General Purpose, Pulse and DC Transient Suppression

R74 Series 125°C Single Metallized Polypropylene Film, Optimized for AC Applications

The Capacitance Company
KEMET
CHARGED.

Overview

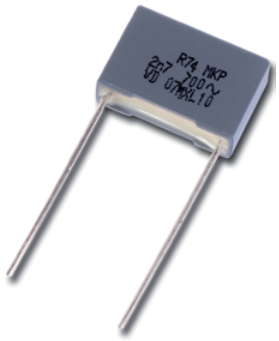
The R74 Series is a metallized polypropylene film encapsulated with self-extinguishing resin in a box of material meeting the requirements of UL 94 V–0.

Applications

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

Benefits

- Rated voltage: 1,600 – 2,000 VDC
- Rated voltage: 500 – 700 VAC
- Capacitance range: 0.00068 – 0.1 µF
- Lead spacing: 10 – 22.5 mm
- Capacitance tolerance: ±5%, ±10%
- Climatic category: 55/125/56, 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 +125˚C



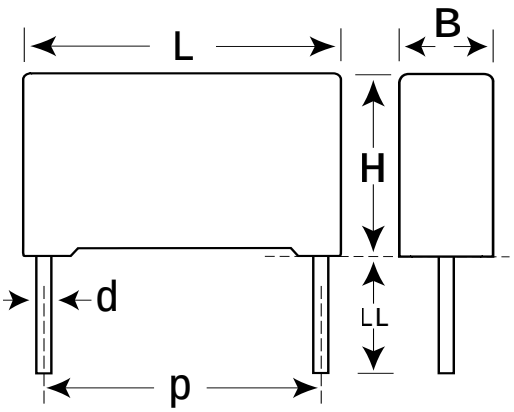
Part Number System

R74	5	F	1100	AA	H	0	J
Series	Rated Voltage (VAC)	Lead Spacing (mm)	Capacitance Code (pF)	Lead and Packaging Code	Dimensions and Electrical Characteristics	Internal Use	Capacitance Tolerance
Metallized Polypropylene	5 = 500 7 = 700	F = 10.0 I = 15.0 N = 22.5	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	H = 125ºC	0 (Standard)	J = ±5% K = ±10%

Ordering Options Table

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

Dimensions – Millimeters



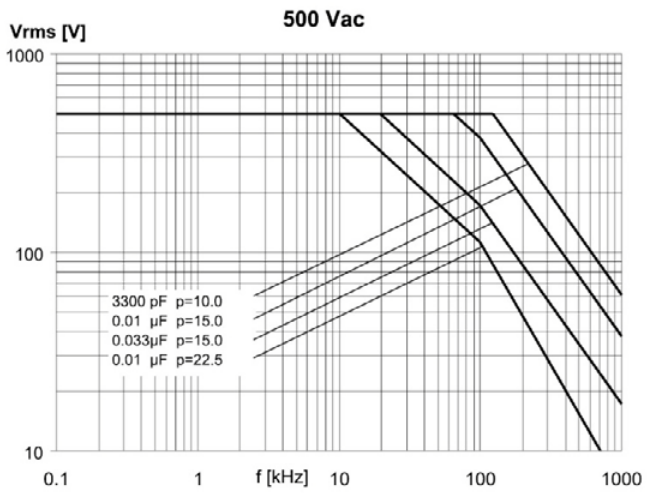
p		B		H		L		d	
Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance
10	+/-0.4	4	+0.2/-0	9	+0.1/-0	13	+0.2/-0	0.6	+/-0.05
10	+/-0.4	5	+0.2/-0	11	+0.1/-0	13	+0.2/-0	0.6	+/-0.05
10	+/-0.4	6	+0.2/-0	12	+0.1/-0	13	+0.2/-0	0.6	+/-0.05
15	+/-0.4	4	+0.2/-0	10	+0.1/-0	18	+0.3/-0	0.8	+/-0.05
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	9	+0.2/-0	12.5	+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
15	+/-0.4	11	+0.2/-0	19	+0.1/-0	18	+0.5/-0	0.8	+/-0.05
15	+/-0.4	13	+0.2/-0	12	+0.1/-0	18	+0.5/-0	0.8	+/-0.05
15	+/-0.4	13	+0.2/-0	12	+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
22.5	+/-0.4	13	+0.2/-0	22	+0.1/-0	26.5	+0.3/-0	0.8	+/-0.05

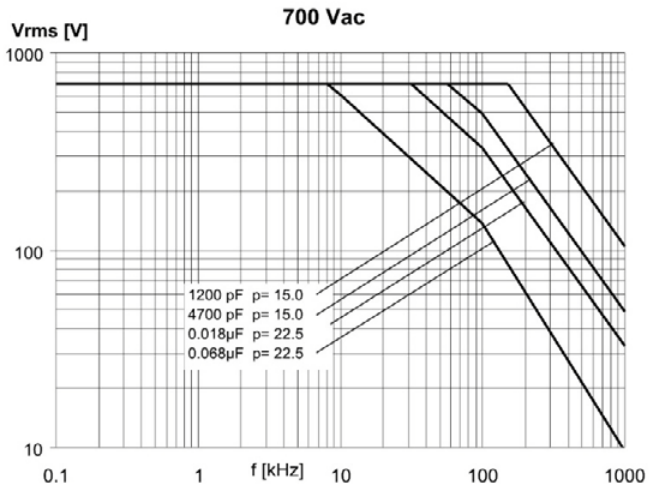
Note: See Ordering Options Table for lead length (LL) options.

Performance Characteristics

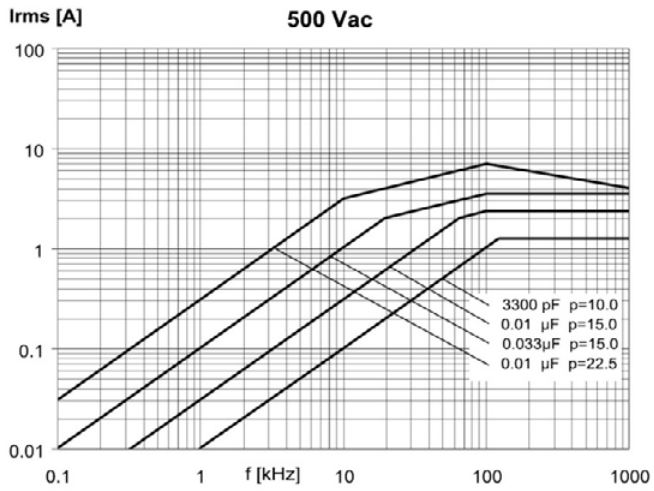
Series	R74		R74	
Sections	2		3	
Voltage Range (VDC)	1,600		2,000	
Voltage Range (VAC)	500		700	
Capacitance Range (µF)	0.001 – 0.1		0.00068 – 0.068	
Capacitance Values	In accordance with IEC E12 series			
Capacitance Tolerance	±5%, ±10%			
Category Temperature Range	-55°C to +125°C			
Voltage Derating	The rated voltage is decreased with 1.25%/°C between +105°C and +125°C			
Climatic Category	IEC 60068–1, 55/125/56			
Self-Inductance L (Lead Length ~ 2 mm)	Lead Space (mm)	10	15	22.5
	L (nH) ≈	9	10	18
Dissipation Factor tanδ	Measured at 25°C ± 5°C			
		C ≤ 2.2 nF	2.2 nF < C ≤ 0.027 µF	0.027 µF < C ≤ 0.1 µF
	1 kHz	0.0001	0.0001	0.0004
	10 kHz	0.0002	0.0002	0.0006
	100 kHz	0.0003	0.0008	0.0025
Insulation Resistance	Measured at +25°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	
Test Voltage Between Terminals	1.0 x V_R applied for 2 seconds at 25°C ±5°C			

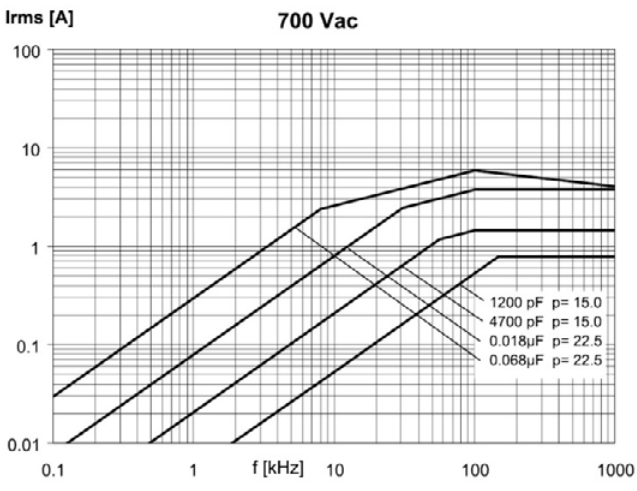
Maximum Voltage (V_{rms}) vs. Frequency (Sinusoidal Waveform/T ≤ 85ºC)





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





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.

RoHS Compliant

Table 1 – Ratings & Part Number Reference

VDC	VAC	Cap 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					
1600	500	0.001	4.0	9.0	13.0	10.0	6000	1.28 E7	745F1100(1)H0(2)	R745F1100(1)H0(2)
1600	500	0.0012	4.0	9.0	13.0	10.0	6000	1.28 E7	745F1120(1)H0(2)	R745F1120(1)H0(2)
1600	500	0.0015	4.0	9.0	13.0	10.0	6000	1.28 E7	745F1150(1)H0(2)	R745F1150(1)H0(2)
1600	500	0.0018	5.0	11.0	13.0	10.0	6000	1.28 E7	745F1180(1)H0(2)	R745F1180(1)H0(2)
1600	500	0.0022	5.0	11.0	13.0	10.0	6000	1.28 E7	745F1220(1)H0(2)	R745F1220(1)H0(2)
1600	500	0.0027	5.0	11.0	13.0	10.0	6000	1.28 E7	745F1270(1)H0(2)	R745F1270(1)H0(2)
1600	500	0.0033	6.0	12.0	13.0	10.0	6000	1.28 E7	745F1330(1)H0(2)	R745F1330(1)H0(2)
1600	500	0.0039	6.0	12.0	13.0	10.0	6000	1.28 E7	745F1390(1)H0(2)	R745F1390(1)H0(2)
1600	500	0.0027	4.0	10.0	18.0	15.0	4500	8.00 E6	745I1270(1)H3(2)	R745I1270(1)H3(2)
1600	500	0.0033	4.0	10.0	18.0	15.0	4500	8.00 E6	745I1330(1)H3(2)	R745I1330(1)H3(2)
1600	500	0.0039	4.0	10.0	18.0	15.0	4500	8.00 E6	745I1390(1)H3(2)	R745I1390(1)H3(2)
1600	500	0.0047	5.0	11.0	18.0	15.0	4500	8.00 E6	745I1470(1)H0(2)	R745I1470(1)H0(2)
1600	500	0.0056	5.0	11.0	18.0	15.0	4500	8.00 E6	745I1560(1)H0(2)	R745I1560(1)H0(2)
1600	500	0.0068	6.0	12.0	18.0	15.0	4500	8.00 E6	745I1680(1)H0(2)	R745I1680(1)H0(2)
1600	500	0.0082	6.0	12.0	18.0	15.0	4500	8.00 E6	745I1820(1)H0(2)	R745I1820(1)H0(2)
1600	500	0.010	6.0	12.0	18.0	15.0	4500	8.00 E6	745I2100(1)H0(2)	R745I2100(1)H0(2)
1600	500	0.012	7.5	13.5	18.0	15.0	4500	8.00 E6	745I2120(1)H0(2)	R745I2120(1)H0(2)
1600	500	0.015	7.5	13.5	18.0	15.0	4500	8.00 E6	745I2150(1)H0(2)	R745I2150(1)H0(2)
1600	500	0.015	13.0	12.0	18.0	15.0	4500	8.00 E6	745I2150(1)H1(2)	R745I2150(1)H1(2)
1600	500	0.018	8.5	14.5	18.0	15.0	4500	8.00 E6	745I2180(1)H0(2)	R745I2180(1)H0(2)
1600	500	0.018	13.0	12.0	18.0	15.0	4500	8.00 E6	745I2180(1)H1(2)	R745I2180(1)H1(2)
1600	500	0.022	10.0	16.0	18.0	15.0	4500	8.00 E6	745I2220(1)H0(2)	R745I2220(1)H0(2)
1600	500	0.022	13.0	12.0	18.0	15.0	4500	8.00 E6	745I2220(1)H1(2)	R745I2220(1)H1(2)
1600	500	0.027	10.0	16.0	18.0	15.0	4500	8.00 E6	745I2270(1)H0(2)	R745I2270(1)H0(2)
1600	500	0.033	11.0	19.0	18.0	15.0	4500	8.00 E6	745I2330(1)H0(2)	R745I2330(1)H0(2)
1600	500	0.018	6.0	15.0	26.5	22.5	1200	3.84 E6	745N2180(1)H0(2)	R745N2180(1)H0(2)
1600	500	0.022	6.0	15.0	26.5	22.5	1200	3.84 E4	745N2220(1)H0(2)	R745N2220(1)H0(2)
1600	500	0.027	7.0	16.0	26.5	22.5	1200	3.84 E4	745N2270(1)H0(2)	R745N2270(1)H0(2)
1600	500	0.033	7.0	16.0	26.5	22.5	1200	3.84 E4	745N2330(1)H0(2)	R745N2330(1)H0(2)
1600	500	0.039	8.5	17.0	26.5	22.5	1200	3.84 E4	745N2390(1)H0(2)	R745N2390(1)H0(2)
1600	500	0.047	10.0	18.5	26.5	22.5	1200	3.84 E4	745N2470(1)H0(2)	R745N2470(1)H0(2)
1600	500	0.056	10.0	18.5	26.5	22.5	1200	3.84 E4	745N2560(1)H0(2)	R745N2560(1)H0(2)
1600	500	0.068	11.0	20.0	26.5	22.5	1200	3.84 E4	745N2680(1)H0(2)	R745N2680(1)H0(2)
1600	500	0.082	13.0	22.0	26.5	22.5	1200	3.84 E4	745N2820(1)H0(2)	R745N2820(1)H0(2)
1600	500	0.10	13.0	22.0	26.5	22.5	1200	3.84 E4	745N3100(1)H0(2)	R745N3100(1)H0(2)
2000	700	0.00068	4.0	10.0	18.0	15.0	9500	960 E4	747I0680(1)H3(2)	R747I0680(1)H3(2)
2000	700	0.00082	4.0	10.0	18.0	15.0	9500	960 E4	747I0820(1)H3(2)	R747I0820(1)H3(2)
2000	700	0.001	4.0	10.0	18.0	15.0	9500	960 E4	747I1100(1)H3(2)	R747I1100(1)H3(2)
2000	700	0.0012	4.0	10.0	18.0	15.0	9500	960 E4	747I1120(1)H3(2)	R747I1120(1)H3(2)
2000	700	0.0013	4.0	10.0	18.0	15.0	9500	960 E4	747I1130(1)H3(2)	R747I1130(1)H3(2)
2000	700	0.0018	4.0	10.0	18.0	15.0	9500	960 E4	747I1180(1)H3(2)	R747I1180(1)H3(2)
2000	700	0.0022	4.0	10.0	18.0	15.0	9500	960 E4	747I1220(1)H3(2)	R747I1220(1)H3(2)
2000	700	0.0025	4.0	10.0	18.0	15.0	9500	960 E4	747I1250(1)H3(2)	R747I1250(1)H3(2)
2000	700	0.0027	5.0	11.0	18.0	15.0	9500	960 E4	747I1270(1)H0(2)	R747I1270(1)H0(2)
2000	700	0.0033	5.0	11.0	18.0	15.0	9500	960 E4	747I1330(1)H0(2)	R747I1330(1)H0(2)
2000	700	0.0036	6.0	12.0	18.0	15.0	9500	960 E4	747I1360(1)H0(2)	R747I1360(1)H0(2)
2000	700	0.0039	6.0	12.0	18.0	15.0	9500	960 E4	747I1390(1)H0(2)	R747I1390(1)H0(2)
2000	700	0.0043	6.0	12.0	18.0	15.0	9500	960 E4	747I1430(1)H0(2)	R747I1430(1)H0(2)
2000	700	0.0047	6.0	12.0	18.0	15.0	9500	960 E4	747I1470(1)H0(2)	R747I1470(1)H0(2)
2000	700	0.0052	6.0	12.0	18.0	15.0	9500	960 E4	747I1520(1)H0(2)	R747I1520(1)H0(2)
2000	700	0.0056	6.0	12.0	18.0	15.0	9500	960 E4	747I1560(1)H0(2)	R747I1560(1)H0(2)
2000	700	0.0062	7.5	13.5	18.0	15.0	9500	960 E4	747I1620(1)H0(2)	R747I1620(1)H0(2)
2000	700	0.0068	7.5	13.5	18.0	15.0	9500	960 E4	747I1680(1)H0(2)	R747I1680(1)H0(2)
2000	700	0.0082	7.5	13.5	18.0	15.0	9500	960 E4	747I1820(1)H0(2)	R747I1820(1)H0(2)
2000	700	0.0082	9.0	12.5	18.0	15.0	9500	960 E4	747I1820(1)H1(2)	R747I1820(1)H1(2)
2000	700	0.010	8.5	14.5	18.0	15.0	9500	960 E4	747I2100(1)H0(2)	R747I2100(1)H0(2)
2000	700	0.010	13.0	12.0	18.0	15.0	9500	960 E4	747I2100(1)H1(2)	R747I2100(1)H1(2)
2000	700	0.012	10.0	16.0	18.0	15.0	9500	960 E4	747I2120(1)H0(2)	R747I2120(1)H0(2)
2000	700	0.012	13.0	12.0	18.0	15.0	9500	960 E4	747I2120(1)H1(2)	R747I2120(1)H1(2)
2000	700	0.015	10.0	16.0	18.0	15.0	9500	960 E4	747I2150(1)H0(2)	R747I2150(1)H0(2)
VDC	**VAC**	**Cap 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%.

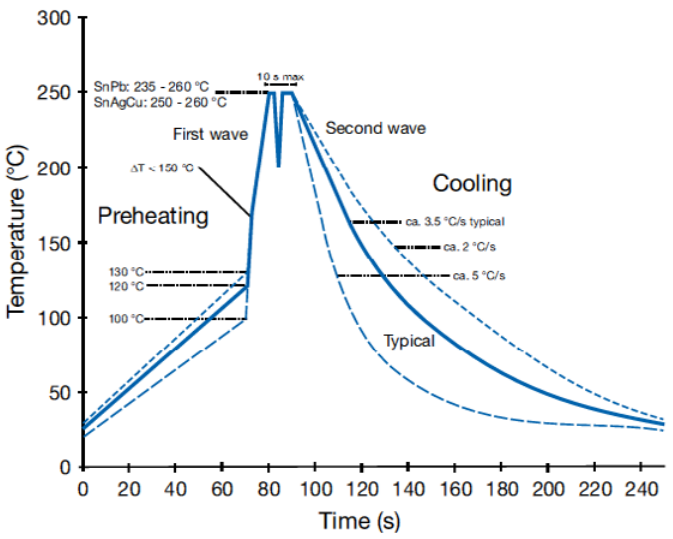
Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap 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					
2000	700	0.018	11.0	19.0	18.0	15.0	9500	960 E4	747I2180(1)H0(2)	R747I2180(1)H0(2)
2000	700	0.0062	6.0	15.0	26.5	22.5	4500	420 E4	747N1620(1)H0(2)	R747N1620(1)H0(2)
2000	700	0.0068	6.0	15.0	26.5	22.5	4500	420 E4	747N1680(1)H0(2)	R747N1680(1)H0(2)
2000	700	0.0075	6.0	15.0	26.5	22.5	4500	420 E4	747N1750(1)H0(2)	R747N1750(1)H0(2)
2000	700	0.0082	6.0	15.0	26.5	22.5	4500	420 E4	747N1820(1)H0(2)	R747N1820(1)H0(2)
2000	700	0.010	6.0	15.0	26.5	22.5	4500	420 E4	747N2100(1)H0(2)	R747N2100(1)H0(2)
2000	700	0.012	6.0	15.0	26.5	22.5	4500	420 E4	747N2120(1)H0(2)	R747N2120(1)H0(2)
2000	700	0.015	6.0	15.0	26.5	22.5	4500	420 E4	747N2150(1)H0(2)	R747N2150(1)H0(2)
2000	700	0.018	7.0	16.0	26.5	22.5	4500	420 E4	747N2180(1)H0(2)	R747N2180(1)H0(2)
2000	700	0.022	8.5	17.0	26.5	22.5	4500	420 E4	747N2220(1)H0(2)	R747N2220(1)H0(2)
2000	700	0.027	8.5	17.0	26.5	22.5	4500	420 E4	747N2270(1)H0(2)	R747N2270(1)H0(2)
2000	700	0.033	10.0	18.5	26.5	22.5	4500	420 E4	747N2330(1)H0(2)	R747N2330(1)H0(2)
2000	700	0.039	10.0	18.5	26.5	22.5	4500	420 E4	747N2390(1)H0(2)	R747N2390(1)H0(2)
2000	700	0.047	11.0	20.0	26.5	22.5	4500	420 E4	747N2470(1)H0(2)	R747N2470(1)H0(2)
2000	700	0.056	13.0	22.0	26.5	22.5	4500	420 E4	747N2560(1)H0(2)	R747N2560(1)H0(2)
2000	700	0.062	13.0	22.0	26.5	22.5	4500	420 E4	747N2620(1)H0(2)	R747N2620(1)H0(2)
2000	700	0.068	13.0	22.0	26.5	22.5	4500	420 E4	747N2680(1)H0(2)	R747N2680(1)H0(2)
VDC	**VAC**	**Cap 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 required the selection SnAuCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183ºC for SnPb eutectic alloy to 217ºC – 221ºC 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 160ºC – 170ºC). 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.



Roll Over for Order Info.

Marking

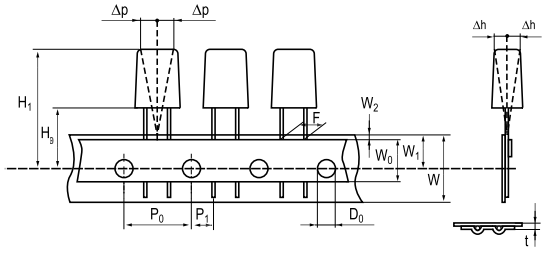
- KEMET's logo
- Series
- Dielectric code MKP
- Capacitance
- Capacitance tolerance
- Rated AC voltage
- Manufacturing date code

Packaging Quantities

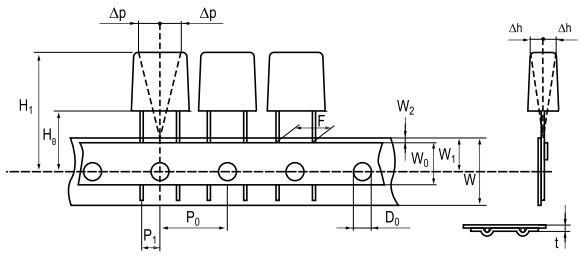
Lead Spacing	Thickness (mm)	Height (mm)	Length (mm)	Bulk Short Leads	Bulk Long Leads	Standard Reel ø 355 mm	Large Reel ø 500 mm	Ammo	Pizza
10	4	9	13	2000	2200	750	1500	1000	
	5	11	13	1300	2000	600	1250	800	
	6	12	13	1000	1800	500	1000	680	
15	4	10	18	2500	1500	750	1500	1000	1411
	5	11	18	1000	1250	600	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

Lead Taping & Packaging (IEC 60286–2)

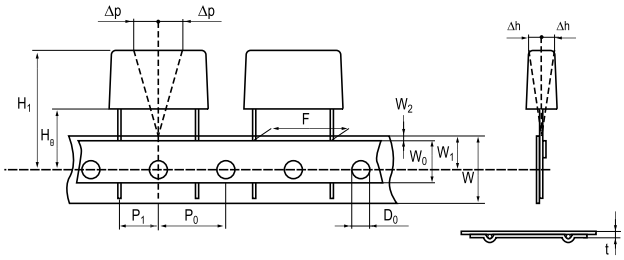
Lead Spacing 5 mm



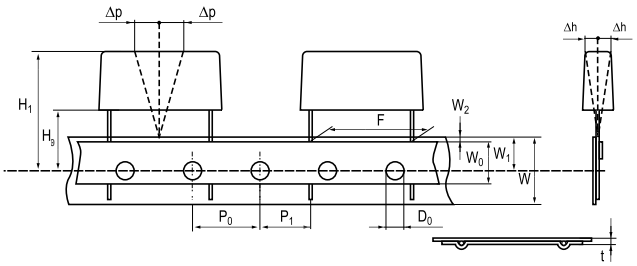
Lead Spacing 7.5 mm



Lead Spacing 10 – 15 mm



Lead Spacing 22.5 – 27.5 mm



Taping Specification

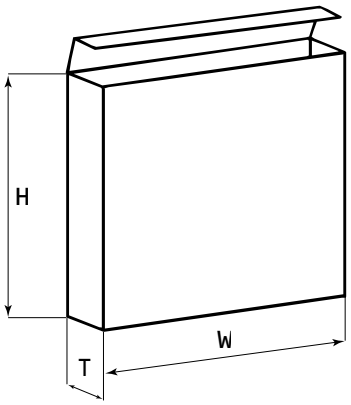
Dimensions in mm									Standard IEC 60286–2
Lead spacing	+6/-0.1	F	5	7.5	10	15	22.5	27.5	F
Carrier tape width	+1/-0.5	W	18	18	18	18	18	18	$18^{+1/-0.5}$
Hold-down tape width	Minimum	W_0	6	6	9	10	10	10	
Position of sprocket hole	+/-0.5	W_1	9	9	9	9	9	9	$9^{+0.75/-0.5}$
Distance between tapes	Maximum	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	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 ≥ 10 mm).

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

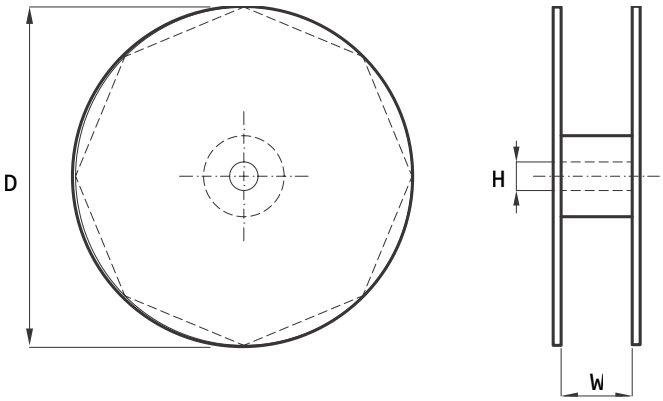
Ammo Specifications

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 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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Wilmington, MA
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Novi, MI
Tel: 248-994-1030

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Milpitas, CA
Tel: 408-433-9950

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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
Tel: 358-9-5406-5000

Asia

Northeast Asia
Hong Kong
Tel: 852-2305-1168

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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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.

Digitally signed by Jeannette Calvo
DN: c=US, st=FL, l=Fort Lauderdale, o=KEMET Corp., ou=Marketing Communications, cn=Jeannette Calvo, email=jeannettecalvo@kemet.com
Date: 2013.04.08 12:30:51 -04'00'