

- Metallized polyester (PET) DIL
- Low ESR and ESL
- Three and four pole connection possible
- Good temperature stability
- No voltage dependence of capacitance and dissipation factor

TYPICAL APPLICATIONS

High frequency switched mode power supplies and DC-DC converters. Input/output filtering.

CONSTRUCTION

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

TECHNICAL DATA

Rated voltage U_R VDC	50	100	250	400	630
Rated voltage U_R 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 $\pm 10\%$, $\pm 5\%$, other tolerances on request

Category temperature range -55 to $+125^\circ\text{C}$

Rated temperature $+85^\circ\text{C}$

Voltage derating The rated voltage is decreased with $1.25\%/^\circ\text{C}$ from $+85^\circ\text{C}$

Climatic category 55/125/56

Test voltage $1.6 \times U_R$, 60s

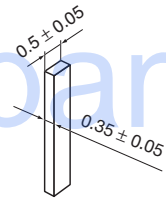
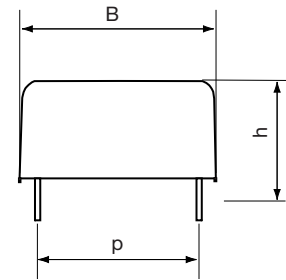
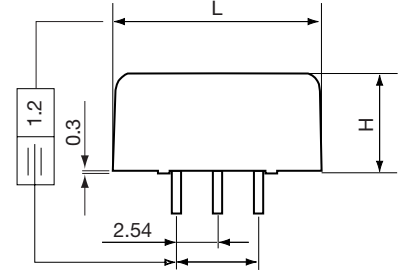
Insulation resistance Minimum value between terminals
Measured at $+20^\circ\text{C}$ according to IEC 60384-2

	$C \leq 0.33 \mu\text{F}$	$C > 0.33 \mu\text{F}$
$U_R \leq 100 \text{ V}$	15 000 M Ω	5 000 s
$U_R > 100 \text{ V}$	30 000 M Ω	10 000 s

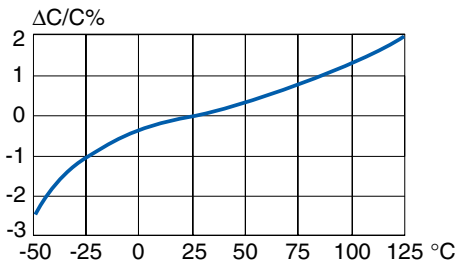
Dissipation factor Maximum values at $+23^\circ\text{C}$

	$C \leq 0.1 \mu\text{F}$	$0.1 < C \leq 3.3 \mu\text{F}$	$3.3 < C < 10 \mu\text{F}$	$C \geq 10 \mu\text{F}$
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 %	—	—

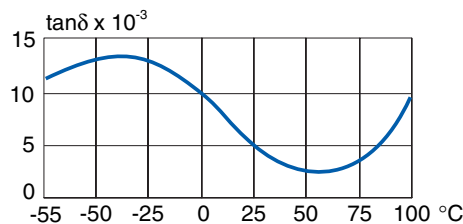
Self inductancy Approximately 4 nH



Detail of a lead



Typical capacitance vs temperature at 1 kHz

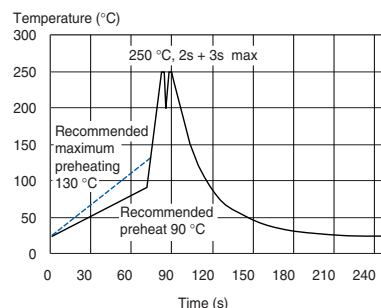


Typical dissipation factor vs temperature at 1 kHz

RECOMMENDED SOLDERING CONDITIONS

Electrode temperature, Wave soldering

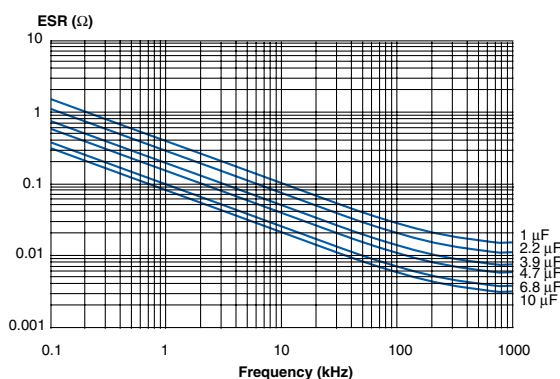
Preheating temperature should be less than 130°C. The peak temperature must not exceed 250°C.



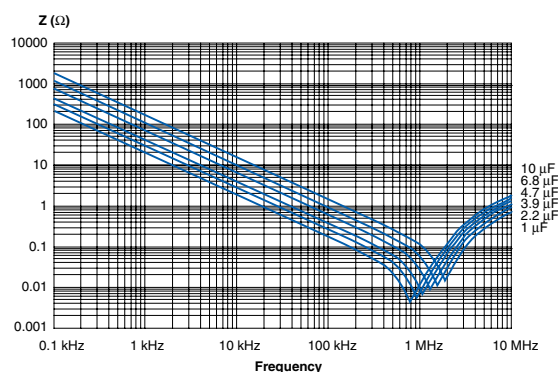
Recommended wave soldering profile

TYPICAL DATA

ESR vs. frequency



Impedance vs. frequency

Maximum RMS voltage U_{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
10 μ F	100 V	A58	50.0	15.0	2.0	0.4	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
10 μ F	100 V	A58	4.0	9.0	13.0	14.0	14.5

ORDERING INFORMATION

See article table and page 10 for options and article code construction.

MARKING

- EVOX
- Rated capacitance according to IEC 60062
- Capacitance tolerance code
- Rated voltage
- Capacitor family code MDK

ARTICLE TABLE

Capacitance μF	Dimensions in mm				ESR 500kHz m Ω	Article code									
	B	H	L	h			Capacitance μF	Dimensions in mm				ESR 500kHz m Ω	Article code		
	± 0.2	± 0.2	± 0.2				B	H	L	h					
100 VDC/63 VAC							400 VDC/200 VAC								
LEAD SPACING 15 MM							LEAD SPACING 10 MM								
0.68	16.5	6.05	11.0	6.25	21	MDK15 684K100B53P3 TUBE	0.033	12.2	6.05	11.0	6.25	390	MDK10 333K400A52P3 TUBE		
0.82	16.5	6.05	11.0	6.25	18	MDK15 824K100B53P3 TUBE	0.039	12.2	6.05	11.0	6.25	330	MDK10 393K400A52P3 TUBE		
1.0	16.5	6.05	11.0	6.25	15	MDK15 105K100B53P3 TUBE	0.047	12.2	6.05	11.0	6.25	270	MDK10 473K400A52P3 TUBE		
1.2	16.5	6.05	11.0	6.25	15	MDK15 125K100B53P3 TUBE	0.056	12.2	6.05	11.0	6.25	230	MDK10 563K400A52P3 TUBE		
1.5	16.5	6.05	11.0	6.25	13	MDK15 155K100B53P3 TUBE	0.068	12.2	6.05	11.0	6.25	190	MDK10 683K400A52P3 TUBE		
1.8	16.5	6.05	11.0	6.25	13	MDK15 185K100B53P3 TUBE	0.082	12.2	6.05	11.0	6.25	160	MDK10 823K400A52P3 TUBE		
2.2	16.5	6.05	11.0	6.25	11	MDK15 225K100B53P3 TUBE	0.10	12.2	6.05	11.0	6.25	130	MDK10 104K400A52P3 TUBE		
2.7	16.5	6.05	11.0	6.25	11	MDK15 275K100B53P3 TUBE	0.12	12.2	6.05	11.0	6.25	110	MDK10 124K400A52P3 TUBE		
3.3	16.5	6.05	11.0	6.25	8	MDK15 335K100B53P3 TUBE	0.15	12.2	6.05	11.0	6.25	85	MDK10 154K400A52P3 TUBE		
3.9	16.5	6.05	11.0	6.25	8	MDK15 395K100B53P3 TUBE	0.18	12.2	6.05	11.0	6.25	70	MDK10 184K400A52P3 TUBE		
4.7	16.5	6.05	11.0	6.25	6	MDK15 475K100B53P3 TUBE *	0.22	12.7	9.0	23.0	10.7	58	MDK10 224K400A57Py TUBE		
5.6	16.5	6.05	12.2	6.25	5	MDK15 565K100B55Px TUBE *	0.27	12.7	9.0	23.0	10.7	47	MDK10 274K400A57Py TUBE		
250 VDC/160 VAC							LEAD SPACING 15 MM								
LEAD SPACING 10 MM															
0.033	12.2	6.05	11.0	6.25	390	MDK10 333K250A52P3 TUBE	0.033	16.5	6.05	11.0	6.25	390	MDK15 333K400B53P3 TUBE		
0.039	12.2	6.05	11.0	6.25	330	MDK10 393K250A52P3 TUBE	0.039	16.5	6.05	11.0	6.25	330	MDK15 393K400B53P3 TUBE		
0.047	12.2	6.05	11.0	6.25	270	MDK10 473K250A52P3 TUBE	0.047	16.5	6.05	11.0	6.25	270	MDK15 473K400B53P3 TUBE		
0.056	12.2	6.05	11.0	6.25	230	MDK10 563K250A52P3 TUBE	0.056	16.5	6.05	11.0	6.25	230	MDK15 563K400B53P3 TUBE		
0.068	12.2	6.05	11.0	6.25	190	MDK10 683K250A52P3 TUBE	0.068	16.5	6.05	11.0	6.25	190	MDK15 683K400B53P3 TUBE		
0.082	12.2	6.05	11.0	6.25	160	MDK10 823K250A52P3 TUBE	0.082	16.5	6.05	11.0	6.25	160	MDK15 823K400B53P3 TUBE		
0.10	12.2	6.05	11.0	6.25	130	MDK10 104K250A52P3 TUBE	0.10	16.5	6.05	11.0	6.25	130	MDK15 104K400B53P3 TUBE		
0.12	12.2	6.05	11.0	6.25	110	MDK10 124K250A52P3 TUBE	0.12	16.5	6.05	11.0	6.25	110	MDK15 124K400B53P3 TUBE		
0.15	12.2	6.05	11.0	6.25	85	MDK10 154K250A52P3 TUBE	0.15	16.5	6.05	11.0	6.25	85	MDK15 154K400B53P3 TUBE		
0.18	12.2	6.05	11.0	6.25	70	MDK10 184K250A52P3 TUBE	0.18	16.5	6.05	11.0	6.25	70	MDK15 184K400B53P3 TUBE		
0.22	12.2	6.05	11.0	6.25	58	MDK10 224K250A52P3 TUBE	0.22	16.5	6.05	11.0	6.25	58	MDK15 224K400B53P3 TUBE		
0.27	12.2	6.05	11.0	6.25	47	MDK10 274K250A52P3 TUBE	0.27	16.5	6.05	11.0	6.25	47	MDK15 274K400B53P3 TUBE		
0.33	12.2	6.05	11.0	6.25	39	MDK10 334K250A52P3 TUBE	0.33	16.5	6.05	12.2	6.25	39	MDK15 334K400B55Px TUBE		
0.39	12.2	6.05	11.0	6.25	33	MDK10 394K250A52P3 TUBE									
0.47	12.2	6.05	11.0	6.25	30	MDK10 474K250A52P3 TUBE	630 VDC/220 VAC								
0.56	12.2	6.05	13.5	6.25	26	MDK10 564K250A54Px TUBE	LEAD SPACING 10 MM								
0.68	12.2	6.05	16.5	6.25	21	MDK10 684K250A55Pz TUBE									
0.82	12.7	9.0	23.0	10.7	18	MDK10 824K250A57Py TUBE									
1.0	12.7	9.0	23.0	10.7	15	MDK10 105K250A57Py TUBE									
1.2	12.7	11.0	23.0	12.5	14	MDK10 125K250A58Py TUBE									
1.5	12.7	11.0	23.0	12.5	13	MDK10 155K250A58Py TUBE									
LEAD SPACING 15 MM							LEAD SPACING 15 MM								
0.033	16.5	6.05	11.0	6.25	390	MDK15 333K250B53P3 TUBE	0.033	12.2	6.05	11.0	6.25	390	MDK10 333K630A52P3 TUBE		
0.039	16.5	6.05	11.0	6.25	330	MDK15 393K250B53P3 TUBE	0.039	12.2	6.05	11.0	6.25	330	MDK10 393K630A52P3 TUBE		
0.047	16.5	6.05	11.0	6.25	270	MDK15 473K250B53P3 TUBE	0.047	12.2	6.05	11.0	6.25	270	MDK10 473K630A52P3 TUBE		
0.056	16.5	6.05	11.0	6.25	230	MDK15 563K250B53P3 TUBE	0.056	12.2	6.05	11.0	6.25	230	MDK10 563K630A52P3 TUBE		
0.068	16.5	6.05	11.0	6.25	190	MDK15 683K250B53P3 TUBE	0.068	12.2	6.05	13.5	6.25	190	MDK10 683K630A54Px TUBE		
0.082	16.5	6.05	11.0	6.25	160	MDK15 823K250B53P3 TUBE	0.082	12.7	11.0	23.0	12.5	160	MDK10 823K630A58Py TUBE		
0.10	16.5	6.05	11.0	6.25	130	MDK15 104K250B53P3 TUBE	0.10	12.7	11.0	23.0	12.5	130	MDK10 104K630A58Py TUBE		
0.12	16.5	6.05	11.0	6.25	110	MDK15 124K250B53P3 TUBE	0.12	12.7	11.0	23.0	12.5	110	MDK10 124K630A58Py TUBE		
0.15	16.5	6.05	11.0	6.25	85	MDK15 154K250B53P3 TUBE	0.15	12.7	11.0	23.0	12.5	85	MDK10 154K630A58Py TUBE		
0.18	16.5	6.05	11.0	6.25	70	MDK15 184K250B53P3 TUBE	0.18	12.7	11.0	23.0	12.5	70	MDK10 184K630A58Py TUBE		
0.22	16.5	6.05	11.0	6.25	58	MDK15 224K250B53P3 TUBE	LEAD SPACING 15 MM								
0.27	16.5	6.05	11.0	6.25	47	MDK15 274K250B53P3 TUBE									
0.33	16.5	6.05	11.0	6.25	39	MDK15 334K250B53P3 TUBE	0.033	16.5	6.05	11.0	6.25	390	MDK15 333K630B53P3 TUBE		
0.39	16.5	6.05	11.0	6.25	39	MDK15 394K250B53P3 TUBE	0.039	16.5	6.05	11.0	6.25	330	MDK15 393K630B53P3 TUBE		
0.47	16.5	6.05	11.0	6.25	30	MDK15 474K250B53P3 TUBE	0.047	16.5	6.05	11.0	6.25	270	MDK15 473K630B53P3 TUBE		
0.56	16.5	6.05	11.0	6.25	26	MDK15 564K250B53P3 TUBE	0.056	16.5	6.05	11.0	6.25	230	MDK15 563K630B53P3 TUBE		
0.68	16.5	6.05	11.0	6.25	21	MDK15 684K250B53P3 TUBE	0.068	16.5	6.05	11.0	6.25	190	MDK15 683K630B53P3 TUBE		
							0.082	16.5	6.05	11.0	6.25	160	MDK15 823K630B53P3 TUBE		
							0.10	16.5	6.05	11.0	6.25	130	MDK15 104K630B53P3 TUBE		

* 100 VDC/35 VAC

Statements of suitability for certain applications are based on our knowledge of typical operating conditions for such applications, but are not intended to constitute – and we specifically disclaim – any warranty concerning suitability for a specific customer application or use. This Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by us with reference to the use of our products is given gratis, and we assume no obligation or liability for the advice given or results obtained.

x = Number of leads per side, 3 or 4
z = Number of leads per side, 3, 4 or 5
y = Number of leads per side, 7 or 8