

R76, 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 UL 94 V-0 requirements. Two different winding constructions are used depending on voltage parameters. Please see the Performance Characteristics for more information.

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

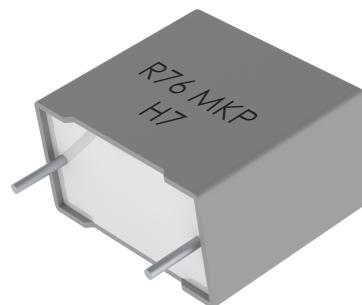
Applications

Typical applications include resonant circuit, high frequency high current, snubber and silicon-controlled rectifier (SCR and IGBT) and SiC (e.g. MOSFET) 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 μ F
- Lead Spacing: 7.5 mm – 37.5 mm
- Capacitance tolerance: \pm 2.5%, \pm 5%, \pm 10%
- Climatic category: 55/110/56 IEC 60068-1
- Operating temperature range of -55°C to $+110^{\circ}\text{C}$
- RoHS compliance and lead-free terminations
- Tape & 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

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	D = 7.5	The last three digits represent significant figures. The first digit specifies the total number of zeros to be added.	See Ordering Options Table	00	50	H = \pm 2.5% (*)
	M = 400	F = 10			10	60	J = \pm 5%
	P = 630	I = 15			20	70	K = \pm 10%
	Q = 1,000	N = 22.5			30	80	
	T = 1,600	R = 27.5			40	L0	(*) = for C \geq 1,000 pF
U = 2,000	W = 37.5						

Ordering Options Table

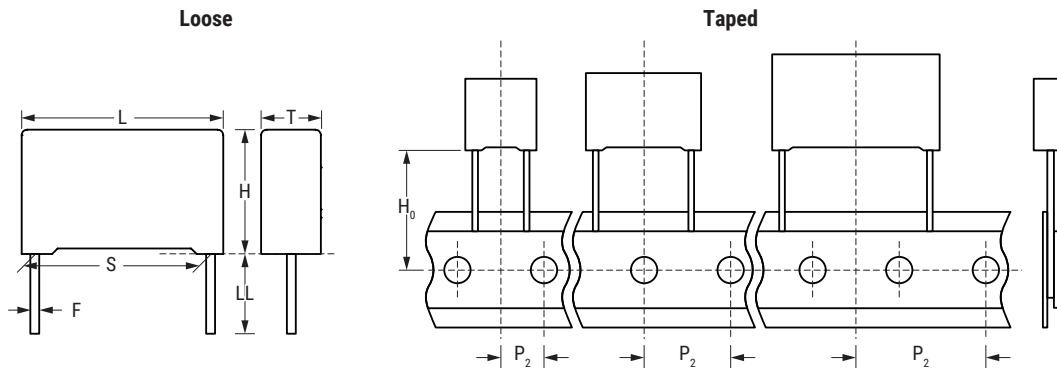
Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
7.5	Standard Lead and Packaging Options		
	Bulk (Bag) – Short Leads	4 +2/-0	SE
	Ammo Pack	H ₀ = 18.5±0.5	DQ
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel Ø 355 mm)	H ₀ = 18.5±0.5	CK
	Bulk (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	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 Ø 355 mm)	H ₀ = 18.5±0.5	GY
	Tape & Reel (Large Reel Ø 500 mm)	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	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	SE
	Other Lead and Packaging Options		
	Tape & Reel (Standard Reel Ø 355 mm)	H ₀ = 18.5±0.5	GY
	Tape & Reel (Large Reel Ø 500 mm)	H ₀ = 18.5±0.5	CK ¹
	Bulk (Tray) – Short Leads	3.5 +0.5/-0	JB
	Bulk (Tray) – Short Leads	4.0 +0.5/-0	JE
	Bulk (Tray) – Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Tray) – Long Leads	30 +5/-0	40
Bulk (Tray) – Long Leads	25 +2/-1	50	

¹ = Not for all sizes, see "Packaging Quantities" table.

Ordering Options Table cont.

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) – Short Leads	4 +2/-0	SE
	Other Lead and Packaging Options		
	Bulk (Tray) – Short Leads	3.5 +0.5/-0	JB
	Bulk (Tray) – Short Leads	4.0 +0.5/-0	JE
	Bulk (Tray) – Short Leads	3.2 +0.3/-0.2	JH
	Bulk (Tray) – Long Leads	30 +5/-0	40
Bulk (Tray) – Long Leads	25 +2/-1	50	

Dimensions – Millimeters



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

Note: See Ordering Options Table for lead length (LL/H₀) options.

Dimensions – Millimeters cont.



S		T		H		L		F	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
15.0	±0.4	11.0	+0.2/-0.5	19.0	+0.1/-0.5	18.0	+0.5/-0.5	0.8	±0.05
15.0	±0.4	13.0	+0.2/-0.5	12.0	+0.1/-0.5	18.0	+0.5/-0.5	0.8	±0.05
22.5	±0.4	6.0	+0.2/-0.5	15.0	+0.1/-0.5	26.5	+0.3/-0.5	0.8	±0.05
22.5	±0.4	7.0	+0.2/-0.5	16.0	+0.1/-0.5	26.5	+0.3/-0.5	0.8	±0.05
22.5	±0.4	8.5	+0.2/-0.5	17.0	+0.1/-0.5	26.5	+0.3/-0.5	0.8	±0.05
22.5	±0.4	10.0	+0.2/-0.5	18.5	+0.1/-0.5	26.5	+0.3/-0.5	0.8	±0.05
22.5	±0.4	11.0	+0.2/-0.5	20.0	+0.1/-0.5	26.5	+0.3/-0.5	0.8	±0.05
22.5	±0.4	13.0	+0.2/-0.5	22.0	+0.1/-0.5	26.5	+0.3/-0.5	0.8	±0.05
27.5	±0.4	9.0	+0.2/-0.7	17.0	+0.1/-0.7	32.0	+0.3/-0.7	0.8	±0.05
27.5	±0.4	11.0	+0.2/-0.7	20.0	+0.1/-0.7	32.0	+0.3/-0.7	0.8	±0.05
27.5	±0.4	13.0	+0.2/-0.7	22.0	+0.1/-0.7	32.0	+0.3/-0.7	0.8	±0.05
27.5	±0.4	13.0	+0.2/-0.7	25.0	+0.1/-0.7	32.0	+0.3/-0.7	0.8	±0.05
27.5	±0.4	14.0	+0.2/-0.7	28.0	+0.1/-0.7	32.0	+0.3/-0.7	0.8	±0.05
27.5	±0.4	18.0	+0.2/-0.7	33.0	+0.1/-0.7	32.0	+0.3/-0.7	0.8	±0.05
27.5	±0.4	22.0	+0.2/-0.7	37.0	+0.1/-0.7	32.0	+0.3/-0.7	0.8	±0.05
27.5	±0.4	24.0	+0.2/-0.7	15.0	+0.1/-0.7	32.0	+0.3/-0.7	0.8	±0.05
37.5	±0.4	11.0	+0.3/-0.7	22.0	+0.1/-0.7	41.5	+0.3/-0.7	1.0	±0.05
37.5	±0.4	13.0	+0.3/-0.7	24.0	+0.1/-0.7	41.5	+0.3/-0.7	1.0	±0.05
37.5	±0.4	16.0	+0.3/-0.7	28.5	+0.1/-0.7	41.5	+0.3/-0.7	1.0	±0.05
37.5	±0.4	19.0	+0.3/-0.7	32.0	+0.1/-0.7	41.5	+0.3/-0.7	1.0	±0.05
37.5	±0.4	20.0	+0.3/-0.7	40.0	+0.1/-0.7	41.5	+0.3/-0.7	1.0	±0.05
37.5	±0.4	24.0	+0.3/-0.7	44.0	+0.1/-0.7	41.5	+0.3/-0.7	1.0	±0.05
37.5	±0.4	24.0	+0.3/-0.7	15.0	+0.1/-0.7	41.5	+0.3/-0.7	1.0	±0.05
37.5	±0.4	24.0	+0.3/-0.7	19.0	+0.1/-0.7	41.5	+0.3/-0.7	1.0	±0.05
37.5	±0.4	30.0	+0.3/-0.7	45.0	+0.1/-0.7	41.5	+0.3/-0.7	1.0	±0.05

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

Performance Characteristics

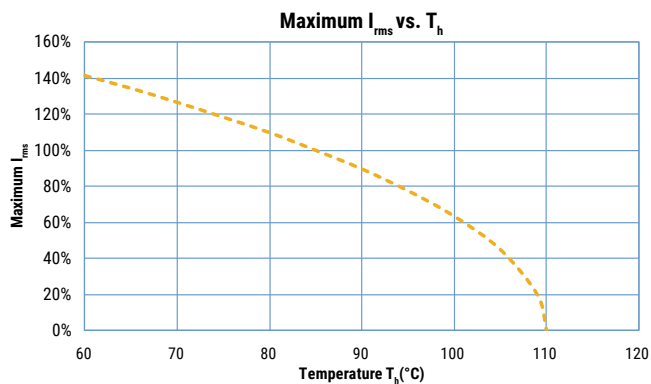
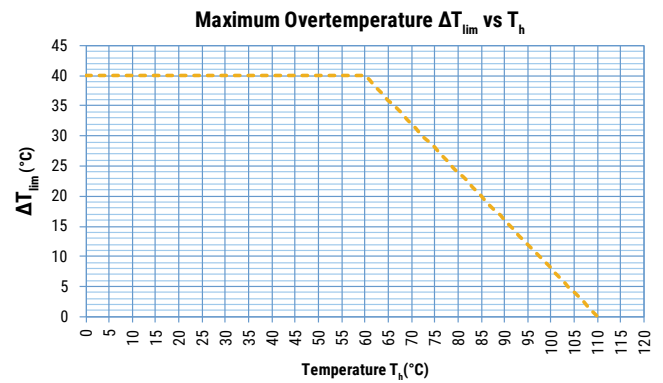
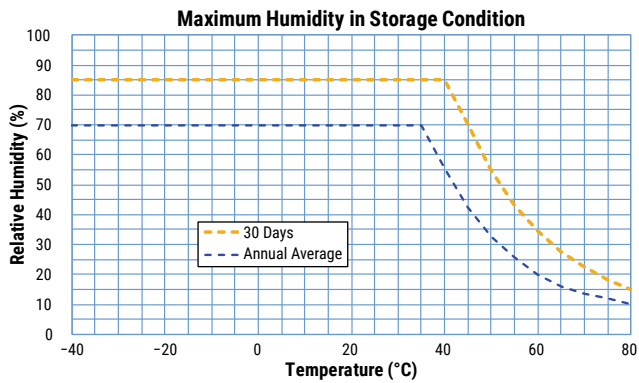
Dielectric	Polypropylene film							
Plates	Double sided metallized polyester film							
Winding	Non-inductive type							
Leads	Tinned wire							
Protection	Plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94.							
Related Documents	IEC 60384-16							
Sections	1				2			
Rated Voltage V_R	250 VDC 180 VAC	400 VDC 250 VAC	630 VDC 250 VAC	630 VDC 400 VAC	1,000 VDC 400 VAC	1,000 VDC 600 VAC	1,600 VDC 650 VAC	2,000 VDC 700 VAC
Capacitance Range (μF)	0.0068- 12	0.0027 - 8.2	0.00068 - 0.012	0.0039 - 3.9	0.00022-0.0033	0.00047 - 2.2	0.0033 - 1.2	0.0001 - 0.56
Capacitance Values	E12 series (IEC 60063) measured at 1 kHz and +20±1°C							
Capacitance Tolerance	±2.5%, ±5%, ±10%							
Operating Temperature Range	-55°C to +110°C							
Rated Temperature T_R	+85°C for V_R (DC and AC)							
Voltage Derating	The following decreasing factor has to be applied on the rated voltage: +85°C to +110°C: 1.25% per °C for V_R (DC and AC)							
Climatic Category	55/110/56 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)							
Test Voltage	1.6 x V_R VDC for 2 seconds (between terminations) at +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 working voltages lower than rated voltage ($V < V_R$), the specified dV/dt can be multiplied by the factor V_R/V .							
Reliability (Reference IEC 61709)	Operational life > 200,000 hours at 85°C							
	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							
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	16	18	20	
	Max 1 nH per 1 mm lead and capacitor length							

Performance Characteristics cont.

Dissipation Factor $\tan\delta$	Measured at 25°C ±5°C			
	Frequency	C ≤ 0.1 μF	0.1 μF < C ≤ 1.0 μF	C > 1μF
	1 kHz	≤ 0.03%	≤ 0.03%	≤ 0.04%
	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

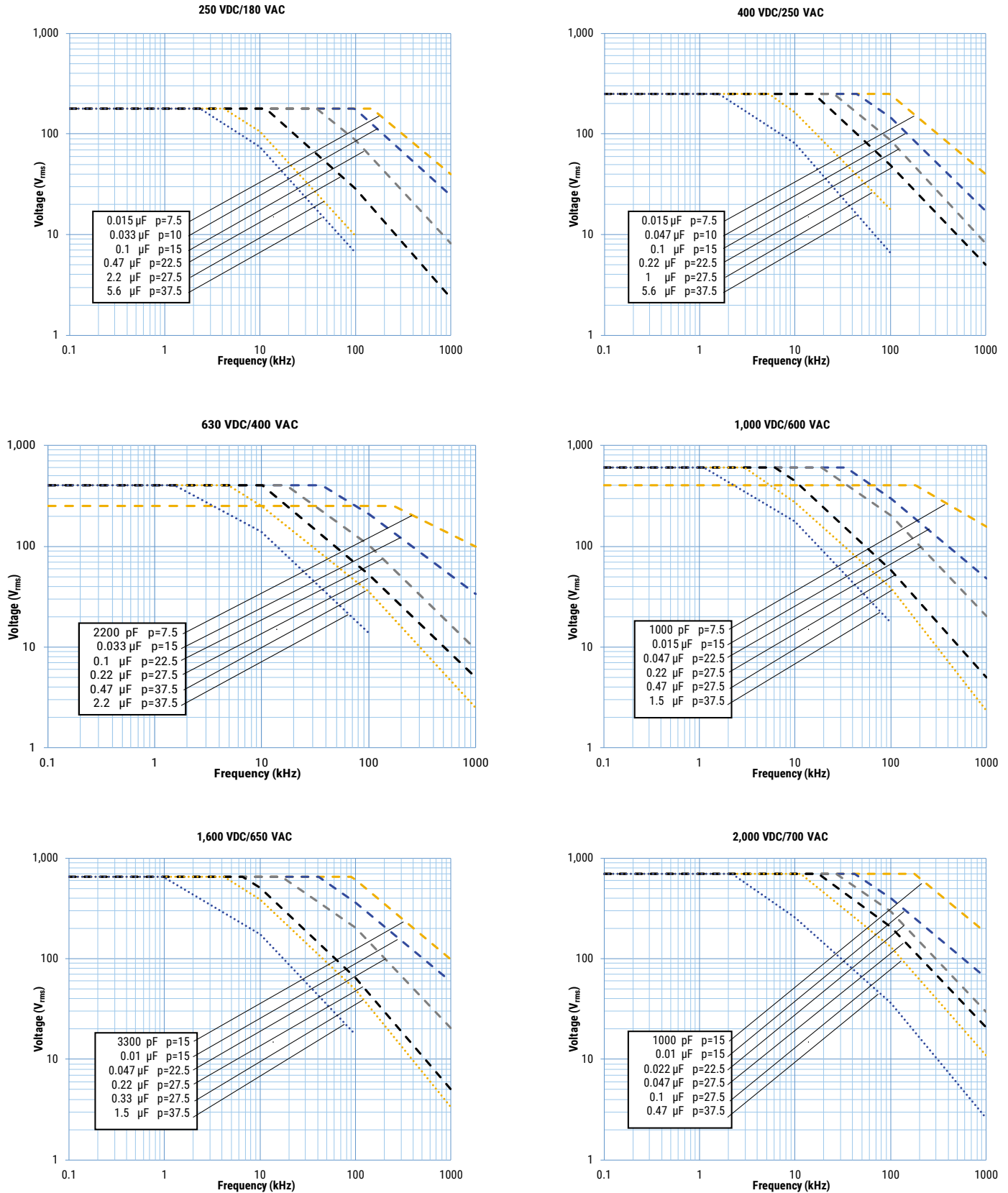


T_h is the maximum ambient temperature surrounding the capacitor or hottest contact point (e.g. tracks), whichever is higher, in the worst operation conditions in °C.

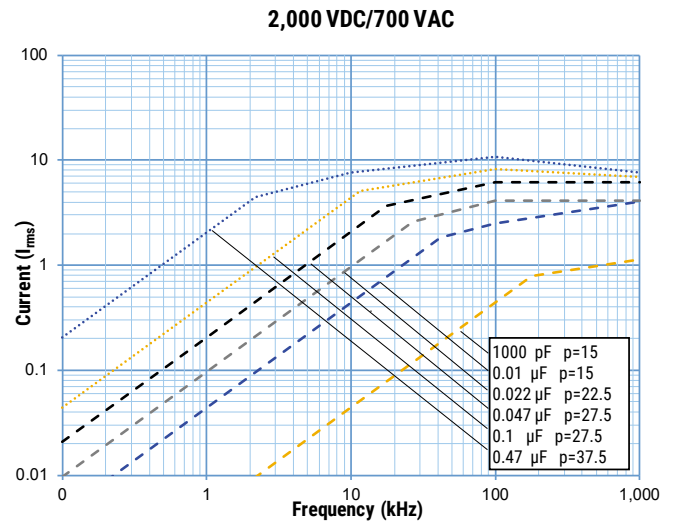
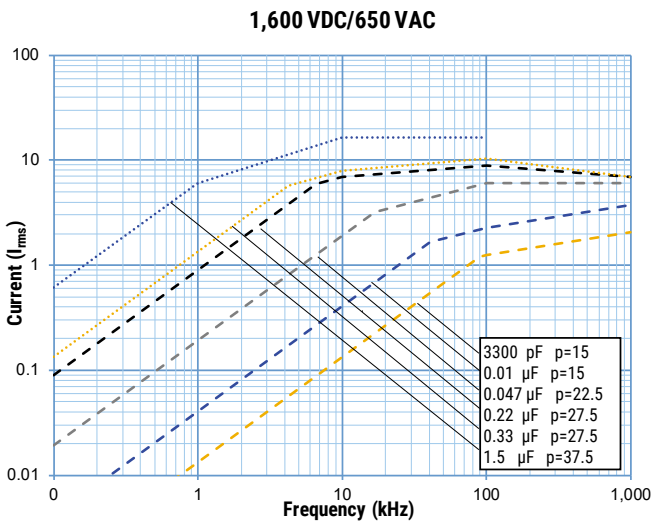
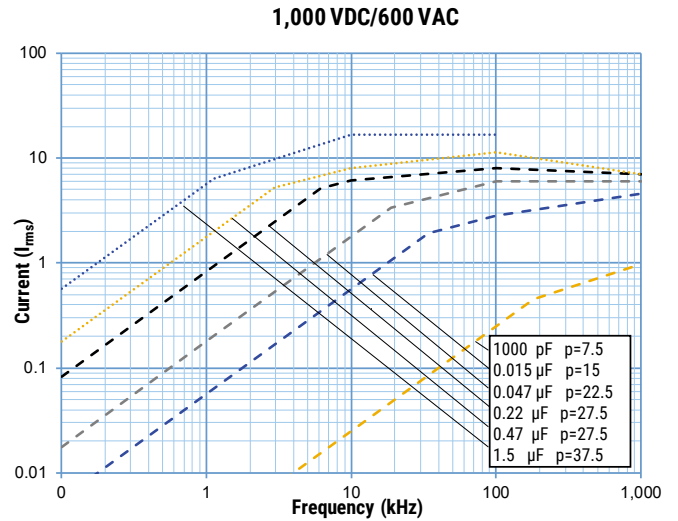
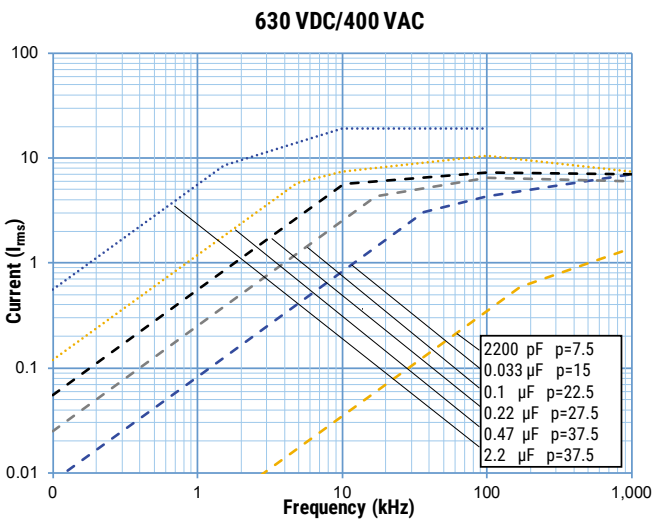
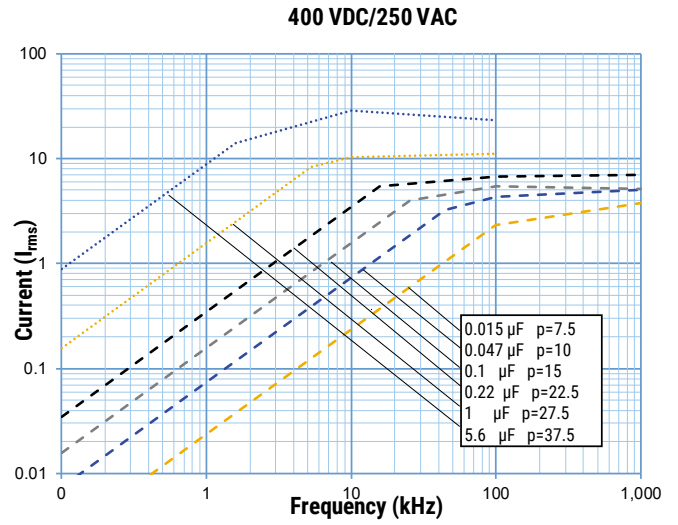
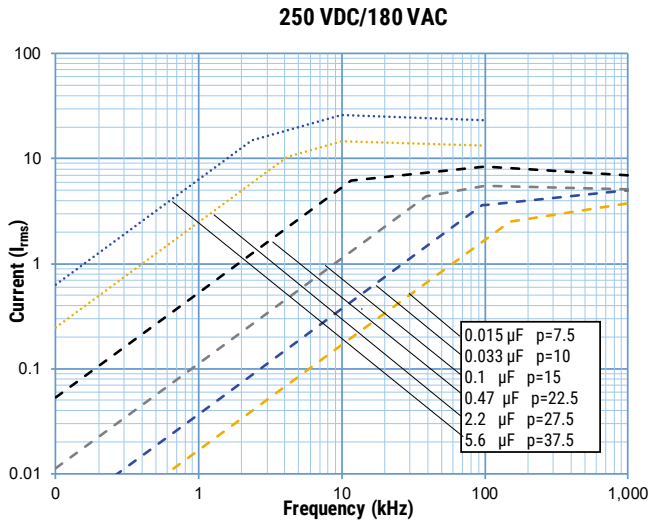
Qualification

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}) Versus Frequency (Sinusoidal Waveform/ $Th \leq 85^\circ C$)



Maximum Current (I_{rms}) Versus Frequency (Sinusoidal Waveform/ $T_h \leq 85^\circ\text{C}$)



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 ≤ 2%, Δ tanδ ≤ 0.001 at 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 at 10 kHz for C ≤ 1 μF Δ tanδ ≤ 0.001 at 1 kHz for C > 1 μF 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 at 10 kHz for C ≤ 1 μF Δ tanδ ≤ 0.001 at 1 kHz for C > 1 μF IR after test ≥ initial limit

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 (S)	dV/dt (V/µs)	Max K ₀ (V ² /µs)	I _{pk}	ESL	ESR	I _{rms max} (*)	R _{th}	KEMET Internal Part Number	Customer Part Number
										Lead Length 2x 4 mm	at 100 kHz	at 100 kHz, 85°C			
			A _{pk}	nH	mΩ					A _{rms}	(°C/W)				
250	180	0.0068	3.0	8.0	10.0	7.5	1,100	550,000	7	8	94	0.77	98	76ID1680(1)30(2)	R76ID1680(1)30(2)
250	180	0.0082	3.0	8.0	10.0	7.5	1,100	550,000	9	8	78	0.93	98	76ID1820(1)30(2)	R76ID1820(1)30(2)
250	180	0.010	3.0	8.0	10.0	7.5	1,100	550,000	11	8	64	1.13	98	76ID2100(1)30(2)	R76ID2100(1)30(2)
250	180	0.012	4.0	9.0	10.0	7.5	1,100	550,000	13	8	53	1.36	88	76ID2120(1)40(2)	R76ID2120(1)40(2)
250	180	0.015	4.0	9.0	10.0	7.5	1,100	550,000	17	8	42	1.70	88	76ID2150(1)40(2)	R76ID2150(1)40(2)
250	180	0.018	4.0	9.0	10.0	7.5	1,100	550,000	20	8	35	2.04	88	76ID2180(1)40(2)	R76ID2180(1)40(2)
250	180	0.022	4.0	9.0	10.0	7.5	1,100	550,000	24	8	29	2.49	88	76ID2220(1)40(2)	R76ID2220(1)40(2)
250	180	0.027	5.0	10.5	10.0	7.5	1,100	550,000	30	8	24	3.05	78	76ID2270(1)40(2)	R76ID2270(1)40(2)
250	180	0.033	5.0	10.5	10.0	7.5	1,100	550,000	36	8	19	3.64	78	76ID2330(1)40(2)	R76ID2330(1)40(2)
250	180	0.039	6.0	12.0	10.5	7.5	1,100	550,000	43	8	16	4.20	69	76ID2390(1)30(2)	R76ID2390(1)30(2)
250	180	0.047	6.0	12.0	10.5	7.5	1,100	550,000	52	8	14	4.61	69	76ID2470(1)30(2)	R76ID2470(1)30(2)
250	180	0.027	4.0	9.0	13.0	10.0	1,000	500,000	27	9	24	3.05	79	76IF2270(1)30(2)	R76IF2270(1)30(2)
250	180	0.033	4.0	9.0	13.0	10.0	1,000	500,000	33	9	19	3.63	79	76IF2330(1)30(2)	R76IF2330(1)30(2)
250	180	0.039	4.0	9.0	13.0	10.0	1,000	500,000	39	9	16	3.95	79	76IF2390(1)30(2)	R76IF2390(1)30(2)
250	180	0.047	5.0	11.0	13.0	10.0	1,000	500,000	47	9	14	4.62	69	76IF2470(1)30(2)	R76IF2470(1)30(2)
250	180	0.056	5.0	11.0	13.0	10.0	1,000	500,000	56	9	23	3.57	69	76IF2560(1)30(2)	R76IF2560(1)30(2)
250	180	0.068	6.0	12.0	13.0	10.0	1,000	500,000	68	9	19	4.09	64	76IF2680(1)30(2)	R76IF2680(1)30(2)
250	180	0.082	6.0	12.0	13.0	10.0	1,000	500,000	82	9	16	4.49	64	76IF2820(1)30(2)	R76IF2820(1)30(2)
250	180	0.068	5.0	11.0	18.0	15.0	550	275,000	37	10	19	4.2	60	76II2680(1)30(2)	R76II2680(1)30(2)
250	180	0.082	5.0	11.0	18.0	15.0	550	275,000	45	10	16	4.6	60	76II2820(1)30(2)	R76II2820(1)30(2)
250	180	0.10	5.0	11.0	18.0	15.0	550	275,000	55	10	13	5.1	60	76II3100(1)30(2)	R76II3100(1)30(2)
250	180	0.12	6.0	12.0	18.0	15.0	550	275,000	66	10	13	5.2	56	76II3120(1)30(2)	R76II3120(1)30(2)
250	180	0.15	6.0	12.0	18.0	15.0	550	275,000	83	10	11	5.8	56	76II3150(1)30(2)	R76II3150(1)30(2)
250	180	0.18	7.5	13.5	18.0	15.0	550	275,000	99	10	9	6.7	51	76II3180(1)30(2)	R76II3180(1)30(2)
250	180	0.18	9.0	12.5	18.0	15.0	550	275,000	99	10	9	6.8	50	76II3180(1)70(2)	R76II3180(1)70(2)
250	180	0.22	7.5	13.5	18.0	15.0	550	275,000	121	10	7	7.4	51	76II3220(1)30(2)	R76II3220(1)30(2)
250	180	0.22	9.0	12.5	18.0	15.0	550	275,000	121	10	7	7.5	50	76II3220(1)70(2)	R76II3220(1)70(2)
250	180	0.27	8.5	14.5	18.0	15.0	550	275,000	149	10	6	8.4	48	76II3270(1)30(2)	R76II3270(1)30(2)
250	180	0.27	9.0	12.5	18.0	15.0	550	275,000	149	10	6	8.3	50	76II3270(1)70(2)	R76II3270(1)70(2)
250	180	0.33	10.0	16.0	18.0	15.0	550	275,000	182	10	5	9.7	44	76II3330(1)30(2)	R76II3330(1)30(2)
250	180	0.33	13.0	12.0	18.0	15.0	550	275,000	182	10	5	9.6	45	76II3330(1)70(2)	R76II3330(1)70(2)
250	180	0.39	10.0	16.0	18.0	15.0	550	275,000	215	10	4	10.5	44	76II3390(1)30(2)	R76II3390(1)30(2)
250	180	0.47	11.0	19.0	18.0	15.0	550	275,000	259	10	3	12.1	40	76II3470(1)30(2)	R76II3470(1)30(2)
250	180	0.22	6.0	15.0	26.5	22.5	300	150,000	55	16	7	8.0	43	76IN3220(1)00(2)	R76IN3220(1)00(2)
250	180	0.27	6.0	15.0	26.5	22.5	300	150,000	68	16	6	8.8	43	76IN3270(1)30(2)	R76IN3270(1)30(2)
250	180	0.33	6.0	15.0	26.5	22.5	300	150,000	83	16	5	9.8	43	76IN3330(1)30(2)	R76IN3330(1)30(2)
250	180	0.39	7.0	16.0	26.5	22.5	300	150,000	98	16	4	10.9	41	76IN3390(1)30(2)	R76IN3390(1)30(2)
250	180	0.47	7.0	16.0	26.5	22.5	300	150,000	118	16	3	12.0	41	76IN3470(1)30(2)	R76IN3470(1)30(2)
250	180	0.56	8.5	17.0	26.5	22.5	300	150,000	140	16	3	13.5	38	76IN3560(1)30(2)	R76IN3560(1)30(2)
250	180	0.68	10.0	18.5	26.5	22.5	300	150,000	170	16	2.3	15.5	36	76IN3680(1)30(2)	R76IN3680(1)30(2)
250	180	0.82	10.0	18.5	26.5	22.5	300	150,000	205	16	1.9	17.0	36	76IN3820(1)30(2)	R76IN3820(1)30(2)
250	180	1.0	11.0	20.0	26.5	22.5	300	150,000	250	16	7.2	9.1	34	76IN4100(1)30(2)	R76IN4100(1)30(2)
250	180	1.2	13.0	22.0	26.5	22.5	300	150,000	300	16	15.9	6.3	31	76IN4120(1)30(2)	R76IN4120(1)30(2)
250	180	0.82	9.0	17.0	32.0	27.5	200	100,000	164	18	9	8.1	35	76IR3820(1)30(2)	R76IR3820(1)30(2)
250	180	1.0	11.0	20.0	32.0	27.5	200	100,000	200	18	7	9.4	31	76IR4100(1)30(2)	R76IR4100(1)30(2)
250	180	1.0	24.0	15.0	32.0	27.5	200	100,000	200	18	7	10.1	27	76IR4100(1)L0(2)	R76IR4100(1)L0(2)
250	180	1.2	11.0	20.0	32.0	27.5	200	100,000	240	18	15.9	6.3	31	76IR4120(1)40(2)	R76IR4120(1)40(2)
250	180	1.2	24.0	15.0	32.0	27.5	200	100,000	240	18	16	6.8	27	76IR4120(1)L0(2)	R76IR4120(1)L0(2)
250	180	1.5	13.0	22.0	32.0	27.5	200	100,000	300	18	12.7	7.3	29	76IR4150(1)30(2)	R76IR4150(1)30(2)
250	180	1.5	24.0	15.0	32.0	27.5	200	100,000	300	18	13	7.6	27	76IR4150(1)L0(2)	R76IR4150(1)L0(2)
250	180	1.8	13.0	25.0	32.0	27.5	200	100,000	360	18	10.6	8.2	28	76IR4180(1)20(2)	R76IR4180(1)20(2)

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

(2) H = 2.5% (only for C ≥ 1,000 pF), J = 5%, K = 10%

(*) I_{rms} value that leads to a ΔT of ≈ 20°C in the hot spot > T_{HS} = T_{AMB} + ΔT = 85°C + 20°C = 105°C

Table 1 – Ratings & Part Number Reference cont.

VDC	VAC	Cap Value (µF)	Dimensions in mm			Lead Spacing (S)	dV/dt (V/µs)	Max K ₀ (V ² /µs)	I _{pk}	ESL	ESR	I _{rms max} (*)	R _{th}	KEMET Internal Part Number	Customer Part Number
										Lead Length 2x 4 mm	at 100 kHz	at 100 kHz, 85°C			
			A _{pk}	nH	mΩ				A _{rms}	(°C/W)					
1,600	650	0.033	6.0	15.0	26.5	22.5	3,000	9,600,000	99	16	19	4.9	43	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	117	16	16	5.5	41	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	141	16	14	6.0	41	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	168	16	23	4.8	38	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	204	16	19	5.5	36	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	246	16	16	6.0	36	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	300	16	13	6.8	34	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	78	18	41	3.7	35	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	94	18	34	4.1	35	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	112	18	43	3.7	35	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	136	18	35	4.0	35	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	164	18	29	4.7	31	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	200	18	24	5.2	31	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	240	18	27	5.1	29	76TR3120(1)30(2)	R76TR3120(1)30(2)
1,600	650	0.12	24.0	15.0	32.0	27.5	2,000	6,400,000	240	18	27	5.3	27	76TR3120(1)L0(2)	R76TR3120(1)L0(2)
1,600	650	0.15	13.0	25.0	32.0	27.5	2,000	6,400,000	300	18	21	5.8	28	76TR3150(1)40(2)	R76TR3150(1)40(2)
1,600	650	0.15	24.0	15.0	32.0	27.5	2,000	6,400,000	300	18	21	5.9	27	76TR3150(1)L0(2)	R76TR3150(1)L0(2)
1,600	650	0.18	14.0	28.0	32.0	27.5	2,000	6,400,000	360	18	18	6.6	26	76TR3180(1)40(2)	R76TR3180(1)40(2)
1,600	650	0.18	24.0	15.0	32.0	27.5	2,000	6,400,000	360	18	18	6.5	27	76TR3180(1)L0(2)	R76TR3180(1)L0(2)
1,600	650	0.22	18.0	33.0	32.0	27.5	2,000	6,400,000	440	18	14	7.8	23	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	540	18	15	7.7	23	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	660	18	12	8.5	23	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	780	18	16	7.7	21	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	940	18	14	8.4	21	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	98	20	29	5.0	27	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	120	20	24	5.6	27	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	144	20	27	5.3	27	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	180	20	21	5.9	27	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	216	20	18	6.7	25	76TW3180(1)30(2)	R76TW3180(1)30(2)
1,600	650	0.18	24.0	15.0	41.5	37.5	1,200	3,840,000	216	20	18	6.8	24	76TW3180(1)L0(2)	R76TW3180(1)L0(2)
1,600	650	0.22	13.0	24.0	41.5	37.5	1,200	3,840,000	264	20	14	7.4	25	76TW3220(1)30(2)	R76TW3220(1)30(2)
1,600	650	0.22	24.0	15.0	41.5	37.5	1,200	3,840,000	264	20	14	7.5	24	76TW3220(1)L0(2)	R76TW3220(1)L0(2)
1,600	650	0.27	13.0	24.0	41.5	37.5	1,200	3,840,000	324	20	15	7.3	25	76TW3270(1)30(2)	R76TW3270(1)30(2)
1,600	650	0.27	24.0	19.0	41.5	37.5	1,200	3,840,000	324	20	15	7.5	24	76TW3270(1)L0(2)	R76TW3270(1)L0(2)
1,600	650	0.33	16.0	28.5	41.5	37.5	1,200	3,840,000	396	20	12	8.6	23	76TW3330(1)30(2)	R76TW3330(1)30(2)
1,600	650	0.33	24.0	19.0	41.5	37.5	1,200	3,840,000	396	20	12	8.2	24	76TW3330(1)L0(2)	R76TW3330(1)L0(2)
1,600	650	0.39	16.0	28.5	41.5	37.5	1,200	3,840,000	468	20	16	7.4	23	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	564	20	14	8.5	21	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	672	20	11	9.7	19	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	816	20	11	10.1	19	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	984	20	9	11.5	17	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	1,200	20	7.2	12.7	17	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	1,440	20	15.9	8.9	16	76TW4120(1)30(2)	R76TW4120(1)30(2)
2,000	700	0.00010	4.0	10.0	18.0	15.0	11,000	44,000,000	1	10	6,366	0.044	65	76UI0100(1)40(2)	R76UI0100(1)40(2)
2,000	700	0.00012	4.0	10.0	18.0	15.0	11,000	44,000,000	1	10	5,305	0.053	65	76UI0120(1)40(2)	R76UI0120(1)40(2)
2,000	700	0.00015	4.0	10.0	18.0	15.0	11,000	44,000,000	1	10	4,244	0.066	65	76UI0150(1)40(2)	R76UI0150(1)40(2)
2,000	700	0.00018	4.0	10.0	18.0	15.0	11,000	44,000,000	2	10	3,537	0.079	65	76UI0180(1)40(2)	R76UI0180(1)40(2)
2,000	700	0.00022	4.0	10.0	18.0	15.0	11,000	44,000,000	2	10	2,894	0.097	65	76UI0220(1)40(2)	R76UI0220(1)40(2)
2,000	700	0.00022	5.0	11.0	18.0	15.0	11,000	44,000,000	2	10	2,894	0.097	60	76UI0220(1)00(2)	R76UI0220(1)00(2)
2,000	700	0.00027	4.0	10.0	18.0	15.0	11,000	44,000,000	3	10	2,358	0.119	65	76UI0270(1)40(2)	R76UI0270(1)40(2)
2,000	700	0.00027	5.0	11.0	18.0	15.0	11,000	44,000,000	3	10	2,358	0.119	60	76UI0270(1)00(2)	R76UI0270(1)00(2)
VDC	VAC	Cap Value	T	H	L	Lead Spacing (S)	dV/dt (V/µs)	Max K ₀ (V ² /µs)	A _{pk}	Lead Length 2x 4 mm	at 100 kHz	at 100 kHz, 85°C	(°C/W)	KEMET Internal Part Number	Customer Part Number
									I _{pk}	ESL	ESR	I _{rms max} (*)	R _{th}		

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

(2) H = 2.5% (only for C ≥ 1,000 pF), J = 5%, K = 10%

(*) I_{rms} value that leads to a ΔT of ≈ 20°C in the hot spot > T_{HS} = T_{AMB} + ΔT = 85°C + 20°C = 105°C

Table 1 – Ratings & Part Number Reference cont.

VDC	VAC	Cap Value (µF)	Dimensions in mm			Lead Spacing (S)	dV/dt (V/µs)	Max K ₀ (V ² /µs)	I _{pk}	ESL	ESR	I _{rms max} (*)	R _{th}	KEMET Internal Part Number	Customer Part Number
										Lead Length 2x 4 mm	at 100 kHz	at 100 kHz, 85°C			
			A _{pk}	nH	mΩ				A _{rms}	(°C/W)					
2,000	700	0.00033	4.0	10.0	18.0	15.0	11,000	44,000,000	3	10	1,929	0.145	65	76UI0330(1)40(2)	R76UI0330(1)40(2)
2,000	700	0.00033	5.0	11.0	18.0	15.0	11,000	44,000,000	3	10	1,929	0.145	60	76UI0330(1)00(2)	R76UI0330(1)00(2)
2,000	700	0.00039	4.0	10.0	18.0	15.0	11,000	44,000,000	4	10	1,632	0.172	65	76UI0390(1)40(2)	R76UI0390(1)40(2)
2,000	700	0.00039	5.0	11.0	18.0	15.0	11,000	44,000,000	4	10	1,632	0.172	60	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	4	10	1,355	0.207	65	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	4	10	1,355	0.207	60	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	5	10	1,137	0.246	65	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	5	10	1,137	0.246	60	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	6	10	936	0.299	65	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	6	10	936	0.299	60	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	8	10	776	0.361	65	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	8	10	776	0.361	60	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	10	10	637	0.440	65	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	10	10	637	0.440	60	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	11	10	531	0.53	65	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	11	10	531	0.53	60	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	14	10	424	0.66	65	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	14	10	424	0.66	60	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	17	10	354	0.79	65	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	17	10	354	0.79	60	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	21	10	289	0.97	65	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	21	10	289	0.97	60	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	26	10	236	1.14	65	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	26	10	236	1.19	60	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	31	10	193	1.31	60	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	37	10	163	1.43	60	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	45	10	135	1.57	60	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	53	10	114	1.77	56	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	65	10	94	1.95	56	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	78	10	78	2.15	56	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	95	10	64	2.49	51	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	95	10	64	2.65	45	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	114	10	53	2.81	48	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	143	10	42	3.14	48	76UI2150(1)40(2)	R76UI2150(1)40(2)
2,000	700	0.0010	6.0	15.0	26.5	22.5	4,500	18,000,000	4	16	637	0.44	43	76UN1100(1)00(2)	R76UN1100(1)00(2)
2,000	700	0.0012	6.0	15.0	26.5	22.5	4,500	18,000,000	4	16	531	0.53	43	76UN1120(1)00(2)	R76UN1120(1)00(2)
2,000	700	0.0015	6.0	15.0	26.5	22.5	4,500	18,000,000	5	16	424	0.66	43	76UN1150(1)00(2)	R76UN1150(1)00(2)
2,000	700	0.0018	6.0	15.0	26.5	22.5	4,500	18,000,000	6	16	354	0.79	43	76UN1180(1)00(2)	R76UN1180(1)00(2)
2,000	700	0.0022	6.0	15.0	26.5	22.5	4,500	18,000,000	8	16	289	0.97	43	76UN1220(1)00(2)	R76UN1220(1)00(2)
2,000	700	0.0027	6.0	15.0	26.5	22.5	4,500	18,000,000	9	16	236	1.19	43	76UN1270(1)00(2)	R76UN1270(1)00(2)
2,000	700	0.0033	6.0	15.0	26.5	22.5	4,500	18,000,000	12	16	193	1.45	43	76UN1330(1)00(2)	R76UN1330(1)00(2)
2,000	700	0.0039	6.0	15.0	26.5	22.5	4,500	18,000,000	14	16	163	1.68	43	76UN1390(1)00(2)	R76UN1390(1)00(2)
2,000	700	0.0047	6.0	15.0	26.5	22.5	4,500	18,000,000	16	16	135	1.84	43	76UN1470(1)00(2)	R76UN1470(1)00(2)
2,000	700	0.0056	6.0	15.0	26.5	22.5	4,500	18,000,000	20	16	114	2.01	43	76UN1560(1)00(2)	R76UN1560(1)00(2)
2,000	700	0.0068	6.0	15.0	26.5	22.5	4,500	18,000,000	24	16	94	2.22	43	76UN1680(1)00(2)	R76UN1680(1)00(2)
2,000	700	0.0082	6.0	15.0	26.5	22.5	4,500	18,000,000	29	16	78	2.44	43	76UN1820(1)30(2)	R76UN1820(1)30(2)
2,000	700	0.010	6.0	15.0	26.5	22.5	4,500	18,000,000	35	16	64	2.69	43	76UN2100(1)30(2)	R76UN2100(1)30(2)
2,000	700	0.012	6.0	15.0	26.5	22.5	4,500	18,000,000	42	16	53	2.95	43	76UN2120(1)30(2)	R76UN2120(1)30(2)
2,000	700	0.015	6.0	15.0	26.5	22.5	4,500	18,000,000	53	16	42	3.29	43	76UN2150(1)40(2)	R76UN2150(1)40(2)
2,000	700	0.018	6.0	15.0	26.5	22.5	4,500	18,000,000	63	16	35	3.61	43	76UN2180(1)40(2)	R76UN2180(1)40(2)
2,000	700	0.022	7.0	16.0	26.5	22.5	4,500	18,000,000	77	16	29	4.1	41	76UN2220(1)40(2)	R76UN2220(1)40(2)

VDC	VAC	Cap Value	T	H	L	Lead Spacing (S)	dV/dt (V/µs)	Max K ₀ (V ² /µs)	A _{pk}	Lead Length 2x 4 mm	at 100 kHz	at 100 kHz, 85°C	(°C/W)	KEMET Internal Part Number	Customer Part Number
									I _{pk}	ESL	ESR	I _{rms max} (*)	R _{th}		

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

(2) H = 2.5% (only for C ≥ 1,000 pF), J = 5%, K = 10%

(*) I_{rms} value that leads to a ΔT of ≈ 20°C in the hot spot > T_{HS} = T_{AMB} + ΔT = 85°C + 20°C = 105°C

Table 1 – Ratings & Part Number Reference cont.

VDC	VAC	Cap Value (µF)	Dimensions in mm			Lead Spacing (S)	dV/dt (V/µs)	Max K ₀ (V ² /µs)	I _{pk}	ESL	ESR	I _{rms max} (*)	R _{th}	KEMET Internal Part Number	Customer Part Number
			Lead Length 2x 4 mm	at 100 kHz	at 100 kHz, 85°C					R _{th}					
											A _{pk}	nH	mΩ		
T	H	L													
2,000	700	0.027	7.0	16.0	26.5	22.5	4,500	18,000,000	95	16	24	4.5	41	76UN2270(1)40(2)	R76UN2270(1)40(2)
2,000	700	0.033	8.5	17.0	26.5	22.5	4,500	18,000,000	116	16	19	5.2	38	76UN2330(1)40(2)	R76UN2330(1)40(2)
2,000	700	0.039	10.0	18.5	26.5	22.5	4,500	18,000,000	137	16	16	5.9	36	76UN2390(1)40(2)	R76UN2390(1)40(2)
2,000	700	0.047	10.0	18.5	26.5	22.5	4,500	18,000,000	165	16	14	6.4	36	76UN2470(1)40(2)	R76UN2470(1)40(2)
2,000	700	0.056	11.0	20.0	26.5	22.5	4,500	18,000,000	196	16	23	5.1	34	76UN2560(1)40(2)	R76UN2560(1)40(2)
2,000	700	0.022	9.0	17.0	32.0	27.5	2,500	10,000,000	51	18	72	2.8	35	76UR2220(1)30(2)	R76UR2220(1)30(2)
2,000	700	0.027	9.0	17.0	32.0	27.5	2,500	10,000,000	62	18	59	3.1	35	76UR2270(1)30(2)	R76UR2270(1)30(2)
2,000	700	0.033	9.0	17.0	32.0	27.5	2,500	10,000,000	76	18	48	3.4	35	76UR2330(1)30(2)	R76UR2330(1)30(2)
2,000	700	0.039	11.0	20.0	32.0	27.5	2,500	10,000,000	90	18	41	4.0	31	76UR2390(1)20(2)	R76UR2390(1)20(2)
2,000	700	0.047	11.0	20.0	32.0	27.5	2,500	10,000,000	108	18	34	4.3	31	76UR2470(1)30(2)	R76UR2470(1)30(2)
2,000	700	0.047	24.0	15.0	32.0	27.5	2,500	10,000,000	108	18	34	4.7	27	76UR2470(1)L0(2)	R76UR2470(1)L0(2)
2,000	700	0.056	13.0	22.0	32.0	27.5	2,500	10,000,000	129	18	43	4.0	29	76UR2560(1)30(2)	R76UR2560(1)30(2)
2,000	700	0.056	24.0	15.0	32.0	27.5	2,500	10,000,000	129	18	43	4.2	27	76UR2560(1)L0(2)	R76UR2560(1)L0(2)
2,000	700	0.068	13.0	22.0	32.0	27.5	2,500	10,000,000	156	18	35	4.4	29	76UR2680(1)30(2)	R76UR2680(1)30(2)
2,000	700	0.068	24.0	15.0	32.0	27.5	2,500	10,000,000	156	18	35	4.6	27	76UR2680(1)L0(2)	R76UR2680(1)L0(2)
2,000	700	0.082	13.0	25.0	32.0	27.5	2,500	10,000,000	189	18	29	5.0	28	76UR2820(1)40(2)	R76UR2820(1)40(2)
2,000	700	0.082	24.0	15.0	32.0	27.5	2,500	10,000,000	189	18	29	5.0	27	76UR2820(1)L0(2)	R76UR2820(1)L0(2)
2,000	700	0.10	14.0	28.0	32.0	27.5	2,500	10,000,000	230	18	24	5.7	26	76UR3100(1)30(2)	R76UR3100(1)30(2)
2,000	700	0.12	18.0	33.0	32.0	27.5	2,500	10,000,000	276	18	27	5.7	23	76UR3120(1)30(2)	R76UR3120(1)30(2)
2,000	700	0.15	18.0	33.0	32.0	27.5	2,500	10,000,000	345	18	21	6.4	23	76UR3150(1)30(2)	R76UR3150(1)30(2)
2,000	700	0.18	22.0	37.0	32.0	27.5	2,500	10,000,000	414	18	18	7.4	21	76UR3180(1)30(2)	R76UR3180(1)30(2)
2,000	700	0.22	22.0	37.0	32.0	27.5	2,500	10,000,000	506	18	14	8.2	21	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	50	20	48	3.9	27	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	59	20	41	4.3	27	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	71	20	34	4.7	27	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	84	20	43	4.2	27	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	102	20	35	4.6	27	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	123	20	29	5.0	27	76UW2820(1)30(2)	R76UW2820(1)30(2)
2,000	700	0.082	24.0	15.0	41.5	37.5	1,500	6,000,000	123	20	29	5.3	24	76UW2820(1)L0(2)	R76UW2820(1)L0(2)
2,000	700	0.10	13.0	24.0	41.5	37.5	1,500	6,000,000	150	20	24	5.8	25	76UW3100(1)30(2)	R76UW3100(1)30(2)
2,000	700	0.10	24.0	15.0	41.5	37.5	1,500	6,000,000	150	20	24	5.9	24	76UW3100(1)L0(2)	R76UW3100(1)L0(2)
2,000	700	0.12	13.0	24.0	41.5	37.5	1,500	6,000,000	180	20	27	5.5	25	76UW3120(1)30(2)	R76UW3120(1)30(2)
2,000	700	0.12	24.0	15.0	41.5	37.5	1,500	6,000,000	180	20	27	5.6	24	76UW3120(1)L0(2)	R76UW3120(1)L0(2)
2,000	700	0.15	16.0	28.5	41.5	37.5	1,500	6,000,000	225	20	21	6.5	23	76UW3150(1)30(2)	R76UW3150(1)30(2)
2,000	700	0.15	24.0	19.0	41.5	37.5	1,500	6,000,000	225	20	21	6.4	23	76UW3150(1)L0(2)	R76UW3150(1)L0(2)
2,000	700	0.18	16.0	28.5	41.5	37.5	1,500	6,000,000	270	20	18	7.1	23	76UW3180(1)30(2)	R76UW3180(1)30(2)
2,000	700	0.18	24.0	19.0	41.5	37.5	1,500	6,000,000	270	20	18	7.0	23	76UW3180(1)L0(2)	R76UW3180(1)L0(2)
2,000	700	0.22	19.0	32.0	41.5	37.5	1,500	6,000,000	330	20	14	8.2	21	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	405	20	15	8.5	19	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	495	20	12	9.4	19	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	585	20	16	8.4	17	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	705	20	14	9.3	17	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	840	20	11	10.5	16	76UW3560(1)30(2)	R76UW3560(1)30(2)
VDC	VAC	Cap Value	T	H	L	Lead Spacing (S)	dV/dt (V/µs)	Max K ₀ (V ² /µs)	A _{pk}	Lead Length 2x 4 mm	at 100 kHz	at 100 kHz, 85°C	(°C/W)	KEMET Internal Part Number	Customer Part Number
									I _{pk}	ESL	ESR	I _{rms max} (*)	R _{th}		

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

(2) H = 2.5% (only for C ≥ 1,000 pF), J = 5%, K = 10%

(*) I_{rms} value that leads to a ΔT of ≈ 20°C in the hot spot > T_{HS} = T_{AMB} + ΔT = 85°C + 20°C = 105°C

Soldering Process

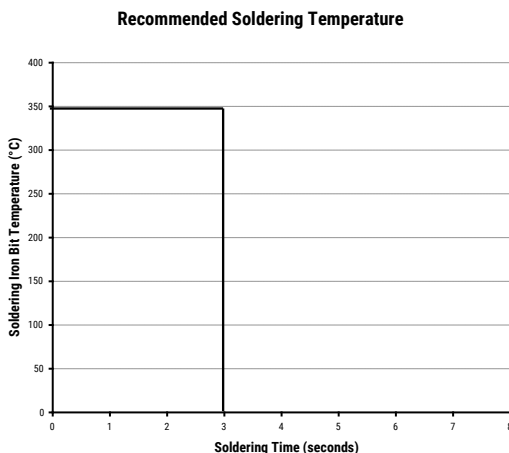
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183°C for SnPb eutectic alloy to 217 – 221°C for the new alloys. As a result, the heat stress to the components, even 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 – 170°C). 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 recommended limits may result in 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.

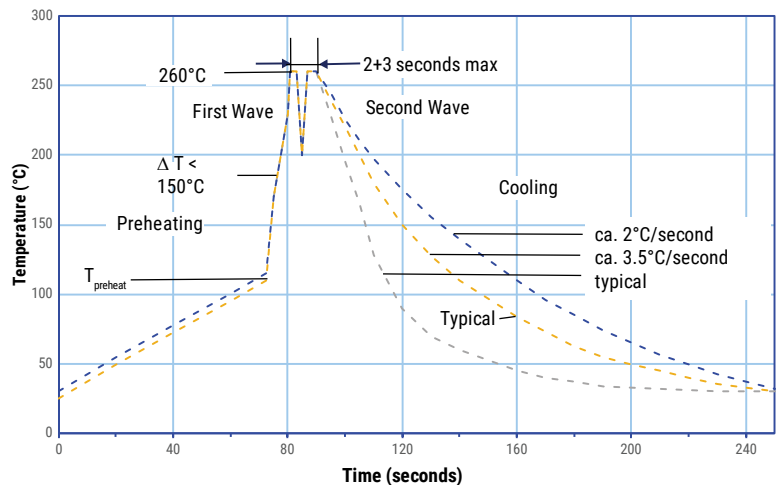
Manual Soldering Recommendations

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.

Wave Soldering Recommendations cont.

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

Figure 1

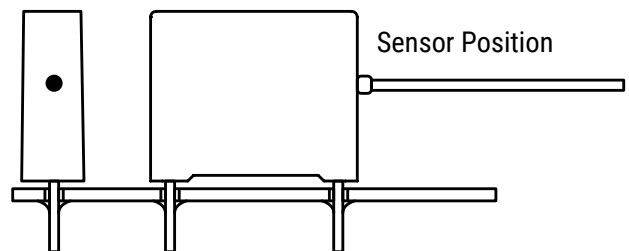
Film Material	Maximum Preheat Temperature			Maximum Peak Soldering Temperature	
	Capacitor Pitch ≤ 10 mm	Capacitor Pitch = 15 mm	Capacitor Pitch > 15 mm	Capacitor Pitch ≤ 15 mm	Capacitor Pitch > 15 mm
Double Metallized Polystyrene and Single Metallized Polypropylene	110°C	110°C	130°C	260°C	270°C

2. The maximum temperature measured on the capacitor body:

Set the temperature so that the maximum temperature is below the limit:

Film Material	Maximum Temperature Measured on the Capacitor Body
Double Metallized Polystyrene and Single Metallized Polypropylene	120°C (for series R76) 125°C (for series R76 125°)

Duration: < 60 seconds



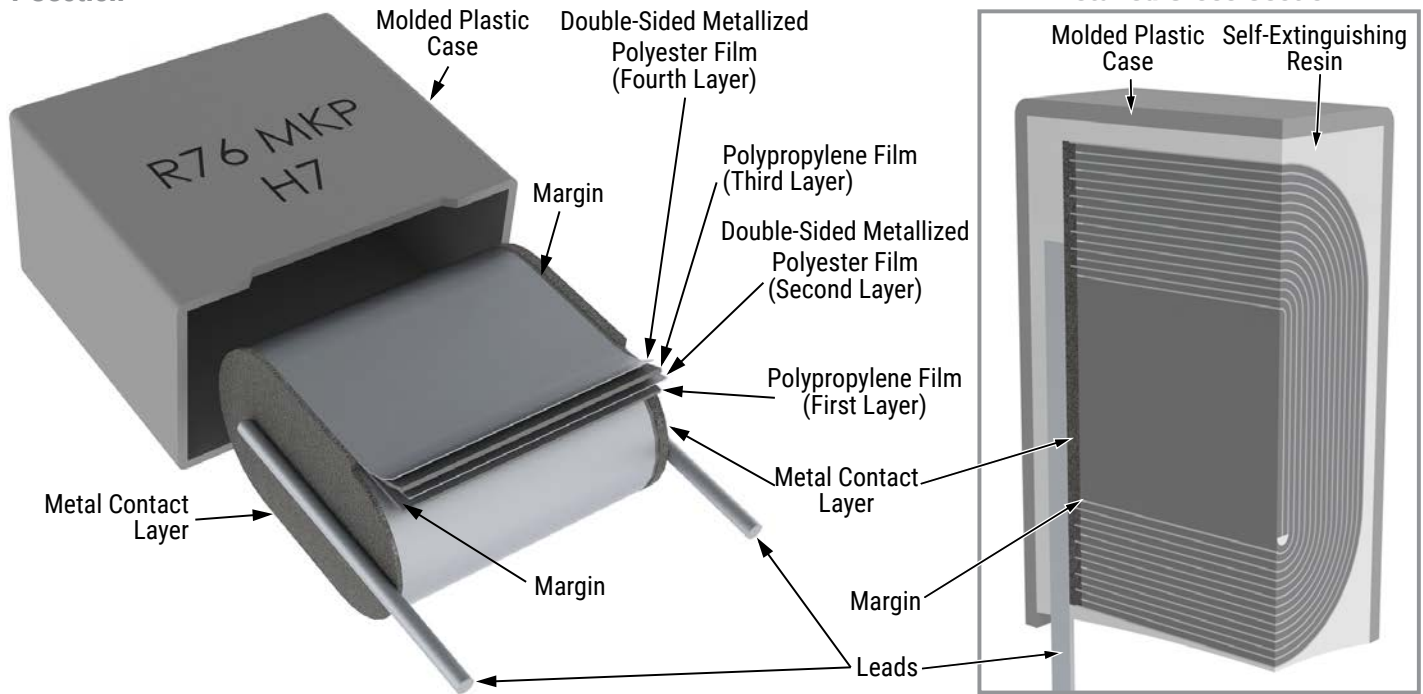
Selective Soldering Recommendations

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.

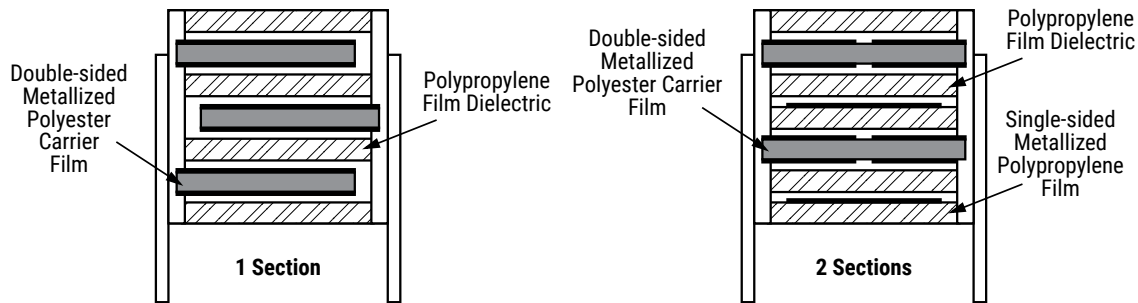
The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering,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

Construction

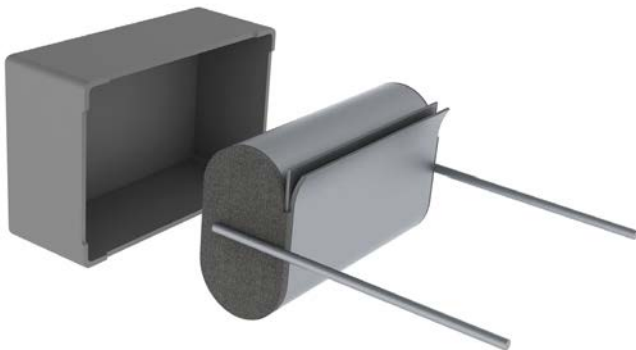
1 Section



Winding Schemes



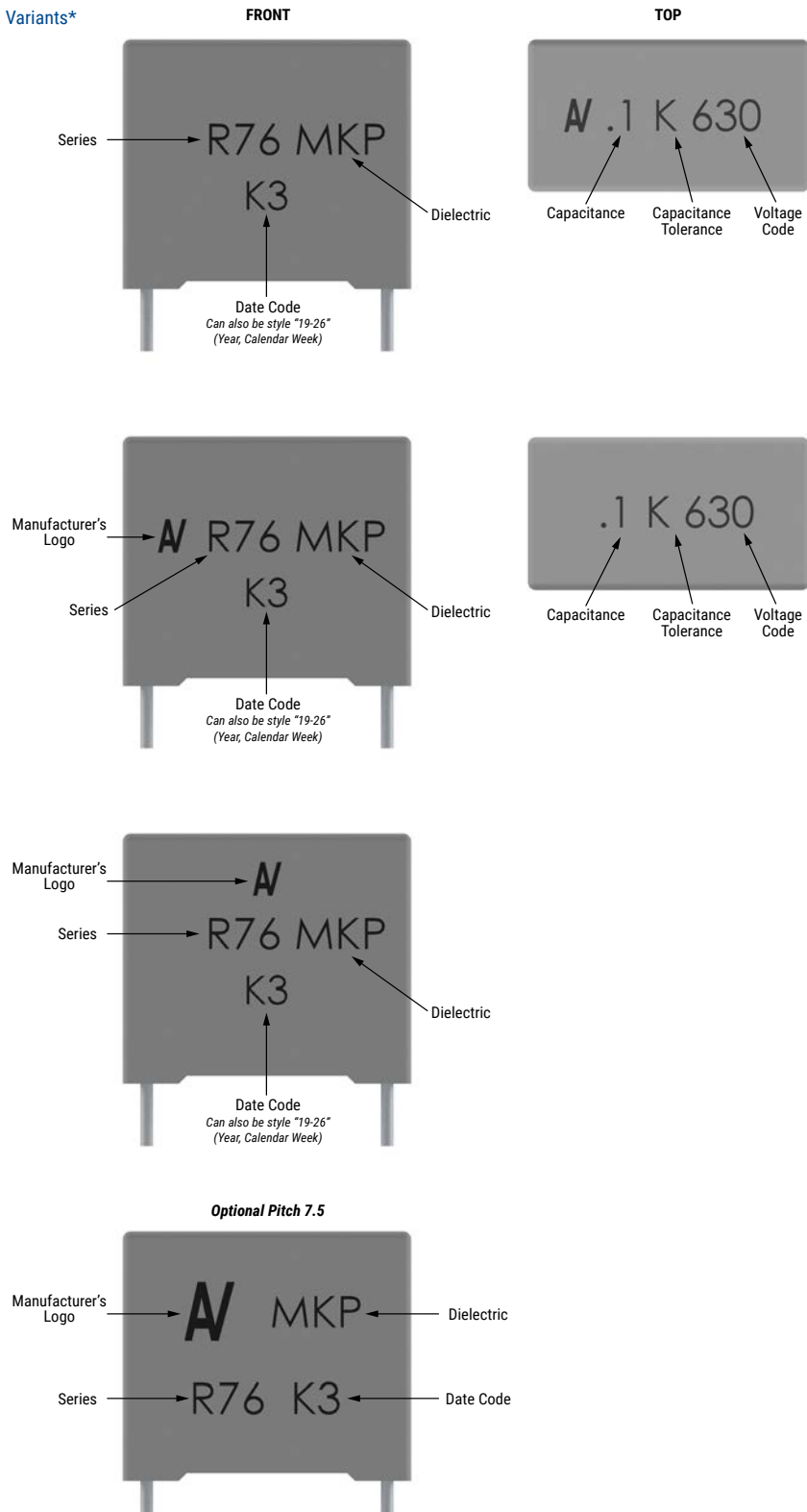
Low Profile Version



Marking

Pitch – 7.5, 10, 15, & 22.5

Marking Variants*

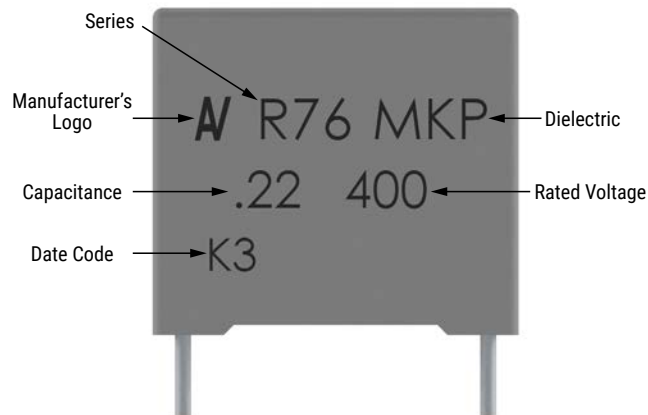
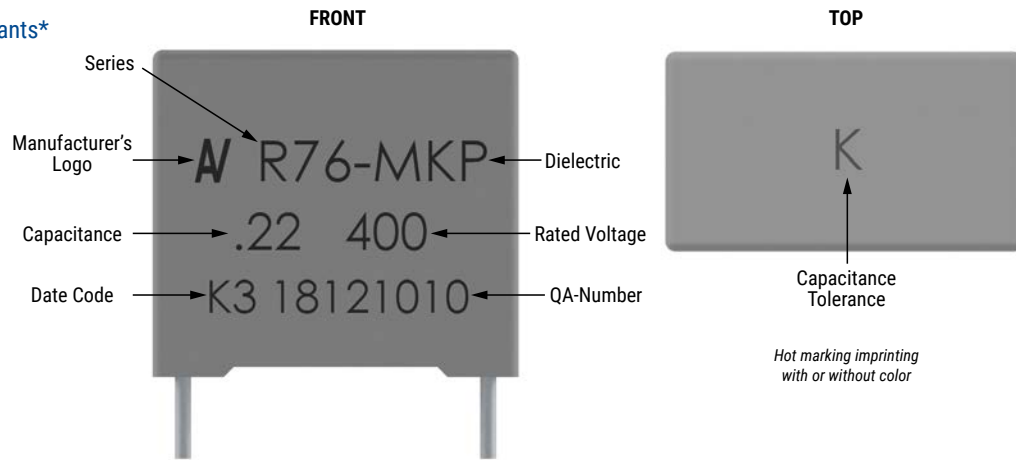


*Differences are caused by technology (clichee, laser, or ink) and technic (production line)

Marking cont.

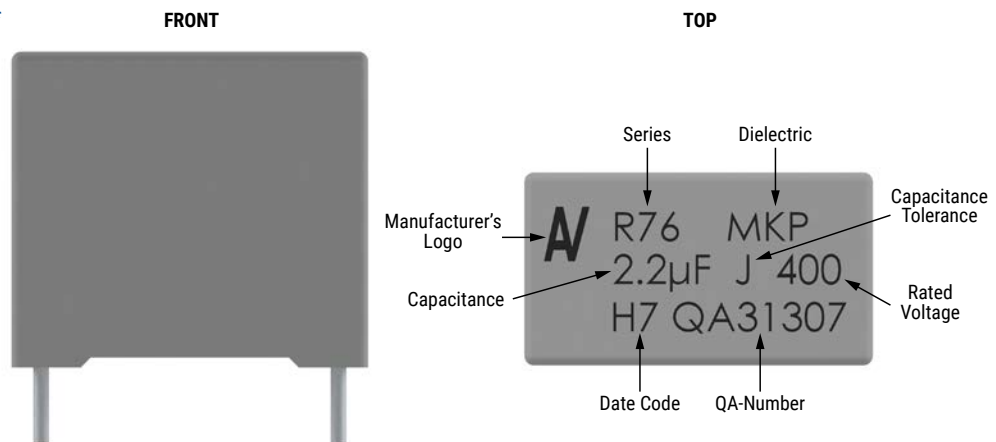
Pitch – 7.5, 10, 15, 22.5, 27.5, & 37.5

Marking Variants*



Pitch – 22.5, 27.5, & 37.5

Marking Variants*



* Differences are caused by technology (clichee, laser, or ink) and technic (production line)

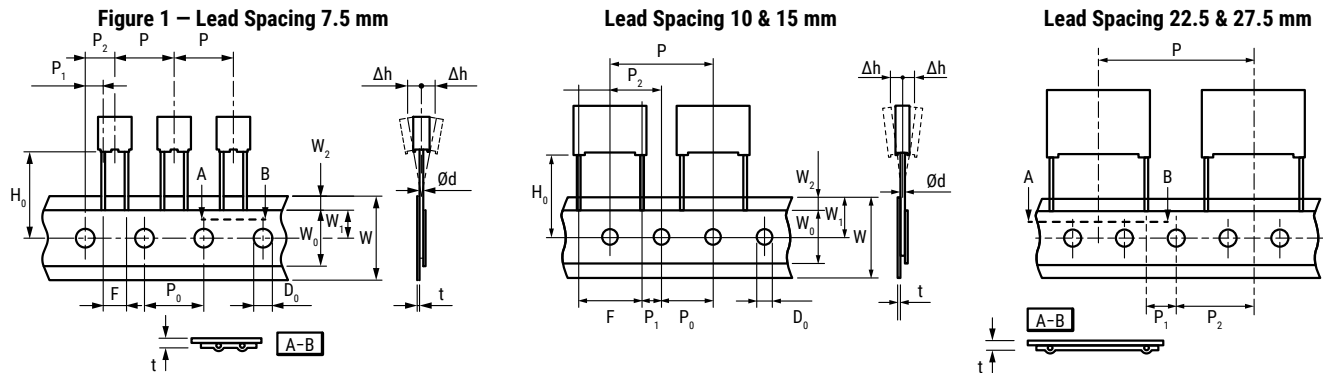
Packaging Quantities

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
	Lead and Packaging Code			JA - JB JE - JH - SE	Z3 ¹ - JM ²	40 - 50	GY - CK ¹	CK	DQ
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	2,200	1,800	750	1,500	1,000
	5.0	11.0	13.0	1,300	2,000	1,500	600	1,250	800
	6.0	12.0	13.0	1,000	1,800	1,200	500	1,000	680
15	4.0	10.0	18.0	2,500	1,500	1,500	750	1,500	1,000
	5.0	11.0	18.0	2,000	1,250	1,000	600	1,250	800
	6.0	12.0	18.0	1,750	1,000	900	500	1,000	680
	7.5	13.5	18.0	1,000	800	700	350	800	500
	8.5	14.5	18.0	1,000	650	500	300	700	440
	9.0	12.5	18.0	1,000	700	520	270	650	410
	10.0	16.0	18.0	750	550	500	270	600	380
	11.0	19.0	18.0	450	400	350	270	500	340
22.5	6.0	15.0	26.5	805	450	500	300	700	464
	7.0	16.0	26.5	700	450	500	250	550	380
	8.5	17.0	26.5	468	350	300	250	450	280
	10.0	18.5	26.5	396	350	300	160	350	235
	11.0	20.0	26.5	360	200	250	190	350	217
	13.0	22.0	26.5	300	150	200	130	300	-
27.5	9.0	17.0	32.0	816	-	408	230	450	-
	11.0	20.0	32.0	560	-	336	190	350	-
	13.0	12.0	32.0	672	-	288	-	-	-
	13.0	22.0	32.0	480	-	288	150	300	-
	13.0	25.0	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	24.0	15.0	32.0	336	-	144	-	-	-
	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	15.0	41.5	252	-	108	-	-	-
	24.0	19.0	41.5	216	-	108	-	-	-
24.0	44.0	41.5	108	-	72	-	-	-	
30.0	45.0	41.5	90	-	60	-	-	-	

1 Only for 7.5 mm lead spacing.

2 Only for > 7.5 mm lead spacing.

Lead Taping & Packaging (IEC 60286-2)



Taping Specification

Description	Symbol	Dimensions (mm)					Tolerance
		Lead Spacing					
		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
Total 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.

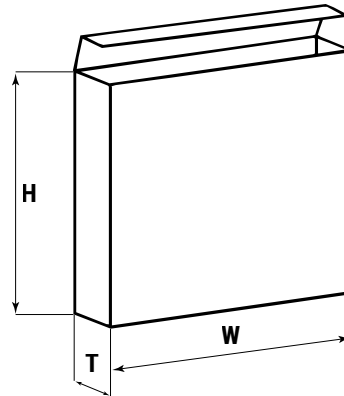
*** 15 mm and 10 mm taped to 7.5 mm (crimped leads) available upon request.

**** H₀ = 16.5 mm is available upon request.

Lead Taping & Packaging (IEC 60286-2) cont.

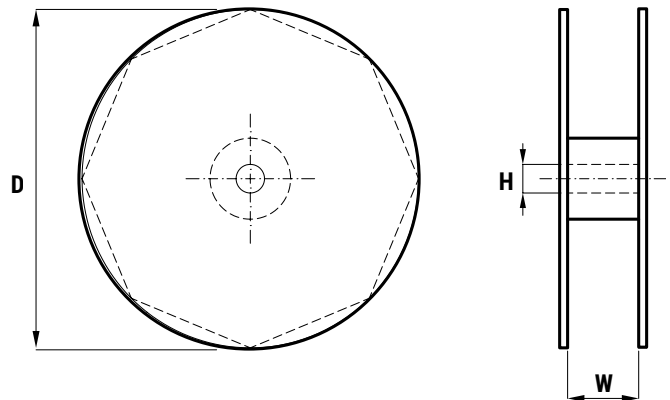
Ammo Specifications

Dimensions (mm)		
H	W	T
360	340	59



Reel Specifications

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



Manufacturing Date Code (IEC-60062)

Y = Year, Z = Month			
Year	Code	Month	Code
2010	A	January	1
2011	B	February	2
2012	C	March	3
2013	D	April	4
2014	E	May	5
2015	F	June	6
2016	H	July	7
2017	J	August	8
2018	K	September	9
2019	L	October	0
2020	M	November	N
2021	N	December	D
2022	P		
2023	R		
2024	S		
2025	T		
2026	U		
2027	V		
2028	W		
2029	X		
2030	A		

KEMET Electronics Corporation Sales Offices

For a complete list of our global sales offices, please visit www.kemet.com/sales.

Disclaimer

All product specifications, statements, information and data (collectively, the "Information") in this datasheet are subject to change. The customer is responsible for checking and verifying the extent to which the Information contained in this publication is applicable to an order at the time the order is placed. All Information given herein is believed to be accurate and reliable, but it is presented without guarantee, warranty, or responsibility of any kind, expressed or implied.

Statements of suitability for certain applications are based on KEMET Electronics Corporation's ("KEMET") knowledge of typical operating conditions for such applications, but are not intended to constitute – and KEMET specifically disclaims – any warranty concerning suitability for a specific customer application or use. The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by KEMET with reference to the use of KEMET's products is given gratis, and KEMET assumes no obligation or liability for the advice given or results obtained.

Although KEMET designs and manufactures its products to the most stringent quality and safety standards, given the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage.

Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated or that other measures may not be required.

KEMET is a registered trademark of KEMET Electronics Corporation.