WIMA MKP 10

Polypropylene (PP) Capacitors for Pulse Applications with Double-Sided Metallized Electrodes in PCM 7.5 mm to 52.5 mm. Capacitances from 1000 pF to 47 µF. Rated Voltages from 100 VDC to 3000 VDC.

Special Features

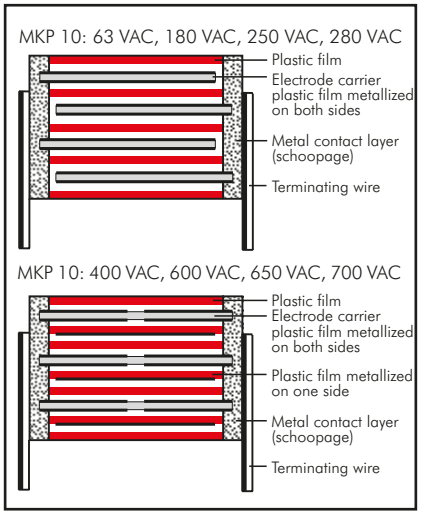
- **Pulse duty construction**
- **Self-healing**
- **Very low dissipation factor**
- **Negative capacitance change versus temperature**
- **AEC-Q200 qualified** AEC-Q200
- **According to RoHS 2015/863/EU**

Typical Applications

For pulse applications e.g.
- **Switch mode power supplies**
- **TV and monitor sets**
- **Lighting**
- **Audio/video equipment**

Construction

Dielectric: Polypropylene (PP) film
Capacitor electrodes:
Double-sided metallized plastic film
Internal construction:



Encapsulation:
Solvent-resistant, flame-retardant plastic case with epoxy resin seal, UL 94 V-0
Terminations: Tinned wire.
Marking: Colour: Red.
Marking: Black.

Electrical Data

Capacitance range:
1000 pF to 47 µF
Rated voltages: 100 VDC, 250 VDC, 400 VDC, 630 VDC, 850 VDC, 1000 VDC, 1600 VDC, 2000 VDC, 2500 VDC, 3000 VDC
Capacitance tolerances:
±20%, ±10%, ±5%
Operating temperature range:
–55° C to +105° C
Insulation resistance at +20° C:
C ⩽ 0.33 µF: ⩾ 1 x 10^5 MΩ
C > 0.33 µF: ⩾ 30 000 sec (MΩ x µF)
Measuring voltage: 100 V/1 min.
Test voltage: 2 sec.

L	⩽ 2000 VDC	2500 VDC	⩾ 3000 VDC
< 41.5	1.6 U_r	1.4 U_r	1.2 U_r
41.5	1.4 U_r	1.4 U_r	1.2 U_r
57	1.2 U_r	1.2 U_r	1.2 U_r

Climatic test category:
55/100/56 in accordance with IEC
Dielectric absorption: 0.05 %
Voltage derating:
A voltage derating factor of 1.35 % per K must be applied from +85° C for DC voltages and from +75° C for AC voltages.
Reliability:
Operational life > 300 000 hours
Failure rate < 1 fit (0.5 x U_r and 40° C)
Specific dissipation:

Box size* W x H x L in mm	Specific dissipation in Watts per K above the ambient temperature
35 x 50 x 57	0.132
45 x 55 x 57	0.164
45 x 65 x 57	0.184

* other box sizes see page 11.

Dissipation factors at + 20° C: tan δ

at f	C ⩽ 0.1 µF	0.1 µF < C ⩽ 1.0 µF	C > 1.0 µF
1 kHz	⩽ 6 x 10^{-4}	⩽ 6 x 10^{-4}	⩽ 6 x 10^{-4}
10 kHz	⩽ 6 x 10^{-4}	⩽ 6 x 10^{-4}	–
100 kHz	⩽ 15 x 10^{-4}	–	–

Maximum pulse rise time:

Capacitance pF/µF	max. pulse rise time V/µsec at T_A < 40° C									
	100 VDC	250 VDC	400 VDC	630 VDC	850 VDC	1000 VDC	1600 VDC	2000 VDC	2500 VDC	3000 VDC
1000 ... 2200	1250	2300	2300	2300	3500	3500	7000	11500	11500	–
3300 ... 6800	1150	1500	1500	1500	3500	3500	7000	11500	11500	–
0.01 ... 0.022	900	1400	1500	1500	2700	2700	3800	4400	11500	–
0.033 ... 0.068	500	1000	1150	1400	2700	2700	2700	2700	2700	2700
0.1 ... 0.22	250	650	650	1150	1800	1800	1800	1800	1800	1800
0.33 ... 0.68	130	390	500	900	1150	1150	1150	1150	1150	1150
1.0 ... 2.2	90	250	250	500	500	500	650	650	650	500
3.3 ... 4.7	65	100	130	190	230	230	330	–	–	–
6.8 ... 15	45	65	90	160	–	–	–	–	–	–
22 ... 47	30	45	45	–	–	–	–	–	–	–

Mechanical Tests

Pull test on pins:
d ⩽ 0.8 Ø: 10 N in direction of pins
d > 0.8 Ø: 20 N in direction of pins
according to IEC 60068-2-21
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: 1kPa = 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

Packing

Available taped and reeled up to and including case size 15 x 26 x 31.5 / PCM 27.5 mm.

Detailed taping information and graphs at the end of the catalogue.

For further details and graphs please refer to Technical Information.

Continuation

General Data

Capacitance	100 VDC/63 VAC W	H	L	PCM**	Part number	250 VDC/180 VAC W	H	L	PCM**	Part number
0.01 µF	4	9	10	7.5	MKP1D021002C_____	4	9	10	7.5	MKP1F021002C_____
						4	9	13	10	MKP1F021003C_____
0.015 „	4	9	10	7.5	MKP1D021502C_____	4	9	10	7.5	MKP1F021502C_____
						4	9	13	10	MKP1F021503C_____
0.022 „	4	9	10	7.5	MKP1D022202C_____	4	9	10	7.5	MKP1F022202C_____
						4	9	13	10	MKP1F022203C_____
0.033 „	5	10.5	10.3	7.5	MKP1D023302E_____	5	10.5	10.3	7.5	MKP1F023302E_____
	4	9	13	10	MKP1D023303C_____	4	9	13	10	MKP1F023303C_____
0.047 „	5	10.5	10.3	7.5	MKP1D024702E_____	5	10.5	10.3	7.5	MKP1F024702E_____
	4	9	13	10	MKP1D024703C_____	4	9	13	10	MKP1F024703C_____
0.068 „	5	11	13	10	MKP1D026803F_____	5	11	13	10	MKP1F026803F_____
						5	11	18	15	MKP1F026804B_____
0.1 µF	6	12	13	10	MKP1D031003G_____	6	12	13	10	MKP1F031003G_____
						5	11	18	15	MKP1F031004B_____
0.12 „	6	12.5	18	15	MKP1D031204C_____	6	12.5	18	15	MKP1F031204C_____
0.15 „	6	12.5	18	15	MKP1D031504C_____	6	12.5	18	15	MKP1F031504C_____
						6	15	26.5	22.5	MKP1F031505B_____
0.18 „	7	14	18	15	MKP1D031804D_____	7	14	18	15	MKP1F031804D_____
0.22 „	7	14	18	15	MKP1D032204D_____	7	14	18	15	MKP1F032204D_____
						6	15	26.5	22.5	MKP1F032205B_____
0.27 „	8	15	18	15	MKP1D032704F_____	8	15	18	15	MKP1F032704F_____
0.33 „	8	15	18	15	MKP1D033304F_____	8	15	18	15	MKP1F033304F_____
						6	15	26.5	22.5	MKP1F033305B_____
0.39 „	9	16	18	15	MKP1D033904J_____	9	16	18	15	MKP1F033904J_____
0.47 „	9	16	18	15	MKP1D034704J_____	9	16	18	15	MKP1F034704J_____
	7	16.5	26.5	22.5	MKP1D034705D_____	7	16.5	26.5	22.5	MKP1F034705D_____
0.56 „	8.5	18.5	26.5	22.5	MKP1D035605F_____	8.5	18.5	26.5	22.5	MKP1F035605F_____
0.68 „	8.5	18.5	26.5	22.5	MKP1D036805F_____	8.5	18.5	26.5	22.5	MKP1F036805F_____
						9	19	31.5	27.5	MKP1F036806A_____
0.82 „	10.5	19	26.5	22.5	MKP1D038205G_____	11	21	26.5	22.5	MKP1F038205I_____
1.0 µF	10.5	19	26.5	22.5	MKP1D041005G_____	11	21	26.5	22.5	MKP1F041005I_____
						11	21	31.5	27.5	MKP1F041006B_____
1.2 „	11	21	31.5	27.5	MKP1D041206B_____	13	24	31.5	27.5	MKP1F041206D_____
1.5 „	11	21	31.5	27.5	MKP1D041506B_____	13	24	31.5	27.5	MKP1F041506D_____
1.8 „	13	24	31.5	27.5	MKP1D041806D_____	15	26	31.5	27.5	MKP1F041806F_____
2.2 „	13	24	31.5	27.5	MKP1D042206D_____	15	26	31.5	27.5	MKP1F042206F_____
						13	24	41.5	37.5	MKP1F042207C_____
2.7 „	17	29	31.5	27.5	MKP1D042706G_____	17	34.5	31.5	27.5	MKP1F042706I_____
3.3 „	17	29	31.5	27.5	MKP1D043306G_____	17	34.5	31.5	27.5	MKP1F043306I_____
						17	29	41.5	37.5	MKP1F043307E_____
3.9 „	20	39.5	31.5	27.5	MKP1D043906J_____	20	39.5	31.5	27.5	MKP1F043906J_____
4.7 „	20	39.5	31.5	27.5	MKP1D044706J_____	20	39.5	31.5	27.5	MKP1F044706J_____
	17	29	41.5	37.5	MKP1D044707E_____	19	32	41.5	37.5	MKP1F044707F_____
5.6 „	19	32	41.5	37.5	MKP1D045607F_____	20	39.5	41.5	37.5	MKP1F045607G_____
6.8 „	19	32	41.5	37.5	MKP1D046807F_____	20	39.5	41.5	37.5	MKP1F046807G_____
8.2 „	20	39.5	41.5	37.5	MKP1D048207G_____	24	45.5	41.5	37.5	MKP1F048207H_____

* AC voltage: f ⩽ 1000 Hz; 1.4 x U_{rms} + UDC ⩽ U_r

** PCM = Printed circuit module = pin spacing

Dims. in mm.

Ionisation inception level in isolated cases may be lower than admissible rated AC voltage.

Part number completion:		
Version code:	2-pin	= 00
	4-pin	= D4
Tolerance:	20 %	= M
	10 %	= K
	5 %	= J
Packing:	bulk	= S
Pin length:	6-2	= SD

Taped version see page 157.

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Continuation

General Data

Capacitance	100 VDC/63 VAC* W	H	L	PCM**	Part number	250 VDC/180 VAC* W	H	L	PCM**	Part number
10 µF	20	39.5	41.5	37.5	MKP1D051007G_____	24	45.5	41.5	37.5	MKP1F051007H_____
						28	38	41.5	37.5	MKP1F051007L_____
12 „	24	45.5	41.5	37.5	MKP1D051207H_____	35	50	41.5	37.5	MKP1F051207J_____
15 „	24	45.5	41.5	37.5	MKP1D051507H_____	35	50	41.5	37.5	MKP1F051507J_____
	28	38	41.5	37.5	MKP1D051507L_____	35	50	57	52.5	MKP1F051509F_____
18 „	35	50	41.5	37.5	MKP1D051807J_____	35	50	57	52.5	MKP1F051809F_____
22 „	35	50	41.5	37.5	MKP1D052207J_____	35	50	57	52.5	MKP1F052209F_____
27 „	40	55	41.5	37.5	MKP1D052707K_____	45	65	57	52.5	MKP1F052709J_____
33 „	40	55	41.5	37.5	MKP1D053307K_____	45	65	57	52.5	MKP1F053309J_____
	35	50	57	52.5	MKP1D053309F_____					
39 „	45	65	57	52.5	MKP1D053909J_____					
47 „	45	65	57	52.5	MKP1D054709J_____					

Capacitance	400 VDC/250 VAC* W	H	L	PCM**	Part number	630 VDC/400 VAC* W	H	L	PCM**	Part number
1000 pF	4	9	10	7.5	MKP1G011002C_____	4	9	10	7.5*	MKP1J011002C_____
1200 „	4	9	10	7.5	MKP1G011202C_____	4	9	10	7.5*	MKP1J011202C_____
1500 „	4	9	10	7.5	MKP1G011502C_____	4	9	10	7.5*	MKP1J011502C_____
1800 „	4	9	10	7.5	MKP1G011802C_____	4	9	10	7.5*	MKP1J011802C_____
2200 „	4	9	10	7.5	MKP1G012202C_____	4	9	10	7.5*	MKP1J012202C_____
2700 „	4	9	10	7.5	MKP1G012702C_____	4	9	10	7.5*	MKP1J012702C_____
3300 „	4	9	10	7.5	MKP1G013302C_____	4	9	10	7.5*	MKP1J013302C_____
3900 „	4	9	10	7.5	MKP1G013902C_____	4	9	10	7.5*	MKP1J013902C_____
4700 „	4	9	10	7.5	MKP1G014702C_____	4	9	10	7.5*	MKP1J014702C_____
5600 „	4	9	10	7.5	MKP1G015602C_____	4	9	10	7.5*	MKP1J015602C_____
6800 „	4	9	10	7.5	MKP1G016802C_____	4	9	10	7.5*	MKP1J016802C_____
						4	9	13	10	MKP1J016803C_____
8200 „	4	9	10	7.5	MKP1G018202C_____	5	10.5	10.3	7.5*	MKP1J018202E_____
0.01 µF	4	9	10	7.5	MKP1G021002C_____	5	10.5	10.3	7.5*	MKP1J021002E_____
	4	9	13	10	MKP1G021003C_____	4	9	13	10	MKP1J021003C_____
0.012 „	5	10.5	10.3	7.5	MKP1G021202E_____	5	11	13	10	MKP1J021203F_____
0.015 „	5	10.5	10.3	7.5	MKP1G021502E_____	5	11	13	10	MKP1J021503F_____
	4	9	13	10	MKP1G021503C_____	5	11	18	15	MKP1J021504B_____
0.018 „	5	10.5	10.3	7.5	MKP1G021802E_____	5	11	13	10	MKP1J021803F_____
0.022 „	5	10.5	10.3	7.5	MKP1G022202E_____	5	11	13	10	MKP1J022203F_____
	4	9	13	10	MKP1G022203C_____	5	11	18	15	MKP1J022204B_____
0.027 „	5.7	12.5	10.3	7.5	MKP1G022702F_____	6	12	13	10	MKP1J022703G_____
0.033 „	5.7	12.5	10.3	7.5	MKP1G023302F_____	6	12	13	10	MKP1J023303G_____
	5	11	13	10	MKP1G023303F_____	5	11	18	15	MKP1J023304B_____
0.039 „	6	12	13	10	MKP1G023903G_____	6	12.5	18	15	MKP1J023904C_____
0.047 „	6	12	13	10	MKP1G024703G_____	6	12.5	18	15	MKP1J024704C_____
	5	11	18	15	MKP1G024704B_____	6	15	26.5	22.5	MKP1J024705B_____
0.056 „	6	12.5	18	15	MKP1G025604C_____	7	14	18	15	MKP1J025604D_____
0.068 „	6	12.5	18	15	MKP1G026804C_____	7	14	18	15	MKP1J026804D_____
	6	15	26.5	22.5	MKP1G026805B_____	6	15	26.5	22.5	MKP1J026805B_____
0.082 „	7	14	18	15	MKP1G028204D_____	9	16	18	15	MKP1J028204J_____

* AC voltage: $f \leqslant 1000$ Hz; $1.4 \times U_{rms} + UDC \leqslant U_r$

** PCM = Printed circuit module = pin spacing

* Admissible AC voltage 280 VAC.

Dims. in mm.

Ionisation inception level in isolated cases may be lower than admissible rated AC voltage.

Part number completion:		
Version code:	2-pin	= 00
	4-pin	= D4
Tolerance:	20 %	= M
	10 %	= K
	5 %	= J
Packing:	bulk	= S
Pin length:	6-2	= SD

Taped version see page 157.

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Continuation

General Data

Capacitance	400 VDC/250 VAC*					630 VDC/400 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
0.1 µF	7	14	18	15	MKP1G031004D_____	9	16	18	15	MKP1J031004J_____
	6	15	26.5	22.5	MKP1G031005B_____	7	16.5	26.5	22.5	MKP1J031005D_____
0.12 „	8	15	18	15	MKP1G031204F_____	8.5	18.5	26.5	22.5	MKP1J031205F_____
0.15 „	8	15	18	15	MKP1G031504F_____	8.5	18.5	26.5	22.5	MKP1J031505F_____
	6	15	26.5	22.5	MKP1G031505B_____	9	19	31.5	27.5	MKP1J031506A_____
0.18 „	9	16	18	15	MKP1G031804J_____	8.5	18.5	26.5	22.5	MKP1J031805F_____
0.22 „	9	16	18	15	MKP1G032204J_____	8.5	18.5	26.5	22.5	MKP1J032205F_____
	7	16.5	26.5	22.5	MKP1G032205D_____	9	19	31.5	27.5	MKP1J032206A_____
0.27 „	8.5	18.5	26.5	22.5	MKP1G032705F_____	11	21	26.5	22.5	MKP1J032705I_____
0.33 „	8.5	18.5	26.5	22.5	MKP1G033305F_____	11	21	26.5	22.5	MKP1J033305I_____
	9	19	31.5	27.5	MKP1G033306A_____	11	21	31.5	27.5	MKP1J033306B_____
0.39 „	10.5	19	26.5	22.5	MKP1G033905G_____	11	21	31.5	27.5	MKP1J033906B_____
0.47 „	10.5	19	26.5	22.5	MKP1G034705G_____	11	21	31.5	27.5	MKP1J034706B_____
	9	19	31.5	27.5	MKP1G034706A_____					
0.56 „	11	21	26.5	22.5	MKP1G035605I_____	15	26	31.5	27.5	MKP1J035606F_____
0.68 „	11	21	26.5	22.5	MKP1G036805I_____	15	26	31.5	27.5	MKP1J036806F_____
	11	21	31.5	27.5	MKP1G036806B_____	13	24	41.5	37.5	MKP1J036807C_____
0.82 „	13	24	31.5	27.5	MKP1G038206D_____	17	29	31.5	27.5	MKP1J038206G_____
1.0 µF	13	24	31.5	27.5	MKP1G041006D_____	17	29	31.5	27.5	MKP1J041006G_____
						15	26	41.5	37.5	MKP1J041007D_____
1.2 „	17	29	31.5	27.5	MKP1G041206G_____	20	39.5	31.5	27.5	MKP1J041206J_____
1.5 „	17	29	31.5	27.5	MKP1G041506G_____	20	39.5	31.5	27.5	MKP1J041506J_____
	13	24	41.5	37.5	MKP1G041507C_____	19	32	41.5	37.5	MKP1J041507F_____
1.8 „	20	39.5	31.5	27.5	MKP1G041806J_____	20	39.5	41.5	37.5	MKP1J041807G_____
2.2 „	20	39.5	31.5	27.5	MKP1G042206J_____	20	39.5	41.5	37.5	MKP1J042207G_____
	17	29	41.5	37.5	MKP1G042207E_____					
2.7 „	20	39.5	41.5	37.5	MKP1G042707G_____	24	45.5	41.5	37.5	MKP1J042707H_____
3.3 „	20	39.5	41.5	37.5	MKP1G043307G_____	24	45.5	41.5	37.5	MKP1J043307H_____
						28	38	41.5	37.5	MKP1J043307L_____
3.9 „	20	39.5	41.5	37.5	MKP1G043907G_____	35	50	41.5	37.5	MKP1J043907J_____
4.7 „	20	39.5	41.5	37.5	MKP1G044707G_____	35	50	41.5	37.5	MKP1J044707J_____
5.6 „	24	45.5	41.5	37.5	MKP1G045607H_____	40	55	41.5	37.5	MKP1J045607K_____
6.8 „	24	45.5	41.5	37.5	MKP1G046807H_____	40	55	41.5	37.5	MKP1J046807K_____
	28	38	41.5	37.5	MKP1G046807L_____	35	50	57	52.5	MKP1J046809F_____
8.2 „	35	50	41.5	37.5	MKP1G048207J_____	45	55	57	52.5	MKP1J048209H_____
10 µF	35	50	41.5	37.5	MKP1G051007J_____	45	55	57	52.5	MKP1J051009H_____
	35	50	57	52.5	MKP1G051009F_____					
12 „	40	55	41.5	37.5	MKP1G051207K_____					
15 „	40	55	41.5	37.5	MKP1G051507K_____					
	35	50	57	52.5	MKP1G051509F_____					
18 „	45	65	57	52.5	MKP1G051809J_____					
22 „	45	65	57	52.5	MKP1G052209J_____					

* AC voltage: $f \leqslant 1000$ Hz; $1.4 \times U_{rms} + UDC \leqslant U_r$

** PCM = Printed circuit module = pin spacing

Dims. in mm.

Ionisation inception level in isolated cases may be lower than admissible rated AC voltage.

Part number completion:		
Version code:	2-pin	= 00
	4-pin	= D4
Tolerance:	20 %	= M
	10 %	= K
	5 %	= J
Packing:	bulk	= S
Pin length:	6-2	= SD

Taped version see page 157.

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Continuation

General Data

Capacitance	850 VDC/450 VAC*					1000 VDC/600 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
1000 pF	4	9	10	7.5	MKP1M011002C_____	4	9	10	7.5	MKP1O111002C_____
	4	9	13	10	MKP1M011003C_____	4	9	13	10	MKP1O111003C_____
1200 „	4	9	10	7.5	MKP1M011202C_____	4	9	10	7.5	MKP1O111202C_____
1500 „	4	9	10	7.5	MKP1M011502C_____	4	9	10	7.5	MKP1O111502C_____
	4	9	13	10	MKP1M011503C_____	4	9	13	10	MKP1O111503C_____
1800 „	4	9	10	7.5	MKP1M011802C_____	4	9	10	7.5	MKP1O111802C_____
2200 „	4	9	10	7.5	MKP1M012202C_____	4	9	10	7.5	MKP1O112202C_____
	4	9	13	10	MKP1M012203C_____	4	9	13	10	MKP1O112203C_____
2700 „	4	9	10	7.5	MKP1M012702C_____	4	9	10	7.5	MKP1O112702C_____
3300 „	4	9	10	7.5	MKP1M013302C_____	4	9	10	7.5	MKP1O113302C_____
	4	9	13	10	MKP1M013303C_____	4	9	13	10	MKP1O113303C_____
3900 „	4.5	9.5	10.3	7.5	MKP1M013902D_____	4.5	9.5	10.3	7.5	MKP1O113902D_____
4700 „	4.5	9.5	10.3	7.5	MKP1M014702D_____	4.5	9.5	10.3	7.5	MKP1O114702D_____
	4	9	13	10	MKP1M014703C_____	4	9	13	10	MKP1O114703C_____
5600 „	5.7	12.5	10.3	7.5	MKP1M015602F_____	5.7	12.5	10.3	7.5	MKP1O115602F_____
6800 „	5.7	12.5	10.3	7.5	MKP1M016802F_____	5.7	12.5	10.3	7.5	MKP1O116802F_____
	5	11	13	10	MKP1M016803F_____	5	11	13	10	MKP1O116803F_____
8200 „	5	11	13	10	MKP1M018203F_____	5	11	13	10	MKP1O118203F_____
0.01 µF	5	11	13	10	MKP1M021003F_____	5	11	13	10	MKP1O121003F_____
	5	11	18	15	MKP1M021004B_____	5	11	18	15	MKP1O121004B_____
0.012 „	6	12	13	10	MKP1M021203G_____	6	12	13	10	MKP1O121203G_____
0.015 „	6	12	13	10	MKP1M021503G_____	6	12	13	10	MKP1O121503G_____
	5	11	18	15	MKP1M021504B_____	5	11	18	15	MKP1O121504B_____
0.018 „	6	12.5	18	15	MKP1M021804C_____	6	12.5	18	15	MKP1O121804C_____
0.022 „	6	12.5	18	15	MKP1M022204C_____	6	12.5	18	15	MKP1O122204C_____
	6	15	26.5	22.5	MKP1M022205B_____	6	15	26.5	22.5	MKP1O122205B_____
0.027 „	7	14	18	15	MKP1M022704D_____	7	14	18	15	MKP1O122704D_____
0.033 „	7	14	18	15	MKP1M023304D_____	7	14	18	15	MKP1O123304D_____
	6	15	26.5	22.5	MKP1M023305B_____	6	15	26.5	22.5	MKP1O123305B_____
0.039 „	8	15	18	15	MKP1M023904F_____	8	15	18	15	MKP1O123904F_____
0.047 „	8	15	18	15	MKP1M024704F_____	8	15	18	15	MKP1O124704F_____
	6	15	26.5	22.5	MKP1M024705B_____	6	15	26.5	22.5	MKP1O124705B_____
0.056 „	7	16.5	26.5	22.5	MKP1M025605D_____	7	16.5	26.5	22.5	MKP1O125605D_____
0.068 „	7	16.5	26.5	22.5	MKP1M026805D_____	7	16.5	26.5	22.5	MKP1O126805D_____
0.08 „	7	16.5	26.5	22.5	MKP1M028205D_____	8.5	18.5	26.5	22.5	MKP1O128205F_____
0.1 µF	7	16.5	26.5	22.5	MKP1M031005D_____	8.5	18.5	26.5	22.5	MKP1O131005F_____
	11	21	31.5	27.5	MKP1M031006B_____	11	21	31.5	27.5	MKP1O131006B_____
0.12 „	8.5	18.5	26.5	22.5	MKP1M031205F_____	11	21	26.5	22.5	MKP1O131205I_____
0.15 „	8.5	18.5	26.5	22.5	MKP1M031505F_____	11	21	26.5	22.5	MKP1O131505I_____
	11	21	31.5	27.5	MKP1M031506B_____	11	21	31.5	27.5	MKP1O131506B_____
0.18 „	11	21	26.5	22.5	MKP1M031805I_____	11	21	31.5	27.5	MKP1O131806B_____
0.22 „	11	21	26.5	22.5	MKP1M032205I_____	11	21	31.5	27.5	MKP1O132206B_____
	11	21	31.5	27.5	MKP1M032206B_____					
0.27	11	21	31.5	27.5	MKP1M033306B_____	15	26	31.5	27.5	MKP1O132706F_____
0.33 „	15	26	31.5	27.5	MKP1M033306F_____	15	26	31.5	27.5	MKP1O133306F_____
	13	24	41.5	37.5	MKP1M033307C_____	13	24	41.5	37.5	MKP1O133307C_____
0.39 „	17	29	31.5	27.5	MKP1M033906G_____	17	29	31.5	27.5	MKP1O133906G_____
0.47 „	17	29	31.5	27.5	MKP1M034706G_____	17	29	31.5	27.5	MKP1O134706G_____
	13	24	41.5	37.5	MKP1M034707C_____	13	24	41.5	37.5	MKP1O134707C_____
0.56 „	17	29	41.5	37.5	MKP1M035607E_____	20	39.5	31.5	27.5	MKP1O135606J_____
0.68 „	20	39.5	31.5	27.5	MKP1M036806J_____	20	39.5	31.5	27.5	MKP1O136806J_____
	17	29	41.5	37.5	MKP1M036807E_____	17	29	41.5	37.5	MKP1O136807E_____
0.82 „	19	32	41.5	37.5	MKP1M038207F_____	20	39.5	41.5	37.5	MKP1O138207G_____

* AC voltage: $f \leqslant 1000$ Hz; $1.4 \times U_{rms} + UDC \leqslant U_r$

** PCM = Printed circuit module = pin spacing

Dims. in mm.

Ionisation inception level in isolated cases may be lower than admissible rated AC voltage.

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Continuation

General Data

Capacitance	850 VDC/450 VAC* W	H	L	PCM**	Part number	1000 VDC/600 VAC* W	H	L	PCM**	Part number
1.0 µF	19	32	41.5	37.5	MKP1M041007F_____	20	39.5	41.5	37.5	MKP1O141007G_____
1.2 „	20	39.5	41.5	37.5	MKP1M041207G_____	24	45.5	41.5	37.5	MKP1O141207H_____
1.5 „	20	39.5	41.5	37.5	MKP1M041507G_____	24	45.5	41.5	37.5	MKP1O141507H_____
						28	38	41.5	37.5	MKP1O141507L_____
1.8 „	24	45.5	41.5	37.5	MKP1M041807H_____	31	46	41.5	37.5	MKP1O141807I_____
2.2 „	24	45.5	41.5	37.5	MKP1M042207H_____	31	46	41.5	37.5	MKP1O142207I_____
	28	38	41.5	37.5	MKP1M042207L_____					
2.7 „	35	50	41.5	37.5	MKP1M042707J_____	40	55	41.5	37.5	MKP1O142707K_____
3.3 „	35	50	41.5	37.5	MKP1M043307J_____	40	55	41.5	37.5	MKP1O143307K_____
	35	50	57	52.5	MKP1M043309F_____	35	50	57	52.5	MKP1O143309F_____
3.9 „	35	50	57	37.5	MKP1M043909F_____	45	55	57	52.5	MKP1O143909H_____
4.7 „	45	55	57	52.5	MKP1M044709H_____	45	55	57	52.5	MKP1O144709H_____
5.6 „	45	65	57	52.5	MKP1M045609J_____					

Capacitance	1600 VDC/650 VAC* W	H	L	PCM**	Part number	2000 VDC/700 VAC* W	H	L	PCM**	Part number
1000 pF	4	9	13	10	MKP1T011003C_____	4	9	13	10	MKP1U011003C_____
1200 „	4	9	13	10	MKP1T011203C_____	4	9	13	10	MKP1U011203C_____
1500 „	4	9	13	10	MKP1T011503C_____	4	9	13	10	MKP1U011503C_____
1800 „	4	9	13	10	MKP1T011803C_____	5	11	13	10	MKP1U011803F_____
2200 „	4	9	13	10	MKP1T012203C_____	5	11	13	10	MKP1U012203F_____
						5	11	18	15	MKP1U012204B_____
2700 „	4	9	13	10	MKP1T012703C_____	5	11	18	15	MKP1U012704B_____
3300 „	4	9	13	10	MKP1T013303C_____	5	11	18	15	MKP1U013304B_____
3900 „	5	11	13	10	MKP1T013903F_____	5	11	18	15	MKP1U013904B_____
4700 „	5	11	13	10	MKP1T014703F_____	5	11	18	15	MKP1U014704B_____
						6	15	26.5	22.5	MKP1U014705B_____
5600 „	6	12	13	10	MKP1T015603G_____	6	12.5	18	15	MKP1U015604C_____
6800 „	6	12	13	10	MKP1T016803G_____	6	12.5	18	15	MKP1U016804C_____
	5	11	18	15	MKP1T016804B_____	6	15	26.5	22.5	MKP1U016805B_____
6800 „	5	11	18	15	MKP1T018204B_____	7	14	18	15	MKP1U018204D_____
0.01 µF	5	11	18	15	MKP1T021004B_____	7	14	18	15	MKP1U021004D_____
						6	15	26.5	22.5	MKP1U021005B_____
0.012 „	6	12.5	18	15	MKP1T021204C_____	8	15	18	15	MKP1U021204F_____
0.015 „	6	12.5	18	15	MKP1T021504C_____	8	15	18	15	MKP1U021504F_____
	6	15	26.5	22.5	MKP1T021505B_____	6	15	26.5	22.5	MKP1U021505B_____
0.018 „	7	14	18	15	MKP1T022184D_____	9	16	18	15	MKP1U021804J_____
0.022 „	7	14	18	15	MKP1T022204D_____	9	16	18	15	MKP1U022204J_____
	6	15	26.5	22.5	MKP1T022205B_____	7	16.5	26.5	22.5	MKP1U022205D_____
0.027 „	8	15	18	15	MKP1T022704F_____	8.5	18.5	26.5	22.5	MKP1U022705F_____
0.033 „	8	15	18	15	MKP1T023304F_____	8.5	18.5	26.5	22.5	MKP1U023305F_____
	6	15	26.5	22.5	MKP1T023305B_____	9	19	31.5	27.5	MKP1U023306A_____
0.039 „	7	16.5	26.5	22.5	MKP1T023905D_____	10.5	19	26.5	22.5	MKP1U023905G_____
0.047 „	7	16.5	26.5	22.5	MKP1T024705D_____	10.5	19	26.5	22.5	MKP1U024705G_____
	9	19	31.5	27.5	MKP1T024706A_____	11	21	31.5	27.5	MKP1U024706B_____
0.056 „	10.5	19	26.5	22.5	MKP1T025605G_____	11	21	26.5	22.5	MKP1U025605I_____
0.068 „	10.5	19	26.5	22.5	MKP1T026805G_____	11	21	26.5	22.5	MKP1U026805I_____
	9	19	31.5	27.5	MKP1T026806A_____	11	21	31.5	27.5	MKP1U026806B_____
0.082 „	11	21	26.5	22.5	MKP1T028205I_____	13	24	31.5	27.5	MKP1U028206D_____

* AC voltage: $f \leqslant 1000$ Hz; $1.4 \times U_{rms} + UDC \leqslant U_r$

** PCM = Printed circuit module = pin spacing

Dims. in mm.

Ionisation inception level in isolated cases may be lower than admissible rated AC voltage.

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Continuation

General Data

Capacitance	1600 VDC/650 VAC* W	H	L	PCM**	Part number	2000 VDC/700 VAC* W	H	L	PCM**	Part number
0.1 µF	11	21	26.5	22.5	MKP1T031005I_____	13	24	31.5	27.5	MKP1U031006D_____
	11	21	31.5	27.5	MKP1T031006B_____					
0.12 „	13	24	31.5	27.5	MKP1T031206D_____	15	26	31.5	27.5	MKP1U031206F_____
0.15 „	13	24	31.5	27.5	MKP1T031506D_____	15	26	31.5	27.5	MKP1U031506F_____
						13	24	41.5	37.5	MKP1U031507C_____
0.18 „	15	26	31.5	27.5	MKP1T031806F_____	17	34.5	31.5	27.5	MKP1U031806I_____
0.22 „	15	26	31.5	27.5	MKP1T032206F_____	17	34.5	31.5	27.5	MKP1U032206I_____
	13	24	41.5	37.5	MKP1T032207C_____	17	29	41.5	37.5	MKP1U032207E_____
0.27 „	17	34.5	31.5	27.5	MKP1T032706I_____	19	32	41.5	37.5	MKP1U032707F_____
0.33 „	17	34.5	31.5	27.5	MKP1T033306I_____	19	32	41.5	37.5	MKP1U033307F_____
	17	29	41.5	37.5	MKP1T033307E_____					
0.39 „	20	39.5	31.5	27.5	MKP1T033906J_____	20	39.5	41.5	37.5	MKP1U033907G_____
0.47 „	20	39.5	31.5	27.5	MKP1T034706J_____	20	39.5	41.5	37.5	MKP1U034707G_____
	19	32	41.5	37.5	MKP1T034707F_____					
0.56 „	20	39.5	41.5	37.5	MKP1T035607G_____	24	45.5	41.5	37.5	MKP1U035607H_____
0.68 „	20	39.5	41.5	37.5	MKP1T036807G_____	24	45.5	41.5	37.5	MKP1U036807H_____
						28	38	41.5	37.5	MKP1U036807L_____
0.82 „	24	45.5	41.5	37.5	MKP1T038207H_____	35	50	41.5	37.5	MKP1U038207J_____
1.0 µF	24	45.5	41.5	37.5	MKP1T041007H_____	35	50	41.5	37.5	MKP1U041007J_____
	28	38	41.5	37.5	MKP1T041007L_____					
1.2 „	31	46	41.5	37.5	MKP1T041207I_____	40	55	41.5	37.5	MKP1U041207K_____
1.5 „	31	46	41.5	37.5	MKP1T041507I_____	40	55	41.5	37.5	MKP1U041507K_____
						35	50	57	52.5	MKP1U041509F_____
1.8 „	40	55	41.5	37.5	MKP1T041807K_____	45	55	57	52.5	MKP1U041809H_____
2.2 „	40	55	41.5	37.5	MKP1T042207K_____	45	55	57	52.5	MKP1U042209H_____
	35	50	57	52.5	MKP1T042209F_____					
2.7 „	45	65	57	52.5	MKP1T042709J_____					
3.3 „	45	65	57	52.5	MKP1T043309J_____					

Capacitance	2500 VDC/700 VAC* W	H	L	PCM**	Part number
1000 pF	5	11	18	15	MKP1V011004B_____
	6	15	26.5	22.5	MKP1V011005B_____
1200 „	5	11	18	15	MKP1V011204B_____
1500 „	5	11	18	15	MKP1V011504B_____
	6	15	26.5	22.5	MKP1V011505B_____
1800 „	5	11	18	15	MKP1V011804B_____
2200 „	5	11	18	15	MKP1V012204B_____
	6	15	26.5	22.5	MKP1V012205B_____
2700 „	5	11	18	15	MKP1V012704B_____
3300 „	5	11	18	15	MKP1V013304B_____
	6	15	26.5	22.5	MKP1V013305B_____
3900 „	6	12.5	18	15	MKP1V013904C_____
4700 „	6	12.5	18	15	MKP1V014704C_____
	6	15	26.5	22.5	MKP1V014705B_____
5600 „	7	14	18	15	MKP1V015604D_____
6800 „	7	14	18	15	MKP1V016804D_____
	7	16.5	26.5	22.5	MKP1V016805D_____
8200 „	8.5	18.5	26.5	22.5	MKP1V018205F_____

Dims. in mm.

Ionisation inception level in isolated cases may be lower than admissible rated AC voltage.

Part number completion:		
Version code:	2-pin	= 00
	4-pin	= D4
Tolerance:	20 %	= M
	10 %	= K
	5 %	= J
Packing:	bulk	= S
Pin length:	6-2	= SD

Taped version see page 157.

* AC voltage: f ⩽ 1000 Hz; 1.4 x U_{rms} + UDC ⩽ U_r

** PCM = Printed circuit module = pin spacing

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Continuation

General Data

Capacitance	2500 VDC/700 VAC* W	H	L	PCM**	Part number	3000 VDC/700 VAC* W	H	L	PCM**	Part number
0.01 µF	8.5	18.5	26.5	22.5	MKP1V021005F_____	8.5	18.5	26.5	22.5	MKP1W021005F_____
0.012 „	10.5	19	26.5	22.5	MKP1V021205G_____	10.5	19	26.5	22.5	MKP1W021205G_____
0.015 „	10.5	19	26.5	22.5	MKP1V021505G_____	10.5	19	26.5	22.5	MKP1W021505G_____
0.018 „	11	21	26.5	22.5	MKP1V021805I_____	11	21	26.5	22.5	MKP1W021805I_____
0.022 „	11	21	26.5	22.5	MKP1V022205I_____	11	21	26.5	22.5	MKP1W022205I_____
0.027 „	11	21	26.5	22.5	MKP1V022705I_____	11	21	26.5	22.5	MKP1W022705I_____
0.033 „	11	21	26.5	22.5	MKP1V023305I_____	11	21	26.5	22.5	MKP1W023305I_____
	9	19	31.5	27.5	MKP1V023306A_____	9	19	31.5	27.5	MKP1W023306A_____
0.039 „	11	21	31.5	27.5	MKP1V023906B_____	11	21	31.5	27.5	MKP1W023906B_____
0.047 „	11	21	31.5	27.5	MKP1V024706B_____	11	21	31.5	27.5	MKP1W024706B_____
0.056 „	13	24	31.5	27.5	MKP1V025606D_____	13	24	31.5	27.5	MKP1W025606D_____
0.068 „	13	24	31.5	27.5	MKP1V026806D_____	13	24	31.5	27.5	MKP1W026806D_____
0.082 „	15	26	31.5	27.5	MKP1V028206F_____	15	26	31.5	27.5	MKP1W028206F_____
0.1 µF	15	26	31.5	27.5	MKP1V031006F_____	15	26	31.5	27.5	MKP1W031006F_____
	13	24	41.5	37.5	MKP1V031007C_____	13	24	41.5	37.5	MKP1W031007C_____
0.12 „	17	34.5	31.5	27.5	MKP1V031206I_____	17	34.5	31.5	27.5	MKP1W031206I_____
0.15 „	17	34.5	31.5	27.5	MKP1V031506I_____	17	34.5	31.5	27.5	MKP1W031506I_____
	15	26	41.5	37.5	MKP1V031507D_____	15	26	41.5	37.5	MKP1W031507D_____
0.18 „	19	32	41.5	37.5	MKP1V031807F_____	19	32	41.5	37.5	MKP1W031807F_____
0.22 „	19	32	41.5	37.5	MKP1V032207F_____	19	32	41.5	37.5	MKP1W032207F_____
0.27 „	24	45.5	41.5	37.5	MKP1V032707H_____	24	45.5	41.5	37.5	MKP1W032707H_____
0.33 „	24	45.5	41.5	37.5	MKP1V033307H_____	24	45.5	41.5	37.5	MKP1W033307H_____
	28	38	41.5	37.5	MKP1V033307L_____	28	38	41.5	37.5	MKP1W033307L_____
0.39 „	31	46	41.5	37.5	MKP1V033907I_____	31	46	41.5	37.5	MKP1W033907I_____
0.47 „	31	46	41.5	37.5	MKP1V034707I_____	31	46	41.5	37.5	MKP1W034707I_____
0.56 „	35	50	41.5	37.5	MKP1V035607J_____	35	50	41.5	37.5	MKP1W035607J_____
0.68 „	35	50	41.5	37.5	MKP1V036807J_____	35	50	41.5	37.5	MKP1W036807J_____
0.82 „	40	55	41.5	37.5	MKP1V038207K_____	40	55	41.5	37.5	MKP1W038207K_____
1.0 µF	40	55	41.5	37.5	MKP1V041007K_____	40	55	41.5	37.5	MKP1W041007K_____
	35	50	57	52.5	MKP1V041009F_____	35	50	57	52.5	MKP1W041009F_____
1.2 „	45	55	57	52.5	MKP1V041209H_____	45	55	57	52.5	MKP1W041209H_____
1.5 „	45	55	57	52.5	MKP1V041509H_____	45	55	57	52.5	MKP1W041509H_____

* AC voltage: $f \leqslant 1000$ Hz; $1.4 \times U_{rms} + UDC \leqslant U_r$

** PCM = Printed circuit module = pin spacing

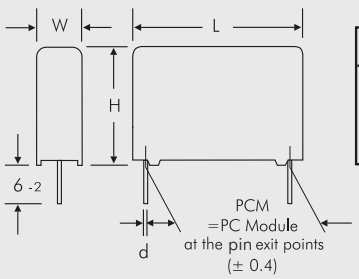
Dims. in mm.

Ionisation inception level in isolated cases may be lower than admissible rated AC voltage.

Part number completion:		
Version code:	2-pin	= 00
	4-pin	= D4
Tolerance:	20 %	= M
	10 %	= K
	5 %	= J
Packing:	bulk	= S
Pin length:	6-2	= SD

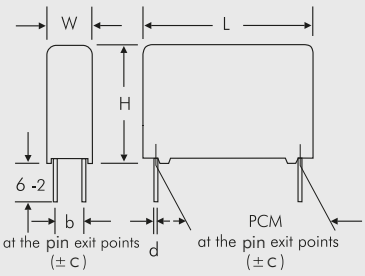
Taped version see page 157.

2-pin version



Ø d	PCM
0.6	7.5 -10
0.8	15 - 27.5
1.0	37.5

4-pin version

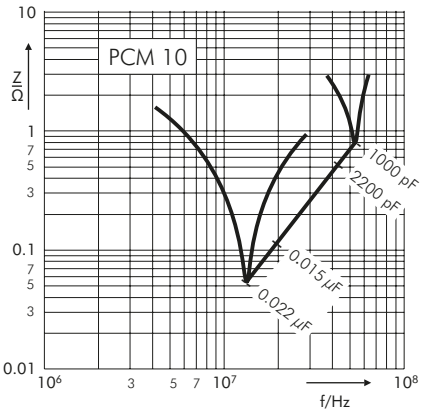


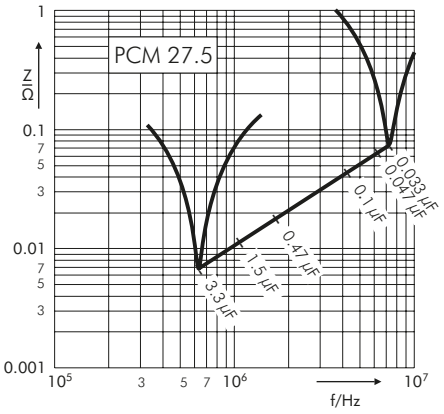
W	PCM	b	Ø d	c
17	37.5	10	1.0	0.4
19	37.5	10	1.0	0.4
20	37.5	12.5	1.0	0.4
24	37.5	12.5	1.0	0.4
28	37.5	10	1.0	0.4
31	37.5	20	1.0	0.4
35	37.5	20	1.0	0.4
40	37.5	20	1.0	0.4
35	52.5	20	1.2	0.8
45	52.5	20	1.2	0.8

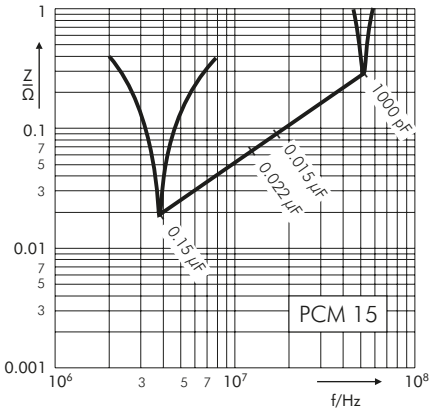
Continuation page 75

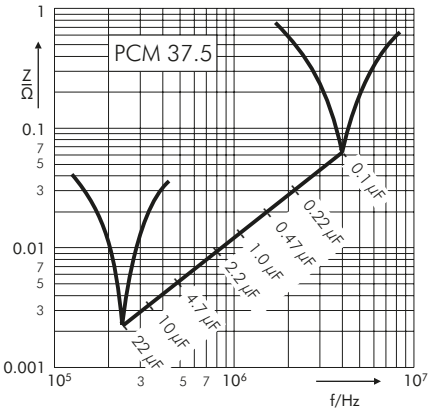
Continuation

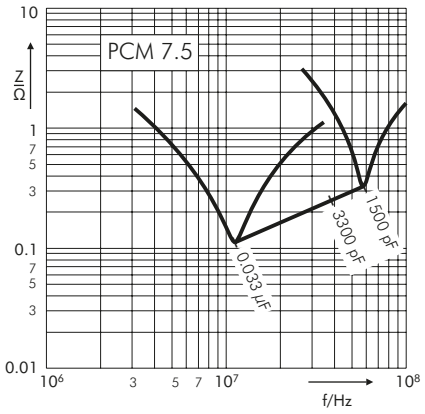
Impedance change with frequency (general guide).

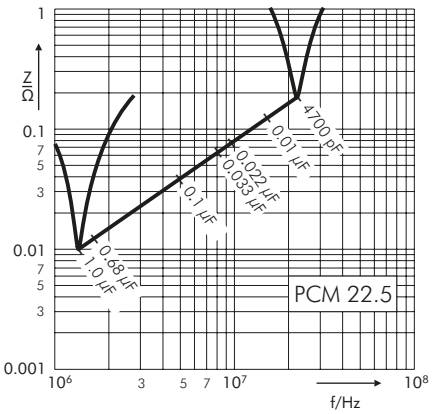


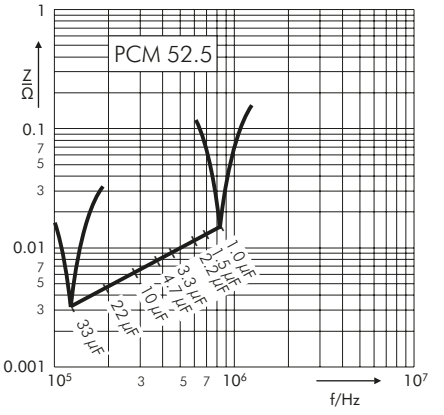










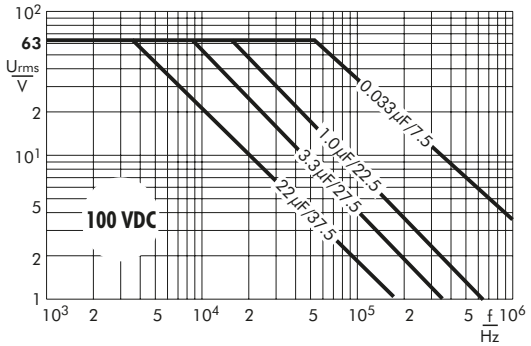


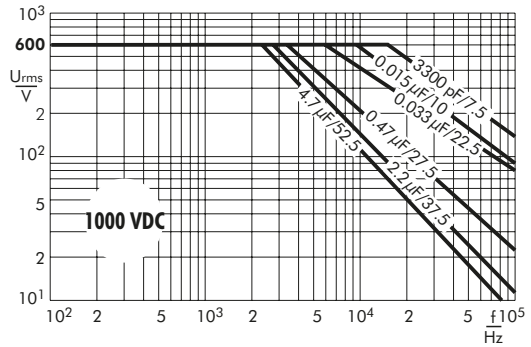
Continuation page 76

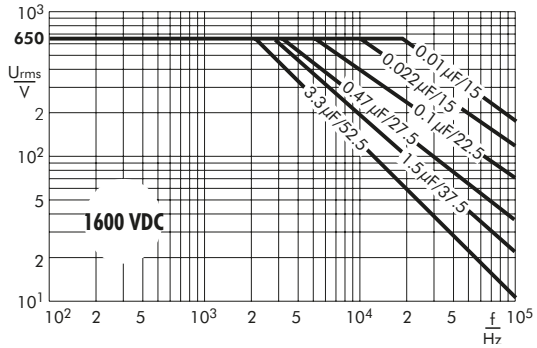
Continuation

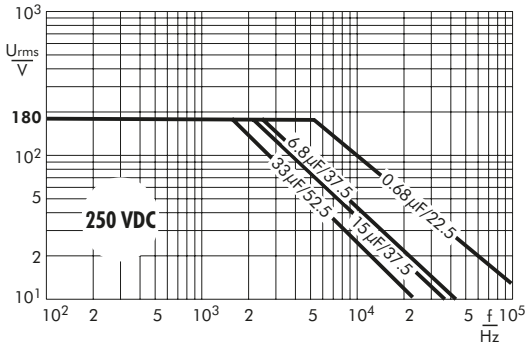
Permissible AC voltage in relation to frequency till 15° C internal temperature rise (general guide).

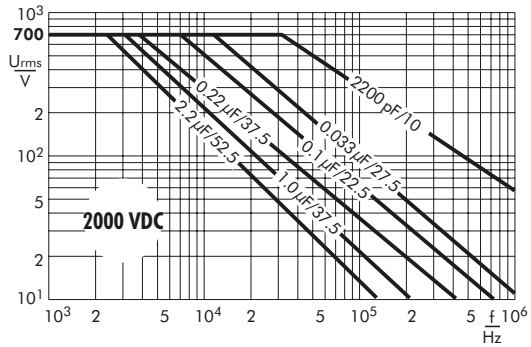
The information behind the cross bar denote the PCM of the measured value.

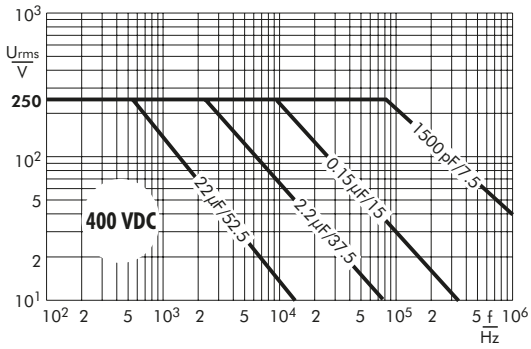


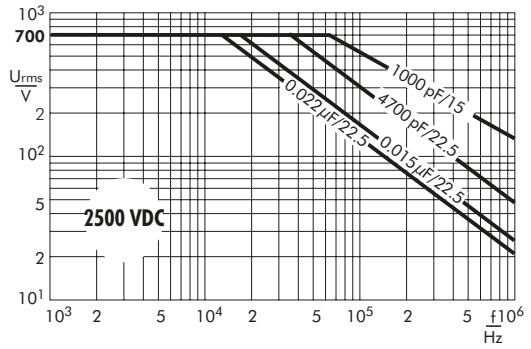


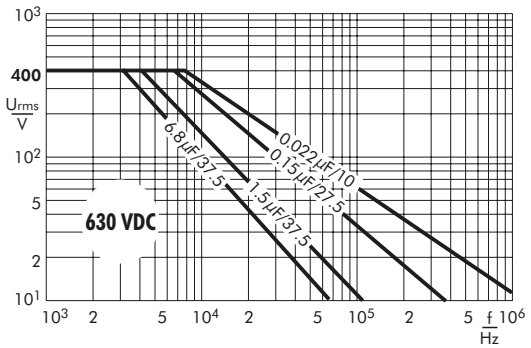


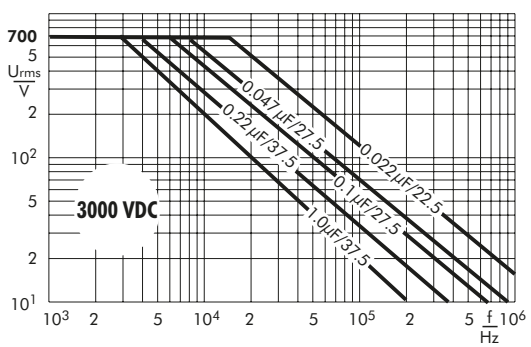










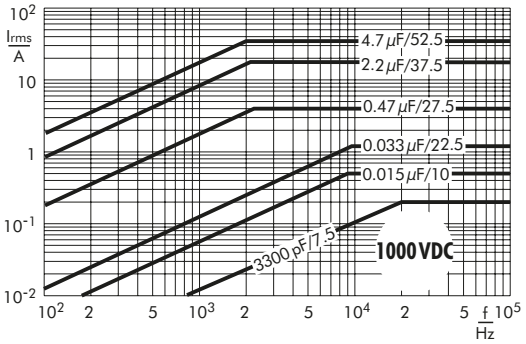


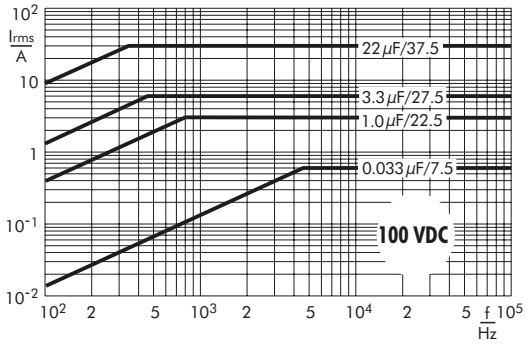
Continuation page 77

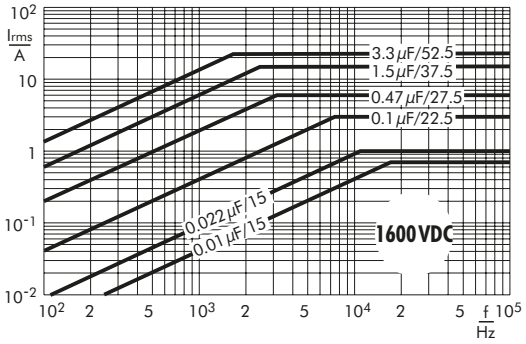
Continuation

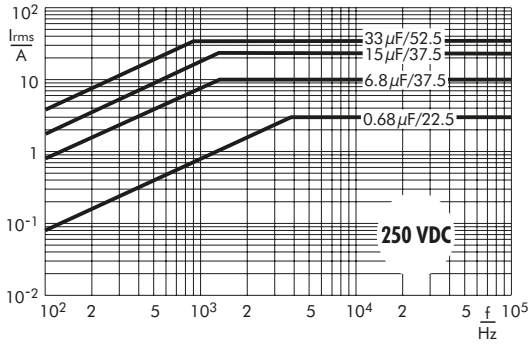
Permissible AC current in relation to frequency till 15° C internal temperature rise (general guide).

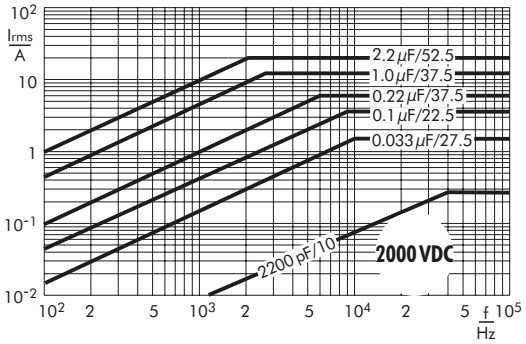
The information behind the cross bar denote the PCM of the measured value.

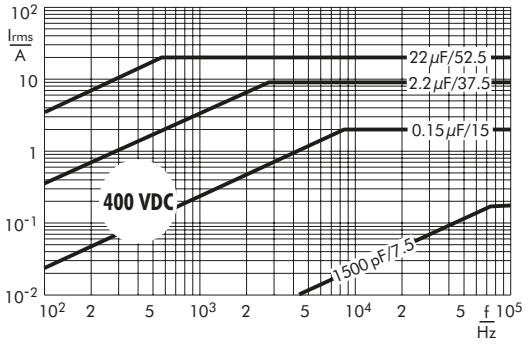


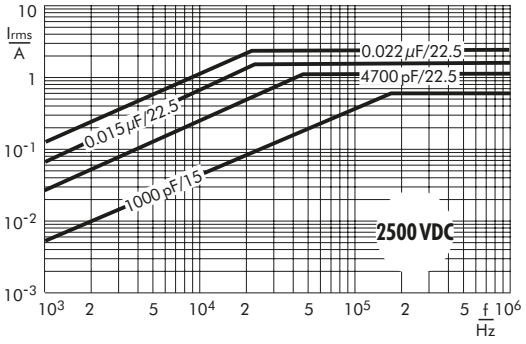


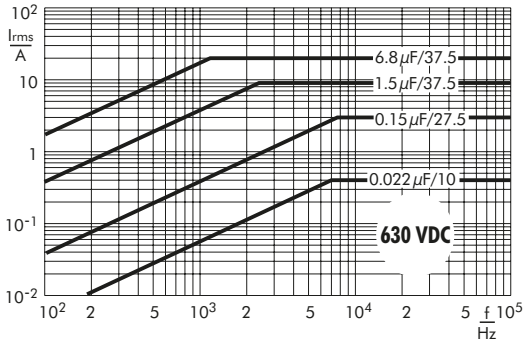


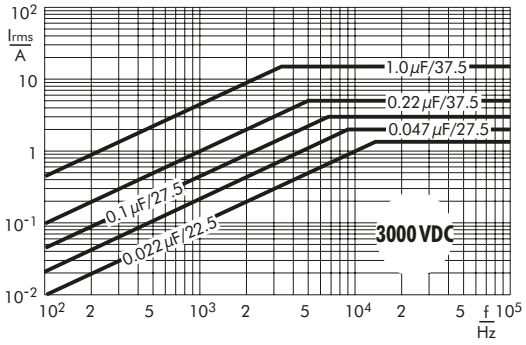












Recommendation for Processing and Application of Through-Hole Capacitors

Soldering Process

Internal temperature of the capacitor must be kept as follows:

Polyester: preheating: $T_{max.} \leqslant 125°$ C
soldering: $T_{max.} \leqslant 135°$ C

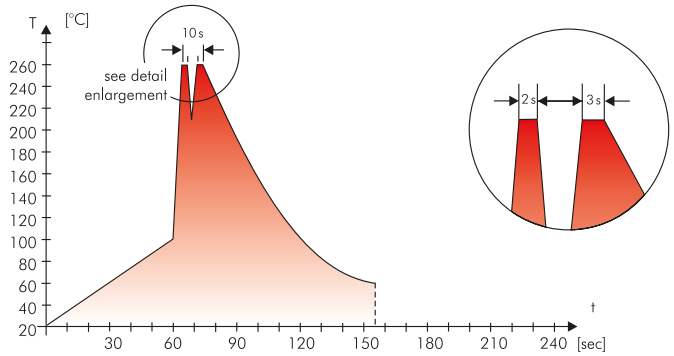
Polypropylene: preheating: $T_{max.} \leqslant 100°$ C
soldering: $T_{max.} \leqslant 110°$ C

Single wave soldering
Soldering bath temperature: T < 260° C
Dwell time: t < 5 sec

Double wave soldering
Soldering bath temperature: T < 260° C
Dwell time: ∑t < 5 sec

Due to different soldering processes and heat requirements the graphs are to be regarded as a recommendation only.

Wave soldering



Typical temperature/time graph for double wave soldering

WIMA Quality and Environmental Philosophy

ISO 9001:2015 Certification

ISO 9001:2015 is an international basic standard of quality assurance systems for all branches of industry. The approval according to ISO 9001:2015 of our factories certifies that organisation, equipment and monitoring of quality assurance in our factories correspond to internationally recognized standards.

WIMA WPCS

The WIMA Process Control System (WPCS) is a quality surveillance and optimization system developed by WIMA. WPCS is a major part of the quality-oriented WIMA production. Points of application during production process:

- **incoming material inspection**
- **metallization**
- **film inspection**
- **schoopage**
- **pre-healing**
- **pin attachment**
- **cast resin preparation/encapsulation**
- **100% final inspection**
- **Testing as per customer requirements**

WIMA Environmental Policy

All WIMA capacitors, irrespective of whether through-hole devices or SMD, are made of environmentally friendly materials. Neither during manufacture nor in the product itself any toxic substances are used, e.g.

- **Lead**
- **PCB**
- **CFC**
- **Hydrocarbon chloride**
- **Chromium 6+**
- **PBB/PBDE**
- **Arsenic**
- **Cadmium**
- **Mercury**
- **etc.**

We merely use pure, recyclable materials for packing our components, such as:

- **carton**
- **cardboard**
- **adhesive tape made of paper**
- **polystyrene**

We almost completely refrain from using packing materials such as:

- **adhesive tapes made of plastic**
- **metal clips**

RoHS Compliance

According to the RoHS Directive 2015/863/EU as amended from time to time certain hazardous substances like e.g. lead, cadmium, mercury must not be used any longer in electronic equipment as of July 1st, 2006. For the sake of the environment WIMA has re-fraind from using such substances since years already.

Tape for lead-free WIMA capacitors

DIN EN ISO 14001:2004

WIMA's environmental management has been established in accordance with the guidelines of DIN EN ISO 14001:2004 to optimize the production processes with regard to energy and resources.

Typical Dimensions for Taping Configuration

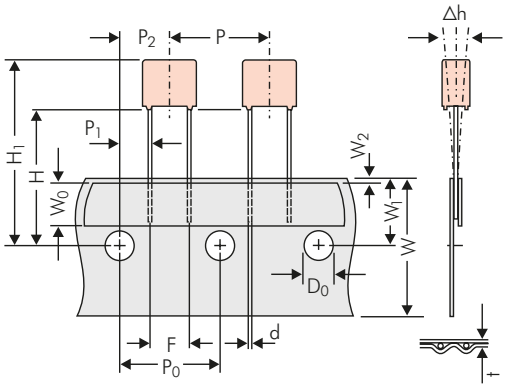


Diagram 1:
PCM 2.5/5/7.5mm

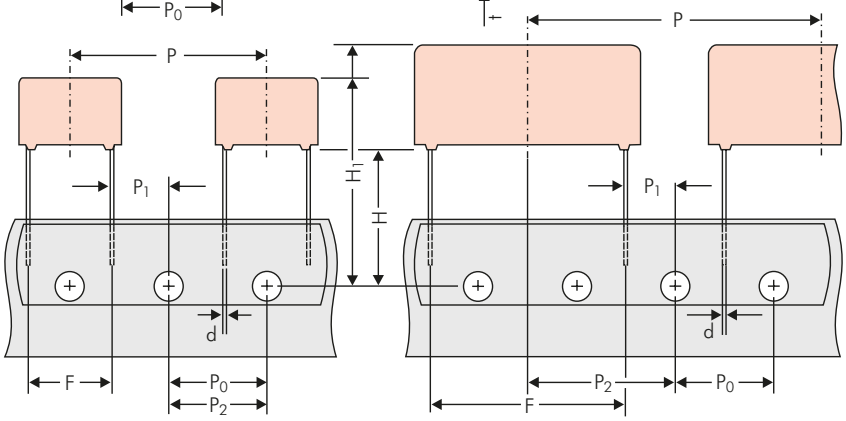


Diagram 2: PCM 10/15 mm

Diagram 3: PCM 22.5 and 27.5*mm
*PCM 27.5 taping possible with two feed holes between components

Designation	Symbol	Dimensions for Radial Taping						
		PCM 2.5 taping	**PCM 5 taping**	**PCM 7.5 taping**	**PCM 10 taping***	**PCM 15 taping***	**PCM 22.5 taping**	**PCM 27.5 taping**
Carrier tape width	W	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5
Hold-down tape width	W_0	6.0 for hot-sealing adhesive tape	6.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape
Hole position	W_1	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5
Hold-down tape position	W_2	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.
Feed hole diameter	D_0	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2
Pitch of component	P	12.7 ±1.0	12.7 ±1.0	12.7 ±1.0	25.4 ±1.0	25.4 ±1.0	38.1 ±1.5	*38.1 ±1.5 or 50.8 ±1.5
Feed hole pitch	P_0	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch
Feed hole centre to pin	P_1	5.1 ±0.5	3.85 ±0.7	2.6 ±0.7	7.7 ±0.7	5.2 ±0.7	7.8 ±0.7	5.3 ±0.7
Hole centre to component centre	P_2	6.35 ±1.3	6.35 ±1.3	6.35 ±1.3	12.7 ±1.3	12.7 ±1.3	19.05 ±1.3	19.05 ±1.3
Feed hole centre to bottom edge of the component	H ▲	16.5 ±0.3	16.5 ±0.3	16.5 ±0.5	16.5 ±0.5	16.5 ±0.5	16.5 ±0.5	16.5 ±0.5
		18.5 ±0.5	18.5 ±0.5	18.5 ±0.5	18.5 ±0.5	18.5 ±0.5	18.5 ±0.5	18.5 ±0.5
Feed hole centre to top edge of the component	H_1	$H+H_{component} < H_1$ 32.25 max.	$H+H_{component} < H_1$ 32.25 max.	$H+H_{component} < H_1$ 24.5 to 31.5	$H+H_{component} < H_1$ 25.0 to 31.5	$H+H_{component} < H_1$ 26.0 to 37.0	$H+H_{component} < H_1$ 30.0 to 43.0	$H+H_{component} < H_1$ 35.0 to 45.0
Pin spacing at upper edge of carrier tape	F	2.5 ±0.5	$5.0^{+0.8}_{-0.2}$	7.5 ±0.8	10.0 ±0.8	15 ±0.8	22.5 ±0.8	27.5 ±0.8
Pin diameter	d	0.4 ±0.05	0.5 ±0.05	•0.5 ±0.05 or $0.6^{+0.06}_{-0.05}$	•0.5 ±0.05 or $0.6^{+0.06}_{-0.05}$	$0.8^{+0.08}_{-0.05}$	$0.8^{+0.08}_{-0.05}$	$0.8^{+0.08}_{-0.05}$
Component alignment	Δh	± 2.0 max.	± 2.0 max.	± 3.0 max.	± 3.0 max.	± 3.0 max.	± 3.0 max.	± 3.0 max.
Total tape thickness	t	0.6 ±0.2	0.6 ±0.2	0.6 ±0.2	0.6 ±0.2	0.6 ±0.2	0.6 ±0.2	0.6 ±0.2
Package (see also page 158)	▲	ROLL/AMMO		AMMO				
		REEL Ø 360 max. Ø 30 ±1 B 52 ±2 / 58 ±2 depending on comp. dimensions		REEL Ø 360 max. Ø 30 ±1 B 52 ±2 / 58 ±2 / 66 ±2 or REEL Ø 500 max. Ø 25 ±1 B 54 ±2 / 60 ±2 / 68 ±2 depending on PCM and component dimensions				
Unit		see details page 159.						

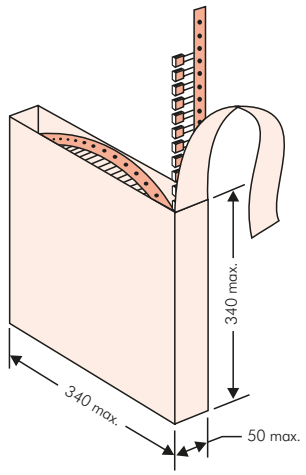
▲ When ordering please specify dimension H and required packaging type.
Dims in mm.

• Diameter of pins see General Data.
Please clarify customer-specific deviations with the manufacturer.

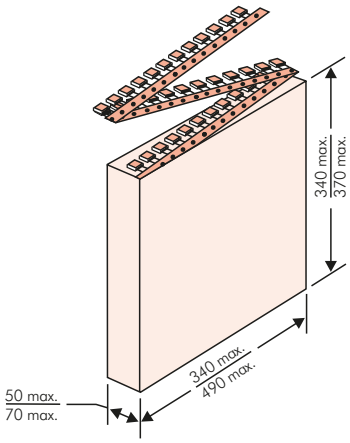
* PCM 10 and PCM 15 can be crimped to PCM 7.5.
Position of components according to PCM 7.5 (sketch 1). P_0 = 12.7 or 15.0 is possible

Types of Tape Packaging of Capacitors for Automatic Radial Insertion

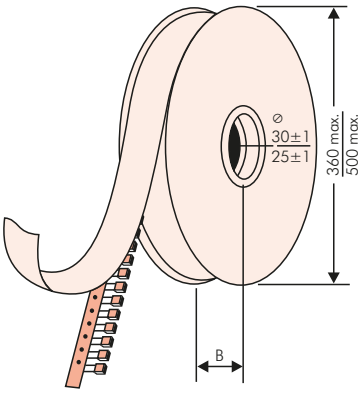
ROLL Packaging



AMMO Packaging



REEL Packaging



BAR CODE (Labelling)

Labelling of package units in plain text and with alphanumerical Bar Code

- WIMA supplier number
- Date code
- Customer's P/O number
- P/O line
- Customer's part number
- WIMA part number
- Quantity
- WIMA confirmation number
- Country of origin
- Customer name
- Handling unit number
- Week of delivery.

In addition part description of

– article
– capacitance value
– rated voltage
– dimensions
– technical note
– capacitance tolerance
– packing
– connecting information

BARCODE PDF417
BARCODE 2D Datamatrix

04.23

Packing Quantities for Capacitors with Radial Pins in PCM 2.5 mm to 27.5 mm

PCM	Size				bulk	pcs. per packing unit									
						ROLL		REEL				AMMO			
								Ø 360		Ø 500		340 x 340		490 x 370	
						H16.5	H18.5	H16.5	H18.5	H16.5	H18.5	H16.5	H18.5	H16.5	H18.5
	W	H	L	Codes	S	N	O	F	I	H	J	A	C	B	D
2.5 mm	2.5	7	4.6	**0B**	5000	2200		2500		–		2800		–	
	3	7.5	4.6	**0C**	5000	2000		2300		–		2300		–	
	3.8	8.5	4.6	**0D**	5000	1500		1800		–		1800		–	
	4.6	9	4.6	**0E**	5000	1200		1500		–		1500		–	
	5.5	10	4.6	**0F**	5000	900		1200		–		1200		–	
5 mm	2.5	6.5	7.2	**1A**	5000	2200		2500		–		2800		–	
	3	7.5	7.2	**1B**	5000	2000		2300		–		2300		–	
	3.5	8.5	7.2	**1C**	5000	1600		2000		–		2000		–	
	4.5	6	7.2	**1D**	6000	1300		1500		–		1500		–	
	4.5	9.5	7.2	**1E**	4000	1300		1500		–		1500		–	
	5	10	7.2	**1F**	3500	1100		1400		–		1400		–	
	5.5	7	7.2	**1G**	4000	1000		1200		–		1200		–	
	5.5	11.5	7.2	**1H**	2500	1000		1200		–		1200		–	
	6.5	8	7.2	**1I**	2500	800		1000		–		1000		–	
	7.2	8.5	7.2	**1J**	2500	700		1000		–		1000		–	
	7.2	13	7.2	**1K**	2000	700		950		–		1000		–	
	8.5	10	7.2	**1L**	2000	600		800		–		800		–	
	8.5	14	7.2	**1M**	1500	600		800		–		800		–	
	11	16	7.2	**1N**	1000	500		600		–		640		–	
7.5 mm	2.5	7	10	**2A**	5000	–		2500		4400		2500		–	
	3	8.5	10	**2B**	5000	–		2200		4300		2300		4150	
	4	9	10	**2C**	4000	–		1700		3200		1700		3000	
	4.5	9.5	10.3	**2D**	3500	–		1500		2900		1400		2700	
	5	10.5	10.3	**2E**	3000	–		1300		2500		1300		–	
	5.7	12.5	10.3	**2F**	2000	–		1000		2200		1100		–	
	7.2	12.5	10.3	**2G**	1500	–		900		1800		1000		–	
10 mm	3	9	13	**3A**	3000	–		1100		2200		–		1900	
	4	9	13	**3C**	3000	–		900		1600		–		1450	
	4	9.5	13	**3D**	3000	–		900		1600		–		1400	
	5	11	13	**3F**	3000	–		700		1300		–		1100	
	6	12	13	**3G**	2400	–		550		1100		–		1000	
	6	12.5	13	**3H**	2400	–		550		1100		–		1000	
	8	12	13	**3I**	2000	–		400		800		–		740	
15 mm	5	11	18	**4B**	2400	–		600		1200		–		1150	
	6	12.5	18	**4C**	2000	–		500		1000		–		1000	
	7	14	18	**4D**	1600	–		450		900		–		850	
	8	15	18	**4F**	1200	–		400		800		–		740	
	9	14	18	**4H**	1200	–		350		700		–		650	
	9	16	18	**4J**	900	–		350		700		–		650	
	11	14	18	**4M**	1000	–		300		600		–		540	
22.5 mm	5	14	26.5	**5A**	1200	–		–		800		–		770	
	6	15	26.5	**5B**	1000	–		–		700		–		640	
	7	16.5	26.5	**5D**	760	–		–		600		–		550	
	8.5	18.5	26.5	**5F**	500	–		–		480		–		450	
	10.5	19	26.5	**5G**	594*	–		–		400		–		360	
	10.5	20.5	26.5	**5H**	594*	–		–		400		–		360	
	11	21	26.5	**5I**	561*	–		–		380		–		350	
27.5 mm	9	19	31.5	**6A**	567*	–		–		460/340*		–		–	
	11	21	31.5	**6B**	459*	–		–		380/280*		–		–	
	13	24	31.5	**6D**	378*	–		–		300		–		–	
	15	26	31.5	**6F**	324*	–		–		270		–		–	
	17	29	31.5	**6G**	198*	–		–		–		–		–	
	17	34.5	31.5	**6I**	198*	–		–		–		–		–	
	20	39.5	31.5	**6J**	162*	–		–		–		–		–	

* for 2-inch transport pitches.

* TPS (Tray-Packing-System). Plate versions may have different packing units. Samples and pre-production needs on request.

Packing Quantities for Capacitors with Radial Pins in PCM 37.5 mm to 52.5 mm

PCM	Size				bulk	pcs. per packing unit									
						ROLL		REEL				AMMO			
								∅ 360		∅ 500		340 x 340		490 x 370	
						H16.5	H18.5	H16.5	H18.5	H16.5	H18.5	H16.5	H18.5	H16.5	H18.5
	W	H	L	Codes	S	N	O	F	I	H	J	A	C	B	D
37.5 mm**	9	19	41.5	**7A**	441*	–		–		–		–		–	
	11	22	41.5	**7B**	357*	–		–		–		–		–	
	13	24	41.5	**7C**	294*	–		–		–		–		–	
	15	26	41.5	**7D**	252*	–		–		–		–		–	
	17	29	41.5	**7E**	154*	–		–		–		–		–	
	19	32	41.5	**7F**	140*	–		–		–		–		–	
	20	39.5	41.5	**7G**	126*	–		–		–		–		–	
	24	45.5	41.5	**7H**	112*	–		–		–		–		–	
	28	38	41.5	**7L**	84*	–		–		–		–		–	
	31	46	41.5	**7I**	84*	–		–		–		–		–	
	35	50	41.5	**7J**	35*	–		–		–		–		–	
	40	55	41.5	**7K**	28*	–		–		–		–		–	
48.5 mm**	19	31	56	**8D**	120*	–		–		–		–		–	
	23	34	56	**8E**	80*	–		–		–		–		–	
	27	37.5	56	**8H**	84*	–		–		–		–		–	
	33	48	56	**8J**	25*	–		–		–		–		–	
	37	54	56	**8L**	25*	–		–		–		–		–	
52.5 mm	25	45	57	**9D**	70*	–		–		–		–		–	
	30	45	57	**9E**	60*	–		–		–		–		–	
	35	50	57	**9F**	25*	–		–		–		–		–	
	45	55	57	**9H**	20*	–		–		–		–		–	
	45	65	57	**9J**	20*	–		–		–		–		–	

* TPS (Tray-Packing-System). Plate versions may have different packing units.
**For Snubber capacitors in 2-pin version the PCM is changing to 38.5 respective 49.5 mm.
Samples and pre-production needs on request.

Updated data on www.wima.com

WIMA Part Number System

A WIMA part number consists of 18 digits and is composed as follows:

Field 1 - 4: Type description
Field 5 - 6: Rated voltage
Field 7 - 10: Capacitance
Field 11 - 12: Size and PCM
Field 13 - 14: Version code (e.g. Snubber versions)
Field 15: Capacitance tolerance
Field 16: Packing
Field 17 - 18: Pin length (untaped)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
M	**K**	**S**	**2**	**C**	**0**	**2**	**1**	**0**	**0**	**1**	**A**	**0**	**0**	**M**	**S**	**S**	**D**
MKS 2				63 VDC		0.01 µF				2.5x6.5x7.2		-		20%	bulk	6 -2	

Type description:

SMD-PET	= SMDT
SMD-PEN	= SMDN
SMD-PPS	= SMDI
FKP 02	= FKP0
MKS 02	= MKS0
FKS 2	= FKS2
FKP 2	= FKP2
FKS 3	= FKS3
FKP 3	= FKP 3
MKS 2	= MKS2
MKP 2	= MKP2
MKS 4	= MKS4
MKP 4	= MKP4
MKP 10	= MKP1
FKP 4	= FKP4
FKP 1	= FKP1
MKP-X2	= MKX2
MKP-X1 R	= MKX1
MKP-Y2	= MKY2
MKP 4F	= MKPF
Snubber MKP	= SNMP
Snubber FKP	= SNFP
GTO MKP	= GTOM
DC-LINK MKP 4	= DCP4
DC-LINK MKP 6	= DCP6
DC-LINK HC	= DCHC

Rated voltage:

50 VDC	= B0
63 VDC	= C0
100 VDC	= D0
250 VDC	= F0
400 VDC	= G0
450 VDC	= H0
520 VDC	= H2
600 VDC	= I0
630 VDC	= J0
700 VDC	= K0
800 VDC	= L0
850 VDC	= M0
900 VDC	= N0
1000 VDC	= O1
1100 VDC	= P0
1200 VDC	= Q0
1250 VDC	= R0
1500 VDC	= S0
1600 VDC	= T0
1700 VDC	= TA
2000 VDC	= U0
2500 VDC	= V0
3000 VDC	= W0
4000 VDC	= X0
6000 VDC	= Y0
230 VAC	= 3Y
275 VAC	= 1W
300 VAC	= 2W
305 VAC	= AW
350 VAC	= BW
440 VAC	= 4W
...	

Capacitance:

22 pF	= 0022
47 pF	= 0047
100 pF	= 0100
150 pF	= 0150
220 pF	= 0220
330 pF	= 0330
470 pF	= 0470
680 pF	= 0680
1000 pF	= 1100
1500 pF	= 1150
2200 pF	= 1220
3300 pF	= 1330
4700 pF	= 1470
6800 pF	= 1680
0.01 µF	= 2100
0.022 µF	= 2220
0.047 µF	= 2470
0.1 µF	= 3100
0.22 µF	= 3220
0.47 µF	= 3470
1 µF	= 4100
2.2 µF	= 4220
4.7 µF	= 4470
10 µF	= 5100
22 µF	= 5220
47 µF	= 5470
100 µF	= 6100
220 µF	= 6220
1000 µF	= 7100
1500 µF	= 7150
...	

Size:

4.8x3.3x3 Size 1812	= KA
4.8x3.3x4 Size 1812	= KB
5.7x5.1x3.5 Size 2220	= QA
5.7x5.1x4.5 Size 2220	= QB
7.2x6.1x3 Size 2824	= TA
7.2x6.1x5 Size 2824	= TB
10.2x7.6x5 Size 4030	= VA
12.7x10.2x6 Size 5040	= XA
15.3x13.7x7 Size 6054	= YA
2.5x7x4.6 PCM 2.5	= 0B
3x7.5x4.6 PCM 2.5	= 0C
2.5x6.5x7.2 PCM 5	= 1A
3x7.5x7.2 PCM 5	= 1B
2.5x7x10 PCM 7.5	= 2A
3x8.5x10 PCM 7.5	= 2B
3x9x13 PCM 10	= 3A
4x9x13 PCM 10	= 3C
5x11x18 PCM 15	= 4B
6x12.5x18 PCM 15	= 4C
5x14x26.5 PCM 22.5	= 5A
6x15x26.5 PCM 22.5	= 5B
9x19x31.5 PCM 27.5	= 6A
11x21x31.5 PCM 27.5	= 6B
9x19x41.5 PCM 37.5	= 7A
11x22x41.5 PCM 37.5	= 7B
19x31x56 PCM 48.5	= 8D
25x45x57 PCM 52.5	= 9D
...	

Version code:

Standard	= 00
Version A1	= 1A
Version A1.1.1	= 1B
Version A2	= 2A
...	

Tolerance:

±20%	= M
±10%	= K
±5%	= J
±2.5%	= H
±1%	= E
...	

Packing:

AMMO H16.5 340x340	= A
AMMO H16.5 490x370	= B
AMMO H18.5 340x340	= C
AMMO H18.5 490x370	= D
REEL H16.5 360	= F
REEL H16.5 500	= H
REEL H18.5 360	= I
REEL H18.5 500	= J
ROLL H16.5	= N
ROLL H18.5	= O
BLISTER W12 180	= P
BLISTER W12 330	= Q
BLISTER W16 330	= R
BLISTER W24 330	= T
Bulk/TPS Standard	= S
...	

Pin length (untaped)

3.5 ±0.5	= C9
6 -2	= SD
16 ±1	= P1
...	

Pin length (taped)

none	= 00

The data on this page is not complete and serves only to explain the part number system. Part number information is listed on the pages of the respective WIMA range.