

R77 Series Double Metallized Polypropylene Film, Optimized for AC Applications

Overview

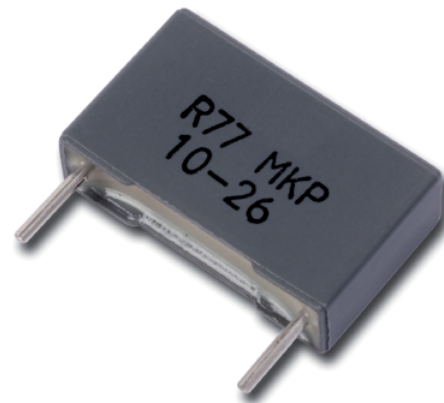
The R77 Series is a polypropylene dielectric with double-metallized polyester film as electrodes, encapsulated in self-extinguishing resin in a box of material meeting the requirements of UL 94 V-0.

Applications

Typical applications include electronic lighting such as automotive headlamps and ballasts, as well as pulse applications with high AC voltage and high current.

Benefits

- Rated voltage: 250 – 900 VAC
- Capacitance range: 0.001 – 0.1 μ F
- Lead spacing: 15 – 27.5 mm
- Capacitance tolerance: $\pm 2.5\%$, $\pm 5\%$, $\pm 10\%$
- 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



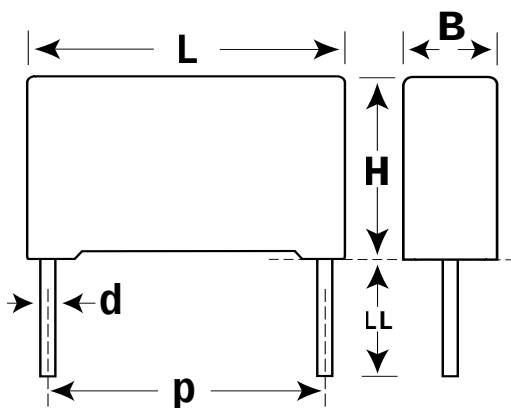
Part Number System

R77	L	I	2270	AA	00	H
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Internal Use	Capacitance Tolerance
Metallized Polypropylene	L = 250 3 = 300 N = 400 5 = 500 7 = 700 9 = 900	I = 15.0 N = 22.5 R = 27.5	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	00 (Standard)	H = $\pm 2.5\%$ J = $\pm 5\%$ K = $\pm 10\%$

Ordering Options Table

Lead Spacing Nominal (mm)	Type of Leads and Packaging	Lead Length (mm)	Lead and Packaging Code
15	Standard Lead and Packaging Options		
	Bulk (Bag) – Short Leads	4 +2/-0	AA
	Ammo Pack	$H_0 = 18.5 \pm 0.5$	DQ
	Other Lead and Packaging Options		
	Bulk (Bag) – Long Leads	25 +2/-1	50
	Bulk (Bag) – Max Length Leads	30 +5/-0	40
	Tape & Reel (Standard Reel)	$H_0 = 18.5 \pm 0.5$	GY
	Tape & Reel (Large Reel)	$H_0 = 18.5 \pm 0.5$	CK
	Pizza Pack	4 +2/-0	BB
22.5	Standard Lead and Packaging Options		
	Bulk (Tray) – Straight Leads	4 +2/-0	AA
	Ammo Pack	$H_0 = 18.5 \pm 0.5$	DQ
	Other Lead and Packaging Options		
	Bulk (Tray) – Long Leads	25 +2/-1	50
	Bulk (Tray) – Max Length Leads	30 +5/-0	40
	Tape & Reel (Large Reel)	$H_0 = 18.5 \pm 0.5$	CK
	Pizza Pack	4 +2/-0	BB
27.5	Standard Lead and Packaging Options		
	Bulk (Tray) – Straight Leads	4 +2/-0	AA
	Other Lead and Packaging Options		
	Bulk (Tray) – Long Leads	25 +2/-1	50
	Bulk (Tray) – Max Length Leads	30 +5/-0	40
	Tape & Reel (Large Reel)	$H_0 = 18.5 \pm 0.5$	CK

Dimensions – Millimeters

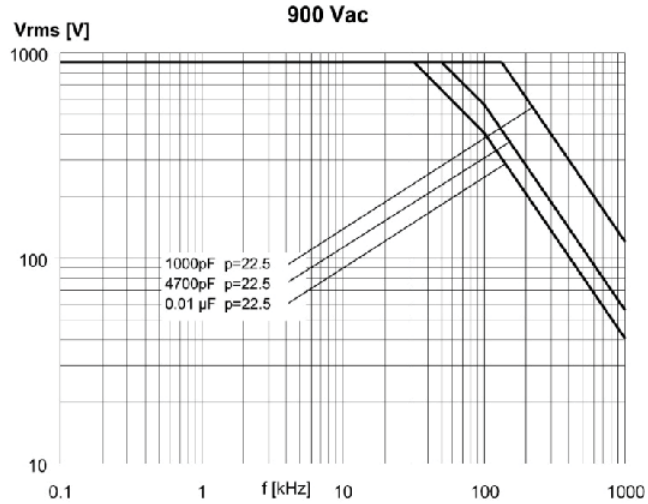
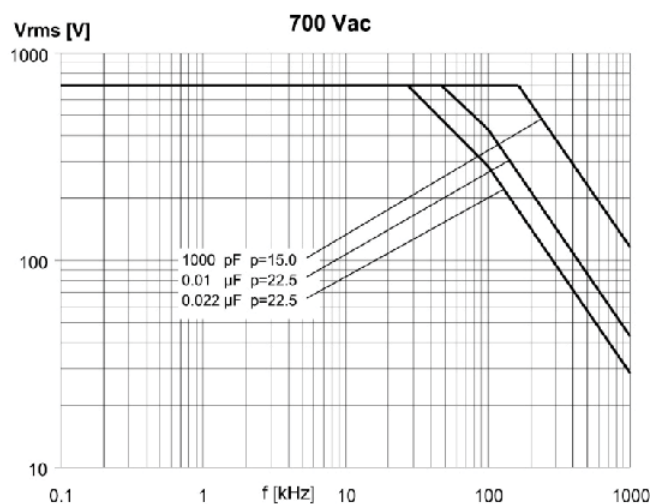
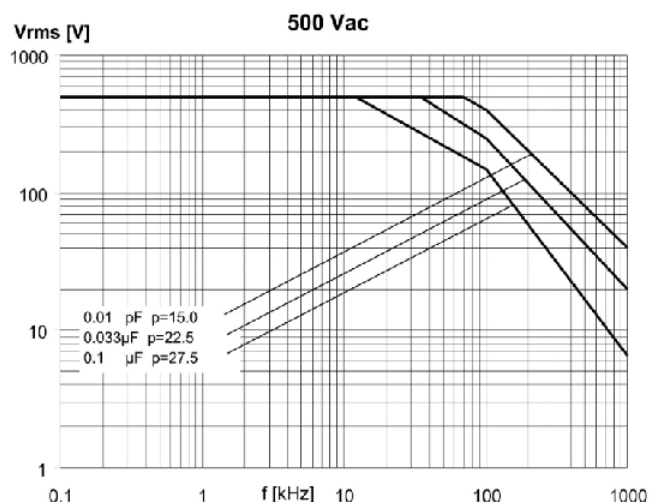
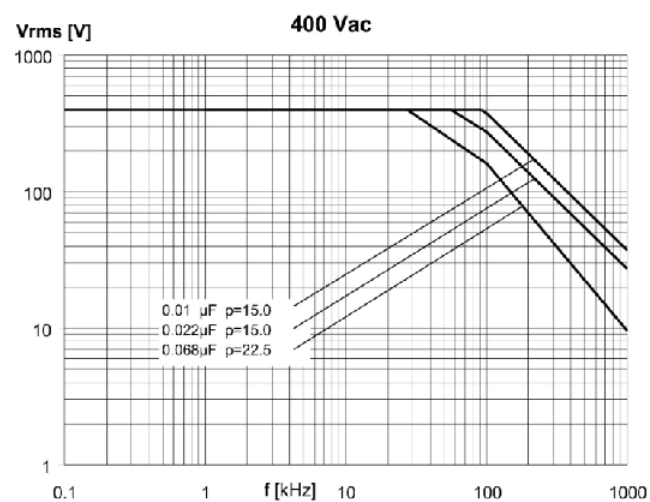
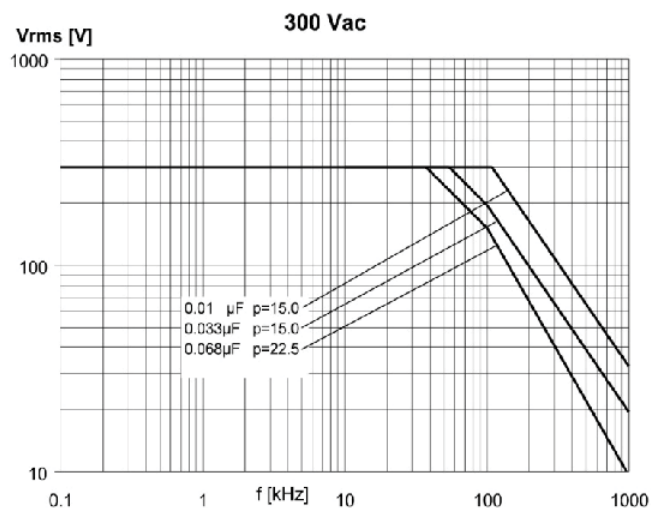
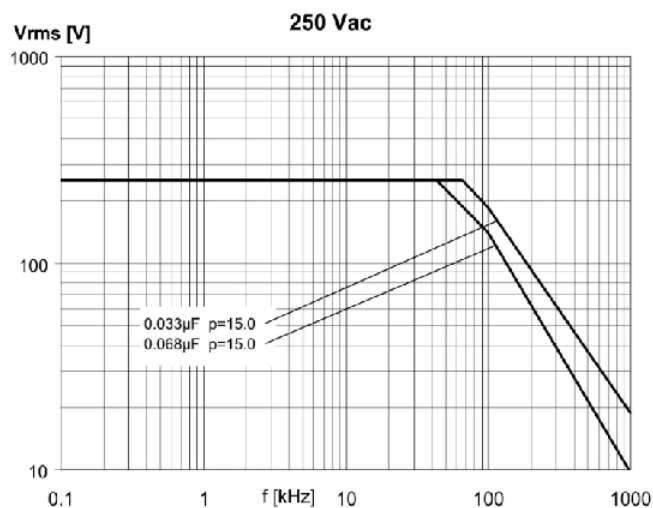


p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
15	+/-0.4	5	+0.2/-0	11	+0.1/-0	18	+0.3/-0	0.8	+/-0.05
15	+/-0.4	6	+0.2/-0	12	+0.1/-0	18	+0.3/-0	0.8	+/-0.05
15	+/-0.4	7.5	+0.2/-0	13.5	+0.1/-0	18	+0.5/-0	0.8	+/-0.05
15	+/-0.4	8.5	+0.2/-0	14.5	+0.1/-0	18	+0.5/-0	0.8	+/-0.05
15	+/-0.4	10	+0.2/-0	16	+0.1/-0	18	+0.5/-0	0.8	+/-0.05
22.5	+/-0.4	6	+0.2/-0	15	+0.1/-0	26.5	+0.3/-0	0.8	+/-0.05
22.5	+/-0.4	7	+0.2/-0	16	+0.1/-0	26.5	+0.3/-0	0.8	+/-0.05
22.5	+/-0.4	8.5	+0.2/-0	17	+0.1/-0	26.5	+0.3/-0	0.8	+/-0.05
22.5	+/-0.4	10	+0.2/-0	18.5	+0.1/-0	26.5	+0.3/-0	0.8	+/-0.05
22.5	+/-0.4	11	+0.2/-0	20	+0.1/-0	26.5	+0.3/-0	0.8	+/-0.05
27.5	+/-0.4	11	+0.2/-0	20	+0.1/-0	32	+0.3/-0	0.8	+/-0.05
27.5	+/-0.4	13	+0.2/-0	22	+0.1/-0	32	+0.3/-0	0.8	+/-0.05
Note: See Ordering Options Table for lead length (LL) options.									

Performance Characteristics

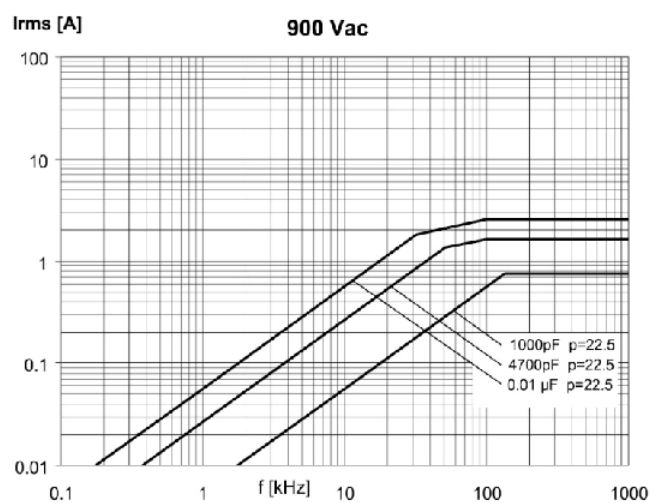
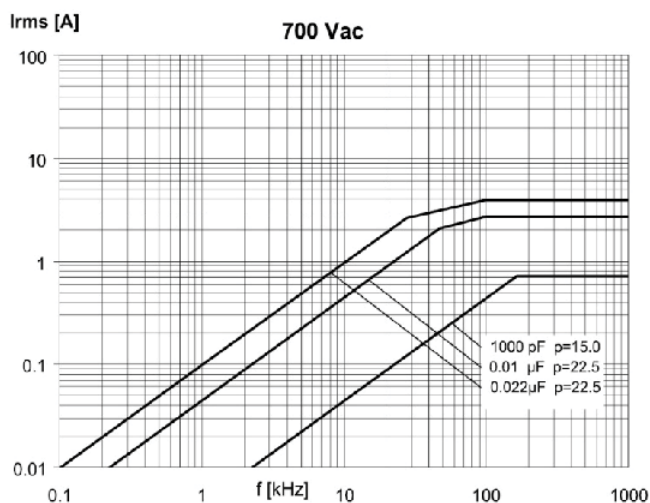
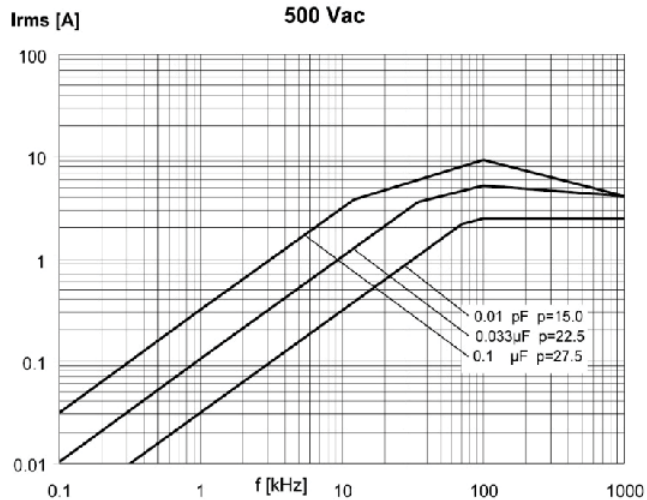
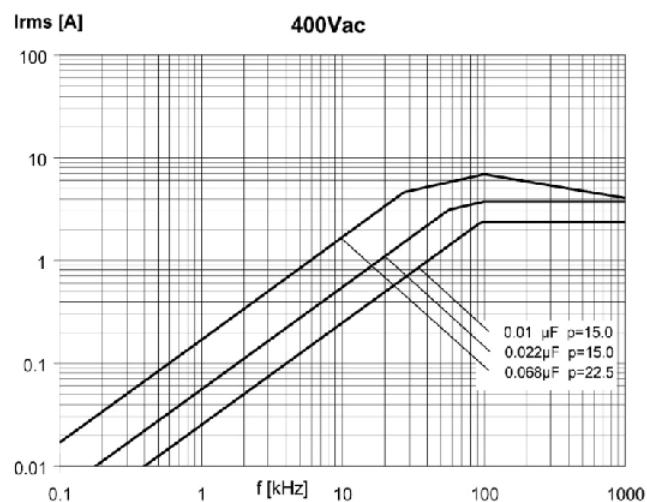
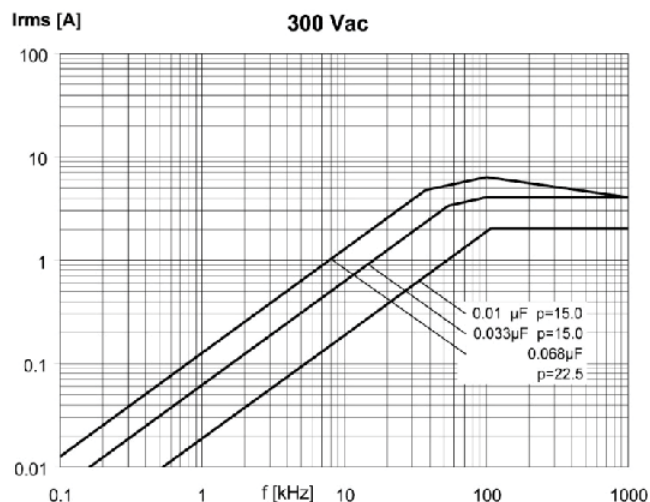
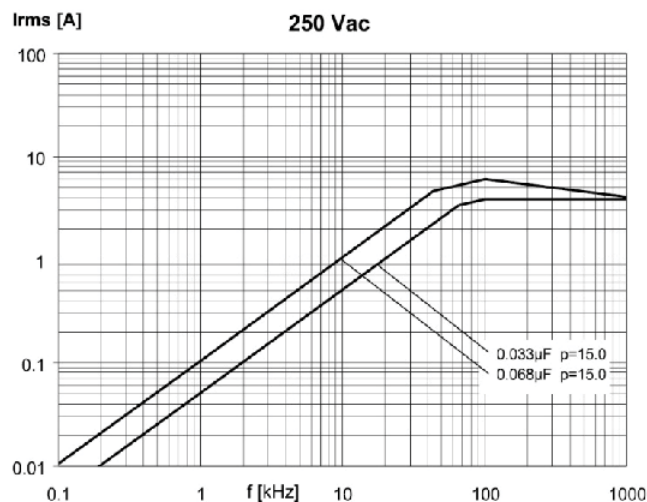
Sections	1	2	2	2	3	4
Voltage Range (VAC)	250	300	400	500	700	900
Voltage Range (VDC)	630	800	1000	1300	1600	2000
Capacitance Range (μF)	0.027 – 0.1	0.01 – 0.1	0.0056 – 0.01	0.001 – 0.1	0.001 – 0.027	0.001 – 0.018
Capacitance Values	In accordance with IEC E12 series					
Capacitance Tolerance	±2.5%, ±5%, ±10%					
Category Temperature Range	-55°C to +105°C					
Voltage Derating	The rated voltage is decreased with 1.25%/°C between +85°C and +105°C					
Climatic Category	IEC 60068–1, 55/105/56					
Self-Inductance L (Lead Length ~ 2 mm)	Lead Spacing (mm)	15			22.5	27.5
	L (nH) ≈	10			18	18
Dissipation Factor tanδ	Measured at 25°C ±5°C					
	1 kHz			0.001		
	10 kHz			0.0006		
	100 kHz			0.001		
Insulation Resistance	Measured at +25°C, 100 VDC 60 seconds					
	Minimum Values Between Terminals					
	C ≤ 0.33 μF			≥ 100,000 MΩ		
	C > 0.33 μF			≥ 30,000 MΩ • μF		
Test Voltage Between Terminals	1.6 x V _R applied for 2 seconds at 25°C ±5°C					

Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/ $T \leq 40^\circ\text{C}$)



Note: p (pitch) in mm.

Maximum Current (I_{rms}) vs. Frequency (Sinusoidal Waveform/ $T \leq 40^\circ\text{C}$)



Note: p (pitch) in mm.

Environmental Test Data

Test	IEC Publication	Procedure	Requirements
Voltage Proof	60384-1 Clause 4.6	$1.6 \times V_R$ 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	$2 \times V_R$ (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 $\tan \delta \leq 1.2 \times \text{stated value at 100 kHz}$ $\Delta C/C \leq \pm 0.5 \%$
Bump	60068-2-29 Test Eb	4,000 bumps with 390 m/s ² mounted on PCB	$\Delta C/C \leq \pm 0.5 \%$ $\tan \delta \leq 1.2 \times \text{stated value at 100 kHz}$ Insulation resistance: $\geq 100,000 \text{ M}\Omega$ for $C_R \leq 0.33 \mu\text{F}$ $\geq 30,000 \text{ M}\Omega \cdot \mu\text{F}$ for $C_R > 0.33 \mu\text{F}$
Resistance to Soldering Heat	60068-2-20 Method 1A	Solder bath at $+260^\circ\text{C} \pm 5^\circ\text{C}$ 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. $\Delta C/C \leq \pm 1.0 \%$ $\tan \delta \text{ increase} < 0.001$ 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: $\geq 100,000 \text{ M}\Omega$ for $C_R \leq 0.33 \mu\text{F}$ $\geq 30,000 \text{ M}\Omega \cdot \mu\text{F}$ for $C_R > 0.33 \mu\text{F}$ $\Delta C/C \leq \pm 0.5 \%$ $\tan \delta \leq 1.2 \times \text{stated value at 100 kHz}$
Damp Heat Steady State	60068-2-3 Test Ca	$+40^\circ\text{C}$ and 90 – 95% RH	56 days no visible damage Insulation resistance: $\geq 50,000 \text{ M}\Omega$ for $C_R \leq 0.33 \mu\text{F}$ $\geq 15,000 \text{ M}\Omega \cdot \mu\text{F}$ for $C_R > 0.33 \mu\text{F}$ $\Delta C/C \leq \pm 1 \%$ $\tan \delta \leq 1.2 \times \text{stated value at 100 kHz}$
Endurance, AC		1,000 hours at $+85^\circ\text{C}$ and $1.25 \times V_R$ AC	No visible damage $\Delta C/C \leq \pm 3 \%$ $\tan \delta \leq 1.5 \times \text{stated value at 100 kHz}$ Insulation resistance: $\geq 100,000 \text{ M}\Omega$ for $C_R \leq 0.33 \mu\text{F}$ $\geq 30,000 \text{ M}\Omega \cdot \mu\text{F}$ for $C_R > 0.33 \mu\text{F}$
Charge and Discharge	60384-17 Paragraph 4.13	10,000 pulses and with (2 x) dV/dt according to detail specification	$\tan \delta (100 \text{ kHz}) \leq 2 \times \text{stated value (100 kHz)}$ $\Delta C/C \leq \pm 0.5 \%$ Insulation resistance: $\geq 50,000 \text{ M}\Omega$ for $C_R \leq 0.33 \mu\text{F}$ $\geq 15,000 \text{ M}\Omega \cdot \mu\text{F}$ for $C_R > 0.33 \mu\text{F}$

Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant.



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	110 E4	77LI2270(1)00(2)	R77LI2270(1)00(2)
250	630	0.033	6.0	12.0	18.0	15.0	900	110 E4	77LI2330(1)00(2)	R77LI2330(1)00(2)
250	630	0.039	6.0	12.0	18.0	15.0	900	110 E4	77LI2390(1)00(2)	R77LI2390(1)00(2)
250	630	0.047	7.5	13.5	18.0	15.0	900	110 E4	77LI2470(1)00(2)	R77LI2470(1)00(2)
250	630	0.056	7.5	13.5	18.0	15.0	900	110 E4	77LI2560(1)00(2)	R77LI2560(1)00(2)
250	630	0.068	8.5	14.5	18.0	15.0	900	110 E4	77LI2680(1)00(2)	R77LI2680(1)00(2)
250	630	0.082	10.0	16.0	18.0	15.0	900	110 E4	77LI2820(1)00(2)	R77LI2820(1)00(2)
250	630	0.10	10.0	16.0	18.0	15.0	900	110 E4	77LI3100(1)00(2)	R77LI3100(1)00(2)
300	800	0.010	5.0	11.0	18.0	15.0	2500	400 E4	773I2100(1)00(2)	R773I2100(1)00(2)
300	800	0.012	5.0	11.0	18.0	15.0	2500	400 E4	773I2120(1)00(2)	R773I2120(1)00(2)
300	800	0.015	5.0	11.0	18.0	15.0	2500	400 E4	773I2150(1)00(2)	R773I2150(1)00(2)
300	800	0.018	5.0	11.0	18.0	15.0	2500	400 E4	773I2180(1)00(2)	R773I2180(1)00(2)
300	800	0.022	6.0	12.0	18.0	15.0	2500	400 E4	773I2220(1)00(2)	R773I2220(1)00(2)
300	800	0.027	6.0	12.0	18.0	15.0	2500	400 E4	773I2270(1)00(2)	R773I2270(1)00(2)
300	800	0.033	7.5	13.5	18.0	15.0	2500	400 E4	773I2330(1)00(2)	R773I2330(1)00(2)
300	800	0.039	7.5	13.5	18.0	15.0	2500	400 E4	773I2390(1)00(2)	R773I2390(1)00(2)
300	800	0.047	8.5	14.5	18.0	15.0	2500	400 E4	773I2470(1)00(2)	R773I2470(1)00(2)
300	800	0.056	10.0	16.0	18.0	15.0	2500	400 E4	773I2560(1)00(2)	R773I2560(1)00(2)
300	800	0.068	10.0	16.0	18.0	15.0	2500	400 E4	773I2680(1)00(2)	R773I2680(1)00(2)
300	800	0.056	6.0	15.0	26.5	22.5	1500	240 E4	773N2560(1)00(2)	R773N2560(1)00(2)
300	800	0.068	7.0	16.0	26.5	22.5	1500	240 E4	773N2680(1)00(2)	R773N2680(1)00(2)
300	800	0.082	7.0	16.0	26.5	22.5	1500	240 E4	773N2820(1)00(2)	R773N2820(1)00(2)
300	800	0.10	8.5	17.0	26.5	22.5	1500	240 E4	773N3100(1)00(2)	R773N3100(1)00(2)
400	1000	0.0056	5.0	11.0	18.0	15.0	3300	660 E4	77NI1560(1)00(2)	R77NI1560(1)00(2)
400	1000	0.0068	5.0	11.0	18.0	15.0	3300	660 E4	77NI1680(1)00(2)	R77NI1680(1)00(2)
400	1000	0.0082	5.0	11.0	18.0	15.0	3300	660 E4	77NI1820(1)00(2)	R77NI1820(1)00(2)
400	1000	0.010	6.0	12.0	18.0	15.0	3300	660 E4	77NI2100(1)00(2)	R77NI2100(1)00(2)
400	1000	0.012	6.0	12.0	18.0	15.0	3300	660 E4	77NI2120(1)00(2)	R77NI2120(1)00(2)
400	1000	0.015	7.5	13.5	18.0	15.0	3300	660 E4	77NI2150(1)00(2)	R77NI2150(1)00(2)
400	1000	0.018	7.5	13.5	18.0	15.0	3300	660 E4	77NI2180(1)00(2)	R77NI2180(1)00(2)
400	1000	0.022	8.5	14.5	18.0	15.0	3300	660 E4	77NI2220(1)00(2)	R77NI2220(1)00(2)
400	1000	0.027	10.0	16.0	18.0	15.0	3300	660 E4	77NI2270(1)00(2)	R77NI2270(1)00(2)
400	1000	0.033	10.0	16.0	18.0	15.0	3300	660 E4	77NI2330(1)00(2)	R77NI2330(1)00(2)
400	1000	0.027	6.0	15.0	26.5	22.5	2100	420 E4	77NN2270(1)00(2)	R77NN2270(1)00(2)
400	1000	0.033	7.0	16.0	26.5	22.5	2100	420 E4	77NN2330(1)00(2)	R77NN2330(1)00(2)
400	1000	0.039	7.0	16.0	26.5	22.5	2100	420 E4	77NN2390(1)00(2)	R77NN2390(1)00(2)
400	1000	0.047	8.5	17.0	26.5	22.5	2100	420 E4	77NN2470(1)00(2)	R77NN2470(1)00(2)
400	1000	0.056	8.5	17.0	26.5	22.5	2100	420 E4	77NN2560(1)00(2)	R77NN2560(1)00(2)
400	1000	0.068	10.0	18.5	26.5	22.5	2100	420 E4	77NN2680(1)00(2)	R77NN2680(1)00(2)
400	1000	0.082	10.0	18.5	26.5	22.5	2100	420 E4	77NN2820(1)00(2)	R77NN2820(1)00(2)
400	1000	0.10	11.0	20.0	26.5	22.5	2100	420 E4	77NN3100(1)00(2)	R77NN3100(1)00(2)
500	1300	0.001	5.0	11.0	18.0	15.0	4500	1200 E4	775I1100(1)00(2)	R775I1100(1)00(2)
500	1300	0.0012	5.0	11.0	18.0	15.0	4500	1200 E4	775I1120(1)00(2)	R775I1120(1)00(2)
500	1300	0.0015	5.0	11.0	18.0	15.0	4500	1200 E4	775I1150(1)00(2)	R775I1150(1)00(2)
500	1300	0.0018	5.0	11.0	18.0	15.0	4500	1200 E4	775I1180(1)00(2)	R775I1180(1)00(2)
500	1300	0.0022	5.0	11.0	18.0	15.0	4500	1200 E4	775I1220(1)00(2)	R775I1220(1)00(2)
500	1300	0.0027	5.0	11.0	18.0	15.0	4500	1200 E4	775I1270(1)00(2)	R775I1270(1)00(2)
500	1300	0.0033	5.0	11.0	18.0	15.0	4500	1200 E4	775I1330(1)00(2)	R775I1330(1)00(2)
500	1300	0.0039	5.0	11.0	18.0	15.0	4500	1200 E4	775I1390(1)00(2)	R775I1390(1)00(2)
500	1300	0.0047	5.0	11.0	18.0	15.0	4500	1200 E4	775I1470(1)00(2)	R775I1470(1)00(2)
500	1300	0.0056	5.0	11.0	18.0	15.0	4500	1200 E4	775I1560(1)00(2)	R775I1560(1)00(2)
500	1300	0.0068	6.0	12.0	18.0	15.0	4500	1200 E4	775I1680(1)00(2)	R775I1680(1)00(2)
500	1300	0.0082	6.0	12.0	18.0	15.0	4500	1200 E4	775I1820(1)00(2)	R775I1820(1)00(2)
500	1300	0.010	7.5	13.5	18.0	15.0	4500	1200 E4	775I2100(1)00(2)	R775I2100(1)00(2)
500	1300	0.012	7.5	13.5	18.0	15.0	4500	1200 E4	775I2120(1)00(2)	R775I2120(1)00(2)
500	1300	0.015	8.5	14.5	18.0	15.0	4500	1200 E4	775I2150(1)00(2)	R775I2150(1)00(2)
500	1300	0.018	10.0	16.0	18.0	15.0	4500	1200 E4	775I2180(1)00(2)	R775I2180(1)00(2)
500	1300	0.022	10.0	16.0	18.0	15.0	4500	1200 E4	775I2220(1)00(2)	R775I2220(1)00(2)
500	1300	0.018	6.0	15.0	26.5	22.5	2500	650 E4	775N2180(1)00(2)	R775N2180(1)00(2)
500	1300	0.022	7.0	16.0	26.5	22.5	2500	650 E4	775N2220(1)00(2)	R775N2220(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

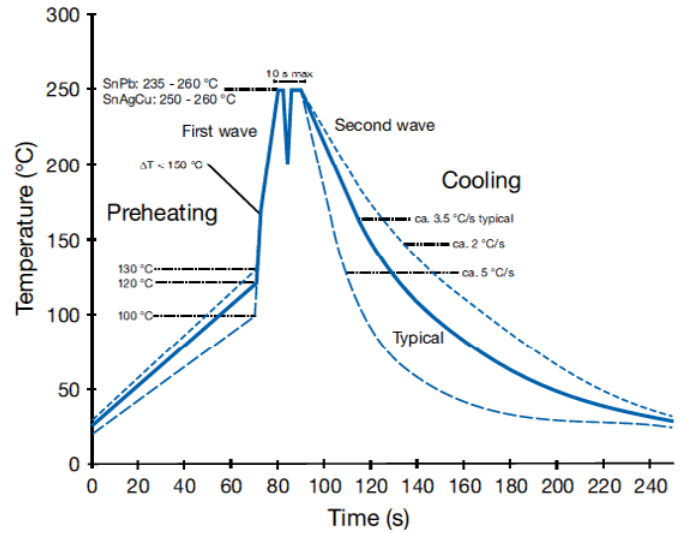
VAC	VDC	Capacitance Value (μF)	Dimensions in mm			Lead Spacing (p)	dV/dt (V/μs)	Max K ₀ (V ² /μs)	New KEMET Part Number	Legacy Part Number
			B	H	L					
500	1300	0.027	7.0	16.0	26.5	22.5	2500	650 E4	775N2270(1)00(2)	R775N2270(1)00(2)
500	1300	0.033	8.5	17.0	26.5	22.5	2500	650 E4	775N2330(1)00(2)	R775N2330(1)00(2)
500	1300	0.039	10.0	18.5	26.5	22.5	2500	650 E4	775N2390(1)00(2)	R775N2390(1)00(2)
500	1300	0.047	10.0	18.5	26.5	22.5	2500	650 E4	775N2470(1)00(2)	R775N2470(1)00(2)
500	1300	0.056	11.0	20.0	26.5	22.5	2500	650 E4	775N2560(1)00(2)	R775N2560(1)00(2)
500	1300	0.068	11.0	20.0	32.0	27.5	1100	290 E4	775R2680(1)00(2)	R775R2680(1)00(2)
500	1300	0.082	11.0	20.0	32.0	27.5	1100	290 E4	775R2820(1)00(2)	R775R2820(1)00(2)
500	1300	0.10	13.0	22.0	32.0	27.5	1100	290 E4	775R3100(1)00(2)	R775R3100(1)00(2)
700	1600	0.001	5.0	11.0	18.0	15.0	9500	3000 E4	777I1100(1)00(2)	R777I1100(1)00(2)
700	1600	0.0012	5.0	11.0	18.0	15.0	9500	3000 E4	777I1120(1)00(2)	R777I1120(1)00(2)
700	1600	0.0015	5.0	11.0	18.0	15.0	9500	3000 E4	777I1150(1)00(2)	R777I1150(1)00(2)
700	1600	0.0018	5.0	11.0	18.0	15.0	9500	3000 E4	777I1180(1)00(2)	R777I1180(1)00(2)
700	1600	0.0022	5.0	11.0	18.0	15.0	9500	3000 E4	777I1220(1)00(2)	R777I1220(1)00(2)
700	1600	0.0027	6.0	12.0	18.0	15.0	9500	3000 E4	777I1270(1)00(2)	R777I1270(1)00(2)
700	1600	0.0033	6.0	12.0	18.0	15.0	9500	3000 E4	777I1330(1)00(2)	R777I1330(1)00(2)
700	1600	0.0039	7.5	13.5	18.0	15.0	9500	3000 E4	777I1390(1)00(2)	R777I1390(1)00(2)
700	1600	0.0047	7.5	13.5	18.0	15.0	9500	3000 E4	777I1470(1)00(2)	R777I1470(1)00(2)
700	1600	0.0056	8.5	14.5	18.0	15.0	9500	3000 E4	777I1560(1)00(2)	R777I1560(1)00(2)
700	1600	0.0068	8.5	14.5	18.0	15.0	9500	3000 E4	777I1680(1)00(2)	R777I1680(1)00(2)
700	1600	0.0082	10.0	16.0	18.0	15.0	9500	3000 E4	777I1820(1)00(2)	R777I1820(1)00(2)
700	1600	0.0082	6.0	15.0	26.5	22.5	4500	1400 E4	777N1820(1)00(2)	R777N1820(1)00(2)
700	1600	0.010	6.0	15.0	26.5	22.5	4500	1400 E4	777N2100(1)00(2)	R777N2100(1)00(2)
700	1600	0.012	7.0	16.0	26.5	22.5	4500	1400 E4	777N2120(1)00(2)	R777N2120(1)00(2)
700	1600	0.015	8.5	17.0	26.5	22.5	4500	1400 E4	777N2150(1)00(2)	R777N2150(1)00(2)
700	1600	0.018	10.0	18.5	26.5	22.5	4500	1400 E4	777N2180(1)00(2)	R777N2180(1)00(2)
700	1600	0.022	10.0	18.5	26.5	22.5	4500	1400 E4	777N2220(1)00(2)	R777N2220(1)00(2)
700	1600	0.027	11.0	20.0	26.5	22.5	4500	1400 E4	777N2270(1)00(2)	R777N2270(1)00(2)
900	2000	0.001	6.0	15.0	26.5	22.5	9500	3800 E4	779N1100(1)00(2)	R779N1100(1)00(2)
900	2000	0.0012	6.0	15.0	26.5	22.5	9500	3800 E4	779N1120(1)00(2)	R779N1120(1)00(2)
900	2000	0.0015	6.0	15.0	26.5	22.5	9500	3800 E4	779N1150(1)00(2)	R779N1150(1)00(2)
900	2000	0.0018	6.0	15.0	26.5	22.5	9500	3800 E4	779N1180(1)00(2)	R779N1180(1)00(2)
900	2000	0.0022	6.0	15.0	26.5	22.5	9500	3800 E4	779N1220(1)00(2)	R779N1220(1)00(2)
900	2000	0.0027	6.0	15.0	26.5	22.5	9500	3800 E4	779N1270(1)00(2)	R779N1270(1)00(2)
900	2000	0.0033	6.0	15.0	26.5	22.5	9500	3800 E4	779N1330(1)00(2)	R779N1330(1)00(2)
900	2000	0.0039	6.0	15.0	26.5	22.5	9500	3800 E4	779N1390(1)00(2)	R779N1390(1)00(2)
900	2000	0.0047	6.0	15.0	26.5	22.5	9500	3800 E4	779N1470(1)00(2)	R779N1470(1)00(2)
900	2000	0.0056	6.0	15.0	26.5	22.5	9500	3800 E4	779N1560(1)00(2)	R779N1560(1)00(2)
900	2000	0.0068	7.0	16.0	26.5	22.5	9500	3800 E4	779N1680(1)00(2)	R779N1680(1)00(2)
900	2000	0.0082	7.0	16.0	26.5	22.5	9500	3800 E4	779N1820(1)00(2)	R779N1820(1)00(2)
900	2000	0.010	8.5	17.0	26.5	22.5	9500	3800 E4	779N2100(1)00(2)	R779N2100(1)00(2)
900	2000	0.012	10.0	18.5	26.5	22.5	9500	3800 E4	779N2120(1)00(2)	R779N2120(1)00(2)
900	2000	0.015	10.0	18.5	26.5	22.5	9500	3800 E4	779N2150(1)00(2)	R779N2150(1)00(2)
900	2000	0.018	11.0	20.0	26.5	22.5	9500	3800 E4	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 required the selection SnAuCu (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°C – 221°C for the new alloys. As a result, the heat stress to components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (melting point of polypropylene is 160°C – 170°C). Wave soldering can be destructive especially for mechanically small polypropylene capacitors and great care must be taken during soldering. The solder profiles from KEMET are highly recommended. You may also refer to the wave soldering curve from IEC Publication 61760–1 Edition 2. Please consult KEMET with any questions.



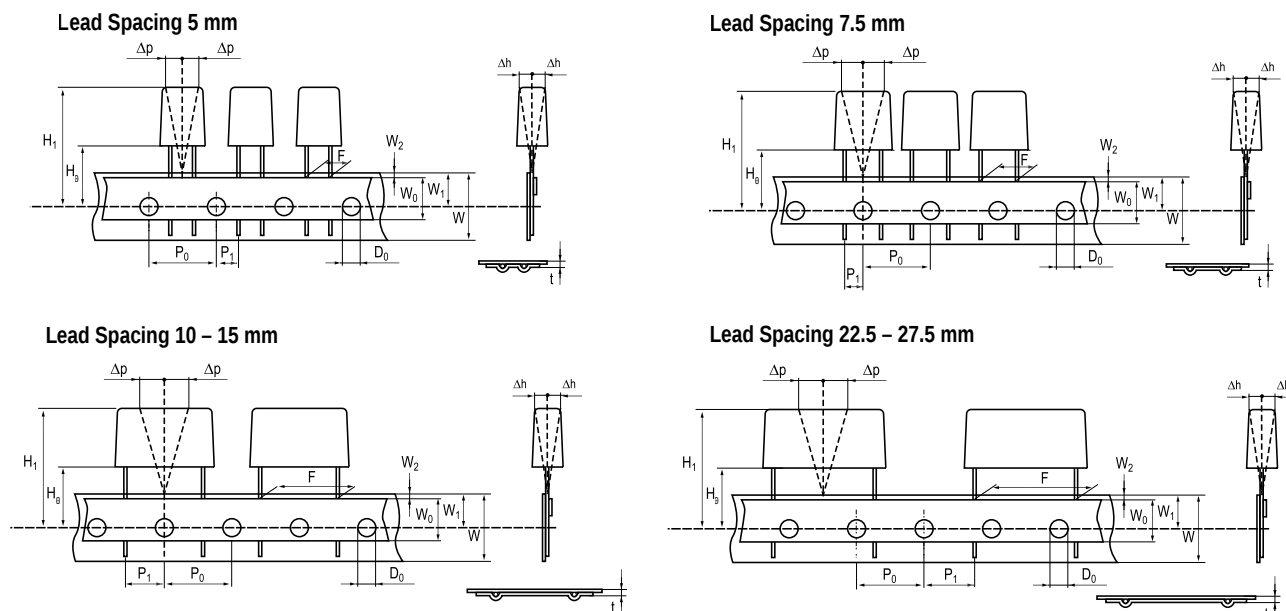
Marking

- KEMET's logo
- Series
- Dielectric code (MKP)
- Capacitance
- Capacitance tolerance
- Rated AC voltage
- 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	Pizza
15	4	10	18	2500	1500	750	1500	1000	1411
	5	11	18	1000	1250	600	1250	800	1139
	6	12	18	1750	1000	500	1000	680	935
	7.5	13.5	18	1000	800	350	800	500	748
	6	17.5	18	1000	800	500	1000	680	935
	7.5	14.5	18	1000	750	350	800	500	748
	8.5	14.5	18	1000	650	300	700	440	663
	9	12.5	18	1000	700	270	650	410	629
	7.5	18.5	18	900	600	350	800	500	748
	10	16	18	750	550	300	600	380	561
	13	12	18	750	520	200	480	280	425
	11	19	18	450	400	250	500	340	510
22.5	6	15	26.5	1404	702	300	700	464	660
	7	16	26.5	1188	594	250	550	380	564
	8.5	17	26.5	972	486	250	450	280	468
	10	18.5	26.5	810	405	160	350	235	396
	11	20	26.5	630	378	190	350	217	360
	13	22	26.5	540	324	150	300	200	300
27.5	9	17	32	816	408		450		
	10	20	32	600	360		350		
	11	20	32	560	336		350		
	13	22	32	480	288		300		
	13	25	32	480	288				
	14	28	32	352	176				
	15	24.5	32	400	240				
	18	33	32	256	128				
	22	37	32	168	112				

Lead Taping & Packaging (IEC 60286-2)



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	P^1
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.

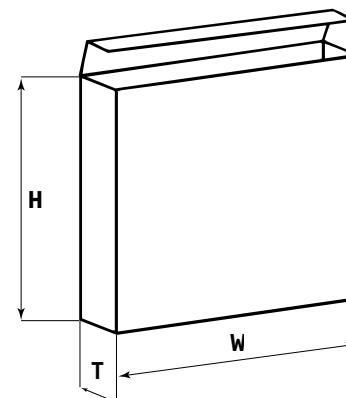
(2) 16.5 mm available on request.

(3) 15 mm available on request ($F \geq 10$ mm).

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

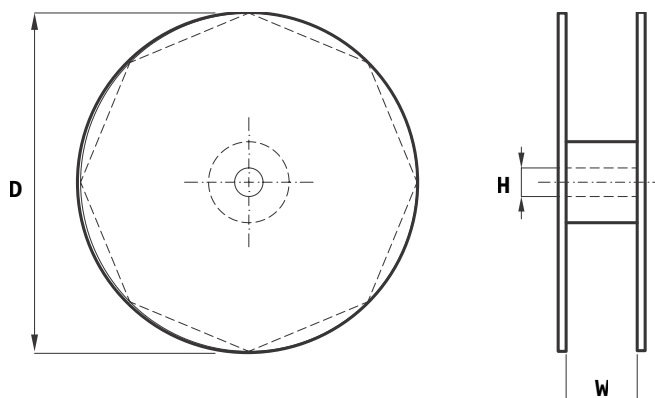
Ammo Specifications

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	55 (Max)
F5A, F5B, F5D		25	
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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Central

Novi, MI
Tel: 248-994-1030

West

Milpitas, CA
Tel: 408-433-9950

Mexico

Guadalajara, Jalisco
Tel: 52-33-3123-2141

Europe

Southern Europe

Paris, France
Tel: 33-1-4646-1006

Sasso Marconi, Italy
Tel: 39-051-939111

Central Europe

Landsberg, Germany
Tel: 49-8191-3350800

Kamen, Germany
Tel: 49-2307-438110

Northern Europe

Bishop's Stortford, United Kingdom
Tel: 44-1279-460122

Espoo, Finland
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Asia

Northeast Asia

Hong Kong
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Shenzhen, China
Tel: 86-755-2518-1306

Beijing, China
Tel: 86-10-5829-1711

Shanghai, China
Tel: 86-21-6447-0707

Taipei, Taiwan
Tel: 886-2-27528585

Southeast Asia

Singapore
Tel: 65-6586-1900

Penang, Malaysia
Tel: 60-4-6430200

Bangalore, India
Tel: 91-806-53-76817

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Other KEMET Resources

Tools	
Resource	Location
Configure A Part: CapEdge	http://capacitoredge.kemet.com
SPICE & FIT Software	http://www.kemet.com/spice
Search Our FAQs: KnowledgeEdge	http://www.kemet.com/keask
Electrolytic LifeCalculator	http://www.kemet.com:8080/elc

Product Information	
Resource	Location
Products	http://www.kemet.com/products
Technical Resources (Including Soldering Techniques)	http://www.kemet.com/technicalpapers
RoHS Statement	http://www.kemet.com/rohs
Quality Documents	http://www.kemet.com/qualitydocuments

Product Request	
Resource	Location
Sample Request	http://www.kemet.com/sample
Engineering Kit Request	http://www.kemet.com/kits

Contact	
Resource	Location
Website	www.kemet.com
Contact Us	http://www.kemet.com/contact
Investor Relations	http://www.kemet.com/ir
Call Us	1-877-MyKEMET
Twitter	http://twitter.com/kemetcapacitors

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