

WIMA MKC 4

Metallized polycarbonate capacitors for stringent requirements

■ Polycarbonate capacitors with PCM ≥ 10 mm and wide capacitance and voltage ranges. ■ For all applications where constant capacitance values with temperature are required, e.g. in automotive electronics. ■ Available taped and reeled up to and including case size 15 x 26 x 31.5 / PCM 27.5.

Technical Data

Dielectric: Polycarbonate film.

Capacitor electrodes: Vacuum-deposited aluminium.

Encapsulation: Flame-retardent plastic case, UL 94 V-0, with epoxy resin seal. Colour: Red. Marking: Black.

Temperature range: -55°C to $+100^{\circ}\text{C}$.

Test specifications: In accordance with IEC 60384-6 and EN 130 500.

Test category: 55/100/56 in accordance with IEC.

Insulation resistance at $+20^{\circ}\text{C}$:

U_r	U_{test}	$C \leq 0.33 \mu\text{F}$	$0.33 \mu\text{F} < C \leq 10 \mu\text{F}$
63 VDC	50 V	$\geq 1.5 \times 10^4 \text{ M}\Omega$	$\geq 5000 \text{ sec (M}\Omega \times \mu\text{F)}$
100 VDC	100 V	Mean value: $5 \times 10^4 \text{ M}\Omega$	Mean value: 20 000 sec
$\geq 250 \text{ VDC}$	100 V	$\geq 3 \times 10^4 \text{ M}\Omega$	$\geq 10 000 \text{ sec (M}\Omega \times \mu\text{F)}$
		Mean value: $1 \times 10^5 \text{ M}\Omega$	Mean value: 40 000 sec

In accordance with IEC 60384-6 grade 1 and EN 130 500.
Measuring time: 1 min.

Dissipation factors at $+20^{\circ}\text{C}$: $\tan \delta$

at f	$C \leq 0.1 \mu\text{F}$	$0.1 \mu\text{F} < C \leq 10 \mu\text{F}$	$C > 10 \mu\text{F}$
1 kHz	$\leq 3 \times 10^{-3}$	$\leq 3 \times 10^{-3}$	$\leq 3 \times 10^{-3}$
10 kHz	$\leq 4 \times 10^{-3}$	$\leq 5 \times 10^{-3}$	-
100 kHz	$\leq 10 \times 10^{-3}$	-	-

Capacitance tolerances: $\pm 20\%$, $\pm 10\%$, $\pm 5\%$.

Temperature characteristics: See graph page 5.

Maximum pulse rise time:

Capacitance μF	Pulse rise time V/ μsec max. operation / test			
	63 VDC	100 VDC	250 VDC	400 VDC
0.01 ... 0.022	-	-	-	40/400
0.033 ... 0.068	-	-	22/220	25/250
0.1 ... 0.22	13/130	12/120	14/140	14/140
0.33 ... 0.68	7.5/75	9.5/95	8.5/85	11/110
1.0 ... 2.2	6.5/65	5.5/55	6.5/65	10/100
3.3 ... 4.7	4/40	4/40	-	-
6.8 ... 10	3/30	3/30	-	-

for pulses equal to the rated voltage.

Test voltage: $1.6 U_r$, 2 sec.

Vibration: 6 hours at 10...2000 Hz and 0.75 mm displacement amplitude or 10 g in accordance with IEC 60068-2-6.

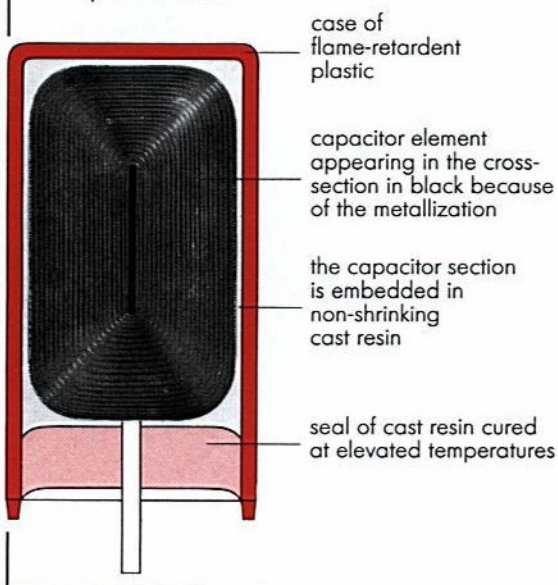
Low air density: 1 kPa = 10 mbar in accordance with IEC 60068-2-13.

Bump test: 4000 bumps at 390 m/sec^2 in accordance with IEC 60068-2-29.

Voltage derating: A voltage derating factor of 1% per K must be applied from $+85^{\circ}\text{C}$ for DC voltages and from $+75^{\circ}\text{C}$ for AC voltages.

Graphs see page 5.

Cross section of a WIMA capacitor in a plastic case



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General Data

Capacitance	63 VDC / 40 VAC*				100 VDC / 63 VAC**			
	W	H	L	PCM	W	H	L	PCM
0.1 μF					4	9.5	13	10
0.15 "					4	9.5	13	10
0.22 "	4	9.5	13	10	5	11	13	10
0.33 "	4	9.5	13	10	5	11	18	15
0.47 "	5	11	13	10	5	11	18	15
0.68 "	5	11	18	15	7	14	18	15
1.0 μF	6	12.5	18	15	7	14	18	15
1.5 "	7	14	18	15	7	16.5	26.5	22.5
2.2 "	8	15	18	15	8.5	18.5	26.5	22.5
3.3 "	7	16.5	26.5	22.5	10.5	19	26.5	22.5
4.7 "	8.5	18.5	26.5	22.5	11	21	31.5	27.5
6.8 "	10.5	19	26.5	22.5	13	24	31.5	27.5
10 μF	11	21	31.5	27.5	15	26	31.5	27.5

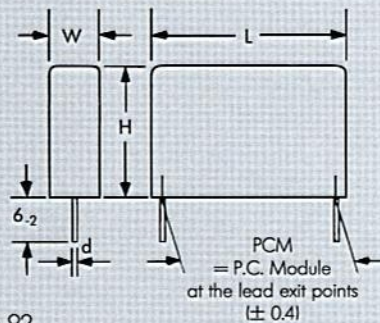
Capacitance	250 VDC / 160 VAC**				400 VDC / 220 VAC**			
	W	H	L	PCM	W	H	L	PCM
0.01 μF					4	9	13	10
0.015 "					4	9	13	10
0.022 "					4	9	13	10
0.033 "	4	9.5	13	10	4	9.5	13	10
0.047 "	4	9.5	13	10	5	11	18	15
0.068 "	5	11	13	10	5	11	18	15
0.1 μF	5	11	13	10*	6	12.5	18	15
	5	11	18	15*				
0.15 "	5	11	18	15	7	14	18	15
0.22 "	6	12.5	18	15	7	16.5	26.5	22.5
0.33 "	7	14	18	15	8.5	18.5	26.5	22.5
0.47 "	7	16.5	26.5	22.5	10.5	19	26.5	22.5
0.68 "	7	16.5	26.5	22.5	11	21	31.5	27.5
1.0 μF	8.5	18.5	26.5	22.5	13	24	31.5	27.5
1.5 "	9	19	31.5	27.5	15	26	31.5	27.5
2.2 "	11	21	31.5	27.5	17	34.5	31.5	27.5

* AC voltage: $f \leq 400 \text{ Hz}$; $1.4 \times U_{\text{rms}} + U_{\text{DC}} \leq U_{\text{r}}$

** PCM = Printed circuit module = lead spacing

* On ordering please state the required PCM (lead spacing)!
If not specified, smaller PCM will be booked.

Dims. in mm.



ϕd	PCM	W
0.7	10	
0.8	15 - 22.5	
0.8	27.5	≤ 15
1.0	27.5	> 15

Taped version see page 92.

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Permissible AC voltages in relation to frequency at 10°C internal temperature rise (general guide):

