General Purpose, Pulse and DC Transient Suppression

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

Overview

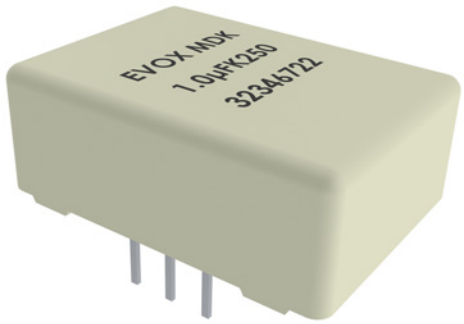
Dual in-line (DIL) metallized polyester (PET) film capacitor is encapsulated in a self-extinguishing material, meeting the requirements of UL 94 V–0.

Applications

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

Benefits

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



Customer Part Number

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

KEMET Internal Part Number

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

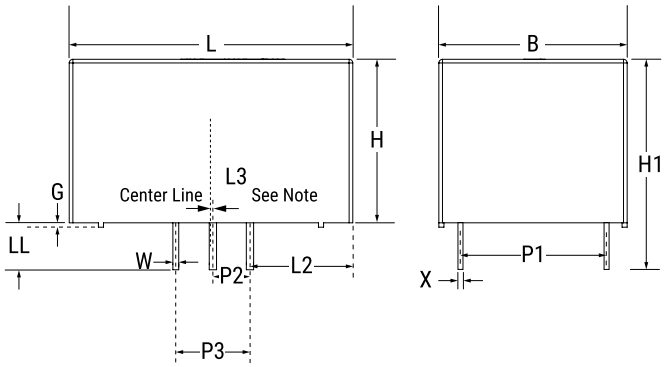
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Ordering Options Table

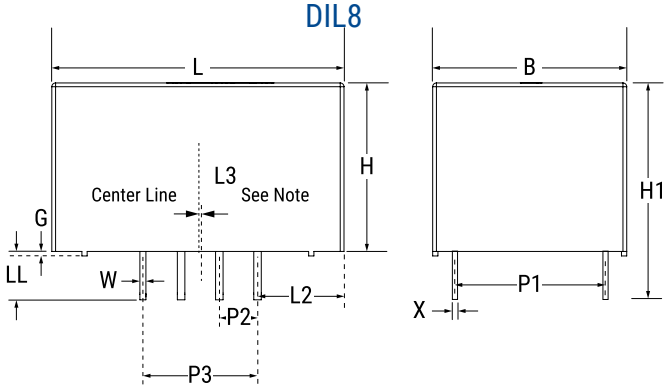
Packaging Type		KEMET Packaging Code	Legacy Packaging Code
Standard Packaging Options			
Bulk (Tube)		T	TUBE
Case Size A53	Tape & Reel (Standard Reel)	VV687	TR32

Dimensions – Millimeters

DIL6



DIL8

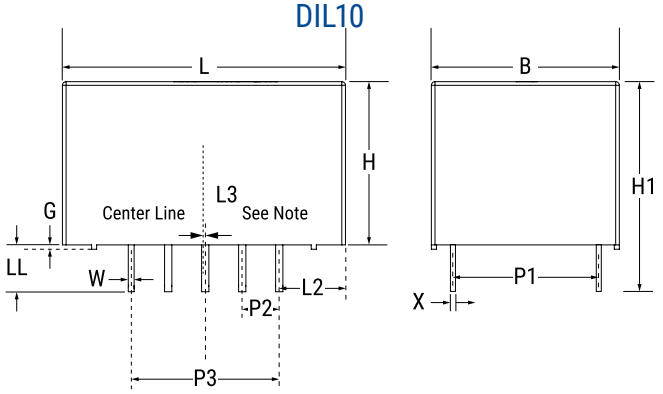


Legacy Size Code	Leads per Side	P1	P2	P3(1)	B	H	L	H1	L2	L3(2)	W	X	LL	G
		±0.2	±0.2	±0.2	±0.2	±0.2	±0.2	+1	±0.2	Maximum	±0.05	±0.05	+1	Maximum
A52	3	10.0	2.54	5.08	12.2	5.75	11.0	9.25	2.96	0.2	0.5	0.35	3.5	0.3
A53	3	10.0	2.54	5.08	12.7	8.5	14.0	12.20	4.46	0.2	0.5	0.35	3.7	0.5
A54	3	10.0	2.54	5.08	12.2	5.75	13.5	9.25	4.21	0.2	0.5	0.35	3.5	0.3
A55	3	10.0	2.54	5.08	12.2	5.75	16.5	9.25	5.71	0.2	0.5	0.35	3.5	0.3
B53	3	15.0	2.54	5.08	16.5	5.75	11.0	9.25	2.96	0.2	0.5	0.35	3.5	0.3
B55	3	15.0	2.54	5.08	16.5	5.75	12.2	9.25	3.56	0.2	0.5	0.35	3.5	0.3
A53	4	10.0	2.54	7.62	12.7	8.5	14.0	12.20	3.19	0.2	0.5	0.35	3.7	0.5
A54	4	10.0	2.54	7.62	12.2	5.75	13.5	9.25	2.94	0.2	0.5	0.35	3.5	0.3
A55	4	10.0	2.54	7.62	12.2	5.75	16.5	9.25	4.44	0.2	0.5	0.35	3.5	0.3
B55	4	15.0	2.54	7.62	16.5	5.75	12.2	9.25	2.29	0.2	0.5	0.35	3.5	0.3
A55	5	10.0	2.54	10.16	12.2	5.75	16.5	9.25	3.17	0.2	0.5	0.35	3.5	0.3
A58	7	10.0	2.54	15.24	12.7	10.5	23.0	14.20	3.88	0.2	0.5	0.35	3.7	0.5
A58	8	10.0	2.54	17.78	12.7	10.5	23.0	14.20	2.61	0.2	0.5	0.35	3.7	0.5

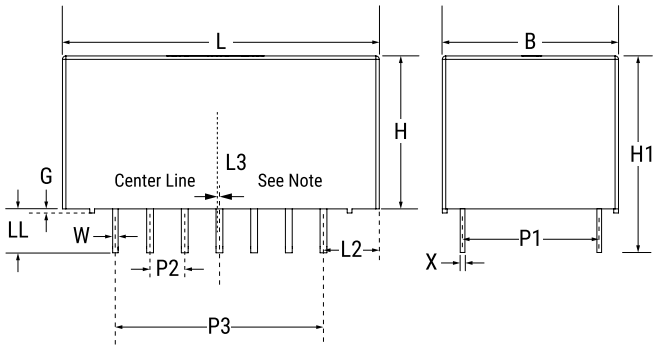
(1) P3 represents the cumulative tolerance of all leads.
(2) L3 represents the extent to which the center line of the leads misaligns with the center line of the body. Dimension shown is the maximum such misalignment allowed.

Dimensions – Millimeters cont.

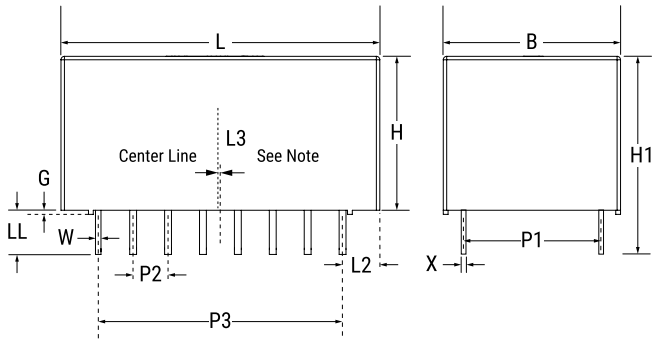
DIL10



DIL14



DIL16



Legacy Size Code	Leads per Side	P1	P2	P3(1)	B	H	L	H1	L2	L3(2)	W	X	LL	G
		±0.2	±0.2	±0.2	±0.2	±0.2	±0.2	+1	±0.2	Maximum	±0.05	±0.05	+1	Maximum
A52	3	10.0	2.54	5.08	12.2	5.75	11.0	9.25	2.96	0.2	0.5	0.35	3.5	0.3
A53	3	10.0	2.54	5.08	12.7	8.5	14.0	12.20	4.46	0.2	0.5	0.35	3.7	0.5
A54	3	10.0	2.54	5.08	12.2	5.75	13.5	9.25	4.21	0.2	0.5	0.35	3.5	0.3
A55	3	10.0	2.54	5.08	12.2	5.75	16.5	9.25	5.71	0.2	0.5	0.35	3.5	0.3
B53	3	15.0	2.54	5.08	16.5	5.75	11.0	9.25	2.96	0.2	0.5	0.35	3.5	0.3
B55	3	15.0	2.54	5.08	16.5	5.75	12.2	9.25	3.56	0.2	0.5	0.35	3.5	0.3
A53	4	10.0	2.54	7.62	12.7	8.5	14.0	12.20	3.19	0.2	0.5	0.35	3.7	0.5
A54	4	10.0	2.54	7.62	12.2	5.75	13.5	9.25	2.94	0.2	0.5	0.35	3.5	0.3
A55	4	10.0	2.54	7.62	12.2	5.75	16.5	9.25	4.44	0.2	0.5	0.35	3.5	0.3
B55	4	15.0	2.54	7.62	16.5	5.75	12.2	9.25	2.29	0.2	0.5	0.35	3.5	0.3
A55	5	10.0	2.54	10.16	12.2	5.75	16.5	9.25	3.17	0.2	0.5	0.35	3.5	0.3
A58	7	10.0	2.54	15.24	12.7	10.5	23.0	14.20	3.88	0.2	0.5	0.35	3.7	0.5
A58	8	10.0	2.54	17.78	12.7	10.5	23.0	14.20	2.61	0.2	0.5	0.35	3.7	0.5

(1) P3 represents the cumulative tolerance of all leads.
(2) L3 represents the extent to which the center line of the leads misaligns with the center line of the body. Dimension shown is the maximum such misalignment allowed.

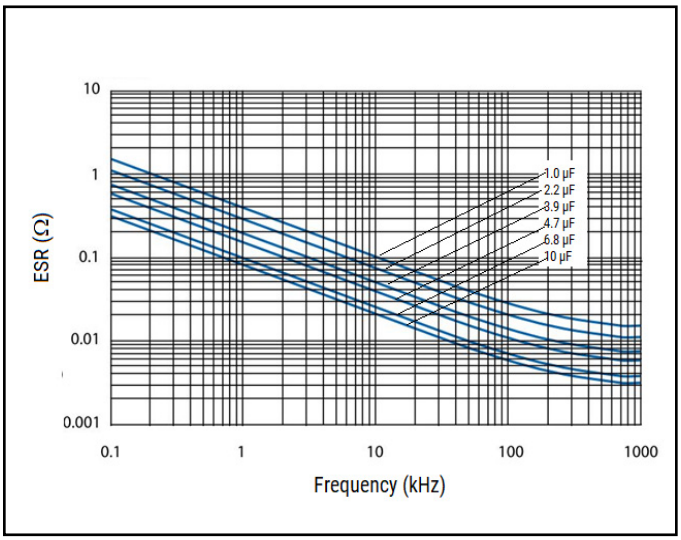
Performance Characteristics

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

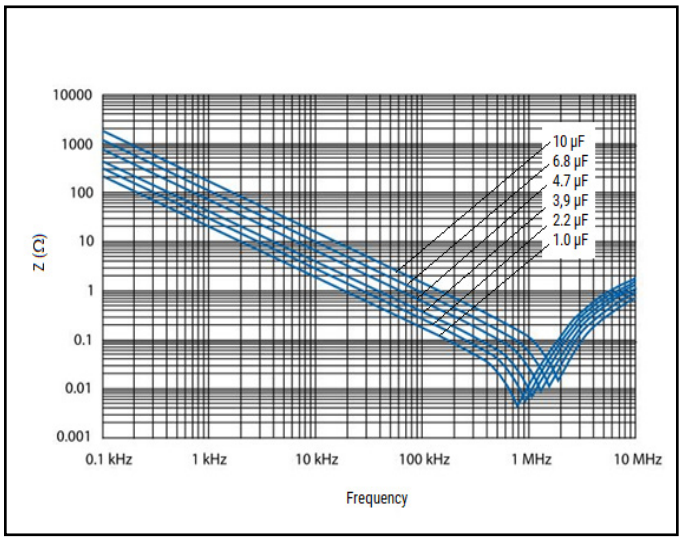
Environmental Compliance

All KEMET surface mount capacitors are RoHS compliant.

ESR vs. Frequency



Impedance vs. Frequency



Maximum V_{rms} (V) vs. Frequency

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

Maximum I_{rms} (V) vs. Frequency

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

Table 1 – Ratings & Part Number Reference

VDC	VAC	Cap Value (µF)	Size Code (New/ Legacy)	Dimensions in mm			Lead Spacing (p)	ESR 500 kHz (mΩ)	New KEMET Part Number	Legacy Part Number
				B	H	L				
50	30	0.033	AA/A52	12.2	5.75	11.0	10	390	F683AA333(1)050T	MDK10333(1)50A52P3TUBE
50	30	0.039	AA/A52	12.2	5.75	11.0	10	330	F683AA393(1)050T	MDK10393(1)50A52P3TUBE
50	30	0.047	AA/A52	12.2	5.75	11.0	10	270	F683AA473(1)050T	MDK10473(1)50A52P3TUBE
50	30	0.056	AA/A52	12.2	5.75	11.0	10	230	F683AA563(1)050T	MDK10563(1)50A52P3TUBE
50	30	0.068	AA/A52	12.2	5.75	11.0	10	190	F683AA683(1)050T	MDK10683(1)50A52P3TUBE
50	30	0.082	AA/A52	12.2	5.75	11.0	10	160	F683AA823(1)050T	MDK10823(1)50A52P3TUBE
50	30	0.10	AA/A52	12.2	5.75	11.0	10	130	F683AA104(1)050T	MDK10104(1)50A52P3TUBE
50	30	0.12	AA/A52	12.2	5.75	11.0	10	110	F683AA124(1)050T	MDK10124(1)50A52P3TUBE
50	30	0.15	AA/A52	12.2	5.75	11.0	10	85	F683AA154(1)050T	MDK10154(1)50A52P3TUBE
50	30	0.18	AA/A52	12.2	5.75	11.0	10	70	F683AA184(1)050T	MDK10184(1)50A52P3TUBE
50	30	0.22	AA/A52	12.2	5.75	11.0	10	58	F683AA224(1)050T	MDK10224(1)50A52P3TUBE
50	30	0.27	AA/A52	12.2	5.75	11.0	10	47	F683AA274(1)050T	MDK10274(1)50A52P3TUBE
50	30	0.33	AA/A52	12.2	5.75	11.0	10	39	F683AA334(1)050T	MDK10334(1)50A52P3TUBE
50	30	0.39	AA/A52	12.2	5.75	11.0	10	33	F683AA394(1)050T	MDK10394(1)50A52P3TUBE
50	30	0.47	AA/A52	12.2	5.75	11.0	10	30	F683AA474(1)050T	MDK10474(1)50A52P3TUBE
50	30	0.56	AA/A52	12.2	5.75	11.0	10	26	F683AA564(1)050T	MDK10564(1)50A52P3TUBE
50	30	0.68	AA/A52	12.2	5.75	11.0	10	21	F683AA684(1)050T	MDK10684(1)50A52P3TUBE
50	30	0.82	AA/A52	12.2	5.75	11.0	10	18	F683AA824(1)050T	MDK10824(1)50A52P3TUBE
50	30	1.0	AA/A52	12.2	5.75	11.0	10	15	F683AA105(1)050T	MDK10105(1)50A52P3TUBE
50	30	1.2	AA/A52	12.2	5.75	11.0	10	14	F683AA125(1)050T	MDK10125(1)50A52P3TUBE
50	30	1.5	AA/A52	12.2	5.75	11.0	10	13	F683AA155(1)050T	MDK10155(1)50A52P3TUBE
50	30	1.8	AA/A52	12.2	5.75	11.0	10	12	F683AA185(1)050T	MDK10185(1)50A52P3TUBE
50	30	2.2	AA/A52	12.2	5.75	11.0	10	11	F683AA225(1)050T	MDK10225(1)50A52P3TUBE
50	30	2.7	AA/A52	12.2	5.75	11.0	10	10	F683AA275(1)050T	MDK10275(1)50A52P3TUBE
50	30	3.3	AA/A52	12.2	5.75	11.0	10	8	F683AA335(1)050T	MDK10335(1)50A52P3TUBE
50	30	3.9	AA/A52	12.2	5.75	11.0	10	7	F683AA395(1)050T	MDK10395(1)50A52P3TUBE
50	30	4.7	AA/A52	12.2	5.75	11.0	10	6	F683AA475(1)050T	MDK10475(1)50A52P3TUBE
50	30	5.6	AA/A54	12.2	5.75	13.5	10	5	F68(2)AA565(1)050T	MDK10565(1)50A54P(2)TUBE
50	30	6.8	AA/A55	12.2	5.75	16.5	10	5	F68(3)AA685(1)050T	MDK10685(1)50A55P(3)TUBE
50	30	8.2	AA/A58	12.7	10.5	23.0	10	4	F68(4)AA825(1)050T	MDK10825(1)50A58P(4)TUBE
50	30	10	AA/A58	12.7	10.5	23.0	10	3	F68(4)AA106(1)050T	MDK10106(1)50A58P(4)TUBE
50	30	12	AA/A58	12.7	10.5	23.0	10	3	F68(4)AA126(1)050T	MDK10126(1)50A58P(4)TUBE
50	30	15	AA/A58	12.7	10.5	23.0	10	3	F68(4)AA156(1)050T	MDK10156(1)50A58P(4)TUBE
50	30	0.033	BA/B53	16.5	5.75	11.0	15	390	F683BA333(1)050T	MDK15333(1)50B53P3TUBE
50	30	0.039	BA/B53	16.5	5.75	11.0	15	330	F683BA393(1)050T	MDK15393(1)50B53P3TUBE
50	30	0.047	BA/B53	16.5	5.75	11.0	15	270	F683BA473(1)050T	MDK15473(1)50B53P3TUBE
50	30	0.056	BA/B53	16.5	5.75	11.0	15	230	F683BA563(1)050T	MDK15563(1)50B53P3TUBE
50	30	0.068	BA/B53	16.5	5.75	11.0	15	190	F683BA683(1)050T	MDK15683(1)50B53P3TUBE
50	30	0.082	BA/B53	16.5	5.75	11.0	15	160	F683BA823(1)050T	MDK15823(1)50B53P3TUBE
50	30	0.10	BA/B53	16.5	5.75	11.0	15	130	F683BA104(1)050T	MDK15104(1)50B53P3TUBE
50	30	0.12	BA/B53	16.5	5.75	11.0	15	110	F683BA124(1)050T	MDK15124(1)50B53P3TUBE
50	30	0.15	BA/B53	16.5	5.75	11.0	15	85	F683BA154(1)050T	MDK15154(1)50B53P3TUBE
50	30	0.18	BA/B53	16.5	5.75	11.0	15	70	F683BA184(1)050T	MDK15184(1)50B53P3TUBE
50	30	0.22	BA/B53	16.5	5.75	11.0	15	58	F683BA224(1)050T	MDK15224(1)50B53P3TUBE
50	30	0.27	BA/B53	16.5	5.75	11.0	15	47	F683BA274(1)050T	MDK15274(1)50B53P3TUBE
50	30	0.33	BA/B53	16.5	5.75	11.0	15	39	F683BA334(1)050T	MDK15334(1)50B53P3TUBE
50	30	0.39	BA/B53	16.5	5.75	11.0	15	39	F683BA394(1)050T	MDK15394(1)50B53P3TUBE
50	30	0.47	BA/B53	16.5	5.75	11.0	15	30	F683BA474(1)050T	MDK15474(1)50B53P3TUBE
50	30	0.56	BA/B53	16.5	5.75	11.0	15	26	F683BA564(1)050T	MDK15564(1)50B53P3TUBE
50	30	0.68	BA/B53	16.5	5.75	11.0	15	21	F683BA684(1)050T	MDK15684(1)50B53P3TUBE
50	30	0.82	BA/B53	16.5	5.75	11.0	15	18	F683BA824(1)050T	MDK15824(1)50B53P3TUBE
50	30	1.0	BA/B53	16.5	5.75	11.0	15	15	F683BA105(1)050T	MDK15105(1)50B53P3TUBE
50	30	1.2	BA/B53	16.5	5.75	11.0	15	15	F683BA125(1)050T	MDK15125(1)50B53P3TUBE
50	30	1.5	BA/B53	16.5	5.75	11.0	15	13	F683BA155(1)050T	MDK15155(1)50B53P3TUBE
50	30	1.8	BA/B53	16.5	5.75	11.0	15	13	F683BA185(1)050T	MDK15185(1)50B53P3TUBE
50	30	2.2	BA/B53	16.5	5.75	11.0	15	11	F683BA225(1)050T	MDK15225(1)50B53P3TUBE
50	30	2.7	BA/B53	16.5	5.75	11.0	15	11	F683BA275(1)050T	MDK15275(1)50B53P3TUBE
VDC	**VAC**	**Cap Value (µF)**	**Size Code (New/ Legacy)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**ESR 500 kHz (mΩ)**	**New KEMET Part Number**	**Legacy Part Number**

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

Table 1 – Ratings & Part Number Reference cont.

VDC	VAC	Cap Value (µF)	Size Code (New/ Legacy)	Dimensions in mm			Lead Spacing (p)	ESR 500 kHz (mΩ)	New KEMET Part Number	Legacy Part Number
				B	H	L				
50	30	3.3	BA/B53	16.5	5.75	11.0	15	8	F683BA335(1)050T	MDK15335(1)50B53P3TUBE
50	30	3.9	BA/B53	16.5	5.75	11.0	15	8	F683BA395(1)050T	MDK15395(1)50B53P3TUBE
50	30	4.7	BA/B53	16.5	5.75	11.0	15	6	F683BA475(1)050T	MDK15475(1)50B53P3TUBE
50	30	5.6	BA/B53	16.5	5.75	11.0	15	5	F683BA565(1)050T	MDK15565(1)50B53P3TUBE
50	30	6.8	BA/B53	16.5	5.75	11.0	15	5	F683BA685(1)050T	MDK15685(1)50B53P3TUBE
100	63	0.033	AA/A52	12.2	5.75	11.0	10	390	F683AA333(1)100T	MDK10333(1)100A52P3TUBE
100	63	0.039	AA/A52	12.2	5.75	11.0	10	330	F683AA393(1)100T	MDK10393(1)100A52P3TUBE
100	63	0.047	AA/A52	12.2	5.75	11.0	10	270	F683AA473(1)100T	MDK10473(1)100A52P3TUBE
100	63	0.056	AA/A52	12.2	5.75	11.0	10	230	F683AA563(1)100T	MDK10563(1)100A52P3TUBE
100	63	0.068	AA/A52	12.2	5.75	11.0	10	190	F683AA683(1)100T	MDK10683(1)100A52P3TUBE
100	63	0.082	AA/A52	12.2	5.75	11.0	10	160	F683AA823(1)100T	MDK10823(1)100A52P3TUBE
100	63	0.10	AA/A52	12.2	5.75	11.0	10	130	F683AA104(1)100T	MDK10104(1)100A52P3TUBE
100	63	0.12	AA/A52	12.2	5.75	11.0	10	110	F683AA124(1)100T	MDK10124(1)100A52P3TUBE
100	63	0.15	AA/A52	12.2	5.75	11.0	10	85	F683AA154(1)100T	MDK10154(1)100A52P3TUBE
100	63	0.18	AA/A52	12.2	5.75	11.0	10	70	F683AA184(1)100T	MDK10184(1)100A52P3TUBE
100	63	0.22	AA/A52	12.2	5.75	11.0	10	58	F683AA224(1)100T	MDK10224(1)100A52P3TUBE
100	63	0.27	AA/A52	12.2	5.75	11.0	10	47	F683AA274(1)100T	MDK10274(1)100A52P3TUBE
100	63	0.33	AA/A52	12.2	5.75	11.0	10	39	F683AA334(1)100T	MDK10334(1)100A52P3TUBE
100	63	0.39	AA/A52	12.2	5.75	11.0	10	33	F683AA394(1)100T	MDK10394(1)100A52P3TUBE
100	63	0.47	AA/A52	12.2	5.75	11.0	10	30	F683AA474(1)100T	MDK10474(1)100A52P3TUBE
100	63	0.56	AA/A52	12.2	5.75	11.0	10	26	F683AA564(1)100T	MDK10564(1)100A52P3TUBE
100	63	0.68	AA/A52	12.2	5.75	11.0	10	21	F683AA684(1)100T	MDK10684(1)100A52P3TUBE
100	63	0.82	AA/A52	12.2	5.75	11.0	10	18	F683AA824(1)100T	MDK10824(1)100A52P3TUBE
100	63	1.0	AA/A52	12.2	5.75	11.0	10	15	F683AA105(1)100T	MDK10105(1)100A52P3TUBE
100	63	1.2	AA/A52	12.2	5.75	11.0	10	14	F683AA125(1)100T	MDK10125(1)100A52P3TUBE
100	63	1.5	AA/A52	12.2	5.75	11.0	10	13	F683AA155(1)100T	MDK10155(1)100A52P3TUBE
100	63	1.8	AA/A52	12.2	5.75	11.0	10	12	F683AA185(1)100T	MDK10185(1)100A52P3TUBE
100	63	2.2	AA/A52	12.2	5.75	11.0	10	11	F683AA225(1)100T	MDK10225(1)100A52P3TUBE
100	35	2.7	AA/A52	12.2	5.75	11.0	10	10	F683AA275(1)100T	MDK10275(1)100A52P3TUBE
100	35	3.3	AA/A52	12.2	5.75	11.0	10	8	F683AA335(1)100T	MDK10335(1)100A52P3TUBE
100	35	3.9	AA/A52	12.2	5.75	11.0	10	7	F683AA395(1)100T	MDK10395(1)100A52P3TUBE
100	35	4.7	AA/A54	12.2	5.75	13.5	10	6	F68(2)AA475(1)100T	MDK10475(1)100A54P(2)TUBE
100	35	4.7	AA/A53	12.7	8.5	14.0	10	6	F68(2)AA475(1)100VV687	MDK10475(1)100A53P(2)TR32
100	35	5.6	AA/A55	12.2	5.75	16.5	10	5	F68(3)AA565(1)100T	MDK10565(1)100A55P(3)TUBE
100	63	6.8	AA/A58	12.7	10.5	23.0	10	5	F68(4)AA685(1)100T	MDK10685(1)100A58P(4)TUBE
100	63	8.2	AA/A58	12.7	10.5	23.0	10	4	F68(4)AA825(1)100T	MDK10825(1)100A58P(4)TUBE
100	63	10	AA/A58	12.7	10.5	23.0	10	3	F68(4)AA106(1)100T	MDK10106(1)100A58P(4)TUBE
100	63	0.033	BA/B53	16.5	5.75	11.0	15	390	F683BA333(1)100T	MDK15333(1)100B53P3TUBE
100	63	0.039	BA/B53	16.5	5.75	11.0	15	330	F683BA393(1)100T	MDK15393(1)100B53P3TUBE
100	63	0.047	BA/B53	16.5	5.75	11.0	15	270	F683BA473(1)100T	MDK15473(1)100B53P3TUBE
100	63	0.056	BA/B53	16.5	5.75	11.0	15	230	F683BA563(1)100T	MDK15563(1)100B53P3TUBE
100	63	0.068	BA/B53	16.5	5.75	11.0	15	190	F683BA683(1)100T	MDK15683(1)100B53P3TUBE
100	63	0.082	BA/B53	16.5	5.75	11.0	15	160	F683BA823(1)100T	MDK15823(1)100B53P3TUBE
100	63	0.10	BA/B53	16.5	5.75	11.0	15	130	F683BA104(1)100T	MDK15104(1)100B53P3TUBE
100	63	0.12	BA/B53	16.5	5.75	11.0	15	110	F683BA124(1)100T	MDK15124(1)100B53P3TUBE
100	63	0.15	BA/B53	16.5	5.75	11.0	15	85	F683BA154(1)100T	MDK15154(1)100B53P3TUBE
100	63	0.18	BA/B53	16.5	5.75	11.0	15	70	F683BA184(1)100T	MDK15184(1)100B53P3TUBE
100	63	0.22	BA/B53	16.5	5.75	11.0	15	58	F683BA224(1)100T	MDK15224(1)100B53P3TUBE
100	63	0.27	BA/B53	16.5	5.75	11.0	15	47	F683BA274(1)100T	MDK15274(1)100B53P3TUBE
100	63	0.33	BA/B53	16.5	5.75	11.0	15	39	F683BA334(1)100T	MDK15334(1)100B53P3TUBE
100	63	0.39	BA/B53	16.5	5.75	11.0	15	39	F683BA394(1)100T	MDK15394(1)100B53P3TUBE
100	63	0.47	BA/B53	16.5	5.75	11.0	15	30	F683BA474(1)100T	MDK15474(1)100B53P3TUBE
100	63	0.56	BA/B53	16.5	5.75	11.0	15	26	F683BA564(1)100T	MDK15564(1)100B53P3TUBE
100	63	0.68	BA/B53	16.5	5.75	11.0	15	21	F683BA684(1)100T	MDK15684(1)100B53P3TUBE
100	63	0.82	BA/B53	16.5	5.75	11.0	15	18	F683BA824(1)100T	MDK15824(1)100B53P3TUBE
100	63	1.0	BA/B53	16.5	5.75	11.0	15	15	F683BA105(1)100T	MDK15105(1)100B53P3TUBE
100	63	1.2	BA/B53	16.5	5.75	11.0	15	15	F683BA125(1)100T	MDK15125(1)100B53P3TUBE
VDC	**VAC**	**Cap Value (µF)**	**Size Code (New/ Legacy)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**ESR 500 kHz (mΩ)**	**New KEMET Part Number**	**Legacy Part Number**

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

Table 1 – Ratings & Part Number Reference cont.

VDC	VAC	Cap Value (µF)	Size Code (New/ Legacy)	Dimensions in mm			Lead Spacing (p)	ESR 500 kHz (mΩ)	New KEMET Part Number	Legacy Part Number
				B	H	L				
100	63	1.5	BA/B53	16.5	5.75	11.0	15	13	F683BA155(1)100T	MDK15155(1)100B53P3TUBE
100	63	1.8	BA/B53	16.5	5.75	11.0	15	13	F683BA185(1)100T	MDK15185(1)100B53P3TUBE
100	63	2.2	BA/B53	16.5	5.75	11.0	15	11	F683BA225(1)100T	MDK15225(1)100B53P3TUBE
100	63	2.7	BA/B53	16.5	5.75	11.0	15	11	F683BA275(1)100T	MDK15275(1)100B53P3TUBE
100	63	3.3	BA/B53	16.5	5.75	11.0	15	8	F683BA335(1)100T	MDK15335(1)100B53P3TUBE
100	63	3.9	BA/B53	16.5	5.75	11.0	15	8	F683BA395(1)100T	MDK15395(1)100B53P3TUBE
100	35	4.7	BA/B53	16.5	5.75	11.0	15	6	F683BA475(1)100T	MDK15475(1)100B53P3TUBE
100	35	5.6	BA/B55	16.5	5.75	12.2	15	5	F68(2)BA565(1)100T	MDK15565(1)100B55P(2)TUBE
250	160	0.033	AA/A52	12.2	5.75	11.0	10	390	F683AA333(1)250T	MDK10333(1)250A52P3TUBE
250	160	0.039	AA/A52	12.2	5.75	11.0	10	330	F683AA393(1)250T	MDK10393(1)250A52P3TUBE
250	160	0.047	AA/A52	12.2	5.75	11.0	10	270	F683AA473(1)250T	MDK10473(1)250A52P3TUBE
250	160	0.056	AA/A52	12.2	5.75	11.0	10	230	F683AA563(1)250T	MDK10563(1)250A52P3TUBE
250	160	0.068	AA/A52	12.2	5.75	11.0	10	190	F683AA683(1)250T	MDK10683(1)250A52P3TUBE
250	160	0.082	AA/A52	12.2	5.75	11.0	10	160	F683AA823(1)250T	MDK10823(1)250A52P3TUBE
250	160	0.10	AA/A52	12.2	5.75	11.0	10	130	F683AA104(1)250T	MDK10104(1)250A52P3TUBE
250	160	0.12	AA/A52	12.2	5.75	11.0	10	110	F683AA124(1)250T	MDK10124(1)250A52P3TUBE
250	160	0.15	AA/A52	12.2	5.75	11.0	10	85	F683AA154(1)250T	MDK10154(1)250A52P3TUBE
250	160	0.18	AA/A52	12.2	5.75	11.0	10	70	F683AA184(1)250T	MDK10184(1)250A52P3TUBE
250	160	0.22	AA/A52	12.2	5.75	11.0	10	58	F683AA224(1)250T	MDK10224(1)250A52P3TUBE
250	160	0.27	AA/A52	12.2	5.75	11.0	10	47	F683AA274(1)250T	MDK10274(1)250A52P3TUBE
250	160	0.33	AA/A52	12.2	5.75	11.0	10	39	F683AA334(1)250T	MDK10334(1)250A52P3TUBE
250	160	0.39	AA/A52	12.2	5.75	11.0	10	33	F683AA394(1)250T	MDK10394(1)250A52P3TUBE
250	160	0.47	AA/A52	12.2	5.75	11.0	10	30	F683AA474(1)250T	MDK10474(1)250A52P3TUBE
250	160	0.56	AA/A54	12.2	5.75	13.5	10	26	F68(2)AA564(1)250T	MDK10564(1)250A54P(2)TUBE
250	160	0.68	AA/A55	12.2	5.75	16.5	10	21	F68(3)AA684(1)250T	MDK10684(1)250A55P(3)TUBE
250	160	0.82	AA/A58	12.7	10.5	23.0	10	18	F68(4)AA824(1)250T	MDK10824(1)250A58P(4)TUBE
250	160	1.0	AA/A58	12.7	10.5	23.0	10	15	F68(4)AA105(1)250T	MDK10105(1)250A58P(4)TUBE
250	160	1.2	AA/A58	12.7	10.5	23.0	10	14	F68(4)AA125(1)250T	MDK10125(1)250A58P(4)TUBE
250	160	1.5	AA/A58	12.7	10.5	23.0	10	13	F68(4)AA155(1)250T	MDK10155(1)250A58P(4)TUBE
250	160	0.033	BA/B53	16.5	5.75	11.0	15	390	F683BA333(1)250T	MDK15333(1)250B53P3TUBE
250	160	0.039	BA/B53	16.5	5.75	11.0	15	330	F683BA393(1)250T	MDK15393(1)250B53P3TUBE
250	160	0.047	BA/B53	16.5	5.75	11.0	15	270	F683BA473(1)250T	MDK15473(1)250B53P3TUBE
250	160	0.056	BA/B53	16.5	5.75	11.0	15	230	F683BA563(1)250T	MDK15563(1)250B53P3TUBE
250	160	0.068	BA/B53	16.5	5.75	11.0	15	190	F683BA683(1)250T	MDK15683(1)250B53P3TUBE
250	160	0.082	BA/B53	16.5	5.75	11.0	15	160	F683BA823(1)250T	MDK15823(1)250B53P3TUBE
250	160	0.10	BA/B53	16.5	5.75	11.0	15	130	F683BA104(1)250T	MDK15104(1)250B53P3TUBE
250	160	0.12	BA/B53	16.5	5.75	11.0	15	110	F683BA124(1)250T	MDK15124(1)250B53P3TUBE
250	160	0.15	BA/B53	16.5	5.75	11.0	15	85	F683BA154(1)250T	MDK15154(1)250B53P3TUBE
250	160	0.18	BA/B53	16.5	5.75	11.0	15	70	F683BA184(1)250T	MDK15184(1)250B53P3TUBE
250	160	0.22	BA/B53	16.5	5.75	11.0	15	58	F683BA224(1)250T	MDK15224(1)250B53P3TUBE
250	160	0.27	BA/B53	16.5	5.75	11.0	15	47	F683BA274(1)250T	MDK15274(1)250B53P3TUBE
250	160	0.33	BA/B53	16.5	5.75	11.0	15	39	F683BA334(1)250T	MDK15334(1)250B53P3TUBE
250	160	0.39	BA/B53	16.5	5.75	11.0	15	39	F683BA394(1)250T	MDK15394(1)250B53P3TUBE
250	160	0.47	BA/B53	16.5	5.75	11.0	15	30	F683BA474(1)250T	MDK15474(1)250B53P3TUBE
250	160	0.56	BA/B53	16.5	5.75	11.0	15	26	F683BA564(1)250T	MDK15564(1)250B53P3TUBE
250	160	0.68	BA/B53	16.5	5.75	11.0	15	21	F683BA684(1)250T	MDK15684(1)250B53P3TUBE
400	200	0.033	AA/A52	12.2	5.75	11.0	10	390	F683AA333(1)400T	MDK10333(1)400A52P3TUBE
400	200	0.039	AA/A52	12.2	5.75	11.0	10	330	F683AA393(1)400T	MDK10393(1)400A52P3TUBE
400	200	0.047	AA/A52	12.2	5.75	11.0	10	270	F683AA473(1)400T	MDK10473(1)400A52P3TUBE
400	200	0.056	AA/A52	12.2	5.75	11.0	10	230	F683AA563(1)400T	MDK10563(1)400A52P3TUBE
400	200	0.068	AA/A52	12.2	5.75	11.0	10	190	F683AA683(1)400T	MDK10683(1)400A52P3TUBE
400	200	0.082	AA/A52	12.2	5.75	11.0	10	160	F683AA823(1)400T	MDK10823(1)400A52P3TUBE
400	200	0.10	AA/A52	12.2	5.75	11.0	10	130	F683AA104(1)400T	MDK10104(1)400A52P3TUBE
400	200	0.12	AA/A52	12.2	5.75	11.0	10	110	F683AA124(1)400T	MDK10124(1)400A52P3TUBE
400	200	0.15	AA/A52	12.2	5.75	11.0	10	85	F683AA154(1)400T	MDK10154(1)400A52P3TUBE
400	200	0.18	AA/A52	12.2	5.75	11.0	10	70	F683AA184(1)400T	MDK10184(1)400A52P3TUBE
400	200	0.22	AA/A58	12.7	10.5	23.0	10	58	F68(4)AA224(1)400T	MDK10224(1)400A58P(4)TUBE
VDC	**VAC**	**Cap Value (µF)**	**Size Code (New/ Legacy)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**ESR 500 kHz (mΩ)**	**New KEMET Part Number**	**Legacy Part Number**

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

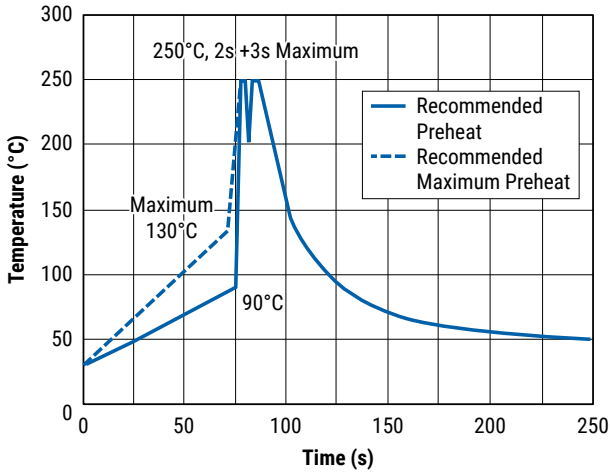
Table 1 – Ratings & Part Number Reference cont.

VDC	VAC	Cap Value (µF)	Size Code (New/ Legacy)	Dimensions in mm			Lead Spacing (p)	ESR 500 kHz (mΩ)	New KEMET Part Number	Legacy Part Number
				B	H	L				
400	200	0.27	AA/A58	12.7	10.5	23.0	10	47	F68(4)AA274(1)400T	MDK10274(1)400A58P(4)TUBE
400	200	0.33	AA/A58	12.7	10.5	23.0	10	39	F68(4)AA334(1)400T	MDK10334(1)400A58P(4)TUBE
400	200	0.39	AA/A58	12.7	10.5	23.0	10	33	F68(4)AA394(1)400T	MDK10394(1)400A58P(4)TUBE
400	200	0.47	AA/A58	12.7	10.5	23.0	10	30	F68(4)AA474(1)400T	MDK10474(1)400A58P(4)TUBE
400	200	0.033	BA/B53	16.5	5.75	11.0	15	390	F683BA333(1)400T	MDK15333(1)400B53P3TUBE
400	200	0.039	BA/B53	16.5	5.75	11.0	15	330	F683BA393(1)400T	MDK15393(1)400B53P3TUBE
400	200	0.047	BA/B53	16.5	5.75	11.0	15	270	F683BA473(1)400T	MDK15473(1)400B53P3TUBE
400	200	0.056	BA/B53	16.5	5.75	11.0	15	230	F683BA563(1)400T	MDK15563(1)400B53P3TUBE
400	200	0.068	BA/B53	16.5	5.75	11.0	15	190	F683BA683(1)400T	MDK15683(1)400B53P3TUBE
400	200	0.082	BA/B53	16.5	5.75	11.0	15	160	F683BA823(1)400T	MDK15823(1)400B53P3TUBE
400	200	0.10	BA/B53	16.5	5.75	11.0	15	130	F683BA104(1)400T	MDK15104(1)400B53P3TUBE
400	200	0.12	BA/B53	16.5	5.75	11.0	15	110	F683BA124(1)400T	MDK15124(1)400B53P3TUBE
400	200	0.15	BA/B53	16.5	5.75	11.0	15	85	F683BA154(1)400T	MDK15154(1)400B53P3TUBE
400	200	0.18	BA/B53	16.5	5.75	11.0	15	70	F683BA184(1)400T	MDK15184(1)400B53P3TUBE
400	200	0.22	BA/B53	16.5	5.75	11.0	15	58	F683BA224(1)400T	MDK15224(1)400B53P3TUBE
400	200	0.27	BA/B53	16.5	5.75	11.0	15	47	F683BA274(1)400T	MDK15274(1)400B53P3TUBE
400	200	0.33	BA/B55	16.5	5.75	12.2	15	39	F68(2)BA334(1)400T	MDK15334(1)400B55P(2)TUBE
630	220	0.033	AA/A52	12.2	5.75	11.0	10	390	F683AA333(1)630T	MDK10333(1)630A52P3TUBE
630	220	0.039	AA/A52	12.2	5.75	11.0	10	330	F683AA393(1)630T	MDK10393(1)630A52P3TUBE
630	220	0.047	AA/A52	12.2	5.75	11.0	10	270	F683AA473(1)630T	MDK10473(1)630A52P3TUBE
630	220	0.056	AA/A52	12.2	5.75	11.0	10	230	F683AA563(1)630T	MDK10563(1)630A52P3TUBE
630	220	0.068	AA/A54	12.2	5.75	13.5	10	190	F68(2)AA683(1)630T	MDK10683(1)630A54P(2)TUBE
630	220	0.082	AA/A58	12.7	10.5	23.0	10	160	F68(4)AA823(1)630T	MDK10823(1)630A58P(4)TUBE
630	220	0.10	AA/A58	12.7	10.5	23.0	10	130	F68(4)AA104(1)630T	MDK10104(1)630A58P(4)TUBE
630	220	0.12	AA/A58	12.7	10.5	23.0	10	110	F68(4)AA124(1)630T	MDK10124(1)630A58P(4)TUBE
630	220	0.15	AA/A58	12.7	10.5	23.0	10	85	F68(4)AA154(1)630T	MDK10154(1)630A58P(4)TUBE
630	220	0.18	AA/A58	12.7	10.5	23.0	10	70	F68(4)AA184(1)630T	MDK10184(1)630A58P(4)TUBE
630	220	0.033	BA/B53	16.5	5.75	11.0	15	390	F683BA333(1)630T	MDK15333(1)630B53P3TUBE
630	220	0.039	BA/B53	16.5	5.75	11.0	15	330	F683BA393(1)630T	MDK15393(1)630B53P3TUBE
630	220	0.047	BA/B53	16.5	5.75	11.0	15	270	F683BA473(1)630T	MDK15473(1)630B53P3TUBE
630	220	0.056	BA/B53	16.5	5.75	11.0	15	230	F683BA563(1)630T	MDK15563(1)630B53P3TUBE
630	220	0.068	BA/B53	16.5	5.75	11.0	15	190	F683BA683(1)630T	MDK15683(1)630B53P3TUBE
630	220	0.082	BA/B53	16.5	5.75	11.0	15	160	F683BA823(1)630T	MDK15823(1)630B53P3TUBE
630	220	0.10	BA/B53	16.5	5.75	11.0	15	130	F683BA104(1)630T	MDK15104(1)630B53P3TUBE
VDC	**VAC**	**Cap Value (µF)**	**Size Code (New/ Legacy)**	**B (mm)**	**H (mm)**	**L (mm)**	**Lead Spacing (p)**	**ESR 500 kHz (mΩ)**	**New KEMET Part Number**	**Legacy Part Number**

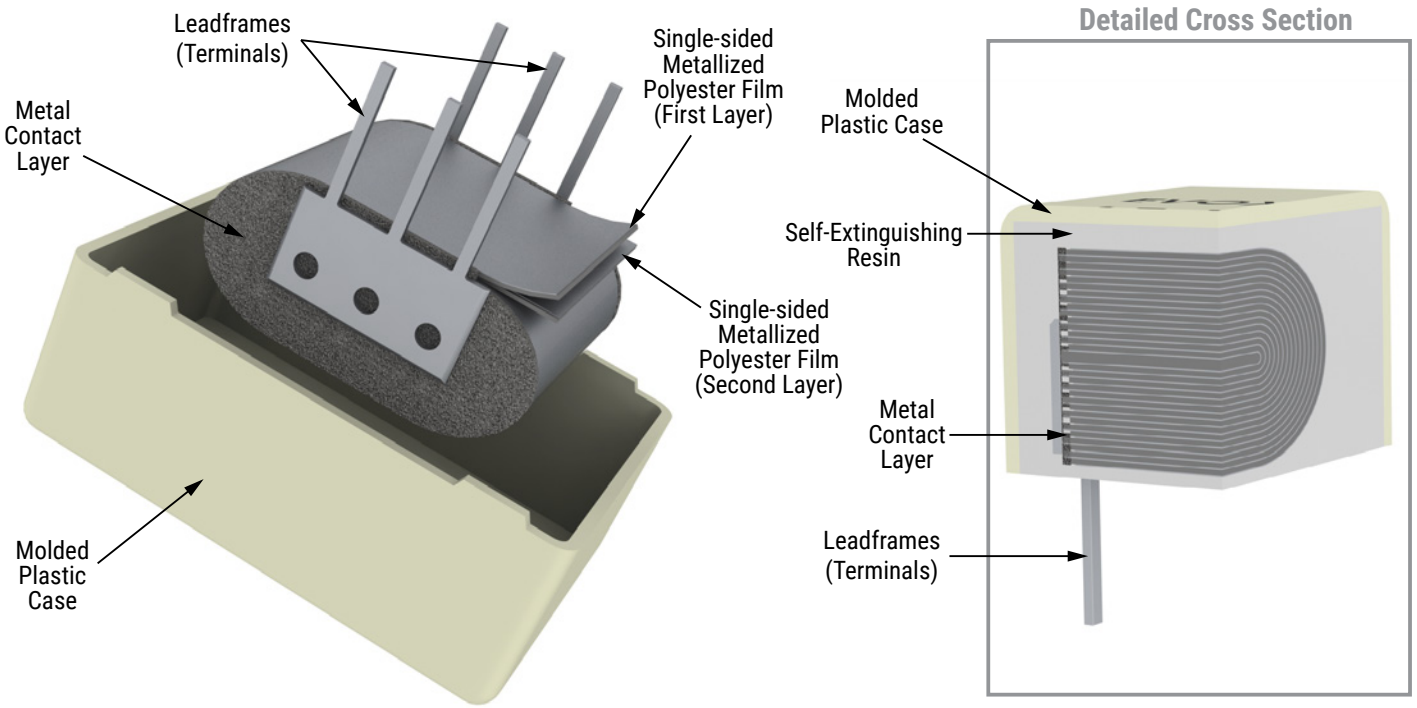
(1) J = ±5%, K = ±10%, other tolerances on request.
(2) = Number of leads per side, 3 or 4.
(3) = Number of leads per side, 3, 4 or 5.
(4) = Number of leads per side, 7 or 8.

Soldering Process

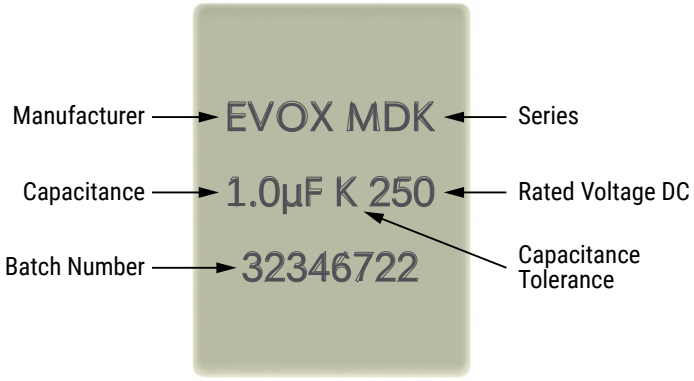
Wave soldering: The recommended preheating temperature is 90°C (130°C maximum). The peak temperature 250°C may be applied for 2 – 5 seconds maximum. KEMET recommends wave soldering for parts with up to 2 mm height.



Construction



Marking



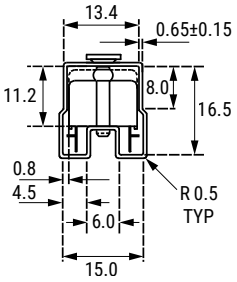
Manufacturing Date Code (IEC 60062)			
Year	Code	Month	Code
2020	M	January	1
2021	N	February	2
2022	P	March	3
2023	R	April	4
2024	S	May	5
2025	T	June	6
2026	U	July	7
2027	V	August	8
2028	W	September	9
2029	X	October	O
2030	A	November	N
2031	B	December	D
2032	C		
2033	D		
2034	E		
2035	F		
2036	H		
2037	J		
2038	K		
2039	L		
2040	M		

Packaging Quantities

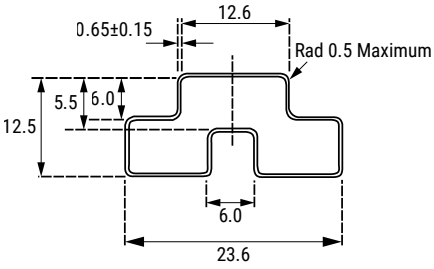
Size Code	Lead Spacing	Base (mm)	Height (mm)	Length (mm)	Bulk	Reel
A52	10.0	12.2	5.75	11.0	43	
A53		12.7	8.5	14.0	34	200
A54		12.2	5.75	13.5	35	
A55		12.2	5.75	16.5	28	
A58		12.7	10.5	23.0	21	
B53	15.0	16.5	5.75	11.0	43	
B55		16.5	5.75	12.2	39	

Tube Packaging

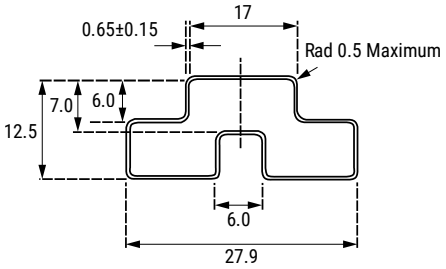
Tube A

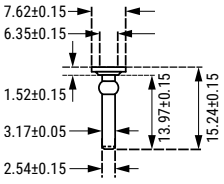


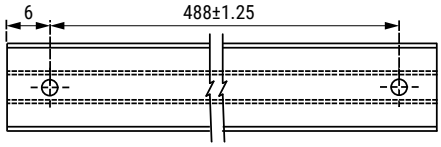
Tube B



Tube C



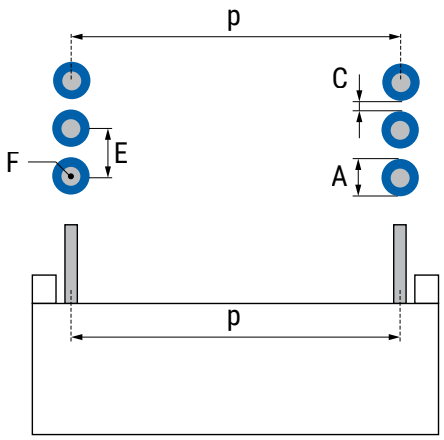




Size Code	Dimensions in mm	Tube
A52	10.0 – 12.2 x 5.75 x 11.0	Tube B
A53	10.0 – 12.7 x 8.5 x 14.0	Tube A
A54	10.0 – 12.2 x 5.75 x 13.5	Tube B
A55	10.0 – 12.2 x 5.75 x 16.5	Tube B
A58	10.0 – 12.7 x 10.5 x 23.0	Tube A
B53	15.0 – 16.5 x 5.75 x 11.0	Tube C
B55	15.0 – 16.5 x 5.75 x 12.2	Tube C

Landing

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



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MDK10106K100A58P8TUBE MDK10475K100A53P3TR32 MDK10104K630A58P7TUBE MDK10104K630A58P8TUBE MDK10105K250A57P7TUBE MDK10105K250A57P8TUBE MDK10106K100A58P7TUBE MDK10106K50A57P7TUBE MDK10106K50A57P8TUBE MDK10124K630A58P7TUBE MDK10124K630A58P8TUBE MDK10125K250A58P7TUBE MDK10125K250A58P8TUBE MDK10126K50A58P7TUBE MDK10126K50A58P8TUBE MDK10154K630A58P7TUBE MDK10154K630A58P8TUBE MDK10155K250A58P7TUBE MDK10155K250A58P8TUBE MDK10156K50A58P7TUBE MDK10156K50A58P8TUBE MDK10184K630A58P7TUBE MDK10184K630A58P8TUBE MDK10224K400A57P7TUBE MDK10224K400A57P8TUBE MDK10274K400A57P7TUBE MDK10274K400A57P8TUBE MDK10334K400A57P7TUBE MDK10334K400A57P8TUBE MDK10394K400A58P7TUBE MDK10394K400A58P8TUBE MDK10474K400A58P7TUBE MDK10474K400A58P8TUBE MDK10475K100A53P4TR32 MDK10475K100A54P4TUBE MDK10564K250A54P3TUBE MDK10564K250A54P4TUBE MDK10565K100A55P3TUBE MDK10565K100A55P4TUBE MDK10565K100A55P5TUBE MDK10565K50A54P3TUBE MDK10565K50A54P4TUBE MDK10683K630A54P3TUBE MDK10683K630A54P4TUBE MDK10684K250A55P3TUBE MDK10684K250A55P4TUBE MDK10684K250A55P5TUBE MDK10685K100A57P7TUBE MDK10685K100A57P8TUBE MDK10685K50A55P3TUBE MDK10685K50A55P4TUBE MDK10685K50A55P5TUBE MDK10823K630A58P7TUBE MDK10823K630A58P8TUBE MDK10824K250A57P7TUBE MDK10824K250A57P8TUBE MDK10825K100A58P7TUBE MDK10825K100A58P8TUBE MDK10825K50A57P7TUBE MDK10825K50A57P8TUBE MDK15334K400B55P3TUBE MDK15334K400B55P4TUBE MDK10104K100A52P3TUBE MDK10104K250A52P3TUBE MDK10104K400A52P3TUBE MDK10104K50A52P3TUBE MDK10105K100A52P3TUBE MDK10105K50A52P3TUBE MDK10124K100A52P3TUBE MDK10124K250A52P3TUBE MDK10124K400A52P3TUBE MDK10124K50A52P3TUBE MDK10125K100A52P3TUBE MDK10125K50A52P3TUBE MDK10154K100A52P3TUBE MDK10154K250A52P3TUBE MDK10154K400A52P3TUBE MDK10154K50A52P3TUBE MDK10155K100A52P3TUBE MDK10155K50A52P3TUBE MDK10184K100A52P3TUBE MDK10184K250A52P3TUBE MDK10184K400A52P3TUBE MDK10184K50A52P3TUBE MDK10185K100A52P3TUBE MDK10185K50A52P3TUBE MDK10224K100A52P3TUBE MDK10224K250A52P3TUBE MDK10224K50A52P3TUBE MDK10225K100A52P3TUBE MDK10225K50A52P3TUBE