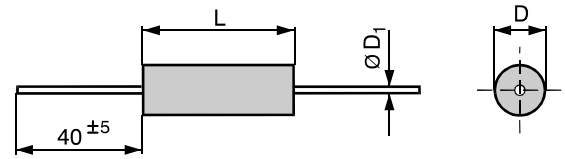




Metallized Polyester-Film-Capacitor with axial leads

for high performances



Characteristic

- small sizes, self-healing, low self inductance
- for use in all fields of electronic e.g. blocking, coupling or decoupling
- RoHS Compliant 2011/95/EC (recall of 2002/95/EC)



Dielectric: Polyester-Film (Polyethylenterephthalat-Film)

Electrodes: Vacuum deposited Aluminium

Coating: Plastic wrapped, epoxy resin sealed

Leads: Tinned wire

Temperature range: -55°C to +100°C

Tests: acc. EN 60384-2, Grad 1

IEC test classification: 55/100/56 acc. EN 60068-1

Capacitance tolerance: ±20% (M), ±10% (K), ±5% (J)

Dissipation factor tanδ (at 20°C):

Frequency	$C_R \leq 0,1 \mu F$	$0,1 \mu F < C_R \leq 1 \mu F$	$C_R > 1 \mu F$
1 kHz	$\leq 8 \cdot 10^{-3}$	$\leq 8 \cdot 10^{-3}$	$\leq 10 \cdot 10^{-3}$
10 kHz	$\leq 15 \cdot 10^{-3}$	$\leq 15 \cdot 10^{-3}$	-
100 kHz	$\leq 30 \cdot 10^{-3}$	-	-

Test voltage (between terminations)

$1,6 \cdot V_R$ for $C_R \leq 33 \mu F$

$1,4 \cdot V_R$ for $C_R > 33 \mu F$

Duration: 2 s, (Approval test: 1 Min.)

Test voltage (between terminations and case): $2 \cdot V_R$,

minimum 200 V, 1 Min.

Derating of voltage: A voltage derating factor of 1,25% per 1K must be applied from 85°C for DC application and from 75°C for AC application >60 Hz

AC-Voltage at 60 Hz: $1,4 \cdot V_{RMS} + V_{DC} \leq V_R$

Resistance to soldering heat: Bath temperature max. 260°C, duration max. 10 s, method Tb acc. IEC 60068-2-20

Insulation values R_i resp. τ :

V_R	V_{meas}	R_i for $C_R \leq 0,33 \mu F$	τ for $0,33 \mu F > C_R \leq 33 \mu F$	τ for $C_R > 33 \mu F$
≤ 63 V	10 V	$\geq 15\,000$ MΩ	$\geq 5\,000$ s	$\geq 2\,500$ s
100 V	100 V	$\geq 15\,000$ MΩ	$\geq 5\,000$ s	$\geq 2\,500$ s
≥ 160 V	100 V	$\geq 30\,000$ MΩ	$\geq 10\,000$ s	$\geq 5\,000$ s

Measuring procedure: 1 Min., 20°C

Pulse rise time dv/dt (max. working) in $V/\mu s$

L / mm	50 V	63 V	100 V	160 V	250 V	400 V	630 V	1 000 V
$\leq 14,0$	7 / 70	9 / 90	11 / 110	-	16 / 160	30 / 300	40 / 400	120 / 1 200
19	2 / 20	4 / 40	6 / 60	-	9 / 90	15 / 150	22 / 220	80 / 800
26,5	-	3 / 30	3 / 30	4 / 40	5 / 50	8 / 80	12 / 120	60 / 600
31,5 / 32,0	-	2 / 20	2 / 20	2 / 20	3 / 30	5 / 50	8 / 80	30 / 300
41,5 - 42,5	-	1 / 10	1 / 10	1 / 10	2 / 20	3 / 30	4 / 40	-
54 / 57	-	-	0,3 / 3	0,4 / 4	0,5 / 5	1 / 10	1,5 / 15	-

Pulse characteristic K_o (max. working) in $V^2/\mu s$

L / mm	50 V	63 V	100 V	160 V	250 V	400 V	630 V	1 000 V
$\leq 14,0$	700	1 100	2 200	-	8 000	24 000	50 000	240 000
19	200	500	1 200	-	4 500	12 000	28 000	160 000
26,5	-	380	600	1 300	2 500	6 400	15 000	120 000
31,5 / 32,0	-	250	400	620	1 500	4 000	10 000	60 000
41,5 - 42,5	-	120	200	320	1 000	2 400	5 000	-
54 / 57	-	-	60	130	250	800	1 900	-



General Data

Capacitance C _R	50 Vdc 30 V, 60 Hz			63 Vdc 40 V, 60 Hz			100 Vdc 63 V, 60 Hz			160 Vdc 100 V, 60 Hz		
	D	L	D ₁	D	L	D ₁	D	L	D ₁	D	L	D ₁
0,1 µF							5	11	0,6			
0,15 µF							5	11	0,6			
0,22 µF							5	11	0,6			
0,33 µF				5	11	0,6	5	14	0,6			
0,47 µF	5	11	0,6	5	11	0,6	5	14	0,6			
0,68 µF	5,5	11	0,6	6	11	0,6	6	14	0,6			
1,0 µF	6,5	11	0,6	6	11	0,6	7	14	0,6			
1,5 µF	7	11	0,6	6	19	0,6	6	19	0,6			
2,2 µF	7	11	0,6	7,5	19	0,8	7	19	0,6	7,5	26,5	0,8
3,3 µF	7,5	19	0,6	8	19	0,8	8	19	0,8	9	26,5	0,8
4,7 µF	7,5	19	0,8	8,5	26,5	0,8	8,5	26,5	0,8	9	26,5	0,8
6,8 µF	9	19	0,8	9,5	19	0,8	9,5	26,5	0,8	10,5	26,5	0,8
10 µF	9	19	0,8	9,5	26,5	0,8	11	26,5	0,8	12,5	26,5	0,8
15 µF	10,5	19	0,8	11	26,5	0,8	12	31,5	0,8	13	31,5	0,8
22 µF	12,5	19	0,8	11,5	31,5	0,8	14,5	31,5	0,8	16	31,5	0,8
33 µF				14,5	31,5	0,8	17	31,5	1,0	19,5	31,5	1,0
47 µF				17	31,5	0,8	20,5	31,5	1,0	23,5	32	1,0
68 µF				18	41,5	1,0	25	32	1,0	20	42	1,0
100 µF				21,5	42	1,0	21,5	42	1,0	24	42	1,0
				26	42	1,0	25	42	1,0	29	42	1,0
				26	42	1,0	30	57	1,0	35	57	1,0
				31	42,5	1,0	37	57	1,0	42	57	1,0

Capacitance C _R	250 Vdc 160 V, 60 Hz			400 Vdc 200 V, 60 Hz			630 Vdc 220 V, 60 Hz*			1 000 Vdc 400 V, 60 Hz		
	D	L	D ₁	D	L	D ₁	D	L	D ₁	D	L	D ₁
100 - 680 pF										5	11	0,6
1 000 pF										5	11	0,6
1 500 pF										5	11	0,6
2 200 pF							5	11	0,6	5	14	0,6
3 300 pF							5	11	0,6	5	14	0,6
4 700 pF							5	11	0,6	5	14	0,6
6 800 pF							5	11	0,6	5,5	14	0,6
0,01 µF				5	11	0,6	5	11	0,6	6	19	0,6
0,015 µF				5	11	0,6	5	14	0,6	6,5	19	0,6
0,022 µF				5	11	0,6	5,5	14	0,6	7	19	0,8
0,033 µF				5	11	0,6	6	14	0,6	8	19	0,8
0,047 µF	5	11	0,6	5	14	0,6	6	19	0,6	12	19	0,8
0,068 µF	5	11	0,6	6	14	0,6	7	19	0,6	8	26,5	0,8
0,1 µF	5	11	0,6	6	14	0,6	7	19	0,6	9	26,5	0,8
0,15 µF	5	14	0,6	6	19	0,6	8	19	0,8	10,5	26,5	0,8
0,22 µF	6	14	0,6	7	19	0,6	8	26,5	0,8	11	31,5	0,8
0,33 µF	7,5	14	0,6	8	19	0,8	9,5	26,5	0,8	13	31,5	0,8
0,47 µF	6	19	0,6	8	26,5	0,8	10	31,5	0,8	16	31,5	0,8
0,68 µF	7	19	0,6	9	26,5	0,8	11,5	31,5	0,8	18,5	31,5	1,0
1,0 µF	8	19	0,8	10,5	26,5	0,8	13,5	31,5	0,8			
1,5 µF	8,5	26,5	0,8	11,5	31,5	0,8	16	31,5	0,8			
2,2 µF	9,5	26,5	0,8	13,5	31,5	0,8	19	31,5	1,0			
3,3 µF	10,5	26,5	0,8	16	31,5	0,8	17	41,5	1,0			
4,7 µF	12	31,5	0,8	16	31,5	0,8	20	42	1,0			
6,8 µF	12,5	31,5	0,8	20	31,5	1,0	24	42	1,0			
10 µF	14,5	31,5	0,8	20,5	42	1,0	29	42	1,0			
15 µF	17,5	31,5	1,0	25	42	1,0	30	54	1,0			
22 µF	21	31,5	1,0	30	42,5	1,0	36	54	1,0			
33 µF	21,5	42	1,0	31	54	1,0						
47 µF	26	42	1,0	37	54	1,0						
68 µF	31,5	42,5	1,0									
	32	54	1,0									
	39	54	1,0									

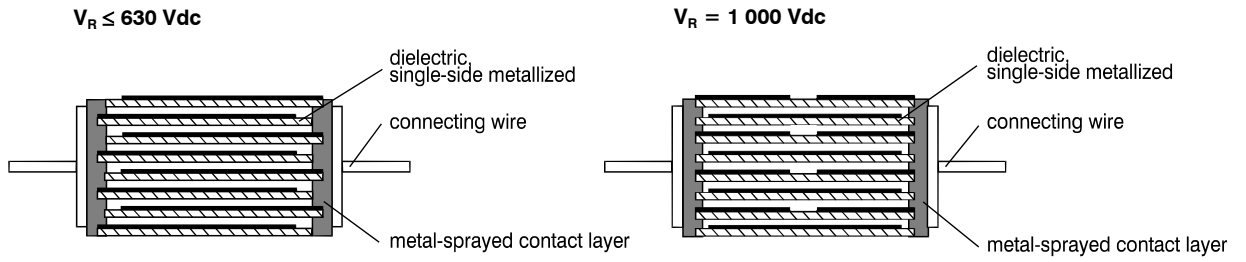
*: Not suitable for mains applications

D and L are maximum values

Further values by request – unless something other was agreed – the size of the next higher value is effective.

available with sizes DxL=14,5x31,5 mm by request
available with sizes DxL=17,0x31,5 mm by request

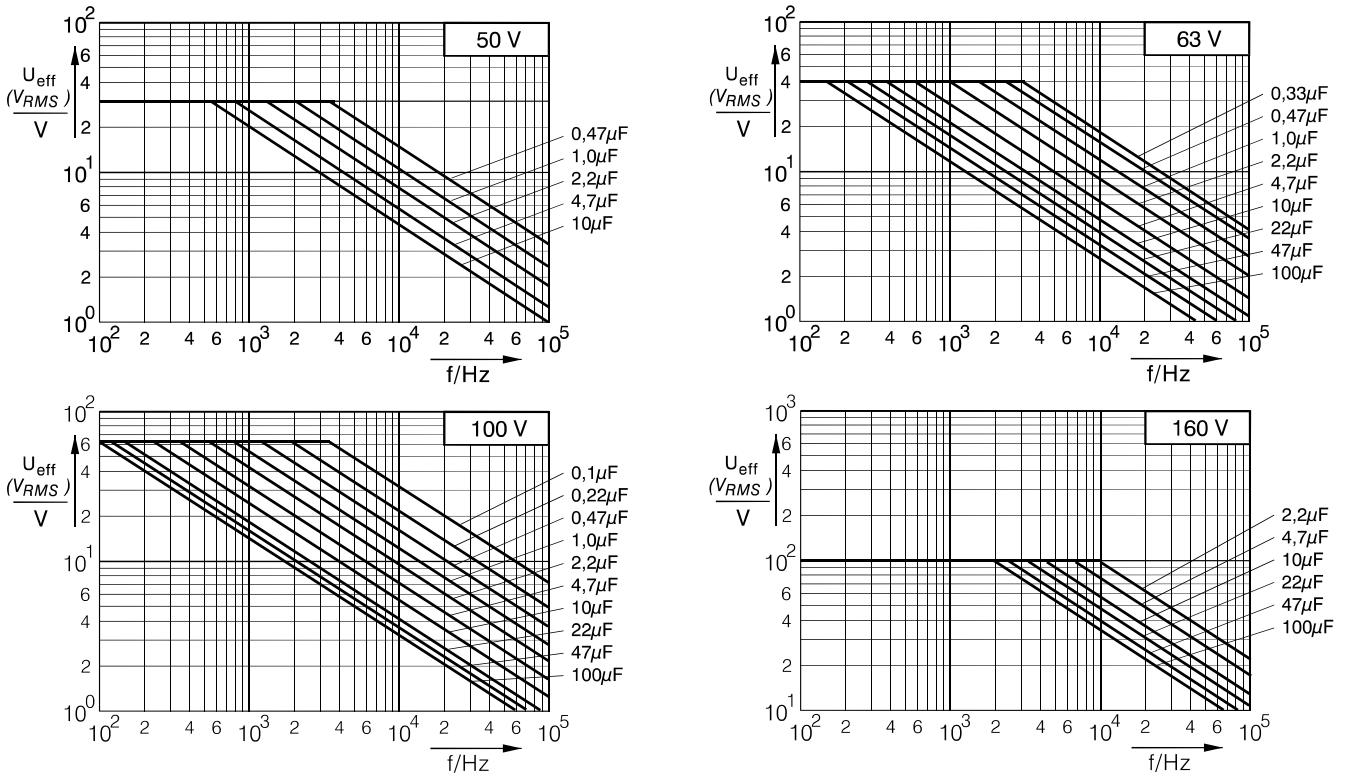
Internal structure / Example



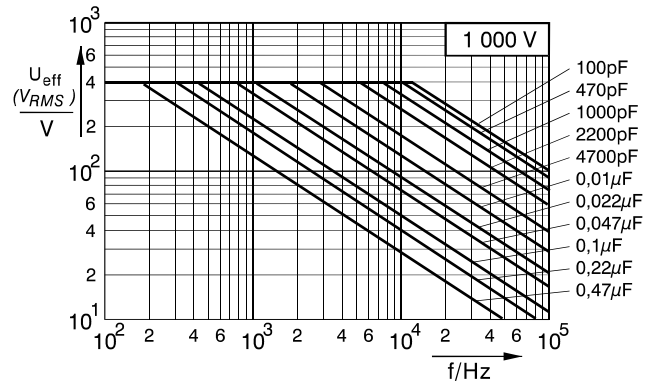
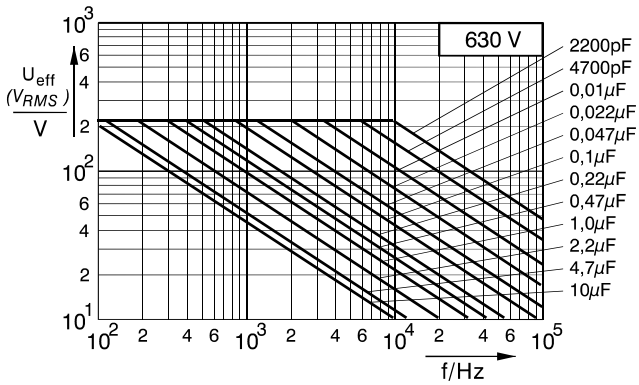
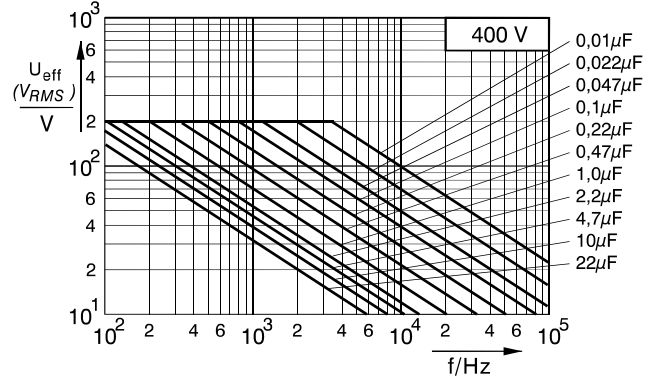
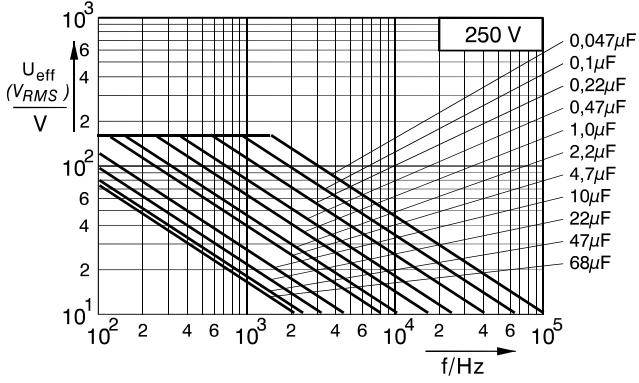
Eccentricity of leads

The maximum eccentricity of leads is smaller than or equal to the lead diameter of the product is used.

AC-Voltage vs. frequency at sinusoidal wave-form, general guide up to 40°C:

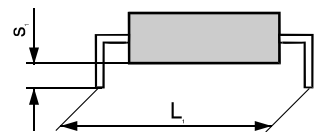


AC-Voltage vs. frequency at sinusoidal wave-form, general guide up to 40°C:
- continued -



Preformed leads

Style „preformed“ (Code „P“ in ordering code) is available for capacitor length $L \leq 31,5$ mm and diameter $D < 20$ mm, specification for L1 and s1 by agreement



Packing: Loose capacitors in boxes or taped and reeled for length $L \leq 31,5$ mm and diameter $D \leq 20$ mm



Ordering Code

In the case of different body sizes for same electrical value the code for series with length is requested, otherwise the series description **MKT 72** is sufficient.

All inquiries and orders we accept in usually text or by code. The following table contains the codes, further values by request:

Series and body length		Capacitance		Tolerance		Voltage		Packing	
Length L	Code	Value	Code	Value	Code	Value	Code	Style	Code
11 mm	MKT720	100 pF	210	±5%	J	50 Vdc	2	loose, leads length 40±5 mm	<i>(empty)</i>
14 mm	MKT721	150 pF	215	±10%	K	63 Vdc	3	taped on reel	R
19 mm	MKT722	220 pF	220	±20%	M	100 Vdc	4	loose, preformed	P
26,5 mm	MKT723	330 pF	233			160 Vdc	5		
31,5..32 mm	MKT724	470 pF	247			250 Vdc	6		
42...42,5 mm	MKT726	680 pF	268			400 Vdc	7		
54...57 mm	MKT727	1 000 pF	310			630 Vdc	8		
		1 500 pF	315			1 000 Vdc	9		
		2 200 pF	322						
		3 300 pF	333						
		4 700 pF	347						
		6 800 pF	368						
		0,01 μF	410						
		0,015 μF	415						
		0,022 μF	422						
		0,033 μF	433						
		0,047 μF	447						
		0,068 μF	468						
		0,1 μF	510						
		0,15 μF	515						
		0,22 μF	522						
		0,33 μF	533						
		0,47 μF	547						
		0,68 μF	568						
		1,0 μF	610						
		1,2 μF	612						
		1,5 μF	615						
		1,8 μF	618						
		2,2 μF	622						
		2,7 μF	627						
		3,3 μF	633						
		3,9 μF	639						
		4,7 μF	647						
		5,6 μF	656						
		6,8 μF	668						
		8,2 μF	682						
		10 μF	710						
		12 μF	712						
		15 μF	715						
		18 μF	718						
		22 μF	722						
		27 μF	727						
		33 μF	733						
Specially sizes acc. notes		39 μF	739						
1 and 2 of table „General data“:		47 μF	747						
	MKT7249	56 μF	756						
		68 μF	768						
		82 μF	782						
		100 μF	810						

Codes for further values by request

The supplier reserved the right to use the description MKT 72 in all documents and will use other rules to distinguish different sizes if necessary.

Example of code for capacitor MKT 72 - 1,0μF/±10%/63vdc, taped on reel, sizes DxL = 6x19 mm:

MKT722+610K3+R

If the purchaser has taken no other agreement, the product description is made as usual text. Capacitance values less than 10 nF are given in Picofarad (pF), from 10 nF in Microfarad (μF).

Packing unitsPreferred quantities for capacitors with diameter $D \leq 21$ mm and length L up to 31,5 mm

diameter of capacitor D max. mm	loose (leads length 40 ± 5 mm)					taped / reel
	length of capacitor L					all lengths up to 31,5 mm
	11 mm	14 mm	19	26,5 mm	31,5 mm	
5	1 500	1 000	-	-	-	3 000
5,5 ... 6	1 000	1 000	2 000	-	-	1 500
6,5 ... 7	1 000	1 000	2 000	-	-	1 200
7,5 ... 8	-	-	1 250	-	-	1 000
8,5	-	-	1 250	-	-	800
9	-	-	1 250	1 000	-	800
9,5 ... 10	-	-	1 000	800	500	800
10,5 ... 11	-	-	1 000	600	500	500
11,5 ... 12	-	-	800	600	500	450
12,5 ... 13	-	-	800	600	500	400
13,5 ... 15	-	-	-	-	400	350
15,5 ... 16	-	-	-	-	350	250
16,5 ... 17	-	-	-	-	300	200
17,5 ... 18	-	-	-	-	300	180
18,5 ... 20	-	-	-	-	250	160
20,5 ... 21	-	-	-	-	250	-

Packing units for capacitors with sizes out of above table or with different leads variations by request

Additional information find as follow:General and Principles: www.electel.de/files/general.pdfTaping: www.electel.de/files/tape_ax.pdf

This specification must be read in conjunction with the data given in the "General technical information" chapter.
Deviations in the construction as opposed to the description in the drawings are possible. The dimension of lengths is mm.

We reserve the rights of delivery and technical alterations without prior notice.

The data indicated herein describe the type of component and shall not be considered as guaranteed characteristics.

In all cases the German version of this document shall be taken as authoritative.

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