0.06%	0.08%	-	-
	100 kHz	0.25%	-	-	-

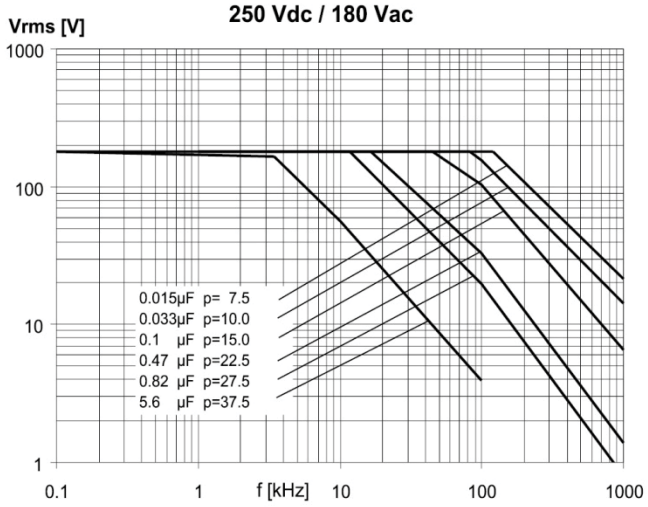
Insulation Resistance	Measured at +25°C, 100 VDC 60 seconds	
	Minimum Values Between Terminals	
	C ≤ 0.33 µF	C > 0.33 µF
	≥ 100,000 MΩ (≥ 500,000 MΩ)*	≥ 30,000 MΩ • µF (≥ 150,000 MΩ • µF)*

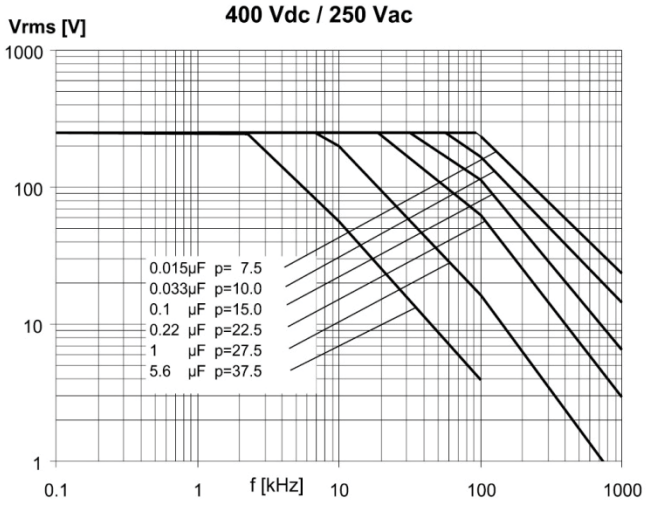
** typical value*

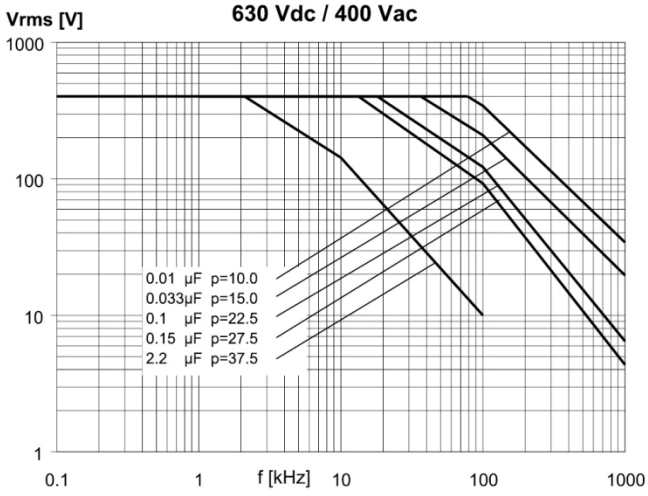
Qualification

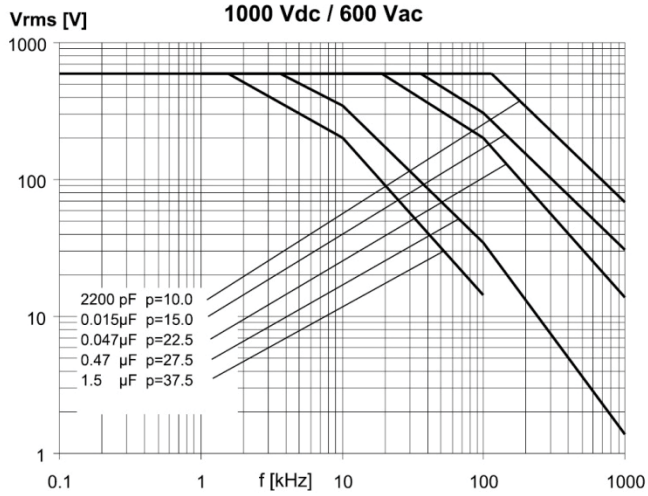
Automotive Grade products meet or exceed the requirements outlined by the Automotive Electronics Council. Details regarding test methods and conditions are referenced in document AEC–Q200, Stress Test Qualification for Passive Components. For additional information regarding the Automotive Electronics Council and AEC–Q200, please visit their website at www.aecouncil.com.

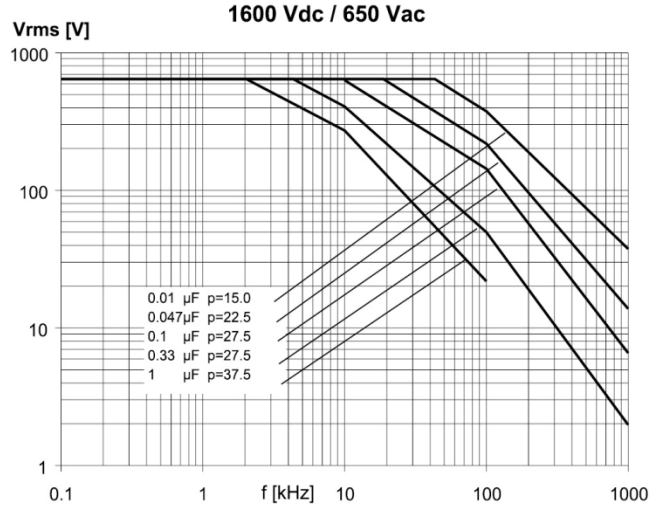
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40ºC)

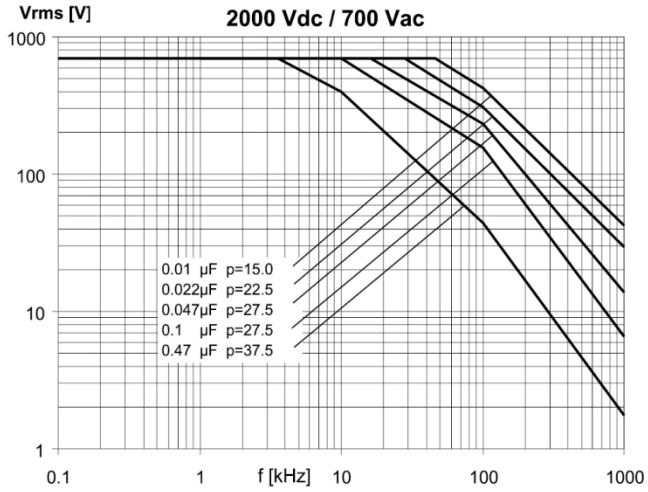




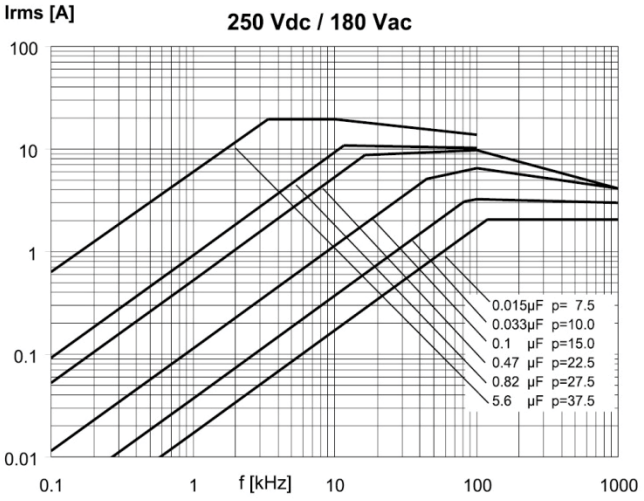


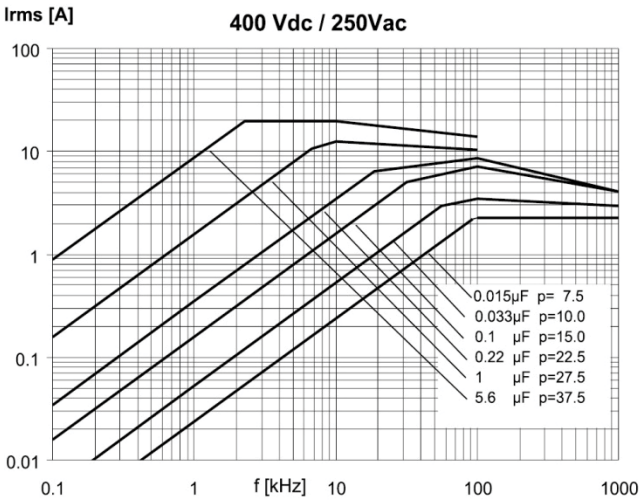


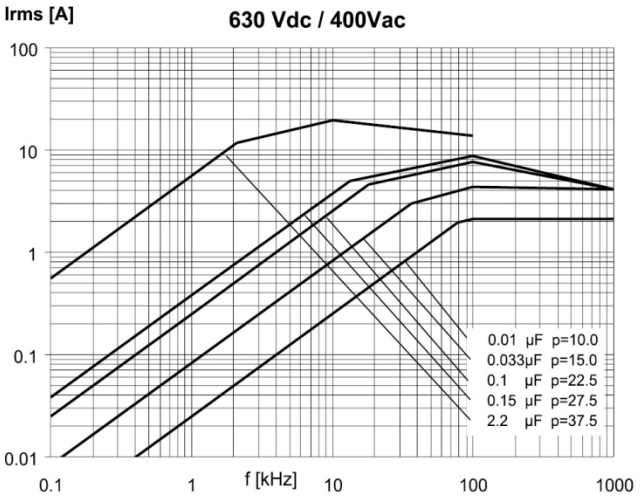


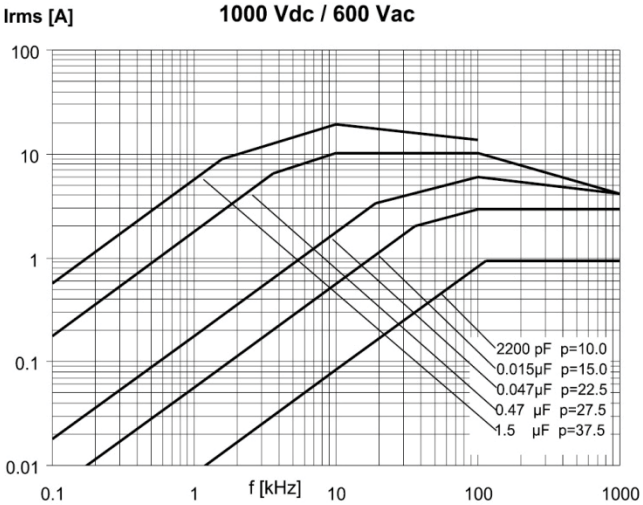


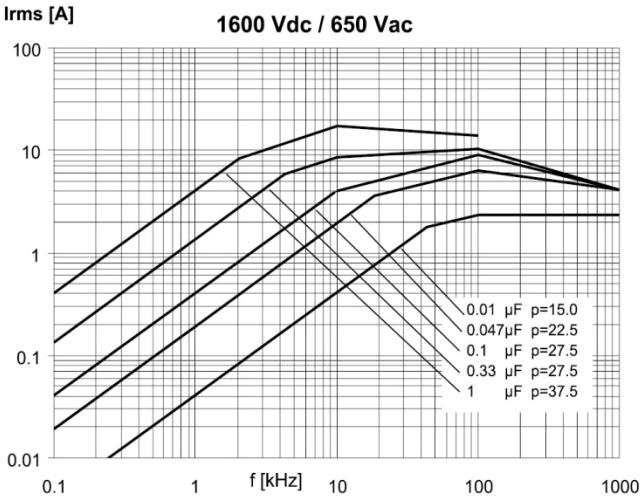
Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40ºC)

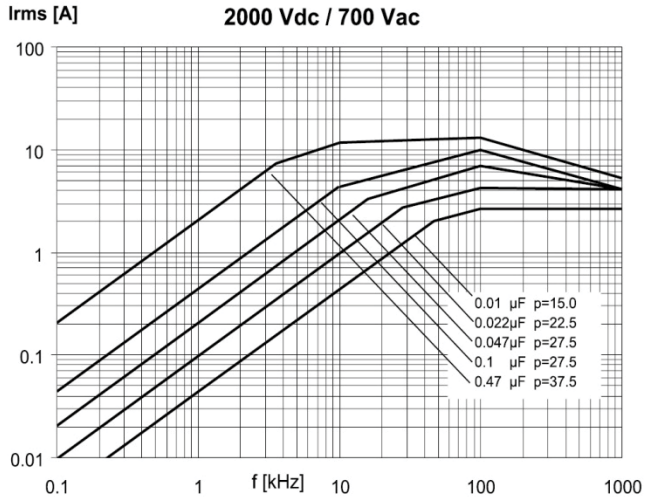












Note: p (pitch) in mm.

Environmental Test Data

Damp Heat, Steady State Test	Test Conditions:		Performances
	Temperature: Relative humidity (RH): Test duration:	+40°C ± 2°C 93% ± 2% 56 days	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.001 @ 1 kHz IR after test ≥ 50% of initial limit
Endurance Test	**Test Conditions**		**Performances**
	Temperature: Voltage applied: Test duration:	+85°C ±2°C 1.25 x V_R (DC) 2,000 hours	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.001 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.001 @ 1 kHz for C > 1µF IR after test ≥ 50% of initial limit
Resistance to Soldering Heat Test	**Test Conditions**		**Performances**
	Solder bath temperature: Dipping time (with heat screen):	260°C ±5°C 10 seconds ±1 second	|Δ C/C| ≤ 1%, Δ tanδ ≤ 0.001 @10 kHz for C ≤ 1µF Δ tanδ ≤ 0.001 @ 1 kHz for C > 1µF IR after test ≥ initial limit

Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
250	180	0.0068	3.0	8.0	10.0	7.5	1,100	550,000	76ID1680(1)30(2)	R76ID1680(1)30(2)
250	180	0.0082	3.0	8.0	10.0	7.5	1,100	550,000	76ID1820(1)30(2)	R76ID1820(1)30(2)
250	180	0.010	3.0	8.0	10.0	7.5	1,100	550,000	76ID2100(1)30(2)	R76ID2100(1)30(2)
250	180	0.012	4.0	9.0	10.0	7.5	1,100	550,000	76ID2120(1)40(2)	R76ID2120(1)40(2)
250	180	0.015	4.0	9.0	10.0	7.5	1,100	550,000	76ID2150(1)40(2)	R76ID2150(1)40(2)
250	180	0.018	4.0	9.0	10.0	7.5	1,100	550,000	76ID2180(1)40(2)	R76ID2180(1)40(2)
250	180	0.022	4.0	9.0	10.0	7.5	1,100	550,000	76ID2220(1)40(2)	R76ID2220(1)40(2)
250	180	0.027	5.0	10.5	10.0	7.5	1,100	550,000	76ID2270(1)40(2)	R76ID2270(1)40(2)
250	180	0.033	5.0	10.5	10.0	7.5	1,100	550,000	76ID2330(1)40(2)	R76ID2330(1)40(2)
250	180	0.039	6.0	12.0	10.5	7.5	1,100	550,000	76ID2390(1)30(2)	R76ID2390(1)30(2)
250	180	0.047	6.0	12.0	10.5	7.5	1,100	550,000	76ID2470(1)30(2)	R76ID2470(1)30(2)
250	180	0.027	4.0	9.0	13.0	10.0	1,000	500,000	76IF2270(1)30(2)	R76IF2270(1)30(2)
250	180	0.033	4.0	9.0	13.0	10.0	1,000	500,000	76IF2330(1)30(2)	R76IF2330(1)30(2)
250	180	0.039	4.0	9.0	13.0	10.0	1,000	500,000	76IF2390(1)30(2)	R76IF2390(1)30(2)
250	180	0.047	5.0	11.0	13.0	10.0	1,000	500,000	76IF2470(1)30(2)	R76IF2470(1)30(2)
250	180	0.056	5.0	11.0	13.0	10.0	1,000	500,000	76IF2560(1)30(2)	R76IF2560(1)30(2)
250	180	0.068	6.0	12.0	13.0	10.0	1,000	500,000	76IF2680(1)30(2)	R76IF2680(1)30(2)
250	180	0.082	6.0	12.0	13.0	10.0	1,000	500,000	76IF2820(1)30(2)	R76IF2820(1)30(2)
250	180	0.068	5.0	11.0	18.0	15.0	550	275,000	76II2680(1)30(2)	R76II2680(1)30(2)
250	180	0.082	5.0	11.0	18.0	15.0	550	275,000	76II2820(1)30(2)	R76II2820(1)30(2)
250	180	0.10	5.0	11.0	18.0	15.0	550	275,000	76II3100(1)30(2)	R76II3100(1)30(2)
250	180	0.12	6.0	12.0	18.0	15.0	550	275,000	76II3120(1)30(2)	R76II3120(1)30(2)
250	180	0.15	6.0	12.0	18.0	15.0	550	275,000	76II3150(1)30(2)	R76II3150(1)30(2)
250	180	0.18	7.5	13.5	18.0	15.0	550	275,000	76II3180(1)30(2)	R76II3180(1)30(2)
250	180	0.18	9.0	12.5	18.0	15.0	550	275,000	76II3180(1)70(2)	R76II3180(1)70(2)
250	180	0.22	7.5	13.5	18.0	15.0	550	275,000	76II3220(1)30(2)	R76II3220(1)30(2)
250	180	0.22	9.0	12.5	18.0	15.0	550	275,000	76II3220(1)70(2)	R76II3220(1)70(2)
250	180	0.27	8.5	14.5	18.0	15.0	550	275,000	76II3270(1)30(2)	R76II3270(1)30(2)
250	180	0.27	9.0	12.5	18.0	15.0	550	275,000	76II3270(1)70(2)	R76II3270(1)70(2)
250	180	0.33	10.0	16.0	18.0	15.0	550	275,000	76II3330(1)30(2)	R76II3330(1)30(2)
250	180	0.33	13.0	12.0	18.0	15.0	550	275,000	76II3330(1)70(2)	R76II3330(1)70(2)
250	180	0.39	10.0	16.0	18.0	15.0	550	275,000	76II3390(1)30(2)	R76II3390(1)30(2)
250	180	0.47	11.0	19.0	18.0	15.0	550	275,000	76II3470(1)30(2)	R76II3470(1)30(2)
250	180	0.22	6.0	15.0	26.5	22.5	250	125,000	76IN3220(1)00(2)	R76IN3220(1)00(2)
250	180	0.27	6.0	15.0	26.5	22.5	250	125,000	76IN3270(1)30(2)	R76IN3270(1)30(2)
250	180	0.33	6.0	15.0	26.5	22.5	250	125,000	76IN3330(1)30(2)	R76IN3330(1)30(2)
250	180	0.39	7.0	16.0	26.5	22.5	250	125,000	76IN3390(1)30(2)	R76IN3390(1)30(2)
250	180	0.47	7.0	16.0	26.5	22.5	250	125,000	76IN3470(1)30(2)	R76IN3470(1)30(2)
250	180	0.56	8.5	17.0	26.5	22.5	250	125,000	76IN3560(1)30(2)	R76IN3560(1)30(2)
250	180	0.68	10.0	18.5	26.5	22.5	250	125,000	76IN3680(1)30(2)	R76IN3680(1)30(2)
250	180	0.82	10.0	18.5	26.5	22.5	250	125,000	76IN3820(1)30(2)	R76IN3820(1)30(2)
250	180	1.0	11.0	20.0	26.5	22.5	250	125,000	76IN4100(1)30(2)	R76IN4100(1)30(2)
250	180	1.2	13.0	22.0	26.5	22.5	250	125,000	76IN4120(1)30(2)	R76IN4120(1)30(2)
250	180	0.82	9.0	17.0	32.0	27.5	200	100,000	76IR3820(1)30(2)	R76IR3820(1)30(2)
250	180	1.0	11.0	20.0	32.0	27.5	200	100,000	76IR4100(1)30(2)	R76IR4100(1)30(2)
250	180	1.2	11.0	20.0	32.0	27.5	200	100,000	76IR4120(1)40(2)	R76IR4120(1)40(2)
250	180	1.5	13.0	22.0	32.0	27.5	200	100,000	76IR4150(1)30(2)	R76IR4150(1)30(2)
250	180	1.8	13.0	25.0	32.0	27.5	200	100,000	76IR4180(1)20(2)	R76IR4180(1)20(2)
250	180	2.2	14.0	28.0	32.0	27.5	200	100,000	76IR4220(1)40(2)	R76IR4220(1)40(2)
250	180	2.7	18.0	33.0	32.0	27.5	200	100,000	76IR4270(1)30(2)	R76IR4270(1)30(2)
250	180	3.3	18.0	33.0	32.0	27.5	200	100,000	76IR4330(1)30(2)	R76IR4330(1)30(2)
250	180	3.9	18.0	33.0	32.0	27.5	200	100,000	76IR4390(1)30(2)	R76IR4390(1)30(2)
250	180	4.7	22.0	37.0	32.0	27.5	200	100,000	76IR4470(1)30(2)	R76IR4470(1)30(2)
250	180	5.6	22.0	37.0	32.0	27.5	200	100,000	76IR4560(1)40(2)	R76IR4560(1)40(2)
250	180	1.2	11.0	22.0	41.5	37.5	100	50,000	76IW4120(1)30(2)	R76IW4120(1)30(2)
250	180	1.5	11.0	22.0	41.5	37.5	100	50,000	76IW4150(1)30(2)	R76IW4150(1)30(2)
250	180	1.8	11.0	22.0	41.5	37.5	100	50,000	76IW4180(1)30(2)	R76IW4180(1)30(2)
250	180	2.2	13.0	24.0	41.5	37.5	100	50,000	76IW4220(1)30(2)	R76IW4220(1)30(2)
250	180	2.7	16.0	28.5	41.5	37.5	100	50,000	76IW4270(1)20(2)	R76IW4270(1)20(2)
250	180	3.3	16.0	28.5	41.5	37.5	100	50,000	76IW4330(1)30(2)	R76IW4330(1)30(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
250	180	3.9	16.0	28.5	41.5	37.5	100	50,000	76IW4390(1)30(2)	R76IW4390(1)30(2)
250	180	4.7	19.0	32.0	41.5	37.5	100	50,000	76IW4470(1)30(2)	R76IW4470(1)30(2)
250	180	5.6	20.0	40.0	41.5	37.5	100	50,000	76IW4560(1)20(2)	R76IW4560(1)20(2)
250	180	6.8	20.0	40.0	41.5	37.5	100	50,000	76IW4680(1)30(2)	R76IW4680(1)30(2)
250	180	8.2	24.0	44.0	41.5	37.5	100	50,000	76IW4820(1)20(2)	R76IW4820(1)20(2)
250	180	10	24.0	44.0	41.5	37.5	100	50,000	76IW5100(1)30(2)	R76IW5100(1)30(2)
250	180	12	30.0	45.0	41.5	37.5	100	50,000	76IW5120(1)30(2)	R76IW5120(1)30(2)
400	250	0.0027	3.0	8.0	10.0	7.5	1,700	1,360,000	76MD1270(1)30(2)	R76MD1270(1)30(2)
400	250	0.0033	3.0	8.0	10.0	7.5	1,700	1,360,000	76MD1330(1)30(2)	R76MD1330(1)30(2)
400	250	0.0039	3.0	8.0	10.0	7.5	1,700	1,360,000	76MD1390(1)30(2)	R76MD1390(1)30(2)
400	250	0.0047	3.0	8.0	10.0	7.5	1,700	1,360,000	76MD1470(1)30(2)	R76MD1470(1)30(2)
400	250	0.0056	3.0	8.0	10.0	7.5	1,700	1,360,000	76MD1560(1)30(2)	R76MD1560(1)30(2)
400	250	0.0068	4.0	9.0	10.0	7.5	1,700	1,360,000	76MD1680(1)40(2)	R76MD1680(1)40(2)
400	250	0.0082	4.0	9.0	10.0	7.5	1,700	1,360,000	76MD1820(1)40(2)	R76MD1820(1)40(2)
400	250	0.010	4.0	9.0	10.0	7.5	1,700	1,360,000	76MD2100(1)40(2)	R76MD2100(1)40(2)
400	250	0.012	4.0	9.0	10.0	7.5	1,700	1,360,000	76MD2120(1)40(2)	R76MD2120(1)40(2)
400	250	0.015	5.0	10.5	10.0	7.5	1,700	1,360,000	76MD2150(1)40(2)	R76MD2150(1)40(2)
400	250	0.018	5.0	10.5	10.0	7.5	1,700	1,360,000	76MD2180(1)40(2)	R76MD2180(1)40(2)
400	250	0.022	6.0	12.0	10.5	7.5	1,700	1,360,000	76MD2220(1)30(2)	R76MD2220(1)30(2)
400	250	0.027	6.0	12.0	10.5	7.5	1,700	1,360,000	76MD2270(1)30(2)	R76MD2270(1)30(2)
400	250	0.010	4.0	9.0	13.0	10.0	1,500	1,200,000	76MF2100(1)00(2)	R76MF2100(1)00(2)
400	250	0.012	4.0	9.0	13.0	10.0	1,500	1,200,000	76MF2120(1)00(2)	R76MF2120(1)00(2)
400	250	0.015	4.0	9.0	13.0	10.0	1,500	1,200,000	76MF2150(1)30(2)	R76MF2150(1)30(2)
400	250	0.018	4.0	9.0	13.0	10.0	1,500	1,200,000	76MF2180(1)30(2)	R76MF2180(1)30(2)
400	250	0.022	4.0	9.0	13.0	10.0	1,500	1,200,000	76MF2220(1)30(2)	R76MF2220(1)30(2)
400	250	0.027	5.0	11.0	13.0	10.0	1,500	1,200,000	76MF2270(1)30(2)	R76MF2270(1)30(2)
400	250	0.033	5.0	11.0	13.0	10.0	1,500	1,200,000	76MF2330(1)30(2)	R76MF2330(1)30(2)
400	250	0.039	6.0	12.0	13.0	10.0	1,500	1,200,000	76MF2390(1)30(2)	R76MF2390(1)30(2)
400	250	0.047	6.0	12.0	13.0	10.0	1,500	1,200,000	76MF2470(1)30(2)	R76MF2470(1)30(2)
400	250	0.033	5.0	11.0	18.0	15.0	900	720,000	76MI2330(1)00(2)	R76MI2330(1)00(2)
400	250	0.039	5.0	11.0	18.0	15.0	900	720,000	76MI2390(1)30(2)	R76MI2390(1)30(2)
400	250	0.047	5.0	11.0	18.0	15.0	900	720,000	76MI2470(1)30(2)	R76MI2470(1)30(2)
400	250	0.056	5.0	11.0	18.0	15.0	900	720,000	76MI2560(1)30(2)	R76MI2560(1)30(2)
400	250	0.068	6.0	12.0	18.0	15.0	900	720,000	76MI2680(1)30(2)	R76MI2680(1)30(2)
400	250	0.082	6.0	12.0	18.0	15.0	900	720,000	76MI2820(1)30(2)	R76MI2820(1)30(2)
400	250	0.10	7.5	13.5	18.0	15.0	900	720,000	76MI3100(1)30(2)	R76MI3100(1)30(2)
400	250	0.10	9.0	12.5	18.0	15.0	900	720,000	76MI3100(1)70(2)	R76MI3100(1)70(2)
400	250	0.12	7.5	13.5	18.0	15.0	900	720,000	76MI3120(1)30(2)	R76MI3120(1)30(2)
400	250	0.12	9.0	12.5	18.0	15.0	900	720,000	76MI3120(1)70(2)	R76MI3120(1)70(2)
400	250	0.15	8.5	14.5	18.0	15.0	900	720,000	76MI3150(1)30(2)	R76MI3150(1)30(2)
400	250	0.15	13.0	12.0	18.0	15.0	900	720,000	76MI3150(1)70(2)	R76MI3150(1)70(2)
400	250	0.18	10.0	16.0	18.0	15.0	900	720,000	76MI3180(1)30(2)	R76MI3180(1)30(2)
400	250	0.18	13.0	12.0	18.0	15.0	900	720,000	76MI3180(1)70(2)	R76MI3180(1)70(2)
400	250	0.22	10.0	16.0	18.0	15.0	900	720,000	76MI3220(1)30(2)	R76MI3220(1)30(2)
400	250	0.27	11.0	19.0	18.0	15.0	900	720,000	76MI3270(1)30(2)	R76MI3270(1)30(2)
400	250	0.12	6.0	15.0	26.5	22.5	500	400,000	76MN3120(1)30(2)	R76MN3120(1)30(2)
400	250	0.15	6.0	15.0	26.5	22.5	500	400,000	76MN3150(1)30(2)	R76MN3150(1)30(2)
400	250	0.18	6.0	15.0	26.5	22.5	500	400,000	76MN3180(1)30(2)	R76MN3180(1)30(2)
400	250	0.22	7.0	16.0	26.5	22.5	500	400,000	76MN3220(1)30(2)	R76MN3220(1)30(2)
400	250	0.27	8.5	17.0	26.5	22.5	500	400,000	76MN3270(1)30(2)	R76MN3270(1)30(2)
400	250	0.33	8.5	17.0	26.5	22.5	500	400,000	76MN3330(1)30(2)	R76MN3330(1)30(2)
400	250	0.39	10.0	18.5	26.5	22.5	500	400,000	76MN3390(1)30(2)	R76MN3390(1)30(2)
400	250	0.47	10.0	18.5	26.5	22.5	500	400,000	76MN3470(1)30(2)	R76MN3470(1)30(2)
400	250	0.56	11.0	20.0	26.5	22.5	500	400,000	76MN3560(1)30(2)	R76MN3560(1)30(2)
400	250	0.68	13.0	22.0	26.5	22.5	500	400,000	76MN3680(1)30(2)	R76MN3680(1)30(2)
400	250	0.39	9.0	17.0	32.0	27.5	300	240,000	76MR3390(1)30(2)	R76MR3390(1)30(2)
400	250	0.47	9.0	17.0	32.0	27.5	300	240,000	76MR3470(1)30(2)	R76MR3470(1)30(2)
400	250	0.56	11.0	20.0	32.0	27.5	300	240,000	76MR3560(1)30(2)	R76MR3560(1)30(2)
400	250	0.68	11.0	20.0	32.0	27.5	300	240,000	76MR3680(1)30(2)	R76MR3680(1)30(2)
400	250	0.82	13.0	22.0	32.0	27.5	300	240,000	76MR3820(1)30(2)	R76MR3820(1)30(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
400	250	1.0	13.0	22.0	32.0	27.5	300	240,000	76MR4100(1)40(2)	R76MR4100(1)40(2)
400	250	1.2	14.0	28.0	32.0	27.5	300	240,000	76MR4120(1)40(2)	R76MR4120(1)40(2)
400	250	1.5	18.0	33.0	32.0	27.5	300	240,000	76MR4150(1)30(2)	R76MR4150(1)30(2)
400	250	1.8	18.0	33.0	32.0	27.5	300	240,000	76MR4180(1)30(2)	R76MR4180(1)30(2)
400	250	2.2	22.0	37.0	32.0	27.5	300	240,000	76MR4220(1)30(2)	R76MR4220(1)30(2)
400	250	2.7	22.0	37.0	32.0	27.5	300	240,000	76MR4270(1)30(2)	R76MR4270(1)30(2)
400	250	1.0	11.0	22.0	41.5	37.5	180	144,000	76MW4100(1)30(2)	R76MW4100(1)30(2)
400	250	1.2	13.0	24.0	41.5	37.5	180	144,000	76MW4120(1)30(2)	R76MW4120(1)30(2)
400	250	1.5	13.0	24.0	41.5	37.5	180	144,000	76MW4150(1)30(2)	R76MW4150(1)30(2)
400	250	1.8	16.0	28.5	41.5	37.5	180	144,000	76MW4180(1)30(2)	R76MW4180(1)30(2)
400	250	2.2	19.0	32.0	41.5	37.5	180	144,000	76MW4220(1)30(2)	R76MW4220(1)30(2)
400	250	2.7	19.0	32.0	41.5	37.5	180	144,000	76MW4270(1)30(2)	R76MW4270(1)30(2)
400	250	3.3	19.0	32.0	41.5	37.5	180	144,000	76MW4330(1)30(2)	R76MW4330(1)30(2)
400	250	3.9	20.0	40.0	41.5	37.5	180	144,000	76MW4390(1)30(2)	R76MW4390(1)30(2)
400	250	4.7	20.0	40.0	41.5	37.5	180	144,000	76MW4470(1)30(2)	R76MW4470(1)30(2)
400	250	5.6	24.0	44.0	41.5	37.5	180	144,000	76MW4560(1)30(2)	R76MW4560(1)30(2)
400	250	6.8	30.0	45.0	41.5	37.5	180	144,000	76MW4680(1)30(2)	R76MW4680(1)30(2)
400	250	8.2	30.0	45.0	41.5	37.5	180	144,000	76MW4820(1)30(2)	R76MW4820(1)30(2)
630	250	0.00068	3.0	8.0	10.0	7.5	2,800	3,528,000	76PD0680(1)00(2)	R76PD0680(1)00(2)
630	250	0.0008	3.0	8.0	10.0	7.5	2,800	3,528,000	76PD0820(1)00(2)	R76PD0820(1)00(2)
630	250	0.0010	3.0	8.0	10.0	7.5	2,800	3,528,000	76PD1100(1)00(2)	R76PD1100(1)00(2)
630	250	0.0012	3.0	8.0	10.0	7.5	2,800	3,528,000	76PD1120(1)00(2)	R76PD1120(1)00(2)
630	250	0.0015	3.0	8.0	10.0	7.5	2,800	3,528,000	76PD1150(1)00(2)	R76PD1150(1)00(2)
630	250	0.0018	3.0	8.0	10.0	7.5	2,800	3,528,000	76PD1180(1)00(2)	R76PD1180(1)00(2)
630	250	0.0022	3.0	8.0	10.0	7.5	2,800	3,528,000	76PD1220(1)00(2)	R76PD1220(1)00(2)
630	250	0.0027	4.0	9.0	10.0	7.5	2,800	3,528,000	76PD1270(1)40(2)	R76PD1270(1)40(2)
630	250	0.0033	4.0	9.0	10.0	7.5	2,800	3,528,000	76PD1330(1)40(2)	R76PD1330(1)40(2)
630	250	0.0039	4.0	9.0	10.0	7.5	2,800	3,528,000	76PD1390(1)40(2)	R76PD1390(1)40(2)
630	250	0.0047	4.0	9.0	10.0	7.5	2,800	3,528,000	76PD1470(1)40(2)	R76PD1470(1)40(2)
630	250	0.0056	4.0	9.0	10.0	7.5	2,800	3,528,000	76PD1560(1)40(2)	R76PD1560(1)40(2)
630	250	0.0068	5.0	10.5	10.0	7.5	2,800	3,528,000	76PD1680(1)40(2)	R76PD1680(1)40(2)
630	250	0.0082	5.0	10.5	10.0	7.5	2,800	3,528,000	76PD1820(1)40(2)	R76PD1820(1)40(2)
630	250	0.010	6.0	12.0	10.5	7.5	2,800	3,528,000	76PD2100(1)30(2)	R76PD2100(1)30(2)
630	250	0.012	6.0	12.0	10.5	7.5	2,800	3,528,000	76PD2120(1)30(2)	R76PD2120(1)30(2)
630	400	0.0039	4.0	9.0	13.0	10.0	3,000	3,780,000	76PF1390(1)00(2)	R76PF1390(1)00(2)
630	400	0.0047	4.0	9.0	13.0	10.0	3,000	3,780,000	76PF1470(1)00(2)	R76PF1470(1)00(2)
630	400	0.0056	4.0	9.0	13.0	10.0	3,000	3,780,000	76PF1560(1)00(2)	R76PF1560(1)00(2)
630	400	0.0068	4.0	9.0	13.0	10.0	3,000	3,780,000	76PF1680(1)00(2)	R76PF1680(1)00(2)
630	400	0.0082	4.0	9.0	13.0	10.0	3,000	3,780,000	76PF1820(1)00(2)	R76PF1820(1)00(2)
630	400	0.010	5.0	11.0	13.0	10.0	3,000	3,780,000	76PF2100(1)30(2)	R76PF2100(1)30(2)
630	400	0.012	5.0	11.0	13.0	10.0	3,000	3,780,000	76PF2120(1)30(2)	R76PF2120(1)30(2)
630	400	0.015	6.0	12.0	13.0	10.0	3,000	3,780,000	76PF2150(1)30(2)	R76PF2150(1)30(2)
630	400	0.018	6.0	12.0	13.0	10.0	3,000	3,780,000	76PF2180(1)30(2)	R76PF2180(1)30(2)
630	400	0.012	5.0	11.0	18.0	15.0	2,500	3,150,000	76PI2120(1)00(2)	R76PI2120(1)00(2)
630	400	0.015	5.0	11.0	18.0	15.0	2,500	3,150,000	76PI2150(1)00(2)	R76PI2150(1)00(2)
630	400	0.018	5.0	11.0	18.0	15.0	2,500	3,150,000	76PI2180(1)00(2)	R76PI2180(1)00(2)
630	400	0.022	5.0	11.0	18.0	15.0	2,500	3,150,000	76PI2220(1)30(2)	R76PI2220(1)30(2)
630	400	0.027	5.0	11.0	18.0	15.0	2,500	3,150,000	76PI2270(1)30(2)	R76PI2270(1)30(2)
630	400	0.033	6.0	12.0	18.0	15.0	2,500	3,150,000	76PI2330(1)30(2)	R76PI2330(1)30(2)
630	400	0.039	6.0	12.0	18.0	15.0	2,500	3,150,000	76PI2390(1)30(2)	R76PI2390(1)30(2)
630	400	0.047	7.5	13.5	18.0	15.0	2,500	3,150,000	76PI2470(1)30(2)	R76PI2470(1)30(2)
630	400	0.047	9.0	12.5	18.0	15.0	2,500	3,150,000	76PI2470(1)70(2)	R76PI2470(1)70(2)
630	400	0.056	7.5	13.5	18.0	15.0	2,500	3,150,000	76PI2560(1)30(2)	R76PI2560(1)30(2)
630	400	0.056	9.0	12.5	18.0	15.0	2,500	3,150,000	76PI2560(1)70(2)	R76PI2560(1)70(2)
630	400	0.068	8.5	14.5	18.0	15.0	2,500	3,150,000	76PI2680(1)30(2)	R76PI2680(1)30(2)
630	400	0.068	9.0	12.5	18.0	15.0	2,500	3,150,000	76PI2680(1)70(2)	R76PI2680(1)70(2)
630	400	0.082	8.5	14.5	18.0	15.0	2,500	3,150,000	76PI2820(1)30(2)	R76PI2820(1)30(2)
630	400	0.082	13.0	12.0	18.0	15.0	2,500	3,150,000	76PI2820(1)70(2)	R76PI2820(1)70(2)
630	400	0.10	10.0	16.0	18.0	15.0	2,500	3,150,000	76PI3100(1)30(2)	R76PI3100(1)30(2)
630	400	0.12	11.0	19.0	18.0	15.0	2,500	3,150,000	76PI3120(1)30(2)	R76PI3120(1)30(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) H = 2.5%, J = 5%, K = 10%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
630	400	0.047	6.0	15.0	26.5	22.5	1,500	1,890,000	76PN2470(1)00(2)	R76PN2470(1)00(2)
630	400	0.056	6.0	15.0	26.5	22.5	1,500	1,890,000	76PN2560(1)00(2)	R76PN2560(1)00(2)
630	400	0.068	6.0	15.0	26.5	22.5	1,500	1,890,000	76PN2680(1)00(2)	R76PN2680(1)00(2)
630	400	0.082	6.0	15.0	26.5	22.5	1,500	1,890,000	76PN2820(1)30(2)	R76PN2820(1)30(2)
630	400	0.10	6.0	15.0	26.5	22.5	1,500	1,890,000	76PN3100(1)30(2)	R76PN3100(1)30(2)
630	400	0.12	7.0	16.0	26.5	22.5	1,500	1,890,000	76PN3120(1)30(2)	R76PN3120(1)30(2)
630	400	0.15	8.5	17.0	26.5	22.5	1,500	1,890,000	76PN3150(1)30(2)	R76PN3150(1)30(2)
630	400	0.18	8.5	17.0	26.5	22.5	1,500	1,890,000	76PN3180(1)30(2)	R76PN3180(1)30(2)
630	400	0.22	10.0	18.5	26.5	22.5	1,500	1,890,000	76PN3220(1)30(2)	R76PN3220(1)30(2)
630	400	0.27	11.0	20.0	26.5	22.5	1,500	1,890,000	76PN3270(1)30(2)	R76PN3270(1)30(2)
630	400	0.33	11.0	20.0	26.5	22.5	1,500	1,890,000	76PN3330(1)30(2)	R76PN3330(1)30(2)
630	400	0.39	13.0	22.0	26.5	22.5	1,500	1,890,000	76PN3390(1)30(2)	R76PN3390(1)30(2)
630	400	0.15	9.0	17.0	32.0	27.5	900	1,134,000	76PR3150(1)30(2)	R76PR3150(1)30(2)
630	400	0.18	9.0	17.0	32.0	27.5	900	1,134,000	76PR3180(1)30(2)	R76PR3180(1)30(2)
630	400	0.22	9.0	17.0	32.0	27.5	900	1,134,000	76PR3220(1)30(2)	R76PR3220(1)30(2)
630	400	0.27	9.0	17.0	32.0	27.5	900	1,134,000	76PR3270(1)30(2)	R76PR3270(1)30(2)
630	400	0.33	11.0	20.0	32.0	27.5	900	1,134,000	76PR3330(1)40(2)	R76PR3330(1)40(2)
630	400	0.39	11.0	20.0	32.0	27.5	900	1,134,000	76PR3390(1)30(2)	R76PR3390(1)30(2)
630	400	0.47	13.0	22.0	32.0	27.5	900	1,134,000	76PR3470(1)30(2)	R76PR3470(1)30(2)
630	400	0.56	13.0	22.0	32.0	27.5	900	1,134,000	76PR3560(1)30(2)	R76PR3560(1)30(2)
630	400	0.68	13.0	25.0	32.0	27.5	900	1,134,000	76PR3680(1)40(2)	R76PR3680(1)40(2)
630	400	0.82	14.0	28.0	32.0	27.5	900	1,134,000	76PR3820(1)30(2)	R76PR3820(1)30(2)
630	400	1.0	18.0	33.0	32.0	27.5	900	1,134,000	76PR4100(1)30(2)	R76PR4100(1)30(2)
630	400	1.2	18.0	33.0	32.0	27.5	900	1,134,000	76PR4120(1)30(2)	R76PR4120(1)30(2)
630	400	1.5	22.0	37.0	32.0	27.5	900	1,134,000	76PR4150(1)30(2)	R76PR4150(1)30(2)
630	400	1.8	22.0	37.0	32.0	27.5	900	1,134,000	76PR4180(1)30(2)	R76PR4180(1)30(2)
630	400	0.33	11.0	22.0	41.5	37.5	450	567,000	76PW3330(1)30(2)	R76PW3330(1)30(2)
630	400	0.39	11.0	22.0	41.5	37.5	450	567,000	76PW3390(1)30(2)	R76PW3390(1)30(2)
630	400	0.47	11.0	22.0	41.5	37.5	450	567,000	76PW3470(1)30(2)	R76PW3470(1)30(2)
630	400	0.56	11.0	22.0	41.5	37.5	450	567,000	76PW3560(1)30(2)	R76PW3560(1)30(2)
630	400	0.68	11.0	22.0	41.5	37.5	450	567,000	76PW3680(1)30(2)	R76PW3680(1)30(2)
630	400	0.82	13.0	24.0	41.5	37.5	450	567,000	76PW3820(1)30(2)	R76PW3820(1)30(2)
630	400	1.0	16.0	28.5	41.5	37.5	450	567,000	76PW4100(1)30(2)	R76PW4100(1)30(2)
630	400	1.2	16.0	28.5	41.5	37.5	450	567,000	76PW4120(1)30(2)	R76PW4120(1)30(2)
630	400	1.5	16.0	28.5	41.5	37.5	450	567,000	76PW4150(1)30(2)	R76PW4150(1)30(2)
630	400	1.8	19.0	32.0	41.5	37.5	450	567,000	76PW4180(1)30(2)	R76PW4180(1)30(2)
630	400	2.2	20.0	40.0	41.5	37.5	450	567,000	76PW4220(1)30(2)	R76PW4220(1)30(2)
630	400	2.7	20.0	40.0	41.5	37.5	450	567,000	76PW4270(1)30(2)	R76PW4270(1)30(2)
630	400	3.3	24.0	44.0	41.5	37.5	450	567,000	76PW4330(1)30(2)	R76PW4330(1)30(2)
630	400	3.9	30.0	45.0	41.5	37.5	450	567,000	76PW4390(1)30(2)	R76PW4390(1)30(2)
630	400	4.7	30.0	45.0	41.5	37.5	450	567,000	76PW4470(1)30(2)	R76PW4470(1)30(2)
1,000	400	0.00022	3.0	8.0	10.0	7.5	6,000	12,000,000	76QD0220(1)00(2)	R76QD0220(1)00(2)
1,000	400	0.00027	3.0	8.0	10.0	7.5	6,000	12,000,000	76QD0270(1)00(2)	R76QD0270(1)00(2)
1,000	400	0.00033	3.0	8.0	10.0	7.5	6,000	12,000,000	76QD0330(1)00(2)	R76QD0330(1)00(2)
1,000	400	0.00039	3.0	8.0	10.0	7.5	6,000	12,000,000	76QD0390(1)00(2)	R76QD0390(1)00(2)
1,000	400	0.00047	3.0	8.0	10.0	7.5	6,000	12,000,000	76QD0470(1)00(2)	R76QD0470(1)00(2)
1,000	400	0.00056	3.0	8.0	10.0	7.5	6,000	12,000,000	76QD0560(1)00(2)	R76QD0560(1)00(2)
1,000	400	0.00068	4.0	9.0	10.0	7.5	6,000	12,000,000	76QD0680(1)40(2)	R76QD0680(1)40(2)
1,000	400	0.00082	4.0	9.0	10.0	7.5	6,000	12,000,000	76QD0820(1)40(2)	R76QD0820(1)40(2)
1,000	400	0.0010	4.0	9.0	10.0	7.5	6,000	12,000,000	76QD1100(1)40(2)	R76QD1100(1)40(2)
1,000	400	0.0012	4.0	9.0	10.0	7.5	6,000	12,000,000	76QD1120(1)40(2)	R76QD1120(1)40(2)
1,000	400	0.0015	5.0	10.5	10.0	7.5	6,000	12,000,000	76QD1150(1)40(2)	R76QD1150(1)40(2)
1,000	400	0.0018	5.0	10.5	10.0	7.5	6,000	12,000,000	76QD1180(1)40(2)	R76QD1180(1)40(2)
1,000	400	0.0022	5.0	10.5	10.0	7.5	6,000	12,000,000	76QD1220(1)40(2)	R76QD1220(1)40(2)
1,000	400	0.0027	6.0	12.0	10.5	7.5	6,000	12,000,000	76QD1270(1)00(2)	R76QD1270(1)00(2)
1,000	400	0.0033	6.0	12.0	10.5	7.5	6,000	12,000,000	76QD1330(1)00(2)	R76QD1330(1)00(2)
1,000	600	0.00047	4.0	9.0	13.0	10.0	4,800	9,600,000	76QF0470(1)00(2)	R76QF0470(1)00(2)
1,000	600	0.00056	4.0	9.0	13.0	10.0	4,800	9,600,000	76QF0560(1)00(2)	R76QF0560(1)00(2)
1,000	600	0.00068	4.0	9.0	13.0	10.0	4,800	9,600,000	76QF0680(1)00(2)	R76QF0680(1)00(2)
1,000	600	0.00082	4.0	9.0	13.0	10.0	4,800	9,600,000	76QF0820(1)00(2)	R76QF0820(1)00(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) H = 2.5%, J = 5%, K = 10%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
1,000	600	0.0010	4.0	9.0	13.0	10.0	4,800	9,600,000	76QF1100(1)00(2)	R76QF1100(1)00(2)
1,000	600	0.0012	4.0	9.0	13.0	10.0	4,800	9,600,000	76QF1120(1)00(2)	R76QF1120(1)00(2)
1,000	600	0.0015	4.0	9.0	13.0	10.0	4,800	9,600,000	76QF1150(1)00(2)	R76QF1150(1)00(2)
1,000	600	0.0018	4.0	9.0	13.0	10.0	4,800	9,600,000	76QF1180(1)00(2)	R76QF1180(1)00(2)
1,000	600	0.0022	4.0	9.0	13.0	10.0	4,800	9,600,000	76QF1220(1)00(2)	R76QF1220(1)00(2)
1,000	600	0.0027	4.0	9.0	13.0	10.0	4,800	9,600,000	76QF1270(1)00(2)	R76QF1270(1)00(2)
1,000	600	0.0033	4.0	9.0	13.0	10.0	4,800	9,600,000	76QF1330(1)30(2)	R76QF1330(1)30(2)
1,000	600	0.0039	5.0	11.0	13.0	10.0	4,800	9,600,000	76QF1390(1)30(2)	R76QF1390(1)30(2)
1,000	600	0.0047	5.0	11.0	13.0	10.0	4,800	9,600,000	76QF1470(1)30(2)	R76QF1470(1)30(2)
1,000	600	0.0056	6.0	12.0	13.0	10.0	4,800	9,600,000	76QF1560(1)30(2)	R76QF1560(1)30(2)
1,000	600	0.0068	6.0	12.0	13.0	10.0	4,800	9,600,000	76QF1680(1)30(2)	R76QF1680(1)30(2)
1,000	600	0.0082	4.0	10.0	18.0	15.0	3,300	6,600,000	76QI1820(1)40(2)	R76QI1820(1)40(2)
1,000	600	0.0082	5.0	11.0	18.0	15.0	3,300	6,600,000	76QI1820(1)00(2)	R76QI1820(1)00(2)
1,000	600	0.010	4.0	10.0	18.0	15.0	3,300	6,600,000	76QI2100(1)40(2)	R76QI2100(1)40(2)
1,000	600	0.010	5.0	11.0	18.0	15.0	3,300	6,600,000	76QI2100(1)30(2)	R76QI2100(1)30(2)
1,000	600	0.012	5.0	11.0	18.0	15.0	3,300	6,600,000	76QI2120(1)30(2)	R76QI2120(1)30(2)
1,000	600	0.015	5.0	11.0	18.0	15.0	3,300	6,600,000	76QI2150(1)40(2)	R76QI2150(1)40(2)
1,000	600	0.018	5.0	11.0	18.0	15.0	3,300	6,600,000	76QI2180(1)40(2)	R76QI2180(1)40(2)
1,000	600	0.022	6.0	12.0	18.0	15.0	3,300	6,600,000	76QI2220(1)40(2)	R76QI2220(1)40(2)
1,000	600	0.022	9.0	12.5	18.0	15.0	3,300	6,600,000	76QI2220(1)70(2)	R76QI2220(1)70(2)
1,000	600	0.027	7.5	13.5	18.0	15.0	3,300	6,600,000	76QI2270(1)40(2)	R76QI2270(1)40(2)
1,000	600	0.027	9.0	12.5	18.0	15.0	3,300	6,600,000	76QI2270(1)70(2)	R76QI2270(1)70(2)
1,000	600	0.033	7.5	13.5	18.0	15.0	3,300	6,600,000	76QI2330(1)40(2)	R76QI2330(1)40(2)
1,000	600	0.033	13.0	12.0	18.0	15.0	3,300	6,600,000	76QI2330(1)70(2)	R76QI2330(1)70(2)
1,000	600	0.039	8.5	14.5	18.0	15.0	3,300	6,600,000	76QI2390(1)40(2)	R76QI2390(1)40(2)
1,000	600	0.047	8.5	14.5	18.0	15.0	3,300	6,600,000	76QI2470(1)40(2)	R76QI2470(1)40(2)
1,000	600	0.027	6.0	15.0	26.5	22.5	2,100	4,200,000	76QN2270(1)00(2)	R76QN2270(1)00(2)
1,000	600	0.033	6.0	15.0	26.5	22.5	2,100	4,200,000	76QN2330(1)30(2)	R76QN2330(1)30(2)
1,000	600	0.039	6.0	15.0	26.5	22.5	2,100	4,200,000	76QN2390(1)30(2)	R76QN2390(1)30(2)
1,000	600	0.047	7.0	16.0	26.5	22.5	2,100	4,200,000	76QN2470(1)30(2)	R76QN2470(1)30(2)
1,000	600	0.056	7.0	16.0	26.5	22.5	2,100	4,200,000	76QN2560(1)30(2)	R76QN2560(1)30(2)
1,000	600	0.068	8.5	17.0	26.5	22.5	2,100	4,200,000	76QN2680(1)30(2)	R76QN2680(1)30(2)
1,000	600	0.082	10.0	18.5	26.5	22.5	2,100	4,200,000	76QN2820(1)30(2)	R76QN2820(1)30(2)
1,000	600	0.10	10.0	18.5	26.5	22.5	2,100	4,200,000	76QN3100(1)30(2)	R76QN3100(1)30(2)
1,000	600	0.12	11.0	20.0	26.5	22.5	2,100	4,200,000	76QN3120(1)30(2)	R76QN3120(1)30(2)
1,000	600	0.15	13.0	22.0	26.5	22.5	2,100	4,200,000	76QN3150(1)30(2)	R76QN3150(1)30(2)
1,000	600	0.10	9.0	17.0	32.0	27.5	1,000	2,000,000	76QR3100(1)40(2)	R76QR3100(1)40(2)
1,000	600	0.12	9.0	17.0	32.0	27.5	1,000	2,000,000	76QR3120(1)40(2)	R76QR3120(1)40(2)
1,000	600	0.15	11.0	20.0	32.0	27.5	1,000	2,000,000	76QR3150(1)30(2)	R76QR3150(1)30(2)
1,000	600	0.18	13.0	22.0	32.0	27.5	1,000	2,000,000	76QR3180(1)30(2)	R76QR3180(1)30(2)
1,000	600	0.22	13.0	22.0	32.0	27.5	1,000	2,000,000	76QR3220(1)30(2)	R76QR3220(1)30(2)
1,000	600	0.27	13.0	25.0	32.0	27.5	1,000	2,000,000	76QR3270(1)40(2)	R76QR3270(1)40(2)
1,000	600	0.33	14.0	28.0	32.0	27.5	1,000	2,000,000	76QR3330(1)30(2)	R76QR3330(1)30(2)
1,000	600	0.39	18.0	33.0	32.0	27.5	1,000	2,000,000	76QR3390(1)30(2)	R76QR3390(1)30(2)
1,000	600	0.47	18.0	33.0	32.0	27.5	1,000	2,000,000	76QR3470(1)30(2)	R76QR3470(1)30(2)
1,000	600	0.56	22.0	37.0	32.0	27.5	1,000	2,000,000	76QR3560(1)30(2)	R76QR3560(1)30(2)
1,000	600	0.68	22.0	37.0	32.0	27.5	1,000	2,000,000	76QR3680(1)30(2)	R76QR3680(1)30(2)
1,000	600	0.18	11.0	22.0	41.5	37.5	500	1,000,000	76QW3180(1)30(2)	R76QW3180(1)30(2)
1,000	600	0.22	11.0	22.0	41.5	37.5	500	1,000,000	76QW3220(1)30(2)	R76QW3220(1)30(2)
1,000	600	0.27	13.0	24.0	41.5	37.5	500	1,000,000	76QW3270(1)30(2)	R76QW3270(1)30(2)
1,000	600	0.33	13.0	24.0	41.5	37.5	500	1,000,000	76QW3330(1)30(2)	R76QW3330(1)30(2)
1,000	600	0.39	16.0	28.5	41.5	37.5	500	1,000,000	76QW3390(1)30(2)	R76QW3390(1)30(2)
1,000	600	0.47	16.0	28.5	41.5	37.5	500	1,000,000	76QW3470(1)30(2)	R76QW3470(1)30(2)
1,000	600	0.56	16.0	28.5	41.5	37.5	500	1,000,000	76QW3560(1)30(2)	R76QW3560(1)30(2)
1,000	600	0.68	19.0	32.0	41.5	37.5	500	1,000,000	76QW3680(1)30(2)	R76QW3680(1)30(2)
1,000	600	0.82	20.0	40.0	41.5	37.5	500	1,000,000	76QW3820(1)30(2)	R76QW3820(1)30(2)
1,000	600	1.0	20.0	40.0	41.5	37.5	500	1,000,000	76QW4100(1)30(2)	R76QW4100(1)30(2)
1,000	600	1.2	24.0	44.0	41.5	37.5	500	1,000,000	76QW4120(1)30(2)	R76QW4120(1)30(2)
1,000	600	1.5	24.0	44.0	41.5	37.5	500	1,000,000	76QW4150(1)30(2)	R76QW4150(1)30(2)
1,000	600	1.8	30.0	45.0	41.5	37.5	500	1,000,000	76QW4180(1)30(2)	R76QW4180(1)30(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) H = 2.5%, J = 5%, K = 10%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
1,000	600	2.2	30.0	45.0	41.5	37.5	500	1,000,000	76QW4220(1)30(2)	R76QW4220(1)30(2)
1,600	650	0.0033	4.0	10.0	18.0	15.0	6,000	19,200,000	76TI1330(1)40(2)	R76TI1330(1)40(2)
1,600	650	0.0033	5.0	11.0	18.0	15.0	6,000	19,200,000	76TI1330(1)30(2)	R76TI1330(1)30(2)
1,600	650	0.0039	4.0	10.0	18.0	15.0	6,000	19,200,000	76TI1390(1)40(2)	R76TI1390(1)40(2)
1,600	650	0.0039	5.0	11.0	18.0	15.0	6,000	19,200,000	76TI1390(1)30(2)	R76TI1390(1)30(2)
1,600	650	0.0047	4.0	10.0	18.0	15.0	6,000	19,200,000	76TI1470(1)40(2)	R76TI1470(1)40(2)
1,600	650	0.0047	5.0	11.0	18.0	15.0	6,000	19,200,000	76TI1470(1)30(2)	R76TI1470(1)30(2)
1,600	650	0.0056	4.0	10.0	18.0	15.0	6,000	19,200,000	76TI1560(1)40(2)	R76TI1560(1)40(2)
1,600	650	0.0056	5.0	11.0	18.0	15.0	6,000	19,200,000	76TI1560(1)30(2)	R76TI1560(1)30(2)
1,600	650	0.0068	5.0	11.0	18.0	15.0	6,000	19,200,000	76TI1680(1)30(2)	R76TI1680(1)30(2)
1,600	650	0.0082	5.0	11.0	18.0	15.0	6,000	19,200,000	76TI1820(1)40(2)	R76TI1820(1)40(2)
1,600	650	0.010	5.0	11.0	18.0	15.0	6,000	19,200,000	76TI2100(1)40(2)	R76TI2100(1)40(2)
1,600	650	0.012	6.0	12.0	18.0	15.0	6,000	19,200,000	76TI2120(1)40(2)	R76TI2120(1)40(2)
1,600	650	0.015	6.0	12.0	18.0	15.0	6,000	19,200,000	76TI2150(1)40(2)	R76TI2150(1)40(2)
1,600	650	0.018	7.5	13.5	18.0	15.0	6,000	19,200,000	76TI2180(1)40(2)	R76TI2180(1)40(2)
1,600	650	0.018	9.0	12.5	18.0	15.0	6,000	19,200,000	76TI2180(1)70(2)	R76TI2180(1)70(2)
1,600	650	0.022	7.5	13.5	18.0	15.0	6,000	19,200,000	76TI2220(1)40(2)	R76TI2220(1)40(2)
1,600	650	0.022	13.0	12.0	18.0	15.0	6,000	19,200,000	76TI2220(1)70(2)	R76TI2220(1)70(2)
1,600	650	0.027	8.5	14.5	18.0	15.0	6,000	19,200,000	76TI2270(1)40(2)	R76TI2270(1)40(2)
1,600	650	0.033	8.5	14.5	18.0	15.0	6,000	19,200,000	76TI2330(1)40(2)	R76TI2330(1)40(2)
1,600	650	0.015	6.0	15.0	26.5	22.5	3,000	9,600,000	76TN2150(1)30(2)	R76TN2150(1)30(2)
1,600	650	0.018	6.0	15.0	26.5	22.5	3,000	9,600,000	76TN2180(1)30(2)	R76TN2180(1)30(2)
1,600	650	0.022	6.0	15.0	26.5	22.5	3,000	9,600,000	76TN2220(1)30(2)	R76TN2220(1)30(2)
1,600	650	0.027	6.0	15.0	26.5	22.5	3,000	9,600,000	76TN2270(1)30(2)	R76TN2270(1)30(2)
1,600	650	0.033	6.0	15.0	26.5	22.5	3,000	9,600,000	76TN2330(1)40(2)	R76TN2330(1)40(2)
1,600	650	0.039	7.0	16.0	26.5	22.5	3,000	9,600,000	76TN2390(1)40(2)	R76TN2390(1)40(2)
1,600	650	0.047	7.0	16.0	26.5	22.5	3,000	9,600,000	76TN2470(1)40(2)	R76TN2470(1)40(2)
1,600	650	0.056	8.5	17.0	26.5	22.5	3,000	9,600,000	76TN2560(1)40(2)	R76TN2560(1)40(2)
1,600	650	0.068	10.0	18.5	26.5	22.5	3,000	9,600,000	76TN2680(1)40(2)	R76TN2680(1)40(2)
1,600	650	0.082	10.0	18.5	26.5	22.5	3,000	9,600,000	76TN2820(1)40(2)	R76TN2820(1)40(2)
1,600	650	0.10	11.0	20.0	26.5	22.5	3,000	9,600,000	76TN3100(1)40(2)	R76TN3100(1)40(2)
1,600	650	0.039	9.0	17.0	32.0	27.5	2,000	6,400,000	76TR2390(1)30(2)	R76TR2390(1)30(2)
1,600	650	0.047	9.0	17.0	32.0	27.5	2,000	6,400,000	76TR2470(1)30(2)	R76TR2470(1)30(2)
1,600	650	0.056	9.0	17.0	32.0	27.5	2,000	6,400,000	76TR2560(1)30(2)	R76TR2560(1)30(2)
1,600	650	0.068	9.0	17.0	32.0	27.5	2,000	6,400,000	76TR2680(1)30(2)	R76TR2680(1)30(2)
1,600	650	0.082	11.0	20.0	32.0	27.5	2,000	6,400,000	76TR2820(1)30(2)	R76TR2820(1)30(2)
1,600	650	0.10	11.0	20.0	32.0	27.5	2,000	6,400,000	76TR3100(1)30(2)	R76TR3100(1)30(2)
1,600	650	0.12	13.0	22.0	32.0	27.5	2,000	6,400,000	76TR3120(1)30(2)	R76TR3120(1)30(2)
1,600	650	0.15	13.0	25.0	32.0	27.5	2,000	6,400,000	76TR3150(1)40(2)	R76TR3150(1)40(2)
1,600	650	0.18	14.0	28.0	32.0	27.5	2,000	6,400,000	76TR3180(1)40(2)	R76TR3180(1)40(2)
1,600	650	0.22	18.0	33.0	32.0	27.5	2,000	6,400,000	76TR3220(1)30(2)	R76TR3220(1)30(2)
1,600	650	0.27	18.0	33.0	32.0	27.5	2,000	6,400,000	76TR3270(1)30(2)	R76TR3270(1)30(2)
1,600	650	0.33	18.0	33.0	32.0	27.5	2,000	6,400,000	76TR3330(1)30(2)	R76TR3330(1)30(2)
1,600	650	0.39	22.0	37.0	32.0	27.5	2,000	6,400,000	76TR3390(1)30(2)	R76TR3390(1)30(2)
1,600	650	0.47	22.0	37.0	32.0	27.5	2,000	6,400,000	76TR3470(1)30(2)	R76TR3470(1)30(2)
1,600	650	0.082	11.0	22.0	41.5	37.5	1,200	3,840,000	76TW2820(1)30(2)	R76TW2820(1)30(2)
1,600	650	0.10	11.0	22.0	41.5	37.5	1,200	3,840,000	76TW3100(1)30(2)	R76TW3100(1)30(2)
1,600	650	0.12	11.0	22.0	41.5	37.5	1,200	3,840,000	76TW3120(1)30(2)	R76TW3120(1)30(2)
1,600	650	0.15	11.0	22.0	41.5	37.5	1,200	3,840,000	76TW3150(1)30(2)	R76TW3150(1)30(2)
1,600	650	0.18	13.0	24.0	41.5	37.5	1,200	3,840,000	76TW3180(1)30(2)	R76TW3180(1)30(2)
1,600	650	0.22	13.0	24.0	41.5	37.5	1,200	3,840,000	76TW3220(1)30(2)	R76TW3220(1)30(2)
1,600	650	0.27	13.0	24.0	41.5	37.5	1,200	3,840,000	76TW3270(1)30(2)	R76TW3270(1)30(2)
1,600	650	0.33	16.0	28.5	41.5	37.5	1,200	3,840,000	76TW3330(1)30(2)	R76TW3330(1)30(2)
1,600	650	0.39	16.0	28.5	41.5	37.5	1,200	3,840,000	76TW3390(1)30(2)	R76TW3390(1)30(2)
1,600	650	0.47	19.0	32.0	41.5	37.5	1,200	3,840,000	76TW3470(1)30(2)	R76TW3470(1)30(2)
1,600	650	0.56	20.0	40.0	41.5	37.5	1,200	3,840,000	76TW3560(1)30(2)	R76TW3560(1)30(2)
1,600	650	0.68	20.0	40.0	41.5	37.5	1,200	3,840,000	76TW3680(1)30(2)	R76TW3680(1)30(2)
1,600	650	0.82	24.0	44.0	41.5	37.5	1,200	3,840,000	76TW3820(1)30(2)	R76TW3820(1)30(2)
1,600	650	1.0	24.0	44.0	41.5	37.5	1,200	3,840,000	76TW4100(1)30(2)	R76TW4100(1)30(2)
1,600	650	1.2	30.0	45.0	41.5	37.5	1,200	3,840,000	76TW4120(1)30(2)	R76TW4120(1)30(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) H = 2.5%, J = 5%, K = 10%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
2,000	700	0.00010	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI0100(1)40(2)	R76UI0100(1)40(2)
2,000	700	0.00012	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI0120(1)40(2)	R76UI0120(1)40(2)
2,000	700	0.00015	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI0150(1)40(2)	R76UI0150(1)40(2)
2,000	700	0.00018	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI0180(1)40(2)	R76UI0180(1)40(2)
2,000	700	0.00022	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI0220(1)40(2)	R76UI0220(1)40(2)
2,000	700	0.00022	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI0220(1)00(2)	R76UI0220(1)00(2)
2,000	700	0.00027	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI0270(1)40(2)	R76UI0270(1)40(2)
2,000	700	0.00027	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI0270(1)00(2)	R76UI0270(1)00(2)
2,000	700	0.00033	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI0330(1)40(2)	R76UI0330(1)40(2)
2,000	700	0.00033	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI0330(1)00(2)	R76UI0330(1)00(2)
2,000	700	0.00039	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI0390(1)40(2)	R76UI0390(1)40(2)
2,000	700	0.00039	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI0390(1)00(2)	R76UI0390(1)00(2)
2,000	700	0.00047	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI0470(1)40(2)	R76UI0470(1)40(2)
2,000	700	0.00047	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI0470(1)00(2)	R76UI0470(1)00(2)
2,000	700	0.00056	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI0560(1)40(2)	R76UI0560(1)40(2)
2,000	700	0.00056	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI0560(1)00(2)	R76UI0560(1)00(2)
2,000	700	0.00068	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI0680(1)40(2)	R76UI0680(1)40(2)
2,000	700	0.00068	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI0680(1)00(2)	R76UI0680(1)00(2)
2,000	700	0.00082	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI0820(1)40(2)	R76UI0820(1)40(2)
2,000	700	0.00082	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI0820(1)00(2)	R76UI0820(1)00(2)
2,000	700	0.0010	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI1100(1)40(2)	R76UI1100(1)40(2)
2,000	700	0.0010	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI1100(1)30(2)	R76UI1100(1)30(2)
2,000	700	0.0012	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI1120(1)40(2)	R76UI1120(1)40(2)
2,000	700	0.0012	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI1120(1)30(2)	R76UI1120(1)30(2)
2,000	700	0.0015	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI1150(1)40(2)	R76UI1150(1)40(2)
2,000	700	0.0015	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI1150(1)30(2)	R76UI1150(1)30(2)
2,000	700	0.0018	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI1180(1)40(2)	R76UI1180(1)40(2)
2,000	700	0.0018	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI1180(1)30(2)	R76UI1180(1)30(2)
2,000	700	0.0022	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI1220(1)40(2)	R76UI1220(1)40(2)
2,000	700	0.0022	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI1220(1)30(2)	R76UI1220(1)30(2)
2,000	700	0.0027	4.0	10.0	18.0	15.0	9,500	38,000,000	76UI1270(1)40(2)	R76UI1270(1)40(2)
2,000	700	0.0027	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI1270(1)30(2)	R76UI1270(1)30(2)
2,000	700	0.0033	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI1330(1)40(2)	R76UI1330(1)40(2)
2,000	700	0.0039	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI1390(1)40(2)	R76UI1390(1)40(2)
2,000	700	0.0047	5.0	11.0	18.0	15.0	9,500	38,000,000	76UI1470(1)40(2)	R76UI1470(1)40(2)
2,000	700	0.0056	6.0	12.0	18.0	15.0	9,500	38,000,000	76UI1560(1)40(2)	R76UI1560(1)40(2)
2,000	700	0.0068	6.0	12.0	18.0	15.0	9,500	38,000,000	76UI1680(1)40(2)	R76UI1680(1)40(2)
2,000	700	0.0082	6.0	12.0	18.0	15.0	9,500	38,000,000	76UI1820(1)40(2)	R76UI1820(1)40(2)
2,000	700	0.010	7.5	13.5	18.0	15.0	9,500	38,000,000	76UI2100(1)40(2)	R76UI2100(1)40(2)
2,000	700	0.010	13.0	12.0	18.0	15.0	9,500	38,000,000	76UI2100(1)70(2)	R76UI2100(1)70(2)
2,000	700	0.012	8.5	14.5	18.0	15.0	9,500	38,000,000	76UI2120(1)40(2)	R76UI2120(1)40(2)
2,000	700	0.015	8.5	14.5	18.0	15.0	9,500	38,000,000	76UI2150(1)40(2)	R76UI2150(1)40(2)
2,000	700	0.0010	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN1100(1)00(2)	R76UN1100(1)00(2)
2,000	700	0.0012	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN1120(1)00(2)	R76UN1120(1)00(2)
2,000	700	0.0015	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN1150(1)00(2)	R76UN1150(1)00(2)
2,000	700	0.0018	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN1180(1)00(2)	R76UN1180(1)00(2)
2,000	700	0.0022	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN1220(1)00(2)	R76UN1220(1)00(2)
2,000	700	0.0027	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN1270(1)00(2)	R76UN1270(1)00(2)
2,000	700	0.0033	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN1330(1)00(2)	R76UN1330(1)00(2)
2,000	700	0.0039	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN1390(1)00(2)	R76UN1390(1)00(2)
2,000	700	0.0047	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN1470(1)00(2)	R76UN1470(1)00(2)
2,000	700	0.0056	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN1560(1)00(2)	R76UN1560(1)00(2)
2,000	700	0.0068	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN1680(1)00(2)	R76UN1680(1)00(2)
2,000	700	0.0082	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN1820(1)30(2)	R76UN1820(1)30(2)
2,000	700	0.010	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN2100(1)30(2)	R76UN2100(1)30(2)
2,000	700	0.012	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN2120(1)30(2)	R76UN2120(1)30(2)
2,000	700	0.015	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN2150(1)40(2)	R76UN2150(1)40(2)
2,000	700	0.018	6.0	15.0	26.5	22.5	3,500	14,000,000	76UN2180(1)40(2)	R76UN2180(1)40(2)
2,000	700	0.022	7.0	16.0	26.5	22.5	3,500	14,000,000	76UN2220(1)40(2)	R76UN2220(1)40(2)
2,000	700	0.027	7.0	16.0	26.5	22.5	3,500	14,000,000	76UN2270(1)40(2)	R76UN2270(1)40(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) H = 2.5%, J = 5%, K = 10%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
2,000	700	0.033	8.5	17.0	26.5	22.5	3,500	14,000,000	76UN2330(1)40(2)	R76UN2330(1)40(2)
2,000	700	0.039	10.0	18.5	26.5	22.5	3,500	14,000,000	76UN2390(1)40(2)	R76UN2390(1)40(2)
2,000	700	0.047	10.0	18.5	26.5	22.5	3,500	14,000,000	76UN2470(1)40(2)	R76UN2470(1)40(2)
2,000	700	0.056	11.0	20.0	26.5	22.5	3,500	14,000,000	76UN2560(1)40(2)	R76UN2560(1)40(2)
2,000	700	0.022	9.0	17.0	32.0	27.5	2,300	9,200,000	76UR2220(1)30(2)	R76UR2220(1)30(2)
2,000	700	0.027	9.0	17.0	32.0	27.5	2,300	9,200,000	76UR2270(1)30(2)	R76UR2270(1)30(2)
2,000	700	0.033	9.0	17.0	32.0	27.5	2,300	9,200,000	76UR2330(1)30(2)	R76UR2330(1)30(2)
2,000	700	0.039	11.0	20.0	32.0	27.5	2,300	9,200,000	76UR2390(1)20(2)	R76UR2390(1)20(2)
2,000	700	0.047	11.0	20.0	32.0	27.5	2,300	9,200,000	76UR2470(1)30(2)	R76UR2470(1)30(2)
2,000	700	0.056	13.0	22.0	32.0	27.5	2,300	9,200,000	76UR2560(1)30(2)	R76UR2560(1)30(2)
2,000	700	0.068	13.0	22.0	32.0	27.5	2,300	9,200,000	76UR2680(1)30(2)	R76UR2680(1)30(2)
2,000	700	0.082	13.0	25.0	32.0	27.5	2,300	9,200,000	76UR2820(1)40(2)	R76UR2820(1)40(2)
2,000	700	0.10	14.0	28.0	32.0	27.5	2,300	9,200,000	76UR3100(1)30(2)	R76UR3100(1)30(2)
2,000	700	0.12	18.0	33.0	32.0	27.5	2,300	9,200,000	76UR3120(1)30(2)	R76UR3120(1)30(2)
2,000	700	0.15	18.0	33.0	32.0	27.5	2,300	9,200,000	76UR3150(1)30(2)	R76UR3150(1)30(2)
2,000	700	0.18	22.0	37.0	32.0	27.5	2,300	9,200,000	76UR3180(1)30(2)	R76UR3180(1)30(2)
2,000	700	0.22	22.0	37.0	32.0	27.5	2,300	9,200,000	76UR3220(1)30(2)	R76UR3220(1)30(2)
2,000	700	0.033	11.0	22.0	41.5	37.5	1,500	6,000,000	76UW2330(1)30(2)	R76UW2330(1)30(2)
2,000	700	0.039	11.0	22.0	41.5	37.5	1,500	6,000,000	76UW2390(1)30(2)	R76UW2390(1)30(2)
2,000	700	0.047	11.0	22.0	41.5	37.5	1,500	6,000,000	76UW2470(1)30(2)	R76UW2470(1)30(2)
2,000	700	0.056	11.0	22.0	41.5	37.5	1,500	6,000,000	76UW2560(1)30(2)	R76UW2560(1)30(2)
2,000	700	0.068	11.0	22.0	41.5	37.5	1,500	6,000,000	76UW2680(1)30(2)	R76UW2680(1)30(2)
2,000	700	0.082	11.0	22.0	41.5	37.5	1,500	6,000,000	76UW2820(1)30(2)	R76UW2820(1)30(2)
2,000	700	0.10	13.0	24.0	41.5	37.5	1,500	6,000,000	76UW3100(1)30(2)	R76UW3100(1)30(2)
2,000	700	0.12	13.0	24.0	41.5	37.5	1,500	6,000,000	76UW3120(1)30(2)	R76UW3120(1)30(2)
2,000	700	0.15	16.0	28.5	41.5	37.5	1,500	6,000,000	76UW3150(1)30(2)	R76UW3150(1)30(2)
2,000	700	0.18	16.0	28.5	41.5	37.5	1,500	6,000,000	76UW3180(1)30(2)	R76UW3180(1)30(2)
2,000	700	0.22	19.0	32.0	41.5	37.5	1,500	6,000,000	76UW3220(1)30(2)	R76UW3220(1)30(2)
2,000	700	0.27	20.0	40.0	41.5	37.5	1,500	6,000,000	76UW3270(1)30(2)	R76UW3270(1)30(2)
2,000	700	0.33	20.0	40.0	41.5	37.5	1,500	6,000,000	76UW3330(1)30(2)	R76UW3330(1)30(2)
2,000	700	0.39	24.0	44.0	41.5	37.5	1,500	6,000,000	76UW3390(1)30(2)	R76UW3390(1)30(2)
2,000	700	0.47	24.0	44.0	41.5	37.5	1,500	6,000,000	76UW3470(1)30(2)	R76UW3470(1)30(2)
2,000	700	0.56	30.0	45.0	41.5	37.5	1,500	6,000,000	76UW3560(1)30(2)	R76UW3560(1)30(2)
2,000	700	0.68	30.0	45.0	41.5	37.5	1,500	6,000,000	76UW3680(1)30(2)	R76UW3680(1)30(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) H = 2.5%, J = 5%, K = 10%

Soldering Process

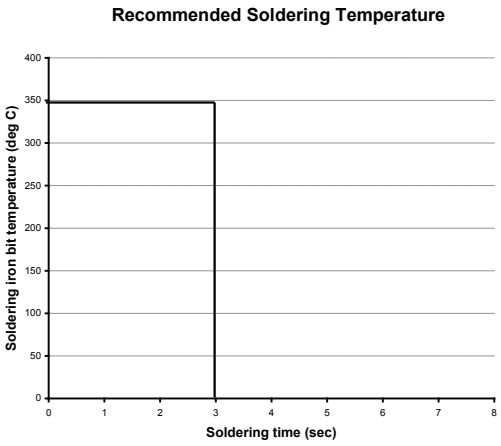
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

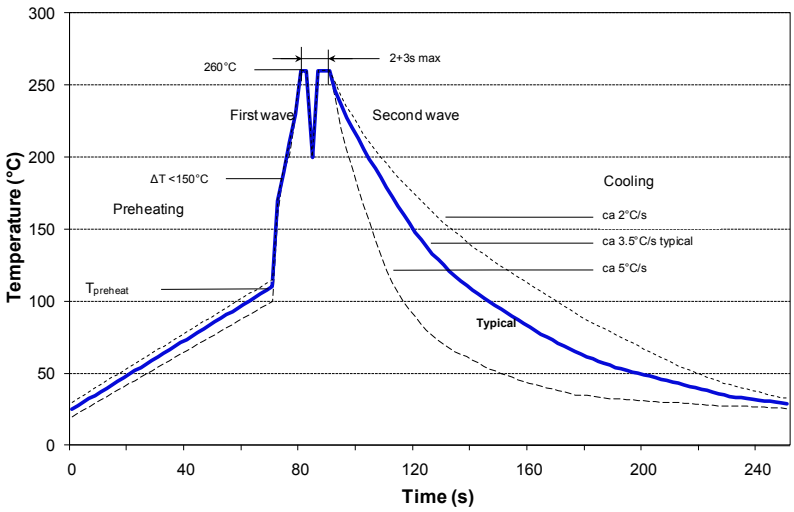
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

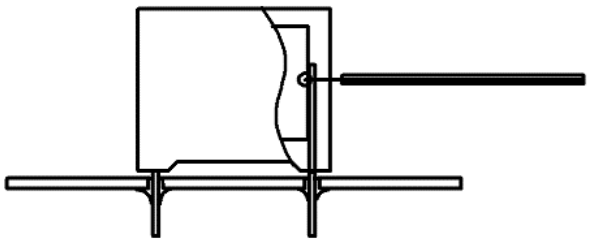
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



Temperature monitored inside the capacitor.

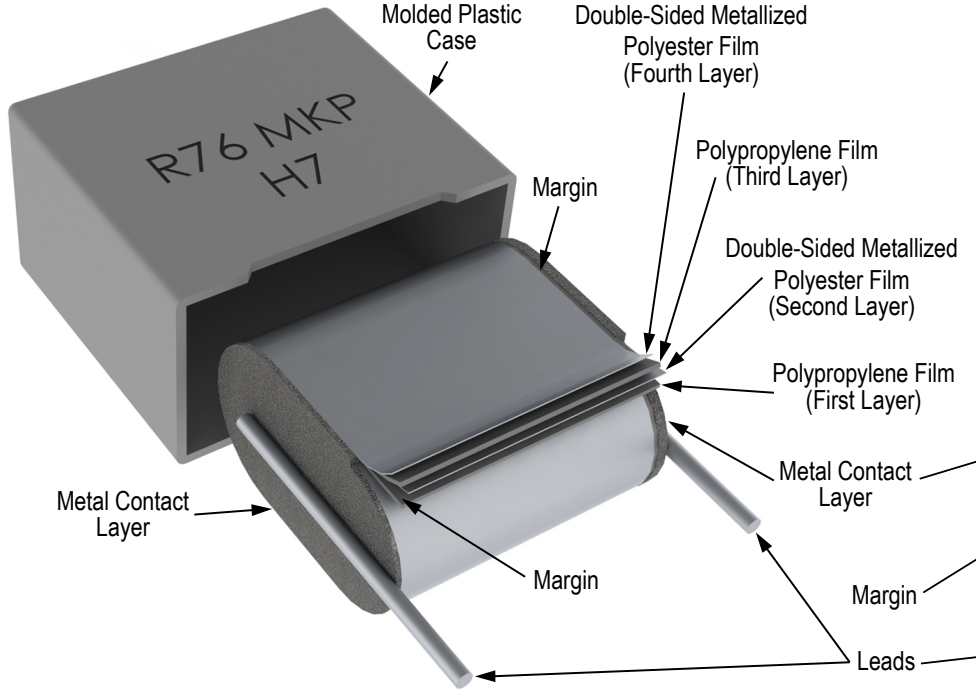
Selective Soldering Recommendations

Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

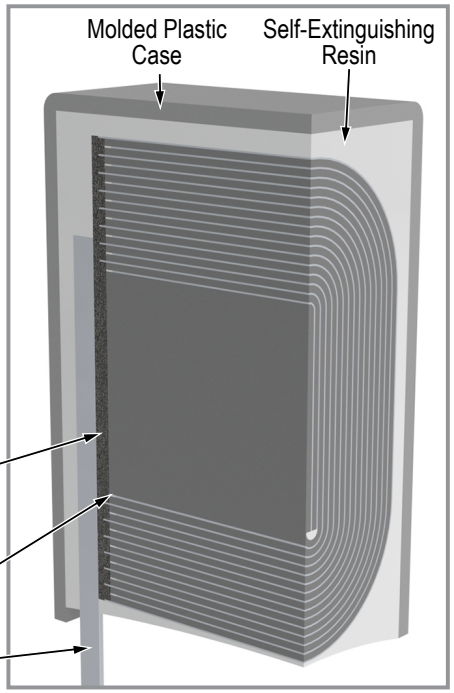
The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

Construction

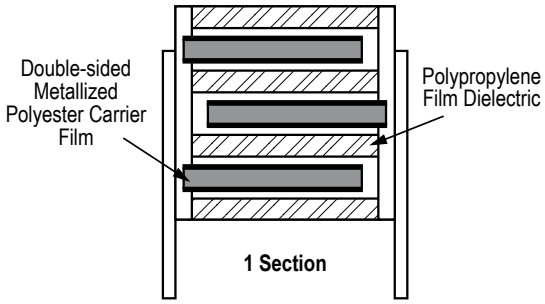
1 Section

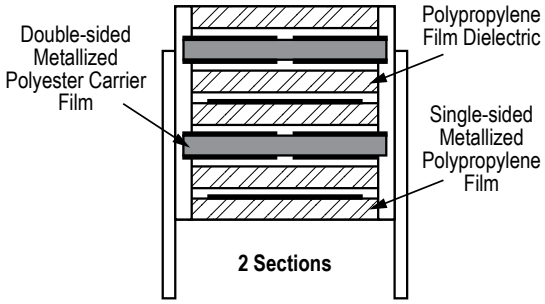


Detailed Cross Section

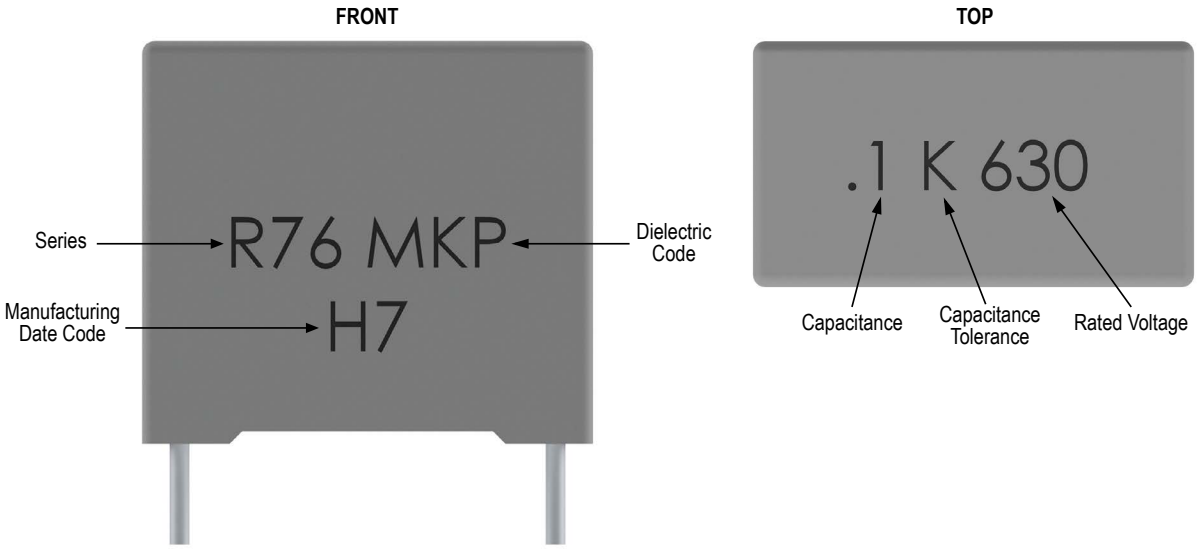


Winding Schemes





Marking

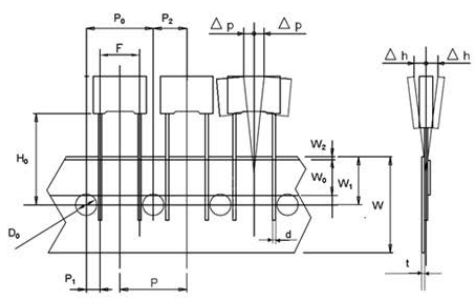

FRONT
TOP
Series
R76 MKP
Dielectric Code
Manufacturing Date Code
H7
.1 K 630
Capacitance
Capacitance Tolerance
Rated Voltage

Packaging Quantities

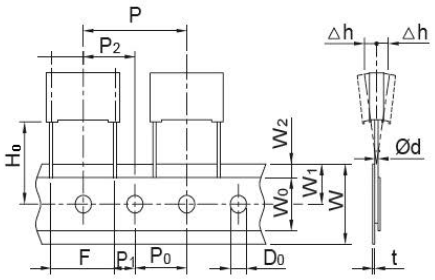
Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Large Reel ø 500 mm	Ammo Taped
7.5	3.0	8.0	10.0	1,500	1,750	2,100		2,800
	4.0	9.0	10.0	2,000	1,500	1,500		2,100
	5.0	10.5	10.0	1,500	1,000	1,200		1,600
	6.0	12.0	10.5	1,000	800	1,000		1,350
10	4.0	9.0	13.0	2,000	1,800	750	1,500	1,000
	5.0	11.0	13.0	1,300	1,500	600	1,250	800
	6.0	12.0	13.0	1,000	1,200	500	1,000	680
15	4.0	10.0	18.0	2,500	1,500	-	1,500	1,000
	5.0	11.0	18.0	2,000	1,000	600	1,250	800
	6.0	12.0	18.0	1,750	900	500	1,000	680
	7.5	13.5	18.0	1,000	700	350	800	500
	8.5	14.5	18.0	1,000	500	300	700	440
	9.0	12.5	18.0	1,000	520	270	650	410
	10.0	16.0	18.0	750	500	300	600	380
	11.0	19.0	18.0	450	350	-	500	340
	13.0	12.0	18.0	750	490	200	480	280
22.5	6.0	15.0	26.5	805	500		700	464
	7.0	16.0	26.5	700	500		550	380
	8.5	17.0	26.5	468	300		450	280
	10.0	18.5	26.5	396	300		350	235
	11.0	20.0	26.5	360	250		350	217
	13.0	22.0	26.5	300	200		300	-
27.5	9.0	17.0	32.0	816	408		450	
	11.0	20.0	32.0	560	336		350	
	13.0	22.0	32.0	480	288		300	
	13.0	25.0	32.0	480	288			
	14.0	28.0	32.0	352	176			
	18.0	33.0	32.0	256	128			
	22.0	37.0	32.0	168	112			
37.5	11.0	22.0	41.5	420	252			
	13.0	24.0	41.5	360	216			
	16.0	28.5	41.5	216	108			
	19.0	32.0	41.5	192	96			
	20.0	40.0	41.5	126	84			
	24.0	44.0	41.5	108	72			
	30.0	45.0	41.5	90	60			

Lead Taping & Packaging (IEC 60286–2)

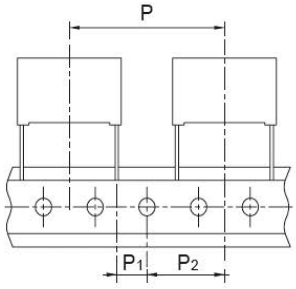
Lead Spacing 7.5 mm



Lead Spacing 10 & 15 mm



Lead Spacing 22.5 & 27.5



Taping Specification

Description	Symbol	Dimensions (mm)					
		Lead Spacing					Tolerance
		7.5	10.0	15.0	22.5	27.5	
Lead wire diameter	d	0.5 - 0.6	0.6	0.6 - 0.8	0.8	0.8	±0.05
Taping lead space	P	12.7	25.4	25.4	38.1	38.1	±1
Feed hole lead space *	P_0	12.7	12.7	12.7	12.7	12.7	±0.2 **
Centering of the lead wire	P_1	2.6	7.7	5.2	7.8	5.3	±0.7
Centering of the body	P_2	6.35	12.7	12.7	19.05	19.05	±1.3
Lead spacing ***	F	7.5	10.0	15.0	22.5	27.5	+0.6/-0.1
Component alignment	Δh	0	0	0	0	0	±2
Component deviation	Δp	0	0	0	0	0	±1
Height of component from tape center	H_0****	18.5	18.5	18.5	18.5	18.5	±0.5
Carrier tape width	W	18	18	18	18	18	+1/-0.5
Hold down tape width	W_0	6	9	10	10	10	Minimum
Hole position	W_1	9	9	9	9	9	±0.5
Hold down tape position	W_2	3	3	3	3	3	Maximum
Feed hole diameter	D_0	4	4	4	4	4	±0.2
Tape thickness	t	0.7	0.7	0.7	0.7	0.7	±0.2

** Available also 15 mm.*
*** Maximum 1 mm on 20 lead spacing.*
**** 15 mm and 10 mm taped to 7.5 mm (crimped leads) available upon request.*
***** H_0 = 16.5 mm is available upon request.*

R77 Series Double Metallized Polypropylene Film, Radial, AC Applications

Overview

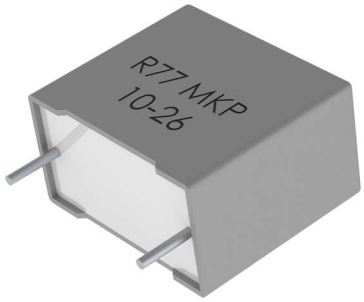
The R77 Series is constructed of polypropylene film and double metallized polyester film as electrodes with radial leads of tinned wire. The radial leads are electrically welded to the metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing solvent resistant plastic case with thermosetting resin material meeting the UL 94V–0 requirements. Four different winding constructions are used depending on voltage parameters. Please see the Performance Characteristics for more information.

Applications

Typical applications include electronic lighting such as automotive headlamps and ballasts, as well as pulse applications with high AC voltage and high current. Not suitable for across-the-line application (see Suppressor Capacitors).

Benefits

- Voltage range: 250 – 900 VAC
- Capacitance range: 0.001 µF – 0.1 µF
- Lead Spacing: 10 – 27.5 mm
- Capacitance tolerance: ±2.5%, ±5%, ±10%
- Climatic category: 55/105/56 IEC 60068-1
- Operating temperature range of -55˚C to +105˚C
- RoHS compliance and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–2
- Self-healing



Part Number System

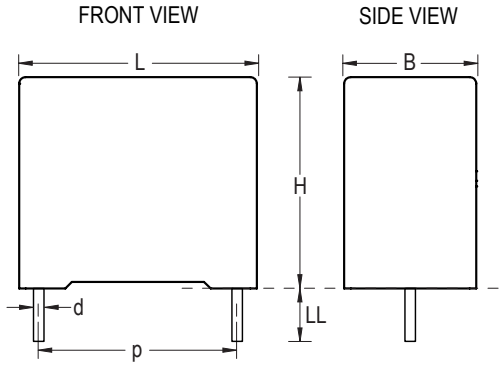
R77	L	I	2270	AA	00	H
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Packaging	Internal Use	Capacitance Tolerance
Double Metallized Polypropylene	L = 250 N = 400 5 = 500 7 = 700 9 = 900	I = 15 N = 22.5 R = 27.5	The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.	See Ordering Options Table	00	H = 2.5% J = ±5% K = ±10%

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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
15 22.5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	AA
	Ammo Pack	H_0= 18.5 +/-0.5	DQ
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel)	H0=18.5 +/- 0.5	GY
	Tape & Reel (Large Reel)	H0=18.5 +/- 0.5	CK
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag)–Long Leads	25 +2/-1	50
27.5	**Standard Lead and Packaging Options**		
	Bulk (Tray) – Short Leads	4 +2/-0	AA
	Other Lead and Packaging Options		
	Tape & Reel (Large Reel)	H0=18.5 +/-0.5	CK
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag) – Long Leads	25 +2/-1	50

Dimensions – Millimeters

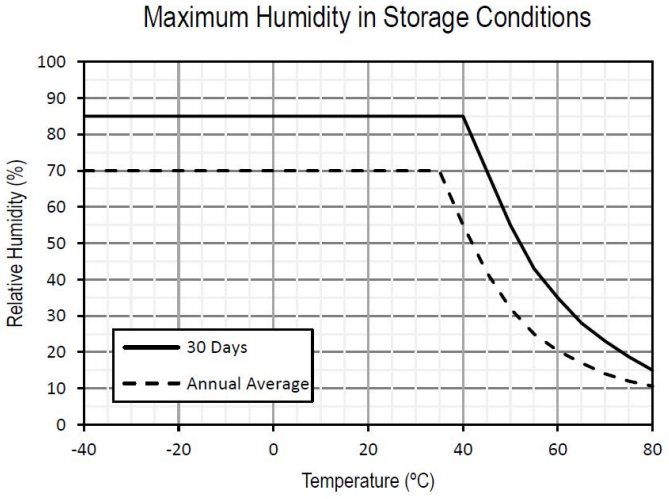


p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
15.0	+/- 0.4	5.0	+0.2	11.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	6.0	+0.2	12.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	7.5	+0.2	13.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	8.5	+0.2	14.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	10.0	+0.2	16.0	+0.1	18.0	+0.5	0.8	+/- 0.05
22.5	+/- 0.4	6.0	+0.2	15.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	7.0	+0.2	16.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	8.5	+0.2	17.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	10.0	+0.2	18.5	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	11.0	+0.2	20.0	+0.1	26.5	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	11.0	+0.2	20.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	13.0	+0.2	22.0	+0.1	32.0	+0.3	0.8	+/- 0.05

Note: See Ordering Options Table for lead length (LL/Ho) options.

Performance Characteristics

Dielectric	Polypropylene film					
Plates	Double sided metallized polyester film					
Winding	Non-inductive type					
Leads	Tinned wire					
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.					
Related Documents	IEC 60384-16, IEC 60384-17					
Sections	1	2			3	4
Voltage Range (VDC)	630	800	1000	1300	1600	2000
Voltage Range (VAC)	250	300	400	500	700	900
Capacitance Range (µF)	0.027 – 0.1	0.01 – 0.1	0.0056 – 0.01	0.001 – 0.1	0.001 – 0.027	0.001 – 0.018
Capacitance Values	E12 series (IEC 60063) measured @ 1 kHz and +20 ±1°C					
Capacitance Tolerance	±2.5%, ±5%, ±10%					
Operating Temperature Range	-55°C to +105°C					
Rated Temperature T_R	+85°C for V_R (DC) +105°C for V_R (AC)					
Voltage Derating	Above +85°C DC voltage derating is 1.25%/°C					
Climatic Category	55/125/56 IEC 60068-1					
Storage Conditions	Storage time: ≤ 24 months from the date marked on the label package					
	Average relative humidity per year ≤ 70%					
	RH ≤ 85% for 30 days randomly distributed throughout the year					
	Dew is absent					
	Temperature: -40 to 80°C (see "Maximum Humidity in Storage Conditions" graph below)					

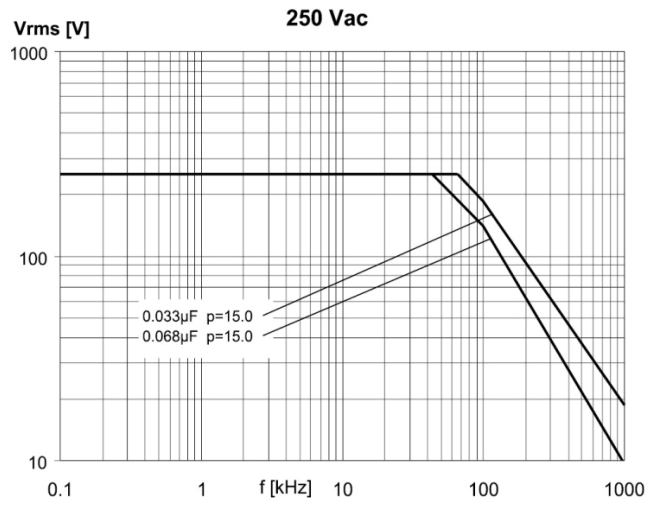


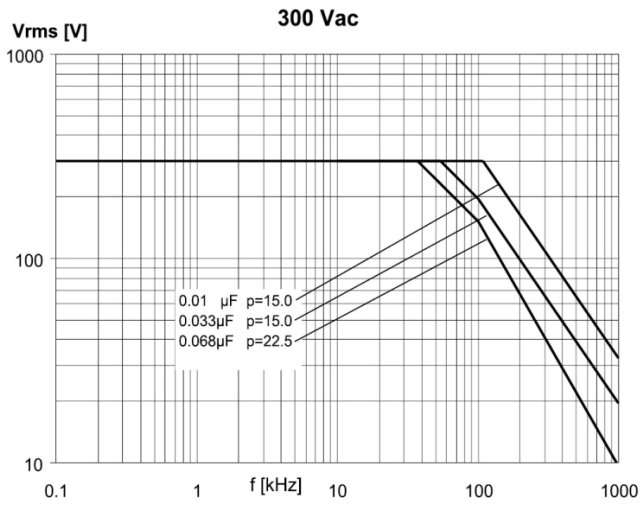
Performance Characteristics cont'd

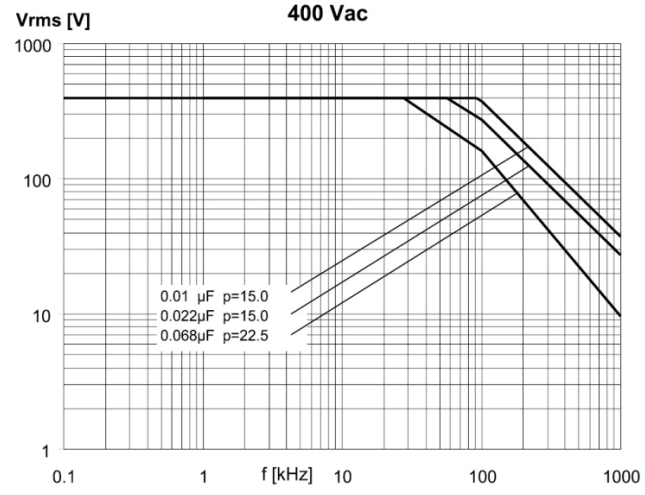
Test Voltage	1.6 x V_R VDC for 2 seconds (between terminations) @ +25°C ±5°C			
Capacitance Drift	Maximum 0.5% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%			
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp<V_R), the specified dv/dt can be multiplied by the factor V_R/Vpp			
Temperature Coefficient	-(200 ±100) ppm/°C at 1 kHz			
Self-Inductance L (Lead Length ~ 2 mm)	Lead Spacing (mm)	15	22.5	27.5
	L (nH) ≈	10	18	18
Dissipation Factor tanδ	Maximum Values @ 25°C ±5°C			
	Frequency	All Capacitance Values		
	10 kHz	0.06%		
	100 kHz	0.10%		
Insulation Resistance	Measured at +25°C, 100 VDC 60 seconds			
	Minimum Values Between Terminals			
	All Capacitance Values			
	≥ 100,000 MΩ (≥ 500,000 MΩ)*			

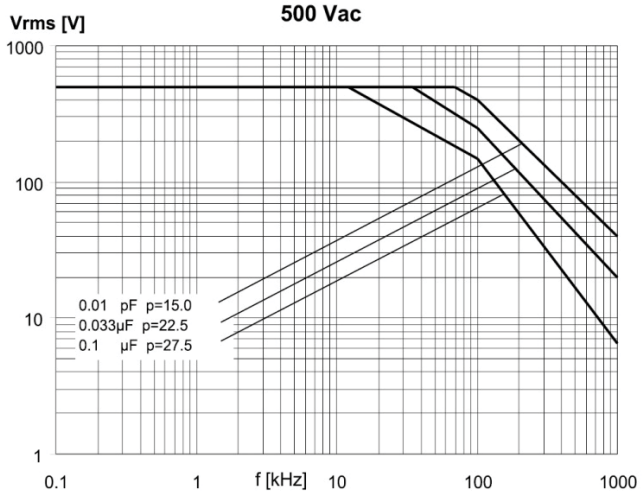
** typical value*

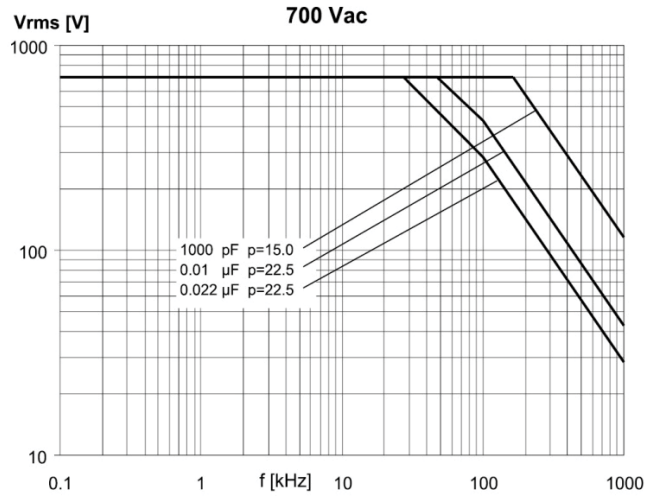
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40ºC)

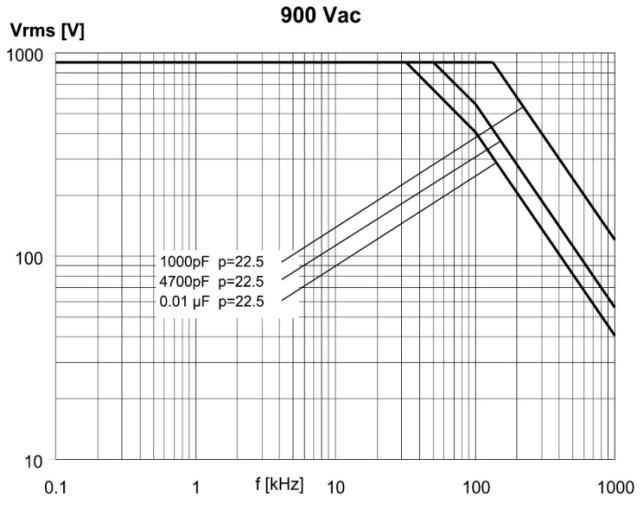






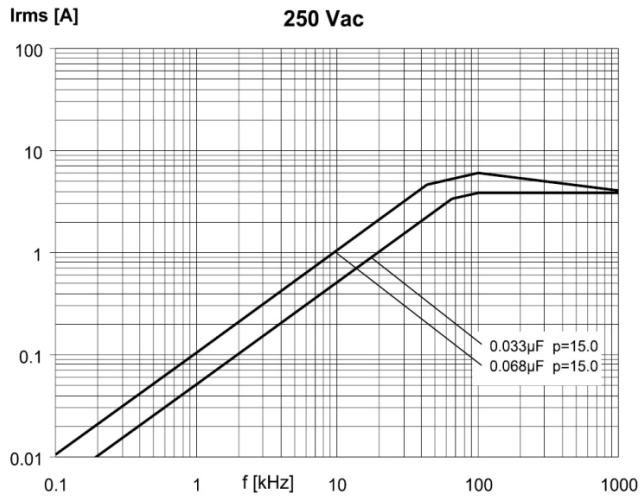


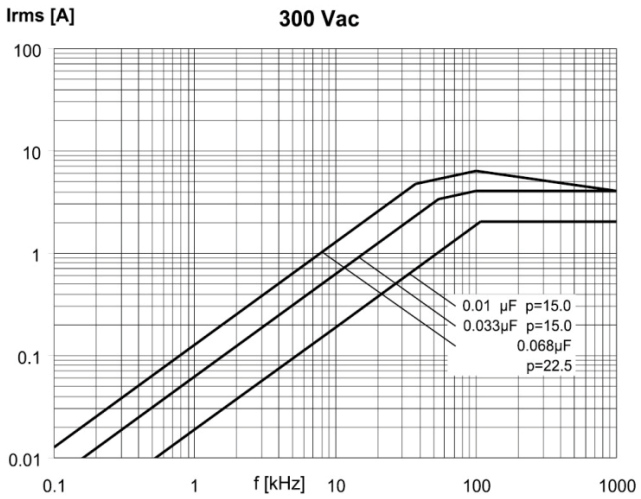


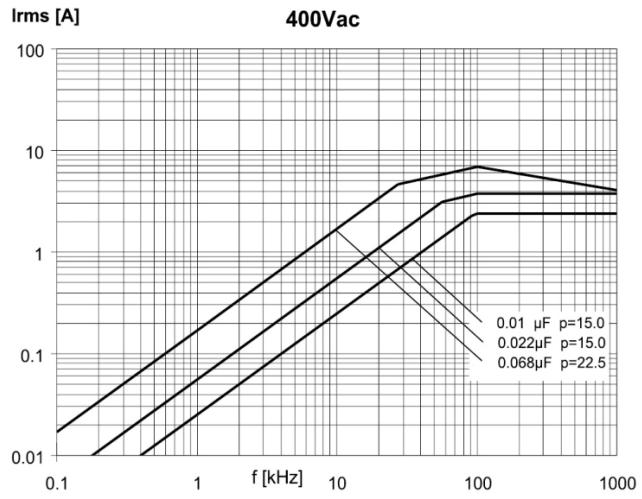


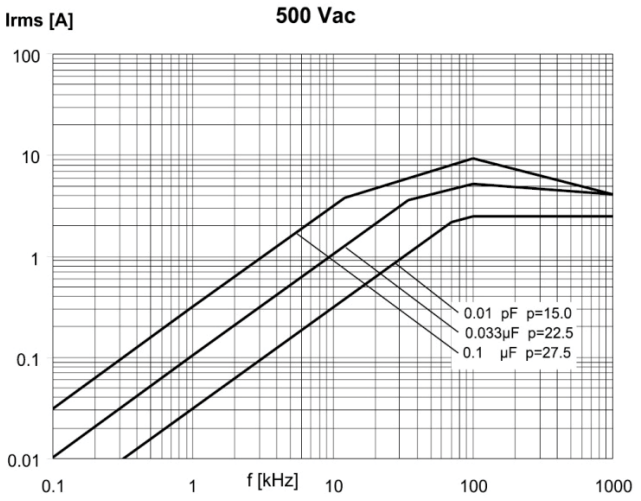
Note: p (pitch) in mm.

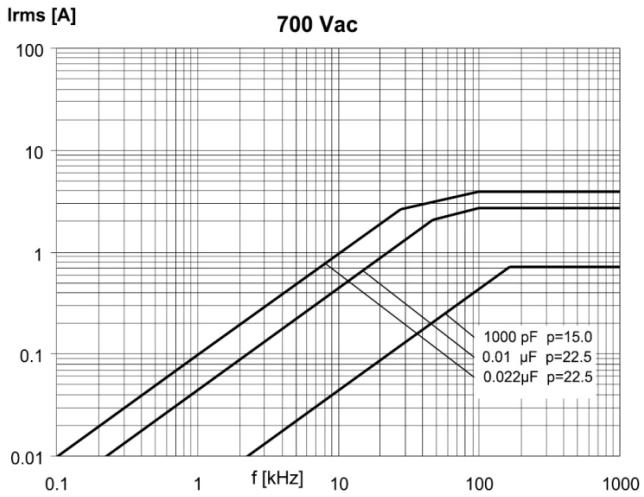
Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40ºC)

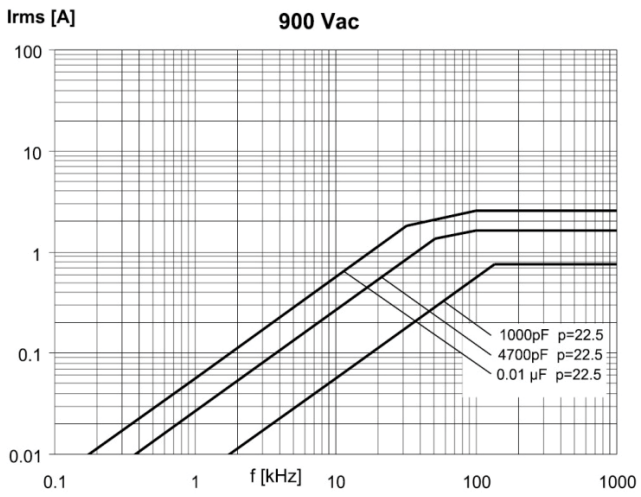












Note: p (pitch) in mm.

Environmental Test Data

Damp Heat, Steady State Test	Test Conditions:		Performances
	Temperature: Relative humidity (RH): Test duration:	+40°C ± 2°C 93% ± 2% 56 days	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.001 @ 1 kHz IR after test ≥ 50% of initial limit
Endurance Test	**Test Conditions**		**Performances**
	Temperature: Voltage applied: Test duration:	+105°C ±2°C 1.25 x V_R (DC) 2,000 hours	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.001 @ 1 kHz IR after test ≥ 50% of initial limit
Resistance to Soldering Heat Test	**Test Conditions**		**Performances**
	Solder bath temperature: Dipping time (with heat screen):	260°C ±5°C 10 seconds ±1 second	|Δ C/C| ≤ 1%, Δ tanδ ≤ 0.001 @ 1 kHz IR after test ≥ initial limit

Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VAC	VDC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
250	630	0.027	6.0	12.0	18.0	15.0	900	1,134,000	77LI2270(1)00(2)	R77LI2270(1)00(2)
250	630	0.033	6.0	12.0	18.0	15.0	900	1,134,000	77LI2330(1)00(2)	R77LI2330(1)00(2)
250	630	0.039	6.0	12.0	18.0	15.0	900	1,134,000	77LI2390(1)00(2)	R77LI2390(1)00(2)
250	630	0.047	7.5	13.5	18.0	15.0	900	1,134,000	77LI2470(1)00(2)	R77LI2470(1)00(2)
250	630	0.056	7.5	13.5	18.0	15.0	900	1,134,000	77LI2560(1)00(2)	R77LI2560(1)00(2)
250	630	0.068	8.5	14.5	18.0	15.0	900	1,134,000	77LI2680(1)00(2)	R77LI2680(1)00(2)
250	630	0.082	10.0	16.0	18.0	15.0	900	1,134,000	77LI2820(1)00(2)	R77LI2820(1)00(2)
250	630	0.10	10.0	16.0	18.0	15.0	900	1,134,000	77LI3100(1)00(2)	R77LI3100(1)00(2)
300	800	0.010	5.0	11.0	18.0	15.0	2,500	4,000,000	773I2100(1)00(2)	R773I2100(1)00(2)
300	800	0.012	5.0	11.0	18.0	15.0	2,500	4,000,000	773I2120(1)00(2)	R773I2120(1)00(2)
300	800	0.015	5.0	11.0	18.0	15.0	2,500	4,000,000	773I2150(1)00(2)	R773I2150(1)00(2)
300	800	0.018	5.0	11.0	18.0	15.0	2,500	4,000,000	773I2180(1)00(2)	R773I2180(1)00(2)
300	800	0.022	6.0	12.0	18.0	15.0	2,500	4,000,000	773I2220(1)00(2)	R773I2220(1)00(2)
300	800	0.027	6.0	12.0	18.0	15.0	2,500	4,000,000	773I2270(1)00(2)	R773I2270(1)00(2)
300	800	0.033	7.5	13.5	18.0	15.0	2,500	4,000,000	773I2330(1)00(2)	R773I2330(1)00(2)
300	800	0.039	7.5	13.5	18.0	15.0	2,500	4,000,000	773I2390(1)00(2)	R773I2390(1)00(2)
300	800	0.047	8.5	14.5	18.0	15.0	2,500	4,000,000	773I2470(1)00(2)	R773I2470(1)00(2)
300	800	0.056	10.0	16.0	18.0	15.0	2,500	4,000,000	773I2560(1)00(2)	R773I2560(1)00(2)
300	800	0.068	10.0	16.0	18.0	15.0	2,500	4,000,000	773I2680(1)00(2)	R773I2680(1)00(2)
300	800	0.056	6.0	15.0	26.5	22.5	1,500	2,400,000	773N2560(1)00(2)	R773N2560(1)00(2)
300	800	0.068	7.0	16.0	26.5	22.5	1,500	2,400,000	773N2680(1)00(2)	R773N2680(1)00(2)
300	800	0.082	7.0	16.0	26.5	22.5	1,500	2,400,000	773N2820(1)00(2)	R773N2820(1)00(2)
300	800	0.10	8.5	17.0	26.5	22.5	1,500	2,400,000	773N3100(1)00(2)	R773N3100(1)00(2)
400	1,000	0.0056	5.0	11.0	18.0	15.0	3,300	6,600,000	77NI1560(1)00(2)	R77NI1560(1)00(2)
400	1,000	0.0068	5.0	11.0	18.0	15.0	3,300	6,600,000	77NI1680(1)00(2)	R77NI1680(1)00(2)
400	1,000	0.0082	5.0	11.0	18.0	15.0	3,300	6,600,000	77NI1820(1)00(2)	R77NI1820(1)00(2)
400	1,000	0.010	6.0	12.0	18.0	15.0	3,300	6,600,000	77NI2100(1)00(2)	R77NI2100(1)00(2)
400	1,000	0.012	6.0	12.0	18.0	15.0	3,300	6,600,000	77NI2120(1)00(2)	R77NI2120(1)00(2)
400	1,000	0.015	7.5	13.5	18.0	15.0	3,300	6,600,000	77NI2150(1)00(2)	R77NI2150(1)00(2)
400	1,000	0.018	7.5	13.5	18.0	15.0	3,300	6,600,000	77NI2180(1)00(2)	R77NI2180(1)00(2)
400	1,000	0.022	8.5	14.5	18.0	15.0	3,300	6,600,000	77NI2220(1)00(2)	R77NI2220(1)00(2)
400	1,000	0.027	10.0	16.0	18.0	15.0	3,300	6,600,000	77NI2270(1)00(2)	R77NI2270(1)00(2)
400	1,000	0.033	10.0	16.0	18.0	15.0	3,300	6,600,000	77NI2330(1)00(2)	R77NI2330(1)00(2)
400	1,000	0.027	6.0	15.0	26.5	22.5	2,100	4,200,000	77NN2270(1)00(2)	R77NN2270(1)00(2)
400	1,000	0.033	7.0	16.0	26.5	22.5	2,100	4,200,000	77NN2330(1)00(2)	R77NN2330(1)00(2)
400	1,000	0.039	7.0	16.0	26.5	22.5	2,100	4,200,000	77NN2390(1)00(2)	R77NN2390(1)00(2)
400	1,000	0.047	8.5	17.0	26.5	22.5	2,100	4,200,000	77NN2470(1)00(2)	R77NN2470(1)00(2)
400	1,000	0.056	8.5	17.0	26.5	22.5	2,100	4,200,000	77NN2560(1)00(2)	R77NN2560(1)00(2)
400	1,000	0.068	10.0	18.5	26.5	22.5	2,100	4,200,000	77NN2680(1)00(2)	R77NN2680(1)00(2)
400	1,000	0.082	10.0	18.5	26.5	22.5	2,100	4,200,000	77NN2820(1)00(2)	R77NN2820(1)00(2)
400	1,000	0.10	11.0	20.0	26.5	22.5	2,100	4,200,000	77NN3100(1)00(2)	R77NN3100(1)00(2)
500	1,300	0.0010	5.0	11.0	18.0	15.0	4,500	11,700,000	775I1100(1)00(2)	R775I1100(1)00(2)
500	1,300	0.0012	5.0	11.0	18.0	15.0	4,500	11,700,000	775I1120(1)00(2)	R775I1120(1)00(2)
500	1,300	0.0015	5.0	11.0	18.0	15.0	4,500	11,700,000	775I1150(1)00(2)	R775I1150(1)00(2)
500	1,300	0.0018	5.0	11.0	18.0	15.0	4,500	11,700,000	775I1180(1)00(2)	R775I1180(1)00(2)
500	1,300	0.0022	5.0	11.0	18.0	15.0	4,500	11,700,000	775I1220(1)00(2)	R775I1220(1)00(2)
500	1,300	0.0027	5.0	11.0	18.0	15.0	4,500	11,700,000	775I1270(1)00(2)	R775I1270(1)00(2)
500	1,300	0.0033	5.0	11.0	18.0	15.0	4,500	11,700,000	775I1330(1)00(2)	R775I1330(1)00(2)
500	1,300	0.0039	5.0	11.0	18.0	15.0	4,500	11,700,000	775I1390(1)00(2)	R775I1390(1)00(2)
500	1,300	0.0047	5.0	11.0	18.0	15.0	4,500	11,700,000	775I1470(1)00(2)	R775I1470(1)00(2)
500	1,300	0.0056	5.0	11.0	18.0	15.0	4,500	11,700,000	775I1560(1)00(2)	R775I1560(1)00(2)
500	1,300	0.0068	6.0	12.0	18.0	15.0	4,500	11,700,000	775I1680(1)00(2)	R775I1680(1)00(2)
500	1,300	0.0082	6.0	12.0	18.0	15.0	4,500	11,700,000	775I1820(1)00(2)	R775I1820(1)00(2)
500	1,300	0.010	7.5	13.5	18.0	15.0	4,500	11,700,000	775I2100(1)00(2)	R775I2100(1)00(2)
500	1,300	0.012	7.5	13.5	18.0	15.0	4,500	11,700,000	775I2120(1)00(2)	R775I2120(1)00(2)
500	1,300	0.015	8.5	14.5	18.0	15.0	4,500	11,700,000	775I2150(1)00(2)	R775I2150(1)00(2)
500	1,300	0.018	10.0	16.0	18.0	15.0	4,500	11,700,000	775I2180(1)00(2)	R775I2180(1)00(2)
500	1,300	0.022	10.0	16.0	18.0	15.0	4,500	11,700,000	775I2220(1)00(2)	R775I2220(1)00(2)
500	1,300	0.018	6.0	15.0	26.5	22.5	2,500	6,500,000	775N2180(1)00(2)	R775N2180(1)00(2)
VAC	VDC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) H = 2.5%, J = 5%, K = 10%.

Table 1 – Ratings & Part Number Reference cont'd

VAC	VDC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
500	1,300	0.022	7.0	16.0	26.5	22.5	2,500	6,500,000	775N2220(1)00(2)	R775N2220(1)00(2)
500	1,300	0.027	7.0	16.0	26.5	22.5	2,500	6,500,000	775N2270(1)00(2)	R775N2270(1)00(2)
500	1,300	0.033	8.5	17.0	26.5	22.5	2,500	6,500,000	775N2330(1)00(2)	R775N2330(1)00(2)
500	1,300	0.039	10.0	18.5	26.5	22.5	2,500	6,500,000	775N2390(1)00(2)	R775N2390(1)00(2)
500	1,300	0.047	10.0	18.5	26.5	22.5	2,500	6,500,000	775N2470(1)00(2)	R775N2470(1)00(2)
500	1,300	0.056	11.0	20.0	26.5	22.5	2,500	6,500,000	775N2560(1)00(2)	R775N2560(1)00(2)
500	1,300	0.068	11.0	20.0	32.0	27.5	1,100	2,860,000	775R2680(1)00(2)	R775R2680(1)00(2)
500	1,300	0.082	11.0	20.0	32.0	27.5	1,100	2,860,000	775R2820(1)00(2)	R775R2820(1)00(2)
500	1,300	0.10	13.0	22.0	32.0	27.5	1,100	2,860,000	775R3100(1)00(2)	R775R3100(1)00(2)
700	1,600	0.0010	5.0	11.0	18.0	15.0	9,500	30,400,000	777I1100(1)00(2)	R777I1100(1)00(2)
700	1,600	0.0012	5.0	11.0	18.0	15.0	9,500	30,400,000	777I1120(1)00(2)	R777I1120(1)00(2)
700	1,600	0.0015	5.0	11.0	18.0	15.0	9,500	30,400,000	777I1150(1)00(2)	R777I1150(1)00(2)
700	1,600	0.0018	5.0	11.0	18.0	15.0	9,500	30,400,000	777I1180(1)00(2)	R777I1180(1)00(2)
700	1,600	0.0022	5.0	11.0	18.0	15.0	9,500	30,400,000	777I1220(1)00(2)	R777I1220(1)00(2)
700	1,600	0.0027	6.0	12.0	18.0	15.0	9,500	30,400,000	777I1270(1)00(2)	R777I1270(1)00(2)
700	1,600	0.0033	6.0	12.0	18.0	15.0	9,500	30,400,000	777I1330(1)00(2)	R777I1330(1)00(2)
700	1,600	0.0039	7.5	13.5	18.0	15.0	9,500	30,400,000	777I1390(1)00(2)	R777I1390(1)00(2)
700	1,600	0.0047	7.5	13.5	18.0	15.0	9,500	30,400,000	777I1470(1)00(2)	R777I1470(1)00(2)
700	1,600	0.0056	8.5	14.5	18.0	15.0	9,500	30,400,000	777I1560(1)00(2)	R777I1560(1)00(2)
700	1,600	0.0068	8.5	14.5	18.0	15.0	9,500	30,400,000	777I1680(1)00(2)	R777I1680(1)00(2)
700	1,600	0.0082	10.0	16.0	18.0	15.0	9,500	30,400,000	777I1820(1)00(2)	R777I1820(1)00(2)
700	1,600	0.0082	6.0	15.0	26.5	22.5	4,500	14,400,000	777N1820(1)00(2)	R777N1820(1)00(2)
700	1,600	0.010	6.0	15.0	26.5	22.5	4,500	14,400,000	777N2100(1)00(2)	R777N2100(1)00(2)
700	1,600	0.012	7.0	16.0	26.5	22.5	4,500	14,400,000	777N2120(1)00(2)	R777N2120(1)00(2)
700	1,600	0.015	8.5	17.0	26.5	22.5	4,500	14,400,000	777N2150(1)00(2)	R777N2150(1)00(2)
700	1,600	0.018	10.0	18.5	26.5	22.5	4,500	14,400,000	777N2180(1)00(2)	R777N2180(1)00(2)
700	1,600	0.022	10.0	18.5	26.5	22.5	4,500	14,400,000	777N2220(1)00(2)	R777N2220(1)00(2)
700	1,600	0.027	11.0	20.0	26.5	22.5	4,500	14,400,000	777N2270(1)00(2)	R777N2270(1)00(2)
900	2,000	0.0010	6.0	15.0	26.5	22.5	9,500	38,000,000	779N1100(1)00(2)	R779N1100(1)00(2)
900	2,000	0.0012	6.0	15.0	26.5	22.5	9,500	38,000,000	779N1120(1)00(2)	R779N1120(1)00(2)
900	2,000	0.0015	6.0	15.0	26.5	22.5	9,500	38,000,000	779N1150(1)00(2)	R779N1150(1)00(2)
900	2,000	0.0018	6.0	15.0	26.5	22.5	9,500	38,000,000	779N1180(1)00(2)	R779N1180(1)00(2)
900	2,000	0.0022	6.0	15.0	26.5	22.5	9,500	38,000,000	779N1220(1)00(2)	R779N1220(1)00(2)
900	2,000	0.0027	6.0	15.0	26.5	22.5	9,500	38,000,000	779N1270(1)00(2)	R779N1270(1)00(2)
900	2,000	0.0033	6.0	15.0	26.5	22.5	9,500	38,000,000	779N1330(1)00(2)	R779N1330(1)00(2)
900	2,000	0.0039	6.0	15.0	26.5	22.5	9,500	38,000,000	779N1390(1)00(2)	R779N1390(1)00(2)
900	2,000	0.0047	6.0	15.0	26.5	22.5	9,500	38,000,000	779N1470(1)00(2)	R779N1470(1)00(2)
900	2,000	0.0056	6.0	15.0	26.5	22.5	9,500	38,000,000	779N1560(1)00(2)	R779N1560(1)00(2)
900	2,000	0.0068	7.0	16.0	26.5	22.5	9,500	38,000,000	779N1680(1)00(2)	R779N1680(1)00(2)
900	2,000	0.0082	7.0	16.0	26.5	22.5	9,500	38,000,000	779N1820(1)00(2)	R779N1820(1)00(2)
900	2,000	0.010	8.5	17.0	26.5	22.5	9,500	38,000,000	779N2100(1)00(2)	R779N2100(1)00(2)
900	2,000	0.012	10.0	18.5	26.5	22.5	9,500	38,000,000	779N2120(1)00(2)	R779N2120(1)00(2)
900	2,000	0.015	10.0	18.5	26.5	22.5	9,500	38,000,000	779N2150(1)00(2)	R779N2150(1)00(2)
900	2,000	0.018	11.0	20.0	26.5	22.5	9,500	38,000,000	779N2180(1)00(2)	R779N2180(1)00(2)
VAC	**VDC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) H = 2.5%, J = 5%, K = 10%.

Soldering Process

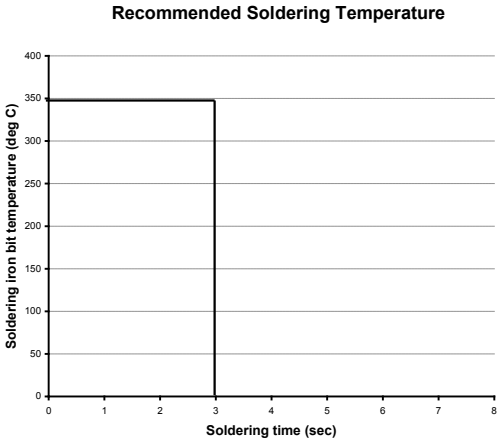
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

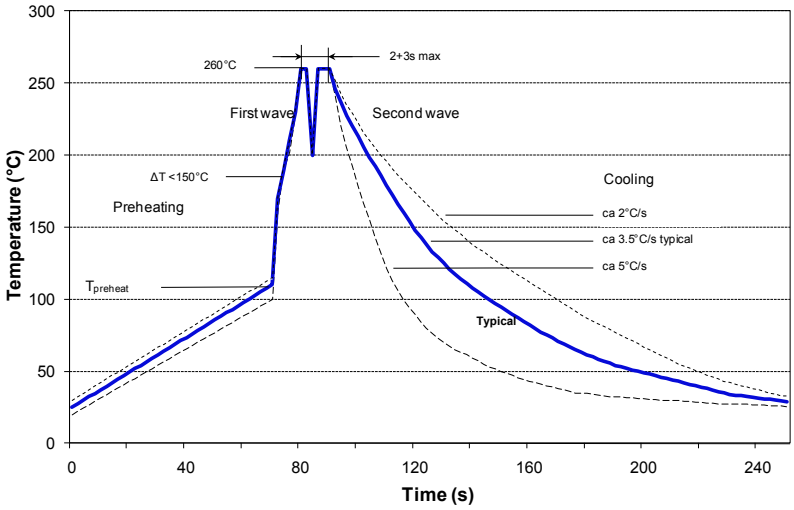
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

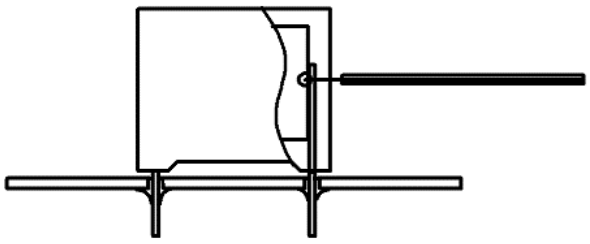
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



Temperature monitored inside the capacitor.

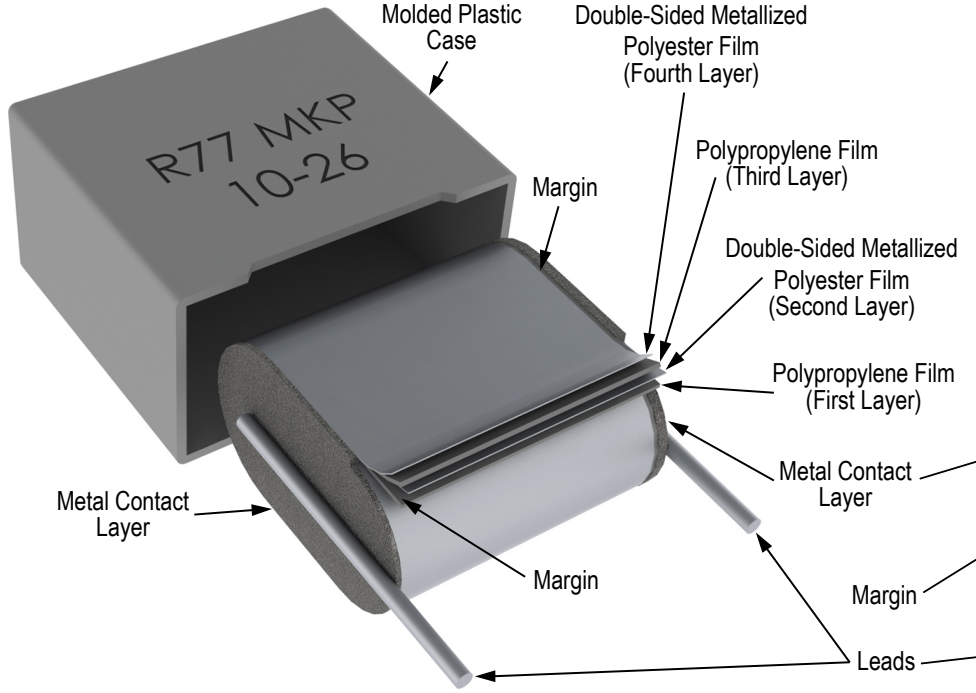
Selective Soldering Recommendations

Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

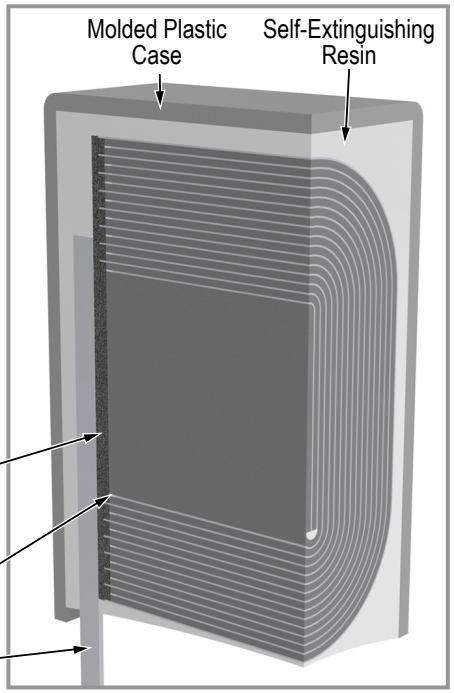
The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

Construction

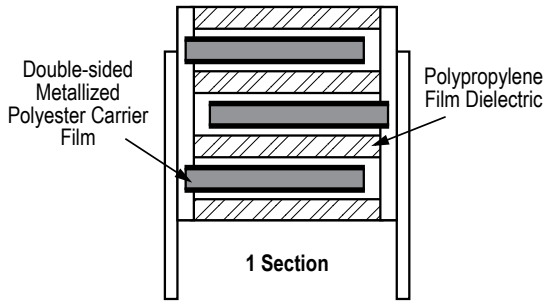
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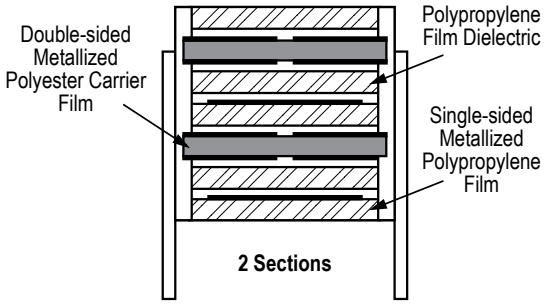


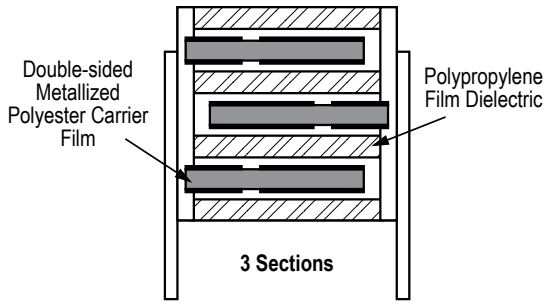
Detailed Cross Section

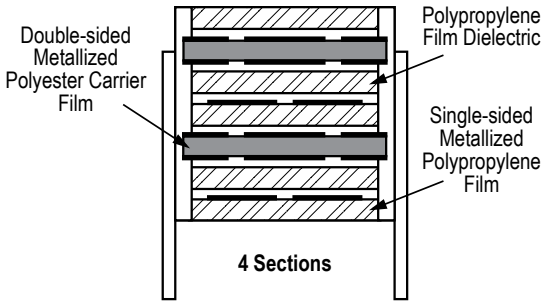


Winding Schemes









Packaging Quantities

Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Large Reel ø 500 mm	Ammo Taped
15	5.0	11.0	18.0	2,000	1,000	600	1,250	800
	6.0	12.0	18.0	1,750	900	500	1,000	680
	7.5	13.5	18.0	1,000	700	350	800	500
	8.5	14.5	18.0	1,000	500	300	700	440
	10.0	16.0	18.0	750	500	300	600	380
22.5	6.0	15.0	26.5	805	500		700	464
	7.0	16.0	26.5	700	500		550	380
	8.5	17.0	26.5	468	300		450	280
	10.0	18.5	26.5	396	300		350	235
	11.0	20.0	26.5	360	250		350	217
27.5	11.0	20.0	32.0	560	336		350	
	13.0	22.0	32.0	480	288		300	

PHE450 Series Double Metallized Polypropylene Film

Overview

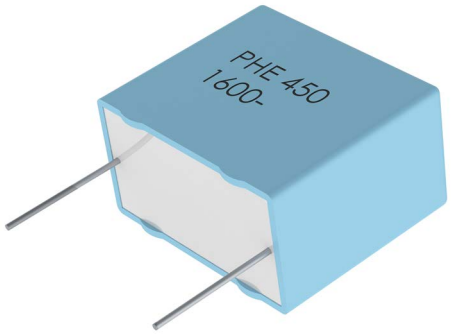
The PHE450 Series is a polypropylene dielectric with double metallized polyester film as electrodes. The capacitor is encapsulated in self-extinguishing resin in a box of material meeting the requirements of UL 94 V–0.

Applications

Typical applications include high frequency applications with high current stress such as deflection circuits in televisions and protection circuits in switched mode power supply (SMPS) and electronic ballasts.

Benefits

- Rated voltage: 250 – 3,000 VDC
- Rated voltage: 180 – 1,000 VAC
- Capacitance range: 0.00033 – 10 µF
- Lead spacing: 7.5 – 37.5 mm
- Capacitance tolerance: ±5%, other tolerances on request
- Climatic category: 55/105/56, IEC 60068–1
- Tape and reel packaging in accordance with IEC 60286–2
- RoHS Compliant and lead-free terminations
- Category temperature range of -55˚C to +105˚C



Legacy Part Number System

PHE450	P	B	5180	J	B04	R06
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Optional Box Code	Packaging
Metallized Polypropylene	H = 250 K = 400 M = 630 P = 1000 R = 1600 S = 2000 T = 2500 X = 3000	K = 7.5 A = 10.0 B = 15.0 D = 22.5 F = 27.5 R = 37.5	The last three digits represent significant figures. First digit specifies the number of zeros to be added.	J = ±5% On request: F = ±1% G = ±2% H = ±2.5% K = ±10% M = ±20%	See Dimension Table	See Ordering Options Table

New KEMET Part Number System

F	450	B	D	183	J	1K0	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging
F = Film	Metallized Polypropylene	K = 7.5 A = 10.0 B = 15.0 D = 22.5 F = 27.5 R = 37.5	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5% On request: F = ±1% G = ±2% H = ±2.5% K = ±10% M = ±20%	250 = 250 400 = 400 630 = 630 1K0 = 1000 1K6 = 1600 2K0 = 2000 2K5 = 2500 3K0 = 3000	See Ordering Options Table

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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	KEMET Lead and Packaging Code	Legacy Lead and Packaging Code
7.5	**Standard Lead and Packaging Options**			
	Bulk (Bag) – Short Leads	5 +0/-1	C	R05
	Ammo Pack	H_0= 18.5 +/-0.5	R	R17TA
	Bulk (Bag) – Long Leads	17 +0/-1	A	R17
	Other Lead and Packaging Options			
	Bulk (Bag) – Max Length Leads	20 +5/-0	ALL0L	R20
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L	R17T0
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P	R17T1
10	**Standard Lead and Packaging Options**			
	Bulk (Bag) – Short Leads	5 +0/-1	C	R05
	Bulk (Bag) – Long Leads	17 +0/-1	A	R17
	Other Lead and Packaging Options			
	Bulk (Bag) – Max Length Leads	20 +5/-0	ALL0L	R20
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L	R17T0
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P	R17T1
15	**Standard Lead and Packaging Options**			
	Bulk (Bag) – Short Leads	6 +0/-1	C	R06
	Bulk (Bag) – Long Leads	17 +0/-1	A	R17
	Other Lead and Packaging Options			
	Bulk (Bag) – Max Length Leads	25 +5/-0	ALR0L	R25
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L	R17T0
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P	R17T1
Native 15 formed to 7.5	Ammo Pack	H_0= 16.5 +/-0.5	XLAF1	R25XA
	Tape & Reel (Standard Reel)	H_0= 16.5 +/-0.5	XLTF1	R25X2
22.5	**Standard Lead and Packaging Options**			
	Bulk (Tray) – Short Leads	6 +0/-1	C	R06L2(1)
	Other Lead and Packaging Options			
	Bulk (Tray) – Max Length Leads	30 +5/-0	ALW0L	R30
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L	R17T0
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P	R17T1
	Pizza Pack	6 +0/-1	Z	R06L2(1)

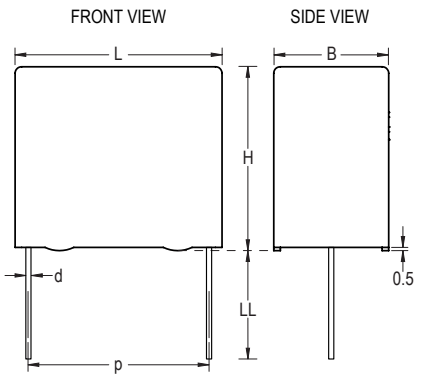
(1) Please specify Bulk (Tray) or Pizza Packaging.

Ordering Options Table cont'd

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	KEMET Lead and Packaging Code	Legacy Lead and Packaging Code
27.5	**Standard Lead and Packaging Options**			
	Bulk (Tray) – Straight Leads	6 +0/-1	C	R06L2(1)
	Other Lead and Packaging Options			
	Bulk (Tray) – Max Length Leads	30 +5/-0	ALW0L	R30
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P	R17T1
	Pizza Pack	6 +0/-1	Z	R06L2(1)
37.5	**Standard Lead and Packaging Options**			
	Bulk (Tray) – Short Leads	6 +0/-1	C	R06L2(1)
	Other Lead and Packaging Options			
	Bulk (Tray) – Max Length Leads	30 +5/-0	ALW0L	R30
	Pizza Pack	6 +0/-1	Z	R06L2(1)

(1) Please specify Bulk (Tray) or Pizza Packaging.

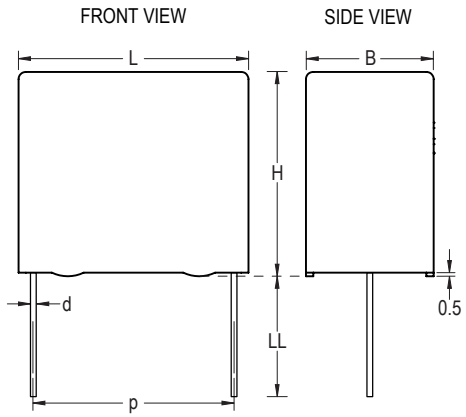
Dimensions – Millimeters



KEMET Size Code	Legacy Size Code	p		B		H		L		d	
		Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
KG	K01	7.5	+/-0.4	4	Maximum	8	Maximum	10	Maximum	0.6	+/-0.05
KK	K03	7.5	+/-0.4	5	Maximum	11	Maximum	10	Maximum	0.6	+/-0.05
KM	K04	7.5	+/-0.4	6	Maximum	12	Maximum	10.5	Maximum	0.6	+/-0.05
AG	A01	10	+/-0.4	4	Maximum	9	Maximum	13	Maximum	0.6	+/-0.05
AH	A02	10	+/-0.4	4.5	Maximum	10.5	Maximum	13	Maximum	0.6	+/-0.05
AK	A03	10	+/-0.4	5	Maximum	11	Maximum	13	Maximum	0.6	+/-0.05
AP	A04	10	+/-0.4	6	Maximum	12	Maximum	13	Maximum	0.6	+/-0.05
BD	B04	15	+/-0.4	5.5	Maximum	10.5	Maximum	18	Maximum	0.8	+/-0.05
BE	B05	15	+/-0.4	5.5	Maximum	12.5	Maximum	18	Maximum	0.8	+/-0.05

Note: See Ordering Options Table for lead length (LL) options.

Dimensions – Millimeters cont'd



KEMET Size Code	Legacy Size Code	p		B		H		L		d	
		Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
BL	B06	15	+/-0.4	7.5	Maximum	14.5	Maximum	18	Maximum	0.8	+/-0.05
BJ	B10	15	+/-0.4	6.5	Maximum	12.5	Maximum	18	Maximum	0.8	+/-0.05
BQ	B11	15	+/-0.4	8.5	Maximum	16	Maximum	18	Maximum	0.8	+/-0.05
BM	B12	15	+/-0.4	8	Maximum	15	Maximum	18	Maximum	0.8	+/-0.05
BV	B14	15	+/-0.4	9.5	Maximum	17.5	Maximum	18	Maximum	0.8	+/-0.05
BY	B16	15	+/-0.4	11	Maximum	19	Maximum	18	Maximum	0.8	+/-0.05
DD	D13	22.5	+/-0.4	6.5	Maximum	14.5	Maximum	26	Maximum	0.8	+/-0.05
DH	D14	22.5	+/-0.4	8	Maximum	16	Maximum	26	Maximum	0.8	+/-0.05
DM	D15	22.5	+/-0.4	9	Maximum	18.5	Maximum	26	Maximum	0.8	+/-0.05
DT	D16	22.5	+/-0.4	11	Maximum	21.5	Maximum	26	Maximum	0.8	+/-0.05
DF	D17	22.5	+/-0.4	7	Maximum	16.5	Maximum	26	Maximum	0.8	+/-0.05
DR	D18	22.5	+/-0.4	10.5	Maximum	19	Maximum	26	Maximum	0.8	+/-0.05
DY	D19	22.5	+/-0.4	15.5	Maximum	24.5	Maximum	26	Maximum	0.8	+/-0.05
DW	D20	22.5	+/-0.4	13.5	Maximum	23	Maximum	26	Maximum	0.8	+/-0.05
FK	F03	27.5	+/-0.4	13.5	Maximum	23	Maximum	31.5	Maximum	0.8	+/-0.05
FE	F11	27.5	+/-0.4	10.5	Maximum	20.5	Maximum	31.5	Maximum	0.8	+/-0.05
FG	F12	27.5	+/-0.4	11.5	Maximum	22.5	Maximum	31.5	Maximum	0.8	+/-0.05
FM	F13	27.5	+/-0.4	14.5	Maximum	24.5	Maximum	31.5	Maximum	0.8	+/-0.05
FR	F14	27.5	+/-0.4	17.5	Maximum	28	Maximum	31.5	Maximum	0.8	+/-0.05
FS	F15	27.5	+/-0.4	19	Maximum	29	Maximum	31.5	Maximum	0.8	+/-0.05
FV	F16	27.5	+/-0.4	21	Maximum	30	Maximum	31.5	Maximum	0.8	+/-0.05
FH	F17	27.5	+/-0.4	21	Maximum	12.5	Maximum	31.5	Maximum	0.8	+/-0.05
FT	F18	27.5	+/-0.4	31	Maximum	19	Maximum	31.5	Maximum	0.8	+/-0.05
FQ	F19	27.5	+/-0.4	27.5	Maximum	16	Maximum	31.5	Maximum	0.8	+/-0.05
RK	R02	37.5	+/-0.4	16.5	Maximum	32	Maximum	41	Maximum	1	+/-0.05
RM	R03	37.5	+/-0.4	19	Maximum	36	Maximum	41	Maximum	1	+/-0.05
RH	R04	37.5	+/-0.4	15	Maximum	26	Maximum	41	Maximum	1	+/-0.05
RF	R05	37.5	+/-0.4	13	Maximum	24	Maximum	41	Maximum	1	+/-0.05
RP	R06	37.5	+/-0.4	21	Maximum	38	Maximum	41	Maximum	1	+/-0.05
RS	R08	37.5	+/-0.4	28	Maximum	43	Maximum	41	Maximum	1	+/-0.05

Note: See Ordering Options Table for lead length (LL) options.

Performance Characteristics

Sections	1	1	1	2	1	2	2	2	3	3
Voltage Range (VDC)	250	400	630	630	1000	1000	1600	2000	2500	3000
Voltage Range (VAC)	180	250	300	400	375	600	650	700	900	1000
Capacitance Range (µF)	0.00033 – 0.033	0.00033 – 5.6	0.00033 – 0.039	0.01 – 3.3	0.00033 – 0.018	0.0039 – 2.2	0.0027 – 1	0.001 – 0.68	0.0010 – 0.33	0.001 – 0.033
Capacitance Values	In accordance with IEC E12 series									
Capacitance Tolerance	±5%, other tolerances on request									
Category Temperature Range	-55°C to +105°C									
Rated Temperature	+85°C									
Voltage Derating	The rated voltage is decreased with 1.3%/°C between +85°C and +105°C									
Climatic Category	IEC 60068–1, 55/105/56/B									
Passive Flammability	Category B according to IEC 60065									
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage ($V_{PP} < V_R$), the specified dV/dt can be multiplied by the factor V_R/V_{PP}.									
Self-Inductance	Approximately 6 nH/cm for the total length of capacitor winding and the leads									

Dissipation Factor tanδ

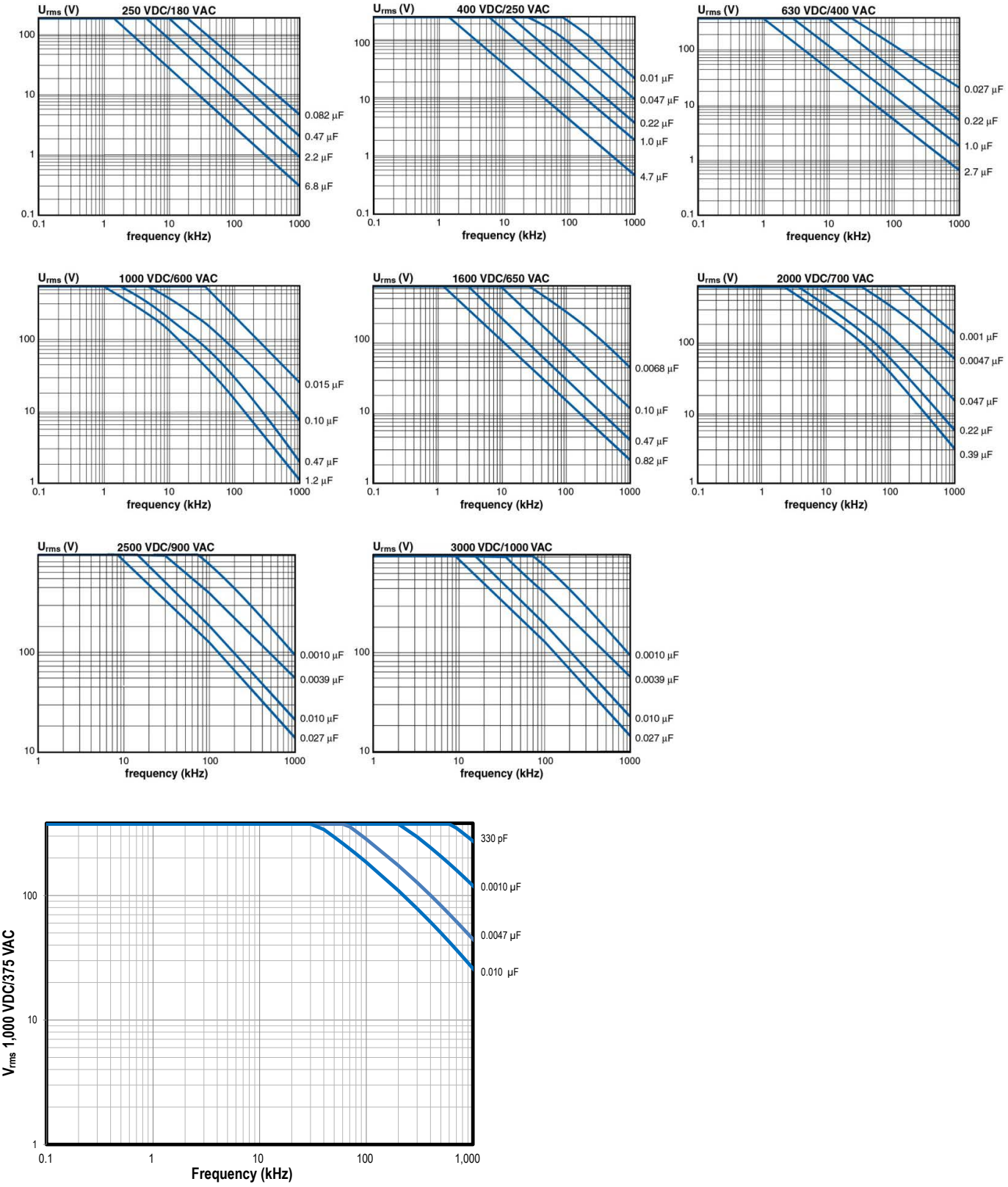
Maximum Values at +23°C			
	C ≤ 0.1 µF	0.1 µF < C ≤ 1.0 µF	C > 1.0 µF
1 kHz	0.0003	0.0003	0.0003
10 kHz	0.0004	0.0006	–
100 kHz	0.0015	–	–

Insulation Resistance

Measured at +23°C, 100 VDC 60 seconds for $V_R < 500$ VDC and at 500 VDC for $V_R \geq 500$ VDC

Minimum Values Between Terminals	
C ≤ 0.33 µF	≥ 100 000 MΩ
C > 0.33 µF	≥ 30 000 MΩ • µF
Minimum Values Between Terminals and Case	
	≥ 100 000 MΩ

Derating of V_{rms} vs. Frequency, +85ºC Ambient Temperature and 10ºC Internal Heating, Typical Values



Environmental Test Data

Test	IEC Publication	Procedure	Requirements
Voltage Proof	60384–1 Clause 4.6	1.6 x V_R after 60 seconds	The capacitors must withstand the voltage without breakdowns or flashovers and without decreased insulation resistance below the value in each detail specification. No visible damage.
	Clause 4.6 2.3	2 x V_R (minimum 400 VDC to case) after 60 seconds	As above
Vibration	60068–2–6 Test Fc	6 hours with 10 – 500 Hz and 0.75 mm amplitude or 98 m/s^2 depending on frequency	No visible damage tanδ ≤ 1.2 x stated value at 100 kHz Δ C/C ≤ ±0.5 %
Bump	60068–2–29 Test Eb	4,000 bumps with 390 m/s^2 mounted on PCB	Δ C/C ≤ ±0.5% tanδ ≤ 1.2 x stated value at 100 kHz Insulation resistance: ≥ 100,000 MΩ for C_R ≤ 0.33 µF ≥ 30,000 MΩ • µF for C_R > 0.33 µF
Resistance to Soldering Heat	60068–2–20 Method 1A	Solder bath at + 260°C ±5°C with screening	Immersion of the terminations into the solder bath shall be completed in a time not exceeding 1 second and the terminations shall remain immersed to the specified depth for 10 + 1 second and then be withdrawn. Δ C/C ≤ ±1.0 % tanδ increase < 0.001 No visible damage
Climatic Sequence	60384–1 Paragraph 4:21	60068–2.2 dry heat 16 hours 60068–2–34 damp heat, one cycle 60068–2–1 Test Aa 2 hours	Insulation resistance: ≥ 100,000 MΩ for C_R ≤ 0.33 µF ≥ 30,000 MΩ • µF for C_R > 0.33 µF Δ C/C ≤ ±0.5 % tanδ ≤ 1.2 x stated value at 100 kHz
Damp Heat Steady State	60068–2–3 Test Ca	+40°C and 90 – 95% RH	56 days no visible damage Insulation resistance: ≥ 50,000 MΩ for C_R ≤ 0.33 µF ≥ 15,000 MΩ • µF for C_R > 0.33 µF Δ C/C ≤ ±1% tanδ ≤ 1.2 x stated value at 100 kHz
Endurance, AC		1,000 hours at +85°C and 1.25 x V_R AC	No visible damage Δ C/C ≤ ±3% tanδ ≤ 1.5 x stated value at 100 kHz Insulation resistance: ≥ 100,000 MΩ for C_R ≤ 0.33 µF ≥ 30,000 MΩ • µF for C_R > 0.33 µF
Charge and Discharge	60384–17 Paragraph 4.13	10,000 pulses and with (2 x) dV/dt according to detail specification	tanδ (100 kHz) ≤ 2 x stated value (100 kHz) Δ C/C ≤ ±0.5% Insulation resistance: ≥ 50,000 MΩ for C_R ≤ 0.33 µF ≥ 15,000 MΩ • µF for C_R > 0.33 µF

Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Cap Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Size Code (New/ Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number
			B	H	L						
250	180	0.00033	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG331J250(1)	PHE450HK3330J(1)
250	180	0.00039	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG391J250(1)	PHE450HK3390J(1)
250	180	0.00047	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG471J250(1)	PHE450HK3470J(1)
250	180	0.00056	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG561J250(1)	PHE450HK3560J(1)
250	180	0.00068	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG681J250(1)	PHE450HK3680J(1)
250	180	0.00082	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG821J250(1)	PHE450HK3820J(1)
250	180	0.0010	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG102J250(1)	PHE450HK4100J(1)
250	180	0.0012	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG122J250(1)	PHE450HK4120J(1)
250	180	0.0015	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG152J250(1)	PHE450HK4150J(1)
250	180	0.0018	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG182J250(1)	PHE450HK4180J(1)
250	180	0.0022	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG222J250(1)	PHE450HK4220J(1)
250	180	0.0027	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG272J250(1)	PHE450HK4270J(1)
250	180	0.0033	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG332J250(1)	PHE450HK4330J(1)
250	180	0.0039	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG392J250(1)	PHE450HK4390J(1)
250	180	0.0047	4.0	8.0	10.0	7.5	1400	KG/K01	160	F450KG472J250(1)	PHE450HK4470J(1)
250	180	0.0056	4.0	8.0	10.0	7.5	1400	KG/K01	160	F450KG562J250(1)	PHE450HK4560J(1)
250	180	0.0068	4.0	8.0	10.0	7.5	1400	KG/K01	160	F450KG682J250(1)	PHE450HK4680J(1)
250	180	0.0082	4.0	8.0	10.0	7.5	1400	KG/K01	160	F450KG822J250(1)	PHE450HK4820J(1)
250	180	0.010	4.0	8.0	10.0	7.5	1200	KG/K01	160	F450KG103J250(1)	PHE450HK5100J(1)
250	180	0.012	4.0	8.0	10.0	7.5	1200	KG/K01	160	F450KG123J250(1)	PHE450HK5120J(1)
250	180	0.015	4.0	8.0	10.0	7.5	800	KG/K01	160	F450KG153J250(1)	PHE450HK5150J(1)
250	180	0.018	4.0	8.0	10.0	7.5	800	KG/K01	160	F450KG183J250(1)	PHE450HK5180J(1)
250	180	0.022	4.0	8.0	10.0	7.5	800	KG/K01	160	F450KG223J250(1)	PHE450HK5220J(1)
250	180	0.027	5.0	11.0	10.0	7.5	800	KK/K03	160	F450KK273J250(1)	PHE450HK5270J(1)
250	180	0.033	5.0	11.0	10.0	7.5	800	KK/K03	160	F450KK333J250(1)	PHE450HK5330J(1)
250	180	0.039	5.0	11.0	10.0	7.5	800	KK/K03	160	F450KK393J250(1)	PHE450HK5390J(1)
250	180	0.047	5.0	11.0	10.0	7.5	800	KK/K03	160	F450KK473J250(1)	PHE450HK5470J(1)
250	180	0.056	5.0	11.0	10.0	7.5	800	KK/K03	160	F450KK563J250(1)	PHE450HK5560J(1)
250	180	0.068	6.0	12.0	10.5	7.5	800	KM/K04	160	F450KM683J250(1)	PHE450HK5680J(1)
250	180	0.0010	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG102J250(1)	PHE450HA4100J(1)
250	180	0.0012	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG122J250(1)	PHE450HA4120J(1)
250	180	0.0015	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG152J250(1)	PHE450HA4150J(1)
250	180	0.0018	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG182J250(1)	PHE450HA4180J(1)
250	180	0.0022	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG222J250(1)	PHE450HA4220J(1)
250	180	0.0027	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG272J250(1)	PHE450HA4270J(1)
250	180	0.0033	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG332J250(1)	PHE450HA4330J(1)
250	180	0.0039	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG392J250(1)	PHE450HA4390J(1)
250	180	0.0047	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG472J250(1)	PHE450HA4470J(1)
250	180	0.0056	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG562J250(1)	PHE450HA4560J(1)
250	180	0.0068	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG682J250(1)	PHE450HA4680J(1)
250	180	0.0082	4.0	9.0	13.0	10	1200	AG/A01	142	F450AG822J250(1)	PHE450HA4820J(1)
250	180	0.010	4.0	9.0	13.0	10	1200	AG/A01	142	F450AG103J250(1)	PHE450HA5100J(1)
250	180	0.012	4.0	9.0	13.0	10	1200	AG/A01	142	F450AG123J250(1)	PHE450HA5120J(1)
250	180	0.015	4.0	9.0	13.0	10	1200	AG/A01	142	F450AG153J250(1)	PHE450HA5150J(1)
250	180	0.018	4.0	9.0	13.0	10	1100	AG/A01	142	F450AG183J250(1)	PHE450HA5180J(1)
250	180	0.022	4.0	9.0	13.0	10	1100	AG/A01	142	F450AG223J250(1)	PHE450HA5220J(1)
250	180	0.027	4.0	9.0	13.0	10	1100	AG/A01	142	F450AG273J250(1)	PHE450HA5270J(1)
250	180	0.033	4.0	9.0	13.0	10	700	AG/A01	142	F450AG333J250(1)	PHE450HA5330J(1)
250	180	0.039	4.0	9.0	13.0	10	700	AG/A01	142	F450AG393J250(1)	PHE450HA5390J(1)
250	180	0.047	4.0	9.0	13.0	10	700	AG/A01	142	F450AG473J250(1)	PHE450HA5470J(1)
250	180	0.056	4.5	10.5	13.0	10	700	AH/A02	122	F450AH563J250(1)	PHE450HA5560J(1)
250	180	0.068	4.5	10.5	13.0	10	700	AH/A02	122	F450AH683J250(1)	PHE450HA5680J(1)
250	180	0.082	5.0	11.0	13.0	10	700	AK/A03	116	F450AK823J250(1)	PHE450HA5820J(1)
250	180	0.10	6.0	12.0	13.0	10	700	AP/A04	105	F450AP104J250(1)	PHE450HA6100J(1)
250	180	0.12	6.0	12.0	13.0	10	700	AP/A04	105	F450AP124J250(1)	PHE450HA6120J(1)
250	180	0.047	5.5	10.5	18.0	15	1000	BD/B04	100	F450BD473J250(1)	PHE450HB5470J(1)
250	180	0.056	5.5	10.5	18.0	15	1000	BD/B04	100	F450BD563J250(1)	PHE450HB5560J(1)
250	180	0.068	5.5	10.5	18.0	15	1000	BD/B04	100	F450BD683J250(1)	PHE450HB5680J(1)
250	180	0.082	5.5	10.5	18.0	15	600	BD/B04	101	F450BD823J250(1)	PHE450HB5820J(1)
VDC	VAC	Cap Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/ µs)	Size Code (New/Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Size Code (New/ Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number
			B	H	L						
250	180	0.10	5.5	10.5	18.0	15	600	BD/B04	100	F450BD104J250(1)	PHE450HB6100J(1)
250	180	0.12	5.5	10.5	18.0	15	600	BD/B04	99	F450BD124J250(1)	PHE450HB6120J(1)
250	180	0.15	5.5	12.5	18.0	15	600	BE/B05	85	F450BE154J250(1)	PHE450HB6150J(1)
250	180	0.18	6.5	12.5	18.0	15	600	BJ/B10	83	F450BJ184J250(1)	PHE450HB6180J(1)
250	180	0.22	7.5	14.5	18.0	15	600	BL/B06	74	F450BL224J250(1)	PHE450HB6220J(1)
250	180	0.27	7.5	14.5	18.0	15	600	BL/B06	73	F450BL274J250(1)	PHE450HB6270J(1)
250	180	0.33	8.0	15.0	18.0	15	600	BM/B12	67	F450BM334J250(1)	PHE450HB6330J(1)
250	180	0.39	8.5	16.0	18.0	15	600	BQ/B11	65	F450BQ394J250(1)	PHE450HB6390J(1)
250	180	0.47	9.5	17.5	18.0	15	600	BV/B14	60	F450BV474J250(1)	PHE450HB6470J(1)
250	180	0.18	6.5	14.5	26.0	22.5	600	DD/D13	58	F450DD184J250(1)	PHE450HD6180J(1)
250	180	0.22	6.5	14.5	26.0	22.5	400	DD/D13	60	F450DD224J250(1)	PHE450HD6220J(1)
250	180	0.27	6.5	14.5	26.0	22.5	400	DD/D13	59	F450DD274J250(1)	PHE450HD6270J(1)
250	180	0.33	6.5	14.5	26.0	22.5	400	DD/D13	58	F450DD334J250(1)	PHE450HD6330J(1)
250	180	0.39	7.0	16.5	26.0	22.5	400	DF/D17	54	F450DF394J250(1)	PHE450HD6390J(1)
250	180	0.47	7.0	16.5	26.0	22.5	400	DF/D17	53	F450DF474J250(1)	PHE450HD6470J(1)
250	180	0.56	9.0	18.5	26.0	22.5	400	DM/D15	49	F450DM564J250(1)	PHE450HD6560J(1)
250	180	0.68	9.0	18.5	26.0	22.5	400	DM/D15	47	F450DM684J250(1)	PHE450HD6680J(1)
250	180	0.82	10.5	19.0	26.0	22.5	400	DR/D18	43	F450DR824J250(1)	PHE450HD6820J(1)
250	180	1.0	11.0	21.5	26.0	22.5	400	DT/D16	40	F450DT105J250(1)	PHE450HD7100J(1)
250	180	1.2	13.5	23.0	26.0	22.5	400	DW/D20	38	F450DW125J250(1)	PHE450HD7120J(1)
250	180	1.5	13.5	23.0	26.0	22.5	400	DW/D20	36	F450DW155J250(1)	PHE450HD7150J(1)
250	180	1.8	15.5	24.5	26.0	22.5	400	DY/D19	36	F450DY185J250(1)	PHE450HD7180J(1)
250	180	0.82	10.5	20.5	31.5	27.5	300	FE/F11	38	F450FE824J250(1)	PHE450HF6820J(1)
250	180	1.0	10.5	20.5	31.5	27.5	300	FE/F11	38	F450FE105J250(1)	PHE450HF7100J(1)
250	180	1.2	10.5	20.5	31.5	27.5	300	FE/F11	37	F450FE125J250(1)	PHE450HF7120J(1)
250	180	1.2	21.0	12.5	31.5	27.5	300	FH/F17	37	F450FH125J250(1)	PHE450HT7120J(1)
250	180	1.5	11.5	22.5	31.5	27.5	300	FG/F12	34	F450FG155J250(1)	PHE450HF7150J(1)
250	180	1.8	13.5	23.0	31.5	27.5	300	FK/F03	32	F450FK185J250(1)	PHE450HF7180J(1)
250	180	2.2	14.5	24.5	31.5	27.5	300	FM/F13	31	F450FM225J250(1)	PHE450HF7220J(1)
250	180	2.2	27.5	16.0	31.5	27.5	300	FQ/F19	31	F450FQ225J250(1)	PHE450HT7220J(1)
250	180	2.7	17.5	28.0	31.5	27.5	300	FR/F14	27	F450FR275J250(1)	PHE450HF7270J(1)
250	180	3.3	19.0	29.0	31.5	27.5	300	FS/F15	25	F450FS335J250(1)	PHE450HF7330J(1)
250	180	3.9	21.0	30.0	31.5	27.5	300	FV/F16	23	F450FV395J250(1)	PHE450HF7390J(1)
250	180	3.9	31.0	19.0	31.5	27.5	300	FT/F18	23	F450FT395J250(1)	PHE450HT7390J(1)
250	180	1.8	13.0	24.0	41.0	37.5	200	RF/R05	28	F450RF185J250(1)	PHE450HR7180J(1)
250	180	2.2	13.0	24.0	41.0	37.5	200	RF/R05	28	F450RF225J250(1)	PHE450HR7220J(1)
250	180	2.7	13.0	24.0	41.0	37.5	200	RF/R05	27	F450RF275J250(1)	PHE450HR7270J(1)
250	180	3.3	15.0	26.0	41.0	37.5	200	RH/R04	25	F450RH335J250(1)	PHE450HR7330J(1)
250	180	3.9	16.5	32.0	41.0	37.5	200	RK/R02	22	F450RK395J250(1)	PHE450HR7390J(1)
250	180	4.7	16.5	32.0	41.0	37.5	200	RK/R02	22	F450RK475J250(1)	PHE450HR7470J(1)
250	180	5.6	19.0	36.0	41.0	37.5	200	RM/R03	18	F450RM565J250(1)	PHE450HR7560J(1)
250	180	6.8	21.0	38.0	41.0	37.5	200	RP/R06	17	F450RP685J250(1)	PHE450HR7680J(1)
250	180	8.2	28.0	43.0	41.0	37.5	200	RS/R08	17	F450RS825J250(1)	PHE450HR7820J(1)
250	180	10	28.0	43.0	41.0	37.5	200	RS/R08	17	F450RS106J250(1)	PHE450HR8100J(1)
400	250	0.00033	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG331J400(1)	PHE450KK3330J(1)
400	250	0.00039	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG391J400(1)	PHE450KK3390J(1)
400	250	0.00047	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG471J400(1)	PHE450KK3470J(1)
400	250	0.00056	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG561J400(1)	PHE450KK3560J(1)
400	250	0.00068	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG681J400(1)	PHE450KK3680J(1)
400	250	0.00082	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG821J400(1)	PHE450KK3820J(1)
400	250	0.0010	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG102J400(1)	PHE450KK4100J(1)
400	250	0.0012	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG122J400(1)	PHE450KK4120J(1)
400	250	0.0015	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG152J400(1)	PHE450KK4150J(1)
400	250	0.0018	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG182J400(1)	PHE450KK4180J(1)
400	250	0.0022	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG222J400(1)	PHE450KK4220J(1)
400	250	0.0027	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG272J400(1)	PHE450KK4270J(1)
400	250	0.0033	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG332J400(1)	PHE450KK4330J(1)
400	250	0.0039	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG392J400(1)	PHE450KK4390J(1)
400	250	0.0047	4.0	8.0	10.0	7.5	1400	KG/K01	160	F450KG472J400(1)	PHE450KK4470J(1)
VDC	VAC	Cap Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/ µs)	Size Code (New/Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Size Code (New/ Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number
			B	H	L						
400	250	0.0056	4.0	8.0	10.0	7.5	1400	KG/K01	160	F450KG562J400(1)	PHE450KK4560J(1)
400	250	0.0068	4.0	8.0	10.0	7.5	1400	KG/K01	160	F450KG682J400(1)	PHE450KK4680J(1)
400	250	0.0082	4.0	8.0	10.0	7.5	1400	KG/K01	160	F450KG822J400(1)	PHE450KK4820J(1)
400	250	0.010	4.0	8.0	10.0	7.5	1200	KG/K01	160	F450KG103J400(1)	PHE450KK5100J(1)
400	250	0.012	4.0	8.0	10.0	7.5	1200	KG/K01	160	F450KG123J400(1)	PHE450KK5120J(1)
400	250	0.015	5.0	11.0	10.0	7.5	1200	KK/K03	160	F450KK153J400(1)	PHE450KK5150J(1)
400	250	0.018	5.0	11.0	10.0	7.5	1200	KK/K03	160	F450KK183J400(1)	PHE450KK5180J(1)
400	250	0.022	5.0	11.0	10.0	7.5	1200	KK/K03	160	F450KK223J400(1)	PHE450KK5220J(1)
400	250	0.027	5.0	11.0	10.0	7.5	1200	KK/K03	160	F450KK273J400(1)	PHE450KK5270J(1)
400	250	0.033	5.0	11.0	10.0	7.5	1200	KK/K03	160	F450KK333J400(1)	PHE450KK5330J(1)
400	250	0.039	6.0	12.0	10.5	7.5	1200	KM/K04	160	F450KM393J400(1)	PHE450KK5390J(1)
400	250	0.047	6.0	12.0	10.5	7.5	1200	KM/K04	160	F450KM473J400(1)	PHE450KK5470J(1)
400	250	0.0010	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG102J400(1)	PHE450KA4100J(1)
400	250	0.0012	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG122J400(1)	PHE450KA4120J(1)
400	250	0.0015	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG152J400(1)	PHE450KA4150J(1)
400	250	0.0018	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG182J400(1)	PHE450KA4180J(1)
400	250	0.0022	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG222J400(1)	PHE450KA4220J(1)
400	250	0.0027	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG272J400(1)	PHE450KA4270J(1)
400	250	0.0033	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG332J400(1)	PHE450KA4330J(1)
400	250	0.0039	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG392J400(1)	PHE450KA4390J(1)
400	250	0.0047	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG472J400(1)	PHE450KA4470J(1)
400	250	0.0056	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG562J400(1)	PHE450KA4560J(1)
400	250	0.0068	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG682J400(1)	PHE450KA4680J(1)
400	250	0.0082	4.0	9.0	13.0	10	1200	AG/A01	142	F450AG822J400(1)	PHE450KA4820J(1)
400	250	0.010	4.0	9.0	13.0	10	1200	AG/A01	142	F450AG103J400(1)	PHE450KA5100J(1)
400	250	0.012	4.0	9.0	13.0	10	1200	AG/A01	142	F450AG123J400(1)	PHE450KA5120J(1)
400	250	0.015	4.0	9.0	13.0	10	1200	AG/A01	142	F450AG153J400(1)	PHE450KA5150J(1)
400	250	0.018	4.0	9.0	13.0	10	1100	AG/A01	142	F450AG183J400(1)	PHE450KA5180J(1)
400	250	0.022	4.0	9.0	13.0	10	1100	AG/A01	142	F450AG223J400(1)	PHE450KA5220J(1)
400	250	0.027	4.0	9.0	13.0	10	1100	AG/A01	142	F450AG273J400(1)	PHE450KA5270J(1)
400	250	0.033	4.5	10.5	13.0	10	1100	AH/A02	122	F450AH333J400(1)	PHE450KA5330J(1)
400	250	0.039	5.0	11.0	13.0	10	1100	AK/A03	116	F450AK393J400(1)	PHE450KA5390J(1)
400	250	0.047	6.0	12.0	13.0	10	1100	AP/A04	105	F450AP473J400(1)	PHE450KA5470J(1)
400	250	0.056	6.0	12.0	13.0	10	1100	AP/A04	105	F450AP563J400(1)	PHE450KA5560J(1)
400	250	0.033	5.5	10.5	18.0	15	2500	BD/B04	100	F450BD333J400(1)	PHE450KB5330J(1)
400	250	0.039	5.5	10.5	18.0	15	1000	BD/B04	100	F450BD393J400(1)	PHE450KB5390J(1)
400	250	0.047	5.5	10.5	18.0	15	1000	BD/B04	100	F450BD473J400(1)	PHE450KB5470J(1)
400	250	0.056	5.5	10.5	18.0	15	1000	BD/B04	100	F450BD563J400(1)	PHE450KB5560J(1)
400	250	0.068	5.5	10.5	18.0	15	1000	BD/B04	100	F450BD683J400(1)	PHE450KB5680J(1)
400	250	0.082	5.5	12.5	18.0	15	1000	BE/B05	99	F450BE823J400(1)	PHE450KB5820J(1)
400	250	0.10	6.5	12.5	18.0	15	1000	BJ/B10	85	F450BJ104J400(1)	PHE450KB6100J(1)
400	250	0.12	7.5	14.5	18.0	15	1000	BL/B06	75	F450BL124J400(1)	PHE450KB6120J(1)
400	250	0.15	7.5	14.5	18.0	15	1000	BL/B06	75	F450BL154J400(1)	PHE450KB6150J(1)
400	250	0.18	8.0	15.0	18.0	15	1000	BM/B12	71	F450BM184J400(1)	PHE450KB6180J(1)
400	250	0.22	9.5	17.5	18.0	15	1000	BV/B14	60	F450BV224J400(1)	PHE450KB6220J(1)
400	250	0.27	9.5	17.5	18.0	15	1000	BV/B14	59	F450BV274J400(1)	PHE450KB6270J(1)
400	250	0.12	6.5	14.5	26.0	22.5	600	DD/D13	58	F450DD124J400(1)	PHE450KD6120J(1)
400	250	0.15	6.5	14.5	26.0	22.5	600	DD/D13	58	F450DD154J400(1)	PHE450KD6150J(1)
400	250	0.18	6.5	14.5	26.0	22.5	600	DD/D13	58	F450DD184J400(1)	PHE450KD6180J(1)
400	250	0.22	7.0	16.5	26.0	22.5	600	DF/D17	52	F450DF224J400(1)	PHE450KD6220J(1)
400	250	0.27	7.0	16.5	26.0	22.5	600	DF/D17	52	F450DF274J400(1)	PHE450KD6270J(1)
400	250	0.33	9.0	18.5	26.0	22.5	600	DM/D15	48	F450DM334J400(1)	PHE450KD6330J(1)
400	250	0.39	9.0	18.5	26.0	22.5	600	DM/D15	48	F450DM394J400(1)	PHE450KD6390J(1)
400	250	0.47	10.5	19.0	26.0	22.5	600	DR/D18	45	F450DR474J400(1)	PHE450KD6470J(1)
400	250	0.56	11.0	21.5	26.0	22.5	600	DT/D16	40	F450DT564J400(1)	PHE450KD6560J(1)
400	250	0.68	13.5	23.0	26.0	22.5	600	DW/D20	35	F450DW684J400(1)	PHE450KD6680J(1)
400	250	0.82	13.5	23.0	26.0	22.5	600	DW/D20	35	F450DW824J400(1)	PHE450KD6820J(1)
400	250	1.0	15.5	24.5	26.0	22.5	600	DY/D19	33	F450DY105J400(1)	PHE450KD7100J(1)
400	250	0.47	10.5	20.5	31.5	27.5	500	FE/F11	38	F450FE474J400(1)	PHE450KF6470J(1)
VDC	VAC	Cap Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/ µs)	Size Code (New/Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Size Code (New/ Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number
			B	H	L						
400	250	0.56	10.5	20.5	31.5	27.5	500	FE/F11	38	F450FE564J400(1)	PHE450KF6560J(1)
400	250	0.68	10.5	20.5	31.5	27.5	500	FE/F11	38	F450FE684J400(1)	PHE450KF6680J(1)
400	250	0.68	21.0	12.5	31.5	27.5	500	FH/F17	38	F450FH684J400(1)	PHE450KT6680J(1)
400	250	0.82	11.5	22.5	31.5	27.5	500	FG/F12	34	F450FG824J400(1)	PHE450KF6820J(1)
400	250	1.0	13.5	23.0	31.5	27.5	500	FK/F03	32	F450FK105J400(1)	PHE450KF7100J(1)
400	250	1.2	14.5	24.5	31.5	27.5	500	FM/F13	30	F450FM125J400(1)	PHE450KF7120J(1)
400	250	1.5	17.5	28.0	31.5	27.5	500	FR/F14	27	F450FR155J400(1)	PHE450KF7150J(1)
400	250	1.5	27.5	16.0	31.5	27.5	500	FQ/F19	27	F450FQ155J400(1)	PHE450KT7150J(1)
400	250	1.8	19.0	29.0	31.5	27.5	500	FS/F15	25	F450FS185J400(1)	PHE450KF7180J(1)
400	250	2.2	21.0	30.0	31.5	27.5	500	FV/F16	24	F450FV225J400(1)	PHE450KF7220J(1)
400	250	2.2	31.0	19.0	31.5	27.5	500	FT/F18	24	F450FT225J400(1)	PHE450KT7220J(1)
400	250	1.0	13.0	24.0	41.0	37.5	300	RF/R05	27	F450RF105J400(1)	PHE450KR7100J(1)
400	250	1.2	13.0	24.0	41.0	37.5	300	RF/R05	27	F450RF125J400(1)	PHE450KR7120J(1)
400	250	1.5	13.0	24.0	41.0	37.5	300	RF/R05	27	F450RF155J400(1)	PHE450KR7150J(1)
400	250	1.8	15.0	26.0	41.0	37.5	300	RH/R04	25	F450RH185J400(1)	PHE450KR7180J(1)
400	250	2.2	16.5	32.0	41.0	37.5	300	RK/R02	22	F450RK225J400(1)	PHE450KR7220J(1)
400	250	2.7	16.5	32.0	41.0	37.5	300	RK/R02	22	F450RK275J400(1)	PHE450KR7270J(1)
400	250	3.3	19.0	36.0	41.0	37.5	300	RM/R03	19	F450RM335J400(1)	PHE450KR7330J(1)
400	250	3.9	19.0	36.0	41.0	37.5	300	RM/R03	19	F450RM395J400(1)	PHE450KR7390J(1)
400	250	4.7	21.0	38.0	41.0	37.5	300	RP/R06	17	F450RP475J400(1)	PHE450KR7470J(1)
400	250	5.6	28.0	43.0	41.0	37.5	300	RS/R08	17	F450RS565J400(1)	PHE450KR7560J(1)
630	300	0.00039	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG391J630(1)	PHE450MK3390J(1)
630	300	0.00047	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG471J630(1)	PHE450MK3470J(1)
630	300	0.00056	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG561J630(1)	PHE450MK3560J(1)
630	300	0.00068	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG681J630(1)	PHE450MK3680J(1)
630	300	0.00082	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG821J630(1)	PHE450MK3820J(1)
630	300	0.0010	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG102J630(1)	PHE450MK4100J(1)
630	300	0.0012	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG122J630(1)	PHE450MK4120J(1)
630	300	0.0015	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG152J630(1)	PHE450MK4150J(1)
630	300	0.0018	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG182J630(1)	PHE450MK4180J(1)
630	300	0.0022	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG222J630(1)	PHE450MK4220J(1)
630	300	0.0027	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG272J630(1)	PHE450MK4270J(1)
630	300	0.0033	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG332J630(1)	PHE450MK4330J(1)
630	300	0.0039	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG392J630(1)	PHE450MK4390J(1)
630	300	0.0047	4.0	8.0	10.0	7.5	1400	KG/K01	160	F450KG472J630(1)	PHE450MK4470J(1)
630	300	0.0056	4.0	8.0	10.0	7.5	1400	KG/K01	160	F450KG562J630(1)	PHE450MK4560J(1)
630	300	0.0068	4.0	8.0	10.0	7.5	1400	KG/K01	160	F450KG682J630(1)	PHE450MK4680J(1)
630	300	0.0082	4.0	8.0	10.0	7.5	1400	KG/K01	160	F450KG822J630(1)	PHE450MK4820J(1)
630	300	0.010	5.0	11.0	10.0	7.5	1400	KK/K03	160	F450KK103J630(1)	PHE450MK5100J(1)
630	300	0.012	5.0	11.0	10.0	7.5	1400	KK/K03	160	F450KK123J630(1)	PHE450MK5120J(1)
630	300	0.015	5.0	11.0	10.0	7.5	1400	KK/K03	160	F450KK153J630(1)	PHE450MK5150J(1)
630	300	0.018	5.0	11.0	10.0	7.5	1400	KK/K03	160	F450KK183J630(1)	PHE450MK5180J(1)
630	300	0.022	6.0	12.0	10.5	7.5	1400	KM/K04	160	F450KM223J630(1)	PHE450MK5220J(1)
630	300	0.0010	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG102J630(1)	PHE450MA4100J(1)
630	300	0.0012	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG122J630(1)	PHE450MA4120J(1)
630	300	0.0015	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG152J630(1)	PHE450MA4150J(1)
630	300	0.0018	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG182J630(1)	PHE450MA4180J(1)
630	300	0.0022	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG222J630(1)	PHE450MA4220J(1)
630	300	0.0027	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG272J630(1)	PHE450MA4270J(1)
630	300	0.0033	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG332J630(1)	PHE450MA4330J(1)
630	300	0.0039	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG392J630(1)	PHE450MA4390J(1)
630	300	0.0047	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG472J630(1)	PHE450MA4470J(1)
630	300	0.0056	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG562J630(1)	PHE450MA4560J(1)
630	300	0.0068	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG682J630(1)	PHE450MA4680J(1)
630	300	0.0082	4.0	9.0	13.0	10	1200	AG/A01	142	F450AG822J630(1)	PHE450MA4820J(1)
630	300	0.010	4.0	9.0	13.0	10	1200	AG/A01	142	F450AG103J630(1)	PHE450MA5100J(1)
630	300	0.012	4.0	9.0	13.0	10	1200	AG/A01	142	F450AG123J630(1)	PHE450MA5120J(1)
630	300	0.015	4.0	9.0	13.0	10	1200	AG/A01	142	F450AG153J630(1)	PHE450MA5150J(1)
630	300	0.018	4.5	10.5	13.0	10	1200	AH/A02	122	F450AH183J630(1)	PHE450MA5180J(1)
VDC	VAC	Cap Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/ µs)	Size Code (New/Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Size Code (New/ Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number
			B	H	L						
630	300	0.022	4.5	10.5	13.0	10	1200	AH/A02	122	F450AH223J630(1)	PHE450MA5220J(1)
630	300	0.027	5.0	11.0	13.0	10	1200	AK/A03	116	F450AK273J630(1)	PHE450MA5270J(1)
630	300	0.033	6.0	12.0	13.0	10	1200	AP/A04	105	F450AP333J630(1)	PHE450MA5330J(1)
630	300	0.039	6.0	12.0	13.0	10	1200	AP/A04	105	F450AP393J630(1)	PHE450MA5390J(1)
630	400	0.010	5.5	10.5	18.0	15	2500	BD/B04	99	F450BD103J630(1)	PHE450MB5100J(1)
630	400	0.012	5.5	10.5	18.0	15	2500	BD/B04	99	F450BD123J630(1)	PHE450MB5120J(1)
630	400	0.015	5.5	10.5	18.0	15	2500	BD/B04	100	F450BD153J630(1)	PHE450MB5150J(1)
630	400	0.018	5.5	10.5	18.0	15	2500	BD/B04	100	F450BD183J630(1)	PHE450MB5180J(1)
630	400	0.022	5.5	10.5	18.0	15	2500	BD/B04	100	F450BD223J630(1)	PHE450MB5220J(1)
630	400	0.027	5.5	10.5	18.0	15	2500	BD/B04	100	F450BD273J630(1)	PHE450MB5270J(1)
630	400	0.033	5.5	10.5	18.0	15	2500	BD/B04	100	F450BD333J630(1)	PHE450MB5330J(1)
630	400	0.039	5.5	12.5	18.0	15	2500	BE/B05	90	F450BE393J630(1)	PHE450MB5390J(1)
630	400	0.047	6.5	12.5	18.0	15	2500	BJ/B10	85	F450BJ473J630(1)	PHE450MB5470J(1)
630	400	0.056	6.5	12.5	18.0	15	2500	BJ/B10	85	F450BJ563J630(1)	PHE450MB5560J(1)
630	400	0.068	7.5	14.5	18.0	15	2500	BL/B06	75	F450BL683J630(1)	PHE450MB5680J(1)
630	400	0.082	8.0	15.0	18.0	15	2500	BM/B12	72	F450BM823J630(1)	PHE450MB5820J(1)
630	400	0.10	8.5	16.0	18.0	15	2500	BQ/B11	70	F450BQ104J630(1)	PHE450MB6100J(1)
630	400	0.12	9.5	17.5	18.0	15	2500	BV/B14	61	F450BV124J630(1)	PHE450MB6120J(1)
630	400	0.15	9.5	17.5	18.0	15	2500	BV/B14	61	F450BV154J630(1)	PHE450MB6150J(1)
630	400	0.033	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD333J630(1)	PHE450MD5330J(1)
630	400	0.039	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD393J630(1)	PHE450MD5390J(1)
630	400	0.047	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD473J630(1)	PHE450MD5470J(1)
630	400	0.056	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD563J630(1)	PHE450MD5560J(1)
630	400	0.068	6.5	14.5	26.0	22.5	1800	DD/D13	59	F450DD683J630(1)	PHE450MD5680J(1)
630	400	0.082	6.5	14.5	26.0	22.5	1800	DD/D13	59	F450DD823J630(1)	PHE450MD5820J(1)
630	400	0.10	6.5	14.5	26.0	22.5	1800	DD/D13	59	F450DD104J630(1)	PHE450MD6100J(1)
630	400	0.12	7.0	16.5	26.0	22.5	1800	DF/D17	55	F450DF124J630(1)	PHE450MD6120J(1)
630	400	0.15	7.0	16.5	26.0	22.5	1800	DF/D17	55	F450DF154J630(1)	PHE450MD6150J(1)
630	400	0.18	9.0	18.5	26.0	22.5	1800	DM/D15	50	F450DM184J630(1)	PHE450MD6180J(1)
630	400	0.22	9.0	18.5	26.0	22.5	1800	DM/D15	50	F450DM224J630(1)	PHE450MD6220J(1)
630	400	0.27	11.0	21.5	26.0	22.5	1800	DT/D16	45	F450DT274J630(1)	PHE450MD6270J(1)
630	400	0.33	11.0	21.5	26.0	22.5	1800	DT/D16	45	F450DT334J630(1)	PHE450MD6330J(1)
630	400	0.39	13.5	23.0	26.0	22.5	1800	DW/D20	40	F450DW394J630(1)	PHE450MD6390J(1)
630	400	0.47	13.5	23.0	26.0	22.5	1800	DW/D20	40	F450DW474J630(1)	PHE450MD6470J(1)
630	400	0.56	15.5	24.5	26.0	22.5	1800	DY/D19	34	F450DY564J630(1)	PHE450MD6560J(1)
630	400	0.22	10.5	20.5	31.5	27.5	1100	FE/F11	38	F450FE224J630(1)	PHE450MF6220J(1)
630	400	0.27	10.5	20.5	31.5	27.5	1100	FE/F11	38	F450FE274J630(1)	PHE450MF6270J(1)
630	400	0.33	10.5	20.5	31.5	27.5	1100	FE/F11	38	F450FE334J630(1)	PHE450MF6330J(1)
630	400	0.39	10.5	20.5	31.5	27.5	1100	FE/F11	38	F450FE394J630(1)	PHE450MF6390J(1)
630	400	0.39	21.0	12.5	31.5	27.5	1100	FH/F17	38	F450FH394J630(1)	PHE450MT6390J(1)
630	400	0.47	11.5	22.5	31.5	27.5	1100	FG/F12	35	F450FG474J630(1)	PHE450MF6470J(1)
630	400	0.56	13.5	23.0	31.5	27.5	1100	FK/F03	34	F450FK564J630(1)	PHE450MF6560J(1)
630	400	0.68	14.5	24.5	31.5	27.5	1100	FM/F13	33	F450FM684J630(1)	PHE450MF6680J(1)
630	400	0.82	17.5	28.0	31.5	27.5	1100	FR/F14	30	F450FR824J630(1)	PHE450MF6820J(1)
630	400	0.82	27.5	16.0	31.5	27.5	1100	FQ/F19	30	F450FQ824J630(1)	PHE450MT6820J(1)
630	400	1.0	17.5	28.0	31.5	27.5	1100	FR/F14	30	F450FR105J630(1)	PHE450MF7100J(1)
630	400	1.2	21.0	30.0	31.5	27.5	1100	FV/F16	25	F450FV125J630(1)	PHE450MF7120J(1)
630	400	1.2	31.0	19.0	31.5	27.5	1100	FT/F18	25	F450FT125J630(1)	PHE450MT7120J(1)
630	400	0.56	13.0	24.0	41.0	37.5	700	RF/R05	29	F450RF564J630(1)	PHE450MR6560J(1)
630	400	0.68	13.0	24.0	41.0	37.5	700	RF/R05	28	F450RF684J630(1)	PHE450MR6680J(1)
630	400	0.82	13.0	24.0	41.0	37.5	700	RF/R05	28	F450RF824J630(1)	PHE450MR6820J(1)
630	400	1.0	15.0	26.0	41.0	37.5	700	RH/R04	27	F450RH105J630(1)	PHE450MR7100J(1)
630	400	1.2	15.0	26.0	41.0	37.5	700	RH/R04	27	F450RH125J630(1)	PHE450MR7120J(1)
630	400	1.5	16.5	32.0	41.0	37.5	700	RK/R02	24	F450RK155J630(1)	PHE450MR7150J(1)
630	400	1.8	19.0	36.0	41.0	37.5	700	RM/R03	20	F450RM185J630(1)	PHE450MR7180J(1)
630	400	2.2	19.0	36.0	41.0	37.5	700	RM/R03	20	F450RM225J630(1)	PHE450MR7220J(1)
630	400	2.7	21.0	38.0	41.0	37.5	700	RP/R06	18	F450RP275J630(1)	PHE450MR7270J(1)
630	400	3.3	28.0	43.0	41.0	37.5	700	RS/R08	18	F450RS335J630(1)	PHE450MR7330J(1)
1000	375	0.00033	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG331J1K0(1)	PHE450PK3330J(1)
VDC	VAC	Cap Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/ µs)	Size Code (New/Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Size Code (New/ Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number
			B	H	L						
1000	375	0.00039	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG391J1K0(1)	PHE450PK3390J(1)
1000	375	0.00047	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG471J1K0(1)	PHE450PK3470J(1)
1000	375	0.00056	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG561J1K0(1)	PHE450PK3560J(1)
1000	375	0.00068	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG681J1K0(1)	PHE450PK3680J(1)
1000	375	0.00082	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG821J1K0(1)	PHE450PK3820J(1)
1000	375	0.0010	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG102J1K0(1)	PHE450PK4100J(1)
1000	375	0.0012	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG122J1K0(1)	PHE450PK4120J(1)
1000	375	0.0015	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG152J1K0(1)	PHE450PK4150J(1)
1000	375	0.0018	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG182J1K0(1)	PHE450PK4180J(1)
1000	375	0.0022	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG222J1K0(1)	PHE450PK4220J(1)
1000	375	0.0027	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG272J1K0(1)	PHE450PK4270J(1)
1000	375	0.0033	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG332J1K0(1)	PHE450PK4330J(1)
1000	375	0.0039	4.0	8.0	10.0	7.5	2000	KG/K01	160	F450KG392J1K0(1)	PHE450PK4390J(1)
1000	375	0.0047	5.0	11.0	10.0	7.5	2000	KK/K03	160	F450KK472J1K0(1)	PHE450PK4470J(1)
1000	375	0.0056	5.0	11.0	10.0	7.5	2000	KK/K03	160	F450KK562J1K0(1)	PHE450PK4560J(1)
1000	375	0.0068	5.0	11.0	10.0	7.5	2000	KK/K03	160	F450KK682J1K0(1)	PHE450PK4680J(1)
1000	375	0.0082	5.0	11.0	10.0	7.5	2000	KK/K03	160	F450KK822J1K0(1)	PHE450PK4820J(1)
1000	375	0.010	6.0	12.0	10.5	7.5	2000	KM/K04	160	F450KM103J1K0(1)	PHE450PK5100J(1)
1000	375	0.012	6.0	12.0	10.5	7.5	2000	KM/K04	160	F450KM123J1K0(1)	PHE450PK5120J(1)
1000	375	0.0010	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG102J1K0(1)	PHE450PA4100J(1)
1000	375	0.0012	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG122J1K0(1)	PHE450PA4120J(1)
1000	375	0.0015	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG152J1K0(1)	PHE450PA4150J(1)
1000	375	0.0018	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG182J1K0(1)	PHE450PA4180J(1)
1000	375	0.0022	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG222J1K0(1)	PHE450PA4220J(1)
1000	375	0.0027	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG272J1K0(1)	PHE450PA4270J(1)
1000	375	0.0033	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG332J1K0(1)	PHE450PA4330J(1)
1000	375	0.0039	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG392J1K0(1)	PHE450PA4390J(1)
1000	375	0.0047	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG472J1K0(1)	PHE450PA4470J(1)
1000	375	0.0056	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG562J1K0(1)	PHE450PA4560J(1)
1000	375	0.0068	4.0	9.0	13.0	10	1400	AG/A01	142	F450AG682J1K0(1)	PHE450PA4680J(1)
1000	375	0.0082	4.5	10.5	13.0	10	1400	AH/A02	122	F450AH822J1K0(1)	PHE450PA4820J(1)
1000	375	0.010	4.5	10.5	13.0	10	1400	AH/A02	122	F450AH103J1K0(1)	PHE450PA5100J(1)
1000	375	0.012	5.0	11.0	13.0	10	1400	AK/A03	116	F450AK123J1K0(1)	PHE450PA5120J(1)
1000	375	0.015	6.0	12.0	13.0	10	1400	AP/A04	105	F450AP153J1K0(1)	PHE450PA5150J(1)
1000	375	0.018	6.0	12.0	13.0	10	1400	AP/A04	105	F450AP183J1K0(1)	PHE450PA5180J(1)
1000	600	0.0039	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD392J1K0(1)	PHE450PB4390J(1)
1000	600	0.0047	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD472J1K0(1)	PHE450PB4470J(1)
1000	600	0.0056	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD562J1K0(1)	PHE450PB4560J(1)
1000	600	0.0068	5.5	10.5	18.0	15	2500	BD/B04	99	F450BD682J1K0(1)	PHE450PB4680J(1)
1000	600	0.0082	5.5	10.5	18.0	15	2500	BD/B04	99	F450BD822J1K0(1)	PHE450PB4820J(1)
1000	600	0.010	5.5	10.5	18.0	15	2500	BD/B04	99	F450BD103J1K0(1)	PHE450PB5100J(1)
1000	600	0.012	5.5	10.5	18.0	15	2500	BD/B04	99	F450BD123J1K0(1)	PHE450PB5120J(1)
1000	600	0.015	5.5	10.5	18.0	15	2500	BD/B04	99	F450BD153J1K0(1)	PHE450PB5150J(1)
1000	600	0.018	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD183J1K0(1)	PHE450PB5180JB04(1)
1000	600	0.022	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD223J1K0(1)	PHE450PB5220JB04(1)
1000	600	0.027	5.5	12.5	18.0	15	2500	BE/B05	90	F450BE273J1K0(1)	PHE450PB5270JB05(1)
1000	600	0.033	6.5	12.5	18.0	15	2500	BJ/B10	87	F450BJ333J1K0(1)	PHE450PB5330JB10(1)
1000	600	0.039	7.5	14.5	18.0	15	2500	BL/B06	78	F450BL393J1K0(1)	PHE450PB5390J(1)
1000	600	0.047	7.5	14.5	18.0	15	2500	BL/B06	78	F450BL473J1K0(1)	PHE450PB5470JB06(1)
1000	600	0.056	8.0	15.0	18.0	15	2500	BM/B12	75	F450BM563J1K0(1)	PHE450PB5560JB12(1)
1000	600	0.068	8.5	16.0	18.0	15	2500	BQ/B11	70	F450BQ683J1K0(1)	PHE450PB5680JB11(1)
1000	600	0.082	9.5	17.5	18.0	15	2500	BV/B14	60	F450BV823J1K0(1)	PHE450PB5820JB14(1)
1000	600	0.10	11.0	19.0	18.0	15	2500	BY/B16	55	F450BY104J1K0(1)	PHE450PB6100JB16(1)
1000	600	0.12	11.0	19.0	18.0	15	2500	BY/B16	55	F450BY124J1K0(1)	PHE450PB6120JB16(1)
1000	600	0.022	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD223J1K0(1)	PHE450PD5220J(1)
1000	600	0.027	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD273J1K0(1)	PHE450PD5270J(1)
1000	600	0.033	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD333J1K0(1)	PHE450PD5330J(1)
1000	600	0.039	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD393J1K0(1)	PHE450PD5390J(1)
1000	600	0.047	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD473J1K0(1)	PHE450PD5470J(1)
VDC	VAC	Cap Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/ µs)	Size Code (New/Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Size Code (New/ Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number
			B	H	L						
1000	600	0.056	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD563J1K0(1)	PHE450PD5560J(1)
1000	600	0.068	6.5	14.5	26.0	22.5	1800	DD/D13	55	F450DD683J1K0(1)	PHE450PD5680JD13(1)
1000	600	0.082	6.5	14.5	26.0	22.5	1800	DD/D13	54	F450DD823J1K0(1)	PHE450PD5820JD13(1)
1000	600	0.10	7.0	16.5	26.0	22.5	1800	DF/D17	52	F450DF104J1K0(1)	PHE450PD6100JD17(1)
1000	600	0.12	8.0	16.0	26.0	22.5	1800	DH/D14	52	F450DH124J1K0(1)	PHE450PD6120JD14(1)
1000	600	0.15	9.0	18.5	26.0	22.5	1800	DM/D15	49	F450DM154J1K0(1)	PHE450PD6150JD15(1)
1000	600	0.18	10.5	19.0	26.0	22.5	1800	DR/D18	46	F450DR184J1K0(1)	PHE450PD6180JD18(1)
1000	600	0.22	11.0	21.5	26.0	22.5	1800	DT/D16	44	F450DT224J1K0(1)	PHE450PD6220JD16(1)
1000	600	0.27	13.5	23.0	26.0	22.5	1800	DW/D20	40	F450DW274J1K0(1)	PHE450PD6270JD20(1)
1000	600	0.33	13.5	23.0	26.0	22.5	1800	DW/D20	40	F450DW334J1K0(1)	PHE450PD6330JD20(1)
1000	600	0.39	15.5	24.5	26.0	22.5	1800	DY/D19	35	F450DY394J1K0(1)	PHE450PD6390JD19(1)
1000	600	0.15	10.5	20.5	31.5	27.5	1300	FE/F11	38	F450FE154J1K0(1)	PHE450PF6150J(1)
1000	600	0.18	10.5	20.5	31.5	27.5	1300	FE/F11	38	F450FE184J1K0(1)	PHE450PF6180J(1)
1000	600	0.22	10.5	20.5	31.5	27.5	1300	FE/F11	36	F450FE224J1K0(1)	PHE450PF6220J(1)
1000	600	0.22	21.0	12.5	31.5	27.5	1300	FH/F17	36	F450FH224J1K0(1)	PHE450PT6220JF17(1)
1000	600	0.27	10.5	20.5	31.5	27.5	1300	FE/F11	36	F450FE274J1K0(1)	PHE450PF6270JF11(1)
1000	600	0.33	11.5	22.5	31.5	27.5	1300	FG/F12	35	F450FG334J1K0(1)	PHE450PF6330JF12(1)
1000	600	0.39	13.5	23.0	31.5	27.5	1300	FK/F03	34	F450FK394J1K0(1)	PHE450PF6390JF03(1)
1000	600	0.47	14.5	24.5	31.5	27.5	1300	FM/F13	34	F450FM474J1K0(1)	PHE450PF6470JF13(1)
1000	600	0.47	27.5	16.0	31.5	27.5	1300	FQ/F19	30	F450FQ474J1K0(1)	PHE450PT6470J(1)
1000	600	0.56	17.5	28.0	31.5	27.5	1300	FR/F14	28	F450FR564J1K0(1)	PHE450PF6560JF14(1)
1000	600	0.68	17.5	28.0	31.5	27.5	1300	FR/F14	28	F450FR684J1K0(1)	PHE450PF6680JF14(1)
1000	600	0.68	31.0	19.0	31.5	27.5	1300	FT/F18	25	F450FT684J1K0(1)	PHE450PT6680J(1)
1000	600	0.82	19.0	29.0	31.5	27.5	1300	FS/F15	25	F450FS824J1K0(1)	PHE450PF6820JF15(1)
1000	600	1.0	21.0	30.0	31.5	27.5	1300	FV/F16	25	F450FV105J1K0(1)	PHE450PF7100JF16(1)
1000	600	0.33	13.0	24.0	41.0	37.5	800	RF/R05	28	F450RF334J1K0(1)	PHE450PR6330J(1)
1000	600	0.39	13.0	24.0	41.0	37.5	800	RF/R05	28	F450RF394J1K0(1)	PHE450PR6390J(1)
1000	600	0.47	13.0	24.0	41.0	37.5	800	RF/R05	28	F450RF474J1K0(1)	PHE450PR6470J(1)
1000	600	0.56	13.0	24.0	41.0	37.5	800	RF/R05	27	F450RF564J1K0(1)	PHE450PR6560JR05(1)
1000	600	0.68	15.0	26.0	41.0	37.5	800	RH/R04	25	F450RH684J1K0(1)	PHE450PR6680JR04(1)
1000	600	0.82	16.5	32.0	41.0	37.5	800	RK/R02	25	F450RK824J1K0(1)	PHE450PR6820J(1)
1000	600	1.0	16.5	32.0	41.0	37.5	800	RK/R02	20	F450RK105J1K0(1)	PHE450PR7100JR02(1)
1000	600	1.2	19.0	36.0	41.0	37.5	800	RM/R03	19	F450RM125J1K0(1)	PHE450PR7120J(1)
1000	600	1.5	19.0	36.0	41.0	37.5	800	RM/R03	19	F450RM155J1K0(1)	PHE450PR7150JR03(1)
1000	600	1.8	21.0	38.0	41.0	37.5	800	RP/R06	19	F450RP185J1K0(1)	PHE450PR7180JR06(1)
1000	600	2.2	28.0	43.0	41.0	37.5	800	RS/R08	19	F450RS225J1K0(1)	PHE450PR7220JR08(1)
1600	650	0.0027	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD272J1K6(1)	PHE450RB4270J(1)
1600	650	0.0033	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD332J1K6(1)	PHE450RB4330J(1)
1600	650	0.0039	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD392J1K6(1)	PHE450RB4390J(1)
1600	650	0.0047	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD472J1K6(1)	PHE450RB4470J(1)
1600	650	0.0056	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD562J1K6(1)	PHE450RB4560J(1)
1600	650	0.0068	5.5	10.5	18.0	15	2500	BD/B04	99	F450BD682J1K6(1)	PHE450RB4680J(1)
1600	650	0.0082	5.5	10.5	18.0	15	2500	BD/B04	99	F450BD822J1K6(1)	PHE450RB4820J(1)
1600	650	0.010	5.5	10.5	18.0	15	2500	BD/B04	99	F450BD103J1K6(1)	PHE450RB5100J(1)
1600	650	0.012	5.5	10.5	18.0	15	2500	BD/B04	99	F450BD123J1K6(1)	PHE450RB5120J(1)
1600	650	0.015	5.5	12.5	18.0	15	2500	BE/B05	90	F450BE153J1K6(1)	PHE450RB5150J(1)
1600	650	0.018	6.5	12.5	18.0	15	2500	BJ/B10	88	F450BJ183J1K6(1)	PHE450RB5180J(1)
1600	650	0.022	6.5	12.5	18.0	15	2500	BJ/B10	89	F450BJ223J1K6(1)	PHE450RB5220J(1)
1600	650	0.027	7.5	14.5	18.0	15	2500	BL/B06	80	F450BL273J1K6(1)	PHE450RB5270J(1)
1600	650	0.033	8.0	15.0	18.0	15	2500	BM/B12	75	F450BM333J1K6(1)	PHE450RB5330J(1)
1600	650	0.039	8.5	16.0	18.0	15	2500	BQ/B11	73	F450BQ393J1K6(1)	PHE450RB5390J(1)
1600	650	0.047	9.5	17.5	18.0	15	2500	BV/B14	60	F450BV473J1K6(1)	PHE450RB5470J(1)
1600	650	0.056	9.5	17.5	18.0	15	2500	BV/B14	60	F450BV563J1K6(1)	PHE450RB5560J(1)
1600	650	0.010	6.5	14.5	26.0	22.5	1800	DD/D13	60	F450DD103J1K6(1)	PHE450RD5100J(1)
1600	650	0.012	6.5	14.5	26.0	22.5	1800	DD/D13	60	F450DD123J1K6(1)	PHE450RD5120J(1)
1600	650	0.015	6.5	14.5	26.0	22.5	1800	DD/D13	60	F450DD153J1K6(1)	PHE450RD5150J(1)
1600	650	0.018	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD183J1K6(1)	PHE450RD5180J(1)
1600	650	0.022	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD223J1K6(1)	PHE450RD5220J(1)
1600	650	0.027	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD273J1K6(1)	PHE450RD5270J(1)
VDC	VAC	Cap Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/ µs)	Size Code (New/Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Size Code (New/ Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number
			B	H	L						
1600	650	0.033	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD333J1K6(1)	PHE450RD5330J(1)
1600	650	0.039	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD393J1K6(1)	PHE450RD5390J(1)
1600	650	0.047	7.0	16.5	26.0	22.5	1800	DF/D17	55	F450DF473J1K6(1)	PHE450RD5470J(1)
1600	650	0.056	7.0	16.5	26.0	22.5	1800	DF/D17	55	F450DF563J1K6(1)	PHE450RD5560J(1)
1600	650	0.068	9.0	18.5	26.0	22.5	1800	DM/D15	50	F450DM683J1K6(1)	PHE450RD5680J(1)
1600	650	0.082	9.0	18.5	26.0	22.5	1800	DM/D15	50	F450DM823J1K6(1)	PHE450RD5820J(1)
1600	650	0.10	10.5	19.0	26.0	22.5	1800	DR/D18	48	F450DR104J1K6(1)	PHE450RD6100J(1)
1600	650	0.12	11.0	21.5	26.0	22.5	1800	DT/D16	45	F450DT124J1K6(1)	PHE450RD6120J(1)
1600	650	0.15	13.5	23.0	26.0	22.5	1800	DW/D20	40	F450DW154J1K6(1)	PHE450RD6150J(1)
1600	650	0.18	13.5	23.0	26.0	22.5	1800	DW/D20	40	F450DW184J1K6(1)	PHE450RD6180J(1)
1600	650	0.22	15.5	24.5	26.0	22.5	1800	DY/D19	34	F450DY224J1K6(1)	PHE450RD6220J(1)
1600	650	0.082	10.5	20.5	31.5	27.5	1300	FE/F11	37	F450FE823J1K6(1)	PHE450RF5820J(1)
1600	650	0.10	10.5	20.5	31.5	27.5	1300	FE/F11	37	F450FE104J1K6(1)	PHE450RF6100J(1)
1600	650	0.10	21.0	12.5	31.5	27.5	1300	FH/F17	37	F450FH104J1K6(1)	PHE450RT6100J(1)
1600	650	0.12	10.5	20.5	31.5	27.5	1300	FE/F11	37	F450FE124J1K6(1)	PHE450RF6120J(1)
1600	650	0.15	11.5	22.5	31.5	27.5	1300	FG/F12	36	F450FG154J1K6(1)	PHE450RF6150J(1)
1600	650	0.18	13.5	23.0	31.5	27.5	1300	FK/F03	35	F450FK184J1K6(1)	PHE450RF6180J(1)
1600	650	0.22	14.5	24.5	31.5	27.5	1300	FM/F13	35	F450FM224J1K6(1)	PHE450RF6220J(1)
1600	650	0.22	27.5	16.0	31.5	27.5	1300	FQ/F19	35	F450FQ224J1K6(1)	PHE450RT6220J(1)
1600	650	0.27	17.5	28.0	31.5	27.5	1300	FR/F14	32	F450FR274J1K6(1)	PHE450RF6270J(1)
1600	650	0.33	19.0	29.0	31.5	27.5	1300	FS/F15	28	F450FS334J1K6(1)	PHE450RF6330J(1)
1600	650	0.33	31.0	19.0	31.5	27.5	1300	FT/F18	28	F450FT334J1K6(1)	PHE450RT6330J(1)
1600	650	0.39	21.0	30.0	31.5	27.5	1300	FV/F16	25	F450FV394J1K6(1)	PHE450RF6390J(1)
1600	650	0.18	13.0	24.0	41.0	37.5	800	RF/R05	27	F450RF184J1K6(1)	PHE450RR6180J(1)
1600	650	0.22	13.0	24.0	41.0	37.5	800	RF/R05	27	F450RF224J1K6(1)	PHE450RR6220J(1)
1600	650	0.27	13.0	24.0	41.0	37.5	800	RF/R05	27	F450RF274J1K6(1)	PHE450RR6270J(1)
1600	650	0.33	15.0	26.0	41.0	37.5	800	RH/R04	26	F450RH334J1K6(1)	PHE450RR6330J(1)
1600	650	0.39	16.5	32.0	41.0	37.5	800	RK/R02	24	F450RK394J1K6(1)	PHE450RR6390J(1)
1600	650	0.47	16.5	32.0	41.0	37.5	800	RK/R02	24	F450RK474J1K6(1)	PHE450RR6470J(1)
1600	650	0.56	16.5	32.0	41.0	37.5	800	RK/R02	20	F450RK564J1K6(1)	PHE450RR6560J(1)
1600	650	0.68	19.0	36.0	41.0	37.5	800	RM/R03	20	F450RM684J1K6(1)	PHE450RR6680J(1)
1600	650	0.82	21.0	38.0	41.0	37.5	800	RP/R06	18	F450RP824J1K6(1)	PHE450RR6820J(1)
1600	650	1.0	28.0	43.0	41.0	37.5	800	RS/R08	18	F450RS105J1K6(1)	PHE450RR7100JR08(1)
2000	700	0.0010	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD102J2K0(1)	PHE450SB4100J(1)
2000	700	0.0012	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD122J2K0(1)	PHE450SB4120J(1)
2000	700	0.0015	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD152J2K0(1)	PHE450SB4150J(1)
2000	700	0.0018	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD182J2K0(1)	PHE450SB4180J(1)
2000	700	0.0022	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD222J2K0(1)	PHE450SB4220J(1)
2000	700	0.0027	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD272J2K0(1)	PHE450SB4270J(1)
2000	700	0.0033	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD332J2K0(1)	PHE450SB4330J(1)
2000	700	0.0039	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD392J2K0(1)	PHE450SB4390J(1)
2000	700	0.0047	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD472J2K0(1)	PHE450SB4470J(1)
2000	700	0.0056	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD562J2K0(1)	PHE450SB4560J(1)
2000	700	0.0068	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD682J2K0(1)	PHE450SB4680J(1)
2000	700	0.0082	5.5	12.5	18.0	15	2500	BE/B05	92	F450BE822J2K0(1)	PHE450SB4820J(1)
2000	700	0.010	6.5	12.5	18.0	15	2500	BJ/B10	90	F450BJ103J2K0(1)	PHE450SB5100J(1)
2000	700	0.012	7.5	14.5	18.0	15	2500	BL/B06	80	F450BL123J2K0(1)	PHE450SB5120J(1)
2000	700	0.015	7.5	14.5	18.0	15	2500	BL/B06	80	F450BL153J2K0(1)	PHE450SB5150J(1)
2000	700	0.018	8.0	15.0	18.0	15	2500	BM/B12	75	F450BM183J2K0(1)	PHE450SB5180J(1)
2000	700	0.022	8.5	16.0	18.0	15	2500	BQ/B11	70	F450BQ223J2K0(1)	PHE450SB5220J(1)
2000	700	0.027	9.5	17.5	18.0	15	2500	BV/B14	61	F450BV273J2K0(1)	PHE450SB5270J(1)
2000	700	0.0033	6.5	14.5	26.0	22.5	1800	DD/D13	60	F450DD332J2K0(1)	PHE450SD4330J(1)
2000	700	0.0039	6.5	14.5	26.0	22.5	1800	DD/D13	60	F450DD392J2K0(1)	PHE450SD4390J(1)
2000	700	0.0047	6.5	14.5	26.0	22.5	1800	DD/D13	60	F450DD472J2K0(1)	PHE450SD4470J(1)
2000	700	0.0056	6.5	14.5	26.0	22.5	1800	DD/D13	60	F450DD562J2K0(1)	PHE450SD4560J(1)
2000	700	0.0068	6.5	14.5	26.0	22.5	1800	DD/D13	60	F450DD682J2K0(1)	PHE450SD4680J(1)
2000	700	0.0082	6.5	14.5	26.0	22.5	1800	DD/D13	60	F450DD822J2K0(1)	PHE450SD4820J(1)
2000	700	0.010	6.5	14.5	26.0	22.5	1800	DD/D13	60	F450DD103J2K0(1)	PHE450SD5100J(1)
2000	700	0.012	6.5	14.5	26.0	22.5	1800	DD/D13	60	F450DD123J2K0(1)	PHE450SD5120J(1)
VDC	VAC	Cap Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/ µs)	Size Code (New/Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Size Code (New/ Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number
			B	H	L						
2000	700	0.015	6.5	14.5	26.0	22.5	1800	DD/D13	60	F450DD153J2K0(1)	PHE450SD5150J(1)
2000	700	0.018	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD183J2K0(1)	PHE450SD5180J(1)
2000	700	0.022	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD223J2K0(1)	PHE450SD5220J(1)
2000	700	0.027	7.0	16.5	26.0	22.5	1800	DF/D17	55	F450DF273J2K0(1)	PHE450SD5270J(1)
2000	700	0.033	7.0	16.5	26.0	22.5	1800	DF/D17	55	F450DF333J2K0(1)	PHE450SD5330J(1)
2000	700	0.039	8.0	16.0	26.0	22.5	1800	DH/D14	53	F450DH393J2K0(1)	PHE450SD5390J(1)
2000	700	0.047	9.0	18.5	26.0	22.5	1800	DM/D15	52	F450DM473J2K0(1)	PHE450SD5470J(1)
2000	700	0.056	10.5	19.0	26.0	22.5	1800	DR/D18	50	F450DR563J2K0(1)	PHE450SD5560J(1)
2000	700	0.068	11.0	21.5	26.0	22.5	1800	DT/D16	45	F450DT683J2K0(1)	PHE450SD5680J(1)
2000	700	0.082	11.0	21.5	26.0	22.5	1800	DT/D16	45	F450DT823J2K0(1)	PHE450SD5820J(1)
2000	700	0.10	13.5	23.0	26.0	22.5	1800	DW/D20	40	F450DW104J2K0(1)	PHE450SD6100J(1)
2000	700	0.12	15.5	24.5	26.0	22.5	1800	DY/D19	35	F450DY124J2K0(1)	PHE450SD6120J(1)
2000	700	0.047	10.5	20.5	31.5	27.5	1300	FE/F11	37	F450FE473J2K0(1)	PHE450SF5470J(1)
2000	700	0.056	10.5	20.5	31.5	27.5	1300	FE/F11	37	F450FE563J2K0(1)	PHE450SF5560J(1)
2000	700	0.056	21.0	12.5	31.5	27.5	1300	FH/F17	37	F450FH563J2K0(1)	PHE450ST5560J(1)
2000	700	0.068	10.5	20.5	31.5	27.5	1300	FE/F11	36	F450FE683J2K0(1)	PHE450SF5680J(1)
2000	700	0.082	10.5	20.5	31.5	27.5	1300	FE/F11	35	F450FE823J2K0(1)	PHE450SF5820J(1)
2000	700	0.10	11.5	22.5	31.5	27.5	1300	FG/F12	34	F450FG104J2K0(1)	PHE450SF6100JF12(1)
2000	700	0.12	13.5	23.0	31.5	27.5	1300	FK/F03	32	F450FK124J2K0(1)	PHE450SF6120JF03(1)
2000	700	0.12	27.5	16.0	31.5	27.5	1300	FQ/F19	32	F450FQ124J2K0(1)	PHE450ST6120J(1)
2000	700	0.15	14.5	24.5	31.5	27.5	1300	FM/F13	30	F450FM154J2K0(1)	PHE450SF6150JF13(1)
2000	700	0.18	17.5	28.0	31.5	27.5	1300	FR/F14	28	F450FR184J2K0(1)	PHE450SF6180JF14(1)
2000	700	0.18	31.0	19.0	31.5	27.5	1300	FT/F18	28	F450FT184J2K0(1)	PHE450ST6180J(1)
2000	700	0.22	19.0	29.0	31.5	27.5	1300	FS/F15	26	F450FS224J2K0(1)	PHE450SF6220JF15(1)
2000	700	0.27	21.0	30.0	31.5	27.5	1300	FV/F16	25	F450FV274J2K0(1)	PHE450SF6270JF16(1)
2000	700	0.10	13.0	24.0	41.0	37.5	800	RF/R05	27	F450RF104J2K0(1)	PHE450SR6100J(1)
2000	700	0.12	13.0	24.0	41.0	37.5	800	RF/R05	27	F450RF124J2K0(1)	PHE450SR6120J(1)
2000	700	0.15	13.0	24.0	41.0	37.5	800	RF/R05	26	F450RF154J2K0(1)	PHE450SR6150JR05(1)
2000	700	0.18	13.0	24.0	41.0	37.5	800	RF/R05	26	F450RF184J2K0(1)	PHE450SR6180JR05(1)
2000	700	0.22	15.0	26.0	41.0	37.5	800	RH/R04	24	F450RH224J2K0(1)	PHE450SR6220JR04(1)
2000	700	0.27	16.5	32.0	41.0	37.5	800	RK/R02	22	F450RK274J2K0(1)	PHE450SR6270JR02(1)
2000	700	0.33	16.5	32.0	41.0	37.5	800	RK/R02	22	F450RK334J2K0(1)	PHE450SR6330JR02(1)
2000	700	0.39	19.0	36.0	41.0	37.5	800	RM/R03	18	F450RM394J2K0(1)	PHE450SR6390JR03(1)
2000	700	0.47	19.0	36.0	41.0	37.5	800	RM/R03	18	F450RM474J2K0(1)	PHE450SR6470JR03(1)
2000	700	0.56	21.0	38.0	41.0	37.5	800	RP/R06	18	F450RP564J2K0(1)	PHE450SR6560JR06(1)
2000	700	0.68	28.0	43.0	41.0	37.5	800	RS/R08	18	F450RS684J2K0(1)	PHE450SR6680JR08(1)
2500	900	0.0010	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD102J2K5(1)	PHE450TB4100J(1)
2500	900	0.0012	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD122J2K5(1)	PHE450TB4120J(1)
2500	900	0.0015	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD152J2K5(1)	PHE450TB4150J(1)
2500	900	0.0018	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD182J2K5(1)	PHE450TB4180J(1)
2500	900	0.0022	5.5	12.5	18.0	15	2500	BE/B05	92	F450BE222J2K5(1)	PHE450TB4220J(1)
2500	900	0.0027	6.5	12.5	18.0	15	2500	BJ/B10	90	F450BJ272J2K5(1)	PHE450TB4270J(1)
2500	900	0.0033	7.5	14.5	18.0	15	2500	BL/B06	80	F450BL332J2K5(1)	PHE450TB4330J(1)
2500	900	0.0039	7.5	14.5	18.0	15	2500	BL/B06	80	F450BL392J2K5(1)	PHE450TB4390J(1)
2500	900	0.0047	8.0	15.0	18.0	15	2500	BM/B12	75	F450BM472J2K5(1)	PHE450TB4470J(1)
2500	900	0.0056	8.5	16.0	18.0	15	2500	BQ/B11	70	F450BQ562J2K5(1)	PHE450TB4560J(1)
2500	900	0.0068	9.5	17.5	18.0	15	2500	BV/B14	60	F450BV682J2K5(1)	PHE450TB4680JB14(1)
2500	900	0.0082	9.5	17.5	18.0	15	2500	BV/B14	60	F450BV822J2K5(1)	PHE450TB4820J(1)
2500	900	0.010	11.0	19.0	18.0	15	2500	BY/B16	55	F450BY103J2K5(1)	PHE450TB5100JB16(1)
2500	900	0.0047	6.5	14.5	26.0	22.5	1800	DD/D13	60	F450DD472J2K5(1)	PHE450TD4470J(1)
2500	900	0.0056	6.5	14.5	26.0	22.5	1800	DD/D13	60	F450DD562J2K5(1)	PHE450TD4560J(1)
2500	900	0.0068	6.5	14.5	26.0	22.5	1800	DD/D13	60	F450DD682J2K5(1)	PHE450TD4680J(1)
2500	900	0.0082	6.5	14.5	26.0	22.5	1800	DD/D13	55	F450DD822J2K5(1)	PHE450TD4820JD13(1)
2500	900	0.010	7.0	16.5	26.0	22.5	1800	DF/D17	53	F450DF103J2K5(1)	PHE450TD5100JD17(1)
2500	900	0.012	8.0	16.0	26.0	22.5	1800	DH/D14	52	F450DH123J2K5(1)	PHE450TD5120JD14(1)
2500	900	0.015	9.0	18.5	26.0	22.5	1800	DM/D15	52	F450DM153J2K5(1)	PHE450TD5150J(1)
2500	900	0.018	9.0	18.5	26.0	22.5	1800	DM/D15	50	F450DM183J2K5(1)	PHE450TD5180JD15(1)
2500	900	0.022	10.5	19.0	26.0	22.5	1800	DR/D18	48	F450DR223J2K5(1)	PHE450TD5220JD18(1)
2500	900	0.027	11.0	21.5	26.0	22.5	1800	DT/D16	45	F450DT273J2K5(1)	PHE450TD5270JD16(1)
VDC	VAC	Cap Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/ µs)	Size Code (New/Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Size Code (New/ Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number
			B	H	L						
2500	900	0.033	13.5	23.0	26.0	22.5	1800	DW/D20	38	F450DW333J2K5(1)	PHE450TD5330JD20(1)
2500	900	0.039	13.5	23.0	26.0	22.5	1800	DW/D20	38	F450DW393J2K5(1)	PHE450TD5390JD20(1)
2500	900	0.047	15.5	24.5	26.0	22.5	1800	DY/D19	35	F450DY473J2K5(1)	PHE450TD5470JD19(1)
2500	900	0.027	10.5	20.5	31.5	27.5	1300	FE/F11	38	F450FE273J2K5(1)	PHE450TF5270JF11(1)
2500	900	0.033	10.5	20.5	31.5	27.5	1300	FE/F11	38	F450FE333J2K5(1)	PHE450TF5330JF11(1)
2500	900	0.039	11.5	22.5	31.5	27.5	1300	FG/F12	36	F450FG393J2K5(1)	PHE450TF5390JF12(1)
2500	900	0.047	13.5	23.0	31.5	27.5	1300	FK/F03	35	F450FK473J2K5(1)	PHE450TF5470JF03(1)
2500	900	0.056	13.5	23.0	31.5	27.5	1300	FK/F03	35	F450FK563J2K5(1)	PHE450TF5560JF03(1)
2500	900	0.068	14.5	24.5	31.5	27.5	1300	FM/F13	34	F450FM683J2K5(1)	PHE450TF5680JF13(1)
2500	900	0.027	17.5	28.0	31.5	27.5	1300	FR/F14	30	F450FR273J2K5(1)	PHE450TF5270JF14(1)
2500	900	0.10	19.0	29.0	31.5	27.5	1300	FS/F15	28	F450FS104J2K5(1)	PHE450TF6100JF15(1)
2500	900	0.12	21.0	30.0	31.5	27.5	1300	FV/F16	25	F450FV124J2K5(1)	PHE450TF6120JF16(1)
2500	900	0.068	13.0	24.0	41.0	37.5	800	RF/R05	28	F450RF683J2K5(1)	PHE450TR5680JR05(1)
2500	900	0.082	13.0	24.0	41.0	37.5	800	RF/R05	28	F450RF823J2K5(1)	PHE450TR5820JR05(1)
2500	900	0.10	15.0	26.0	41.0	37.5	800	RH/R04	27	F450RH104J2K5(1)	PHE450TR6100JR04(1)
2500	900	0.12	15.0	26.0	41.0	37.5	800	RH/R04	27	F450RH124J2K5(1)	PHE450TR6120JR04(1)
2500	900	0.15	16.5	32.0	41.0	37.5	800	RK/R02	25	F450RK154J2K5(1)	PHE450TR6150JR02(1)
2500	900	0.18	19.0	36.0	41.0	37.5	800	RM/R03	20	F450RM184J2K5(1)	PHE450TR6180JR03(1)
2500	900	0.22	19.0	36.0	41.0	37.5	800	RM/R03	20	F450RM224J2K5(1)	PHE450TR6220JR03(1)
2500	900	0.22	21.0	38.0	41.0	37.5	800	RP/R06	19	F450RP224J2K5(1)	PHE450TR6220J(1)
2500	900	0.27	21.0	38.0	41.0	37.5	800	RP/R06	19	F450RP274J2K5(1)	PHE450TR6270JR06(1)
2500	900	0.33	28.0	43.0	41.0	37.5	800	RS/R08	19	F450RS334J2K5(1)	PHE450TR6330JR08(1)
3000	1000	0.0010	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD102J3K0(1)	PHE450XB4100JB04(1)
3000	1000	0.0012	5.5	10.5	18.0	15	2500	BD/B04	98	F450BD122J3K0(1)	PHE450XB4120JB04(1)
3000	1000	0.0015	5.5	12.5	18.0	15	2500	BE/B05	92	F450BE152J3K0(1)	PHE450XB4150JB05(1)
3000	1000	0.0018	5.5	12.5	18.0	15	2500	BE/B05	90	F450BE182J3K0(1)	PHE450XB4180JB05(1)
3000	1000	0.0022	6.5	12.5	18.0	15	2500	BJ/B10	87	F450BJ222J3K0(1)	PHE450XB4220JB10(1)
3000	1000	0.0027	7.5	14.5	18.0	15	2500	BL/B06	80	F450BL272J3K0(1)	PHE450XB4270JB06(1)
3000	1000	0.0033	8.0	15.0	18.0	15	2500	BM/B12	75	F450BM332J3K0(1)	PHE450XB4330JB12(1)
3000	1000	0.0039	8.5	16.0	18.0	15	2500	BQ/B11	70	F450BQ392J3K0(1)	PHE450XB4390JB11(1)
3000	1000	0.0047	9.5	17.5	18.0	15	2500	BV/B14	61	F450BV472J3K0(1)	PHE450XB4470JB14(1)
3000	1000	0.0056	9.5	17.5	18.0	15	2500	BV/B14	60	F450BV562J3K0(1)	PHE450XB4560JB14(1)
3000	1000	0.0068	11.0	19.0	18.0	15	2500	BY/B16	55	F450BY682J3K0(1)	PHE450XB4680JB16(1)
3000	1000	0.0047	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD472J3K0(1)	PHE450XD4470JD13(1)
3000	1000	0.0056	6.5	14.5	26.0	22.5	1800	DD/D13	58	F450DD562J3K0(1)	PHE450XD4560JD13(1)
3000	1000	0.0068	7.0	16.5	26.0	22.5	1800	DF/D17	55	F450DF682J3K0(1)	PHE450XD4680JD17(1)
3000	1000	0.0082	8.0	16.0	26.0	22.5	1800	DH/D14	54	F450DH822J3K0(1)	PHE450XD4820JD14(1)
3000	1000	0.010	9.0	18.5	26.0	22.5	1800	DM/D15	50	F450DM103J3K0(1)	PHE450XD5100JD15(1)
3000	1000	0.012	10.5	19.0	26.0	22.5	1800	DR/D18	49	F450DR123J3K0(1)	PHE450XD5120JD18(1)
3000	1000	0.015	11.0	21.5	26.0	22.5	1800	DT/D16	44	F450DT153J3K0(1)	PHE450XD5150JD16(1)
3000	1000	0.018	11.0	21.5	26.0	22.5	1800	DT/D16	44	F450DT183J3K0(1)	PHE450XD5180JD16(1)
3000	1000	0.022	13.5	23.0	26.0	22.5	1800	DW/D20	38	F450DW223J3K0(1)	PHE450XD5220JD20(1)
3000	1000	0.027	15.5	24.5	26.0	22.5	1800	DY/D19	35	F450DY273J3K0(1)	PHE450XD5270JD19(1)
3000	1000	0.033	15.5	24.5	26.0	22.5	1800	DY/D19	35	F450DY333J3K0(1)	PHE450XD5330JD19(1)
VDC	VAC	Cap Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/ µs)	Size Code (New/Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.

Soldering Process

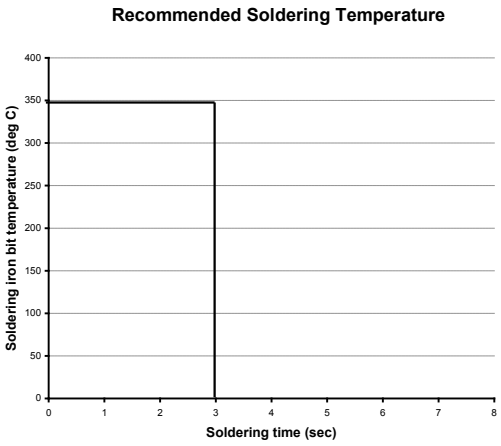
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

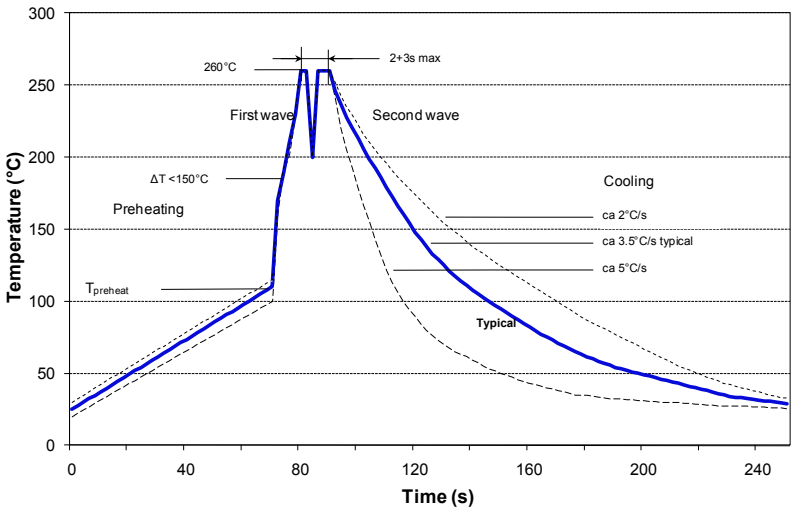
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

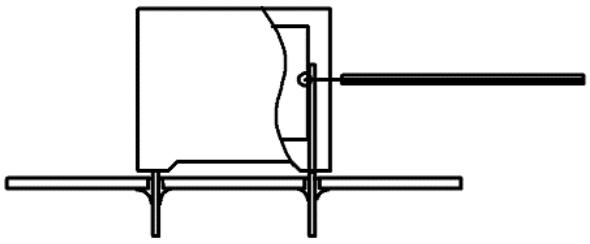
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



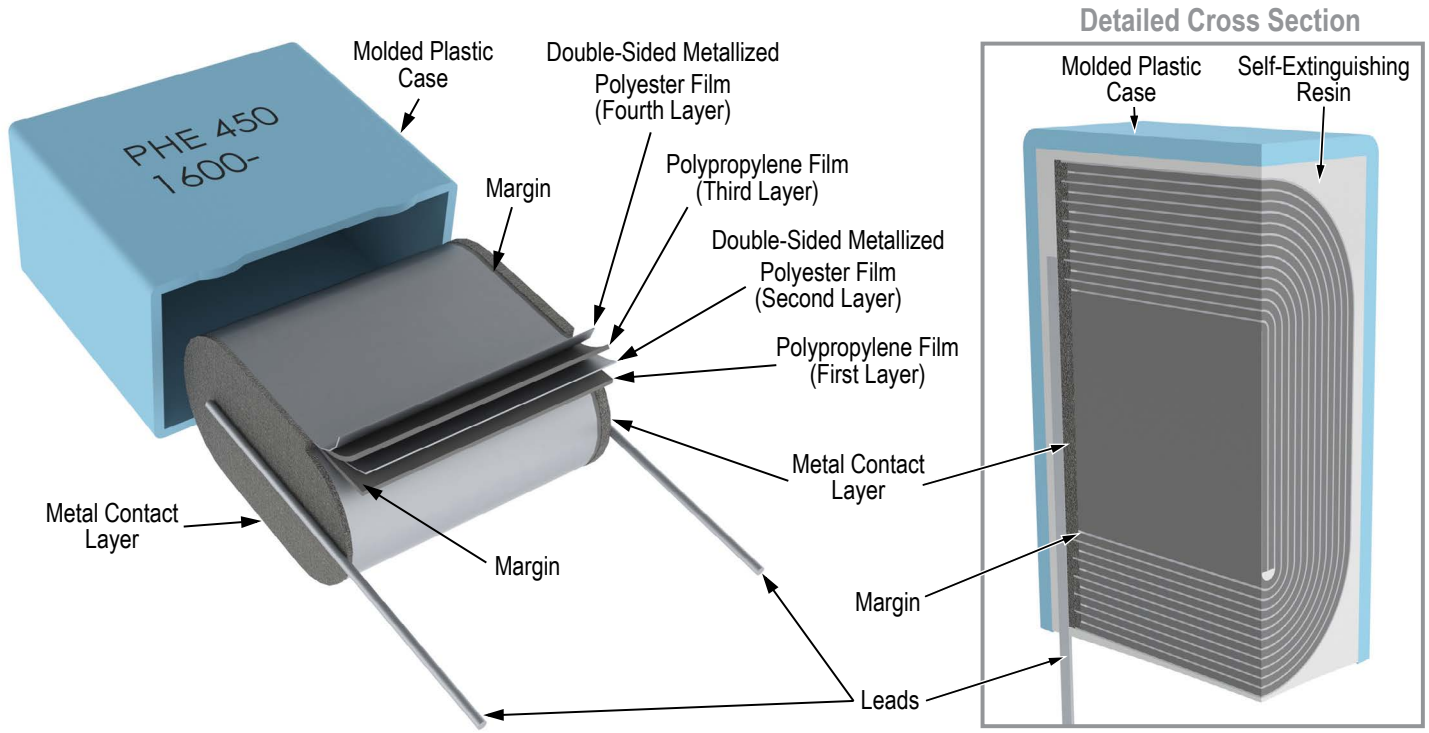
Temperature monitored inside the capacitor.

Selective Soldering Recommendations

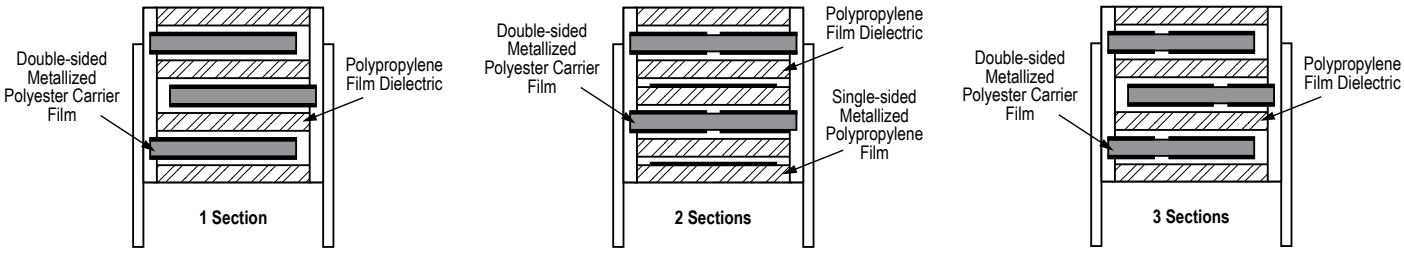
Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

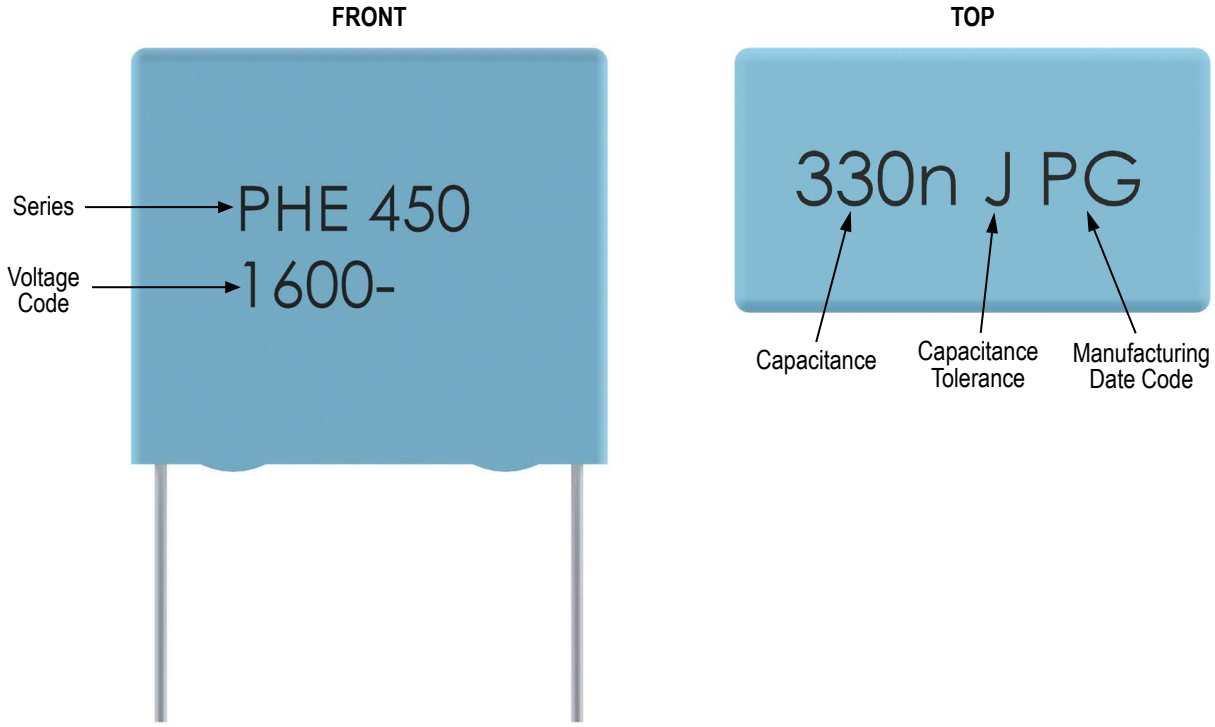
Construction



Winding Schemes



Marking



Packaging Quantities

KEMET Size Code	Legacy Size	Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 360 mm	Large Reel ø 500 mm	Ammo	Pizza	Std Reel Formed	Ammo Formed
KE	K00	7.5	2.5	6	10	2000	2000	2500	5000	3000			
KG	K01		4	8	10	1000	1000	1700	3400	1900			
KK	K03		5	11	10	1000	1000	1300	2600	1500			
KM	K04		6	12	10	1000	1000	1000	2000	1200			
AG	A01	10	4	9	13	1000	1000	900	1800				780
AH	A02		4.5	10.5	13	1000	1000	800	1600				
AK	A03		5	11	13	800	800	700	1400				
AP	A04		6	12	13	600	600	500	1000				520
AL	A05		9.5	7.5	13	600	600	350	700				
AE	A06		4	8	13	1000	1000	900	1800				

R73 Series Polypropylene Film/Foil, Radial (Automotive Grade)

Overview

The R73 Series is constructed of polypropylene film and metal foil or metallized film and metal foil with radial leads of tinned wire. The radial leads are electrically welded to the metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a self-extinguishing solvent resistant plastic case with thermosetting resin material meeting the UL 94V–0 requirements. Two different winding constructions are used depending on voltage parameters. Please see the Performance Characteristics for more information.

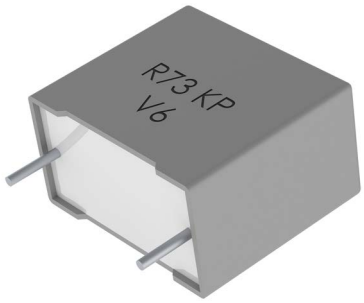
Automotive grade devices are available (up to lead spacing 22.5 mm) and meet the demanding Automotive Electronics Council's AEC–Q200 qualification requirements.

Applications

Typical applications include deflection circuits in televisions (flyback tuning), switching spikes suppression in switched mode power supply (SMPS), snubber and silicon-controlled rectifier (SCR) commutation circuits, and switching circuits in electronic ballasts, as well as applications with high voltage and very high current. Not suitable for across-the-line application (see Suppressor Capacitors).

Benefits

- Voltage range: 100 – 2,000 VDC
- Capacitance range: 100 pF – 2.2 µF
- Lead Spacing: 15 – 37.5 mm
- Capacitance tolerance: ±2.5% (for 2-section construction only) ±5%, ±10%
- Climatic category: 55/105/56 IEC 60068-1
- Operating temperature range of -55˚C to +105˚C
- RoHS compliance and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–2
- Self-healing
- Automotive (AEC–Q200) grades available up to lead spacing 22.5mm



Part Number System

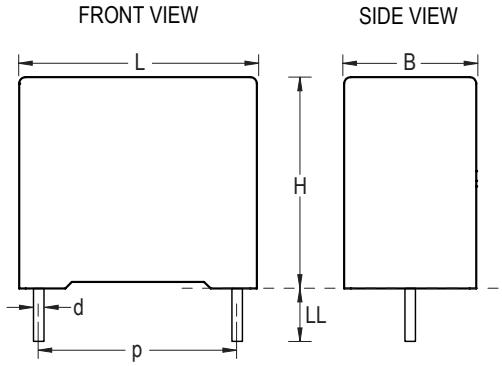
R73	E	I	2470	AA	00	H
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Packaging	Internal Use	Capacitance Tolerance
Polypropylene Film/ Foil	E = 100 G = 160 I = 250 M = 400 P = 630 Q = 1000 R = 1250 T = 1600 U = 2000	I = 15.0 N = 22.5 R = 27.5 W = 37.5	The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.	See Ordering Options Table	00, 10, 30, 40 (Standard)	H = ±2.5% (for 2-section construction only) J = ±5% K = ±10%

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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
15 22.5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	SE
	Ammo Pack	H_0= 18.5 +/-0.5	DQ
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel)	H_0=18.5 +/- 0.5	GY
	Tape & Reel (Large Reel)	H_0=18.5 +/- 0.5	CK
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag)–Long Leads	25 +2/-1	50
27.5	**Standard Lead and Packaging Options**		
	Bulk (Tray) – Straight Leads	4 +2/-0	SE
	Other Lead and Packaging Options		
	Tape & Reel (Large Reel)	H_0=18.5 +/-0.5	CK
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag) – Long Leads	25 +2/-1	50
37.5	**Standard Lead and Packaging Options**		
	Bulk (Tray) – Straight Leads	4 +2/-0	SE
	Other Lead and Packaging Options		
	Bulk (Bag)–Short Leads	3.5 +0.5/-0	JB
	Bulk (Bag)–Short Leads	4.0 +0.5/-0	JE
	Bulk (Bag)–Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Bag)–Long Leads	18 +1/-1	JM
	Bulk (Bag)–Long Leads	30 +5/-0	40
	Bulk (Bag) – Long Leads	25 +2/-1	50

Dimensions – Millimeters



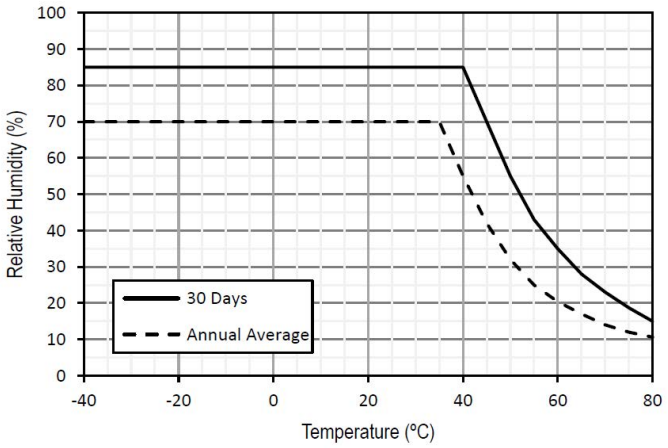
p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
15.0	+/- 0.4	5.0	+0.2	11.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	6.0	+0.2	12.0	+0.1	18.0	+0.3	0.8	+/- 0.05
15.0	+/- 0.4	7.5	+0.2	13.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	8.5	+0.2	14.5	+0.1	18.0	+0.5	0.8	+/- 0.05
15.0	+/- 0.4	10.0	+0.2	16.0	+0.1	18.0	+0.5	0.8	+/- 0.05
22.5	+/- 0.4	6.0	+0.2	15.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	7.0	+0.2	16.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	8.5	+0.2	17.0	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	10.0	+0.2	18.5	+0.1	26.5	+0.3	0.8	+/- 0.05
22.5	+/- 0.4	11.0	+0.2	20.0	+0.1	26.5	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	9.0	+0.2	17.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	11.0	+0.2	20.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	13.0	+0.2	22.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	13.0	+0.2	25.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	14.0	+0.2	28.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	18.0	+0.2	33.0	+0.1	32.0	+0.3	0.8	+/- 0.05
27.5	+/- 0.4	22.0	+0.2	37.0	+0.1	32.0	+0.3	0.8	+/- 0.05
37.5	+/- 0.4	11.0	+0.3	22.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	13.0	+0.3	24.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	16.0	+0.3	28.5	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	19.0	+0.3	32.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	20.0	+0.3	40.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	24.0	+0.3	44.0	+0.1	41.5	+0.3	1.0	+/- 0.05
37.5	+/- 0.4	30.0	+0.3	45.0	+0.1	41.5	+0.3	1.0	+/- 0.05

Note: See Ordering Options Table for lead length (LL/Ho) options.

Performance Characteristics

Dielectric	Polypropylene film								
Plates	Metal foil for 1 section, metal foil + metallized film for 2 sections								
Winding	Non-inductive type								
Leads	Tinned wire								
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.								
Related Documents	IEC 60384-13								
Sections	1				2				
Voltage Range (VDC)	100	160	250	400	630	1000	1250	1600	2000
Voltage Range (VAC)	63	90	125	160	300	400	450	450	500
Capacitance Range (µF)	0.047 – 0.15	0.033 – 0.1	0.015 – 0.047	0.01 – 0.047	0.01 – 2.2	0.0033 – 1.5	0.0022 – 0.82	0.001 – 0.56	0.0001 – 0.22
Capacitance Values	E6/E12 series (IEC 60063) measured @ 1kHz and +20 ±1°C								
Capacitance Tolerance	±5%, ±10%, ±2.5% only for 2 sections								
Category Temperature Range	-55°C to +105°C								
Rated Temperature T_R	+85°C								
Voltage Derating	Above +85°C DC and AC voltage derating is 1.25%/°C								
Climatic Category	55/105/56 IEC 60068-1								
Storage Conditions	Storage time: ≤ 24 months from the date marked on the label package								
	Average relative humidity per year ≤ 70%								
	RH ≤ 85% for 30 days randomly distributed throughout the year								
	Dew is absent								
	Temperature: -40 to 80°C (see "Maximum Humidity in Storage Conditions" graph below)								

Maximum Humidity in Storage Conditions



Performance Characteristics cont'd

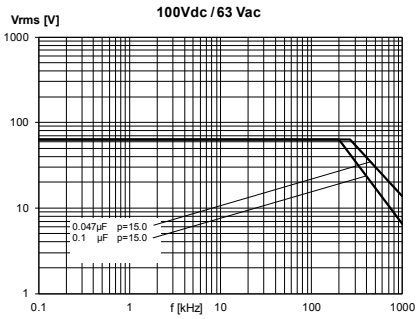
Test Voltage	2.5 x V_R VDC for 2s (between terminations) @ +25°C ±5°C (1 section) 2 x V_R VDC for 2s (between terminations) @ +25°C ±5°C (2 sections)				
Capacitance Drift	Maximum 0.5% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%				
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp<V_R), the specified dv/dt can be multiplied by the factor V_R/Vpp				
Temperature Coefficient	-(150 ±70) ppm/°C at 1 kHz				
Self Inductance (Lead Length ~ 2 mm)	Lead Spacing (mm)	15	22.5	27.5	37.5
	L (nH) ≈	10	18	18	20
	Maximum 1 nH per 1 mm lead and capacitor length.				
Dissipation Factor tanδ	Measured at 25°C ± 5°C				
	Frequency	C ≤ 0.1 µF	0.1 µF < C ≤ 1 µF	C > 1 µF	
	1 kHz	0.03%	0.03%	0.03%	
	10 kHz	0.04%	0.06%	–	
	100 kHz	0.10%	–	–	
Insulation Resistance	Measured at +25°C, 100 VDC 60 seconds				
	Minimum Values Between Terminals				
	C ≤ 0.33 µF		C > 0.33 µF		
	≥ 100,000 MΩ (≥ 500,000 MΩ)*		≥ 30,000 MΩ • µF (≥ 150,000 MΩ • µF)*		

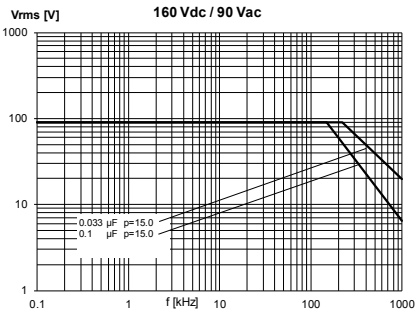
** typical value*

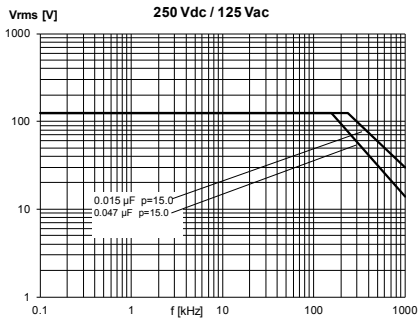
Qualification

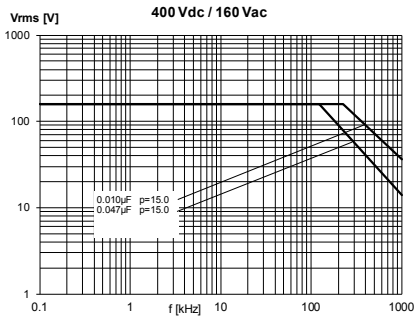
Automotive Grade products meet or exceed the requirements outlined by the Automotive Electronics Council. Details regarding test methods and conditions are referenced in document AEC–Q200, Stress Test Qualification for Passive Components. For additional information regarding the Automotive Electronics Council and AEC–Q200, please visit their website at www.aecouncil.com.

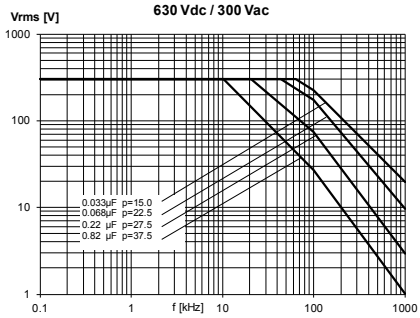
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40ºC)

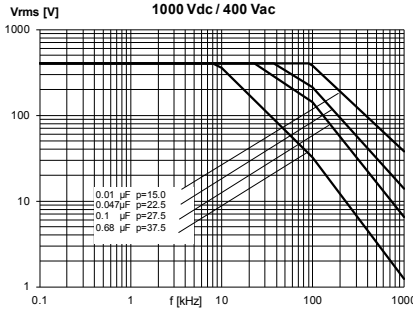


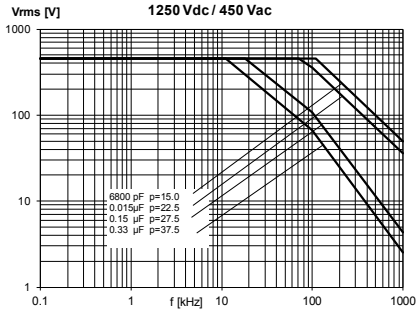


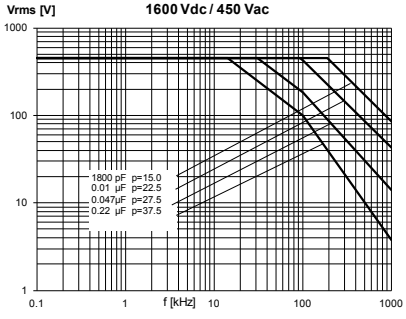


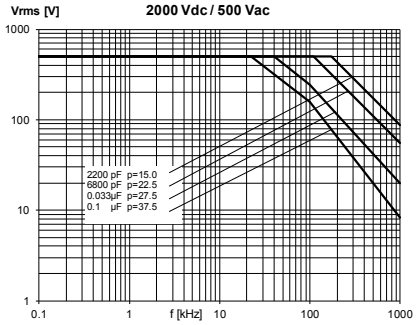




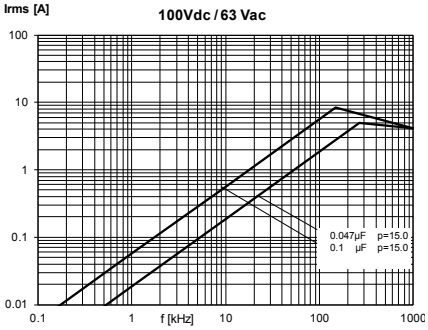


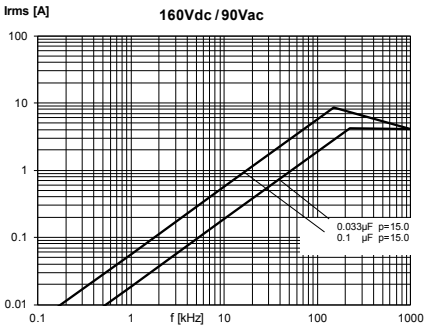


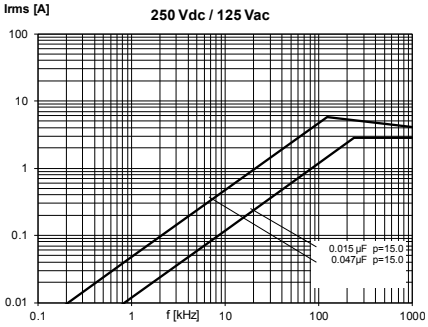


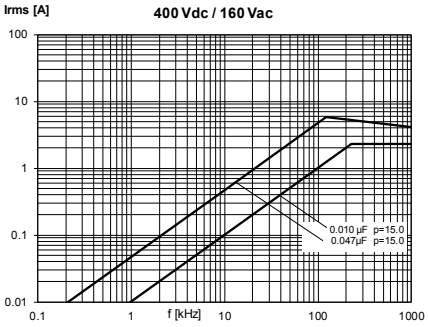


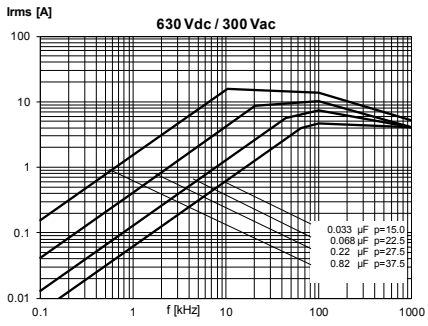
Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ 40ºC)

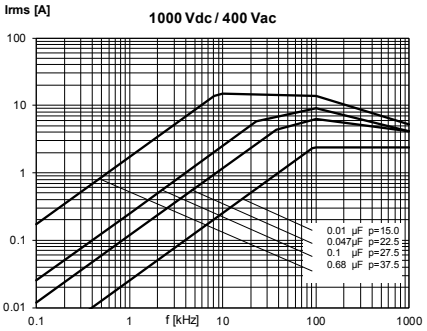


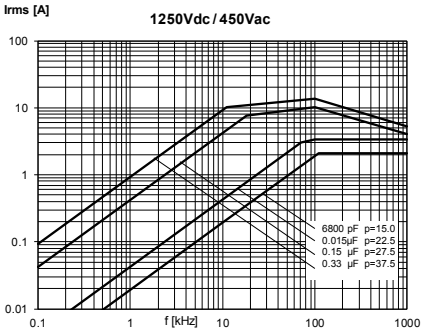


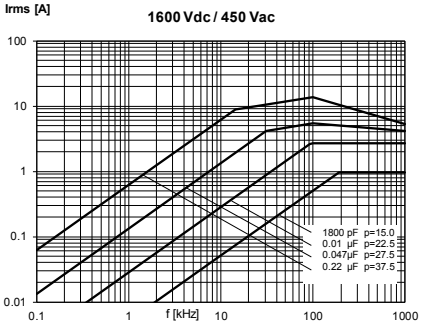


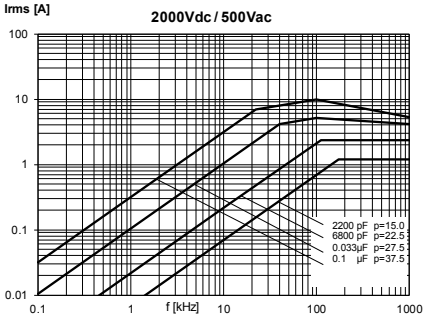












Environmental Test Data

Damp Heat, Steady State Test	Test Conditions:		Performances
	Temperature: Relative humidity (RH): Test duration:	+40°C ± 2°C 93% ± 2% 56 days	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.0005 @ 1 kHz IR after test ≥ 50% of initial limit
Endurance Test	**Test Conditions**		**Performances**
	Temperature: Voltage applied: Test duration:	+85°C ±2°C 1.5 x V_R (DC) 1,000 hours	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.0005 @ 1 kHz IR after test ≥ 50% of initial limit
Resistance to Soldering Heat Test	**Test Conditions**		**Performances**
	Solder bath temperature: Dipping time (with heat screen):	260°C ±5°C 10 seconds ±1 second	|Δ C/C| ≤ 1%, Δ tanδ ≤ 0.003 @ 1 kHz IR after test ≥ initial limit

Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
100	63	0.047	5.0	11.0	18.0	15.0	2,400	480,000	73EI2470(1)00(2)	R73EI2470(1)00(2)
100	63	0.068	6.0	12.0	18.0	15.0	2,400	480,000	73EI2680(1)00(2)	R73EI2680(1)00(2)
100	63	0.10	7.5	13.5	18.0	15.0	2,400	480,000	73EI3100(1)00(2)	R73EI3100(1)00(2)
100	63	0.15	10.0	16.0	18.0	15.0	2,400	480,000	73EI3150(1)00(2)	R73EI3150(1)00(2)
160	90	0.033	5.0	11.0	18.0	15.0	3,000	960,000	73GI2330(1)00(2)	R73GI2330(1)00(2)
160	90	0.047	6.0	12.0	18.0	15.0	3,000	960,000	73GI2470(1)00(2)	R73GI2470(1)00(2)
160	90	0.068	7.5	13.5	18.0	15.0	3,000	960,000	73GI2680(1)00(2)	R73GI2680(1)00(2)
160	90	0.10	10.0	16.0	18.0	15.0	3,000	960,000	73GI3100(1)00(2)	R73GI3100(1)00(2)
250	125	0.015	5.0	11.0	18.0	15.0	4,800	2,400,000	73II2150(1)00(2)	R73II2150(1)00(2)
250	125	0.022	6.0	12.0	18.0	15.0	4,800	2,400,000	73II2220(1)00(2)	R73II2220(1)00(2)
250	125	0.033	7.5	13.5	18.0	15.0	4,800	2,400,000	73II2330(1)00(2)	R73II2330(1)00(2)
250	125	0.047	10.0	16.0	18.0	15.0	4,800	2,400,000	73II2470(1)00(2)	R73II2470(1)00(2)
400	160	0.010	5.0	11.0	18.0	15.0	6,000	4,800,000	73MI2100(1)00(2)	R73MI2100(1)00(2)
400	160	0.015	6.0	12.0	18.0	15.0	6,000	4,800,000	73MI2150(1)00(2)	R73MI2150(1)00(2)
400	160	0.022	7.5	13.5	18.0	15.0	6,000	4,800,000	73MI2220(1)00(2)	R73MI2220(1)00(2)
400	160	0.033	8.5	14.5	18.0	15.0	6,000	4,800,000	73MI2330(1)00(2)	R73MI2330(1)00(2)
400	160	0.047	10.0	16.0	18.0	15.0	6,000	4,800,000	73MI2470(1)00(2)	R73MI2470(1)00(2)
630	300	0.010	5.0	11.0	18.0	15.0	11,000	13,860,000	73PI2100(1)00(2)	R73PI2100(1)00(2)
630	300	0.012	5.0	11.0	18.0	15.0	11,000	13,860,000	73PI2120(1)00(2)	R73PI2120(1)00(2)
630	300	0.015	6.0	12.0	18.0	15.0	11,000	13,860,000	73PI2150(1)00(2)	R73PI2150(1)00(2)
630	300	0.018	6.0	12.0	18.0	15.0	11,000	13,860,000	73PI2180(1)00(2)	R73PI2180(1)00(2)
630	300	0.022	7.5	13.5	18.0	15.0	11,000	13,860,000	73PI2220(1)00(2)	R73PI2220(1)00(2)
630	300	0.027	7.5	13.5	18.0	15.0	11,000	13,860,000	73PI2270(1)00(2)	R73PI2270(1)00(2)
630	300	0.033	8.5	14.5	18.0	15.0	11,000	13,860,000	73PI2330(1)00(2)	R73PI2330(1)00(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
630	300	0.039	10.0	16.0	18.0	15.0	11,000	13,860,000	73PI2390(1)00(2)	R73PI2390(1)00(2)
630	300	0.047	10.0	16.0	18.0	15.0	11,000	13,860,000	73PI2470(1)00(2)	R73PI2470(1)00(2)
630	300	0.039	6.0	15.0	26.5	22.5	11,000	13,860,000	73PN2390(1)00(2)	R73PN2390(1)00(2)
630	300	0.047	7.0	16.0	26.5	22.5	11,000	13,860,000	73PN2470(1)00(2)	R73PN2470(1)00(2)
630	300	0.056	7.0	16.0	26.5	22.5	11,000	13,860,000	73PN2560(1)00(2)	R73PN2560(1)00(2)
630	300	0.068	8.5	17.0	26.5	22.5	11,000	13,860,000	73PN2680(1)00(2)	R73PN2680(1)00(2)
630	300	0.082	10.0	18.5	26.5	22.5	11,000	13,860,000	73PN2820(1)00(2)	R73PN2820(1)00(2)
630	300	0.10	10.0	18.5	26.5	22.5	11,000	13,860,000	73PN3100(1)00(2)	R73PN3100(1)00(2)
630	300	0.10	9.0	17.0	32.0	27.5	11,000	13,860,000	73PR3100(1)00(2)	R73PR3100(1)00(2)
630	300	0.12	9.0	17.0	32.0	27.5	11,000	13,860,000	73PR3120(1)00(2)	R73PR3120(1)00(2)
630	300	0.15	11.0	20.0	32.0	27.5	11,000	13,860,000	73PR3150(1)00(2)	R73PR3150(1)00(2)
630	300	0.18	11.0	20.0	32.0	27.5	11,000	13,860,000	73PR3180(1)10(2)	R73PR3180(1)10(2)
630	300	0.18	13.0	22.0	32.0	27.5	11,000	13,860,000	73PR3180(1)00(2)	R73PR3180(1)00(2)
630	300	0.22	13.0	22.0	32.0	27.5	11,000	13,860,000	73PR3220(1)00(2)	R73PR3220(1)00(2)
630	300	0.27	13.0	25.0	32.0	27.5	11,000	13,860,000	73PR3270(1)10(2)	R73PR3270(1)10(2)
630	300	0.33	14.0	28.0	32.0	27.5	11,000	13,860,000	73PR3330(1)00(2)	R73PR3330(1)00(2)
630	300	0.39	14.0	28.0	32.0	27.5	11,000	13,860,000	73PR3390(1)10(2)	R73PR3390(1)10(2)
630	300	0.39	18.0	33.0	32.0	27.5	11,000	13,860,000	73PR3390(1)00(2)	R73PR3390(1)00(2)
630	300	0.47	18.0	33.0	32.0	27.5	11,000	13,860,000	73PR3470(1)00(2)	R73PR3470(1)00(2)
630	300	0.56	18.0	33.0	32.0	27.5	11,000	13,860,000	73PR3560(1)10(2)	R73PR3560(1)10(2)
630	300	0.56	22.0	37.0	32.0	27.5	11,000	13,860,000	73PR3560(1)00(2)	R73PR3560(1)00(2)
630	300	0.68	22.0	37.0	32.0	27.5	11,000	13,860,000	73PR3680(1)00(2)	R73PR3680(1)00(2)
630	300	0.82	22.0	37.0	32.0	27.5	11,000	13,860,000	73PR3820(1)10(2)	R73PR3820(1)10(2)
630	300	0.22	11.0	22.0	41.5	37.5	3,000	3,780,000	73PW3220(1)00(2)	R73PW3220(1)00(2)
630	300	0.27	11.0	22.0	41.5	37.5	3,000	3,780,000	73PW3270(1)00(2)	R73PW3270(1)00(2)
630	300	0.33	11.0	22.0	41.5	37.5	3,000	3,780,000	73PW3330(1)10(2)	R73PW3330(1)10(2)
630	300	0.33	13.0	24.0	41.5	37.5	3,000	3,780,000	73PW3330(1)00(2)	R73PW3330(1)00(2)
630	300	0.39	13.0	24.0	41.5	37.5	3,000	3,780,000	73PW3390(1)00(2)	R73PW3390(1)00(2)
630	300	0.47	13.0	24.0	41.5	37.5	3,000	3,780,000	73PW3470(1)10(2)	R73PW3470(1)10(2)
630	300	0.47	16.0	28.5	41.5	37.5	3,000	3,780,000	73PW3470(1)00(2)	R73PW3470(1)00(2)
630	300	0.56	16.0	28.5	41.5	37.5	3,000	3,780,000	73PW3560(1)00(2)	R73PW3560(1)00(2)
630	300	0.68	16.0	28.5	41.5	37.5	3,000	3,780,000	73PW3680(1)00(2)	R73PW3680(1)00(2)
630	300	0.82	19.0	32.0	41.5	37.5	3,000	3,780,000	73PW3820(1)00(2)	R73PW3820(1)00(2)
630	300	1.0	20.0	40.0	41.5	37.5	3,000	3,780,000	73PW4100(1)00(2)	R73PW4100(1)00(2)
630	300	1.2	20.0	40.0	41.5	37.5	3,000	3,780,000	73PW4120(1)00(2)	R73PW4120(1)00(2)
630	300	1.5	24.0	44.0	41.5	37.5	3,000	3,780,000	73PW4150(1)00(2)	R73PW4150(1)00(2)
630	300	1.8	30.0	45.0	41.5	37.5	3,000	3,780,000	73PW4180(1)00(2)	R73PW4180(1)00(2)
630	300	2.2	30.0	45.0	41.5	37.5	3,000	3,780,000	73PW4220(1)00(2)	R73PW4220(1)00(2)
1,000	400	0.0033	5.0	11.0	18.0	15.0	28,000	56,000,000	73QI1330(1)30(2)	R73QI1330(1)30(2)
1,000	400	0.0039	5.0	11.0	18.0	15.0	28,000	56,000,000	73QI1390(1)30(2)	R73QI1390(1)30(2)
1,000	400	0.0047	5.0	11.0	18.0	15.0	28,000	56,000,000	73QI1470(1)30(2)	R73QI1470(1)30(2)
1,000	400	0.0056	5.0	11.0	18.0	15.0	28,000	56,000,000	73QI1560(1)30(2)	R73QI1560(1)30(2)
1,000	400	0.0068	5.0	11.0	18.0	15.0	28,000	56,000,000	73QI1680(1)30(2)	R73QI1680(1)30(2)
1,000	400	0.0082	5.0	11.0	18.0	15.0	28,000	56,000,000	73QI1820(1)30(2)	R73QI1820(1)30(2)
1,000	400	0.010	6.0	12.0	18.0	15.0	28,000	56,000,000	73QI2100(1)30(2)	R73QI2100(1)30(2)
1,000	400	0.012	6.0	12.0	18.0	15.0	28,000	56,000,000	73QI2120(1)30(2)	R73QI2120(1)30(2)
1,000	400	0.015	7.5	13.5	18.0	15.0	28,000	56,000,000	73QI2150(1)30(2)	R73QI2150(1)30(2)
1,000	400	0.018	8.5	14.5	18.0	15.0	28,000	56,000,000	73QI2180(1)30(2)	R73QI2180(1)30(2)
1,000	400	0.022	8.5	14.5	18.0	15.0	28,000	56,000,000	73QI2220(1)30(2)	R73QI2220(1)30(2)
1,000	400	0.027	10.0	16.0	18.0	15.0	28,000	56,000,000	73QI2270(1)30(2)	R73QI2270(1)30(2)
1,000	400	0.015	6.0	15.0	26.5	22.5	11,000	22,000,000	73QN2150(1)30(2)	R73QN2150(1)30(2)
1,000	400	0.018	6.0	15.0	26.5	22.5	11,000	22,000,000	73QN2180(1)30(2)	R73QN2180(1)30(2)
1,000	400	0.022	6.0	15.0	26.5	22.5	11,000	22,000,000	73QN2220(1)30(2)	R73QN2220(1)30(2)
1,000	400	0.027	7.0	16.0	26.5	22.5	11,000	22,000,000	73QN2270(1)30(2)	R73QN2270(1)30(2)
1,000	400	0.033	7.0	16.0	26.5	22.5	11,000	22,000,000	73QN2330(1)30(2)	R73QN2330(1)30(2)
1,000	400	0.039	8.5	17.0	26.5	22.5	11,000	22,000,000	73QN2390(1)30(2)	R73QN2390(1)30(2)
1,000	400	0.047	10.0	18.5	26.5	22.5	11,000	22,000,000	73QN2470(1)30(2)	R73QN2470(1)30(2)
1,000	400	0.056	10.0	18.5	26.5	22.5	11,000	22,000,000	73QN2560(1)30(2)	R73QN2560(1)30(2)
1,000	400	0.068	11.0	20.0	26.5	22.5	11,000	22,000,000	73QN2680(1)30(2)	R73QN2680(1)30(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
1,000	400	0.047	9.0	17.0	32.0	27.5	11,000	22,000,000	73QR2470(1)30(2)	R73QR2470(1)30(2)
1,000	400	0.056	9.0	17.0	32.0	27.5	11,000	22,000,000	73QR2560(1)30(2)	R73QR2560(1)30(2)
1,000	400	0.068	9.0	17.0	32.0	27.5	11,000	22,000,000	73QR2680(1)30(2)	R73QR2680(1)30(2)
1,000	400	0.082	9.0	17.0	32.0	27.5	11,000	22,000,000	73QR2820(1)40(2)	R73QR2820(1)40(2)
1,000	400	0.082	11.0	20.0	32.0	27.5	11,000	22,000,000	73QR2820(1)30(2)	R73QR2820(1)30(2)
1,000	400	0.10	11.0	20.0	32.0	27.5	11,000	22,000,000	73QR3100(1)30(2)	R73QR3100(1)30(2)
1,000	400	0.12	11.0	20.0	32.0	27.5	11,000	22,000,000	73QR3120(1)40(2)	R73QR3120(1)40(2)
1,000	400	0.12	13.0	22.0	32.0	27.5	11,000	22,000,000	73QR3120(1)30(2)	R73QR3120(1)30(2)
1,000	400	0.15	13.0	22.0	32.0	27.5	11,000	22,000,000	73QR3150(1)30(2)	R73QR3150(1)30(2)
1,000	400	0.18	13.0	25.0	32.0	27.5	11,000	22,000,000	73QR3180(1)40(2)	R73QR3180(1)40(2)
1,000	400	0.22	14.0	28.0	32.0	27.5	11,000	22,000,000	73QR3220(1)30(2)	R73QR3220(1)30(2)
1,000	400	0.27	18.0	33.0	32.0	27.5	11,000	22,000,000	73QR3270(1)30(2)	R73QR3270(1)30(2)
1,000	400	0.33	18.0	33.0	32.0	27.5	11,000	22,000,000	73QR3330(1)30(2)	R73QR3330(1)30(2)
1,000	400	0.47	22.0	37.0	32.0	27.5	11,000	22,000,000	73QR3470(1)30(2)	R73QR3470(1)30(2)
1,000	400	0.12	11.0	22.0	41.5	37.5	4,500	9,000,000	73QW3120(1)30(2)	R73QW3120(1)30(2)
1,000	400	0.15	11.0	22.0	41.5	37.5	4,500	9,000,000	73QW3150(1)30(2)	R73QW3150(1)30(2)
1,000	400	0.18	11.0	22.0	41.5	37.5	4,500	9,000,000	73QW3180(1)30(2)	R73QW3180(1)30(2)
1,000	400	0.22	13.0	24.0	41.5	37.5	4,500	9,000,000	73QW3220(1)30(2)	R73QW3220(1)30(2)
1,000	400	0.27	13.0	24.0	41.5	37.5	4,500	9,000,000	73QW3270(1)40(2)	R73QW3270(1)40(2)
1,000	400	0.27	16.0	28.5	41.5	37.5	4,500	9,000,000	73QW3270(1)30(2)	R73QW3270(1)30(2)
1,000	400	0.33	16.0	28.5	41.5	37.5	4,500	9,000,000	73QW3330(1)30(2)	R73QW3330(1)30(2)
1,000	400	0.39	16.0	28.5	41.5	37.5	4,500	9,000,000	73QW3390(1)30(2)	R73QW3390(1)30(2)
1,000	400	0.47	19.0	32.0	41.5	37.5	4,500	9,000,000	73QW3470(1)30(2)	R73QW3470(1)30(2)
1,000	400	0.56	19.0	32.0	41.5	37.5	4,500	9,000,000	73QW3560(1)30(2)	R73QW3560(1)30(2)
1,000	400	0.68	20.0	40.0	41.5	37.5	4,500	9,000,000	73QW3680(1)30(2)	R73QW3680(1)30(2)
1,000	400	0.82	20.0	40.0	41.5	37.5	4,500	9,000,000	73QW3820(1)30(2)	R73QW3820(1)30(2)
1,000	400	1.0	24.0	44.0	41.5	37.5	4,500	9,000,000	73QW4100(1)30(2)	R73QW4100(1)30(2)
1,000	400	1.2	30.0	45.0	41.5	37.5	4,500	9,000,000	73QW4120(1)30(2)	R73QW4120(1)30(2)
1,000	400	1.5	30.0	45.0	41.5	37.5	4,500	9,000,000	73QW4150(1)40(2)	R73QW4150(1)40(2)
1,250	450	0.0022	5.0	11.0	18.0	15.0	30,000	75,000,000	73RI1220(1)00(2)	R73RI1220(1)00(2)
1,250	450	0.0027	5.0	11.0	18.0	15.0	30,000	75,000,000	73RI1270(1)00(2)	R73RI1270(1)00(2)
1,250	450	0.0033	6.0	12.0	18.0	15.0	30,000	75,000,000	73RI1330(1)00(2)	R73RI1330(1)00(2)
1,250	450	0.0039	6.0	12.0	18.0	15.0	30,000	75,000,000	73RI1390(1)00(2)	R73RI1390(1)00(2)
1,250	450	0.0047	7.5	13.5	18.0	15.0	30,000	75,000,000	73RI1470(1)00(2)	R73RI1470(1)00(2)
1,250	450	0.0056	7.5	13.5	18.0	15.0	30,000	75,000,000	73RI1560(1)00(2)	R73RI1560(1)00(2)
1,250	450	0.0068	8.5	14.5	18.0	15.0	30,000	75,000,000	73RI1680(1)00(2)	R73RI1680(1)00(2)
1,250	450	0.0082	10.0	16.0	18.0	15.0	30,000	75,000,000	73RI1820(1)00(2)	R73RI1820(1)00(2)
1,250	450	0.0082	6.0	15.0	26.5	22.5	11,000	27,500,000	73RN1820(1)00(2)	R73RN1820(1)00(2)
1,250	450	0.010	6.0	15.0	26.5	22.5	11,000	27,500,000	73RN2100(1)00(2)	R73RN2100(1)00(2)
1,250	450	0.012	6.0	15.0	26.5	22.5	11,000	27,500,000	73RN2120(1)00(2)	R73RN2120(1)00(2)
1,250	450	0.015	7.0	16.0	26.5	22.5	11,000	27,500,000	73RN2150(1)00(2)	R73RN2150(1)00(2)
1,250	450	0.018	7.0	16.0	26.5	22.5	11,000	27,500,000	73RN2180(1)00(2)	R73RN2180(1)00(2)
1,250	450	0.022	8.5	17.0	26.5	22.5	11,000	27,500,000	73RN2220(1)00(2)	R73RN2220(1)00(2)
1,250	450	0.027	10.0	18.5	26.5	22.5	11,000	27,500,000	73RN2270(1)00(2)	R73RN2270(1)00(2)
1,250	450	0.033	10.0	18.5	26.5	22.5	11,000	27,500,000	73RN2330(1)00(2)	R73RN2330(1)00(2)
1,250	450	0.039	9.0	17.0	32.0	27.5	11,000	27,500,000	73RR2390(1)00(2)	R73RR2390(1)00(2)
1,250	450	0.047	11.0	20.0	32.0	27.5	11,000	27,500,000	73RR2470(1)00(2)	R73RR2470(1)00(2)
1,250	450	0.056	11.0	20.0	32.0	27.5	11,000	27,500,000	73RR2560(1)00(2)	R73RR2560(1)00(2)
1,250	450	0.068	13.0	22.0	32.0	27.5	11,000	27,500,000	73RR2680(1)00(2)	R73RR2680(1)00(2)
1,250	450	0.082	13.0	25.0	32.0	27.5	11,000	27,500,000	73RR2820(1)10(2)	R73RR2820(1)10(2)
1,250	450	0.10	13.0	25.0	32.0	27.5	11,000	27,500,000	73RR3100(1)10(2)	R73RR3100(1)10(2)
1,250	450	0.12	14.0	28.0	32.0	27.5	11,000	27,500,000	73RR3120(1)10(2)	R73RR3120(1)10(2)
1,250	450	0.12	18.0	33.0	32.0	27.5	11,000	27,500,000	73RR3120(1)00(2)	R73RR3120(1)00(2)
1,250	450	0.15	18.0	33.0	32.0	27.5	11,000	27,500,000	73RR3150(1)00(2)	R73RR3150(1)00(2)
1,250	450	0.18	18.0	33.0	32.0	27.5	11,000	27,500,000	73RR3180(1)00(2)	R73RR3180(1)00(2)
1,250	450	0.22	22.0	37.0	32.0	27.5	11,000	27,500,000	73RR3220(1)00(2)	R73RR3220(1)00(2)
1,250	450	0.082	11.0	22.0	41.5	37.5	5,500	13,750,000	73RW2820(1)00(2)	R73RW2820(1)00(2)
1,250	450	0.10	11.0	22.0	41.5	37.5	5,500	13,750,000	73RW3100(1)00(2)	R73RW3100(1)00(2)
1,250	450	0.12	11.0	22.0	41.5	37.5	5,500	13,750,000	73RW3120(1)10(2)	R73RW3120(1)10(2)
1,250	450	0.12	13.0	24.0	41.5	37.5	5,500	13,750,000	73RW3120(1)00(2)	R73RW3120(1)00(2)
VDC	VAC	Capacitance Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) H = 2.5%, J = 5%, K = 10%, M = 20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
1,250	450	0.15	13.0	24.0	41.5	37.5	5,500	13,750,000	73RW3150(1)00(2)	R73RW3150(1)00(2)
1,250	450	0.18	13.0	24.0	41.5	37.5	5,500	13,750,000	73RW3180(1)10(2)	R73RW3180(1)10(2)
1,250	450	0.18	16.0	28.5	41.5	37.5	5,500	13,750,000	73RW3180(1)00(2)	R73RW3180(1)00(2)
1,250	450	0.22	16.0	28.5	41.5	37.5	5,500	13,750,000	73RW3220(1)00(2)	R73RW3220(1)00(2)
1,250	450	0.27	16.0	28.5	41.5	37.5	5,500	13,750,000	73RW3270(1)00(2)	R73RW3270(1)00(2)
1,250	450	0.33	19.0	32.0	41.5	37.5	5,500	13,750,000	73RW3330(1)00(2)	R73RW3330(1)00(2)
1,250	450	0.39	20.0	40.0	41.5	37.5	5,500	13,750,000	73RW3390(1)00(2)	R73RW3390(1)00(2)
1,250	450	0.47	20.0	40.0	41.5	37.5	5,500	13,750,000	73RW3470(1)00(2)	R73RW3470(1)00(2)
1,250	450	0.56	20.0	40.0	41.5	37.5	5,500	13,750,000	73RW3560(1)00(2)	R73RW3560(1)00(2)
1,250	450	0.68	24.0	44.0	41.5	37.5	5,500	13,750,000	73RW3680(1)00(2)	R73RW3680(1)00(2)
1,250	450	0.82	30.0	45.0	41.5	37.5	5,500	13,750,000	73RW3820(1)00(2)	R73RW3820(1)00(2)
1,600	450	0.0010	5.0	11.0	18.0	15.0	34,000	108,800,000	73TI1100(1)00(2)	R73TI1100(1)00(2)
1,600	450	0.0012	5.0	11.0	18.0	15.0	34,000	108,800,000	73TI1120(1)00(2)	R73TI1120(1)00(2)
1,600	450	0.0015	5.0	11.0	18.0	15.0	34,000	108,800,000	73TI1150(1)00(2)	R73TI1150(1)00(2)
1,600	450	0.0018	5.0	11.0	18.0	15.0	34,000	108,800,000	73TI1180(1)00(2)	R73TI1180(1)00(2)
1,600	450	0.0022	6.0	12.0	18.0	15.0	34,000	108,800,000	73TI1220(1)00(2)	R73TI1220(1)00(2)
1,600	450	0.0027	6.0	12.0	18.0	15.0	34,000	108,800,000	73TI1270(1)00(2)	R73TI1270(1)00(2)
1,600	450	0.0033	7.5	13.5	18.0	15.0	34,000	108,800,000	73TI1330(1)00(2)	R73TI1330(1)00(2)
1,600	450	0.0039	7.5	13.5	18.0	15.0	34,000	108,800,000	73TI1390(1)00(2)	R73TI1390(1)00(2)
1,600	450	0.0047	8.5	14.5	18.0	15.0	34,000	108,800,000	73TI1470(1)00(2)	R73TI1470(1)00(2)
1,600	450	0.0056	10.0	16.0	18.0	15.0	34,000	108,800,000	73TI1560(1)00(2)	R73TI1560(1)00(2)
1,600	450	0.0068	10.0	16.0	18.0	15.0	34,000	108,800,000	73TI1680(1)00(2)	R73TI1680(1)00(2)
1,600	450	0.0056	6.0	15.0	26.5	22.5	11,000	35,200,000	73TN1560(1)00(2)	R73TN1560(1)00(2)
1,600	450	0.0068	6.0	15.0	26.5	22.5	11,000	35,200,000	73TN1680(1)00(2)	R73TN1680(1)00(2)
1,600	450	0.0082	6.0	15.0	26.5	22.5	11,000	35,200,000	73TN1820(1)00(2)	R73TN1820(1)00(2)
1,600	450	0.010	6.0	15.0	26.5	22.5	11,000	35,200,000	73TN2100(1)00(2)	R73TN2100(1)00(2)
1,600	450	0.012	7.0	16.0	26.5	22.5	11,000	35,200,000	73TN2120(1)00(2)	R73TN2120(1)00(2)
1,600	450	0.015	8.5	17.0	26.5	22.5	11,000	35,200,000	73TN2150(1)00(2)	R73TN2150(1)00(2)
1,600	450	0.018	8.5	17.0	26.5	22.5	11,000	35,200,000	73TN2180(1)00(2)	R73TN2180(1)00(2)
1,600	450	0.022	10.0	18.5	26.5	22.5	11,000	35,200,000	73TN2220(1)00(2)	R73TN2220(1)00(2)
1,600	450	0.027	9.0	17.0	32.0	27.5	11,000	35,200,000	73TR2270(1)00(2)	R73TR2270(1)00(2)
1,600	450	0.033	11.0	20.0	32.0	27.5	11,000	35,200,000	73TR2330(1)00(2)	R73TR2330(1)00(2)
1,600	450	0.039	11.0	20.0	32.0	27.5	11,000	35,200,000	73TR2390(1)00(2)	R73TR2390(1)00(2)
1,600	450	0.047	13.0	22.0	32.0	27.5	11,000	35,200,000	73TR2470(1)00(2)	R73TR2470(1)00(2)
1,600	450	0.056	13.0	22.0	32.0	27.5	11,000	35,200,000	73TR2560(1)00(2)	R73TR2560(1)00(2)
1,600	450	0.068	14.0	28.0	32.0	27.5	11,000	35,200,000	73TR2680(1)10(2)	R73TR2680(1)10(2)
1,600	450	0.082	14.0	28.0	32.0	27.5	11,000	35,200,000	73TR2820(1)00(2)	R73TR2820(1)00(2)
1,600	450	0.10	18.0	33.0	32.0	27.5	11,000	35,200,000	73TR3100(1)00(2)	R73TR3100(1)00(2)
1,600	450	0.12	18.0	33.0	32.0	27.5	11,000	35,200,000	73TR3120(1)00(2)	R73TR3120(1)00(2)
1,600	450	0.15	22.0	37.0	32.0	27.5	11,000	35,200,000	73TR3150(1)00(2)	R73TR3150(1)00(2)
1,600	450	0.18	22.0	37.0	32.0	27.5	11,000	35,200,000	73TR3180(1)00(2)	R73TR3180(1)00(2)
1,600	450	0.033	11.0	22.0	41.5	37.5	6,500	20,800,000	73TW2330(1)00(2)	R73TW2330(1)00(2)
1,600	450	0.039	11.0	22.0	41.5	37.5	6,500	20,800,000	73TW2390(1)00(2)	R73TW2390(1)00(2)
1,600	450	0.047	11.0	22.0	41.5	37.5	6,500	20,800,000	73TW2470(1)00(2)	R73TW2470(1)00(2)
1,600	450	0.056	11.0	22.0	41.5	37.5	6,500	20,800,000	73TW2560(1)00(2)	R73TW2560(1)00(2)
1,600	450	0.068	11.0	22.0	41.5	37.5	6,500	20,800,000	73TW2680(1)00(2)	R73TW2680(1)00(2)
1,600	450	0.082	11.0	22.0	41.5	37.5	6,500	20,800,000	73TW2820(1)00(2)	R73TW2820(1)00(2)
1,600	450	0.10	13.0	24.0	41.5	37.5	6,500	20,800,000	73TW3100(1)00(2)	R73TW3100(1)00(2)
1,600	450	0.12	16.0	28.5	41.5	37.5	6,500	20,800,000	73TW3120(1)00(2)	R73TW3120(1)00(2)
1,600	450	0.15	16.0	28.5	41.5	37.5	6,500	20,800,000	73TW3150(1)00(2)	R73TW3150(1)00(2)
1,600	450	0.18	16.0	28.5	41.5	37.5	6,500	20,800,000	73TW3180(1)00(2)	R73TW3180(1)00(2)
1,600	450	0.22	19.0	32.0	41.5	37.5	6,500	20,800,000	73TW3220(1)00(2)	R73TW3220(1)00(2)
1,600	450	0.27	20.0	40.0	41.5	37.5	6,500	20,800,000	73TW3270(1)00(2)	R73TW3270(1)00(2)
1,600	450	0.33	20.0	40.0	41.5	37.5	6,500	20,800,000	73TW3330(1)00(2)	R73TW3330(1)00(2)
1,600	450	0.39	24.0	44.0	41.5	37.5	6,500	20,800,000	73TW3390(1)00(2)	R73TW3390(1)00(2)
1,600	450	0.47	24.0	44.0	41.5	37.5	6,500	20,800,000	73TW3470(1)10(2)	R73TW3470(1)10(2)
1,600	450	0.47	30.0	45.0	41.5	37.5	6,500	20,800,000	73TW3470(1)00(2)	R73TW3470(1)00(2)
1,600	450	0.56	24.0	44.0	41.5	37.5	6,500	20,800,000	73TW3560(1)10(2)	R73TW3560(1)10(2)
1,600	450	0.56	30.0	45.0	41.5	37.5	6,500	20,800,000	73TW3560(1)00(2)	R73TW3560(1)00(2)
2,000	500	0.00010	5.0	11.0	18.0	15.0	54,000	216,000,000	73UI0100(1)00(2)	R73UI0100(1)00(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) H = 2.5%, J = 5%, K = 10%, M = 20%

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
2,000	500	0.00015	5.0	11.0	18.0	15.0	54,000	216,000,000	73UI0150(1)00(2)	R73UI0150(1)00(2)
2,000	500	0.00022	5.0	11.0	18.0	15.0	54,000	216,000,000	73UI0220(1)00(2)	R73UI0220(1)00(2)
2,000	500	0.00033	5.0	11.0	18.0	15.0	54,000	216,000,000	73UI0330(1)00(2)	R73UI0330(1)00(2)
2,000	500	0.00047	5.0	11.0	18.0	15.0	54,000	216,000,000	73UI0470(1)00(2)	R73UI0470(1)00(2)
2,000	500	0.00068	5.0	11.0	18.0	15.0	54,000	216,000,000	73UI0680(1)00(2)	R73UI0680(1)00(2)
2,000	500	0.0010	6.0	12.0	18.0	15.0	54,000	216,000,000	73UI1100(1)00(2)	R73UI1100(1)00(2)
2,000	500	0.0012	6.0	12.0	18.0	15.0	54,000	216,000,000	73UI1120(1)00(2)	R73UI1120(1)00(2)
2,000	500	0.0015	7.5	13.5	18.0	15.0	54,000	216,000,000	73UI1150(1)00(2)	R73UI1150(1)00(2)
2,000	500	0.0018	7.5	13.5	18.0	15.0	54,000	216,000,000	73UI1180(1)00(2)	R73UI1180(1)00(2)
2,000	500	0.0022	8.5	14.5	18.0	15.0	54,000	216,000,000	73UI1220(1)00(2)	R73UI1220(1)00(2)
2,000	500	0.0027	10.0	16.0	18.0	15.0	54,000	216,000,000	73UI1270(1)00(2)	R73UI1270(1)00(2)
2,000	500	0.0027	6.0	15.0	26.5	22.5	11,000	44,000,000	73UN1270(1)00(2)	R73UN1270(1)00(2)
2,000	500	0.0033	6.0	15.0	26.5	22.5	11,000	44,000,000	73UN1330(1)00(2)	R73UN1330(1)00(2)
2,000	500	0.0039	6.0	15.0	26.5	22.5	11,000	44,000,000	73UN1390(1)00(2)	R73UN1390(1)00(2)
2,000	500	0.0047	7.0	16.0	26.5	22.5	11,000	44,000,000	73UN1470(1)00(2)	R73UN1470(1)00(2)
2,000	500	0.0056	7.0	16.0	26.5	22.5	11,000	44,000,000	73UN1560(1)00(2)	R73UN1560(1)00(2)
2,000	500	0.0068	8.5	17.0	26.5	22.5	11,000	44,000,000	73UN1680(1)00(2)	R73UN1680(1)00(2)
2,000	500	0.0082	8.5	17.0	26.5	22.5	11,000	44,000,000	73UN1820(1)00(2)	R73UN1820(1)00(2)
2,000	500	0.010	10.0	18.5	26.5	22.5	11,000	44,000,000	73UN2100(1)00(2)	R73UN2100(1)00(2)
2,000	500	0.012	11.0	20.0	26.5	22.5	11,000	44,000,000	73UN2120(1)00(2)	R73UN2120(1)00(2)
2,000	500	0.010	9.0	17.0	32.0	27.5	11,000	44,000,000	73UR2100(1)00(2)	R73UR2100(1)00(2)
2,000	500	0.012	9.0	17.0	32.0	27.5	11,000	44,000,000	73UR2120(1)00(2)	R73UR2120(1)00(2)
2,000	500	0.015	11.0	20.0	32.0	27.5	11,000	44,000,000	73UR2150(1)00(2)	R73UR2150(1)00(2)
2,000	500	0.018	13.0	22.0	32.0	27.5	11,000	44,000,000	73UR2180(1)00(2)	R73UR2180(1)00(2)
2,000	500	0.022	13.0	22.0	32.0	27.5	11,000	44,000,000	73UR2220(1)00(2)	R73UR2220(1)00(2)
2,000	500	0.027	14.0	28.0	32.0	27.5	11,000	44,000,000	73UR2270(1)10(2)	R73UR2270(1)10(2)
2,000	500	0.033	14.0	28.0	32.0	27.5	11,000	44,000,000	73UR2330(1)10(2)	R73UR2330(1)10(2)
2,000	500	0.033	18.0	33.0	32.0	27.5	11,000	44,000,000	73UR2330(1)00(2)	R73UR2330(1)00(2)
2,000	500	0.039	18.0	33.0	32.0	27.5	11,000	44,000,000	73UR2390(1)00(2)	R73UR2390(1)00(2)
2,000	500	0.047	18.0	33.0	32.0	27.5	11,000	44,000,000	73UR2470(1)00(2)	R73UR2470(1)00(2)
2,000	500	0.056	22.0	37.0	32.0	27.5	11,000	44,000,000	73UR2560(1)00(2)	R73UR2560(1)00(2)
2,000	500	0.068	22.0	37.0	32.0	27.5	11,000	44,000,000	73UR2680(1)00(2)	R73UR2680(1)00(2)
2,000	500	0.018	11.0	22.0	41.5	37.5	9,000	36,000,000	73UW2180(1)00(2)	R73UW2180(1)00(2)
2,000	500	0.022	11.0	22.0	41.5	37.5	9,000	36,000,000	73UW2220(1)00(2)	R73UW2220(1)00(2)
2,000	500	0.027	11.0	22.0	41.5	37.5	9,000	36,000,000	73UW2270(1)00(2)	R73UW2270(1)00(2)
2,000	500	0.033	13.0	24.0	41.5	37.5	9,000	36,000,000	73UW2330(1)00(2)	R73UW2330(1)00(2)
2,000	500	0.039	13.0	24.0	41.5	37.5	9,000	36,000,000	73UW2390(1)00(2)	R73UW2390(1)00(2)
2,000	500	0.047	16.0	28.5	41.5	37.5	9,000	36,000,000	73UW2470(1)00(2)	R73UW2470(1)00(2)
2,000	500	0.056	16.0	28.5	41.5	37.5	9,000	36,000,000	73UW2560(1)00(2)	R73UW2560(1)00(2)
2,000	500	0.068	16.0	28.5	41.5	37.5	9,000	36,000,000	73UW2680(1)00(2)	R73UW2680(1)00(2)
2,000	500	0.082	19.0	32.0	41.5	37.5	9,000	36,000,000	73UW2820(1)00(2)	R73UW2820(1)00(2)
2,000	500	0.10	20.0	40.0	41.5	37.5	9,000	36,000,000	73UW3100(1)00(2)	R73UW3100(1)00(2)
2,000	500	0.12	20.0	40.0	41.5	37.5	9,000	36,000,000	73UW3120(1)00(2)	R73UW3120(1)00(2)
2,000	500	0.15	24.0	44.0	41.5	37.5	9,000	36,000,000	73UW3150(1)00(2)	R73UW3150(1)00(2)
2,000	500	0.18	30.0	45.0	41.5	37.5	9,000	36,000,000	73UW3180(1)00(2)	R73UW3180(1)00(2)
2,000	500	0.22	30.0	45.0	41.5	37.5	9,000	36,000,000	73UW3220(1)00(2)	R73UW3220(1)00(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) H = ±2.5% (for 2-section construction only), J = ±5%, K = ±10%.

Soldering Process

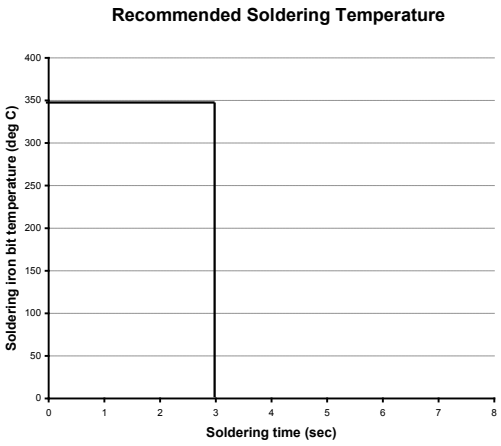
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

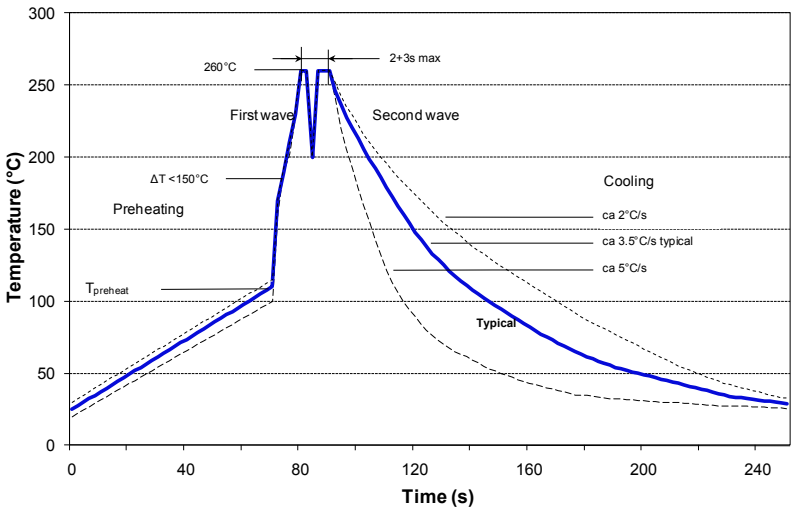
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

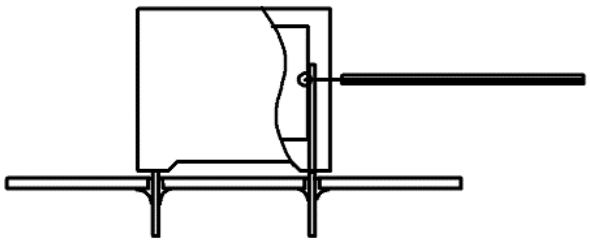
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



Temperature monitored inside the capacitor.

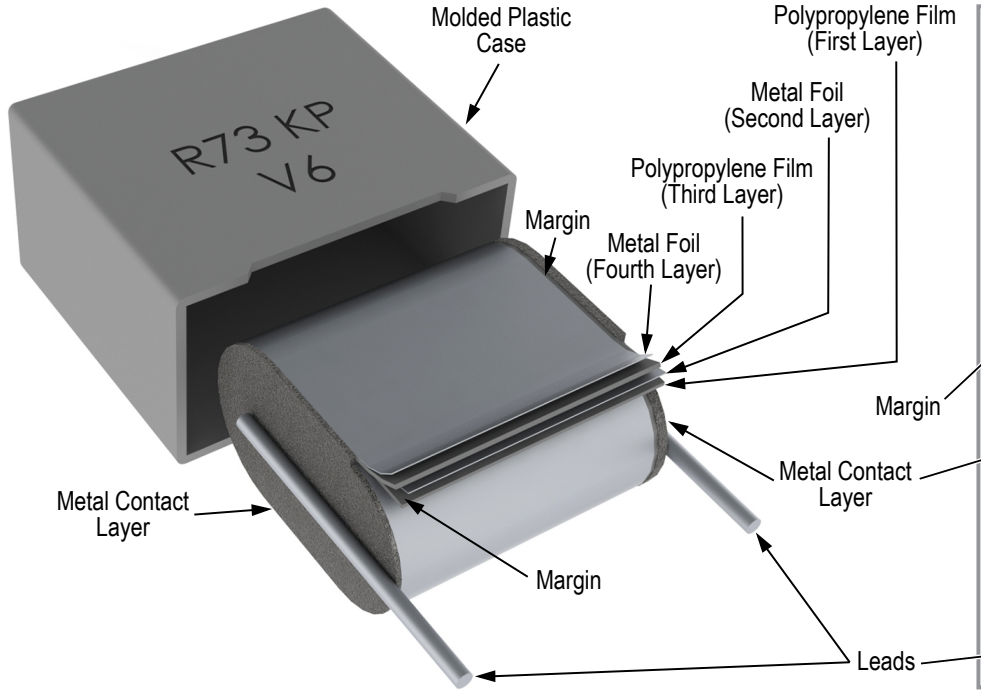
Selective Soldering Recommendations

Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

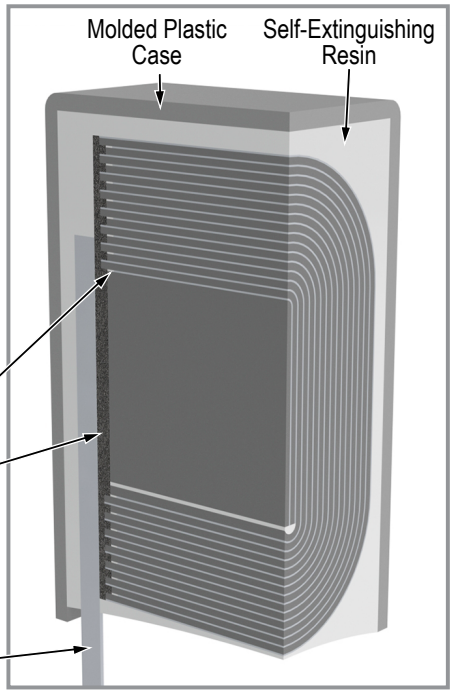
The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

Construction

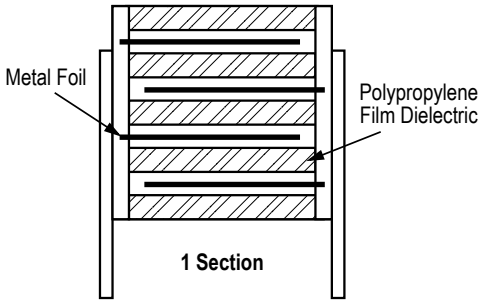
1 Section

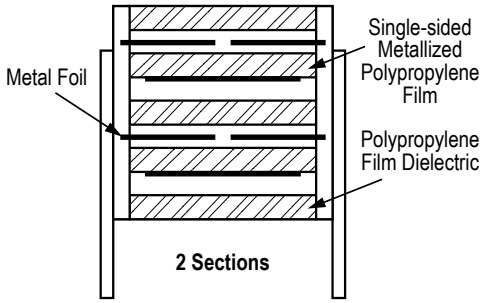


Detailed Cross Section

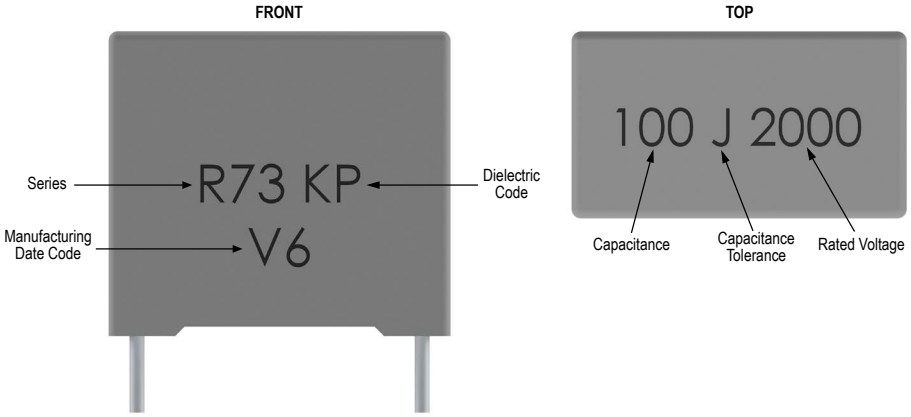


Winding Schemes





Marking

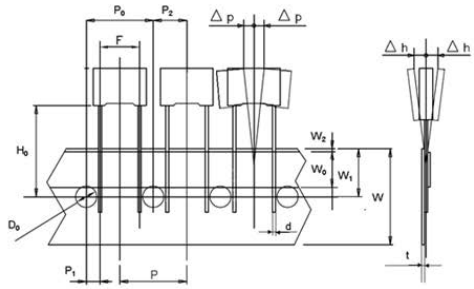


Packaging Quantities

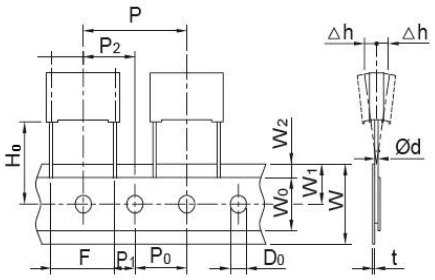
Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Large Reel ø 500 mm	Ammo Taped
15	5.0	11.0	18.0	2,000	1,000	600	1,250	800
	6.0	12.0	18.0	1,750	900	500	1,000	680
	7.5	13.5	18.0	1,000	700	350	800	500
	8.5	14.5	18.0	1,000	500	300	700	440
	10.0	16.0	18.0	750	500	300	600	380
22.5	6.0	15.0	26.5	805	500		700	464
	7.0	16.0	26.5	700	500		550	380
	8.5	17.0	26.5	468	300		450	280
	10.0	18.5	26.5	396	300		350	235
	11.0	20.0	26.5	360	250		350	217
27.5	9.0	17.0	32.0	816	408		450	
	11.0	20.0	32.0	560	336		350	
	13.0	22.0	32.0	480	288		300	
	13.0	25.0	32.0	480	288			
	14.0	28.0	32.0	352	176			
	18.0	33.0	32.0	256	128			
	22.0	37.0	32.0	168	112			
37.5	11.0	22.0	41.5	420	252			
	13.0	24.0	41.5	360	216			
	16.0	28.5	41.5	216	108			
	19.0	32.0	41.5	192	96			
	20.0	40.0	41.5	126	84			
	24.0	44.0	41.5	108	72			
	30.0	45.0	41.5	90	60			

Lead Taping & Packaging (IEC 60286–2)

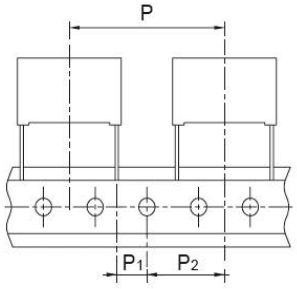
Lead Spacing 7.5 mm



Lead Spacing 10 & 15 mm



Lead Spacing 22.5 & 27.5



Taping Specification

Description	Symbol	Dimensions (mm)			
		Lead Spacing			Tolerance
		15.0	22.5	27.5	
Lead wire diameter	d	0.6 - 0.8	0.8	0.8	±0.05
Taping lead space	P	25.4	38.1	38.1	±1
Feed hole lead space *	P_0	12.7	12.7	12.7	±0.2 **
Centering of the lead wire	P_1	5.2	7.8	5.3	±0.7
Centering of the body	P_2	12.7	19.05	19.05	±1.3
Lead spacing ***	F	15.0	22.5	27.5	+0.6/-0.1
Component alignment	Δh	0	0	0	±2
Component deviation	Δp	0	0	0	±1
Height of component from tape center	H_0****	18.5	18.5	18.5	±0.5
Carrier tape width	W	18	18	18	+1/-0.5
Hold down tape width	W_0	10	10	10	Minimum
Hole position	W_1	9	9	9	±0.5
Hold down tape position	W_2	3	3	3	Maximum
Feed hole diameter	D_0	4	4	4	±0.2
Tape thickness	t	0.7	0.7	0.7	±0.2

** Available also 15 mm.*
*** Maximum 1 mm on 20 lead spacing.*
**** 15 mm and 10 mm taped to 7.5 mm (crimped leads) available upon request.*
***** H_0 = 16.5 mm is available upon request.*

A72 Series Polypropylene Film/Foil, Axial

Overview

The A72 Series is constructed of polypropylene film and metal foil or metallized film and metal foil with axial leads of tinned wire. The axial leads are electrically welded to the metal layer on the ends of the capacitor winding. The capacitor is encapsulated in a polyester tape wrapping case with thermosetting resin material. Two different winding constructions are used depending on voltage parameters. Please see the Performance Characteristics for more information.

Applications

Typical applications include switching spikes suppression and resonant capacitors in switched mode power supply (SMPS), and deflection circuits in televisions (S-correction and flyback tuning) as well as applications with high voltage and high current. Not suitable for across-the-line application (see Suppressor Capacitors).

Benefits

- Voltage range: 100 – 2,000 VDC
- Capacitance range: 47 pF – 0.33 µF
- Diameter: 5 – 22.5 mm
- Length: 11 – 33 mm
- Capacitance tolerance: ±5%, ±10%, ±20%
- Climatic category: 55/105/56 IEC 60068-1
- Operating temperature range of -55˚C to +105˚C
- RoHS compliance and lead-free terminations
- Tape and reel packaging in accordance with IEC 60286–1
- Self-healing



Part Number System

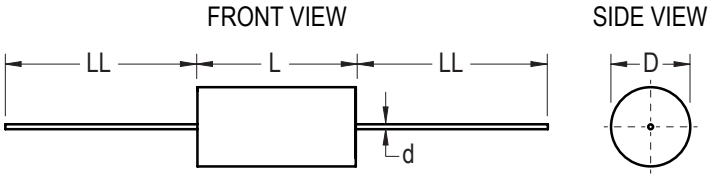
A72	E	F	1470	AA	00	J
Series	Rated Voltage (VDC)	Length (mm)	Capacitance Code (pF)	Packaging	Internal Use	Capacitance Tolerance
Polypropylene Film/ Foil	E = 100 I = 250 M = 400 P = 630 Q = 1000 S = 1500 U = 2000	F = 11 H= 14 K = 20.5 Q = 28 T = 33	The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.	See Ordering Options Table	00, 02 (Standard)	J = ±5% K = ±10% M = ±20%

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Ordering Options Table

Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
Bulk (Bag) – Straight Leads	40 +/-5	AA
Tape & Reel (Standard Reel)		26

Dimensions – Millimeters



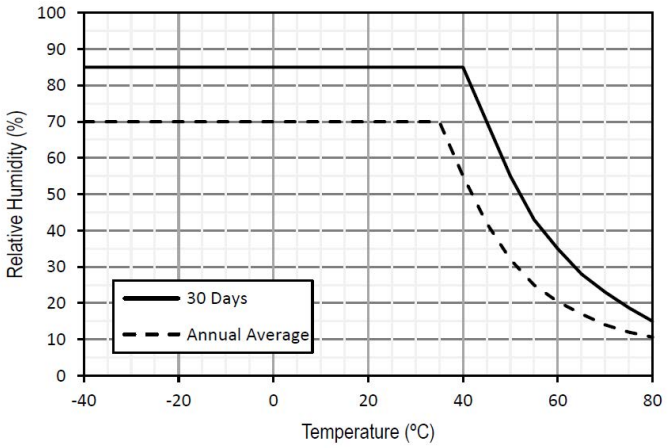
D		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
5.0	Maximum	11.0	Maximum	0.5	±0.05
6.5	Maximum	16.5	Maximum	0.6	±0.05
7.0	Maximum	16.5	Maximum	0.6	±0.05
7.5	Maximum	16.5	Maximum	0.6	±0.05
8.0	Maximum	16.5	Maximum	0.8	±0.05
8.0	Maximum	20.5	Maximum	0.8	±0.05
8.0	Maximum	28.0	Maximum	0.8	±0.05
8.5	Maximum	16.5	Maximum	0.8	±0.05
8.5	Maximum	20.5	Maximum	0.8	±0.05
8.5	Maximum	28.0	Maximum	0.8	±0.05
9.0	Maximum	16.5	Maximum	0.8	±0.05
9.0	Maximum	28.0	Maximum	0.8	±0.05
9.5	Maximum	20.5	Maximum	0.8	±0.05
9.5	Maximum	28.0	Maximum	0.8	±0.05
10.0	Maximum	28.0	Maximum	0.8	±0.05
Note: See Ordering Options Table for lead length (LL / l) options.					

D		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
11.0	Maximum	20.5	Maximum	0.8	±0.05
11.0	Maximum	28.0	Maximum	0.8	±0.05
11.5	Maximum	28.0	Maximum	0.8	±0.05
12.5	Maximum	28.0	Maximum	0.8	±0.05
13.0	Maximum	28.0	Maximum	0.8	±0.05
13.5	Maximum	28.0	Maximum	0.8	±0.05
13.5	Maximum	33.0	Maximum	0.8	±0.05
14.0	Maximum	33.0	Maximum	0.8	±0.05
16.0	Maximum	33.0	Maximum	1.0	±0.05
16.5	Maximum	33.0	Maximum	1.0	±0.05
18.0	Maximum	33.0	Maximum	1.0	±0.05
19.0	Maximum	33.0	Maximum	1.0	±0.05
19.5	Maximum	33.0	Maximum	1.0	±0.05
20.0	Maximum	33.0	Maximum	1.0	±0.05
22.5	Maximum	33.0	Maximum	1.0	±0.05
Note: See Ordering Options Table for lead length (LL / l) options.					

Performance Characteristics

Dielectric	Polypropylene film						
Plates	Metal foil for 1 section, metal foil + metallized film for 2 sections						
Winding	Non-inductive type						
Leads	Tinned wire						
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.						
Related Documents	IEC 60384-13						
Sections	1			2			
Voltage Range (VDC)	100	250	400	630	1000	1500	2000
Voltage Range (VAC)	63	125	160	300	400	450	500
Capacitance Range (µF)	0.0047 – 0.01	0.0022 – 0.015	0.000047 – 0.01	0.015 – 0.33	0.0033 – 0.1	0.0022 – 0.068	0.001 – 0.047
Capacitance Values	E6 series (IEC 60063) measured @ 1 kHz and +20 ±1°C						
Capacitance Tolerance	±5%, ±10%, ±20%						
Operating temperature Range	-55°C to +105°C						
Rated Temperature T_R	+85°C						
Voltage Derating	Above +85°C DC and AC voltage derating is 1.25%/°C						
Climatic Category	55/105/56 IEC 60068-1						
Storage Conditions	Storage time: ≤ 24 months from the date marked on the label package						
	Average relative humidity per year ≤ 70%						
	RH ≤ 85% for 30 days randomly distributed throughout the year						
	Dew is absent						
	Temperature: -40 to 80°C (see "Maximum Humidity in Storage Conditions" graph below)						

Maximum Humidity in Storage Conditions

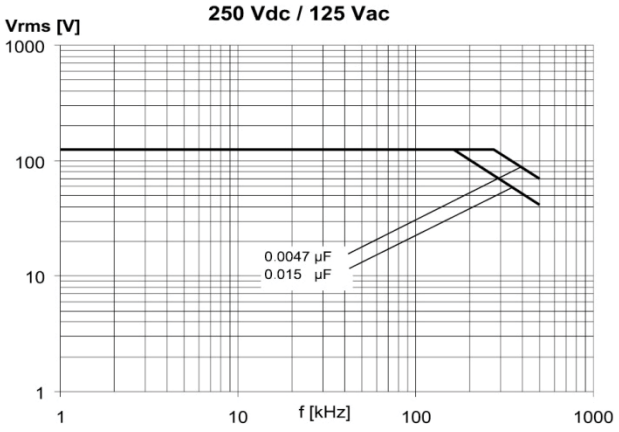


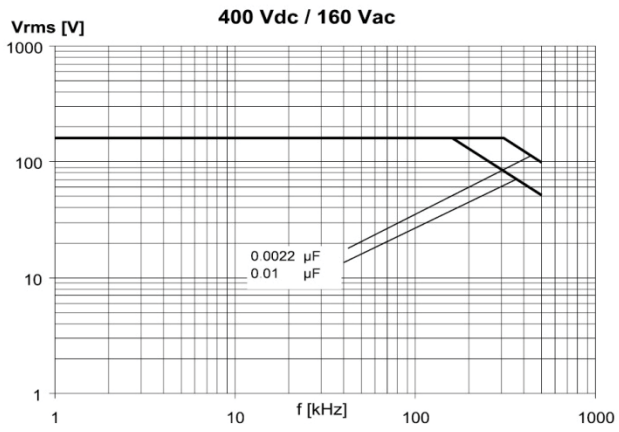
Performance Characteristics cont'd

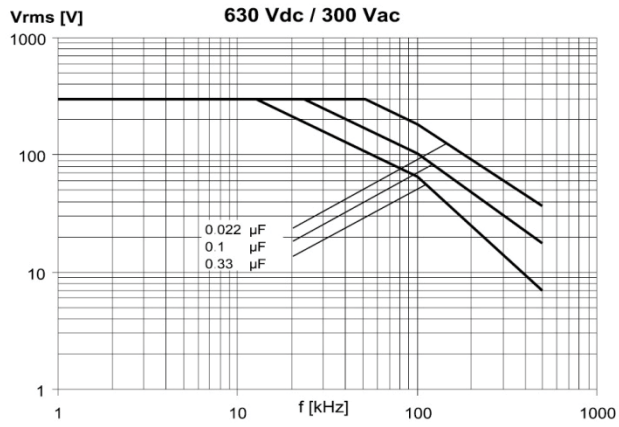
Test Voltage	2 x V_R VDC for 2 s (between terminations) @ +25°C ±5°C		
Capacitance Drift	Maximum 0.5% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%		
Maximum Pulse Steepness	dV/dt according to Table 1. For peak to peak voltages lower than rated voltage (Vpp<V_R), the specified dv/dt can be multiplied by the factor V_R/Vpp		
Temperature Coefficient	-(150 ±70) ppm/°C at 1 kHz		
Self Inductance (Lead Length ~ 2 mm)	Maximum 1 nH per 1 mm lead and capacitor length.		
Dissipation Factor tanδ	Measured at 25°C ±5°C		
	Frequency	C ≤ 0.1 µF	C ≥ 0.1 µF
	10 kHz	0.05%	0.05%
	100 kHz	0.10%	–
Insulation Resistance	Measured at +25°C, 100 VDC 60 seconds		
	Minimum Values Between Terminals		
	All Capacitance Values		
	≥ 100,000 MΩ (≥ 500,000 MΩ)*		

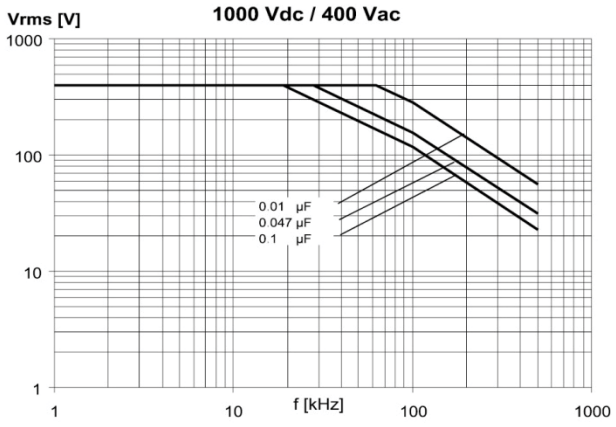
** typical value*

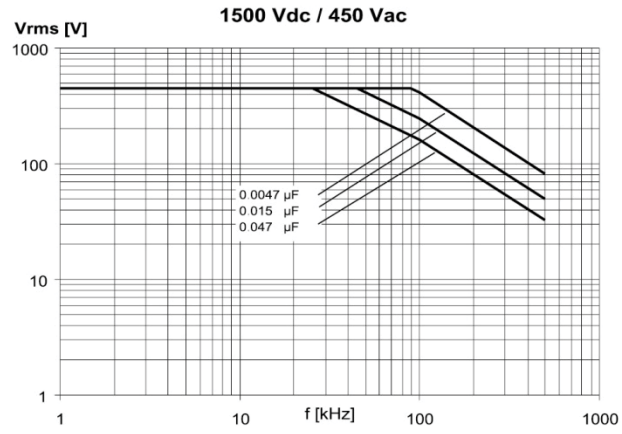
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ +40ºC)

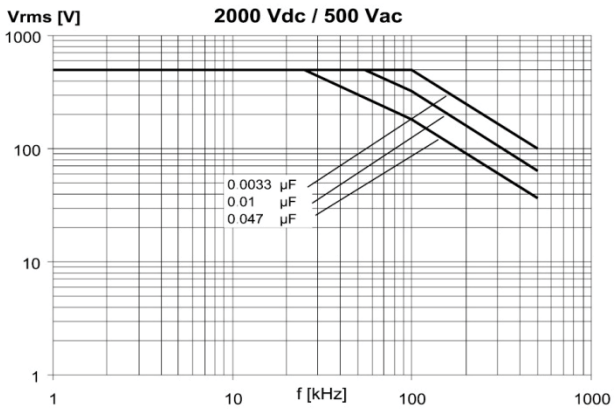




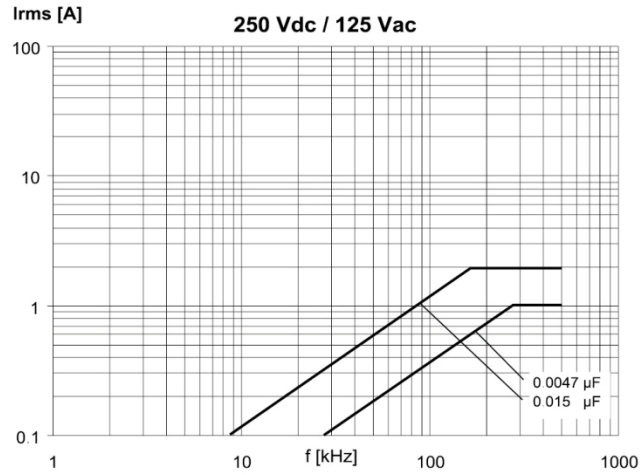


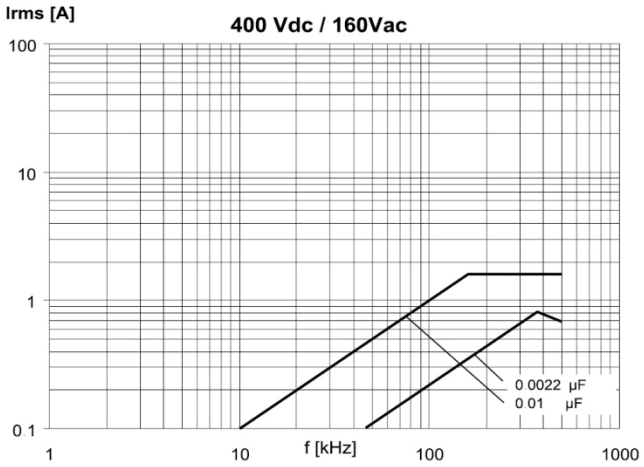


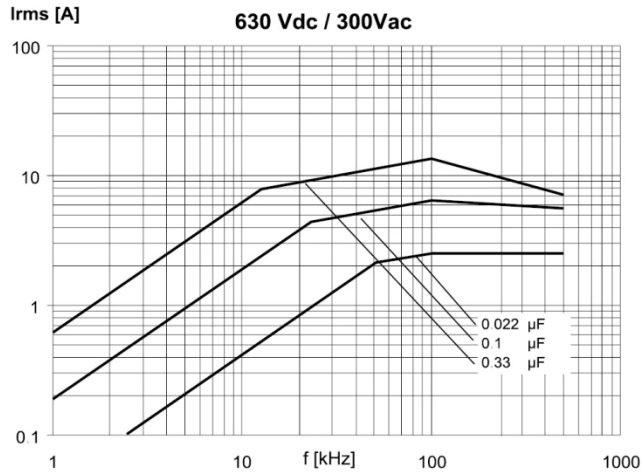


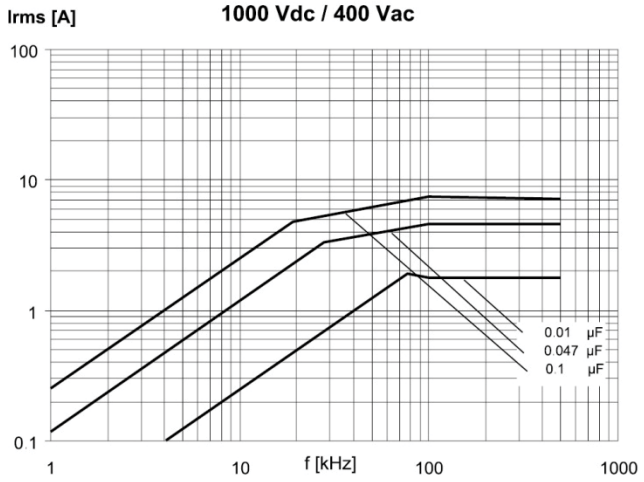


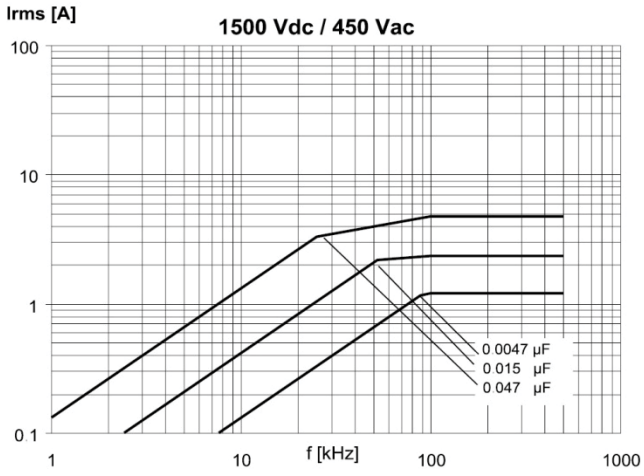
Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/Th ≤ +40ºC)

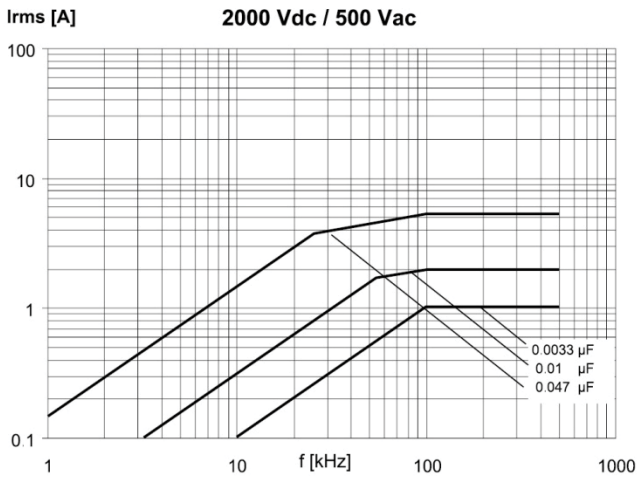












Environmental Test Data

Damp Heat, Steady State Test	Test Conditions:		Performances
	Temperature: Relative humidity (RH): Test duration:	+40°C ±2°C 93% ±2% 56 days	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.0005 @ 1 kHz IR after test ≥ 50% of initial limit
Endurance Test	**Test Conditions**		**Performances**
	Temperature: Voltage applied: Test duration:	+85°C ±2°C 1.5 x V_R (DC) 1,000 hours	|Δ C/C| ≤ 2%, Δ tanδ ≤ 0.0005 @ 1 kHz IR after test ≥ 50% of initial limit
Resistance to Soldering Heat Test	**Test Conditions**		**Performances**
	Solder bath temperature: Dipping time (with heat screen):	260°C ±5°C 10 seconds ±1 second	|Δ C/C| ≤ 1%, Δ tanδ ≤ 0.0005 @ 1 kHz IR after test ≥ initial limit

Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant, except A72 Series components with capacitance values < 4,700 pF.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Capacitance Value (µF)	Dimensions in mm		dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			D Max	L Max				
100	63	0.0047	5.0	11.0	3,000	600,000	72EF1470(1)00(2)	A72EF1470(1)00(2)
100	63	0.0068	5.0	11.0	3,000	600,000	72EF1680(1)00(2)	A72EF1680(1)00(2)
100	63	0.010	5.0	11.0	3,000	600,000	72EF2100(1)00(2)	A72EF2100(1)00(2)
250	125	0.0022	5.0	11.0	5,000	2,500,000	72IF1220(1)00(2)	A72IF1220(1)00(2)
250	125	0.0033	5.0	11.0	5,000	2,500,000	72IF1330(1)00(2)	A72IF1330(1)00(2)
250	125	0.0047	7.0	16.5	4,500	2,250,000	72II1470(1)00(2)	A72II1470(1)00(2)
250	125	0.0068	7.0	16.5	4,500	2,250,000	72II1680(1)00(2)	A72II1680(1)00(2)
250	125	0.010	7.5	16.5	4,500	2,250,000	72II2100(1)00(2)	A72II2100(1)00(2)
250	125	0.015	8.5	16.5	4,500	2,250,000	72II2150(1)00(2)	A72II2150(1)00(2)
400	160	0.000047	5.0	11.0	13,000	10,400,000	72MF0047(1)00(2)	A72MF0047(1)00(2)
400	160	0.000068	5.0	11.0	13,000	10,400,000	72MF0068(1)00(2)	A72MF0068(1)00(2)
400	160	0.00010	5.0	11.0	13,000	10,400,000	72MF0100(1)00(2)	A72MF0100(1)00(2)
400	160	0.00015	5.0	11.0	13,000	10,400,000	72MF0150(1)00(2)	A72MF0150(1)00(2)
400	160	0.00022	5.0	11.0	13,000	10,400,000	72MF0220(1)00(2)	A72MF0220(1)00(2)
400	160	0.00033	5.0	11.0	13,000	10,400,000	72MF0330(1)00(2)	A72MF0330(1)00(2)
400	160	0.00047	5.0	11.0	13,000	10,400,000	72MF0470(1)00(2)	A72MF0470(1)00(2)
400	160	0.00068	5.0	11.0	13,000	10,400,000	72MF0680(1)00(2)	A72MF0680(1)00(2)
400	160	0.0010	5.0	11.0	13,000	10,400,000	72MF1100(1)00(2)	A72MF1100(1)00(2)
400	160	0.0015	5.0	11.0	13,000	10,400,000	72MF1150(1)00(2)	A72MF1150(1)00(2)
400	160	0.0022	6.5	16.5	6,500	5,200,000	72MI1220(1)00(2)	A72MI1220(1)00(2)
400	160	0.0033	6.5	16.5	6,500	5,200,000	72MI1330(1)00(2)	A72MI1330(1)00(2)
400	160	0.0047	7.0	16.5	6,500	5,200,000	72MI1470(1)00(2)	A72MI1470(1)00(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Capacitance Value (µF)	Dimensions in mm		dV/dt (V/µs)	Max K_0 (V^2/µs)	New KEMET Part Number	Legacy Part Number
			D Max	L Max				
400	160	0.0068	8.0	16.5	6,500	5,200,000	72MI1680(1)00(2)	A72MI1680(1)00(2)
400	160	0.010	9.0	16.5	6,500	5,200,000	72MI2100(1)00(2)	A72MI2100(1)00(2)
630	300	0.015	8.5	20.5	4,300	5,418,000	72PK2150(1)00(2)	A72PK2150(1)00(2)
630	300	0.022	9.5	20.5	4,300	5,418,000	72PK2220(1)00(2)	A72PK2220(1)00(2)
630	300	0.033	9.0	28.0	2,600	3,276,000	72PQ2330(1)00(2)	A72PQ2330(1)00(2)
630	300	0.047	10.0	28.0	2,600	3,276,000	72PQ2470(1)00(2)	A72PQ2470(1)00(2)
630	300	0.068	11.5	28.0	2,600	3,276,000	72PQ2680(1)00(2)	A72PQ2680(1)00(2)
630	300	0.10	13.5	28.0	2,600	3,276,000	72PQ3100(1)00(2)	A72PQ3100(1)00(2)
630	300	0.15	14.0	33.0	1,800	2,268,000	72PT3150(1)00(2)	A72PT3150(1)00(2)
630	300	0.22	16.5	33.0	1,800	2,268,000	72PT3220(1)00(2)	A72PT3220(1)00(2)
630	300	0.33	19.5	33.0	1,800	2,268,000	72PT3330(1)00(2)	A72PT3330(1)00(2)
1,000	400	0.0033	8.5	20.5	14,000	28,000,000	72QK1330(1)02(2)	A72QK1330(1)02(2)
1,000	400	0.0047	9.5	20.5	14,000	28,000,000	72QK1470(1)02(2)	A72QK1470(1)02(2)
1,000	400	0.0068	8.0	28.0	5,000	10,000,000	72QQ1680(1)02(2)	A72QQ1680(1)02(2)
1,000	400	0.010	8.5	28.0	5,000	10,000,000	72QQ2100(1)02(2)	A72QQ2100(1)02(2)
1,000	400	0.015	10.0	28.0	5,000	10,000,000	72QQ2150(1)02(2)	A72QQ2150(1)02(2)
1,000	400	0.022	11.0	28.0	5,000	10,000,000	72QQ2220(1)02(2)	A72QQ2220(1)02(2)
1,000	400	0.033	13.0	28.0	5,000	10,000,000	72QQ2330(1)02(2)	A72QQ2330(1)02(2)
1,000	400	0.047	14.0	33.0	3,700	7,400,000	72QT2470(1)02(2)	A72QT2470(1)02(2)
1,000	400	0.068	16.0	33.0	3,700	7,400,000	72QT2680(1)02(2)	A72QT2680(1)02(2)
1,000	400	0.10	19.0	33.0	3,700	7,400,000	72QT3100(1)02(2)	A72QT3100(1)02(2)
1,500	450	0.0022	8.0	20.5	17,000	51,000,000	72SK1220(1)00(2)	A72SK1220(1)00(2)
1,500	450	0.0033	9.5	20.5	17,000	51,000,000	72SK1330(1)00(2)	A72SK1330(1)00(2)
1,500	450	0.0047	8.5	28.0	6,000	18,000,000	72SQ1470(1)00(2)	A72SQ1470(1)00(2)
1,500	450	0.0068	8.5	28.0	6,000	18,000,000	72SQ1680(1)00(2)	A72SQ1680(1)00(2)
1,500	450	0.010	9.5	28.0	6,000	18,000,000	72SQ2100(1)00(2)	A72SQ2100(1)00(2)
1,500	450	0.015	11.0	28.0	6,000	18,000,000	72SQ2150(1)00(2)	A72SQ2150(1)00(2)
1,500	450	0.022	12.5	28.0	6,000	18,000,000	72SQ2220(1)00(2)	A72SQ2220(1)00(2)
1,500	450	0.033	13.5	33.0	4,500	13,500,000	72ST2330(1)00(2)	A72ST2330(1)00(2)
1,500	450	0.047	16.0	33.0	4,500	13,500,000	72ST2470(1)00(2)	A72ST2470(1)00(2)
1,500	450	0.068	18.0	33.0	4,500	13,500,000	72ST2680(1)00(2)	A72ST2680(1)00(2)
2,000	500	0.0010	8.5	20.5	27,000	108,000,000	72UK1100(1)00(2)	A72UK1100(1)00(2)
2,000	500	0.0015	9.5	20.5	27,000	108,000,000	72UK1150(1)00(2)	A72UK1150(1)00(2)
2,000	500	0.0022	11.0	20.5	27,000	108,000,000	72UK1220(1)00(2)	A72UK1220(1)00(2)
2,000	500	0.0033	9.0	28.0	9,800	39,200,000	72UQ1330(1)00(2)	A72UQ1330(1)00(2)
2,000	500	0.0047	9.5	28.0	9,800	39,200,000	72UQ1470(1)00(2)	A72UQ1470(1)00(2)
2,000	500	0.0068	11.0	28.0	9,800	39,200,000	72UQ1680(1)00(2)	A72UQ1680(1)00(2)
VDC	**VAC**	**Capacitance Value (µF)**	**B (mm)**	**H (mm)**	**dV/dt (V/µs)**	**Max K_0 (V^2/µs)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) J = 5%, K = 10%, M = 20%.

Soldering Process

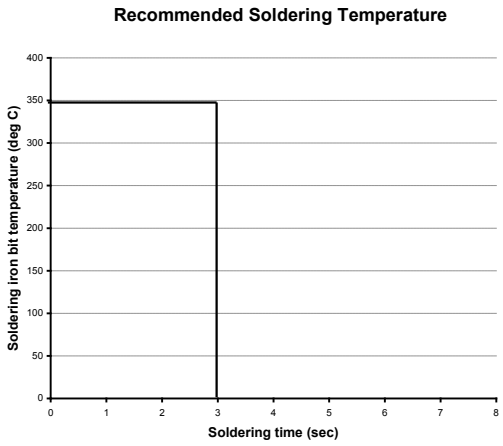
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

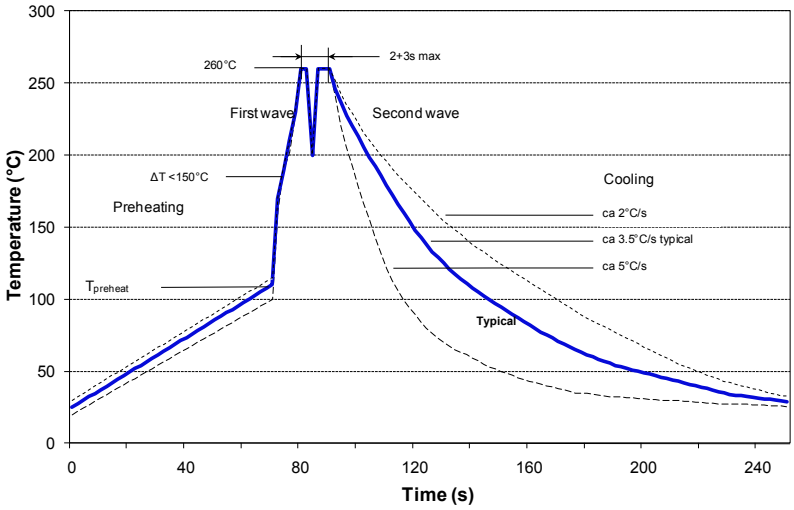
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

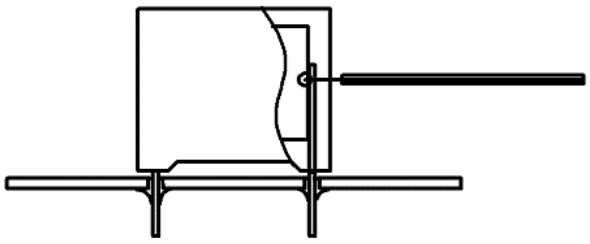
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



Temperature monitored inside the capacitor.

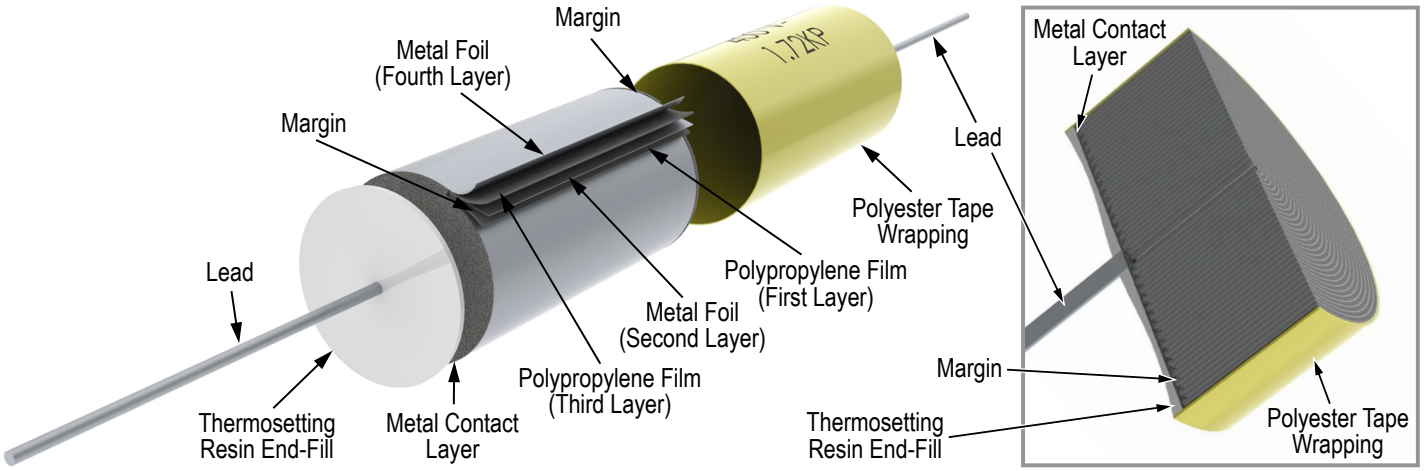
Selective Soldering Recommendations

Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

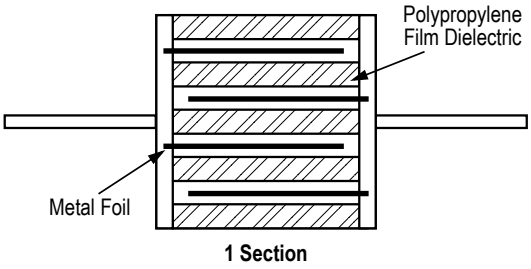
Construction

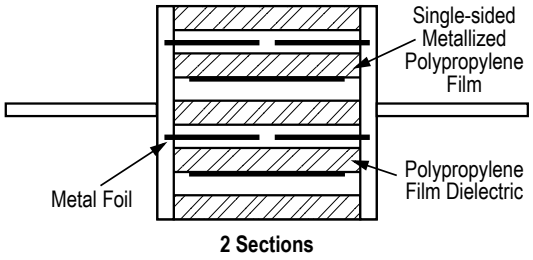
1 Section



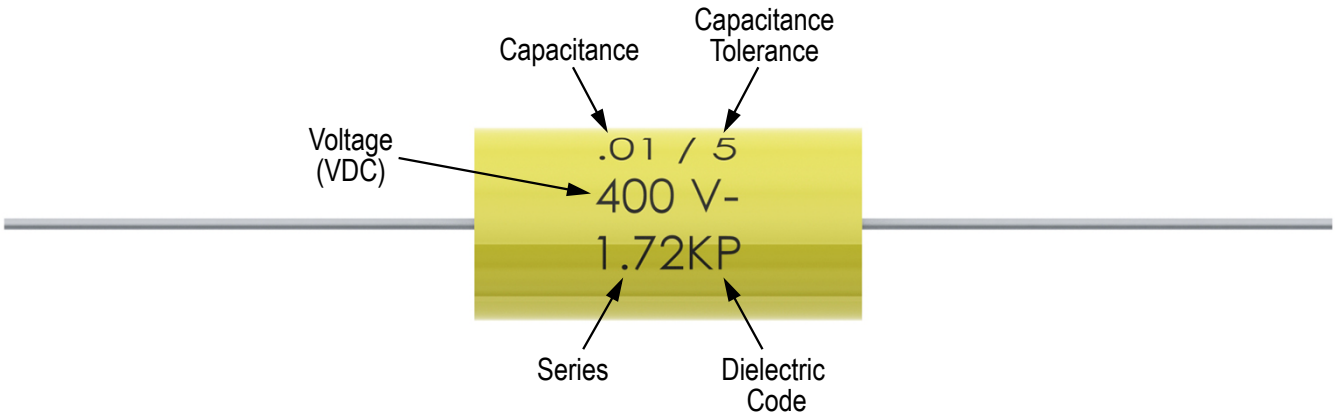
Detailed Cross Section

Winding Schemes





Marking



Packaging Quantities

Diameter	Length	Bulk Long Leads	Standard Reel ø 355 mm
5.0	11.0	1,500	3,000
6.5	16.5	2,000	1,200
7.0	16.5	1,750	1,100
7.5	16.5	1,500	1,000
8.0	16.5	1,250	900
8.0	20.5	1,000	900
8.0	28.0	500	900
8.5	16.5	1,000	800
8.5	20.5	750	800
8.5	28.0	500	800
9.0	16.5	1,000	800
9.0	28.0	500	800
9.5	20.5	750	600
9.5	28.0	500	600
10.0	28.0	500	600

Diameter	Length	Bulk Long Leads	Standard Reel ø 355 mm
11.0	20.5	500	400
11.0	28.0	500	400
11.5	28.0	300	400
12.5	28.0	300	400
13.0	28.0	300	400
13.5	28.0	300	300
13.5	33.0	300	300
14.0	33.0	300	300
16.0	33.0	200	250
16.5	33.0	200	250
18.0	33.0	200	200
19.0	33.0	150	150
19.5	33.0	150	150
20.0	33.0	150	150
22.5	33.0	100	–

PFR Series Polypropylene Film/Foil, Radial

Overview

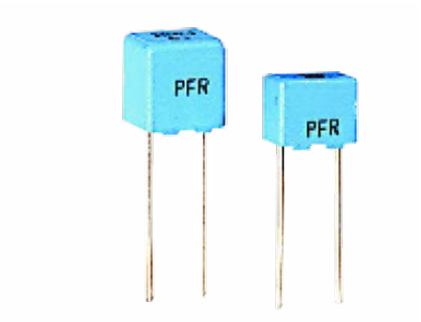
The PFR Series is a capacitor with polypropylene film and metal foil electrodes, encapsulated in self-extinguishing resin in a box of material meeting the requirements of UL 94 V–0.

Applications

Typical applications include high speed applications requiring low losses at high frequencies and high dV/dt, such as electrical ballasts, televisions, video and telecommunications.

Benefits

- Rated voltage: 63 – 1,000 VDC
- Rated voltage: 40 – 250 VAC
- Capacitance range: 0.0001 – 0.022 µF
- Lead spacing: 5 mm
- Capacitance tolerance: ±1%, ±2%, ±2.5%, ±5%, ±10%
- Climatic category: 55/100/56, IEC 60068–1
- Tape and reel packaging in accordance with IEC 60286–2
- RoHS Compliant and lead-free terminations
- Category temperature range of -55˚C to +100˚C



Legacy Part Number System

PFR	5	101	J	63	J11	L4	BULK
Series	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Size Code	Lead Length	Packaging
Polypropylene Film/Foil	5 (Standard)	First two digits represent significant figures. Third digit specifies number of zeros.	F = ±1% G = ±2% H = ±2.5% J = ±5% K = ±10%	63 = 63 100 = 100 250 = 250 400 = 400 630 = 630 1000 = 1000	See Dimension Table	Letter "L" followed by lead length in mm	See Ordering Options Table

New KEMET Part Number System

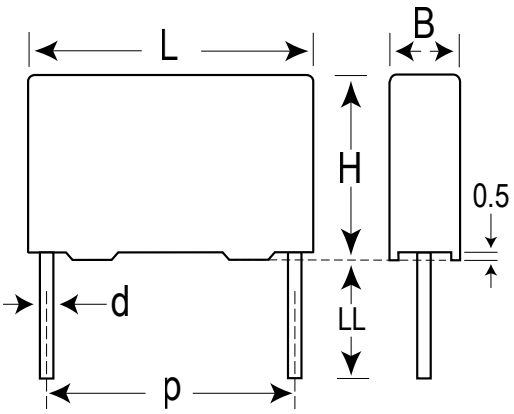
F	411	J	H	101	J	063	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging
F = Film	Polypropylene Film/Foil	J = 5.0	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	F = ±1% G = ±2% H = ±2.5% J = ±5% K = ±10%	063 = 63 100 = 100 250 = 250 400 = 400 630 = 630 1K0 = 1000	See Ordering Options Table

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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	KEMET Lead and Packaging Code	Legacy Lead and Packaging Code
5	**Standard Lead and Packaging Options**			
	Bulk (Bag) – Short Leads	4 +1/-0	C	Bulk
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L	TR18
	Other Lead and Packaging Options			
	Ammo Pack	H_0= 16.5 +/-0.5	Q	TA16
	Ammo Pack	H_0= 18.5 +/-0.5	R	TA18
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P	LR18

Dimensions – Millimeters

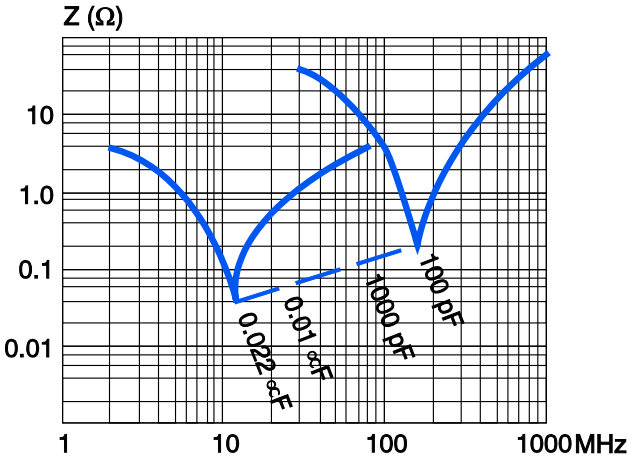


KEMET Size Code	Legacy Size Code	p		B		H		L		d	
		Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
JH	J11	5	-0.4	4.5	Maximum	6	Maximum	7.2	Maximum	0.5	+/-0.05
JK	J12	5	-0.4	5.5	Maximum	7	Maximum	7.2	Maximum	0.5	+/-0.05
JR	J13	5	-0.4	6.5	Maximum	8	Maximum	7.2	Maximum	0.5	+/-0.05
Note: See Ordering Options Table for lead length (LL) options.											

Performance Characteristics

Voltage Range (VDC)	63	100	250	400	630	1000
Voltage Range (VAC)	40	63	160	220	250	250
Capacitance Range (µF)	0.0001 – 0.022	0.0001 – 0.01	0.0001 – 0.0068	0.0001 – 0.0068	0.0001 – 0.0047	0.0001 – 0.001
Capacitance Values	In accordance with IEC E12 series					
Capacitance Tolerance	±1%, ±2%, ±2.5%, ±5%, ±10%					
Category Temperature Range	-55°C to +100°C. An operating temperature up to +105°C is allowed under certain conditions. Please consult KEMET for details					
Climatic Category	IEC 60068–1, 55/100/56					
Capacitance Drift	Maximum 0.3% after a 2 year storage period at a temperature of +10°C to +40°C and a relative humidity of 40% to 60%					
Temperature Coefficient	-200 (+50, -100) ppm/°C at 1 kHz					
Self-Inductance	Approximately 6 nH/cm for the total length of capacitor winding and the leads					
Dissipation Factor tanδ	Maximum Values at +23°C					
		C ≤ 0.001 µF	0.001 µF < C ≤ 0.0047 µF	C > 0.0047 µF		
	1 kHz	0.0004	0.0004	0.0004		
	10 kHz	0.0004	0.0005	0.0007		
	100 kHz	0.0005	0.0007	–		
Insulation Resistance	Measured at +20°C, according to IEC 60384–13					
	Minimum value between terminals 100,000 MΩ					

Resonance Frequencies



Environmental Test Data

Test	IEC Publication	Procedure	Requirements
Voltage Proof	60384–1 Clause 4.6	1.6 x V_R after 60 seconds	The capacitors must withstand the voltage without breakdowns or flashovers and without decreased insulation resistance below the value in each detail specification. No visible damage
	Clause 4.6 2.3	2 x V_R (minimum 400 VDC to case) after 60 seconds	As above
Vibration	60068–2–6 Test Fc	6 hours with 10 – 500 Hz and 0.75 mm amplitude or 98 m/s^2 depending on frequency	No visible damage tanδ ≤ 1.2 x stated value at 100 kHz Δ C/C ≤ ±0.5 %
Bump	60068–2–29 Test Eb	4,000 bumps with 390 m/s^2 mounted on PCB	Δ C/C ≤ ±0.5% tanδ ≤ 1.2 x stated value at 100 kHz Insulation resistance: ≥ 100,000 MΩ for C_R ≤ 0.33 µF ≥ 30,000 MΩ • µF for C_R > 0.33 µF
Resistance to Soldering Heat	60068–2–20 Method 1A	Solder bath at + 260°C ±5°C with screening	Immersion of the terminations into the solder bath shall be completed in a time not exceeding 1 second and the terminations shall remain immersed to the specified depth for 10 + 1 second and then be withdrawn. Δ C/C ≤ ±0.5% tanδ increase < 0.001 No visible damage
Climatic Sequence	60384–1 Paragraph 4:21	60068–2.2 dry heat 16 hours 60068–2–34 damp heat, one cycle 60068–2–1 Test Aa 2 hours	Insulation resistance: ≥ 100,000 MΩ for C_R ≤ 0.33 µF ≥ 30,000 MΩ • µF for C_R > 0.33 µF Δ C/C ≤ ±0.5% tanδ ≤ 1.2 x stated value at 100 kHz
Damp Heat Steady State	60068–2–3 Test Ca	+40°C and 90 – 95% RH	56 days no visible damage Insulation resistance: ≥ 50,000 MΩ for C_R ≤ 0.33 µF ≥ 15,000 MΩ • µF for C_R > 0.33 µF Δ C/C ≤ ±1% tanδ ≤ 1.2 x stated value at 100 kHz
Endurance, AC		1,000 hours at +85°C and 1.25 x V_R AC	No visible damage Δ C/C ≤ ±3% tanδ ≤ 1.5 x stated value at 100 kHz Insulation resistance: ≥ 100,000 MΩ for C_R ≤ 0.33 µF ≥ 30,000 MΩ • µF for C_R > 0.33 µF
Charge and Discharge	60384–17 Paragraph 4.13	10,000 pulses and with (2 x) dV/dt according to detail specification	tanδ (100 kHz) ≤ 2 x stated value (100 kHz) Δ C/C ≤ ±0.5% Insulation resistance: ≥ 50,000 MΩ for C_R ≤ 0.33 µF ≥ 15,000 MΩ • µF for C_R > 0.33 µF

Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Cap Value (µF)	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Size Code (New/Legacy)	New KEMET Part Number	Legacy Part Number
			B	H	L					
63	40	0.00010	4.5	6.0	7.2	5	1000	JH/J11	F411JH101(1)063(2)	PFR5101(1)63J11L4(2)
63	40	0.00015	4.5	6.0	7.2	5	1000	JH/J11	F411JH151(1)063(2)	PFR5151(1)63J11L4(2)
63	40	0.00022	4.5	6.0	7.2	5	1000	JH/J11	F411JH221(1)063(2)	PFR5221(1)63J11L4(2)
63	40	0.00033	4.5	6.0	7.2	5	1000	JH/J11	F411JH331(1)063(2)	PFR5331(1)63J11L4(2)
63	40	0.00047	4.5	6.0	7.2	5	1000	JH/J11	F411JH471(1)063(2)	PFR5471(1)63J11L4(2)
63	40	0.00068	4.5	6.0	7.2	5	1000	JH/J11	F411JH681(1)063(2)	PFR5681(1)63J11L4(2)
63	40	0.0010	4.5	6.0	7.2	5	1000	JH/J11	F411JH102(1)063(2)	PFR5102(1)63J11L4(2)
63	40	0.0015	4.5	6.0	7.2	5	1000	JH/J11	F411JH152(1)063(2)	PFR5152(1)63J11L4(2)
63	40	0.0022	4.5	6.0	7.2	5	1000	JH/J11	F411JH222(1)063(2)	PFR5222(1)63J11L4(2)
63	40	0.0033	4.5	6.0	7.2	5	1000	JH/J11	F411JH332(1)063(2)	PFR5332(1)63J11L4(2)
63	40	0.0047	4.5	6.0	7.2	5	1000	JH/J11	F411JH472(1)063(2)	PFR5472(1)63J11L4(2)
63	40	0.0068	4.5	6.0	7.2	5	1000	JH/J11	F411JH682(1)063(2)	PFR5682(1)63J11L4(2)
63	40	0.010	5.5	7.0	7.2	5	1000	JK/J12	F411JK103(1)063(2)	PFR5103(1)63J12L4(2)
63	40	0.015	6.5	8.0	7.2	5	1000	JR/J13	F411JR153(1)063(2)	PFR5153(1)63J13L4(2)
63	40	0.020	6.5	8.0	7.2	5	1000	JR/J13	F411JR203(1)063(2)	PFR5203(1)63J13L4(2)
63	40	0.022	6.5	8.0	7.2	5	1000	JR/J13	F411JR223(1)063(2)	PFR5223(1)63J13L4(2)
100	63	0.00010	4.5	6.0	7.2	5	1000	JH/J11	F411JH101(1)100(2)	PFR5101(1)100J11L4(2)
100	63	0.00015	4.5	6.0	7.2	5	1000	JH/J11	F411JH151(1)100(2)	PFR5151(1)100J11L4(2)
100	63	0.00022	4.5	6.0	7.2	5	1000	JH/J11	F411JH221(1)100(2)	PFR5221(1)100J11L4(2)
100	63	0.00033	4.5	6.0	7.2	5	1000	JH/J11	F411JH331(1)100(2)	PFR5331(1)100J11L4(2)
100	63	0.00047	4.5	6.0	7.2	5	1000	JH/J11	F411JH471(1)100(2)	PFR5471(1)100J11L4(2)
100	63	0.00068	4.5	6.0	7.2	5	1000	JH/J11	F411JH681(1)100(2)	PFR5681(1)100J11L4(2)
100	63	0.0010	4.5	6.0	7.2	5	1000	JH/J11	F411JH102(1)100(2)	PFR5102(1)100J11L4(2)
100	63	0.0015	4.5	6.0	7.2	5	1000	JH/J11	F411JH152(1)100(2)	PFR5152(1)100J11L4(2)
100	63	0.0022	4.5	6.0	7.2	5	1000	JH/J11	F411JH222(1)100(2)	PFR5222(1)100J11L4(2)
100	63	0.0033	5.5	7.0	7.2	5	1000	JK/J12	F411JK332(1)100(2)	PFR5332(1)100J12L4(2)
100	63	0.0047	5.5	7.0	7.2	5	1000	JK/J12	F411JK472(1)100(2)	PFR5472(1)100J12L4(2)
100	63	0.0068	6.5	8.0	7.2	5	1000	JR/J13	F411JR682(1)100(2)	PFR5682(1)100J13L4(2)
100	63	0.010	6.5	8.0	7.2	5	1000	JR/J13	F411JR103(1)100(2)	PFR5103(1)100J13L4(2)
250	160	0.00010	4.5	6.0	7.2	5	1000	JH/J11	F411JH101(1)250(2)	PFR5101(1)250J11L4(2)
250	160	0.00015	4.5	6.0	7.2	5	1000	JH/J11	F411JH151(1)250(2)	PFR5151(1)250J11L4(2)
250	160	0.00022	4.5	6.0	7.2	5	1000	JH/J11	F411JH221(1)250(2)	PFR5221(1)250J11L4(2)
250	160	0.00033	4.5	6.0	7.2	5	1000	JH/J11	F411JH331(1)250(2)	PFR5331(1)250J11L4(2)
250	160	0.00047	4.5	6.0	7.2	5	1000	JH/J11	F411JH471(1)250(2)	PFR5471(1)250J11L4(2)
250	160	0.00068	4.5	6.0	7.2	5	1000	JH/J11	F411JH681(1)250(2)	PFR5681(1)250J11L4(2)
250	160	0.0010	4.5	6.0	7.2	5	1000	JH/J11	F411JH102(1)250(2)	PFR5102(1)250J11L4(2)
250	160	0.0015	4.5	6.0	7.2	5	1000	JH/J11	F411JH152(1)250(2)	PFR5152(1)250J11L4(2)
250	160	0.0022	4.5	6.0	7.2	5	1000	JH/J11	F411JH222(1)250(2)	PFR5222(1)250J11L4(2)
250	160	0.0033	5.5	7.0	7.2	5	1000	JK/J12	F411JK332(1)250(2)	PFR5332(1)250J12L4(2)
250	160	0.0047	6.5	8.0	7.2	5	1000	JR/J13	F411JR472(1)250(2)	PFR5472(1)250J13L4(2)
250	160	0.0068	6.5	8.0	7.2	5	1000	JR/J13	F411JR682(1)250(2)	PFR5682(1)250J13L4(2)
400	220	0.00010	4.5	6.0	7.2	5	1000	JH/J11	F411JH101(1)400(2)	PFR5101(1)400J11L4(2)
400	220	0.00015	4.5	6.0	7.2	5	1000	JH/J11	F411JH151(1)400(2)	PFR5151(1)400J11L4(2)
400	220	0.00022	4.5	6.0	7.2	5	1000	JH/J11	F411JH221(1)400(2)	PFR5221(1)400J11L4(2)
400	220	0.00033	4.5	6.0	7.2	5	1000	JH/J11	F411JH331(1)400(2)	PFR5331(1)400J11L4(2)
400	220	0.00047	4.5	6.0	7.2	5	1000	JH/J11	F411JH471(1)400(2)	PFR5471(1)400J11L4(2)
400	220	0.00068	4.5	6.0	7.2	5	1000	JH/J11	F411JH681(1)400(2)	PFR5681(1)400J11L4(2)
400	220	0.0010	4.5	6.0	7.2	5	1000	JH/J11	F411JH102(1)400(2)	PFR5102(1)400J11L4(2)
400	220	0.0015	4.5	6.0	7.2	5	1000	JH/J11	F411JH152(1)400(2)	PFR5152(1)400J11L4(2)
400	220	0.0022	4.5	6.0	7.2	5	1000	JH/J11	F411JH222(1)400(2)	PFR5222(1)400J11L4(2)
400	220	0.0033	5.5	7.0	7.2	5	1000	JK/J12	F411JK332(1)400(2)	PFR5332(1)400J12L4(2)
400	220	0.0047	6.5	8.0	7.2	5	1000	JR/J13	F411JR472(1)400(2)	PFR5472(1)400J13L4(2)
400	220	0.0068	6.5	8.0	7.2	5	1000	JR/J13	F411JR682(1)400(2)	PFR5682(1)400J13L4(2)
630	250	0.00010	4.5	6.0	7.2	5	1000	JH/J11	F411JH101(1)630(2)	PFR5101(1)630J11L4(2)
630	250	0.00015	4.5	6.0	7.2	5	1000	JH/J11	F411JH151(1)630(2)	PFR5151(1)630J11L4(2)
630	250	0.00022	4.5	6.0	7.2	5	1000	JH/J11	F411JH221(1)630(2)	PFR5221(1)630J11L4(2)
630	250	0.00033	4.5	6.0	7.2	5	1000	JH/J11	F411JH331(1)630(2)	PFR5331(1)630J11L4(2)
630	250	0.00047	4.5	6.0	7.2	5	1000	JH/J11	F411JH471(1)630(2)	PFR5471(1)630J11L4(2)
630	250	0.00068	4.5	6.0	7.2	5	1000	JH/J11	F411JH681(1)630(2)	PFR5681(1)630J11L4(2)
630	250	0.0010	4.5	6.0	7.2	5	1000	JH/J11	F411JH102(1)630(2)	PFR5102(1)630J11L4(2)
VDC	VAC	Cap Value (µF)	B (mm)	H (mm)	L (mm)	Lead Spacing (p)	dV/dt (V/µs)	Size Code (New/Legacy)	New KEMET Part Number	Legacy Part Number

(1) F = ±1%, G = ±2%, H = ±2.5%, J = ±5%, K = ±10%.

(2) Insert lead and packaging code. See Ordering Options Table for available options.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Max Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Size Code (New/Legacy)	New KEMET Part Number	Legacy Part Number
			B	H	L					
630	250	0.0015	4.5	6.0	7.2	5	1000	JH/J11	F411JH152(1)630(2)	PFR5152(1)630J11L4(2)
630	250	0.0022	5.5	7.0	7.2	5	1000	JK/J12	F411JK222(1)630(2)	PFR5222(1)630J12L4(2)
630	250	0.0033	6.5	8.0	7.2	5	1000	JR/J13	F411JR332(1)630(2)	PFR5332(1)630J13L4(2)
630	250	0.0047	6.5	8.0	7.2	5	1000	JR/J13	F411JR472(1)630(2)	PFR5472(1)630J13L4(2)
1000	250	0.00010	4.5	6.0	7.2	5	1000	JH/J11	F411JH101(1)1K0(2)	PFR5101(1)1000J11L4(2)
1000	250	0.00015	4.5	6.0	7.2	5	1000	JH/J11	F411JH151(1)1K0(2)	PFR5151(1)1000J11L4(2)
1000	250	0.00022	4.5	6.0	7.2	5	1000	JH/J11	F411JH221(1)1K0(2)	PFR5221(1)1000J11L4(2)
1000	250	0.00033	5.5	7.0	7.2	5	1000	JK/J12	F411JK331(1)1K0(2)	PFR5331(1)1000J12L4(2)
1000	250	0.00047	5.5	7.0	7.2	5	1000	JK/J12	F411JK471(1)1K0(2)	PFR5471(1)1000J12L4(2)
1000	250	0.00068	5.5	7.0	7.2	5	1000	JK/J12	F411JK681(1)1K0(2)	PFR5681(1)1000J12L4(2)
1000	250	0.0010	6.5	8.0	7.2	5	1000	JR/J13	F411JR102(1)1K0(2)	PFR5102(1)1000J13L4(2)
VDC	**VAC**	**Cap Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Size Code (New/Legacy)**	**New KEMET Part Number**	**Legacy Part Number**

(1) F = ±1%, G = ±2%, H = ±2.5%, J = ±5%, K = ±10%.

(2) Insert lead and packaging code. See Ordering Options Table for available options.

Soldering Process

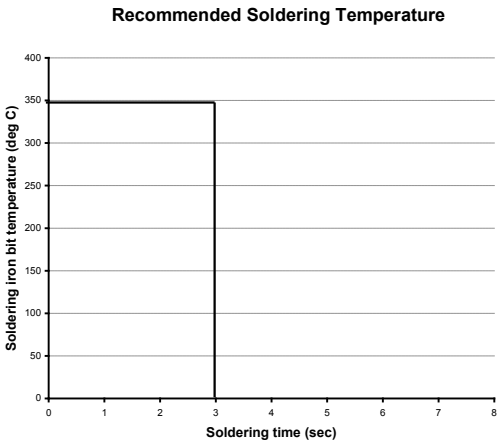
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

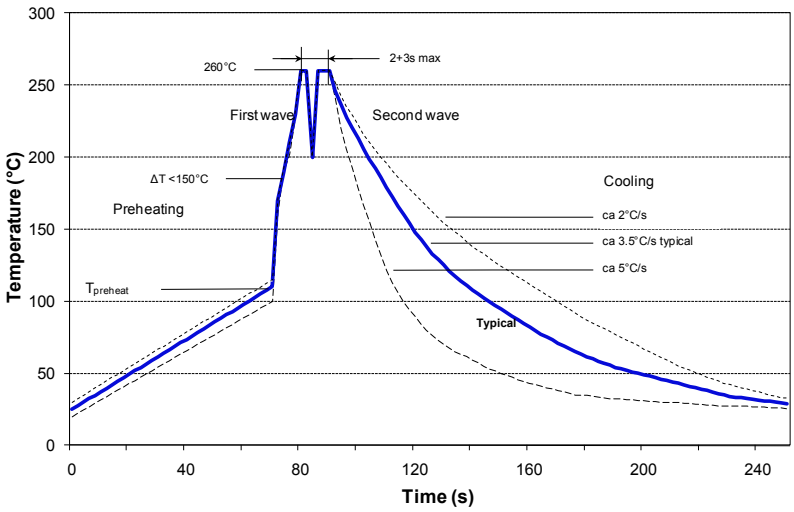
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

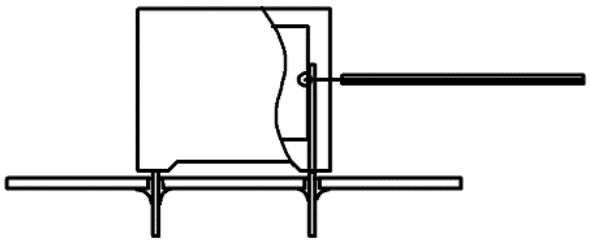
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



Temperature monitored inside the capacitor.

Selective Soldering Recommendations

Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

Marking

- Series
- Capacitance
- Capacitance tolerance
- Rated DC voltage

Packaging Quantities

KEMET Size Code	Legacy Size Code	Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 360 mm	Large Reel ø 500 mm	Ammo
JF	J01	5	2.5	6.5	7.2	2000	2000	2500	5000	3000
JJ	J02		3.5	8	7.2	2000	2000	2000	4000	2000
JL	J03		4.5	9	7.2	1000	1000	1500	3000	1700
JQ	J04		5	10	7.2	1000	1000	1300	2600	1500
JT	J05		6	11	7.2	1000	1000	1000	2000	1200
JU	J06		7.2	13	7.2	1000	1000	800	1600	–
JH	J11		4.5	6	7.2	1000	1000	1500	3000	1700
JK	J12		5.5	7	7.2	1000	1000	1200	2400	1300
JR	J13		6.5	8	7.2	1000	1000	900	1800	1100

PHE448 Series Polypropylene Film/Foil, Radial

Overview

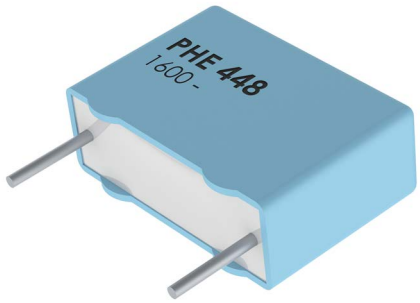
The PHE448 Series is a capacitor with polypropylene film dielectric and metal foil electrodes, encapsulated in self-extinguishing resin in a box of material meeting the requirements of UL 94 V–0.

Applications

Typical applications include high frequency and high voltage applications requiring capacitors with extremely high current handling capability, i.e., high dV/dt values.

Benefits

- Rated voltage: 1,600 – 2,000 VDC
- Rated voltage: 650 – 700 VAC
- Capacitance range: 0.0001 – 0.022 µF
- Lead spacing: 15 mm
- Capacitance tolerance: ±5%, other tolerances on request
- Climatic category: 55/105/56, IEC 60068–1
- Tape and reel packaging in accordance with IEC 60286–2
- RoHS Compliant and lead-free terminations
- Category temperature range of -55˚C to +105˚C



Legacy Part Number System

PHE448	R	B	4150	J	R06
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Capacitance Tolerance	Packaging
Polypropylene Film/Foil	R = 1,600 S = 2,000	B = 15.0	The last three digits represent significant figures. The first digit specifies the total number of digits.	J = ±5% Other tolerances on request	See Ordering Options Table

New KEMET Part Number System

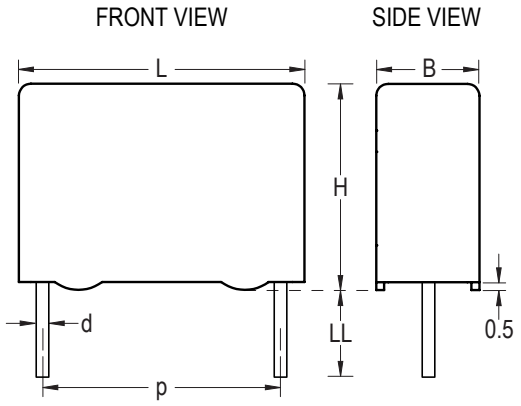
F	448	B	D	152	J	1K6	C
Capacitor Class	Series	Lead Spacing (mm)	Size Code	Capacitance Code (pF)	Capacitance Tolerance	Rated Voltage (VDC)	Packaging
F = Film	Polypropylene Film/Foil	B = 15.0	See Dimension Table	First two digits represent significant figures. Third digit specifies number of zeros.	J = ±5%, Other tolerances on request	1K6 = 1,600 2K0 = 2,000	See Ordering Options Table

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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	KEMET Lead and Packaging Code	Legacy Lead and Packaging Code
15	**Standard Lead and Packaging Options**			
	Bulk (Bag) – Short Leads	6 +0/-1	C	R06
	Bulk (Bag) – Long Leads	17 +0/-1	A	R17
	Other Lead and Packaging Options			
	Bulk (Bag) – Max Length Leads	30 +5/-0	ALW0L	R30
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	L	R17T0
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	P	R17T1
Native 15 formed to 7.5	Ammo Pack	H_0= 16.5 +/-0.5	XLAF1	R25XA
	Tape & Reel (Standard Reel)	H_0= 16.5 +/-0.5	XLTF1	R25X2

Dimensions – Millimeters



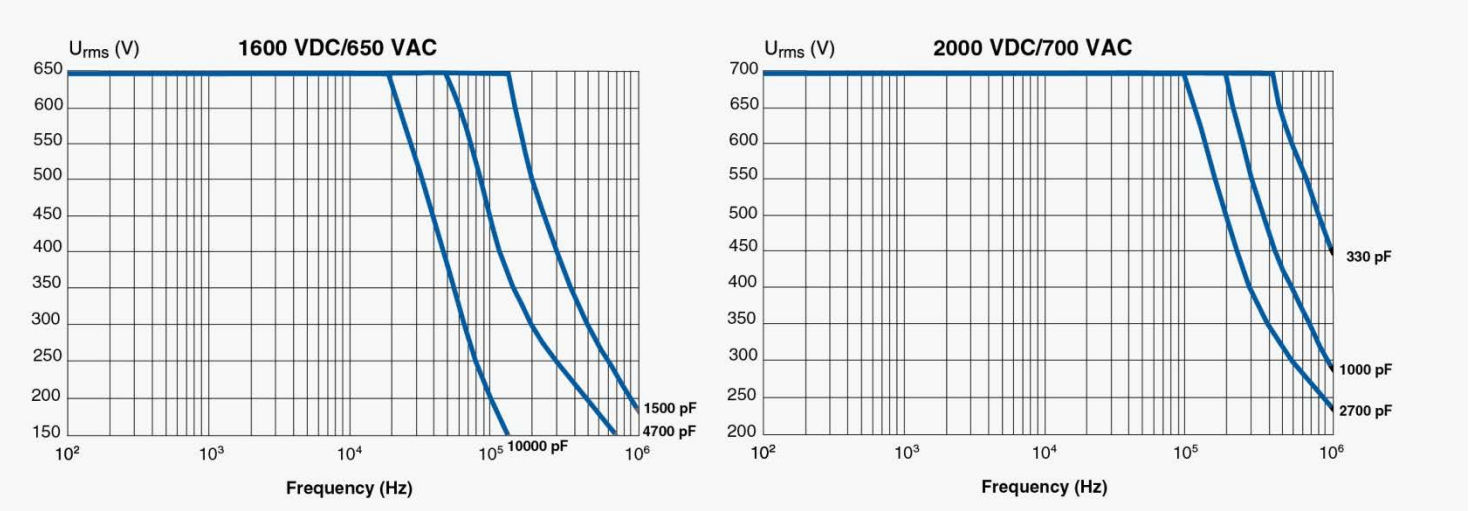
KEMET Size Code	Legacy Size Code	p		B		H		L		d	
		Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
BD	B04	15	+/-0.4	5.5	Maximum	10.5	Maximum	18	Maximum	0.8	+/-0.05
BL	B06	15	+/-0.4	7.5	Maximum	14.5	Maximum	18	Maximum	0.8	+/-0.05
BJ	B10	15	+/-0.4	6.5	Maximum	12.5	Maximum	18	Maximum	0.8	+/-0.05
BQ	B11	15	+/-0.4	8.5	Maximum	16	Maximum	18	Maximum	0.8	+/-0.05
BV	B14	15	+/-0.4	9.5	Maximum	17.5	Maximum	18	Maximum	0.8	+/-0.05
BY	B16	15	+/-0.4	11	Maximum	19	Maximum	18	Maximum	0.8	+/-0.05

Note: See Ordering Options Table for lead length (LL) options.

Performance Characteristics

Voltage Range (VDC)	1,600	2,000
Voltage Range (VAC)	650	700
Capacitance Range (µF)	0.0015 – 0.022	0.0001 – 0.0033
Capacitance Values	In accordance with IEC E12 series	
Capacitance Tolerance	±5%, other tolerances on request	
Category Temperature Range	-55°C to +105°C	
Rated Temperature	+85°C	
Voltage Derating	The rated voltage is decreased with 1.3%/°C between +85°C and +105°C	
Climatic Category	IEC 60068–1, 55/105/56	
Dissipation Factor tanδ	Maximum Values at +23°C	
	1 kHz	0.0003
	10 kHz	0.0005
	100 kHz	0.001
Insulation Resistance	Measured at +23°C, 100 VDC 60 seconds for V_R < 500 VDC and at 500 VDC for V_R ≥ 500 VDC	
	Minimum Values Between Terminals	
	≥ 100,000 MΩ	
	Minimum Values Between Terminals and Case	
	≥ 100,000 MΩ	

Derating of V_{rms} vs. Frequency, +85ºC Ambient Temperature and 10ºC Internal Heating, Typical Values



Environmental Test Data

Test	IEC Publication	Procedure	Requirements
Voltage Proof	60384–1 Clause 4.6	1.6 x V_R after 60 seconds	The capacitors must withstand the voltage without breakdowns or flashovers and without decreased insulation resistance below the value in each detail specification. No visible damage
	Clause 4.6 2.3	2 x V_R (minimum 400 VDC to case) after 60 seconds	As above
Vibration	60068–2–6 Test Fc	6 hours with 10 – 500 Hz and 0.75 mm amplitude or 98 m/s^2 depending on frequency	No visible damage tanδ ≤ 1.2 x stated value at 100 kHz Δ C/C ≤ ±0.5 %
Bump	60068–2–29 Test Eb	4,000 bumps with 390 m/s^2 mounted on PCB	Δ C/C ≤ ±0.5% tanδ ≤ 1.2 x stated value at 100 kHz Insulation resistance: ≥ 100,000 MΩ for C_R ≤ 0.33 µF ≥ 30,000 MΩ • µF for C_R > 0.33 µF
Resistance to Soldering Heat	60068–2–20 Method 1A	Solder bath at + 260°C ±5°C with screening	Immersion of the terminations into the solder bath shall be completed in a time not exceeding 1 second and the terminations shall remain immersed to the specified depth for 10 + 1 second and then be withdrawn. Δ C/C ≤ ±1.0% tanδ increase < 0.001 No visible damage
Climatic Sequence	60384–1 Paragraph 4:21	60068–2.2 dry heat 16 hours 60068–2–34 damp heat, one cycle 60068–2–1 Test Aa 2 hours	Insulation resistance: ≥ 100,000 MΩ for C_R ≤ 0.33 µF ≥ 30,000 MΩ • µF for C_R > 0.33 µF Δ C/C ≤ ±0.5% tanδ ≤ 1.2 x stated value at 100 kHz
Damp Heat Steady State	60068–2–3 Test Ca	+40°C and 90 – 95% RH	56 days no visible damage Insulation resistance: ≥ 50,000 MΩ for C_R ≤ 0.33 µF ≥ 15,000 MΩ • µF for C_R > 0.33 µF Δ C/C ≤ ±1% tanδ ≤ 1.2 x stated value at 100 kHz
Endurance, AC		1,000 hours at +85°C and 1.25 x V_R AC	No visible damage Δ C/C ≤ ±3% tanδ ≤ 1.5 x stated value at 100 kHz Insulation resistance: ≥ 100,000 MΩ for C_R ≤ 0.33 µF ≥ 30,000 MΩ • µF for C_R > 0.33 µF
Charge and Discharge	60384–17 Paragraph 4.13	10,000 pulses and with (2 x) dV/dt according to detail specification	tanδ (100 kHz) ≤ 2 x stated value (100 kHz) Δ C/C ≤ ±0.5% Insulation resistance: ≥ 50,000 MΩ for C_R ≤ 0.33 µF ≥ 15,000 MΩ • µF for C_R > 0.33 µF

Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

VDC	VAC	Cap Value (µF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/µs)	Size Code (New/Legacy)	R_{thha} °C/W 85°C 0.2m/s	New KEMET Part Number	Legacy Part Number
			B	H	L						
1600	650	0.0015	5.5	10.5	18.0	15	15000	BD/B04	87	F448BD152J1K6(1)	PHE448RB4150J(1)
1600	650	0.0018	5.5	10.5	18.0	15	15000	BD/B04	86	F448BD182J1K6(1)	PHE448RB4180J(1)
1600	650	0.0022	5.5	10.5	18.0	15	15000	BD/B04	84	F448BD222J1K6(1)	PHE448RB4220J(1)
1600	650	0.0027	6.5	12.5	18.0	15	15000	BJ/B10	82	F448BJ272J1K6(1)	PHE448RB4270J(1)
1600	650	0.0033	6.5	12.5	18.0	15	15000	BJ/B10	82	F448BJ332J1K6(1)	PHE448RB4330J(1)
1600	650	0.0039	6.5	12.5	18.0	15	15000	BJ/B10	82	F448BJ392J1K6(1)	PHE448RB4390J(1)
1600	650	0.0047	6.5	12.5	18.0	15	15000	BJ/B10	82	F448BJ472J1K6(1)	PHE448RB4470J(1)
1600	650	0.0056	7.5	14.5	18.0	15	15000	BL/B06	78	F448BL562J1K6(1)	PHE448RB4560J(1)
1600	650	0.0068	7.5	14.5	18.0	15	15000	BL/B06	78	F448BL682J1K6(1)	PHE448RB4680J(1)
1600	650	0.0082	8.5	16.0	18.0	15	15000	BQ/B11	70	F448BQ822J1K6(1)	PHE448RB4820J(1)
1600	650	0.01	8.5	16.0	18.0	15	15000	BQ/B11	70	F448BQ103J1K6(1)	PHE448RB5100J(1)
1600	650	0.012	9.5	17.5	18.0	15	15000	BV/B14	60	F448BV123J1K6(1)	PHE448RB5120J(1)
1600	650	0.015	9.5	17.5	18.0	15	15000	BV/B14	60	F448BV153J1K6(1)	PHE448RB5150J(1)
1600	650	0.018	11.0	19.0	18.0	15	15000	BY/B16	55	F448BY183J1K6(1)	PHE448RB5180J(1)
1600	650	0.022	11.0	19.0	18.0	15	15000	BY/B16	55	F448BY223K1K6(2)	PHE448RB5220K(2)
2000	700	0.0001	5.5	10.5	18.0	15	25000	BD/B04	87	F448BD101J2K0(1)	PHE448SB3100J(1)
2000	700	0.00012	5.5	10.5	18.0	15	25000	BD/B04	87	F448BD121J2K0(1)	PHE448SB3120J(1)
2000	700	0.00015	5.5	10.5	18.0	15	25000	BD/B04	87	F448BD151J2K0(1)	PHE448SB3150J(1)
2000	700	0.00018	5.5	10.5	18.0	15	25000	BD/B04	87	F448BD181J2K0(1)	PHE448SB3180J(1)
2000	700	0.00022	5.5	10.5	18.0	15	25000	BD/B04	87	F448BD221J2K0(1)	PHE448SB3220J(1)
2000	700	0.00027	5.5	10.5	18.0	15	25000	BD/B04	87	F448BD271J2K0(1)	PHE448SB3270J(1)
2000	700	0.00033	5.5	10.5	18.0	15	25000	BD/B04	86	F448BD331J2K0(1)	PHE448SB3330J(1)
2000	700	0.00039	5.5	10.5	18.0	15	25000	BD/B04	86	F448BD391J2K0(1)	PHE448SB3390J(1)
2000	700	0.00047	5.5	10.5	18.0	15	25000	BD/B04	86	F448BD471J2K0(1)	PHE448SB3470J(1)
2000	700	0.00056	5.5	10.5	18.0	15	25000	BD/B04	85	F448BD561J2K0(1)	PHE448SB3560J(1)
2000	700	0.00068	5.5	10.5	18.0	15	25000	BD/B04	85	F448BD681J2K0(1)	PHE448SB3680J(1)
2000	700	0.00082	5.5	10.5	18.0	15	25000	BD/B04	85	F448BD821J2K0(1)	PHE448SB3820J(1)
2000	700	0.001	5.5	10.5	18.0	15	25000	BD/B04	84	F448BD102J2K0(1)	PHE448SB4100J(1)
2000	700	0.0012	6.5	12.5	18.0	15	25000	BJ/B10	82	F448BJ122J2K0(1)	PHE448SB4120J(1)
2000	700	0.0015	6.5	12.5	18.0	15	25000	BJ/B10	82	F448BJ152J2K0(1)	PHE448SB4150J(1)
2000	700	0.0018	7.5	14.5	18.0	15	25000	BL/B06	78	F448BL182J2K0(1)	PHE448SB4180J(1)
2000	700	0.0022	8.5	16.0	18.0	15	25000	BQ/B11	70	F448BQ222J2K0(1)	PHE448SB4220J(1)
2000	700	0.0027	8.5	16.0	18.0	15	25000	BQ/B11	70	F448BQ272J2K0(1)	PHE448SB4270J(1)
2000	700	0.0033	9.5	17.5	18.0	15	25000	BV/B14	60	F448BV332J2K0(1)	PHE448SB4330J(1)
VDC	**VAC**	**Cap Value (µF)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**dV/dt (V/µs)**	**Size Code (New/Legacy)**	**R_{thha} °C/W 85°C 0.2m/s**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Order Options Table for available options.
(2) K = ±10% (only available tolerance).

Soldering Process

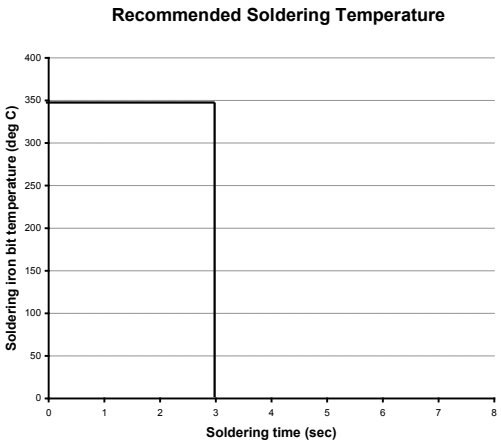
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217 – 221ºC for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170ºC). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

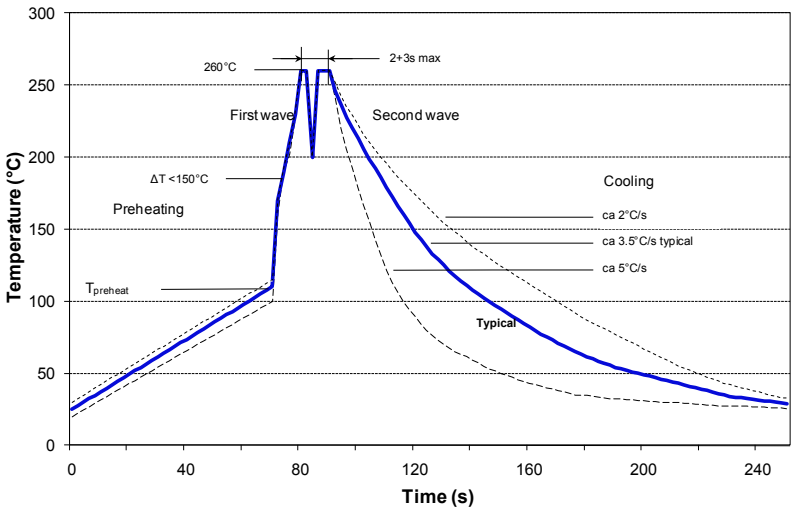
Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

Wave Soldering Recommendations



Soldering Process cont'd

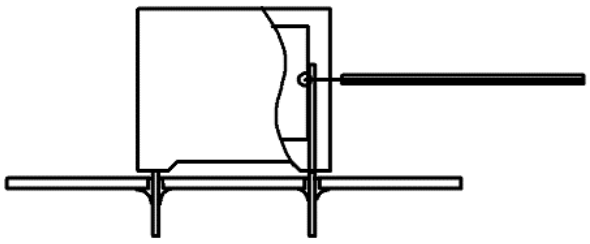
Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process
Figure 1

Dielectric Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Polyester	130°C	130°C	130°C	270°C	270°C
Polypropylene	100°C	110°C	130°C	260°C	270°C
Paper	130°C	130°C	140°C	270°C	270°C
Polyphenylene Sulphide	150°C	150°C	160°C	270°C	270°C

2. The maximum temperature measured inside the capacitor:
Set the temperature so that inside the element the maximum temperature is below the limit:

Dielectric Film Material	Maximum temperature measured inside the element
Polyester	160°C
Polypropylene	110°C
Paper	160°C
Polyphenylene sulphide	160°C



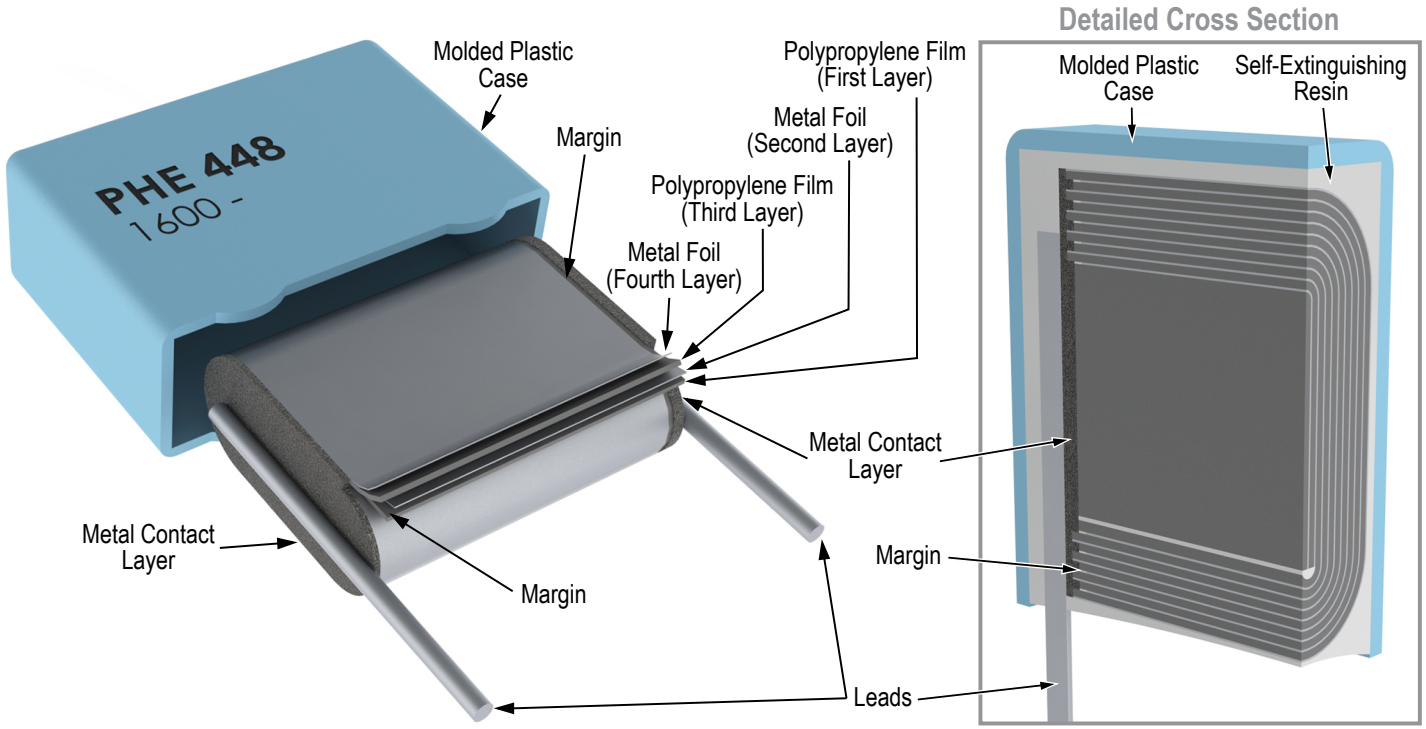
Temperature monitored inside the capacitor.

Selective Soldering Recommendations

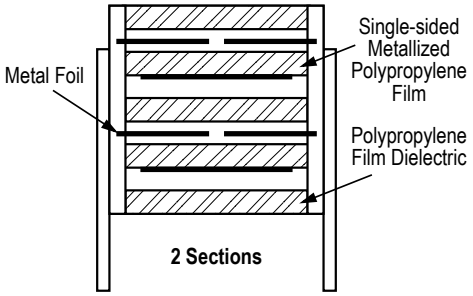
Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

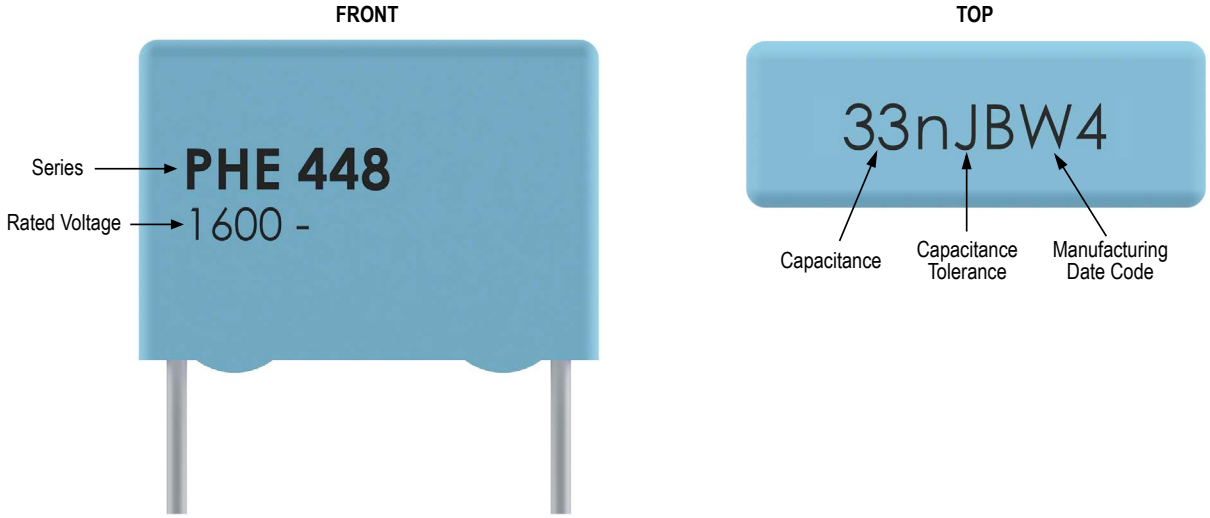
Construction



Winding Scheme



Marking



Packaging Quantities

KEMET Size Code	Legacy Size Code	Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 360 mm	Large Reel ø 500 mm	Standard Reel Formed	Ammo Formed
BD	B04	15	5.5	10.5	18	1000	800	600	1200	550	570
BE	B05		5.5	12.5	18	1000	800	600	1200	550	570
BL	B06		7.5	14.5	18	800	400	400	800	350	378
BJ	B10		6.5	12.5	18	1000	600	500	1000	450	480
BQ	B11		8.5	16	18	600	400	400	800	350	324
BM	B12		8	15	18	600	400	400	800	350	351
BV	B14		9.5	17.5	18	500	300	350	700	250	297
BG	B15		6	12	18	1000	800	500	1000	450	520
BY	B16		11	19	18	450	250	300	600	250	252
BU	B17		13	12.5	18	400	300	250	500	200	216

Low Voltage Transient Suppression

F5A Series Metallized Polyester Film with Integrated Ceramic Varistor, 18 – 63 VDC

Electronic Components
KEMET
CHARGED.

Overview

The F5A Series is a metallized polyester (MKT) film capacitor with integrated ceramic varistor encapsulated in a thermosetting resin-filled plastic box with tinned wire leads. Box material is solvent resistant and flame retardant meeting the requirements of UL 94 V–0.

Applications

Typical applications include worldwide use as EMI/RFI and transient voltage suppressors for automotive motors and other suppression applications. These include engine blower fans, central locking systems, heating/air-conditioning blowers, electric sun roofs, electric window regulators, fuel/oil pumps, electric windshield wipers and electrically operated seats. This through-hole EMI/RFI suppression element is mainly used for automotive applications without a printed circuit board, e.g., motor suppression or mixed through-hole and surface mount printed circuit boards.

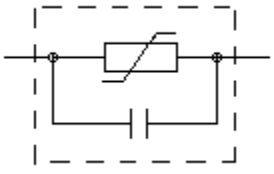
Benefits

- Low inductive MKT capacitors in parallel construction with a ceramic varistor in a single case provide superior suppression results
- Approvals: AEC–Q200, ISO 7637
- Rated voltage: 18 – 63 VDC
- Capacitance range: 0.1 µF to 2.2 µF
- Lead spacing: 5 – 10 mm
- Capacitance tolerance: ±10%, ±20%
- Climatic category: 55/125/56 IEC 60068–1
- Tape and reel packaging in accordance with IEC 60286–2
- RoHS Compliant and lead-free terminations
- Operating temperature range: -55˚C to +125˚C

Part Number System

F5A	H	C	4100	DQ	A	6	K
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Varistor Voltage V_v @ 1 mA	Size Code	Capacitance Tolerance
Film Capacitor/ Ceramic Varistor Unit	B = 18 H = 25 J = 30 N = 45 C = 50 D = 63	C = 5 F = 10	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	See Varistor Voltage Table	See Dimension Table	K = ±10% M = ±20%

Circuit Diagram



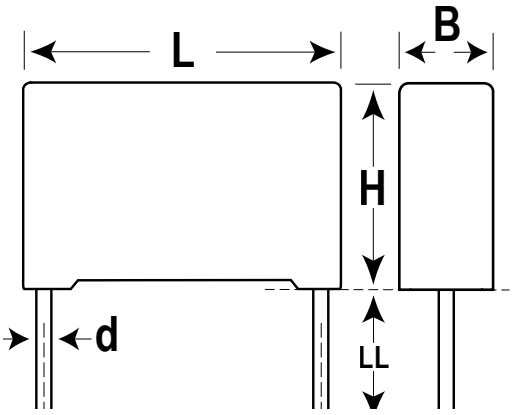


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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	AA
	Ammo Pack	H_0= 18.5 +/-0.5	DQ
	Other Lead and Packaging Options		
	Bulk (Bag) – Long Leads	17 +1/-2	Z3
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	CK
10	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	AA
	Ammo Pack	H_0= 18.5 +/-0.5	DQ
	Other Lead and Packaging Options		
	Bulk (Bag) – Long Leads	17 +1/-2	Z3
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	CK

Dimensions – Millimeters



Rated Capacitance µF	Size Code	p		B		H		L		d	
		Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
0.1 – 0.47	5	5.0	+/-0.4	4.6	Maximum	9.6	Maximum	7.4	Maximum	0.6	+/-0.05
0.56 – 1.5	6	5.0	+/-0.4	5.1	Maximum	10.1	Maximum	7.5	Maximum	0.6	+/-0.05
1.8 – 2.2	7	5.0	+/-0.4	6.1	Maximum	11.1	Maximum	7.5	Maximum	0.6	+/-0.05
0.1 – 1.0	2	10.0	+/-0.4	5.2	Maximum	11.1	Maximum	13.4	Maximum	0.7	+/-0.05
1.2 – 1.5	3	10.0	+/-0.4	6.2	Maximum	12.1	Maximum	13.4	Maximum	0.7	+/-0.05
Note: See Ordering Options Table for lead length (LL) options.											

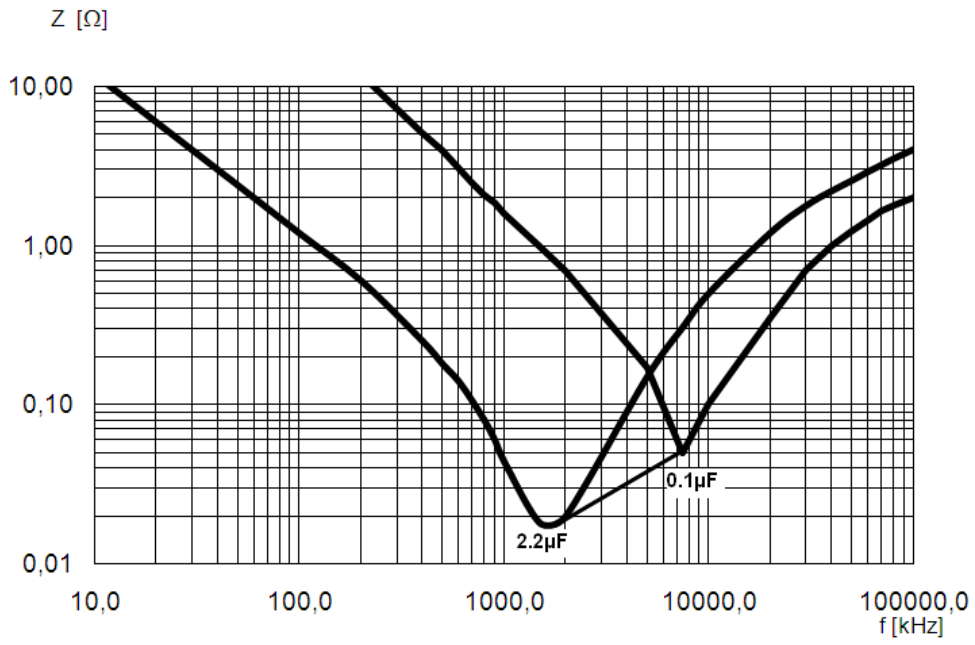
Varistor Voltage Table

Part Number Digit 4		Part Number Digit 12		Clamping Voltage (1A, Pulse 8/20 µs)
Letter	V_r (VDC)	Letter	V_v (VDC)	V_C (V)
B	18	B	22	38
B	18	E	27	44
H	25	A	33	54
J	30	D	39	65
J	30	I	47	77
N	45	B	56	90
C	50	C	68	110
D	63	C	82	135

Performance Characteristics

Rated Voltage	18 – 63 VDC (For temperature over 100°C a decreasing factor of 2% per degree has to be applied on the rated voltage V_R)
Capacitance Range	0.1 – 2.2 µF
Capacitance Tolerance	±10%, ±20%
Temperature Range	-55°C to +125°C
Climatic Category	55/125/56, IEC 60068–1
Leakage Current	≤ 50 µA at V_R
Approvals	AEC–Q200, ISO 7637
Dissipation Factor	0.01 (1 kHz at 25°C ±5°C)
Test Voltage Between Terminals	100 VDC
Insulation Resistance	V_R < 24 V 1MΩ @ 12 V, V_R ≥ 24 V 1MΩ @ 24 V
Varistor	Multilayer ceramic, EIA case size 1206
Peak Current Pulse	8/20 µs
Peak Current for V_v< 50 V	200 A
Peak Current for V_v> 50 V	100 A

Impedance Graph



Environmental Test Data

Test	Conditions	Performance	
Damp Heat Steady State	+40°C ±2°C and 93% ±2% RH, 56 days	Δ C/C	≤ 5%
		V_v change	≤ 10%
		DF change	≤ 50 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 100 µA
Endurance	+125°C ±2°C/100°C ±2°C, 0.5 x V_R/1.0 x V_R, 1,000 hours	Δ C/C	≤ 10%
		V_v change	≤ 10%
		DF change	≤ 50 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 100 µA
Resistance to Soldering Heat	+260°C ±5°C, 10 ±1 second	Δ C/C	≤ 3%
		V_v change	≤ 5%
		DF change	≤ 30 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 50 µA
Peak Current Derating	Reference CECC 42,000/Test C 2.1, 100 times (2 ms), 120 seconds between each current peak	Δ C/C	≤ 10%
		V_v change	≤ 10%
		DF change	≤ 30 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 100 µA
Long Term Stability (After 2 Years)	-40°C to +80°C, ≤ 70% Humidity	Δ C/C	≤ 3%
		V_v change	≤ 5%
		DF change	≤ 20 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 50 µA
Reliability Failure Criteria	Reference MIL HDB 217 +40°C ±2°C, 0.5 x V_R, ≤ 5 FIT	Δ C/C	> 10%
		V_v change	≤ 10%
		DF change	≤ 20 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 200 µA

Environmental Compliance

All KEMET EMI capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

Capacitance Value (µF)	VDC	Max Dimensions in mm			Lead Spacing (p)	Varistor Voltage (VDC)	New KEMET Part Number	Legacy Part Number
		B	H	L				
0.10	18	4.6	9.6	7.4	5.0	22	5ABC3100(1)B5(2)	F5ABC3100(1)B5(2)
0.10	18	4.6	9.6	7.4	5.0	27	5ABC3100(1)E5(2)	F5ABC3100(1)E5(2)
0.22	18	4.6	9.6	7.4	5.0	22	5ABC3220(1)B5(2)	F5ABC3220(1)B5(2)
0.22	18	4.6	9.6	7.4	5.0	27	5ABC3220(1)E5(2)	F5ABC3220(1)E5(2)
0.33	18	4.6	9.6	7.4	5.0	22	5ABC3330(1)B5(2)	F5ABC3330(1)B5(2)
0.33	18	4.6	9.6	7.4	5.0	27	5ABC3330(1)E5(2)	F5ABC3330(1)E5(2)
0.47	18	4.6	9.6	7.4	5.0	22	5ABC3470(1)B5(2)	F5ABC3470(1)B5(2)
0.47	18	4.6	9.6	7.4	5.0	27	5ABC3470(1)E5(2)	F5ABC3470(1)E5(2)
0.56	18	5.1	10.1	7.5	5.0	22	5ABC3560(1)B6(2)	F5ABC3560(1)B6(2)
0.56	18	5.1	10.1	7.5	5.0	27	5ABC3560(1)E6(2)	F5ABC3560(1)E6(2)
0.68	18	5.1	10.1	7.5	5.0	22	5ABC3680(1)B6(2)	F5ABC3680(1)B6(2)
0.68	18	5.1	10.1	7.5	5.0	27	5ABC3680(1)E6(2)	F5ABC3680(1)E6(2)
0.82	18	5.1	10.1	7.5	5.0	22	5ABC3820(1)B6(2)	F5ABC3820(1)B6(2)
0.82	18	5.1	10.1	7.5	5.0	27	5ABC3820(1)E6(2)	F5ABC3820(1)E6(2)
1.00	18	5.1	10.1	7.5	5.0	22	5ABC4100(1)B6(2)	F5ABC4100(1)B6(2)
1.00	18	5.1	10.1	7.5	5.0	27	5ABC4100(1)E6(2)	F5ABC4100(1)E6(2)
1.20	18	5.1	10.1	7.5	5.0	22	5ABC4120(1)B6(2)	F5ABC4120(1)B6(2)
1.20	18	5.1	10.1	7.5	5.0	27	5ABC4120(1)E6(2)	F5ABC4120(1)E6(2)
1.50	18	5.1	10.1	7.5	5.0	22	5ABC4150(1)B6(2)	F5ABC4150(1)B6(2)
1.50	18	5.1	10.1	7.5	5.0	27	5ABC4150(1)E6(2)	F5ABC4150(1)E6(2)
1.80	18	6.1	11.1	7.5	5.0	22	5ABC4180(1)B7(2)	F5ABC4180(1)B7(2)
1.80	18	6.1	11.1	7.5	5.0	27	5ABC4180(1)E7(2)	F5ABC4180(1)E7(2)
2.20	18	6.1	11.1	7.5	5.0	22	5ABC4220(1)B7(2)	F5ABC4220(1)B7(2)
2.20	18	6.1	11.1	7.5	5.0	27	5ABC4220(1)E7(2)	F5ABC4220(1)E7(2)
0.10	25	4.6	9.6	7.4	5.0	33	5AHC3100(1)A5(2)	F5AHC3100(1)A5(2)
0.22	25	4.6	9.6	7.4	5.0	33	5AHC3220(1)A5(2)	F5AHC3220(1)A5(2)
0.33	25	4.6	9.6	7.4	5.0	33	5AHC3330(1)A5(2)	F5AHC3330(1)A5(2)
0.47	25	4.6	9.6	7.4	5.0	33	5AHC3470(1)A5(2)	F5AHC3470(1)A5(2)
0.56	25	5.1	10.1	7.5	5.0	33	5AHC3560(1)A6(2)	F5AHC3560(1)A6(2)
0.68	25	5.1	10.1	7.5	5.0	33	5AHC3680(1)A6(2)	F5AHC3680(1)A6(2)
0.82	25	5.1	10.1	7.5	5.0	33	5AHC3820(1)A6(2)	F5AHC3820(1)A6(2)
1.00	25	5.1	10.1	7.5	5.0	33	5AHC4100(1)A6(2)	F5AHC4100(1)A6(2)
1.20	25	5.1	10.1	7.5	5.0	33	5AHC4120(1)A6(2)	F5AHC4120(1)A6(2)
1.50	25	5.1	10.1	7.5	5.0	33	5AHC4150(1)A6(2)	F5AHC4150(1)A6(2)
1.80	25	6.1	11.1	7.5	5.0	33	5AHC4180(1)A7(2)	F5AHC4180(1)A7(2)
2.20	25	6.1	11.1	7.5	5.0	33	5AHC4220(1)A7(2)	F5AHC4220(1)A7(2)
0.10	30	4.6	9.6	7.4	5.0	39	5AJC3100(1)D5(2)	F5AJC3100(1)D5(2)
0.10	30	4.6	9.6	7.4	5.0	47	5AJC3100(1)I5(2)	F5AJC3100(1)I5(2)
0.22	30	4.6	9.6	7.4	5.0	39	5AJC3220(1)D5(2)	F5AJC3220(1)D5(2)
0.22	30	4.6	9.6	7.4	5.0	47	5AJC3220(1)I5(2)	F5AJC3220(1)I5(2)
0.33	30	4.6	9.6	7.4	5.0	39	5AJC3330(1)D5(2)	F5AJC3330(1)D5(2)
0.33	30	4.6	9.6	7.4	5.0	47	5AJC3330(1)I5(2)	F5AJC3330(1)I5(2)
0.47	30	4.6	9.6	7.4	5.0	39	5AJC3470(1)D5(2)	F5AJC3470(1)D5(2)
0.47	30	4.6	9.6	7.4	5.0	47	5AJC3470(1)I5(2)	F5AJC3470(1)I5(2)
0.56	30	5.1	10.1	7.5	5.0	39	5AJC3560(1)D6(2)	F5AJC3560(1)D6(2)
0.56	30	5.1	10.1	7.5	5.0	47	5AJC3560(1)I6(2)	F5AJC3560(1)I6(2)
0.68	30	5.1	10.1	7.5	5.0	39	5AJC3680(1)D6(2)	F5AJC3680(1)D6(2)
0.68	30	5.1	10.1	7.5	5.0	47	5AJC3680(1)I6(2)	F5AJC3680(1)I6(2)
0.82	30	5.1	10.1	7.5	5.0	39	5AJC3820(1)D6(2)	F5AJC3820(1)D6(2)
0.82	30	5.1	10.1	7.5	5.0	47	5AJC3820(1)I6(2)	F5AJC3820(1)I6(2)
1.00	30	5.1	10.1	7.5	5.0	39	5AJC4100(1)D6(2)	F5AJC4100(1)D6(2)
1.00	30	5.1	10.1	7.5	5.0	47	5AJC4100(1)I6(2)	F5AJC4100(1)I6(2)
1.20	30	5.1	10.1	7.5	5.0	39	5AJC4120(1)D6(2)	F5AJC4120(1)D6(2)
1.20	30	5.1	10.1	7.5	5.0	47	5AJC4120(1)I6(2)	F5AJC4120(1)I6(2)
1.50	30	5.1	10.1	7.5	5.0	39	5AJC4150(1)D6(2)	F5AJC4150(1)D6(2)
1.50	30	5.1	10.1	7.5	5.0	47	5AJC4150(1)I6(2)	F5AJC4150(1)I6(2)
1.80	30	6.1	11.1	7.5	5.0	39	5AJC4180(1)D7(2)	F5AJC4180(1)D7(2)
1.80	30	6.1	11.1	7.5	5.0	47	5AJC4180(1)I7(2)	F5AJC4180(1)I7(2)
2.20	30	6.1	11.1	7.5	5.0	39	5AJC4220(1)D7(2)	F5AJC4220(1)D7(2)
Capacitance Value (µF)	**VDC**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Varistor Voltage (VDC)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) K = 10%, M = 20%.

Table 1 – Ratings & Part Number Reference cont'd

Capacitance Value (µF)	VDC	Max Dimensions in mm			Lead Spacing (p)	Varistor Voltage (VDC)	New KEMET Part Number	Legacy Part Number
		B	H	L				
2.20	30	6.1	11.1	7.5	5.0	47	5AJC4220(1)I7(2)	F5AJC4220(1)I7(2)
0.10	45	4.6	9.6	7.4	5.0	56	5ANC3100(1)B5(2)	F5ANC3100(1)B5(2)
0.22	45	4.6	9.6	7.4	5.0	56	5ANC3220(1)B5(2)	F5ANC3220(1)B5(2)
0.33	45	4.6	9.6	7.4	5.0	56	5ANC3330(1)B5(2)	F5ANC3330(1)B5(2)
0.47	45	4.6	9.6	7.4	5.0	56	5ANC3470(1)B5(2)	F5ANC3470(1)B5(2)
0.56	45	5.1	10.1	7.5	5.0	56	5ANC3560(1)B6(2)	F5ANC3560(1)B6(2)
0.68	45	5.1	10.1	7.5	5.0	56	5ANC3680(1)B6(2)	F5ANC3680(1)B6(2)
0.82	45	5.1	10.1	7.5	5.0	56	5ANC3820(1)B6(2)	F5ANC3820(1)B6(2)
1.00	45	5.1	10.1	7.5	5.0	56	5ANC4100(1)B6(2)	F5ANC4100(1)B6(2)
1.20	45	5.1	10.1	7.5	5.0	56	5ANC4120(1)B6(2)	F5ANC4120(1)B6(2)
1.50	45	5.1	10.1	7.5	5.0	56	5ANC4150(1)B6(2)	F5ANC4150(1)B6(2)
1.80	45	6.1	11.1	7.5	5.0	56	5ANC4180(1)B7(2)	F5ANC4180(1)B7(2)
2.20	45	6.1	11.1	7.5	5.0	56	5ANC4220(1)B7(2)	F5ANC4220(1)B7(2)
0.10	50	4.6	9.6	7.4	5.0	68	5ACC3100(1)C5(2)	F5ACC3100(1)C5(2)
0.22	50	4.6	9.6	7.4	5.0	68	5ACC3220(1)C5(2)	F5ACC3220(1)C5(2)
0.33	50	4.6	9.6	7.4	5.0	68	5ACC3330(1)C5(2)	F5ACC3330(1)C5(2)
0.47	50	4.6	9.6	7.4	5.0	68	5ACC3470(1)C5(2)	F5ACC3470(1)C5(2)
0.56	50	5.1	10.1	7.5	5.0	68	5ACC3560(1)C6(2)	F5ACC3560(1)C6(2)
0.68	50	5.1	10.1	7.5	5.0	68	5ACC3680(1)C6(2)	F5ACC3680(1)C6(2)
0.82	50	5.1	10.1	7.5	5.0	68	5ACC3820(1)C6(2)	F5ACC3820(1)C6(2)
1.00	50	5.1	10.1	7.5	5.0	68	5ACC4100(1)C6(2)	F5ACC4100(1)C6(2)
1.20	50	5.1	10.1	7.5	5.0	68	5ACC4120(1)C6(2)	F5ACC4120(1)C6(2)
1.50	50	5.1	10.1	7.5	5.0	68	5ACC4150(1)C6(2)	F5ACC4150(1)C6(2)
1.80	50	6.1	11.1	7.5	5.0	68	5ACC4180(1)C7(2)	F5ACC4180(1)C7(2)
2.20	50	6.1	11.1	7.5	5.0	68	5ACC4220(1)C7(2)	F5ACC4220(1)C7(2)
0.10	63	4.6	9.6	7.4	5.0	68	5ADC3100(1)C5(2)	F5ADC3100(1)C5(2)
0.22	63	4.6	9.6	7.4	5.0	68	5ADC3220(1)C5(2)	F5ADC3220(1)C5(2)
0.33	63	4.6	9.6	7.4	5.0	68	5ADC3330(1)C5(2)	F5ADC3330(1)C5(2)
0.47	63	4.6	9.6	7.4	5.0	68	5ADC3470(1)C5(2)	F5ADC3470(1)C5(2)
0.56	63	5.1	10.1	7.5	5.0	68	5ADC3560(1)C6(2)	F5ADC3560(1)C6(2)
0.68	63	5.1	10.1	7.5	5.0	68	5ADC3680(1)C6(2)	F5ADC3680(1)C6(2)
0.82	63	5.1	10.1	7.5	5.0	68	5ADC3820(1)C6(2)	F5ADC3820(1)C6(2)
1.00	63	5.1	10.1	7.5	5.0	68	5ADC4100(1)C6(2)	F5ADC4100(1)C6(2)
1.20	63	5.1	10.1	7.5	5.0	68	5ADC4120(1)C6(2)	F5ADC4120(1)C6(2)
1.50	63	5.1	10.1	7.5	5.0	68	5ADC4150(1)C6(2)	F5ADC4150(1)C6(2)
1.80	63	6.1	11.1	7.5	5.0	68	5ADC4180(1)C7(2)	F5ADC4180(1)C7(2)
2.20	63	6.1	11.1	7.5	5.0	68	5ADC4220(1)C7(2)	F5ADC4220(1)C7(2)
0.10	18	5.2	11.1	13.4	10.0	22	5ABF3100(1)B2(2)	F5ABF3100(1)B2(2)
0.10	18	5.2	11.1	13.4	10.0	27	5ABF3100(1)E2(2)	F5ABF3100(1)E2(2)
0.22	18	5.2	11.1	13.4	10.0	22	5ABF3220(1)B2(2)	F5ABF3220(1)B2(2)
0.22	18	5.2	11.1	13.4	10.0	27	5ABF3220(1)E2(2)	F5ABF3220(1)E2(2)
0.33	18	5.2	11.1	13.4	10.0	22	5ABF3330(1)B2(2)	F5ABF3330(1)B2(2)
0.33	18	5.2	11.1	13.4	10.0	27	5ABF3330(1)E2(2)	F5ABF3330(1)E2(2)
0.47	18	5.2	11.1	13.4	10.0	22	5ABF3470(1)B2(2)	F5ABF3470(1)B2(2)
0.47	18	5.2	11.1	13.4	10.0	27	5ABF3470(1)E2(2)	F5ABF3470(1)E2(2)
0.56	18	5.2	11.1	13.4	10.0	22	5ABF3560(1)B2(2)	F5ABF3560(1)B2(2)
0.56	18	5.2	11.1	13.4	10.0	27	5ABF3560(1)E2(2)	F5ABF3560(1)E2(2)
0.68	18	5.2	11.1	13.4	10.0	22	5ABF3680(1)B2(2)	F5ABF3680(1)B2(2)
0.68	18	5.2	11.1	13.4	10.0	27	5ABF3680(1)E2(2)	F5ABF3680(1)E2(2)
0.82	18	5.2	11.1	13.4	10.0	22	5ABF3820(1)B2(2)	F5ABF3820(1)B2(2)
0.82	18	5.2	11.1	13.4	10.0	27	5ABF3820(1)E2(2)	F5ABF3820(1)E2(2)
1.00	18	5.2	11.1	13.4	10.0	22	5ABF4100(1)B2(2)	F5ABF4100(1)B2(2)
1.00	18	5.2	11.1	13.4	10.0	27	5ABF4100(1)E2(2)	F5ABF4100(1)E2(2)
1.20	18	6.2	12.1	13.4	10.0	22	5ABF4120(1)B3(2)	F5ABF4120(1)B3(2)
1.20	18	6.2	12.1	13.4	10.0	27	5ABF4120(1)E3(2)	F5ABF4120(1)E3(2)
1.50	18	6.2	12.1	13.4	10.0	22	5ABF4150(1)B3(2)	F5ABF4150(1)B3(2)
1.50	18	6.2	12.1	13.4	10.0	27	5ABF4150(1)E3(2)	F5ABF4150(1)E3(2)
0.10	25	5.2	11.1	13.4	10.0	33	5AHF3100(1)A2(2)	F5AHF3100(1)A2(2)
0.22	25	5.2	11.1	13.4	10.0	33	5AHF3220(1)A2(2)	F5AHF3220(1)A2(2)
Capacitance Value (µF)	**VDC**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Varistor Voltage (VDC)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) K = 10%, M = 20%.

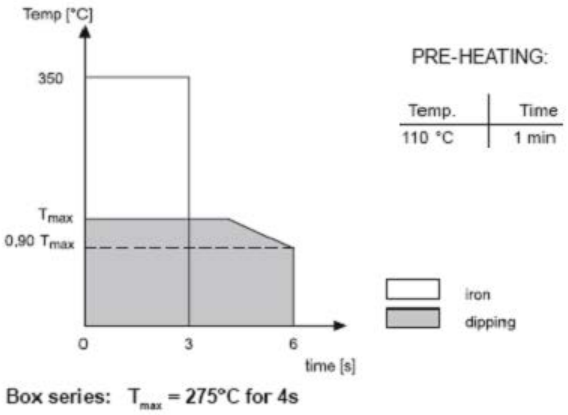
Table 1 – Ratings & Part Number Reference cont'd

Capacitance Value (µF)	VDC	Max Dimensions in mm			Lead Spacing (p)	Varistor Voltage (VDC)	New KEMET Part Number	Legacy Part Number
		B	H	L				
0.33	25	5.2	11.1	13.4	10.0	33	5AHF3330(1)A2(2)	F5AHF3330(1)A2(2)
0.47	25	5.2	11.1	13.4	10.0	33	5AHF3470(1)A2(2)	F5AHF3470(1)A2(2)
0.56	25	5.2	11.1	13.4	10.0	33	5AHF3560(1)A2(2)	F5AHF3560(1)A2(2)
0.68	25	5.2	11.1	13.4	10.0	33	5AHF3680(1)A2(2)	F5AHF3680(1)A2(2)
0.82	25	5.2	11.1	13.4	10.0	33	5AHF3820(1)A2(2)	F5AHF3820(1)A2(2)
1.00	25	5.2	11.1	13.4	10.0	33	5AHF4100(1)A2(2)	F5AHF4100(1)A2(2)
1.20	25	6.2	12.1	13.4	10.0	33	5AHF4120(1)A3(2)	F5AHF4120(1)A3(2)
1.50	25	6.2	12.1	13.4	10.0	33	5AHF4150(1)A3(2)	F5AHF4150(1)A3(2)
0.10	30	5.2	11.1	13.4	10.0	39	5AJF3100(1)D2(2)	F5AJF3100(1)D2(2)
0.10	30	5.2	11.1	13.4	10.0	47	5AJF3100(1)I2(2)	F5AJF3100(1)I2(2)
0.22	30	5.2	11.1	13.4	10.0	39	5AJF3220(1)D2(2)	F5AJF3220(1)D2(2)
0.22	30	5.2	11.1	13.4	10.0	47	5AJF3220(1)I2(2)	F5AJF3220(1)I2(2)
0.33	30	5.2	11.1	13.4	10.0	39	5AJF3330(1)D2(2)	F5AJF3330(1)D2(2)
0.33	30	5.2	11.1	13.4	10.0	47	5AJF3330(1)I2(2)	F5AJF3330(1)I2(2)
0.47	30	5.2	11.1	13.4	10.0	39	5AJF3470(1)D2(2)	F5AJF3470(1)D2(2)
0.47	30	5.2	11.1	13.4	10.0	47	5AJF3470(1)I2(2)	F5AJF3470(1)I2(2)
0.56	30	5.2	11.1	13.4	10.0	39	5AJF3560(1)D2(2)	F5AJF3560(1)D2(2)
0.56	30	5.2	11.1	13.4	10.0	47	5AJF3560(1)I2(2)	F5AJF3560(1)I2(2)
0.68	30	5.2	11.1	13.4	10.0	39	5AJF3680(1)D2(2)	F5AJF3680(1)D2(2)
0.68	30	5.2	11.1	13.4	10.0	47	5AJF3680(1)I2(2)	F5AJF3680(1)I2(2)
0.82	30	5.2	11.1	13.4	10.0	39	5AJF3820(1)D2(2)	F5AJF3820(1)D2(2)
0.82	30	5.2	11.1	13.4	10.0	47	5AJF3820(1)I2(2)	F5AJF3820(1)I2(2)
1.00	30	5.2	11.1	13.4	10.0	39	5AJF4100(1)D2(2)	F5AJF4100(1)D2(2)
1.00	30	5.2	11.1	13.4	10.0	47	5AJF4100(1)I2(2)	F5AJF4100(1)I2(2)
1.20	30	6.2	12.1	13.4	10.0	39	5AJF4120(1)D3(2)	F5AJF4120(1)D3(2)
1.20	30	6.2	12.1	13.4	10.0	47	5AJF4120(1)I3(2)	F5AJF4120(1)I3(2)
1.50	30	6.2	12.1	13.4	10.0	39	5AJF4150(1)D3(2)	F5AJF4150(1)D3(2)
1.50	30	6.2	12.1	13.4	10.0	47	5AJF4150(1)I3(2)	F5AJF4150(1)I3(2)
0.10	45	5.2	11.1	13.4	10.0	56	5ANF3100(1)B2(2)	F5ANF3100(1)B2(2)
0.22	45	5.2	11.1	13.4	10.0	56	5ANF3220(1)B2(2)	F5ANF3220(1)B2(2)
0.33	45	5.2	11.1	13.4	10.0	56	5ANF3330(1)B2(2)	F5ANF3330(1)B2(2)
0.47	45	5.2	11.1	13.4	10.0	56	5ANF3470(1)B2(2)	F5ANF3470(1)B2(2)
0.56	45	5.2	11.1	13.4	10.0	56	5ANF3560(1)B2(2)	F5ANF3560(1)B2(2)
0.68	45	5.2	11.1	13.4	10.0	56	5ANF3680(1)B2(2)	F5ANF3680(1)B2(2)
0.82	45	5.2	11.1	13.4	10.0	56	5ANF3820(1)B2(2)	F5ANF3820(1)B2(2)
1.00	45	5.2	11.1	13.4	10.0	56	5ANF4100(1)B2(2)	F5ANF4100(1)B2(2)
1.20	45	6.2	12.1	13.4	10.0	56	5ANF4120(1)B3(2)	F5ANF4120(1)B3(2)
1.50	45	6.2	12.1	13.4	10.0	56	5ANF4150(1)B3(2)	F5ANF4150(1)B3(2)
0.10	50	5.2	11.1	13.4	10.0	68	5ACF3100(1)C2(2)	F5ACF3100(1)C2(2)
0.22	50	5.2	11.1	13.4	10.0	68	5ACF3220(1)C2(2)	F5ACF3220(1)C2(2)
0.33	50	5.2	11.1	13.4	10.0	68	5ACF3330(1)C2(2)	F5ACF3330(1)C2(2)
0.47	50	5.2	11.1	13.4	10.0	68	5ACF3470(1)C2(2)	F5ACF3470(1)C2(2)
0.56	50	5.2	11.1	13.4	10.0	68	5ACF3560(1)C2(2)	F5ACF3560(1)C2(2)
0.68	50	5.2	11.1	13.4	10.0	68	5ACF3680(1)C2(2)	F5ACF3680(1)C2(2)
0.82	50	5.2	11.1	13.4	10.0	68	5ACF3820(1)C2(2)	F5ACF3820(1)C2(2)
1.00	50	5.2	11.1	13.4	10.0	68	5ACF4100(1)C2(2)	F5ACF4100(1)C2(2)
1.20	50	6.2	12.1	13.4	10.0	68	5ACF4120(1)C3(2)	F5ACF4120(1)C3(2)
1.50	50	6.2	12.1	13.4	10.0	68	5ACF4150(1)C3(2)	F5ACF4150(1)C3(2)
0.10	63	5.2	11.1	13.4	10.0	68	5ADF3100(1)C2(2)	F5ADF3100(1)C2(2)
0.22	63	5.2	11.1	13.4	10.0	68	5ADF3220(1)C2(2)	F5ADF3220(1)C2(2)
0.33	63	5.2	11.1	13.4	10.0	68	5ADF3330(1)C2(2)	F5ADF3330(1)C2(2)
0.47	63	5.2	11.1	13.4	10.0	68	5ADF3470(1)C2(2)	F5ADF3470(1)C2(2)
0.56	63	5.2	11.1	13.4	10.0	68	5ADF3560(1)C2(2)	F5ADF3560(1)C2(2)
0.68	63	5.2	11.1	13.4	10.0	68	5ADF3680(1)C2(2)	F5ADF3680(1)C2(2)
0.82	63	5.2	11.1	13.4	10.0	68	5ADF3820(1)C2(2)	F5ADF3820(1)C2(2)
1.00	63	5.2	11.1	13.4	10.0	68	5ADF4100(1)C2(2)	F5ADF4100(1)C2(2)
1.20	63	6.2	12.1	13.4	10.0	68	5ADF4120(1)C3(2)	F5ADF4120(1)C3(2)
1.50	63	6.2	12.1	13.4	10.0	68	5ADF4150(1)C3(2)	F5ADF4150(1)C3(2)
Capacitance Value (µF)	**VDC**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Varistor Voltage (VDC)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) K = 10%, M = 20%.

Maximum Soldering Temperature

- Set the temperature so that inside the element the maximum temperature is below 160°C
- Solder within the following temperature profiles, especially for iron soldering:



Box series: T_{max} = 275°C for 4s

General Conditions

- If two solderings are needed, please apply a recovery time until the temperature on the capacitor surface is below 50°C.
- Avoid any passing through adhesive curing oven when fixing surface mount parts in combination with through-hole parts. Insert through-hole parts only after the curing of surface mount parts.
- Avoid reflow soldering by combining the lead type with surface mount parts

Marking

- Capacitance
- Tolerance
- DC rated voltage
- Series (F5A)
- Manufacturing date code

Packaging Quantities

Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Large Reel ø 500 mm	Ammo
5	4.6	9.6	7.4	1500	2000	1400		1900
	5.1	10.1	7.5	1000	1500	1200		1700
	6.1	11.1	7.5	2000	1000	1000		1400
	7.3	13.1	7.5	1500	750	800		1150
10	5.2	11.1	13.4	1300	2000	600	1250	800
	6.2	12.1	13.4	1000	1800	500	1000	680

Low Voltage Transient Suppression

F5B Series Metallized Polyester Film with Integrated Suppression Diode 18 – 63 VDC

Electronic Components
KEMET
CHARGED.

Overview

The F5B Series is a metallized polyester (MKT) film capacitor with an integrated suppression diode encapsulated in a thermosetting resin-filled plastic box with tinned wire leads. Box material is solvent resistant and flame retardant meeting the requirements of UL 94 V–0.

Applications

Typical applications include worldwide use as EMI/RFI and advanced transient voltage suppressors for automotive motors and other suppression applications such as engine blower fans, central locking systems, heating/air-conditioning blowers, electric sun roofs, electric window regulators, fuel/oil pumps, electric windshield wipers and electrically operated seats. This through-hole EMI/RFI suppression element is mainly used for automotive applications without a printed circuit board, e.g., motor suppression or mixed through-hole and surface mount printed circuit boards.

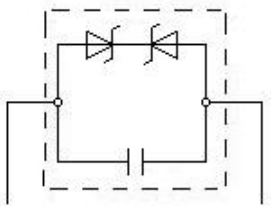
Benefits

- Low inductive MKT capacitors in parallel construction with a high power bidirectional transient voltage suppressor diode in a single case provide superior suppression results
- Approvals: AEC–Q200 (in progress), ISO7637
- Rated voltage: 18 – 63 VDC
- Capacitance range: 0.1 µF to 2.2 µF
- Lead spacing: 5 mm
- Capacitance tolerance: ±10%, ±20%
- Climatic category: 55/125/56, IEC 60068-1
- Tape and reel packaging in accordance with IEC 60286-2
- RoHS Compliant and lead-free terminations
- Operating temperature range: -55˚C to +125˚C

Part Number System

F5B	H	C	4100	DQ	A	7	K
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Diode Breakdown Voltage V_{BR} @ 1 mA	Size Code	Capacitance Tolerance
Film Capacitor/ Diode Unit	B = 18 H = 25 J = 30 N = 45 C = 50 D = 63	C = 5	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	See Diode Breakdown Voltage Table	See Dimension Table	K = ±10% M = ±20%

Circuit Diagram



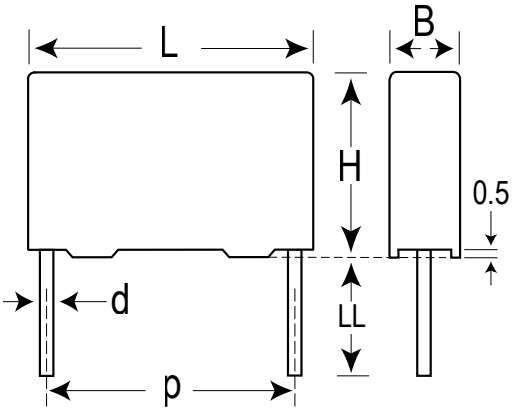


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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	AA
	Ammo Pack	H_0= 18.5 +/-0.5	DQ
	Other Lead and Packaging Options		
	Bulk (Bag) – Long Leads	17 +1/-2	Z3
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	CK

Dimensions – Millimeters



Rated Capacitance µF	Size Code	p		B		H		L		d	
		Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
0.1 – 1.2	7	5	+/-0.4	6.1	Maximum	11.1	Maximum	7.5	Maximum	0.6	+/-0.05
1.5 – 2.2	8	5	+/-0.4	7.3	Maximum	13.1	Maximum	7.5	Maximum	0.6	+/-0.05
Note: See Ordering Options Table for lead length (LL) options.											

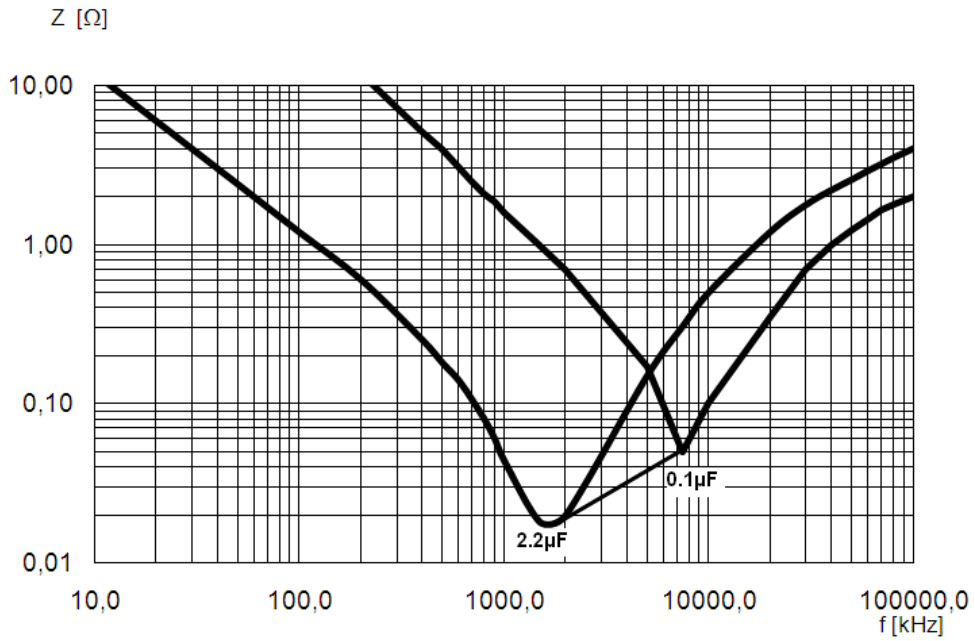
Diode Breakdown Voltage & Clamping Voltage Table

Part Number Digit 4		Part Number Digit 12		Clamping Voltage (Pulse 10/700 µs)	
Letter	V_r (VDC)	Letter	V_{BR} (VDC)	V_C (V)	I_p (A)
B	18	B	22	28	24
B	18	E	27	33	31
H	25	A	30	36	20
H	25	C	33	40	19
J	30	D	36	43	18
J	30	I	39	46	17
J	30	N	44	52	16
N	45	B	53	62	14
C	50	C	68	78	12
D	63	C	78	89	11

Performance Characteristics

Rated Voltage	18 – 63 VDC (For temperature over 100°C a decreasing factor of 2% per degree has to be applied on the rated voltage V_R)
Capacitance Range	0.1 – 2.2 µF
Capacitance Tolerance	±10%, ±20%
Temperature Range	-55°C to +125°C
Climatic Category	55/125/56, IEC 60068–1
Leakage Current	≤ 50 µA at V_R
Approvals	AEC–Q200 (in progress), ISO 7637–2
Dissipation Factor	0.01 (1 kHz at 25°C ± 5°C)
Test Voltage Between Terminals	100 VDC
Insulation Resistance	V_R < 24 V 1MΩ @ 12 V, V_R ≥ 24 V 1MΩ @ 24 V
Diode	600 W TVS diode, bidirectional
Peak Current Pulse	10/700 µs
Peak Current	See Diode Breakdown Voltage & Clamping Voltage Table

Impedance Graph



Environmental Test Data

Test	Conditions	Performance	
Damp Heat Steady State	+40°C ±2°C and 93% ±2% RH, 56 days	Δ C/C	≤ 5%
		V_{BR} change	≤ 10%
		DF change	≤ 50 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 100 µA
Endurance	+125°C ±2°C/100°C ±2°C, 0.5 x V_R/1.0 x V_R, 1,000 hours	Δ C/C	≤ 10%
		V_{BR} change	≤ 10%
		DF change	≤ 50 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 100 µA
Resistance to Soldering Heat	+260°C ±5°C, 10 ±1 second	Δ C/C	≤ 3%
		V_{BR} change	≤ 5%
		DF change	≤ 30 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 50 µA
Peak Current Derating	Pulse 10/700 µs, 300 V_p, 100 cycles with alternating polarity, 120 seconds between each current peak	Δ C/C	≤ 10%
		V_{BR} change	≤ 10%
		DF change	≤ 30 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 100 µA
Long Term Stability (After 2 Years)	-40°C to +80°C, ≤ 70% humidity	Δ C/C	≤ 3%
		V_{BR} change	≤ 5%
		DF change	≤ 20 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 50 µA
Reliability Failure Criteria	Reference MIL HDB 217 +40°C ±2°C, 0.5 x V_R, ≤ 5 FIT	Δ C/C	> 10%
		V_{BR} change	≤ 10%
		DF change	≤ 20 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 200 µA

Environmental Compliance

All KEMET EMI capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

Capacitance Value (µF)	VDC	Max Dimensions in mm			Lead Spacing (p)	Varistor Voltage (VDC)	New KEMET Part Number	Legacy Part Number
		B	H	L				
0.10	18	6.1	11.1	7.5	5.0	22	5BBC3100(1)B7(2)	F5BBC3100(1)B7(2)
0.10	18	6.1	11.1	7.5	5.0	27	5BBC3100(1)E7(2)	F5BBC3100(1)E7(2)
0.22	18	6.1	11.1	7.5	5.0	22	5BBC3220(1)B7(2)	F5BBC3220(1)B7(2)
0.22	18	6.1	11.1	7.5	5.0	27	5BBC3220(1)E7(2)	F5BBC3220(1)E7(2)
0.33	18	6.1	11.1	7.5	5.0	22	5BBC3330(1)B7(2)	F5BBC3330(1)B7(2)
0.33	18	6.1	11.1	7.5	5.0	27	5BBC3330(1)E7(2)	F5BBC3330(1)E7(2)
0.47	18	6.1	11.1	7.5	5.0	22	5BBC3470(1)B7(2)	F5BBC3470(1)B7(2)
0.47	18	6.1	11.1	7.5	5.0	27	5BBC3470(1)E7(2)	F5BBC3470(1)E7(2)
0.56	18	6.1	11.1	7.5	5.0	22	5BBC3560(1)B7(2)	F5BBC3560(1)B7(2)
0.56	18	6.1	11.1	7.5	5.0	27	5BBC3560(1)E7(2)	F5BBC3560(1)E7(2)
0.68	18	6.1	11.1	7.5	5.0	22	5BBC3680(1)B7(2)	F5BBC3680(1)B7(2)
0.68	18	6.1	11.1	7.5	5.0	27	5BBC3680(1)E7(2)	F5BBC3680(1)E7(2)
0.82	18	6.1	11.1	7.5	5.0	22	5BBC3820(1)B7(2)	F5BBC3820(1)B7(2)
0.82	18	6.1	11.1	7.5	5.0	27	5BBC3820(1)E7(2)	F5BBC3820(1)E7(2)
1.00	18	6.1	11.1	7.5	5.0	22	5BBC4100(1)B7(2)	F5BBC4100(1)B7(2)
1.00	18	6.1	11.1	7.5	5.0	27	5BBC4100(1)E7(2)	F5BBC4100(1)E7(2)
1.20	18	6.1	11.1	7.5	5.0	22	5BBC4120(1)B7(2)	F5BBC4120(1)B7(2)
1.20	18	6.1	11.1	7.5	5.0	27	5BBC4120(1)E7(2)	F5BBC4120(1)E7(2)
1.50	18	7.3	13.1	7.5	5.0	22	5BBC4150(1)B8(2)	F5BBC4150(1)B8(2)
1.50	18	7.3	13.1	7.5	5.0	27	5BBC4150(1)E8(2)	F5BBC4150(1)E8(2)
1.80	18	7.3	13.1	7.5	5.0	22	5BBC4180(1)B8(2)	F5BBC4180(1)B8(2)
1.80	18	7.3	13.1	7.5	5.0	27	5BBC4180(1)E8(2)	F5BBC4180(1)E8(2)
2.20	18	7.3	13.1	7.5	5.0	22	5BBC4220(1)B8(2)	F5BBC4220(1)B8(2)
2.20	18	7.3	13.1	7.5	5.0	27	5BBC4220(1)E8(2)	F5BBC4220(1)E8(2)
0.10	25	6.1	11.1	7.5	5.0	30	5BHC3100(1)A7(2)	F5BHC3100(1)A7(2)
0.10	25	6.1	11.1	7.5	5.0	33	5BHC3100(1)C7(2)	F5BHC3100(1)C7(2)
0.22	25	6.1	11.1	7.5	5.0	30	5BHC3220(1)A7(2)	F5BHC3220(1)A7(2)
0.22	25	6.1	11.1	7.5	5.0	33	5BHC3220(1)C7(2)	F5BHC3220(1)C7(2)
0.33	25	6.1	11.1	7.5	5.0	30	5BHC3330(1)A7(2)	F5BHC3330(1)A7(2)
0.33	25	6.1	11.1	7.5	5.0	33	5BHC3330(1)C7(2)	F5BHC3330(1)C7(2)
0.47	25	6.1	11.1	7.5	5.0	30	5BHC3470(1)A7(2)	F5BHC3470(1)A7(2)
0.47	25	6.1	11.1	7.5	5.0	33	5BHC3470(1)C7(2)	F5BHC3470(1)C7(2)
0.56	25	6.1	11.1	7.5	5.0	30	5BHC3560(1)A7(2)	F5BHC3560(1)A7(2)
0.56	25	6.1	11.1	7.5	5.0	33	5BHC3560(1)C7(2)	F5BHC3560(1)C7(2)
0.68	25	6.1	11.1	7.5	5.0	30	5BHC3680(1)A7(2)	F5BHC3680(1)A7(2)
0.68	25	6.1	11.1	7.5	5.0	33	5BHC3680(1)C7(2)	F5BHC3680(1)C7(2)
0.82	25	6.1	11.1	7.5	5.0	30	5BHC3820(1)A7(2)	F5BHC3820(1)A7(2)
0.82	25	6.1	11.1	7.5	5.0	33	5BHC3820(1)C7(2)	F5BHC3820(1)C7(2)
1.00	25	6.1	11.1	7.5	5.0	30	5BHC4100(1)A7(2)	F5BHC4100(1)A7(2)
1.00	25	6.1	11.1	7.5	5.0	33	5BHC4100(1)C7(2)	F5BHC4100(1)C7(2)
1.20	25	6.1	11.1	7.5	5.0	30	5BHC4120(1)A7(2)	F5BHC4120(1)A7(2)
1.20	25	6.1	11.1	7.5	5.0	33	5BHC4120(1)C7(2)	F5BHC4120(1)C7(2)
1.50	25	7.3	13.1	7.5	5.0	30	5BHC4150(1)A8(2)	F5BHC4150(1)A8(2)
1.50	25	7.3	13.1	7.5	5.0	33	5BHC4150(1)C8(2)	F5BHC4150(1)C8(2)
1.80	25	7.3	13.1	7.5	5.0	30	5BHC4180(1)A8(2)	F5BHC4180(1)A8(2)
1.80	25	7.3	13.1	7.5	5.0	33	5BHC4180(1)C8(2)	F5BHC4180(1)C8(2)
2.20	25	7.3	13.1	7.5	5.0	30	5BHC4220(1)A8(2)	F5BHC4220(1)A8(2)
2.20	25	7.3	13.1	7.5	5.0	33	5BHC4220(1)C8(2)	F5BHC4220(1)C8(2)
0.10	30	6.1	11.1	7.5	5.0	36	5BJC3100(1)D7(2)	F5BJC3100(1)D7(2)
0.10	30	6.1	11.1	7.5	5.0	39	5BJC3100(1)I7(2)	F5BJC3100(1)I7(2)
0.10	30	6.1	11.1	7.5	5.0	44	5BJC3100(1)N7(2)	F5BJC3100(1)N7(2)
0.22	30	6.1	11.1	7.5	5.0	36	5BJC3220(1)D7(2)	F5BJC3220(1)D7(2)
0.22	30	6.1	11.1	7.5	5.0	39	5BJC3220(1)I7(2)	F5BJC3220(1)I7(2)
0.22	30	6.1	11.1	7.5	5.0	44	5BJC3220(1)N7(2)	F5BJC3220(1)N7(2)
0.33	30	6.1	11.1	7.5	5.0	36	5BJC3330(1)D7(2)	F5BJC3330(1)D7(2)
0.33	30	6.1	11.1	7.5	5.0	39	5BJC3330(1)I7(2)	F5BJC3330(1)I7(2)
0.33	30	6.1	11.1	7.5	5.0	44	5BJC3330(1)N7(2)	F5BJC3330(1)N7(2)
0.47	30	6.1	11.1	7.5	5.0	36	5BJC3470(1)D7(2)	F5BJC3470(1)D7(2)
0.47	30	6.1	11.1	7.5	5.0	39	5BJC3470(1)I7(2)	F5BJC3470(1)I7(2)
0.47	30	6.1	11.1	7.5	5.0	44	5BJC3470(1)N7(2)	F5BJC3470(1)N7(2)
Capacitance Value (µF)	**VDC**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Varistor Voltage (VDC)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) Capacitance tolerance: K= +/-10%, M = +/-20%.

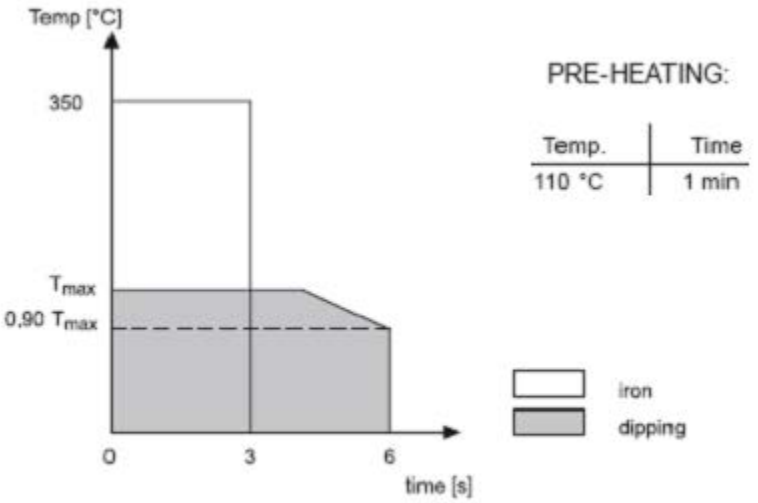
Table 1 – Ratings & Part Number Reference cont'd

Capacitance Value (µF)	VDC	Max Dimensions in mm			Lead Spacing (p)	Varistor Voltage (VDC)	New KEMET Part Number	Legacy Part Number
		B	H	L				
0.56	30	6.1	11.1	7.5	5.0	36	5BJC3560(1)D7(2)	F5BJC3560(1)D7(2)
0.56	30	6.1	11.1	7.5	5.0	39	5BJC3560(1)I7(2)	F5BJC3560(1)I7(2)
0.56	30	6.1	11.1	7.5	5.0	44	5BJC3560(1)N7(2)	F5BJC3560(1)N7(2)
0.68	30	6.1	11.1	7.5	5.0	36	5BJC3680(1)D7(2)	F5BJC3680(1)D7(2)
0.68	30	6.1	11.1	7.5	5.0	39	5BJC3680(1)I7(2)	F5BJC3680(1)I7(2)
0.68	30	6.1	11.1	7.5	5.0	44	5BJC3680(1)N7(2)	F5BJC3680(1)N7(2)
0.82	30	6.1	11.1	7.5	5.0	36	5BJC3820(1)D7(2)	F5BJC3820(1)D7(2)
0.82	30	6.1	11.1	7.5	5.0	39	5BJC3820(1)I7(2)	F5BJC3820(1)I7(2)
0.82	30	6.1	11.1	7.5	5.0	44	5BJC3820(1)N7(2)	F5BJC3820(1)N7(2)
1.00	30	6.1	11.1	7.5	5.0	36	5BJC4100(1)D7(2)	F5BJC4100(1)D7(2)
1.00	30	6.1	11.1	7.5	5.0	39	5BJC4100(1)I7(2)	F5BJC4100(1)I7(2)
1.00	30	6.1	11.1	7.5	5.0	44	5BJC4100(1)N7(2)	F5BJC4100(1)N7(2)
1.20	30	6.1	11.1	7.5	5.0	36	5BJC4120(1)D7(2)	F5BJC4120(1)D7(2)
1.20	30	6.1	11.1	7.5	5.0	39	5BJC4120(1)I7(2)	F5BJC4120(1)I7(2)
1.20	30	6.1	11.1	7.5	5.0	44	5BJC4120(1)N7(2)	F5BJC4120(1)N7(2)
1.50	30	7.3	13.1	7.5	5.0	36	5BJC4150(1)D8(2)	F5BJC4150(1)D8(2)
1.50	30	7.3	13.1	7.5	5.0	39	5BJC4150(1)I8(2)	F5BJC4150(1)I8(2)
1.50	30	7.3	13.1	7.5	5.0	44	5BJC4150(1)N8(2)	F5BJC4150(1)N8(2)
1.80	30	7.3	13.1	7.5	5.0	36	5BJC4180(1)D8(2)	F5BJC4180(1)D8(2)
1.80	30	7.3	13.1	7.5	5.0	39	5BJC4180(1)I8(2)	F5BJC4180(1)I8(2)
1.80	30	7.3	13.1	7.5	5.0	44	5BJC4180(1)N8(2)	F5BJC4180(1)N8(2)
2.20	30	7.3	13.1	7.5	5.0	36	5BJC4220(1)D8(2)	F5BJC4220(1)D8(2)
2.20	30	7.3	13.1	7.5	5.0	39	5BJC4220(1)I8(2)	F5BJC4220(1)I8(2)
2.20	30	7.3	13.1	7.5	5.0	44	5BJC4220(1)N8(2)	F5BJC4220(1)N8(2)
0.10	45	6.1	11.1	7.5	5.0	53	5BNC3100(1)B7(2)	F5BNC3100(1)B7(2)
0.22	45	6.1	11.1	7.5	5.0	53	5BNC3220(1)B7(2)	F5BNC3220(1)B7(2)
0.33	45	6.1	11.1	7.5	5.0	53	5BNC3330(1)B7(2)	F5BNC3330(1)B7(2)
0.47	45	6.1	11.1	7.5	5.0	53	5BNC3470(1)B7(2)	F5BNC3470(1)B7(2)
0.56	45	6.1	11.1	7.5	5.0	53	5BNC3560(1)B7(2)	F5BNC3560(1)B7(2)
0.68	45	6.1	11.1	7.5	5.0	53	5BNC3680(1)B7(2)	F5BNC3680(1)B7(2)
0.82	45	6.1	11.1	7.5	5.0	53	5BNC3820(1)B7(2)	F5BNC3820(1)B7(2)
1.00	45	6.1	11.1	7.5	5.0	53	5BNC4100(1)B7(2)	F5BNC4100(1)B7(2)
1.20	45	6.1	11.1	7.5	5.0	53	5BNC4120(1)B7(2)	F5BNC4120(1)B7(2)
1.50	45	7.3	13.1	7.5	5.0	53	5BNC4150(1)B8(2)	F5BNC4150(1)B8(2)
1.80	45	7.3	13.1	7.5	5.0	53	5BNC4180(1)B8(2)	F5BNC4180(1)B8(2)
2.20	45	7.3	13.1	7.5	5.0	53	5BNC4220(1)B8(2)	F5BNC4220(1)B8(2)
0.10	50	6.1	11.1	7.5	5.0	68	5BCC3100(1)C7(2)	F5BCC3100(1)C7(2)
0.22	50	6.1	11.1	7.5	5.0	68	5BCC3220(1)C7(2)	F5BCC3220(1)C7(2)
0.33	50	6.1	11.1	7.5	5.0	68	5BCC3330(1)C7(2)	F5BCC3330(1)C7(2)
0.47	50	6.1	11.1	7.5	5.0	68	5BCC3470(1)C7(2)	F5BCC3470(1)C7(2)
0.56	50	6.1	11.1	7.5	5.0	68	5BCC3560(1)C7(2)	F5BCC3560(1)C7(2)
0.68	50	6.1	11.1	7.5	5.0	68	5BCC3680(1)C7(2)	F5BCC3680(1)C7(2)
0.82	50	6.1	11.1	7.5	5.0	68	5BCC3820(1)C7(2)	F5BCC3820(1)C7(2)
1.00	50	6.1	11.1	7.5	5.0	68	5BCC4100(1)C7(2)	F5BCC4100(1)C7(2)
1.20	50	6.1	11.1	7.5	5.0	68	5BCC4120(1)C7(2)	F5BCC4120(1)C7(2)
1.50	50	7.3	13.1	7.5	5.0	68	5BCC4150(1)C8(2)	F5BCC4150(1)C8(2)
1.80	50	7.3	13.1	7.5	5.0	68	5BCC4180(1)C8(2)	F5BCC4180(1)C8(2)
2.20	50	7.3	13.1	7.5	5.0	68	5BCC4220(1)C8(2)	F5BCC4220(1)C8(2)
0.10	63	6.1	11.1	7.5	5.0	82	5BDC3100(1)C7(2)	F5BDC3100(1)C7(2)
0.22	63	6.1	11.1	7.5	5.0	82	5BDC3220(1)C7(2)	F5BDC3220(1)C7(2)
0.33	63	6.1	11.1	7.5	5.0	82	5BDC3330(1)C7(2)	F5BDC3330(1)C7(2)
0.47	63	6.1	11.1	7.5	5.0	82	5BDC3470(1)C7(2)	F5BDC3470(1)C7(2)
0.56	63	6.1	11.1	7.5	5.0	82	5BDC3560(1)C7(2)	F5BDC3560(1)C7(2)
0.68	63	6.1	11.1	7.5	5.0	82	5BDC3680(1)C7(2)	F5BDC3680(1)C7(2)
0.82	63	6.1	11.1	7.5	5.0	82	5BDC3820(1)C7(2)	F5BDC3820(1)C7(2)
1.00	63	6.1	11.1	7.5	5.0	82	5BDC4100(1)C7(2)	F5BDC4100(1)C7(2)
1.20	63	6.1	11.1	7.5	5.0	82	5BDC4120(1)C7(2)	F5BDC4120(1)C7(2)
1.50	63	7.3	13.1	7.5	5.0	82	5BDC4150(1)C8(2)	F5BDC4150(1)C8(2)
1.80	63	7.3	13.1	7.5	5.0	82	5BDC4180(1)C8(2)	F5BDC4180(1)C8(2)
2.20	63	7.3	13.1	7.5	5.0	82	5BDC4220(1)C8(2)	F5BDC4220(1)C8(2)
Capacitance Value (µF)	**VDC**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Varistor Voltage (VDC)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) Capacitance tolerance: K= +/-10%, M = +/-20%.

Maximum Soldering Temperature

- Set the temperature so that inside the element the maximum temperature is below 160°C
- Solder within the following temperature profiles, especially for iron soldering:



Box series: T_{max} = 275°C for 4s

General Conditions

- If two solderings are needed, please apply a recovery time until the temperature on the capacitor surface is below 50°C.
- Avoid any passing through adhesive curing oven when fixing surface mount parts in combination with through-hole parts. Insert through-hole parts only after the curing of surface mount parts.
- Avoid reflow soldering by combining the lead type with surface mount parts

Marking

- Capacitance
- Tolerance
- DC rated voltage
- Series (F5B)
- Manufacturing date code

Packaging Quantities

Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Ammo
5	4.6	9.6	7.4	1500	2000	1400	1900
	5.1	10.1	7.5	1000	1500	1200	1700
	6.1	11.1	7.5	2000	1000	1000	1400
	7.3	13.1	7.5	1500	750	800	1150

F5D Series Metallized Polyester Film with Integrated Ceramic Capacitor, 63 – 100 VDC

Electronic Components
KEMET
CHARGED.

Overview

The F5D Series is a metallized polyester (MKT) film capacitor with integrated ceramic capacitor encapsulated in a thermosetting resin-filled plastic box with tinned wire leads. Box material is solvent resistant and flame retardant meeting the requirements of UL 94 V–0.

Applications

Typical applications include worldwide use as EMI/RFI suppressors for automotive motors and other suppression applications such as engine blower fans, central locking systems, heating/air-conditioning blowers, electric sun roofs, electric window regulators, fuel/oil pumps, electric windshield wipers and electrically operated seats. This through-hole EMI/RFI suppression element is mainly used for automotive applications without a printed circuit board, e.g., motor suppression or mixed through-hole and surface mount printed circuit boards.

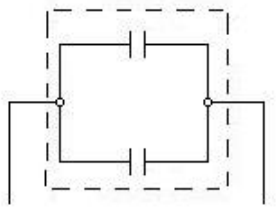
Benefits

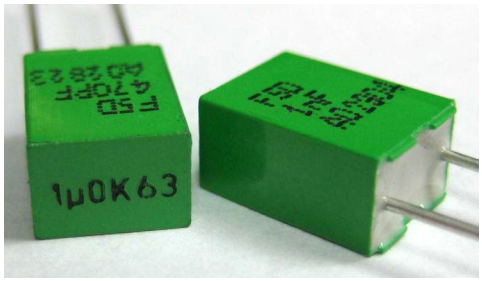
- Low inductive MKT capacitors in parallel construction with a ceramic capacitor in a single case provide superior suppression results
- Approvals: AEC–Q200, ISO 7637–2
- Rated voltage: 63 – 100 VDC
- Capacitance range: 0.1 – 2.2 µF
- Capacitance tolerance: ±10%, ±20%
- Climatic category: 55/125/56, IEC 60068–1
- Tape and reel packaging in accordance with IEC 60286–2
- RoHS Compliant and lead-free terminations
- Operating temperature range: -55˚C to +125˚C

Part Number System

F5D	D	C	3100	DQ	W	5	M
Series	Rated Voltage (VDC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Ceramic Capacitor Value	Size Code	Capacitance Tolerance
Film Capacitor/ Ceramic Capacitor Unit	D = 63 E = 100	C = 5 mm F= 10 mm	Digits 2 – 4 indicate the first three digits of the capacitance value. First digit indicates the number of zeros to be added.	See Ordering Options Table	See Ceramic Capacitor Table	See Dimension Table	K = ±10% M = ±20%

Circuit Diagram



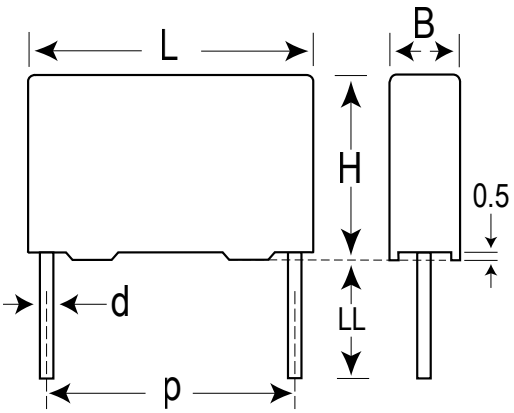


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Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
5	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	AA
	Ammo Pack	H_0= 18.5 +/-0.5	DQ
	Other Lead and Packaging Options		
	Bulk (Bag) – Long Leads	17 +1/-2	Z3
	Tape & Reel (Standard Reel)	H_0= 18.5 +/-0.5	CK
10	**Standard Lead and Packaging Options**		
	Bulk (Bag) – Short Leads	4 +2/-0	AA
	Ammo Pack	H_0= 18.5 +/-0.5	DQ
	Other Lead and Packaging Options		
	Bulk (Bag) – Long Leads	17 +1/-2	Z3
	Tape & Reel (Large Reel)	H_0= 18.5 +/-0.5	CK

Dimensions – Millimeters



Rated Capacitance µF		Size Code	p		B		H		L		d	
V_r = 63 V	V_r = 100 V	(Digit 13)	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
0.1 – 0.47	0.1 – 0.33	5	5.0	+/-0.4	4.6	Maximum	9.6	Maximum	7.4	Maximum	0.6	+/-0.05
0.56 – 1.5	0.47 – 1.0	6	5.0	+/-0.4	5.1	Maximum	10.1	Maximum	7.5	Maximum	0.6	+/-0.05
1.8	1.2 – 1.5	7	5.0	+/-0.4	6.1	Maximum	11.1	Maximum	7.5	Maximum	0.6	+/-0.05
0.1 – 1.0	0.1 – 1.0	2	10.0	+/-0.4	5.2	Maximum	11.1	Maximum	13.4	Maximum	0.75	+/-0.05
1.2 – 1.5	1.2 – 1.5	3	10.0	+/-0.4	6.2	Maximum	12.1	Maximum	13.4	Maximum	0.75	+/-0.05

Note: See Ordering Options Table for lead length (LL) options.

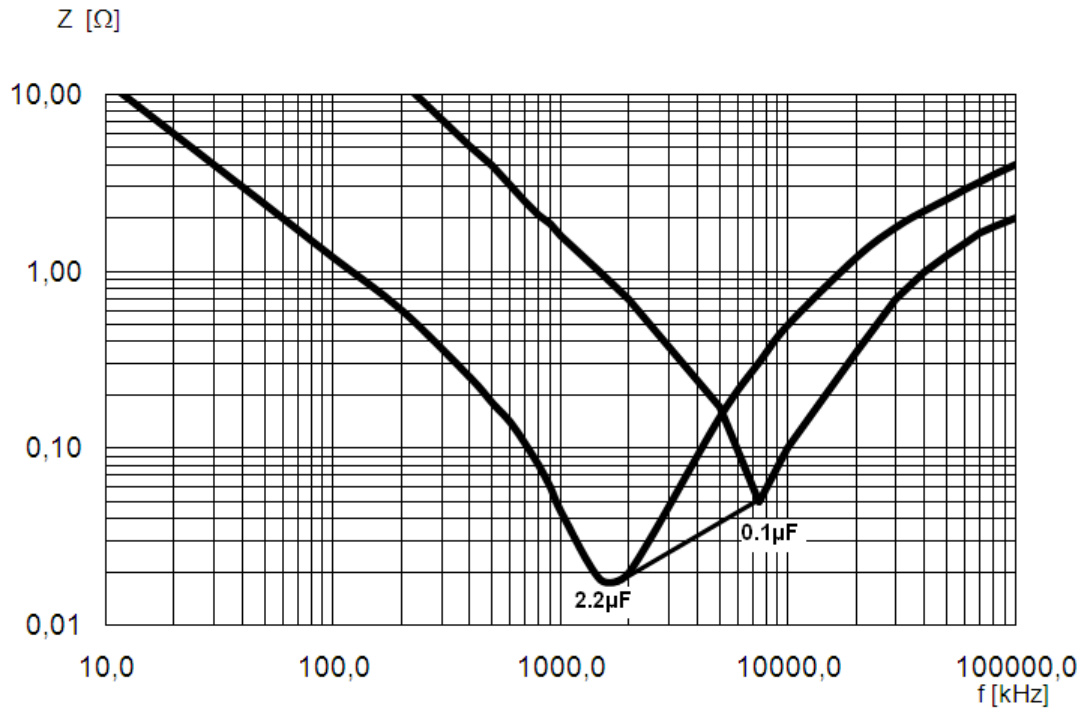
Ceramic Capacitor Value

Ceramic Capacitor Value	Digit 12
10 pF	U
22 pF	V
47 pF	W
68 pF	X
100 pF	E
220 pF	G
470 pF	A
680 pF	H
1 nF	C
2.2 nF	F
4.7 nF	B
6.8 nF	N
10 nF	D
47 nF	R
68 nF	T
100 nF	S

Performance Characteristics

Rated Voltage	63 – 100 VDC (For temperature over 100°C a decreasing factor of 2% per degree has to be applied on the rated voltage V_R)
Capacitance Range	0.1 – 2.2 µF (See Ceramic Capacitor Value Table)
Capacitance Tolerance	±10%, ±20%
Temperature Range	-55°C to +125°C
Climatic Category	55/125/56, IEC 60068–1
Leakage Current	≤ 10 µA at V_R
Approvals	AEC–Q200, ISO 7637
Dissipation Factor	0.025 (1 kHz at 25°C ± 5°C)
Test Voltage Between Terminals	1.6 x V_R
Insulation Resistance	100 MΩ @ 50 V

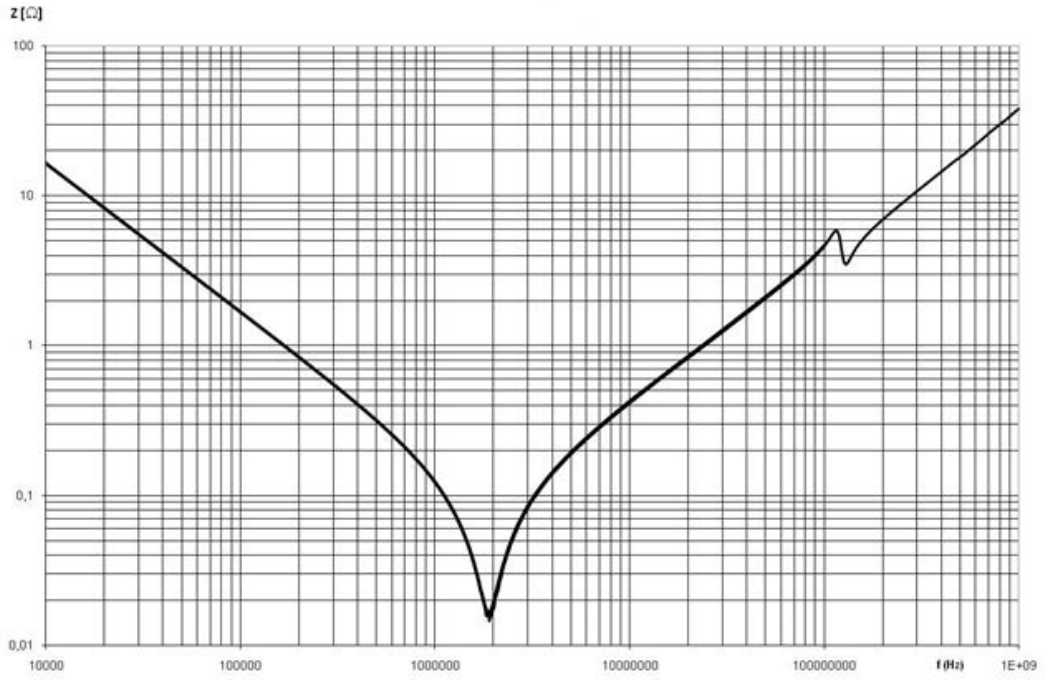
Impedance Graphs



Impedance Graphs cont'd

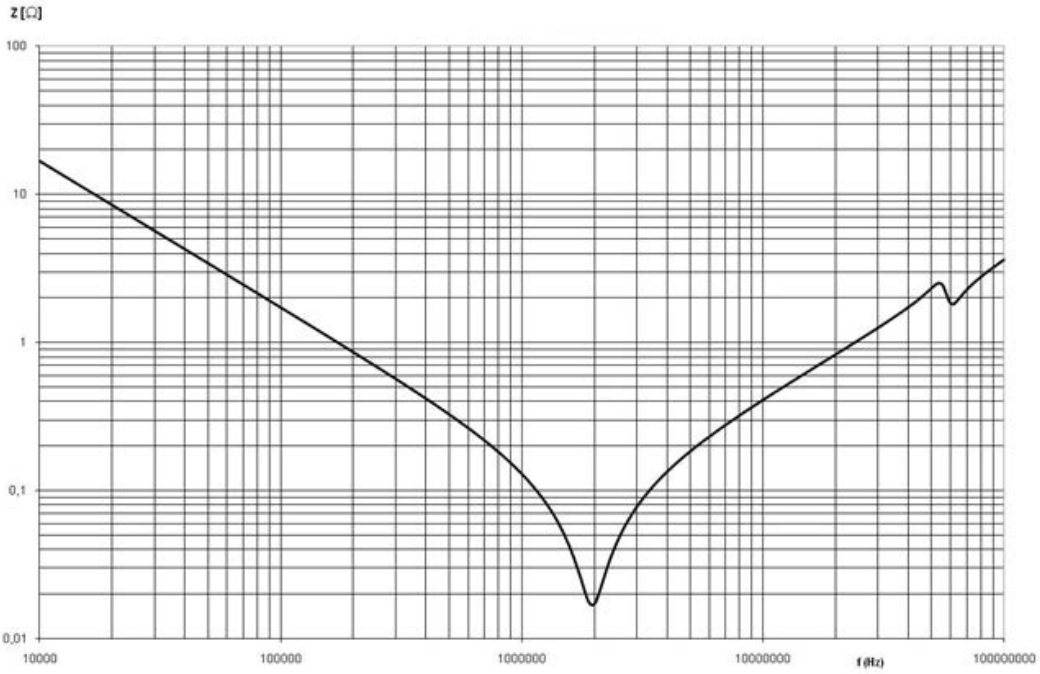
Impedance vs. Frequency

Example: Combination of 1 µF and 1 nF



Impedance vs. Frequency

Example: Combination of 1 µF and 4.7 nF



Environmental Test Data

Test	Conditions	Performance	
Damp Heat Steady State	+40°C ±2°C and 93% ±2% RH, 56 days	Δ C/C	≤ 5%
		DF Change	≤ 50 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 100 µA
Endurance	+125°C ±2°C/100°C ±2°C, 0.5 x V_R/1.0 x V_R, 1,000 hours	Δ C/C	≤ 10%
		DF Change	≤ 50 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 100 µA
Resistance to Soldering Heat	+260°C ±5°C, 10 ±1 second	Δ C/C	≤ 3%
		DF Change	≤ 30 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 50 µA
Long Term Stability (After 2 Years)	-40°C to +80°C, ≤ 70% humidity	Δ C/C	≤ 3%
		DF Change	≤ 20 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 50 µA
Reliability Failure Criteria	Reference MIL HDB 217 +40°C ±2°C, 0.5 x V_R, ≤ 5 FIT	Δ C/C	> 10%
		DF Change	≤ 20 x 10^{-4} @ 1 kHz
		Leakage current at V_R	≤ 200 µA

Environmental Compliance

All KEMET EMI capacitors are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

Capacitance Value (µF)	VDC	Max Dimensions in mm			Lead Spacing (p)	Ceramic Cap (µF)	New KEMET Part Number	Legacy Part Number
		B	H	L				
0.10	63	4.6	9.6	7.4	5.0	0.00001	5DDC3100(1)U5(2)	F5DDC3100(1)U5(2)
0.10	63	4.6	9.6	7.4	5.0	0.000022	5DDC3100(1)V5(2)	F5DDC3100(1)V5(2)
0.10	63	4.6	9.6	7.4	5.0	0.000047	5DDC3100(1)W5(2)	F5DDC3100(1)W5(2)
0.10	63	4.6	9.6	7.4	5.0	0.000068	5DDC3100(1)X5(2)	F5DDC3100(1)X5(2)
0.10	63	4.6	9.6	7.4	5.0	0.0001	5DDC3100(1)E5(2)	F5DDC3100(1)E5(2)
0.10	63	4.6	9.6	7.4	5.0	0.00022	5DDC3100(1)G5(2)	F5DDC3100(1)G5(2)
0.10	63	4.6	9.6	7.4	5.0	0.00047	5DDC3100(1)A5(2)	F5DDC3100(1)A5(2)
0.10	63	4.6	9.6	7.4	5.0	0.00068	5DDC3100(1)H5(2)	F5DDC3100(1)H5(2)
0.10	63	4.6	9.6	7.4	5.0	0.001	5DDC3100(1)C5(2)	F5DDC3100(1)C5(2)
0.10	63	4.6	9.6	7.4	5.0	0.0022	5DDC3100(1)F5(2)	F5DDC3100(1)F5(2)
0.10	63	4.6	9.6	7.4	5.0	0.0047	5DDC3100(1)B5(2)	F5DDC3100(1)B5(2)
0.10	63	4.6	9.6	7.4	5.0	0.0068	5DDC3100(1)N5(2)	F5DDC3100(1)N5(2)
0.10	63	4.6	9.6	7.4	5.0	0.01	5DDC3100(1)D5(2)	F5DDC3100(1)D5(2)
0.10	63	4.6	9.6	7.4	5.0	0.047	5DDC3100(1)R5(2)	F5DDC3100(1)R5(2)
0.10	63	4.6	9.6	7.4	5.0	0.068	5DDC3100(1)T5(2)	F5DDC3100(1)T5(2)
0.10	63	4.6	9.6	7.4	5.0	0.1	5DDC3100(1)S5(2)	F5DDC3100(1)S5(2)
0.22	63	4.6	9.6	7.4	5.0	0.00001	5DDC3220(1)U5(2)	F5DDC3220(1)U5(2)
0.22	63	4.6	9.6	7.4	5.0	0.000022	5DDC3220(1)V5(2)	F5DDC3220(1)V5(2)
0.22	63	4.6	9.6	7.4	5.0	0.000047	5DDC3220(1)W5(2)	F5DDC3220(1)W5(2)
0.22	63	4.6	9.6	7.4	5.0	0.000068	5DDC3220(1)X5(2)	F5DDC3220(1)X5(2)
0.22	63	4.6	9.6	7.4	5.0	0.0001	5DDC3220(1)E5(2)	F5DDC3220(1)E5(2)
0.22	63	4.6	9.6	7.4	5.0	0.00022	5DDC3220(1)G5(2)	F5DDC3220(1)G5(2)
0.22	63	4.6	9.6	7.4	5.0	0.00047	5DDC3220(1)A5(2)	F5DDC3220(1)A5(2)
0.22	63	4.6	9.6	7.4	5.0	0.00068	5DDC3220(1)H5(2)	F5DDC3220(1)H5(2)
0.22	63	4.6	9.6	7.4	5.0	0.001	5DDC3220(1)C5(2)	F5DDC3220(1)C5(2)
0.22	63	4.6	9.6	7.4	5.0	0.0022	5DDC3220(1)F5(2)	F5DDC3220(1)F5(2)
0.22	63	4.6	9.6	7.4	5.0	0.0047	5DDC3220(1)B5(2)	F5DDC3220(1)B5(2)
0.22	63	4.6	9.6	7.4	5.0	0.0068	5DDC3220(1)N5(2)	F5DDC3220(1)N5(2)
0.22	63	4.6	9.6	7.4	5.0	0.01	5DDC3220(1)D5(2)	F5DDC3220(1)D5(2)
0.22	63	4.6	9.6	7.4	5.0	0.047	5DDC3220(1)R5(2)	F5DDC3220(1)R5(2)
0.22	63	4.6	9.6	7.4	5.0	0.068	5DDC3220(1)T5(2)	F5DDC3220(1)T5(2)
0.22	63	4.6	9.6	7.4	5.0	0.1	5DDC3220(1)S5(2)	F5DDC3220(1)S5(2)
0.33	63	4.6	9.6	7.4	5.0	0.00001	5DDC3330(1)U5(2)	F5DDC3330(1)U5(2)
0.33	63	4.6	9.6	7.4	5.0	0.000022	5DDC3330(1)V5(2)	F5DDC3330(1)V5(2)
0.33	63	4.6	9.6	7.4	5.0	0.000047	5DDC3330(1)W5(2)	F5DDC3330(1)W5(2)
0.33	63	4.6	9.6	7.4	5.0	0.000068	5DDC3330(1)X5(2)	F5DDC3330(1)X5(2)
0.33	63	4.6	9.6	7.4	5.0	0.0001	5DDC3330(1)E5(2)	F5DDC3330(1)E5(2)
0.33	63	4.6	9.6	7.4	5.0	0.00022	5DDC3330(1)G5(2)	F5DDC3330(1)G5(2)
0.33	63	4.6	9.6	7.4	5.0	0.00047	5DDC3330(1)A5(2)	F5DDC3330(1)A5(2)
0.33	63	4.6	9.6	7.4	5.0	0.00068	5DDC3330(1)H5(2)	F5DDC3330(1)H5(2)
0.33	63	4.6	9.6	7.4	5.0	0.001	5DDC3330(1)C5(2)	F5DDC3330(1)C5(2)
0.33	63	4.6	9.6	7.4	5.0	0.0022	5DDC3330(1)F5(2)	F5DDC3330(1)F5(2)
0.33	63	4.6	9.6	7.4	5.0	0.0047	5DDC3330(1)B5(2)	F5DDC3330(1)B5(2)
0.33	63	4.6	9.6	7.4	5.0	0.0068	5DDC3330(1)N5(2)	F5DDC3330(1)N5(2)
0.33	63	4.6	9.6	7.4	5.0	0.01	5DDC3330(1)D5(2)	F5DDC3330(1)D5(2)
0.33	63	4.6	9.6	7.4	5.0	0.047	5DDC3330(1)R5(2)	F5DDC3330(1)R5(2)
0.33	63	4.6	9.6	7.4	5.0	0.068	5DDC3330(1)T5(2)	F5DDC3330(1)T5(2)
0.33	63	4.6	9.6	7.4	5.0	0.1	5DDC3330(1)S5(2)	F5DDC3330(1)S5(2)
0.47	63	4.6	9.6	7.4	5.0	0.00001	5DDC3470(1)U5(2)	F5DDC3470(1)U5(2)
0.47	63	4.6	9.6	7.4	5.0	0.000022	5DDC3470(1)V5(2)	F5DDC3470(1)V5(2)
0.47	63	4.6	9.6	7.4	5.0	0.000047	5DDC3470(1)W5(2)	F5DDC3470(1)W5(2)
0.47	63	4.6	9.6	7.4	5.0	0.000068	5DDC3470(1)X5(2)	F5DDC3470(1)X5(2)
0.47	63	4.6	9.6	7.4	5.0	0.0001	5DDC3470(1)E5(2)	F5DDC3470(1)E5(2)
0.47	63	4.6	9.6	7.4	5.0	0.00022	5DDC3470(1)G5(2)	F5DDC3470(1)G5(2)
0.47	63	4.6	9.6	7.4	5.0	0.00047	5DDC3470(1)A5(2)	F5DDC3470(1)A5(2)
0.47	63	4.6	9.6	7.4	5.0	0.00068	5DDC3470(1)H5(2)	F5DDC3470(1)H5(2)
0.47	63	4.6	9.6	7.4	5.0	0.001	5DDC3470(1)C5(2)	F5DDC3470(1)C5(2)
0.47	63	4.6	9.6	7.4	5.0	0.0022	5DDC3470(1)F5(2)	F5DDC3470(1)F5(2)
0.47	63	4.6	9.6	7.4	5.0	0.0047	5DDC3470(1)B5(2)	F5DDC3470(1)B5(2)
0.47	63	4.6	9.6	7.4	5.0	0.0068	5DDC3470(1)N5(2)	F5DDC3470(1)N5(2)
Capacitance Value (µF)	**VDC**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Ceramic Cap (µF)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) K = 10%, M = 20%.

Table 1 – Ratings & Part Number Reference cont'd

Capacitance Value (µF)	VDC	Max Dimensions in mm			Lead Spacing (p)	Ceramic Cap (µF)	New KEMET Part Number	Legacy Part Number
		B	H	L				
0.47	63	4.6	9.6	7.4	5.0	0.01	5DDC3470(1)D5(2)	F5DDC3470(1)D5(2)
0.47	63	4.6	9.6	7.4	5.0	0.047	5DDC3470(1)R5(2)	F5DDC3470(1)R5(2)
0.47	63	4.6	9.6	7.4	5.0	0.068	5DDC3470(1)T5(2)	F5DDC3470(1)T5(2)
0.47	63	4.6	9.6	7.4	5.0	0.1	5DDC3470(1)S5(2)	F5DDC3470(1)S5(2)
0.56	63	5.1	10.1	7.5	5.0	0.00001	5DDC3560(1)U6(2)	F5DDC3560(1)U6(2)
0.56	63	5.1	10.1	7.5	5.0	0.000022	5DDC3560(1)V6(2)	F5DDC3560(1)V6(2)
0.56	63	5.1	10.1	7.5	5.0	0.000047	5DDC3560(1)W6(2)	F5DDC3560(1)W6(2)
0.56	63	5.1	10.1	7.5	5.0	0.000068	5DDC3560(1)X6(2)	F5DDC3560(1)X6(2)
0.56	63	5.1	10.1	7.5	5.0	0.0001	5DDC3560(1)E6(2)	F5DDC3560(1)E6(2)
0.56	63	5.1	10.1	7.5	5.0	0.00022	5DDC3560(1)G6(2)	F5DDC3560(1)G6(2)
0.56	63	5.1	10.1	7.5	5.0	0.00047	5DDC3560(1)A6(2)	F5DDC3560(1)A6(2)
0.56	63	5.1	10.1	7.5	5.0	0.00068	5DDC3560(1)H6(2)	F5DDC3560(1)H6(2)
0.56	63	5.1	10.1	7.5	5.0	0.001	5DDC3560(1)C6(2)	F5DDC3560(1)C6(2)
0.56	63	5.1	10.1	7.5	5.0	0.0022	5DDC3560(1)F6(2)	F5DDC3560(1)F6(2)
0.56	63	5.1	10.1	7.5	5.0	0.0047	5DDC3560(1)B6(2)	F5DDC3560(1)B6(2)
0.56	63	5.1	10.1	7.5	5.0	0.0068	5DDC3560(1)N6(2)	F5DDC3560(1)N6(2)
0.56	63	5.1	10.1	7.5	5.0	0.01	5DDC3560(1)D6(2)	F5DDC3560(1)D6(2)
0.56	63	5.1	10.1	7.5	5.0	0.047	5DDC3560(1)R6(2)	F5DDC3560(1)R6(2)
0.56	63	5.1	10.1	7.5	5.0	0.068	5DDC3560(1)T6(2)	F5DDC3560(1)T6(2)
0.56	63	5.1	10.1	7.5	5.0	0.1	5DDC3560(1)S6(2)	F5DDC3560(1)S6(2)
0.68	63	5.1	10.1	7.5	5.0	0.00001	5DDC3680(1)U6(2)	F5DDC3680(1)U6(2)
0.68	63	5.1	10.1	7.5	5.0	0.000022	5DDC3680(1)V6(2)	F5DDC3680(1)V6(2)
0.68	63	5.1	10.1	7.5	5.0	0.000047	5DDC3680(1)W6(2)	F5DDC3680(1)W6(2)
0.68	63	5.1	10.1	7.5	5.0	0.000068	5DDC3680(1)X6(2)	F5DDC3680(1)X6(2)
0.68	63	5.1	10.1	7.5	5.0	0.0001	5DDC3680(1)E6(2)	F5DDC3680(1)E6(2)
0.68	63	5.1	10.1	7.5	5.0	0.00022	5DDC3680(1)G6(2)	F5DDC3680(1)G6(2)
0.68	63	5.1	10.1	7.5	5.0	0.00047	5DDC3680(1)A6(2)	F5DDC3680(1)A6(2)
0.68	63	5.1	10.1	7.5	5.0	0.00068	5DDC3680(1)H6(2)	F5DDC3680(1)H6(2)
0.68	63	5.1	10.1	7.5	5.0	0.001	5DDC3680(1)C6(2)	F5DDC3680(1)C6(2)
0.68	63	5.1	10.1	7.5	5.0	0.0022	5DDC3680(1)F6(2)	F5DDC3680(1)F6(2)
0.68	63	5.1	10.1	7.5	5.0	0.0047	5DDC3680(1)B6(2)	F5DDC3680(1)B6(2)
0.68	63	5.1	10.1	7.5	5.0	0.0068	5DDC3680(1)N6(2)	F5DDC3680(1)N6(2)
0.68	63	5.1	10.1	7.5	5.0	0.01	5DDC3680(1)D6(2)	F5DDC3680(1)D6(2)
0.68	63	5.1	10.1	7.5	5.0	0.047	5DDC3680(1)R6(2)	F5DDC3680(1)R6(2)
0.68	63	5.1	10.1	7.5	5.0	0.068	5DDC3680(1)T6(2)	F5DDC3680(1)T6(2)
0.68	63	5.1	10.1	7.5	5.0	0.1	5DDC3680(1)S6(2)	F5DDC3680(1)S6(2)
1.00	63	5.1	10.1	7.5	5.0	0.00001	5DDC4100(1)U6(2)	F5DDC4100(1)U6(2)
1.00	63	5.1	10.1	7.5	5.0	0.000022	5DDC4100(1)V6(2)	F5DDC4100(1)V6(2)
1.00	63	5.1	10.1	7.5	5.0	0.000047	5DDC4100(1)W6(2)	F5DDC4100(1)W6(2)
1.00	63	5.1	10.1	7.5	5.0	0.000068	5DDC4100(1)X6(2)	F5DDC4100(1)X6(2)
1.00	63	5.1	10.1	7.5	5.0	0.0001	5DDC4100(1)E6(2)	F5DDC4100(1)E6(2)
1.00	63	5.1	10.1	7.5	5.0	0.00022	5DDC4100(1)G6(2)	F5DDC4100(1)G6(2)
1.00	63	5.1	10.1	7.5	5.0	0.00047	5DDC4100(1)A6(2)	F5DDC4100(1)A6(2)
1.00	63	5.1	10.1	7.5	5.0	0.00068	5DDC4100(1)H6(2)	F5DDC4100(1)H6(2)
1.00	63	5.1	10.1	7.5	5.0	0.001	5DDC4100(1)C6(2)	F5DDC4100(1)C6(2)
1.00	63	5.1	10.1	7.5	5.0	0.0022	5DDC4100(1)F6(2)	F5DDC4100(1)F6(2)
1.00	63	5.1	10.1	7.5	5.0	0.0047	5DDC4100(1)B6(2)	F5DDC4100(1)B6(2)
1.00	63	5.1	10.1	7.5	5.0	0.0068	5DDC4100(1)N6(2)	F5DDC4100(1)N6(2)
1.00	63	5.1	10.1	7.5	5.0	0.01	5DDC4100(1)D6(2)	F5DDC4100(1)D6(2)
1.00	63	5.1	10.1	7.5	5.0	0.047	5DDC4100(1)R6(2)	F5DDC4100(1)R6(2)
1.00	63	5.1	10.1	7.5	5.0	0.068	5DDC4100(1)T6(2)	F5DDC4100(1)T6(2)
1.00	63	5.1	10.1	7.5	5.0	0.1	5DDC4100(1)S6(2)	F5DDC4100(1)S6(2)
1.50	63	6.1	11.1	7.5	5.0	0.00001	5DDC4150(1)U7(2)	F5DDC4150(1)U7(2)
1.50	63	6.1	11.1	7.5	5.0	0.000022	5DDC4150(1)V7(2)	F5DDC4150(1)V7(2)
1.50	63	6.1	11.1	7.5	5.0	0.000047	5DDC4150(1)W7(2)	F5DDC4150(1)W7(2)
1.50	63	6.1	11.1	7.5	5.0	0.000068	5DDC4150(1)X7(2)	F5DDC4150(1)X7(2)
1.50	63	6.1	11.1	7.5	5.0	0.0001	5DDC4150(1)E7(2)	F5DDC4150(1)E7(2)
1.50	63	6.1	11.1	7.5	5.0	0.00022	5DDC4150(1)G7(2)	F5DDC4150(1)G7(2)
1.50	63	6.1	11.1	7.5	5.0	0.00047	5DDC4150(1)A7(2)	F5DDC4150(1)A7(2)
1.50	63	6.1	11.1	7.5	5.0	0.00068	5DDC4150(1)H7(2)	F5DDC4150(1)H7(2)
Capacitance Value (µF)	**VDC**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Ceramic Cap (µF)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) K = 10%, M = 20%.

Table 1 – Ratings & Part Number Reference cont'd

Capacitance Value (µF)	VDC	Max Dimensions in mm			Lead Spacing (p)	Ceramic Cap (µF)	New KEMET Part Number	Legacy Part Number
		B	H	L				
1.50	63	6.1	11.1	7.5	5.0	0.001	5DDC4150(1)C7(2)	F5DDC4150(1)C7(2)
1.50	63	6.1	11.1	7.5	5.0	0.0022	5DDC4150(1)F7(2)	F5DDC4150(1)F7(2)
1.50	63	6.1	11.1	7.5	5.0	0.0047	5DDC4150(1)B7(2)	F5DDC4150(1)B7(2)
1.50	63	6.1	11.1	7.5	5.0	0.0068	5DDC4150(1)N7(2)	F5DDC4150(1)N7(2)
1.50	63	6.1	11.1	7.5	5.0	0.01	5DDC4150(1)D7(2)	F5DDC4150(1)D7(2)
1.50	63	6.1	11.1	7.5	5.0	0.047	5DDC4150(1)R7(2)	F5DDC4150(1)R7(2)
1.50	63	6.1	11.1	7.5	5.0	0.068	5DDC4150(1)T7(2)	F5DDC4150(1)T7(2)
1.50	63	6.1	11.1	7.5	5.0	0.1	5DDC4150(1)S7(2)	F5DDC4150(1)S7(2)
1.80	63	6.1	11.1	7.5	5.0	0.1	5DDC4180(1)S7(2)	F5DDC4180(1)S7(2)
1.80	63	6.1	11.1	7.5	5.0	0.000022	5DDC4180(1)V7(2)	F5DDC4180(1)V7(2)
1.80	63	6.1	11.1	7.5	5.0	0.000047	5DDC4180(1)W7(2)	F5DDC4180(1)W7(2)
1.80	63	6.1	11.1	7.5	5.0	0.000068	5DDC4180(1)X7(2)	F5DDC4180(1)X7(2)
1.80	63	6.1	11.1	7.5	5.0	0.0001	5DDC4180(1)E7(2)	F5DDC4180(1)E7(2)
1.80	63	6.1	11.1	7.5	5.0	0.00022	5DDC4180(1)G7(2)	F5DDC4180(1)G7(2)
1.80	63	6.1	11.1	7.5	5.0	0.00047	5DDC4180(1)A7(2)	F5DDC4180(1)A7(2)
1.80	63	6.1	11.1	7.5	5.0	0.00068	5DDC4180(1)H7(2)	F5DDC4180(1)H7(2)
1.80	63	6.1	11.1	7.5	5.0	0.001	5DDC4180(1)C7(2)	F5DDC4180(1)C7(2)
1.80	63	6.1	11.1	7.5	5.0	0.0022	5DDC4180(1)F7(2)	F5DDC4180(1)F7(2)
1.80	63	6.1	11.1	7.5	5.0	0.0047	5DDC4180(1)B7(2)	F5DDC4180(1)B7(2)
1.80	63	6.1	11.1	7.5	5.0	0.0068	5DDC4180(1)N7(2)	F5DDC4180(1)N7(2)
1.80	63	6.1	11.1	7.5	5.0	0.01	5DDC4180(1)D7(2)	F5DDC4180(1)D7(2)
1.80	63	6.1	11.1	7.5	5.0	0.047	5DDC4180(1)R7(2)	F5DDC4180(1)R7(2)
1.80	63	6.1	11.1	7.5	5.0	0.068	5DDC4180(1)T7(2)	F5DDC4180(1)T7(2)
1.80	63	6.1	11.1	7.5	5.0	0.00001	5DDC4180(1)U7(2)	F5DDC4180(1)U7(2)
2.20	63	6.1	11.1	7.5	5.0	0.1	5DDC4220(1)S7(2)	F5DDC4220(1)S7(2)
2.20	63	6.1	11.1	7.5	5.0	0.000022	5DDC4220(1)V7(2)	F5DDC4220(1)V7(2)
2.20	63	6.1	11.1	7.5	5.0	0.000047	5DDC4220(1)W7(2)	F5DDC4220(1)W7(2)
2.20	63	6.1	11.1	7.5	5.0	0.000068	5DDC4220(1)X7(2)	F5DDC4220(1)X7(2)
2.20	63	6.1	11.1	7.5	5.0	0.0001	5DDC4220(1)E7(2)	F5DDC4220(1)E7(2)
2.20	63	6.1	11.1	7.5	5.0	0.00022	5DDC4220(1)G7(2)	F5DDC4220(1)G7(2)
2.20	63	6.1	11.1	7.5	5.0	0.00047	5DDC4220(1)A7(2)	F5DDC4220(1)A7(2)
2.20	63	6.1	11.1	7.5	5.0	0.00068	5DDC4220(1)H7(2)	F5DDC4220(1)H7(2)
2.20	63	6.1	11.1	7.5	5.0	0.001	5DDC4220(1)C7(2)	F5DDC4220(1)C7(2)
2.20	63	6.1	11.1	7.5	5.0	0.0022	5DDC4220(1)F7(2)	F5DDC4220(1)F7(2)
2.20	63	6.1	11.1	7.5	5.0	0.0047	5DDC4220(1)B7(2)	F5DDC4220(1)B7(2)
2.20	63	6.1	11.1	7.5	5.0	0.0068	5DDC4220(1)N7(2)	F5DDC4220(1)N7(2)
2.20	63	6.1	11.1	7.5	5.0	0.01	5DDC4220(1)D7(2)	F5DDC4220(1)D7(2)
2.20	63	6.1	11.1	7.5	5.0	0.047	5DDC4220(1)R7(2)	F5DDC4220(1)R7(2)
2.20	63	6.1	11.1	7.5	5.0	0.068	5DDC4220(1)T7(2)	F5DDC4220(1)T7(2)
2.20	63	6.1	11.1	7.5	5.0	0.00001	5DDC4220(1)U7(2)	F5DDC4220(1)U7(2)
0.10	100	4.6	9.6	7.4	5.0	0.00001	5DEC3100(1)U5(2)	F5DEC3100(1)U5(2)
0.10	100	4.6	9.6	7.4	5.0	0.000022	5DEC3100(1)V5(2)	F5DEC3100(1)V5(2)
0.10	100	4.6	9.6	7.4	5.0	0.000047	5DEC3100(1)W5(2)	F5DEC3100(1)W5(2)
0.10	100	4.6	9.6	7.4	5.0	0.000068	5DEC3100(1)X5(2)	F5DEC3100(1)X5(2)
0.10	100	4.6	9.6	7.4	5.0	0.0001	5DEC3100(1)E5(2)	F5DEC3100(1)E5(2)
0.10	100	4.6	9.6	7.4	5.0	0.00022	5DEC3100(1)G5(2)	F5DEC3100(1)G5(2)
0.10	100	4.6	9.6	7.4	5.0	0.00047	5DEC3100(1)A5(2)	F5DEC3100(1)A5(2)
0.10	100	4.6	9.6	7.4	5.0	0.00068	5DEC3100(1)H5(2)	F5DEC3100(1)H5(2)
0.10	100	4.6	9.6	7.4	5.0	0.001	5DEC3100(1)C5(2)	F5DEC3100(1)C5(2)
0.10	100	4.6	9.6	7.4	5.0	0.0022	5DEC3100(1)F5(2)	F5DEC3100(1)F5(2)
0.10	100	4.6	9.6	7.4	5.0	0.0047	5DEC3100(1)B5(2)	F5DEC3100(1)B5(2)
0.10	100	4.6	9.6	7.4	5.0	0.0068	5DEC3100(1)N5(2)	F5DEC3100(1)N5(2)
0.10	100	4.6	9.6	7.4	5.0	0.01	5DEC3100(1)D5(2)	F5DEC3100(1)D5(2)
0.10	100	4.6	9.6	7.4	5.0	0.047	5DEC3100(1)R5(2)	F5DEC3100(1)R5(2)
0.10	100	4.6	9.6	7.4	5.0	0.068	5DEC3100(1)T5(2)	F5DEC3100(1)T5(2)
0.10	100	4.6	9.6	7.4	5.0	0.1	5DEC3100(1)S5(2)	F5DEC3100(1)S5(2)
0.22	100	4.6	9.6	7.4	5.0	0.00001	5DEC3220(1)U5(2)	F5DEC3220(1)U5(2)
0.22	100	4.6	9.6	7.4	5.0	0.000022	5DEC3220(1)V5(2)	F5DEC3220(1)V5(2)
0.22	100	4.6	9.6	7.4	5.0	0.000047	5DEC3220(1)W5(2)	F5DEC3220(1)W5(2)
0.22	100	4.6	9.6	7.4	5.0	0.000068	5DEC3220(1)X5(2)	F5DEC3220(1)X5(2)
Capacitance Value (µF)	**VDC**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Ceramic Cap (µF)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) K = 10%, M = 20%.

Table 1 – Ratings & Part Number Reference cont'd

Capacitance Value (µF)	VDC	Max Dimensions in mm			Lead Spacing (p)	Ceramic Cap (µF)	New KEMET Part Number	Legacy Part Number
		B	H	L				
0.22	100	4.6	9.6	7.4	5.0	0.0001	5DEC3220(1)E5(2)	F5DEC3220(1)E5(2)
0.22	100	4.6	9.6	7.4	5.0	0.00022	5DEC3220(1)G5(2)	F5DEC3220(1)G5(2)
0.22	100	4.6	9.6	7.4	5.0	0.00047	5DEC3220(1)A5(2)	F5DEC3220(1)A5(2)
0.22	100	4.6	9.6	7.4	5.0	0.00068	5DEC3220(1)H5(2)	F5DEC3220(1)H5(2)
0.22	100	4.6	9.6	7.4	5.0	0.001	5DEC3220(1)C5(2)	F5DEC3220(1)C5(2)
0.22	100	4.6	9.6	7.4	5.0	0.0022	5DEC3220(1)F5(2)	F5DEC3220(1)F5(2)
0.22	100	4.6	9.6	7.4	5.0	0.0047	5DEC3220(1)B5(2)	F5DEC3220(1)B5(2)
0.22	100	4.6	9.6	7.4	5.0	0.0068	5DEC3220(1)N5(2)	F5DEC3220(1)N5(2)
0.22	100	4.6	9.6	7.4	5.0	0.01	5DEC3220(1)D5(2)	F5DEC3220(1)D5(2)
0.22	100	4.6	9.6	7.4	5.0	0.047	5DEC3220(1)R5(2)	F5DEC3220(1)R5(2)
0.22	100	4.6	9.6	7.4	5.0	0.068	5DEC3220(1)T5(2)	F5DEC3220(1)T5(2)
0.22	100	4.6	9.6	7.4	5.0	0.1	5DEC3220(1)S5(2)	F5DEC3220(1)S5(2)
0.33	100	4.6	9.6	7.4	5.0	0.00001	5DEC3330(1)U5(2)	F5DEC3330(1)U5(2)
0.33	100	4.6	9.6	7.4	5.0	0.000022	5DEC3330(1)V5(2)	F5DEC3330(1)V5(2)
0.33	100	4.6	9.6	7.4	5.0	0.000047	5DEC3330(1)W5(2)	F5DEC3330(1)W5(2)
0.33	100	4.6	9.6	7.4	5.0	0.000068	5DEC3330(1)X5(2)	F5DEC3330(1)X5(2)
0.33	100	4.6	9.6	7.4	5.0	0.0001	5DEC3330(1)E5(2)	F5DEC3330(1)E5(2)
0.33	100	4.6	9.6	7.4	5.0	0.00022	5DEC3330(1)G5(2)	F5DEC3330(1)G5(2)
0.33	100	4.6	9.6	7.4	5.0	0.00047	5DEC3330(1)A5(2)	F5DEC3330(1)A5(2)
0.33	100	4.6	9.6	7.4	5.0	0.00068	5DEC3330(1)H5(2)	F5DEC3330(1)H5(2)
0.33	100	4.6	9.6	7.4	5.0	0.001	5DEC3330(1)C5(2)	F5DEC3330(1)C5(2)
0.33	100	4.6	9.6	7.4	5.0	0.0022	5DEC3330(1)F5(2)	F5DEC3330(1)F5(2)
0.33	100	4.6	9.6	7.4	5.0	0.0047	5DEC3330(1)B5(2)	F5DEC3330(1)B5(2)
0.33	100	4.6	9.6	7.4	5.0	0.0068	5DEC3330(1)N5(2)	F5DEC3330(1)N5(2)
0.33	100	4.6	9.6	7.4	5.0	0.01	5DEC3330(1)D5(2)	F5DEC3330(1)D5(2)
0.33	100	4.6	9.6	7.4	5.0	0.047	5DEC3330(1)R5(2)	F5DEC3330(1)R5(2)
0.33	100	4.6	9.6	7.4	5.0	0.068	5DEC3330(1)T5(2)	F5DEC3330(1)T5(2)
0.33	100	4.6	9.6	7.4	5.0	0.1	5DEC3330(1)S5(2)	F5DEC3330(1)S5(2)
0.47	100	4.6	9.6	7.4	5.0	0.00001	5DEC3470(1)U5(2)	F5DEC3470(1)U5(2)
0.47	100	4.6	9.6	7.4	5.0	0.000022	5DEC3470(1)V5(2)	F5DEC3470(1)V5(2)
0.47	100	4.6	9.6	7.4	5.0	0.000047	5DEC3470(1)W5(2)	F5DEC3470(1)W5(2)
0.47	100	4.6	9.6	7.4	5.0	0.000068	5DEC3470(1)X5(2)	F5DEC3470(1)X5(2)
0.47	100	4.6	9.6	7.4	5.0	0.0001	5DEC3470(1)E5(2)	F5DEC3470(1)E5(2)
0.47	100	4.6	9.6	7.4	5.0	0.00022	5DEC3470(1)G5(2)	F5DEC3470(1)G5(2)
0.47	100	4.6	9.6	7.4	5.0	0.00047	5DEC3470(1)A5(2)	F5DEC3470(1)A5(2)
0.47	100	4.6	9.6	7.4	5.0	0.00068	5DEC3470(1)H5(2)	F5DEC3470(1)H5(2)
0.47	100	4.6	9.6	7.4	5.0	0.001	5DEC3470(1)C5(2)	F5DEC3470(1)C5(2)
0.47	100	4.6	9.6	7.4	5.0	0.0022	5DEC3470(1)F5(2)	F5DEC3470(1)F5(2)
0.47	100	4.6	9.6	7.4	5.0	0.0047	5DEC3470(1)B5(2)	F5DEC3470(1)B5(2)
0.47	100	4.6	9.6	7.4	5.0	0.0068	5DEC3470(1)N5(2)	F5DEC3470(1)N5(2)
0.47	100	4.6	9.6	7.4	5.0	0.01	5DEC3470(1)D5(2)	F5DEC3470(1)D5(2)
0.47	100	4.6	9.6	7.4	5.0	0.047	5DEC3470(1)R5(2)	F5DEC3470(1)R5(2)
0.47	100	4.6	9.6	7.4	5.0	0.068	5DEC3470(1)T5(2)	F5DEC3470(1)T5(2)
0.47	100	4.6	9.6	7.4	5.0	0.1	5DEC3470(1)S5(2)	F5DEC3470(1)S5(2)
0.56	100	5.1	10.1	7.5	5.0	0.00001	5DEC3560(1)U6(2)	F5DEC3560(1)U6(2)
0.56	100	5.1	10.1	7.5	5.0	0.000022	5DEC3560(1)V6(2)	F5DEC3560(1)V6(2)
0.56	100	5.1	10.1	7.5	5.0	0.000047	5DEC3560(1)W6(2)	F5DEC3560(1)W6(2)
0.56	100	5.1	10.1	7.5	5.0	0.000068	5DEC3560(1)X6(2)	F5DEC3560(1)X6(2)
0.56	100	5.1	10.1	7.5	5.0	0.0001	5DEC3560(1)E6(2)	F5DEC3560(1)E6(2)
0.56	100	5.1	10.1	7.5	5.0	0.00022	5DEC3560(1)G6(2)	F5DEC3560(1)G6(2)
0.56	100	5.1	10.1	7.5	5.0	0.00047	5DEC3560(1)A6(2)	F5DEC3560(1)A6(2)
0.56	100	5.1	10.1	7.5	5.0	0.00068	5DEC3560(1)H6(2)	F5DEC3560(1)H6(2)
0.56	100	5.1	10.1	7.5	5.0	0.001	5DEC3560(1)C6(2)	F5DEC3560(1)C6(2)
0.56	100	5.1	10.1	7.5	5.0	0.0022	5DEC3560(1)F6(2)	F5DEC3560(1)F6(2)
0.56	100	5.1	10.1	7.5	5.0	0.0047	5DEC3560(1)B6(2)	F5DEC3560(1)B6(2)
0.56	100	5.1	10.1	7.5	5.0	0.0068	5DEC3560(1)N6(2)	F5DEC3560(1)N6(2)
0.56	100	5.1	10.1	7.5	5.0	0.01	5DEC3560(1)D6(2)	F5DEC3560(1)D6(2)
0.56	100	5.1	10.1	7.5	5.0	0.047	5DEC3560(1)R6(2)	F5DEC3560(1)R6(2)
0.56	100	5.1	10.1	7.5	5.0	0.068	5DEC3560(1)T6(2)	F5DEC3560(1)T6(2)
0.56	100	5.1	10.1	7.5	5.0	0.1	5DEC3560(1)S6(2)	F5DEC3560(1)S6(2)
Capacitance Value (µF)	**VDC**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Ceramic Cap (µF)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) K = 10%, M = 20%.

Table 1 – Ratings & Part Number Reference cont'd

Capacitance Value (µF)	VDC	Max Dimensions in mm			Lead Spacing (p)	Ceramic Cap (µF)	New KEMET Part Number	Legacy Part Number
		B	H	L				
0.68	100	5.1	10.1	7.5	5.0	0.00001	5DEC3680(1)U6(2)	F5DEC3680(1)U6(2)
0.68	100	5.1	10.1	7.5	5.0	0.000022	5DEC3680(1)V6(2)	F5DEC3680(1)V6(2)
0.68	100	5.1	10.1	7.5	5.0	0.000047	5DEC3680(1)W6(2)	F5DEC3680(1)W6(2)
0.68	100	5.1	10.1	7.5	5.0	0.000068	5DEC3680(1)X6(2)	F5DEC3680(1)X6(2)
0.68	100	5.1	10.1	7.5	5.0	0.0001	5DEC3680(1)E6(2)	F5DEC3680(1)E6(2)
0.68	100	5.1	10.1	7.5	5.0	0.00022	5DEC3680(1)G6(2)	F5DEC3680(1)G6(2)
0.68	100	5.1	10.1	7.5	5.0	0.00047	5DEC3680(1)A6(2)	F5DEC3680(1)A6(2)
0.68	100	5.1	10.1	7.5	5.0	0.00068	5DEC3680(1)H6(2)	F5DEC3680(1)H6(2)
0.68	100	5.1	10.1	7.5	5.0	0.001	5DEC3680(1)C6(2)	F5DEC3680(1)C6(2)
0.68	100	5.1	10.1	7.5	5.0	0.0022	5DEC3680(1)F6(2)	F5DEC3680(1)F6(2)
0.68	100	5.1	10.1	7.5	5.0	0.0047	5DEC3680(1)B6(2)	F5DEC3680(1)B6(2)
0.68	100	5.1	10.1	7.5	5.0	0.0068	5DEC3680(1)N6(2)	F5DEC3680(1)N6(2)
0.68	100	5.1	10.1	7.5	5.0	0.01	5DEC3680(1)D6(2)	F5DEC3680(1)D6(2)
0.68	100	5.1	10.1	7.5	5.0	0.047	5DEC3680(1)R6(2)	F5DEC3680(1)R6(2)
0.68	100	5.1	10.1	7.5	5.0	0.068	5DEC3680(1)T6(2)	F5DEC3680(1)T6(2)
0.68	100	5.1	10.1	7.5	5.0	0.1	5DEC3680(1)S6(2)	F5DEC3680(1)S6(2)
1.00	100	5.1	10.1	7.5	5.0	0.00001	5DEC4100(1)U6(2)	F5DEC4100(1)U6(2)
1.00	100	5.1	10.1	7.5	5.0	0.000022	5DEC4100(1)V6(2)	F5DEC4100(1)V6(2)
1.00	100	5.1	10.1	7.5	5.0	0.000047	5DEC4100(1)W6(2)	F5DEC4100(1)W6(2)
1.00	100	5.1	10.1	7.5	5.0	0.000068	5DEC4100(1)X6(2)	F5DEC4100(1)X6(2)
1.00	100	5.1	10.1	7.5	5.0	0.0001	5DEC4100(1)E6(2)	F5DEC4100(1)E6(2)
1.00	100	5.1	10.1	7.5	5.0	0.00022	5DEC4100(1)G6(2)	F5DEC4100(1)G6(2)
1.00	100	5.1	10.1	7.5	5.0	0.00047	5DEC4100(1)A6(2)	F5DEC4100(1)A6(2)
1.00	100	5.1	10.1	7.5	5.0	0.00068	5DEC4100(1)H6(2)	F5DEC4100(1)H6(2)
1.00	100	5.1	10.1	7.5	5.0	0.001	5DEC4100(1)C6(2)	F5DEC4100(1)C6(2)
1.00	100	5.1	10.1	7.5	5.0	0.0022	5DEC4100(1)F6(2)	F5DEC4100(1)F6(2)
1.00	100	5.1	10.1	7.5	5.0	0.0047	5DEC4100(1)B6(2)	F5DEC4100(1)B6(2)
1.00	100	5.1	10.1	7.5	5.0	0.0068	5DEC4100(1)N6(2)	F5DEC4100(1)N6(2)
1.00	100	5.1	10.1	7.5	5.0	0.01	5DEC4100(1)D6(2)	F5DEC4100(1)D6(2)
1.00	100	5.1	10.1	7.5	5.0	0.047	5DEC4100(1)R6(2)	F5DEC4100(1)R6(2)
1.00	100	5.1	10.1	7.5	5.0	0.068	5DEC4100(1)T6(2)	F5DEC4100(1)T6(2)
1.00	100	5.1	10.1	7.5	5.0	0.1	5DEC4100(1)S6(2)	F5DEC4100(1)S6(2)
1.50	100	6.1	11.1	7.5	5.0	0.00001	5DEC4150(1)U7(2)	F5DEC4150(1)U7(2)
1.50	100	6.1	11.1	7.5	5.0	0.000022	5DEC4150(1)V7(2)	F5DEC4150(1)V7(2)
1.50	100	6.1	11.1	7.5	5.0	0.000047	5DEC4150(1)W7(2)	F5DEC4150(1)W7(2)
1.50	100	6.1	11.1	7.5	5.0	0.000068	5DEC4150(1)X7(2)	F5DEC4150(1)X7(2)
1.50	100	6.1	11.1	7.5	5.0	0.0001	5DEC4150(1)E7(2)	F5DEC4150(1)E7(2)
1.50	100	6.1	11.1	7.5	5.0	0.00022	5DEC4150(1)G7(2)	F5DEC4150(1)G7(2)
1.50	100	6.1	11.1	7.5	5.0	0.00047	5DEC4150(1)A7(2)	F5DEC4150(1)A7(2)
1.50	100	6.1	11.1	7.5	5.0	0.00068	5DEC4150(1)H7(2)	F5DEC4150(1)H7(2)
1.50	100	6.1	11.1	7.5	5.0	0.001	5DEC4150(1)C7(2)	F5DEC4150(1)C7(2)
1.50	100	6.1	11.1	7.5	5.0	0.0022	5DEC4150(1)F7(2)	F5DEC4150(1)F7(2)
1.50	100	6.1	11.1	7.5	5.0	0.0047	5DEC4150(1)B7(2)	F5DEC4150(1)B7(2)
1.50	100	6.1	11.1	7.5	5.0	0.0068	5DEC4150(1)N7(2)	F5DEC4150(1)N7(2)
1.50	100	6.1	11.1	7.5	5.0	0.01	5DEC4150(1)D7(2)	F5DEC4150(1)D7(2)
1.50	100	6.1	11.1	7.5	5.0	0.047	5DEC4150(1)R7(2)	F5DEC4150(1)R7(2)
1.50	100	6.1	11.1	7.5	5.0	0.068	5DEC4150(1)T7(2)	F5DEC4150(1)T7(2)
1.50	100	6.1	11.1	7.5	5.0	0.1	5DEC4150(1)S7(2)	F5DEC4150(1)S7(2)
0.10	63	5.2	11.1	13.4	10.0	0.00001	5DDF3100(1)U2(2)	F5DDF3100(1)U2(2)
0.10	63	5.2	11.1	13.4	10.0	0.000022	5DDF3100(1)V2(2)	F5DDF3100(1)V2(2)
0.10	63	5.2	11.1	13.4	10.0	0.000047	5DDF3100(1)W2(2)	F5DDF3100(1)W2(2)
0.10	63	5.2	11.1	13.4	10.0	0.000068	5DDF3100(1)X2(2)	F5DDF3100(1)X2(2)
0.10	63	5.2	11.1	13.4	10.0	0.0001	5DDF3100(1)E2(2)	F5DDF3100(1)E2(2)
0.10	63	5.2	11.1	13.4	10.0	0.00022	5DDF3100(1)G2(2)	F5DDF3100(1)G2(2)
0.10	63	5.2	11.1	13.4	10.0	0.00047	5DDF3100(1)A2(2)	F5DDF3100(1)A2(2)
0.10	63	5.2	11.1	13.4	10.0	0.00068	5DDF3100(1)H2(2)	F5DDF3100(1)H2(2)
0.10	63	5.2	11.1	13.4	10.0	0.001	5DDF3100(1)C2(2)	F5DDF3100(1)C2(2)
0.10	63	5.2	11.1	13.4	10.0	0.0022	5DDF3100(1)F2(2)	F5DDF3100(1)F2(2)
0.10	63	5.2	11.1	13.4	10.0	0.0047	5DDF3100(1)B2(2)	F5DDF3100(1)B2(2)
0.10	63	5.2	11.1	13.4	10.0	0.0068	5DDF3100(1)N2(2)	F5DDF3100(1)N2(2)
Capacitance Value (µF)	**VDC**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Ceramic Cap (µF)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) K = 10%, M = 20%.

Table 1 – Ratings & Part Number Reference cont'd

Capacitance Value (µF)	VDC	Max Dimensions in mm			Lead Spacing (p)	Ceramic Cap (µF)	New KEMET Part Number	Legacy Part Number
		B	H	L				
0.10	63	5.2	11.1	13.4	10.0	0.01	5DDF3100(1)D2(2)	F5DDF3100(1)D2(2)
0.10	63	5.2	11.1	13.4	10.0	0.047	5DDF3100(1)R2(2)	F5DDF3100(1)R2(2)
0.10	63	5.2	11.1	13.4	10.0	0.068	5DDF3100(1)T2(2)	F5DDF3100(1)T2(2)
0.10	63	5.2	11.1	13.4	10.0	0.1	5DDF3100(1)S2(2)	F5DDF3100(1)S2(2)
0.22	63	5.2	11.1	13.4	10.0	0.00001	5DDF3220(1)U2(2)	F5DDF3220(1)U2(2)
0.22	63	5.2	11.1	13.4	10.0	0.000022	5DDF3220(1)V2(2)	F5DDF3220(1)V2(2)
0.22	63	5.2	11.1	13.4	10.0	0.000047	5DDF3220(1)W2(2)	F5DDF3220(1)W2(2)
0.22	63	5.2	11.1	13.4	10.0	0.000068	5DDF3220(1)X2(2)	F5DDF3220(1)X2(2)
0.22	63	5.2	11.1	13.4	10.0	0.0001	5DDF3220(1)E2(2)	F5DDF3220(1)E2(2)
0.22	63	5.2	11.1	13.4	10.0	0.00022	5DDF3220(1)G2(2)	F5DDF3220(1)G2(2)
0.22	63	5.2	11.1	13.4	10.0	0.00047	5DDF3220(1)A2(2)	F5DDF3220(1)A2(2)
0.22	63	5.2	11.1	13.4	10.0	0.00068	5DDF3220(1)H2(2)	F5DDF3220(1)H2(2)
0.22	63	5.2	11.1	13.4	10.0	0.001	5DDF3220(1)C2(2)	F5DDF3220(1)C2(2)
0.22	63	5.2	11.1	13.4	10.0	0.0022	5DDF3220(1)F2(2)	F5DDF3220(1)F2(2)
0.22	63	5.2	11.1	13.4	10.0	0.0047	5DDF3220(1)B2(2)	F5DDF3220(1)B2(2)
0.22	63	5.2	11.1	13.4	10.0	0.0068	5DDF3220(1)N2(2)	F5DDF3220(1)N2(2)
0.22	63	5.2	11.1	13.4	10.0	0.01	5DDF3220(1)D2(2)	F5DDF3220(1)D2(2)
0.22	63	5.2	11.1	13.4	10.0	0.047	5DDF3220(1)R2(2)	F5DDF3220(1)R2(2)
0.22	63	5.2	11.1	13.4	10.0	0.068	5DDF3220(1)T2(2)	F5DDF3220(1)T2(2)
0.22	63	5.2	11.1	13.4	10.0	0.1	5DDF3220(1)S2(2)	F5DDF3220(1)S2(2)
0.33	63	5.2	11.1	13.4	10.0	0.00001	5DDF3330(1)U2(2)	F5DDF3330(1)U2(2)
0.33	63	5.2	11.1	13.4	10.0	0.000022	5DDF3330(1)V2(2)	F5DDF3330(1)V2(2)
0.33	63	5.2	11.1	13.4	10.0	0.000047	5DDF3330(1)W2(2)	F5DDF3330(1)W2(2)
0.33	63	5.2	11.1	13.4	10.0	0.000068	5DDF3330(1)X2(2)	F5DDF3330(1)X2(2)
0.33	63	5.2	11.1	13.4	10.0	0.0001	5DDF3330(1)E2(2)	F5DDF3330(1)E2(2)
0.33	63	5.2	11.1	13.4	10.0	0.00022	5DDF3330(1)G2(2)	F5DDF3330(1)G2(2)
0.33	63	5.2	11.1	13.4	10.0	0.00047	5DDF3330(1)A2(2)	F5DDF3330(1)A2(2)
0.33	63	5.2	11.1	13.4	10.0	0.00068	5DDF3330(1)H2(2)	F5DDF3330(1)H2(2)
0.33	63	5.2	11.1	13.4	10.0	0.001	5DDF3330(1)C2(2)	F5DDF3330(1)C2(2)
0.33	63	5.2	11.1	13.4	10.0	0.0022	5DDF3330(1)F2(2)	F5DDF3330(1)F2(2)
0.33	63	5.2	11.1	13.4	10.0	0.0047	5DDF3330(1)B2(2)	F5DDF3330(1)B2(2)
0.33	63	5.2	11.1	13.4	10.0	0.0068	5DDF3330(1)N2(2)	F5DDF3330(1)N2(2)
0.33	63	5.2	11.1	13.4	10.0	0.01	5DDF3330(1)D2(2)	F5DDF3330(1)D2(2)
0.33	63	5.2	11.1	13.4	10.0	0.047	5DDF3330(1)R2(2)	F5DDF3330(1)R2(2)
0.33	63	5.2	11.1	13.4	10.0	0.068	5DDF3330(1)T2(2)	F5DDF3330(1)T2(2)
0.33	63	5.2	11.1	13.4	10.0	0.1	5DDF3330(1)S2(2)	F5DDF3330(1)S2(2)
0.47	63	5.2	11.1	13.4	10.0	0.00001	5DDF3470(1)U2(2)	F5DDF3470(1)U2(2)
0.47	63	5.2	11.1	13.4	10.0	0.000022	5DDF3470(1)V2(2)	F5DDF3470(1)V2(2)
0.47	63	5.2	11.1	13.4	10.0	0.000047	5DDF3470(1)W2(2)	F5DDF3470(1)W2(2)
0.47	63	5.2	11.1	13.4	10.0	0.000068	5DDF3470(1)X2(2)	F5DDF3470(1)X2(2)
0.47	63	5.2	11.1	13.4	10.0	0.0001	5DDF3470(1)E2(2)	F5DDF3470(1)E2(2)
0.47	63	5.2	11.1	13.4	10.0	0.00022	5DDF3470(1)G2(2)	F5DDF3470(1)G2(2)
0.47	63	5.2	11.1	13.4	10.0	0.00047	5DDF3470(1)A2(2)	F5DDF3470(1)A2(2)
0.47	63	5.2	11.1	13.4	10.0	0.00068	5DDF3470(1)H2(2)	F5DDF3470(1)H2(2)
0.47	63	5.2	11.1	13.4	10.0	0.001	5DDF3470(1)C2(2)	F5DDF3470(1)C2(2)
0.47	63	5.2	11.1	13.4	10.0	0.0022	5DDF3470(1)F2(2)	F5DDF3470(1)F2(2)
0.47	63	5.2	11.1	13.4	10.0	0.0047	5DDF3470(1)B2(2)	F5DDF3470(1)B2(2)
0.47	63	5.2	11.1	13.4	10.0	0.0068	5DDF3470(1)N2(2)	F5DDF3470(1)N2(2)
0.47	63	5.2	11.1	13.4	10.0	0.01	5DDF3470(1)D2(2)	F5DDF3470(1)D2(2)
0.47	63	5.2	11.1	13.4	10.0	0.047	5DDF3470(1)R2(2)	F5DDF3470(1)R2(2)
0.47	63	5.2	11.1	13.4	10.0	0.068	5DDF3470(1)T2(2)	F5DDF3470(1)T2(2)
0.47	63	5.2	11.1	13.4	10.0	0.1	5DDF3470(1)S2(2)	F5DDF3470(1)S2(2)
0.56	63	5.2	11.1	13.4	10.0	0.00001	5DDF3560(1)U2(2)	F5DDF3560(1)U2(2)
0.56	63	5.2	11.1	13.4	10.0	0.000022	5DDF3560(1)V2(2)	F5DDF3560(1)V2(2)
0.56	63	5.2	11.1	13.4	10.0	0.000047	5DDF3560(1)W2(2)	F5DDF3560(1)W2(2)
0.56	63	5.2	11.1	13.4	10.0	0.000068	5DDF3560(1)X2(2)	F5DDF3560(1)X2(2)
0.56	63	5.2	11.1	13.4	10.0	0.0001	5DDF3560(1)E2(2)	F5DDF3560(1)E2(2)
0.56	63	5.2	11.1	13.4	10.0	0.00022	5DDF3560(1)G2(2)	F5DDF3560(1)G2(2)
0.56	63	5.2	11.1	13.4	10.0	0.00047	5DDF3560(1)A2(2)	F5DDF3560(1)A2(2)
0.56	63	5.2	11.1	13.4	10.0	0.00068	5DDF3560(1)H2(2)	F5DDF3560(1)H2(2)
Capacitance Value (µF)	**VDC**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Ceramic Cap (µF)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) K = 10%, M = 20%.

Table 1 – Ratings & Part Number Reference cont'd

Capacitance Value (µF)	VDC	Max Dimensions in mm			Lead Spacing (p)	Ceramic Cap (µF)	New KEMET Part Number	Legacy Part Number
		B	H	L				
0.56	63	5.2	11.1	13.4	10.0	0.001	5DDF3560(1)C2(2)	F5DDF3560(1)C2(2)
0.56	63	5.2	11.1	13.4	10.0	0.0022	5DDF3560(1)F2(2)	F5DDF3560(1)F2(2)
0.56	63	5.2	11.1	13.4	10.0	0.0047	5DDF3560(1)B2(2)	F5DDF3560(1)B2(2)
0.56	63	5.2	11.1	13.4	10.0	0.0068	5DDF3560(1)N2(2)	F5DDF3560(1)N2(2)
0.56	63	5.2	11.1	13.4	10.0	0.01	5DDF3560(1)D2(2)	F5DDF3560(1)D2(2)
0.56	63	5.2	11.1	13.4	10.0	0.047	5DDF3560(1)R2(2)	F5DDF3560(1)R2(2)
0.56	63	5.2	11.1	13.4	10.0	0.068	5DDF3560(1)T2(2)	F5DDF3560(1)T2(2)
0.56	63	5.2	11.1	13.4	10.0	0.1	5DDF3560(1)S2(2)	F5DDF3560(1)S2(2)
1.00	63	5.2	11.1	13.4	10.0	0.00001	5DDF4100(1)U2(2)	F5DDF4100(1)U2(2)
1.00	63	5.2	11.1	13.4	10.0	0.000022	5DDF4100(1)V2(2)	F5DDF4100(1)V2(2)
1.00	63	5.2	11.1	13.4	10.0	0.000047	5DDF4100(1)W2(2)	F5DDF4100(1)W2(2)
1.00	63	5.2	11.1	13.4	10.0	0.000068	5DDF4100(1)X2(2)	F5DDF4100(1)X2(2)
1.00	63	5.2	11.1	13.4	10.0	0.0001	5DDF4100(1)E2(2)	F5DDF4100(1)E2(2)
1.00	63	5.2	11.1	13.4	10.0	0.00022	5DDF4100(1)G2(2)	F5DDF4100(1)G2(2)
1.00	63	5.2	11.1	13.4	10.0	0.00047	5DDF4100(1)A2(2)	F5DDF4100(1)A2(2)
1.00	63	5.2	11.1	13.4	10.0	0.00068	5DDF4100(1)H2(2)	F5DDF4100(1)H2(2)
1.00	63	5.2	11.1	13.4	10.0	0.001	5DDF4100(1)C2(2)	F5DDF4100(1)C2(2)
1.00	63	5.2	11.1	13.4	10.0	0.0022	5DDF4100(1)F2(2)	F5DDF4100(1)F2(2)
1.00	63	5.2	11.1	13.4	10.0	0.0047	5DDF4100(1)B2(2)	F5DDF4100(1)B2(2)
1.00	63	5.2	11.1	13.4	10.0	0.0068	5DDF4100(1)N2(2)	F5DDF4100(1)N2(2)
1.00	63	5.2	11.1	13.4	10.0	0.01	5DDF4100(1)D2(2)	F5DDF4100(1)D2(2)
1.00	63	5.2	11.1	13.4	10.0	0.047	5DDF4100(1)R2(2)	F5DDF4100(1)R2(2)
1.00	63	5.2	11.1	13.4	10.0	0.068	5DDF4100(1)T2(2)	F5DDF4100(1)T2(2)
1.00	63	5.2	11.1	13.4	10.0	0.1	5DDF4100(1)S2(2)	F5DDF4100(1)S2(2)
1.20	63	6.2	12.1	13.4	10.0	0.00001	5DDF4120(1)U3(2)	F5DDF4120(1)U3(2)
1.20	63	6.2	12.1	13.4	10.0	0.000022	5DDF4120(1)V3(2)	F5DDF4120(1)V3(2)
1.20	63	6.2	12.1	13.4	10.0	0.000047	5DDF4120(1)W3(2)	F5DDF4120(1)W3(2)
1.20	63	6.2	12.1	13.4	10.0	0.000068	5DDF4120(1)X3(2)	F5DDF4120(1)X3(2)
1.20	63	6.2	12.1	13.4	10.0	0.0001	5DDF4120(1)E3(2)	F5DDF4120(1)E3(2)
1.20	63	6.2	12.1	13.4	10.0	0.00022	5DDF4120(1)G3(2)	F5DDF4120(1)G3(2)
1.20	63	6.2	12.1	13.4	10.0	0.00047	5DDF4120(1)A3(2)	F5DDF4120(1)A3(2)
1.20	63	6.2	12.1	13.4	10.0	0.00068	5DDF4120(1)H3(2)	F5DDF4120(1)H3(2)
1.20	63	6.2	12.1	13.4	10.0	0.001	5DDF4120(1)C3(2)	F5DDF4120(1)C3(2)
1.20	63	6.2	12.1	13.4	10.0	0.0022	5DDF4120(1)F3(2)	F5DDF4120(1)F3(2)
1.20	63	6.2	12.1	13.4	10.0	0.0047	5DDF4120(1)B3(2)	F5DDF4120(1)B3(2)
1.20	63	6.2	12.1	13.4	10.0	0.0068	5DDF4120(1)N3(2)	F5DDF4120(1)N3(2)
1.20	63	6.2	12.1	13.4	10.0	0.01	5DDF4120(1)D3(2)	F5DDF4120(1)D3(2)
1.20	63	6.2	12.1	13.4	10.0	0.047	5DDF4120(1)R3(2)	F5DDF4120(1)R3(2)
1.20	63	6.2	12.1	13.4	10.0	0.068	5DDF4120(1)T3(2)	F5DDF4120(1)T3(2)
1.20	63	6.2	12.1	13.4	10.0	0.1	5DDF4120(1)S3(2)	F5DDF4120(1)S3(2)
1.50	63	6.2	12.1	13.4	10.0	0.00001	5DDF4150(1)U3(2)	F5DDF4150(1)U3(2)
1.50	63	6.2	12.1	13.4	10.0	0.000022	5DDF4150(1)V3(2)	F5DDF4150(1)V3(2)
1.50	63	6.2	12.1	13.4	10.0	0.000047	5DDF4150(1)W3(2)	F5DDF4150(1)W3(2)
1.50	63	6.2	12.1	13.4	10.0	0.000068	5DDF4150(1)X3(2)	F5DDF4150(1)X3(2)
1.50	63	6.2	12.1	13.4	10.0	0.0001	5DDF4150(1)E3(2)	F5DDF4150(1)E3(2)
1.50	63	6.2	12.1	13.4	10.0	0.00022	5DDF4150(1)G3(2)	F5DDF4150(1)G3(2)
1.50	63	6.2	12.1	13.4	10.0	0.00047	5DDF4150(1)A3(2)	F5DDF4150(1)A3(2)
1.50	63	6.2	12.1	13.4	10.0	0.00068	5DDF4150(1)H3(2)	F5DDF4150(1)H3(2)
1.50	63	6.2	12.1	13.4	10.0	0.001	5DDF4150(1)C3(2)	F5DDF4150(1)C3(2)
1.50	63	6.2	12.1	13.4	10.0	0.0022	5DDF4150(1)F3(2)	F5DDF4150(1)F3(2)
1.50	63	6.2	12.1	13.4	10.0	0.0047	5DDF4150(1)B3(2)	F5DDF4150(1)B3(2)
1.50	63	6.2	12.1	13.4	10.0	0.0068	5DDF4150(1)N3(2)	F5DDF4150(1)N3(2)
1.50	63	6.2	12.1	13.4	10.0	0.01	5DDF4150(1)D3(2)	F5DDF4150(1)D3(2)
1.50	63	6.2	12.1	13.4	10.0	0.047	5DDF4150(1)R3(2)	F5DDF4150(1)R3(2)
1.50	63	6.2	12.1	13.4	10.0	0.068	5DDF4150(1)T3(2)	F5DDF4150(1)T3(2)
1.50	63	6.2	12.1	13.4	10.0	0.1	5DDF4150(1)S3(2)	F5DDF4150(1)S3(2)
0.10	100	5.2	11.1	13.4	10.0	0.00001	5DEF3100(1)U2(2)	F5DEF3100(1)U2(2)
0.10	100	5.2	11.1	13.4	10.0	0.000022	5DEF3100(1)V2(2)	F5DEF3100(1)V2(2)
0.10	100	5.2	11.1	13.4	10.0	0.000047	5DEF3100(1)W2(2)	F5DEF3100(1)W2(2)
0.10	100	5.2	11.1	13.4	10.0	0.000068	5DEF3100(1)X2(2)	F5DEF3100(1)X2(2)
Capacitance Value (µF)	**VDC**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Ceramic Cap (µF)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) K = 10%, M = 20%.

Table 1 – Ratings & Part Number Reference cont'd

Capacitance Value (µF)	VDC	Max Dimensions in mm			Lead Spacing (p)	Ceramic Cap (µF)	New KEMET Part Number	Legacy Part Number
		B	H	L				
0.10	100	5.2	11.1	13.4	10.0	0.0001	5DEF3100(1)E2(2)	F5DEF3100(1)E2(2)
0.10	100	5.2	11.1	13.4	10.0	0.00022	5DEF3100(1)G2(2)	F5DEF3100(1)G2(2)
0.10	100	5.2	11.1	13.4	10.0	0.00047	5DEF3100(1)A2(2)	F5DEF3100(1)A2(2)
0.10	100	5.2	11.1	13.4	10.0	0.00068	5DEF3100(1)H2(2)	F5DEF3100(1)H2(2)
0.10	100	5.2	11.1	13.4	10.0	0.001	5DEF3100(1)C2(2)	F5DEF3100(1)C2(2)
0.10	100	5.2	11.1	13.4	10.0	0.0022	5DEF3100(1)F2(2)	F5DEF3100(1)F2(2)
0.10	100	5.2	11.1	13.4	10.0	0.0047	5DEF3100(1)B2(2)	F5DEF3100(1)B2(2)
0.10	100	5.2	11.1	13.4	10.0	0.0068	5DEF3100(1)N2(2)	F5DEF3100(1)N2(2)
0.10	100	5.2	11.1	13.4	10.0	0.01	5DEF3100(1)D2(2)	F5DEF3100(1)D2(2)
0.10	100	5.2	11.1	13.4	10.0	0.047	5DEF3100(1)R2(2)	F5DEF3100(1)R2(2)
0.10	100	5.2	11.1	13.4	10.0	0.068	5DEF3100(1)T2(2)	F5DEF3100(1)T2(2)
0.10	100	5.2	11.1	13.4	10.0	0.1	5DEF3100(1)S2(2)	F5DEF3100(1)S2(2)
0.22	100	5.2	11.1	13.4	10.0	0.00001	5DEF3220(1)U2(2)	F5DEF3220(1)U2(2)
0.22	100	5.2	11.1	13.4	10.0	0.000022	5DEF3220(1)V2(2)	F5DEF3220(1)V2(2)
0.22	100	5.2	11.1	13.4	10.0	0.000047	5DEF3220(1)W2(2)	F5DEF3220(1)W2(2)
0.22	100	5.2	11.1	13.4	10.0	0.000068	5DEF3220(1)X2(2)	F5DEF3220(1)X2(2)
0.22	100	5.2	11.1	13.4	10.0	0.0001	5DEF3220(1)E2(2)	F5DEF3220(1)E2(2)
0.22	100	5.2	11.1	13.4	10.0	0.00022	5DEF3220(1)G2(2)	F5DEF3220(1)G2(2)
0.22	100	5.2	11.1	13.4	10.0	0.00047	5DEF3220(1)A2(2)	F5DEF3220(1)A2(2)
0.22	100	5.2	11.1	13.4	10.0	0.00068	5DEF3220(1)H2(2)	F5DEF3220(1)H2(2)
0.22	100	5.2	11.1	13.4	10.0	0.001	5DEF3220(1)C2(2)	F5DEF3220(1)C2(2)
0.22	100	5.2	11.1	13.4	10.0	0.0022	5DEF3220(1)F2(2)	F5DEF3220(1)F2(2)
0.22	100	5.2	11.1	13.4	10.0	0.0047	5DEF3220(1)B2(2)	F5DEF3220(1)B2(2)
0.22	100	5.2	11.1	13.4	10.0	0.0068	5DEF3220(1)N2(2)	F5DEF3220(1)N2(2)
0.22	100	5.2	11.1	13.4	10.0	0.01	5DEF3220(1)D2(2)	F5DEF3220(1)D2(2)
0.22	100	5.2	11.1	13.4	10.0	0.047	5DEF3220(1)R2(2)	F5DEF3220(1)R2(2)
0.22	100	5.2	11.1	13.4	10.0	0.068	5DEF3220(1)T2(2)	F5DEF3220(1)T2(2)
0.22	100	5.2	11.1	13.4	10.0	0.1	5DEF3220(1)S2(2)	F5DEF3220(1)S2(2)
0.33	100	5.2	11.1	13.4	10.0	0.00001	5DEF3330(1)U2(2)	F5DEF3330(1)U2(2)
0.33	100	5.2	11.1	13.4	10.0	0.000022	5DEF3330(1)V2(2)	F5DEF3330(1)V2(2)
0.33	100	5.2	11.1	13.4	10.0	0.000047	5DEF3330(1)W2(2)	F5DEF3330(1)W2(2)
0.33	100	5.2	11.1	13.4	10.0	0.000068	5DEF3330(1)X2(2)	F5DEF3330(1)X2(2)
0.33	100	5.2	11.1	13.4	10.0	0.0001	5DEF3330(1)E2(2)	F5DEF3330(1)E2(2)
0.33	100	5.2	11.1	13.4	10.0	0.00022	5DEF3330(1)G2(2)	F5DEF3330(1)G2(2)
0.33	100	5.2	11.1	13.4	10.0	0.00047	5DEF3330(1)A2(2)	F5DEF3330(1)A2(2)
0.33	100	5.2	11.1	13.4	10.0	0.00068	5DEF3330(1)H2(2)	F5DEF3330(1)H2(2)
0.33	100	5.2	11.1	13.4	10.0	0.001	5DEF3330(1)C2(2)	F5DEF3330(1)C2(2)
0.33	100	5.2	11.1	13.4	10.0	0.0022	5DEF3330(1)F2(2)	F5DEF3330(1)F2(2)
0.33	100	5.2	11.1	13.4	10.0	0.0047	5DEF3330(1)B2(2)	F5DEF3330(1)B2(2)
0.33	100	5.2	11.1	13.4	10.0	0.0068	5DEF3330(1)N2(2)	F5DEF3330(1)N2(2)
0.33	100	5.2	11.1	13.4	10.0	0.01	5DEF3330(1)D2(2)	F5DEF3330(1)D2(2)
0.33	100	5.2	11.1	13.4	10.0	0.047	5DEF3330(1)R2(2)	F5DEF3330(1)R2(2)
0.33	100	5.2	11.1	13.4	10.0	0.068	5DEF3330(1)T2(2)	F5DEF3330(1)T2(2)
0.33	100	5.2	11.1	13.4	10.0	0.1	5DEF3330(1)S2(2)	F5DEF3330(1)S2(2)
0.47	100	5.2	11.1	13.4	10.0	0.00001	5DEF3470(1)U2(2)	F5DEF3470(1)U2(2)
0.47	100	5.2	11.1	13.4	10.0	0.000022	5DEF3470(1)V2(2)	F5DEF3470(1)V2(2)
0.47	100	5.2	11.1	13.4	10.0	0.000047	5DEF3470(1)W2(2)	F5DEF3470(1)W2(2)
0.47	100	5.2	11.1	13.4	10.0	0.000068	5DEF3470(1)X2(2)	F5DEF3470(1)X2(2)
0.47	100	5.2	11.1	13.4	10.0	0.0001	5DEF3470(1)E2(2)	F5DEF3470(1)E2(2)
0.47	100	5.2	11.1	13.4	10.0	0.00022	5DEF3470(1)G2(2)	F5DEF3470(1)G2(2)
0.47	100	5.2	11.1	13.4	10.0	0.00047	5DEF3470(1)A2(2)	F5DEF3470(1)A2(2)
0.47	100	5.2	11.1	13.4	10.0	0.00068	5DEF3470(1)H2(2)	F5DEF3470(1)H2(2)
0.47	100	5.2	11.1	13.4	10.0	0.001	5DEF3470(1)C2(2)	F5DEF3470(1)C2(2)
0.47	100	5.2	11.1	13.4	10.0	0.0022	5DEF3470(1)F2(2)	F5DEF3470(1)F2(2)
0.47	100	5.2	11.1	13.4	10.0	0.0047	5DEF3470(1)B2(2)	F5DEF3470(1)B2(2)
0.47	100	5.2	11.1	13.4	10.0	0.0068	5DEF3470(1)N2(2)	F5DEF3470(1)N2(2)
0.47	100	5.2	11.1	13.4	10.0	0.01	5DEF3470(1)D2(2)	F5DEF3470(1)D2(2)
0.47	100	5.2	11.1	13.4	10.0	0.047	5DEF3470(1)R2(2)	F5DEF3470(1)R2(2)
0.47	100	5.2	11.1	13.4	10.0	0.068	5DEF3470(1)T2(2)	F5DEF3470(1)T2(2)
0.47	100	5.2	11.1	13.4	10.0	0.1	5DEF3470(1)S2(2)	F5DEF3470(1)S2(2)
Capacitance Value (µF)	**VDC**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Ceramic Cap (µF)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) K = 10%, M = 20%.

Table 1 – Ratings & Part Number Reference cont'd

Capacitance Value (µF)	VDC	Max Dimensions in mm			Lead Spacing (p)	Ceramic Cap (µF)	New KEMET Part Number	Legacy Part Number
		B	H	L				
0.56	100	5.2	11.1	13.4	10.0	0.00001	5DEF3560(1)U2(2)	F5DEF3560(1)U2(2)
0.56	100	5.2	11.1	13.4	10.0	0.000022	5DEF3560(1)V2(2)	F5DEF3560(1)V2(2)
0.56	100	5.2	11.1	13.4	10.0	0.000047	5DEF3560(1)W2(2)	F5DEF3560(1)W2(2)
0.56	100	5.2	11.1	13.4	10.0	0.000068	5DEF3560(1)X2(2)	F5DEF3560(1)X2(2)
0.56	100	5.2	11.1	13.4	10.0	0.0001	5DEF3560(1)E2(2)	F5DEF3560(1)E2(2)
0.56	100	5.2	11.1	13.4	10.0	0.00022	5DEF3560(1)G2(2)	F5DEF3560(1)G2(2)
0.56	100	5.2	11.1	13.4	10.0	0.00047	5DEF3560(1)A2(2)	F5DEF3560(1)A2(2)
0.56	100	5.2	11.1	13.4	10.0	0.00068	5DEF3560(1)H2(2)	F5DEF3560(1)H2(2)
0.56	100	5.2	11.1	13.4	10.0	0.001	5DEF3560(1)C2(2)	F5DEF3560(1)C2(2)
0.56	100	5.2	11.1	13.4	10.0	0.0022	5DEF3560(1)F2(2)	F5DEF3560(1)F2(2)
0.56	100	5.2	11.1	13.4	10.0	0.0047	5DEF3560(1)B2(2)	F5DEF3560(1)B2(2)
0.56	100	5.2	11.1	13.4	10.0	0.0068	5DEF3560(1)N2(2)	F5DEF3560(1)N2(2)
0.56	100	5.2	11.1	13.4	10.0	0.01	5DEF3560(1)D2(2)	F5DEF3560(1)D2(2)
0.56	100	5.2	11.1	13.4	10.0	0.047	5DEF3560(1)R2(2)	F5DEF3560(1)R2(2)
0.56	100	5.2	11.1	13.4	10.0	0.068	5DEF3560(1)T2(2)	F5DEF3560(1)T2(2)
0.56	100	5.2	11.1	13.4	10.0	0.1	5DEF3560(1)S2(2)	F5DEF3560(1)S2(2)
1.00	100	5.2	11.1	13.4	10.0	0.00001	5DEF4100(1)U2(2)	F5DEF4100(1)U2(2)
1.00	100	5.2	11.1	13.4	10.0	0.000022	5DEF4100(1)V2(2)	F5DEF4100(1)V2(2)
1.00	100	5.2	11.1	13.4	10.0	0.000047	5DEF4100(1)W2(2)	F5DEF4100(1)W2(2)
1.00	100	5.2	11.1	13.4	10.0	0.000068	5DEF4100(1)X2(2)	F5DEF4100(1)X2(2)
1.00	100	5.2	11.1	13.4	10.0	0.0001	5DEF4100(1)E2(2)	F5DEF4100(1)E2(2)
1.00	100	5.2	11.1	13.4	10.0	0.00022	5DEF4100(1)G2(2)	F5DEF4100(1)G2(2)
1.00	100	5.2	11.1	13.4	10.0	0.00047	5DEF4100(1)A2(2)	F5DEF4100(1)A2(2)
1.00	100	5.2	11.1	13.4	10.0	0.00068	5DEF4100(1)H2(2)	F5DEF4100(1)H2(2)
1.00	100	5.2	11.1	13.4	10.0	0.001	5DEF4100(1)C2(2)	F5DEF4100(1)C2(2)
1.00	100	5.2	11.1	13.4	10.0	0.0022	5DEF4100(1)F2(2)	F5DEF4100(1)F2(2)
1.00	100	5.2	11.1	13.4	10.0	0.0047	5DEF4100(1)B2(2)	F5DEF4100(1)B2(2)
1.00	100	5.2	11.1	13.4	10.0	0.0068	5DEF4100(1)N2(2)	F5DEF4100(1)N2(2)
1.00	100	5.2	11.1	13.4	10.0	0.01	5DEF4100(1)D2(2)	F5DEF4100(1)D2(2)
1.00	100	5.2	11.1	13.4	10.0	0.047	5DEF4100(1)R2(2)	F5DEF4100(1)R2(2)
1.00	100	5.2	11.1	13.4	10.0	0.068	5DEF4100(1)T2(2)	F5DEF4100(1)T2(2)
1.00	100	5.2	11.1	13.4	10.0	0.1	5DEF4100(1)S2(2)	F5DEF4100(1)S2(2)
1.20	100	6.2	12.1	13.4	10.0	0.00001	5DEF4120(1)U3(2)	F5DEF4120(1)U3(2)
1.20	100	6.2	12.1	13.4	10.0	0.000022	5DEF4120(1)V3(2)	F5DEF4120(1)V3(2)
1.20	100	6.2	12.1	13.4	10.0	0.000047	5DEF4120(1)W3(2)	F5DEF4120(1)W3(2)
1.20	100	6.2	12.1	13.4	10.0	0.000068	5DEF4120(1)X3(2)	F5DEF4120(1)X3(2)
1.20	100	6.2	12.1	13.4	10.0	0.0001	5DEF4120(1)E3(2)	F5DEF4120(1)E3(2)
1.20	100	6.2	12.1	13.4	10.0	0.00022	5DEF4120(1)G3(2)	F5DEF4120(1)G3(2)
1.20	100	6.2	12.1	13.4	10.0	0.00047	5DEF4120(1)A3(2)	F5DEF4120(1)A3(2)
1.20	100	6.2	12.1	13.4	10.0	0.00068	5DEF4120(1)H3(2)	F5DEF4120(1)H3(2)
1.20	100	6.2	12.1	13.4	10.0	0.001	5DEF4120(1)C3(2)	F5DEF4120(1)C3(2)
1.20	100	6.2	12.1	13.4	10.0	0.0022	5DEF4120(1)F3(2)	F5DEF4120(1)F3(2)
1.20	100	6.2	12.1	13.4	10.0	0.0047	5DEF4120(1)B3(2)	F5DEF4120(1)B3(2)
1.20	100	6.2	12.1	13.4	10.0	0.0068	5DEF4120(1)N3(2)	F5DEF4120(1)N3(2)
1.20	100	6.2	12.1	13.4	10.0	0.01	5DEF4120(1)D3(2)	F5DEF4120(1)D3(2)
1.20	100	6.2	12.1	13.4	10.0	0.047	5DEF4120(1)R3(2)	F5DEF4120(1)R3(2)
1.20	100	6.2	12.1	13.4	10.0	0.068	5DEF4120(1)T3(2)	F5DEF4120(1)T3(2)
1.20	100	6.2	12.1	13.4	10.0	0.1	5DEF4120(1)S3(2)	F5DEF4120(1)S3(2)
1.50	100	6.2	12.1	13.4	10.0	0.00001	5DEF4150(1)U3(2)	F5DEF4150(1)U3(2)
1.50	100	6.2	12.1	13.4	10.0	0.000022	5DEF4150(1)V3(2)	F5DEF4150(1)V3(2)
1.50	100	6.2	12.1	13.4	10.0	0.000047	5DEF4150(1)W3(2)	F5DEF4150(1)W3(2)
1.50	100	6.2	12.1	13.4	10.0	0.000068	5DEF4150(1)X3(2)	F5DEF4150(1)X3(2)
1.50	100	6.2	12.1	13.4	10.0	0.0001	5DEF4150(1)E3(2)	F5DEF4150(1)E3(2)
1.50	100	6.2	12.1	13.4	10.0	0.00022	5DEF4150(1)G3(2)	F5DEF4150(1)G3(2)
1.50	100	6.2	12.1	13.4	10.0	0.00047	5DEF4150(1)A3(2)	F5DEF4150(1)A3(2)
1.50	100	6.2	12.1	13.4	10.0	0.00068	5DEF4150(1)H3(2)	F5DEF4150(1)H3(2)
1.50	100	6.2	12.1	13.4	10.0	0.001	5DEF4150(1)C3(2)	F5DEF4150(1)C3(2)
1.50	100	6.2	12.1	13.4	10.0	0.0022	5DEF4150(1)F3(2)	F5DEF4150(1)F3(2)
1.50	100	6.2	12.1	13.4	10.0	0.0047	5DEF4150(1)B3(2)	F5DEF4150(1)B3(2)
1.50	100	6.2	12.1	13.4	10.0	0.0068	5DEF4150(1)N3(2)	F5DEF4150(1)N3(2)
Capacitance Value (µF)	**VDC**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Ceramic Cap (µF)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) K = 10%, M = 20%.

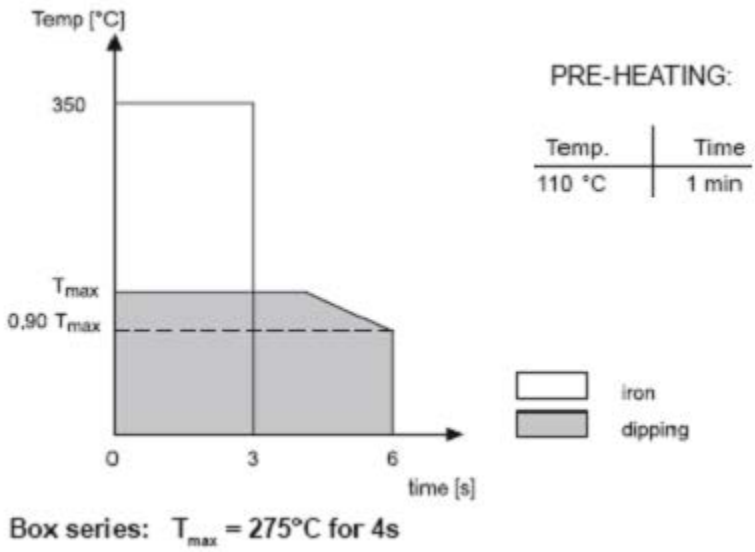
Table 1 – Ratings & Part Number Reference cont'd

Capacitance Value (µF)	VDC	Max Dimensions in mm			Lead Spacing (p)	Ceramic Cap (µF)	New KEMET Part Number	Legacy Part Number
		B	H	L				
1.50	100	6.2	12.1	13.4	10.0	0.01	5DEF4150(1)D3(2)	F5DEF4150(1)D3(2)
1.50	100	6.2	12.1	13.4	10.0	0.047	5DEF4150(1)R3(2)	F5DEF4150(1)R3(2)
1.50	100	6.2	12.1	13.4	10.0	0.068	5DEF4150(1)T3(2)	F5DEF4150(1)T3(2)
1.50	100	6.2	12.1	13.4	10.0	0.1	5DEF4150(1)S3(2)	F5DEF4150(1)S3(2)
Capacitance Value (µF)	**VDC**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**Ceramic Cap (µF)**	**New KEMET Part Number**	**Legacy Part Number**

(1) Insert lead and packaging code. See Ordering Options Table for available options.
(2) K = 10%, M = 20%.

Maximum Soldering Temperature

- Set the temperature so that inside the element the maximum temperature is below 160°C
- Solder within the following temperature profiles, especially for iron soldering:



General Conditions

- If two solderings are needed, please apply a recovery time until the temperature on the capacitor surface is below 50°C.
- Avoid any passing through adhesive curing oven when fixing surface mount parts in combination with through-hole parts. Insert through-hole parts only after the curing of surface mount parts.
- Avoid reflow soldering by combining the lead type with surface mount parts

Marking

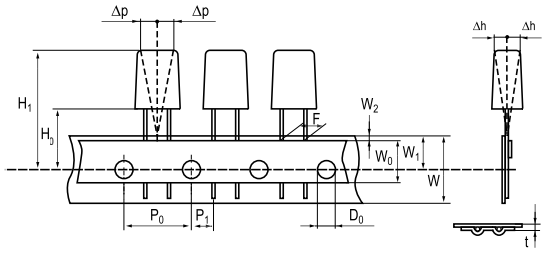
- Film capacitance
- Ceramic capacitance
- Tolerance
- DC rated voltage
- Series (F5D)
- Manufacturing date code

Packaging Quantities

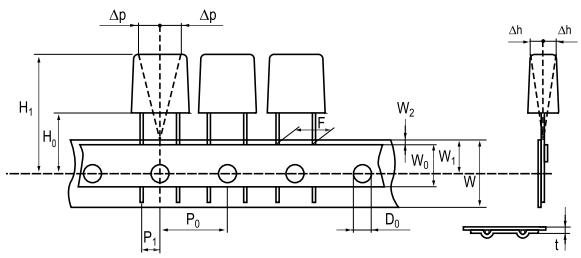
Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Large Reel ø 500 mm	Ammo
5	4.6	9.6	7.4	1500	2000	1400		1900
	5.1	10.1	7.5	1000	1500	1200		1700
	6.1	11.1	7.5	2000	1000	1000		1400
	7.3	13.1	7.5	1500	750	800		1150
10	5.2	11.1	13.4	1300	2000	600	1250	800
	6.2	12.1	13.4	1000	1800	500	1000	680

Lead Taping & Packaging for SMR, PHExxx & PFR (IEC 60286–2)

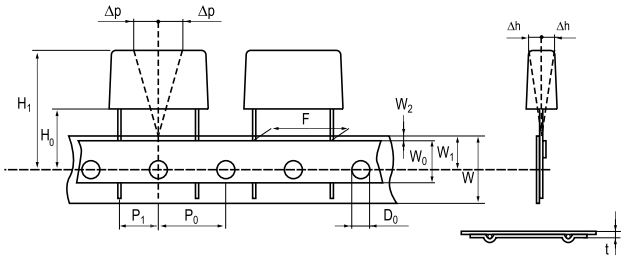
Lead Spacing 5 mm



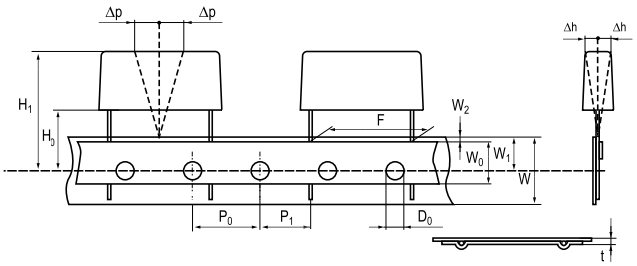
Lead Spacing 7.5 mm



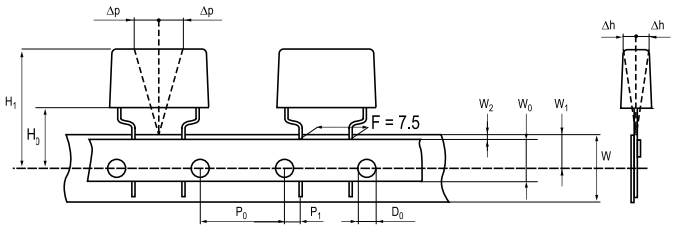
Lead Spacing 10 – 15mm



Lead Spacing 22.5 – 27.5 mm



Formed Leads from 10 and 15 mm to 7.5 mm



Taping Specification

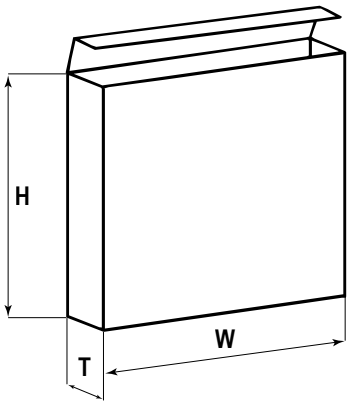
Dimensions in mm										Standard IEC 60286–2
Lead spacing	+6/-0.1	F	5	7.5	Formed 7.5	10	15	22.5	27.5	F
Carrier tape width	+/-0.5	W	18	18	18	18	18	18	18	$18^{+1/-0.5}$
Hold-down tape width	+/-0.3	W_0	9	9	9	12	12	12	12	
Position of sprocket hole	+/-0.5	W_1	9	9	9	9	9	9	9	$9^{+0.75/-0.5}$
Distance between tapes	Maximum	W_2	3	3	3	3	3	3	3	3
Sprocket hole diameter	+/-0.2	D_0	4	4	4	4	4	4	4	4
Feed hole lead spacing	+/-0.3	P_0 (1)	12.7	12.7	12.7(4)	12.7	12.7	12.7	12.7	12.7
Distance lead – feed hole	+/-0.7	P_1	3.85	3.75	3.75	7.7	5.2	5.3	5.3	P1
Deviation tape – plane	Maximum	Δp	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Lateral deviation	Maximum	Δh	2	2	2	2	2	2	2	2
Total thickness	+/-0.2	t	0.7	0.7	0.7	0.7	0.7	0.9^{MAX}	0.9^{MAX}	0.9^{MAX}
Sprocket hole/cap body	Nominal	H_0 (2)	$18.5^{+/-0.5}$	$18.5^{+/-0.5}$	$18.5^{+/-0.5}$	$18.5^{+/-0.5}$	$18.5^{+/-0.5}$	$18.5^{+/-0.5}$	$18.5^{+/-0.5}$	$18^{+2/-0}$
Sprocket hole/top of cap body	Maximum	H_1 (3)	32	31	43	43	43	58	58	58^{MAX}

(1) Maximum cumulative feed hole error, 1 mm per 20 parts.
(2) 16.5 mm available on request.
(3) Depending on case size.
(4) 15 mm available on request.

Lead Taping & Packaging for SMR, PHExxx & PFR (IEC 60286–2) cont'd

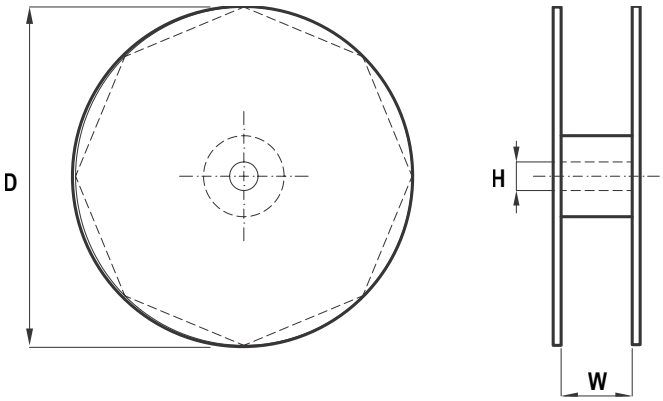
Ammo Specifications

Series	Dimensions (mm)		
	H	W	T
R4x, R4x+R, R7x, RSB	360	340	59
F5A, F5B, F5D			
F6xx, F8xx			
PHExxx, PMExxx, PMRxxx, SMR & PFR	330	330	50



Reel Specifications

Series	Dimensions (mm)		
	D	H	W
R4x, R4x+R, R7x, RSB	355 500	30 25	55 (Max)
F5A, F5B, F5D			
F6xx, F8xx			
PHExxx, PMExxx, PMRxxx, SMR & PFR	360 500	30	46 (Max)

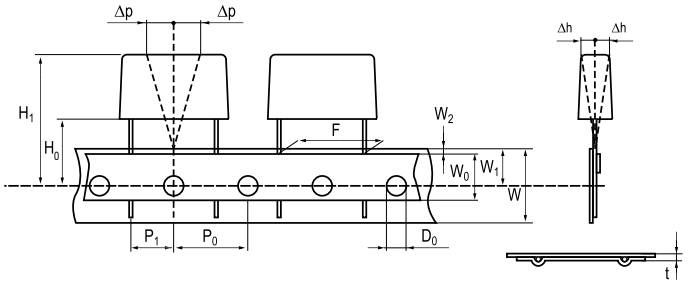


Manufacturing Date Code (IEC–60062)

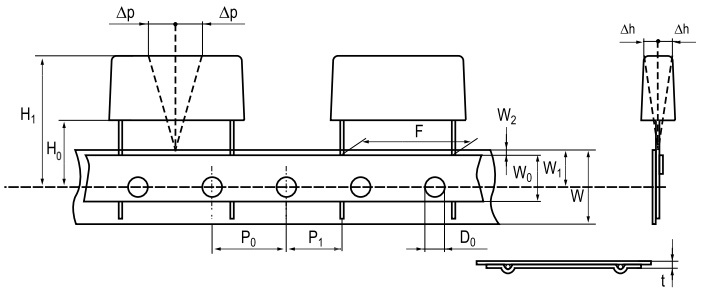
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2003	R	April	4
2004	S	May	5
2005	T	June	6
2006	U	July	7
2007	V	August	8
2008	W	September	9
2009	X	October	O
2010	A	November	N
2011	B	December	D
2012	C		
2013	D		
2014	E		
2015	F		
2016	H		
2017	J		
2018	K		
2019	L		
2020	M		

Lead Taping & Packaging for PMExxx (IEC 60286–2)

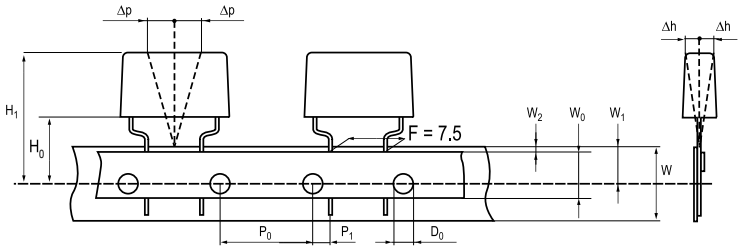
Lead Spacing 10.2 – 15.2 mm



Lead Spacing 20.3 – 22.5 mm



Formed Leads from 10.2 to 7.5 mm



Taping Specification

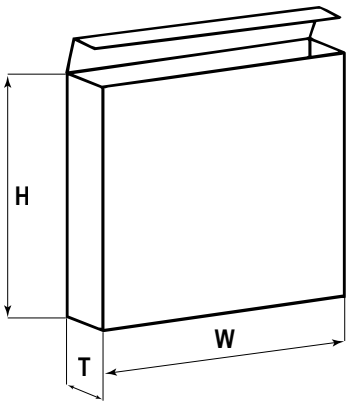
Dimensions in mm								Standard IEC 60286–2
Lead spacing	+6/-0.1	F	Formed 7.5	10.2	15.2	20.3	22.5	F
Carrier tape width	+/-0.5	W	18	18	18	18	18	$18^{+1/-0.5}$
Hold-down tape width	+/-0.3	W_0	9	12	12	12	12	
Position of sprocket hole	+/-0.5	W_1	9	9	9	9	9	$9^{+0.75/-0.5}$
Distance between tapes	Maximum	W_2	3	3	3	3	3	3
Sprocket hole diameter	+/-0.2	D_0	4	4	4	4	4	4
Feed hole lead spacing	+/-0.3	P_0 (1)	12.7(4)	12.7	12.7	12.7	12.7	12.7
Distance lead – feed hole	+/-0.7	P_1	3.75	7.6	5.1	8.9	5.3	P1
Deviation tape – plane	Maximum	Δp	1.3	1.3	1.3	1.3	1.3	1.3
Lateral deviation	Maximum	Δh	2	2	2	2	2	2
Total thickness	+/-0.2	t	0.7	0.7	0.7	0.7	0.9^{MAX}	0.9^{MAX}
Sprocket hole/cap body	Nominal	H_0 (2)	$18^{+2/-0}$	$18^{+2/-0}$	$18^{+2/-0}$	$18^{+2/-0}$	$18.5^{+/-0.5}$	$18^{+2/-0}$
Sprocket hole/top of cap body	Maximum	H_1 (3)	35	35	35	35	58	58^{MAX}

(1) Maximum cumulative feed hole error, 1 mm per 20 parts.
(2) 16.5 mm available on request.
(3) Depending on case size.
(4) 15 mm available on request.

Lead Taping & Packaging for PMExxx (IEC 60286–2) cont'd

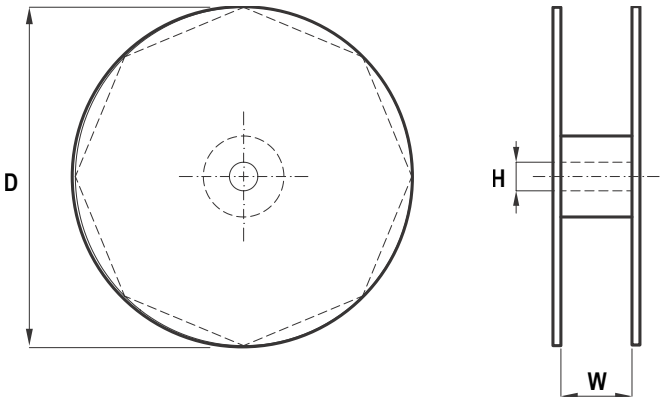
Ammo Specifications

Series	Dimensions (mm)		
	H	W	T
R4x, R4x+R, R7x, RSB	360	340	59
F5A, F5B, F5D			
F6xx, F8xx			
PHExxx, PMExxx, PMRxxx	330	330	50



Reel Specifications

Series	Dimensions (mm)		
	D	H	W
R4x, R4x+R, R7x, RSB	355 500	30 25	55 (Max)
F5A, F5B, F5D			
F6xx, F8xx			
PHExxx, PMExxx, PMRxxx	360 500	30	46 (Max)

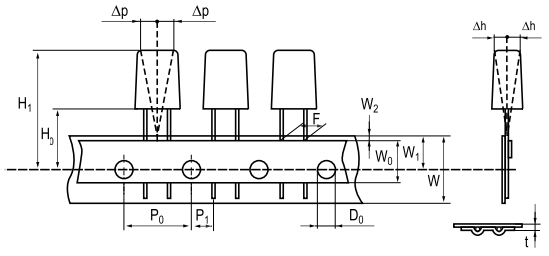


Manufacturing Date Code (IEC–60062)

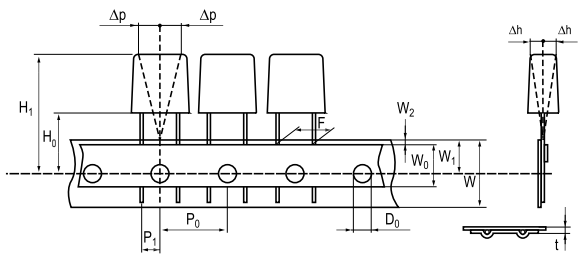
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2001	N	February	2
2002	P	March	3
2003	R	April	4
2004	S	May	5
2005	T	June	6
2006	U	July	7
2007	V	August	8
2008	W	September	9
2009	X	October	O
2010	A	November	N
2011	B	December	D
2012	C		
2013	D		
2014	E		
2015	F		
2016	H		
2017	J		
2018	K		
2019	L		
2020	M		

Lead Taping & Packaging for F6xx, F4xx, R7xx, & F5x (IEC 60286–2)

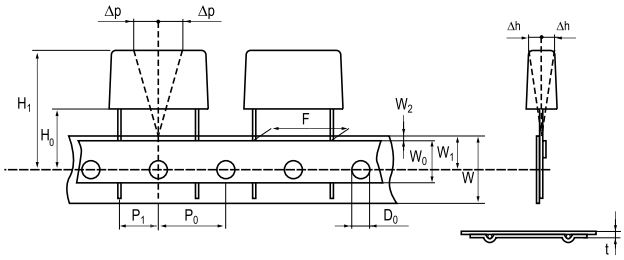
Lead Spacing 5 mm



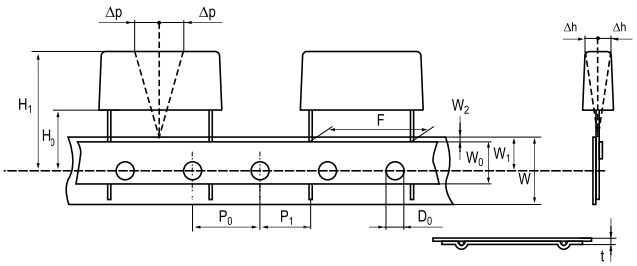
Lead Spacing 7.5 mm



Lead Spacing 10 – 15 mm



Lead Spacing 22.5 – 27.5 mm



Taping Specification

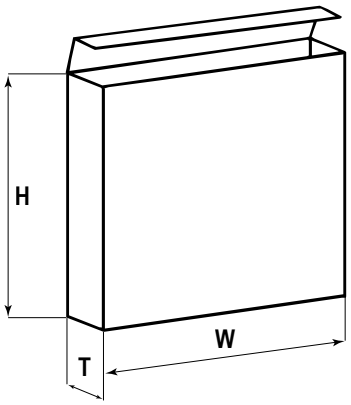
Dimensions in mm									Standard IEC 60286–2
Lead spacing	+6/-0.1	F	5	7.5	10	15	22.5	27.5	F
Carrier tape width	+1/-0.5	W	18	18	18	18	18	18	$18^{+1/-0.5}$
Hold-down tape width	Minimum	W_0	6	6	9	10	10	10	
Position of sprocket hole	+/-0.5	W_1	9	9	9	9	9	9	$9^{+0.75/-0.5}$
Distance between tapes	Maximum	W_2	3	3	3	3	3	3	3
Sprocket hole diameter	+/-0.2	D_0	4	4	4	4	4	4	4
Feed hole lead spacing	+/-0.2(1)	P_0(3)	12.7	12.7	12.7	12.7	12.7	12.7	12.7
Distance lead – feed hole	+/-0.7	P_1	3.85	3.75	7.7	5.2	7.8	5.3	P1
Deviation tape – plane	Maximum	Δp	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Lateral deviation	+/-2	Δh	2	2	2	2	2	2	2
Total thickness	+/-0.2	t	0.7	0.7	0.7	0.7	0.9^{MAX}	0.9^{MAX}	0.9^{MAX}
Sprocket hole/cap body	+/-0.5	H_0(2)	$18.5^{+/-0.5}$	$18.5^{+/-0.5}$	$18.5^{+/-0.5}$	$18.5^{+/-0.5}$	$18.5^{+/-0.5}$	$18.5^{+/-0.5}$	$18^{+2/-0}$

(1) Maximum cumulative feed hole error, 1 mm per 20 parts.
(2) 16.5 mm available on request.
(3) 15 mm available on request (F ≥ 10 mm).

Lead Taping & Packaging for F6xx, F4xx, R7xx, & F5x (IEC 60286–2) cont'd

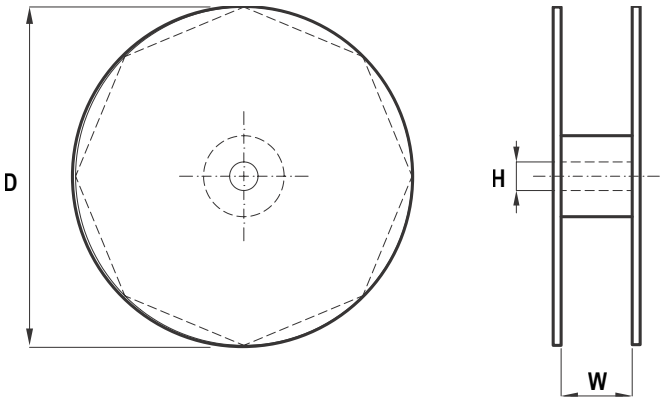
Ammo Specifications

Series	Dimensions (mm)		
	H	W	T
R4x, R4x+R, R7x, RSB	360	340	59
F5A, F5B, F5D			
F6xx, F8xx			
PHExxx, PMExxx, PMRxxx	330	330	50



Reel Specifications

Series	Dimensions (mm)		
	D	H	W
R4x, R4x+R, R7x, RSB	355 500	30 25	55 (Max)
F5A, F5B, F5D			
F6xx, F8xx			
PHExxx, PMExxx, PMRxxx	360 500	30	46 (Max)



Manufacturing Date Code (IEC–60062)

Y = Year, Z = Month			
Year	Code	Month	Code
2000	M	January	1
2001	N	February	2
2002	P	March	3
2003	R	April	4
2004	S	May	5
2005	T	June	6
2006	U	July	7
2007	V	August	8
2008	W	September	9
2009	X	October	O
2010	A	November	N
2011	B	December	D
2012	C		
2013	D		
2014	E		
2015	F		
2016	H		
2017	J		
2018	K		
2019	L		
2020	M		

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Seoul, South Korea
Tel: 82-2-6294-0550

Taipei, Taiwan
Tel: 886-2-27528585

Southeast Asia
Singapore
Tel: 65-6701-8033

Penang, Malaysia
Tel: 60-4-6430200

Bangalore, India
Tel: 91-806-53-76817

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Warning: The component F5A is a combined passive suppression component. Overloading with high voltage or voltage transients can strongly damage the component with the risk of fire.

Remark: For technical reasons, the varistor may not be covered fully by resin. This does not constitute grounds for complaint. The varistors are specified for the same range of temperature and climate as the combined elements. They do not require protection by the resin.

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Although all product–related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicted or that other measures may not be required.

Warning: The component F5B is a combined passive suppression component. Overloading with high voltage or voltage transients can strongly damage the component with the risk of fire.

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Although all product–related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicted or that other measures may not be required.

Warning: The component F5D is a combined passive suppression component. Overloading with high voltage or voltage transients can strongly damage the component with the risk of fire.

Remark: For technical reasons, the ceramic capacitor may not be covered fully by resin. This does not constitute grounds for complaint. The ceramic capacitors are specified for the same range of temperature and climate as the combined elements. They do not require protection by the resin.

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Supplier

Material Management

KEMET Production System

Quality

Manufacturing

Logistics & Distribution

People: Leadership
& Development

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