

MDS Series Dual In-Line Low Profile, 50 – 630 VDC, High Current

Overview

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

Applications

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

Benefits

- Rated voltage: 50 – 630 VDC
- Rated voltage: 30 – 220 VAC
- Capacitance range: 0.033 – 6.8 μ F
- Capacitance tolerance: \pm 5%, \pm 10%, other tolerances on request
- Climatic category: 55/125/56
- RoHS Compliant and lead-free terminations
- Operating temperature range of -55°C to +125°C



Legacy Part Number System

MDS	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 Code
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 = \pm 5 K = \pm 10% Other tolerances on request	50 100 250 400 630	See Dimension Table	P3 = 3 leads P4 = 4 leads P5 = 5 leads	See Ordering Options Table

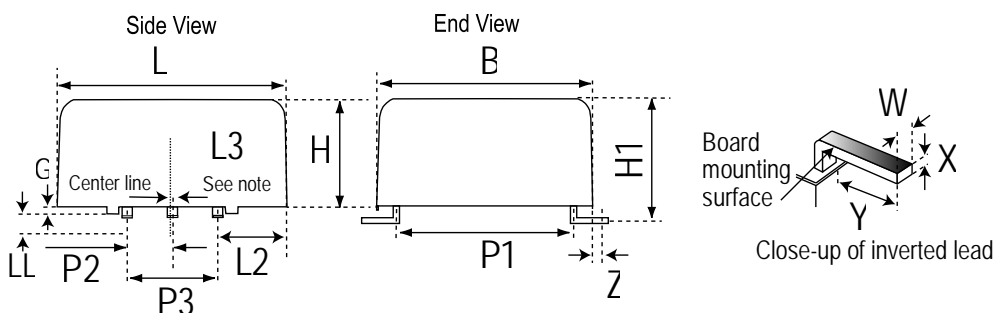
New KEMET Part Number System

F	17	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 Code
F = Film	Dual In-Line, Metallized Polyester	3 = 3 leads 4 = 4 leads 5 = 5 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 = \pm 5 K = \pm 10% Other tolerances on request	050 = 50 100 = 100 250 = 250 400 = 400 630 = 630	See Ordering Options Table

Ordering Options Table

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

Dimensions – Millimeters



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

Drawing shows MDS with three leads per side. Similar dimensional requirements apply to the 4, 5, 7, and 8 leads per side configurations.

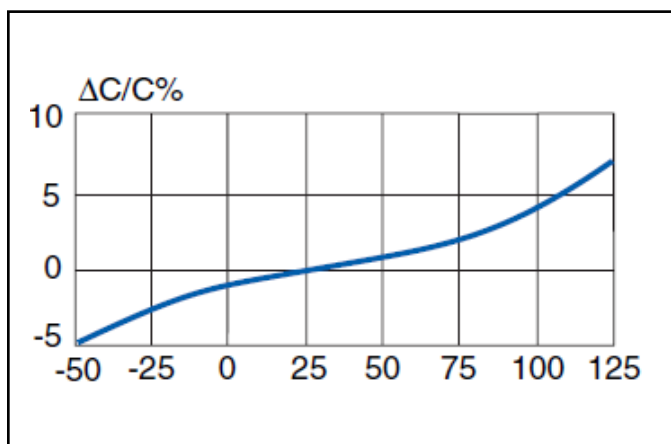
(1) P3 represents the cumulative tolerance of all leads.

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

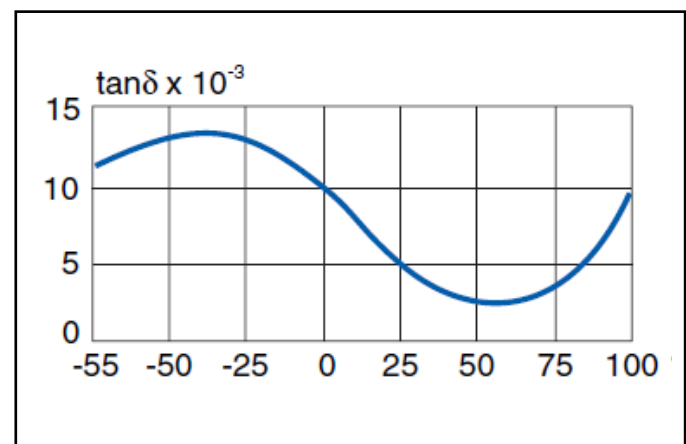
Performance Characteristics

Rated Voltage (VDC)	50	100	250	400	630
Rated Voltage (VAC)	30	63	160	200	220
Capacitance Range (µF)	0.033 – 15	0.033 – 10	0.033 – 1.5	0.033 – 0.47	0.033 – 0.18
Capacitance Tolerance	±5%, ±10%, other tolerances on request				
Category Temperature Range	-55°C to +125°C				
Rated Temperature	+85°C				
Voltage Derating	The rated voltage is decreased with 1.25%/°C from +85°C				
Climatic Category	55/125/56				
Test Voltage	1.6 x V _R , 60 seconds				
Insulation Resistance	Measured at +20°C According to IEC 60384-2				
	Minimum Value Between Terminals				
		C ≤ 0.33 µF		C > 0.33 µF	
	V _R ≤ 100	15,000 MΩ		5,000 MΩ • µF	
	V _R > 100	30,000 MΩ		10,000 MΩ • µF	
Dissipation Factor	Maximum Values at +23°C				
		C ≤ 0.1 µF		0.1 < C < 3.3 µF	3.3 ≤ C ≤ 6.8 µF
	1 kHz	0.8%		0.8%	0.8%
	10 kHz	1.5%		1.5%	1.5%
	100 kHz	2.5%		5.0%	
Self Inductance	Approximately 4 nH				

Typical Capacitance vs. Temperature at 1 kHz



Typical Dissipation Factor vs. Temperature at 1 kHz



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

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

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

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

Environmental Compliance

All KEMET surface mount capacitors are RoHS Compliant.



RoHS Compliant

Table 1 – Ratings & Part Number Reference

VDC	VAC	Cap Value (µF)	Size Code (New/Legacy)	Dimensions in mm			Lead Spacing (p)	ESR 500 kHz (mΩ)	New KEMET Part Number	Legacy Part Number
				B	H	L				
50	30	0.033	AA/50A	12.2	6.05	11.0	10	390	F173AA333(1)050T	MDS10333(1)50A52P3TUBE
50	30	0.039	AA/50A	12.2	6.05	11.0	10	330	F173AA393(1)050T	MDS10393(1)50A52P3TUBE
50	30	0.047	AA/50A	12.2	6.05	11.0	10	270	F173AA473(1)050T	MDS10473(1)50A52P3TUBE
50	30	0.056	AA/50A	12.2	6.05	11.0	10	230	F173AA563(1)050T	MDS10563(1)50A52P3TUBE
50	30	0.068	AA/50A	12.2	6.05	11.0	10	190	F173AA683(1)050T	MDS10683(1)50A52P3TUBE
50	30	0.082	AA/50A	12.2	6.05	11.0	10	160	F173AA823(1)050T	MDS10823(1)50A52P3TUBE
50	30	0.10	AA/50A	12.2	6.05	11.0	10	130	F173AA104(1)050T	MDS10104(1)50A52P3TUBE
50	30	0.12	AA/50A	12.2	6.05	11.0	10	110	F173AA124(1)050T	MDS10124(1)50A52P3TUBE
50	30	0.15	AA/50A	12.2	6.05	11.0	10	85	F173AA154(1)050T	MDS10154(1)50A52P3TUBE
50	30	0.18	AA/50A	12.2	6.05	11.0	10	70	F173AA184(1)050T	MDS10184(1)50A52P3TUBE
50	30	0.22	AA/50A	12.2	6.05	11.0	10	58	F173AA224(1)050T	MDS10224(1)50A52P3TUBE
50	30	0.27	AA/50A	12.2	6.05	11.0	10	47	F173AA274(1)050T	MDS10274(1)50A52P3TUBE
50	30	0.33	AA/50A	12.2	6.05	11.0	10	39	F173AA334(1)050T	MDS10334(1)50A52P3TUBE
50	30	0.39	AA/50A	12.2	6.05	11.0	10	33	F173AA394(1)050T	MDS10394(1)50A52P3TUBE
50	30	0.47	AA/50A	12.2	6.05	11.0	10	30	F173AA474(1)050T	MDS10474(1)50A52P3TUBE
50	30	0.56	AA/50A	12.2	6.05	11.0	10	26	F173AA564(1)050T	MDS10564(1)50A52P3TUBE
50	30	0.68	AA/50A	12.2	6.05	11.0	10	21	F173AA684(1)050T	MDS10684(1)50A52P3TUBE
50	30	0.82	AA/50A	12.2	6.05	11.0	10	18	F173AA824(1)050T	MDS10824(1)50A52P3TUBE
50	30	1.0	AA/50A	12.2	6.05	11.0	10	15	F173AA105(1)050T	MDS10105(1)50A52P3TUBE
50	30	1.2	AA/50A	12.2	6.05	11.0	10	14	F173AA125(1)050T	MDS10125(1)50A52P3TUBE
50	30	1.5	AA/50A	12.2	6.05	11.0	10	13	F173AA155(1)050T	MDS10155(1)50A52P3TUBE
50	30	1.8	AA/50A	12.2	6.05	11.0	10	12	F173AA185(1)050T	MDS10185(1)50A52P3TUBE
50	30	2.2	AA/50A	12.2	6.05	11.0	10	11	F173AA225(1)050T	MDS10225(1)50A52P3TUBE
50	30	2.7	AA/50A	12.2	6.05	11.0	10	10	F173AA275(1)050T	MDS10275(1)50A52P3TUBE
50	30	3.3	AA/50A	12.2	6.05	11.0	10	8	F173AA335(1)050T	MDS10335(1)50A52P3TUBE
50	30	3.9	AA/50A	12.2	6.05	11.0	10	7	F173AA395(1)050T	MDS10395(1)50A52P3TUBE
50	30	4.7	AA/50A	12.2	6.05	11.0	10	6	F173AA475(1)050T	MDS10475(1)50A52P3TUBE
50	30	5.6	AA/50A	12.2	6.05	13.5	10	5	F17(2)AA565(1)050T	MDS10565(1)50A54P(2)TUBE
50	30	6.8	AA/50A	12.2	6.05	16.5	10	5	F17(3)AA685(1)050T	MDS10685(1)50A55P(3)TUBE
50	30	0.033	BA/50B	16.5	6.05	11.0	15	390	F173BA333(1)050T	MDS15333(1)50B53P3TUBE
50	30	0.039	BA/50B	16.5	6.05	11.0	15	330	F173BA393(1)050T	MDS15393(1)50B53P3TUBE
50	30	0.047	BA/50B	16.5	6.05	11.0	15	270	F173BA473(1)050T	MDS15473(1)50B53P3TUBE
50	30	0.056	BA/50B	16.5	6.05	11.0	15	230	F173BA563(1)050T	MDS15563(1)50B53P3TUBE
50	30	0.068	BA/50B	16.5	6.05	11.0	15	190	F173BA683(1)050T	MDS15683(1)50B53P3TUBE
50	30	0.082	BA/50B	16.5	6.05	11.0	15	160	F173BA823(1)050T	MDS15823(1)50B53P3TUBE
50	30	0.10	BA/50B	16.5	6.05	11.0	15	130	F173BA104(1)050T	MDS15104(1)50B53P3TUBE
50	30	0.12	BA/50B	16.5	6.05	11.0	15	110	F173BA124(1)050T	MDS15124(1)50B53P3TUBE
50	30	0.15	BA/50B	16.5	6.05	11.0	15	85	F173BA154(1)050T	MDS15154(1)50B53P3TUBE
50	30	0.18	BA/50B	16.5	6.05	11.0	15	70	F173BA184(1)050T	MDS15184(1)50B53P3TUBE
50	30	0.22	BA/50B	16.5	6.05	11.0	15	58	F173BA224(1)050T	MDS15224(1)50B53P3TUBE
50	30	0.27	BA/50B	16.5	6.05	11.0	15	47	F173BA274(1)050T	MDS15274(1)50B53P3TUBE
50	30	0.33	BA/50B	16.5	6.05	11.0	15	39	F173BA334(1)050T	MDS15334(1)50B53P3TUBE
50	30	0.39	BA/50B	16.5	6.05	11.0	15	39	F173BA394(1)050T	MDS15394(1)50B53P3TUBE
50	30	0.47	BA/50B	16.5	6.05	11.0	15	30	F173BA474(1)050T	MDS15474(1)50B53P3TUBE
50	30	0.56	BA/50B	16.5	6.05	11.0	15	26	F173BA564(1)050T	MDS15564(1)50B53P3TUBE
50	30	0.68	BA/50B	16.5	6.05	11.0	15	21	F173BA684(1)050T	MDS15684(1)50B53P3TUBE
50	30	0.82	BA/50B	16.5	6.05	11.0	15	18	F173BA824(1)050T	MDS15824(1)50B53P3TUBE
50	30	1.0	BA/50B	16.5	6.05	11.0	15	15	F173BA105(1)050T	MDS15105(1)50B53P3TUBE
50	30	1.2	BA/50B	16.5	6.05	11.0	15	13	F173BA125(1)050T	MDS15125(1)50B53P3TUBE
50	30	1.5	BA/50B	16.5	6.05	11.0	15	13	F173BA155(1)050T	MDS15155(1)50B53P3TUBE
50	30	1.8	BA/50B	16.5	6.05	11.0	15	13	F173BA185(1)050T	MDS15185(1)50B53P3TUBE
50	30	2.2	BA/50B	16.5	6.05	11.0	15	11	F173BA225(1)050T	MDS15225(1)50B53P3TUBE
50	30	2.7	BA/50B	16.5	6.05	11.0	15	13	F173BA275(1)050T	MDS15275(1)50B53P3TUBE
50	30	3.3	BA/50B	16.5	6.05	11.0	15	8	F173BA335(1)050T	MDS15335(1)50B53P3TUBE
50	30	3.9	BA/50B	16.5	6.05	11.0	15	13	F173BA395(1)050T	MDS15395(1)50B53P3TUBE
50	30	4.7	BA/50B	16.5	6.05	11.0	15	6	F173BA475(1)050T	MDS15475(1)50B53P3TUBE
50	30	5.6	BA/50B	16.5	6.05	11.0	15	5	F173BA565(1)050T	MDS15565(1)50B53P3TUBE
50	30	6.8	BA/50B	16.5	6.05	11.0	15	5	F173BA685(1)050T	MDS15685(1)50B53P3TUBE
VDC	VAC	Capacitance 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.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Size Code (New/Legacy)	Dimensions in mm			Lead Spacing (p)	ESR 500 kHz (mΩ)	New KEMET Part Number	Legacy Part Number
				B	H	L				
100	63	0.033	AA/00A	12.2	6.05	11.0	10	390	F173AA333(1)100T	MDS10333(1)100A52P3TUBE
100	63	0.039	AA/00A	12.2	6.05	11.0	10	330	F173AA393(1)100T	MDS10393(1)100A52P3TUBE
100	63	0.047	AA/00A	12.2	6.05	11.0	10	270	F173AA473(1)100T	MDS10473(1)100A52P3TUBE
100	63	0.056	AA/00A	12.2	6.05	11.0	10	230	F173AA563(1)100T	MDS10563(1)100A52P3TUBE
100	63	0.068	AA/00A	12.2	6.05	11.0	10	190	F173AA683(1)100T	MDS10683(1)100A52P3TUBE
100	63	0.082	AA/00A	12.2	6.05	11.0	10	160	F173AA823(1)100T	MDS10823(1)100A52P3TUBE
100	63	0.10	AA/00A	12.2	6.05	11.0	10	130	F173AA104(1)100T	MDS10104(1)100A52P3TUBE
100	63	0.12	AA/00A	12.2	6.05	11.0	10	110	F173AA124(1)100T	MDS10124(1)100A52P3TUBE
100	63	0.15	AA/00A	12.2	6.05	11.0	10	85	F173AA154(1)100T	MDS10154(1)100A52P3TUBE
100	63	0.18	AA/00A	12.2	6.05	11.0	10	70	F173AA184(1)100T	MDS10184(1)100A52P3TUBE
100	63	0.22	AA/00A	12.2	6.05	11.0	10	58	F173AA224(1)100T	MDS10224(1)100A52P3TUBE
100	63	0.27	AA/00A	12.2	6.05	11.0	10	47	F173AA274(1)100T	MDS10274(1)100A52P3TUBE
100	63	0.33	AA/00A	12.2	6.05	11.0	10	39	F173AA334(1)100T	MDS10334(1)100A52P3TUBE
100	63	0.39	AA/00A	12.2	6.05	11.0	10	33	F173AA394(1)100T	MDS10394(1)100A52P3TUBE
100	63	0.47	AA/00A	12.2	6.05	11.0	10	30	F173AA474(1)100T	MDS10474(1)100A52P3TUBE
100	63	0.56	AA/00A	12.2	6.05	11.0	10	26	F173AA564(1)100T	MDS10564(1)100A52P3TUBE
100	63	0.68	AA/00A	12.2	6.05	11.0	10	21	F173AA684(1)100T	MDS10684(1)100A52P3TUBE
100	63	0.82	AA/00A	12.2	6.05	11.0	10	18	F173AA824(1)100T	MDS10824(1)100A52P3TUBE
100	63	1.0	AA/00A	12.2	6.05	11.0	10	15	F173AA105(1)100T	MDS10105(1)100A52P3TUBE
100	63	1.2	AA/00A	12.2	6.05	11.0	10	14	F173AA125(1)100T	MDS10125(1)100A52P3TUBE
100	63	1.5	AA/00A	12.2	6.05	11.0	10	13	F173AA155(1)100T	MDS10155(1)100A52P3TUBE
100	63	1.8	AA/00A	12.2	6.05	11.0	10	12	F173AA185(1)100T	MDS10185(1)100A52P3TUBE
100	63	2.2	AA/00A	12.2	6.05	11.0	10	11	F173AA225(1)100T	MDS10225(1)100A52P3TUBE
100	35	2.7	AA/00A	12.2	6.05	11.0	10	10	F173AA275(1)100T	MDS10275(1)100A52P3TUBE
100	35	3.3	AA/00A	12.2	6.05	11.0	10	8	F173AA335(1)100T	MDS10335(1)100A52P3TUBE
100	35	3.9	AA/00A	12.2	6.05	11.0	10	7	F173AA395(1)100T	MDS10395(1)100A52P3TUBE
100	35	4.7	AA/00A	12.2	6.05	13.5	10	6	F17(2)AA475(1)100T	MDS10475(1)100A54P(2)TUBE
100	35	5.6	AA/00A	12.2	6.05	16.5	10	5	F17(3)AA565(1)100T	MDS10565(1)100A55P(3)TUBE
100	63	0.033	BA/00B	16.5	6.05	11.0	15	390	F173BA333(1)100T	MDS15333(1)100B53P3TUBE
100	63	0.039	BA/00B	16.5	6.05	11.0	15	330	F173BA393(1)100T	MDS15393(1)100B53P3TUBE
100	63	0.047	BA/00B	16.5	6.05	11.0	15	270	F173BA473(1)100T	MDS15473(1)100B53P3TUBE
100	63	0.056	BA/00B	16.5	6.05	11.0	15	230	F173BA563(1)100T	MDS15563(1)100B53P3TUBE
100	63	0.068	BA/00B	16.5	6.05	11.0	15	190	F173BA683(1)100T	MDS15683(1)100B53P3TUBE
100	63	0.082	BA/00B	16.5	6.05	11.0	15	160	F173BA823(1)100T	MDS15823(1)100B53P3TUBE
100	63	0.10	BA/00B	16.5	6.05	11.0	15	130	F173BA104(1)100T	MDS15104(1)100B53P3TUBE
100	63	0.12	BA/00B	16.5	6.05	11.0	15	110	F173BA124(1)100T	MDS15124(1)100B53P3TUBE
100	63	0.15	BA/00B	16.5	6.05	11.0	15	85	F173BA154(1)100T	MDS15154(1)100B53P3TUBE
100	63	0.18	BA/00B	16.5	6.05	11.0	15	70	F173BA184(1)100T	MDS15184(1)100B53P3TUBE
100	63	0.22	BA/00B	16.5	6.05	11.0	15	58	F173BA224(1)100T	MDS15224(1)100B53P3TUBE
100	63	0.27	BA/00B	16.5	6.05	11.0	15	47	F173BA274(1)100T	MDS15274(1)100B53P3TUBE
100	63	0.33	BA/00B	16.5	6.05	11.0	15	39	F173BA334(1)100T	MDS15334(1)100B53P3TUBE
100	63	0.39	BA/00B	16.5	6.05	11.0	15	39	F173BA394(1)100T	MDS15394(1)100B53P3TUBE
100	63	0.47	BA/00B	16.5	6.05	11.0	15	30	F173BA474(1)100T	MDS15474(1)100B53P3TUBE
100	63	0.56	BA/00B	16.5	6.05	11.0	15	26	F173BA564(1)100T	MDS15564(1)100B53P3TUBE
100	63	0.68	BA/00B	16.5	6.05	11.0	15	21	F173BA684(1)100T	MDS15684(1)100B53P3TUBE
100	63	0.82	BA/00B	16.5	6.05	11.0	15	18	F173BA824(1)100T	MDS15824(1)100B53P3TUBE
100	63	1.0	BA/00B	16.5	6.05	11.0	15	15	F173BA105(1)100T	MDS15105(1)100B53P3TUBE
100	63	1.2	BA/00B	16.5	6.05	11.0	15	15	F173BA125(1)100T	MDS15125(1)100B53P3TUBE
100	63	1.5	BA/00B	16.5	6.05	11.0	15	13	F173BA155(1)100T	MDS15155(1)100B53P3TUBE
100	63	1.8	BA/00B	16.5	6.05	11.0	15	13	F173BA185(1)100T	MDS15185(1)100B53P3TUBE
100	63	2.2	BA/00B	16.5	6.05	11.0	15	11	F173BA225(1)100T	MDS15225(1)100B53P3TUBE
100	63	2.7	BA/00B	16.5	6.05	11.0	15	11	F173BA275(1)100T	MDS15275(1)100B53P3TUBE
100	63	3.3	BA/00B	16.5	6.05	11.0	15	8	F173BA335(1)100T	MDS15335(1)100B53P3TUBE
100	35	3.9	BA/00B	16.5	6.05	11.0	15	8	F173BA395(1)100T	MDS15395(1)100B53P3TUBE
100	35	4.7	BA/00B	16.5	6.05	11.0	15	6	F173BA475(1)100T	MDS15475(1)100B53P3TUBE
100	35	5.6	BA/00B	16.5	6.05	12.2	15	5	F17(2)BA565(1)100T	MDS15565(1)100B55P(2)TUBE
250	160	0.033	AA/50A	12.2	6.05	11.0	10	390	F173AA333(1)250T	MDS10333(1)250A52P3TUBE
250	160	0.039	AA/50A	12.2	6.05	11.0	10	330	F173AA393(1)250T	MDS10393(1)250A52P3TUBE

(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.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Size Code (New/Legacy)	Dimensions in mm			Lead Spacing (p)	ESR 500 kHz (mΩ)	New KEMET Part Number	Legacy Part Number
				B	H	L				
250	160	0.047	AA/50A	12.2	6.05	11.0	10	270	F173AA473(1)250T	MDS10473(1)250A52P3TUBE
250	160	0.056	AA/50A	12.2	6.05	11.0	10	230	F173AA563(1)250T	MDS10563(1)250A52P3TUBE
250	160	0.068	AA/50A	12.2	6.05	11.0	10	190	F173AA683(1)250T	MDS10683(1)250A52P3TUBE
250	160	0.082	AA/50A	12.2	6.05	11.0	10	160	F173AA823(1)250T	MDS10823(1)250A52P3TUBE
250	160	0.10	AA/50A	12.2	6.05	11.0	10	130	F173AA104(1)250T	MDS10104(1)250A52P3TUBE
250	160	0.12	AA/50A	12.2	6.05	11.0	10	110	F173AA124(1)250T	MDS10124(1)250A52P3TUBE
250	160	0.15	AA/50A	12.2	6.05	11.0	10	85	F173AA154(1)250T	MDS10154(1)250A52P3TUBE
250	160	0.18	AA/50A	12.2	6.05	11.0	10	70	F173AA184(1)250T	MDS10184(1)250A52P3TUBE
250	160	0.22	AA/50A	12.2	6.05	11.0	10	58	F173AA224(1)250T	MDS10224(1)250A52P3TUBE
250	160	0.27	AA/50A	12.2	6.05	11.0	10	47	F173AA274(1)250T	MDS10274(1)250A52P3TUBE
250	160	0.33	AA/50A	12.2	6.05	11.0	10	39	F173AA334(1)250T	MDS10334(1)250A52P3TUBE
250	160	0.39	AA/50A	12.2	6.05	11.0	10	33	F173AA394(1)250T	MDS10394(1)250A52P3TUBE
250	160	0.47	AA/50A	12.2	6.05	11.0	10	30	F173AA474(1)250T	MDS10474(1)250A52P3TUBE
250	160	0.56	AA/50A	12.2	6.05	13.5	10	26	F17(2)AA564(1)250T	MDS10564(1)250A54P(2)TUBE
250	160	0.68	AA/50A	12.2	6.05	16.5	10	21	F17(3)AA684(1)250T	MDS10684(1)250A55P(3)TUBE
250	160	0.033	BA/50B	16.5	6.05	11.0	15	390	F173BA333(1)250T	MDS15333(1)250B53P3TUBE
250	160	0.039	BA/50B	16.5	6.05	11.0	15	330	F173BA393(1)250T	MDS15393(1)250B53P3TUBE
250	160	0.047	BA/50B	16.5	6.05	11.0	15	270	F173BA473(1)250T	MDS15473(1)250B53P3TUBE
250	160	0.056	BA/50B	16.5	6.05	11.0	15	230	F173BA563(1)250T	MDS15563(1)250B53P3TUBE
250	160	0.068	BA/50B	16.5	6.05	11.0	15	190	F173BA683(1)250T	MDS15683(1)250B53P3TUBE
250	160	0.082	BA/50B	16.5	6.05	11.0	15	160	F173BA823(1)250T	MDS15823(1)250B53P3TUBE
250	160	0.10	BA/50B	16.5	6.05	11.0	15	130	F173BA104(1)250T	MDS15104(1)250B53P3TUBE
250	160	0.12	BA/50B	16.5	6.05	11.0	15	110	F173BA124(1)250T	MDS15124(1)250B53P3TUBE
250	160	0.15	BA/50B	16.5	6.05	11.0	15	85	F173BA154(1)250T	MDS15154(1)250B53P3TUBE
250	160	0.18	BA/50B	16.5	6.05	11.0	15	70	F173BA184(1)250T	MDS15184(1)250B53P3TUBE
250	160	0.22	BA/50B	16.5	6.05	11.0	15	58	F173BA224(1)250T	MDS15224(1)250B53P3TUBE
250	160	0.27	BA/50B	16.5	6.05	11.0	15	47	F173BA274(1)250T	MDS15274(1)250B53P3TUBE
250	160	0.33	BA/50B	16.5	6.05	11.0	15	39	F173BA334(1)250T	MDS15334(1)250B53P3TUBE
250	160	0.39	BA/50B	16.5	6.05	11.0	15	39	F173BA394(1)250T	MDS15394(1)250B53P3TUBE
250	160	0.47	BA/50B	16.5	6.05	11.0	15	30	F173BA474(1)250T	MDS15474(1)250B53P3TUBE
250	160	0.56	BA/50B	16.5	6.05	11.0	15	26	F173BA564(1)250T	MDS15564(1)250B53P3TUBE
250	160	0.68	BA/50B	16.5	6.05	11.0	15	21	F173BA684(1)250T	MDS15684(1)250B53P3TUBE
400	200	0.033	AA/00A	12.2	6.05	11.0	10	390	F173AA333(1)400T	MDS10333(1)400A52P3TUBE
400	200	0.039	AA/00A	12.2	6.05	11.0	10	330	F173AA393(1)400T	MDS10393(1)400A52P3TUBE
400	200	0.047	AA/00A	12.2	6.05	11.0	10	270	F173AA473(1)400T	MDS10473(1)400A52P3TUBE
400	200	0.056	AA/00A	12.2	6.05	11.0	10	230	F173AA563(1)400T	MDS10563(1)400A52P3TUBE
400	200	0.068	AA/00A	12.2	6.05	11.0	10	190	F173AA683(1)400T	MDS10683(1)400A52P3TUBE
400	200	0.082	AA/00A	12.2	6.05	11.0	10	160	F173AA823(1)400T	MDS10823(1)400A52P3TUBE
400	200	0.10	AA/00A	12.2	6.05	11.0	10	130	F173AA104(1)400T	MDS10104(1)400A52P3TUBE
400	200	0.12	AA/00A	12.2	6.05	11.0	10	110	F173AA124(1)400T	MDS10124(1)400A52P3TUBE
400	200	0.15	AA/00A	12.2	6.05	11.0	10	85	F173AA154(1)400T	MDS10154(1)400A52P3TUBE
400	200	0.18	AA/00A	12.2	6.05	11.0	10	70	F173AA184(1)400T	MDS10184(1)400A52P3TUBE
400	200	0.033	BA/00B	16.5	6.05	11.0	15	390	F173BA333(1)400T	MDS15333(1)400B53P3TUBE
400	200	0.039	BA/00B	16.5	6.05	11.0	15	330	F173BA393(1)400T	MDS15393(1)400B53P3TUBE
400	200	0.047	BA/00B	16.5	6.05	11.0	15	270	F173BA473(1)400T	MDS15473(1)400B53P3TUBE
400	200	0.056	BA/00B	16.5	6.05	11.0	15	230	F173BA563(1)400T	MDS15563(1)400B53P3TUBE
400	200	0.068	BA/00B	16.5	6.05	11.0	15	190	F173BA683(1)400T	MDS15683(1)400B53P3TUBE
400	200	0.082	BA/00B	16.5	6.05	11.0	15	160	F173BA823(1)400T	MDS15823(1)400B53P3TUBE
400	200	0.10	BA/00B	16.5	6.05	11.0	15	130	F173BA104(1)400T	MDS15104(1)400B53P3TUBE
400	200	0.12	BA/00B	16.5	6.05	11.0	15	110	F173BA124(1)400T	MDS15124(1)400B53P3TUBE
400	200	0.15	BA/00B	16.5	6.05	11.0	15	85	F173BA154(1)400T	MDS15154(1)400B53P3TUBE
400	200	0.18	BA/00B	16.5	6.05	11.0	15	70	F173BA184(1)400T	MDS15184(1)400B53P3TUBE
400	200	0.22	BA/00B	16.5	6.05	11.0	15	58	F173BA224(1)400T	MDS15224(1)400B53P3TUBE
400	200	0.27	BA/00B	16.5	6.05	11.0	15	47	F173BA274(1)400T	MDS15274(1)400B53P3TUBE
400	200	0.33	BA/00B	16.5	6.05	12.2	15	39	F17(2)BA334(1)400T	MDS15334(1)400B55P(2)TUBE
630	220	0.033	AA/30A	12.2	6.05	11.0	10	390	F173AA333(1)630T	MDS10333(1)630A52P3TUBE
630	220	0.039	AA/30A	12.2	6.05	11.0	10	330	F173AA393(1)630T	MDS10393(1)630A52P3TUBE
630	220	0.047	AA/30A	12.2	6.05	11.0	10	270	F173AA473(1)630T	MDS10473(1)630A52P3TUBE

(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.

Table 1 – Ratings & Part Number Reference cont'd

VDC	VAC	Cap Value (µF)	Size Code (New/Legacy)	Dimensions in mm			Lead Spacing (p)	ESR 500 kHz (mΩ)	New KEMET Part Number	Legacy Part Number
				B	H	L				
630	220	0.056	AA/30A	12.2	6.05	11.0	10	230	F173AA563(1)630T	MDS10563(1)630A52P3TUBE
630	220	0.068	AA/30A	12.2	6.05	13.5	10	190	F17(2)AA683(1)630T	MDS10683(1)630A54P(2)TUBE
630	220	0.033	BA/30B	16.5	6.05	11.0	15	390	F173BA333(1)630T	MDS15333(1)630B53P3TUBE
630	220	0.039	BA/30B	16.5	6.05	11.0	15	330	F173BA393(1)630T	MDS15393(1)630B53P3TUBE
630	220	0.047	BA/30B	16.5	6.05	11.0	15	270	F173BA473(1)630T	MDS15473(1)630B53P3TUBE
630	220	0.056	BA/30B	16.5	6.05	11.0	15	230	F173BA563(1)630T	MDS15563(1)630B53P3TUBE
630	220	0.068	BA/30B	16.5	6.05	11.0	15	190	F173BA683(1)630T	MDS15683(1)630B53P3TUBE
630	220	0.082	BA/30B	16.5	6.05	11.0	15	160	F173BA823(1)630T	MDS15823(1)630B53P3TUBE
630	220	0.10	BA/30B	16.5	6.05	11.0	15	130	F173BA104(1)630T	MDS15104(1)630B53P3TUBE
VDC	VAC	Capacitance 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.

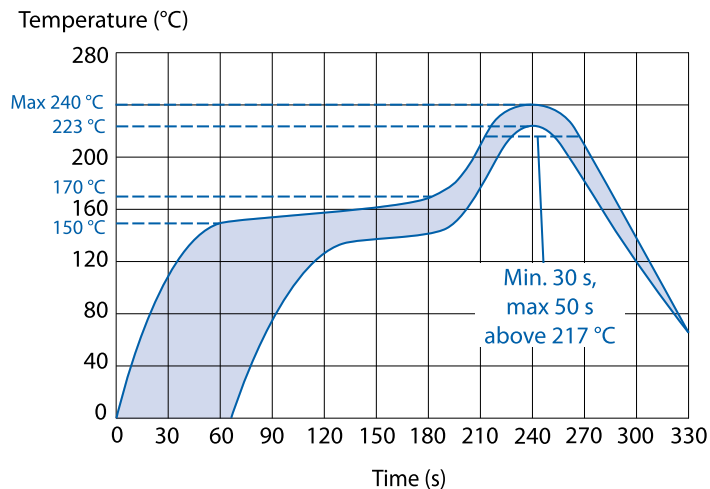
(2) = Number of leads per side, 3 or 4.

(3) = Number of leads per side, 3, 4 or 5.

Soldering Process

Reflow soldering temperature is measured on the top body surface of the component. Preheating temperature should be less than 170°C. The time above 217°C should be less than 50 seconds. The peak temperature must not exceed 240°C.

A lead-free soldering process for this series is in development. Please contact KEMET for details.



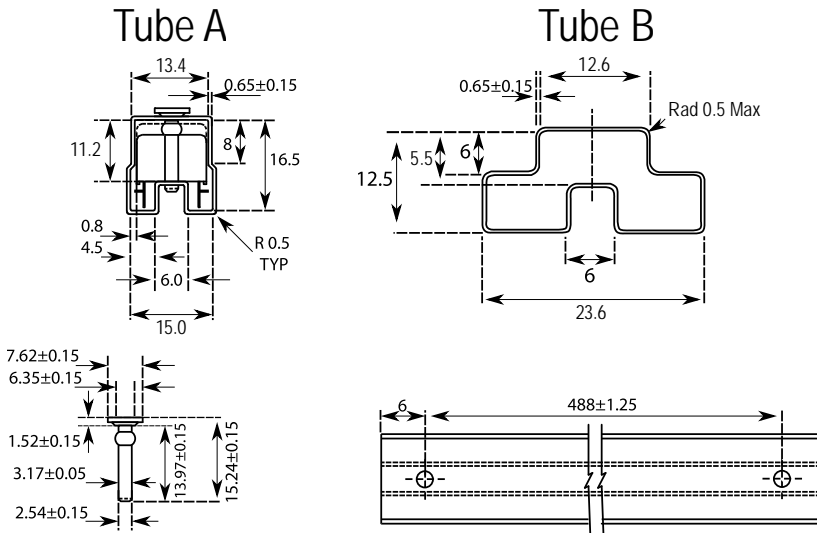
Marking

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

Packaging Quantities

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

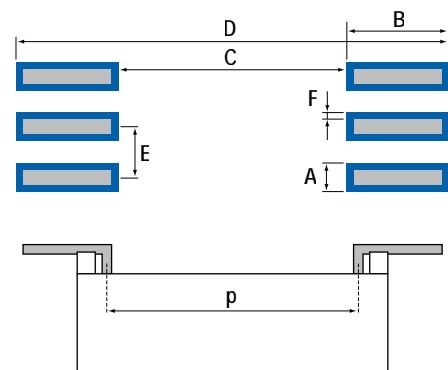
Tube Packaging



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

Landing

Size	Dimensions in mm						
	p	A	B	C	D	E	F
A52	10	1	2	9.15	13.15	2.54	0.25
A53	10	1	2	9.15	13.15	2.54	0.25
A54	10	1	2	9.15	13.15	2.54	0.25
A55	10	1	2	9.15	13.15	2.54	0.25
A57	10	1	2	9.15	13.15	2.54	0.25
A58	10	1	2	9.15	13.15	2.54	0.25
B53	15	1	2	14.15	18.15	2.54	0.25
B55	15	1	2	14.15	18.15	2.54	0.25



KEMET Corporation World Headquarters

2835 KEMET Way
Simpsonville, SC 29681

Mailing Address:
P.O. Box 5928
Greenville, SC 29606

www.kemet.com
Tel: 864-963-6300
Fax: 864-963-6521

Corporate Offices
Fort Lauderdale, FL
Tel: 954-766-2800

North America

Southeast
Lake Mary, FL
Tel: 407-855-8886

Northeast
Wilmington, MA
Tel: 978-658-1663

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
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 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.

