

Metallized Polyester-Film-Capacitor in a plastic case

lead spacing 5 mm
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 2011/65/EC

Dielectric: Polyester-Film (Polyethylenterephthalat-Film)

Electrodes: Vacuum deposited Aluminium

Coating: Flame retardant plastic case (UL-class 94 V-0), epoxy resin sealed

Leads: Tinned wire

Temperature range: -55°C to +110°C

Tests: acc. EN 60384-2

IEC test classification: 55/110/56 acc. EN 60068-1

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

Dissipation factor $\tan\delta$ (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	$\leq 8 * 10^{-3}$	$\leq 8 * 10^{-3}$	$\leq 10 * 10^{-3}$
10 kHz	$\leq 15 * 10^{-3}$	$\leq 15 * 10^{-3}$	-
100 kHz	$\leq 30 * 10^{-3}$	-	-

Insulation values R_i resp. τ :

V_R	V_{meas}	R_i for $C_R \leq 0,33 \mu F$	τ for $0,33 \mu F > C_R \leq 1 \mu F$	τ for $C_R > 1 \mu F$
$\leq 63 V$	10 V	$\geq 15\ 000 M\Omega$	$\geq 5\ 000 s$	$\geq 2\ 500 s$
100 V	100 V	$\geq 15\ 000 M\Omega$	$\geq 5\ 000 s$	-
$\geq 250 V$	100 V	$\geq 30\ 000 M\Omega$	-	-

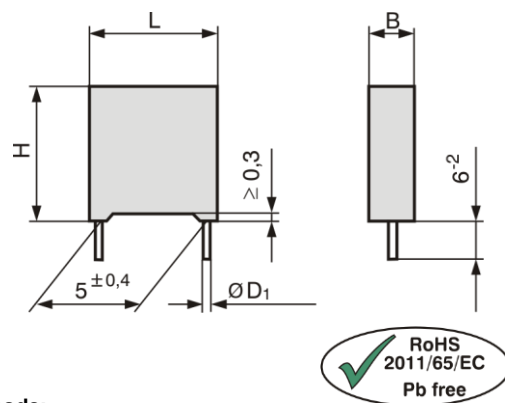
Measuring procedure: 1 Min., 20°C

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

	50 V	63 V	100 V	250 V	400 V	630 V
$< 0,01 \mu F$	-	-	-	30 / 300	60 / 600	800 / 8 000
$\geq 0,01 \mu F \dots < 0,1 \mu F$	-	15 / 150	18 / 180	25 / 250	40 / 400	800 / 8 000
$\geq 0,1 \mu F \dots < 1 \mu F$	10 / 100	12 / 120	15 / 150	20 / 200	-	-
$\geq 1 \mu F$	8 / 80	8 / 80	-	-	-	-

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

	50 V	63 V	100 V	250 V	400 V	630 V
$< 0,01 \mu F$	-	-	-	15 000	48 000	1 000 000
$\geq 0,01 \mu F \dots < 0,1 \mu F$	-	1 900	3 600	13 000	32 000	1 000 000
$\geq 0,1 \mu F \dots < 1 \mu F$	1 000	1 500	3 000	10 000	-	-
$\geq 1 \mu F$	800	1 000	-	-	-	-



Diameter of leads:

B	$\varnothing D_1$
$\leq 6 mm$	0,5 mm
7,2 mm	0,6 mm

Test voltage (between terminations): $1,6 * V_R$, 2 s
(Approval test: 1 Min.)

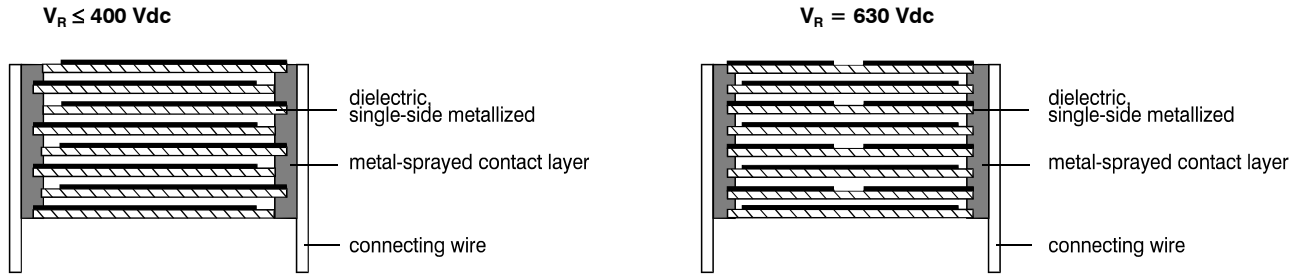
Test voltage (between terminations and case): $2 * V_R$,
minimum 200 V, 1 Min.

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: $1,4 * V_{RMS} + V_{DC} \leq V_R$

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

Internal structure / Examples



General Data

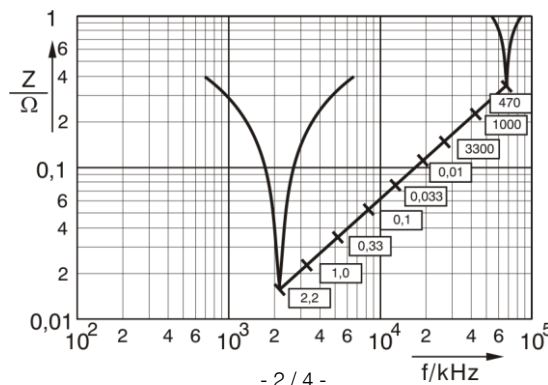
Capacitance C _R	50 Vdc 30 V, 60 Hz			63 Vdc 40 V, 60 Hz			100 Vdc 63 V, 60 Hz			250 Vdc 160 V, 60 Hz			400 Vdc 200 V, 60 Hz			630 Vdc 300 V, 60 Hz*			
	B	H	L	B	H	L	B	H	L	B	H	L	B	H	L	B	H	L	
470 pF													2,5	6,5	7,2				
680 pF													2,5	6,5	7,2				
1 000 pF													2,5	6,5	7,2	2,5	6,5	7,2	
1 500 pF													2,5	6,5	7,2	2,5	6,5	7,2	
2 200 pF													2,5	6,5	7,2	3	6,5	7,2	
3 300 pF													2,5	6,5	7,2	3,5	7,5	7,2	
4 700 pF													2,5	6,5	7,2	3,5	8,5	7,2	
6 800 pF											2,5	6,5	7,2	3	6,5	7,2	4,5	8,7	7,2
0,01 μF										2,5	6,5	7,2	3,5	8,5	7,2	5	10	7,2	
0,015 μF							2,5	6,5	7,2	2,5	6,5	7,2	3,5	8,5	7,2	7,2	13	7,2	
0,022 μF							2,5	6,5	7,2	3	6,5	7,2	4,5	8,7	7,2				
0,033 μF							2,5	6,5	7,2	3,5	7,5	7,2	5	10	7,2				
0,047 μF							2,5	6,5	7,2	3,5	7,5	7,2	6	11	7,2				
0,068 μF				2,5	6,5	7,2	3	6,5	7,2	4,5	8,7	7,2	7,2	13	7,2				
0,082 μF							3,5	7,5	7,2										
0,1 μF				2,5	6,5	7,2	3,5	8,5	7,2	5	10	7,2							
0,12 μF										5	10	7,2							
0,15 μF				2,5	6,5	7,2	3,5	8,5	7,2	6	11	7,2							
0,18 μF							4,5	8,7	7,2	6	11	7,2							
0,22 μF	2,5	6,5	7,2	3	6,5	7,2	4,5	8,7	7,2	7,2	13	7,2							
0,33 μF	3	6,5	7,2	3,5	7,5	7,2	6	11	7,2										
0,47 μF	3,5	7,5	7,2	3,5	8,5	7,2	6	11	7,2										
0,68 μF	4,5	8,7	7,2	4,5	9,5	7,2	7,2	13	7,2										
1,0 μF	4,5	9,5	7,2	5	10	7,2													
1,5 μF	6	11	7,2	6	11	7,2													
2,2 μF	7,2	13	7,2																

*: Not suitable for mains applications

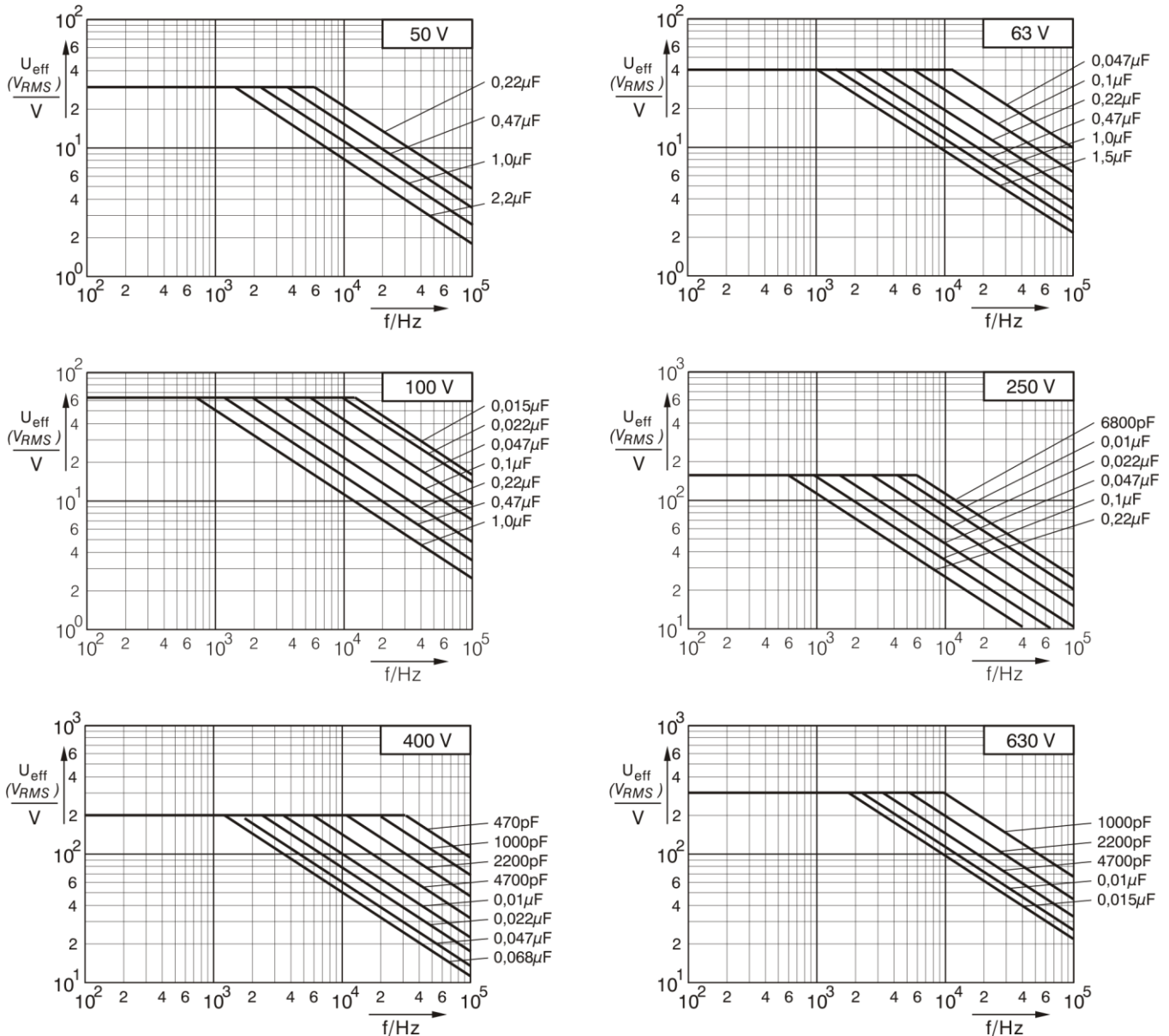
1 available with sizes 3,5x7,5x7,2 mm by request
2 available with sizes 3,5x8,5x7,2 mm by request

Further intermediate values following line E12 by request – unless something other was agreed – the size of the next higher value in line E6 is effective.

Impedance vs. frequency:



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



Packing units

Sizes of capacitors			Bulked (untaped), LL 6-2 mm		Taped	
B	H	L	Standard packing	small packing	Pieces	Style
2,5	6,5	7,2	Pieces	Pieces	Pieces	Ammopack
3	6,5	7,2	4 000	2 000	3 000	Ammopack
3,5	7,5	7,2	3 000	1 500	2 600	Ammopack
3,5	8,5	7,2	2 500	1 250	2 200	Ammopack
4,5	8,7	7,2	2 000	1 000	2 200	Ammopack
4,5	9,5	7,2	3 000	1 500	1 700	Ammopack
5	10	7,2	3 000	1 500	1 700	Ammopack
6	11	7,2	2 500	1 250	1 500	Ammopack
7,2	13	7,2	2 000	1 000	1 200	Ammopack
			1 600	800	1 000	Ammopack

Additional information find as follow:

General and Principles: www.electel.de/files/general.pdf
Taping: www.electel.de/files/tape_rad.pdf

Ordering Code

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

Series	+ Capacitance		Tolerance		Voltage		+ Packing	
	Wert	Code	Wert	Code	Wert	Code	Form	Code
MKT78	470 pF	247	±5%	J	50 Vdc	2	loose, leads length 6-2 mm	(empty)
	560 pF	256	±10%	K	63 Vdc	3	loose, leads length 3,5±0,5 mm	M
	680 pF	268	±20%	M	100 Vdc	4	taped, Ammopack	A
	820 pF	282			250 Vdc	6	taped, reel	R
	1 000 pF	310			400 Vdc	7		
	1 200 pF	312			630 Vdc	8		
	1 500 pF	315						
	1 800 pF	318						
	2 200 pF	322						
	2 700 pF	327						
	3 300 pF	333						
	3 900 pF	339						
	4 700 pF	347						
	5 600 pF	356						
	6 800 pF	368						
	8 200 pF	382						
	0,01 µF	410						
	0,012 µF	412						
	0,015 µF	415						
	0,018 µF	418						
	0,022 µF	422						
	0,027 µF	427						
	0,033 µF	433						
	0,039 µF	439						
	0,047 µF	447						
	0,056 µF	456						
	0,068 µF	468						
	0,082 µF	482						
	0,1 µF	510						
	0,12 µF	512						
	0,15 µF	515						
	0,18 µF	518						
	0,22 µF	522						
0,27 µF	527							
0,33 µF	533							
0,39 µF	539							
0,47 µF	547							
0,56 µF	556							
0,68 µF	568							
0,82 µF	582							
1,0 µF	610							
1,2 µF	612							
1,5 µF	615							
1,8 µF	618							
2,2 µF	622							

Further codes by request

Example of code for capacitor MKT 78 - 1,5µF/±10%/50Vdc, taped / Ammopack:

MKT78+615K2+A

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).

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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