



**THE DATASHEET OF  
MKS4O131005D00KSSD**



**Metallized Polyester (PET) Capacitors**  
**in PCM 7.5 mm to 52.5 mm. Capacitances from 1000 pF to 680 µF.**  
**Rated Voltages from 50 VDC to 2000 VDC.**

## Special Features

- High volume/capacitance ratio
- Self-healing
- AEC-Q200 qualified
- According to RoHS 2015/863/EU

## Typical Applications

For general DC-applications e.g.

- By-pass
- Blocking
- Coupling and decoupling
- Smoothing
- Timing

## Construction

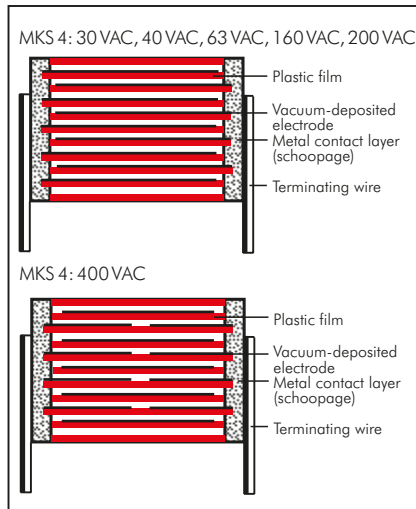
### Dielectric:

Polyethylene-terephthalate (PET) film

### Capacitor electrodes:

Vacuum-deposited

### 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 680 µF

### Rated voltages:

50VDC, 63VDC, 100VDC, 250VDC, 400VDC, 630 VDC, 1000 VDC, 1500 VDC, 2000 VDC

### Capacitance tolerances:

± 20%, ± 10% ± 5%

### Operating temperature range:

$U_r = 50$  VDC:  $-55^\circ\text{C}$  to  $+105^\circ\text{C}$

$U_r \geq 63$  VDC:  $-55^\circ\text{C}$  to  $+125^\circ\text{C}$

### Climatic test category:

55/100/56 in accordance with IEC

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

$U_r$	$U_{\text{test}}$	$C \leq 0.33 \mu\text{F}$	$0.33 \mu\text{F} < C \leq 680 \mu\text{F}$
50VDC	10V	$\geq 5 \times 10^3 \text{ M}\Omega$	$\geq 1500 \text{ sec (M}\Omega \times \mu\text{F)}$
63VDC	50V	$\geq 1 \times 10^4 \text{ M}\Omega$	$\geq 3000 \text{ sec (M}\Omega \times \mu\text{F)}$
100VDC	100V	$\geq 1.5 \times 10^4 \text{ M}\Omega$	$\geq 5000 \text{ sec (M}\Omega \times \mu\text{F)}$
$\geq 250$ VDC	100V	$\geq 3 \times 10^4 \text{ M}\Omega$	$\geq 10000 \text{ sec (M}\Omega \times \mu\text{F)}$

Measuring time: 1 min.

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

at f	$C \leq 0.1 \mu\text{F}$	$0.1 \mu\text{F} < C \leq 1.0 \mu\text{F}$	$C > 1.0 \mu\text{F}$
1 kHz	$\leq 8 \times 10^{-3}$	$\leq 8 \times 10^{-3}$	$\leq 10 \times 10^{-3}$
10 kHz	$\leq 15 \times 10^{-3}$	$\leq 15 \times 10^{-3}$	–
100 kHz	$\leq 30 \times 10^{-3}$	–	–

### Maximum pulse rise time:

Capacitance pF/µF	max. pulse rise time V/µsec								
	50VDC	63VDC	100VDC	250VDC	400VDC	630VDC	1000VDC	1500VDC	2000VDC
1000 ... 6800	–	–	–	–	–	–	70	90	100
0.01 ... 0.022	–	–	30	35	38	40	50	50	60
0.033 ... 0.068	–	–	15	20	25	32	26	35	40
0.1 ... 0.22	10	10	12	15	15	17	20	35	40
0.33 ... 0.68	9	9	9	10	10	13	20	20	38
1.0 ... 2.2	6	6	5	6	9	13	14	15	15
3.3 ... 6.8	2.5	3	3	6	6	9	12	12	12
10 ... 22	2.5	2.5	2.5	3	6	6	6	–	–
33 ... 68	2.5	2.5	2.5	3	3	–	–	–	–
100 ... 220	2.5	2.5	2.5	0.9	–	–	–	–	–
330 ... 680	0.2	0.2	0.3	–	–	–	–	–	–

## Mechanical Tests

### Pull test on pins:

$d \leq 0.8 \text{ Ø}$ : 10 N in direction of pins

$d > 0.8 \text{ Ø}$ : 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:

1 kPa = 10 mbar in

accordance with IEC 60068-2-13

### Bump test:

4000 bumps at 390 m/sec<sup>2</sup>

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	50 VDC/30 VAC*					63 VDC/40 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
0.1 µF	2.5	7	10	7.5	MKS4B031002A_____	2.5	7	10	7.5	MKS4C031002A_____
						4	9	13	10	MKS4C031003C_____
0.15 "	2.5	7	10	7.5	MKS4B031502A_____	2.5	7	10	7.5	MKS4C031502A_____
						4	9	13	10	MKS4C031503C_____
0.22 "	2.5	7	10	7.5	MKS4B032202A_____	3	8.5	10	7.5	MKS4C032202B_____
						4	9	13	10	MKS4C032203C_____
0.33 "	2.5	7	10	7.5	MKS4B033302A_____	4	9	10	7.5	MKS4C033302C_____
						4	9	13	10	MKS4C033303C_____
0.47 "	3	8.5	10	7.5	MKS4B034702B_____	4	9	10	7.5	MKS4C034702C_____
						4	9	13	10	MKS4C034703C_____
0.68 "	4	9	10	7.5	MKS4B036802C_____	5	10.5	10.3	7.5	MKS4C036802E_____
						4	9	13	10	MKS4C036803C_____
1.0 µF	4	9	10	7.5	MKS4B041002C_____	5	10.5	10.3	7.5	MKS4C041002E_____
						4	9	13	10	MKS4C041003C_____
1.5 "	5	10.5	10.3	7.5	MKS4B041502E_____	5.7	12.5	10.3	7.5	MKS4C041502F_____
						5	11	13	10	MKS4C041503F_____
2.2 "	5.7	12.5	10.3	7.5	MKS4B042202F_____	5	11	13	10	MKS4C042203F_____
						6	12.5	18	15	MKS4C042204C_____
3.3 "	5.7	12.5	10.3	7.5	MKS4B043302F_____	6	12	13	10	MKS4C043303G_____
						7	14	18	15	MKS4C043304D_____
4.7 "	7.2	12.5	10.3	7.5	MKS4B044702G_____	7	14	18	15	MKS4C044704D_____
	6	12	13	10	MKS4B044703G_____	6	15	26.5	22.5	MKS4C044705B_____
6.8 "	7.2	12.5	10.3	7.5	MKS4B046802G_____	8	15	18	15	MKS4C046804F_____
	6	12	13	10	MKS4B046803G_____	7	16.5	26.5	22.5	MKS4C046805D_____
10 µF	9	16	18	15	MKS4B051004J_____	8.5	18.5	26.5	22.5	MKS4C051005F_____
						9	19	31.5	27.5	MKS4C051006A_____
15 "	11	21	26.5	22.5	MKS4B051505I_____	11	21	26.5	22.5	MKS4C051505I_____
						9	19	31.5	27.5	MKS4C051506A_____
18 "	9	19	31.5	27.5	MKS4B051806A_____	9	19	31.5	27.5	MKS4C051806A_____
22 "	11	21	31.5	27.5	MKS4B052206B_____	11	21	31.5	27.5	MKS4C052206B_____
27 "	11	21	31.5	27.5	MKS4B052706B_____	11	21	31.5	27.5	MKS4C052706B_____
33 "	13	24	31.5	27.5	MKS4B053306D_____	13	24	31.5	27.5	MKS4C053306D_____
39 "	15	26	31.5	27.5	MKS4B053906F_____	15	26	31.5	27.5	MKS4C053906F_____
47 "	15	26	31.5	27.5	MKS4B054706F_____	15	26	31.5	27.5	MKS4C054706F_____
						13	24	41.5	37.5	MKS4C054707C_____
56 "	17	29	31.5	27.5	MKS4B055606G_____	17	29	31.5	27.5	MKS4C055606G_____
						15	26	41.5	37.5	MKS4C055607D_____
68 "	20	39.5	31.5	27.5	MKS4B056806J_____	17	34.5	31.5	27.5	MKS4C056806I_____
						15	26	41.5	37.5	MKS4C056807D_____
82 "	17	34.5	31.5	27.5	MKS4B058206I_____	17	34.5	31.5	27.5	MKS4C058206I_____
						17	29	41.5	37.5	MKS4C058207E_____
100 µF	19	32	41.5	37.5	MKS4B061007F_____	20	39.5	31.5	27.5	MKS4C061006J_____
						19	32	41.5	37.5	MKS4C061007F_____
120 "	20	39.5	41.5	37.5	MKS4B061207G_____	20	39.5	41.5	37.5	MKS4C061207G_____
150 "	20	39.5	41.5	37.5	MKS4B061507G_____	20	39.5	41.5	37.5	MKS4C061507G_____
180 "	24	45.5	41.5	37.5	MKS4B061807H_____	24	45.5	41.5	37.5	MKS4C061807H_____
						28	38	41.5	37.5	MKS4C061807L_____
220 "	24	45.5	41.5	37.5	MKS4B062207H_____	31	46	41.5	37.5	MKS4C062207I_____
						25	45	57	52.5	MKS4C062209D_____
270 "	31	46	41.5	37.5	MKS4B062707L_____	31	46	41.5	37.5	MKS4C062707L_____
						25	45	57	52.5	MKS4C062709D_____
330 "	35	50	41.5	37.5	MKS4B063307J_____	35	50	41.5	37.5	MKS4C063307J_____
						30	45	57	52.5	MKS4C063309E_____
390 "	40	55	41.5	37.5	MKS4B063907K_____	40	55	41.5	37.5	MKS4C063907K_____
						30	45	57	52.5	MKS4C063909E_____
470 "	35	50	57	52.5	MKS4B064709F_____	35	50	57	52.5	MKS4C064709F_____
560 "	45	55	57	52.5	MKS4B065609H_____	45	55	57	52.5	MKS4C065609H_____
680 "	45	55	57	52.5	MKS4B066809H_____	45	65	57	52.5	MKS4C066809J_____

\* AC voltages:  $f = 50 \text{ Hz}$ ;  $1.4 \times U_{\text{rms}} + U_{\text{DC}} \leq U_{\text{r}}$

\*\* PCM = printed circuit module = pin spacing

Dims. in mm.

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## Continuation

### General Data

Capacitance	100 VDC/63 VAC*					250 VDC/160 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
0.01 µF	2.5	7	10	7.5	MKS4D021002A	3	8.5	10	7.5	MKS4F021002B
	4	9	13	10	MKS4D021003C	4	9	13	10	MKS4F021003C
0.015 "	2.5	7	10	7.5	MKS4D021502A	3	8.5	10	7.5	MKS4F021502B
	4	9	13	10	MKS4D021503C	4	9	13	10	MKS4F021503C
0.022 "	2.5	7	10	7.5	MKS4D022202A	3	8.5	10	7.5	MKS4F022202B
	4	9	13	10	MKS4D022203C	4	9	13	10	MKS4F022203C
0.033 "	2.5	7	10	7.5	MKS4D023302A	3	8.5	10	7.5	MKS4F023302B
	4	9	13	10	MKS4D023303C	4	9	13	10	MKS4F023303C
0.047 "	2.5	7	10	7.5	MKS4D024702A	3	8.5	10	7.5	MKS4F024702B
	4	9	13	10	MKS4D024703C	4	9	13	10	MKS4F024703C
0.068 "	2.5	7	10	7.5	MKS4D026802A	4	9	10	7.5	MKS4F026802C
	4	9	13	10	MKS4D026803C	4	9	13	10	MKS4F026803C
0.1 µF	2.5	7	10	7.5	MKS4D031002A	4	9	10	7.5	MKS4F031002C
	4	9	13	10	MKS4D031003C	4	9	13	10	MKS4F031003C
0.15 "	3	8.5	10	7.5	MKS4D031502B	5	10.5	10.3	7.5	MKS4F031502E
	4	9	13	10	MKS4D031503C	4	9	13	10	MKS4F031503C
0.22 "	3	8.5	10	7.5	MKS4D032202B	5	10.5	10.3	7.5	MKS4F032202E
	4	9	13	10	MKS4D032203C	5	11	13	10	MKS4F032203F
0.33 "	4	9	10	7.5	MKS4D033302C	5.7	12.5	10.3	7.5	MKS4F033302F
	4	9	13	10	MKS4D033303C	5	11	13	10	MKS4F033303F
0.47 "	4.5	9.5	10.3	7.5	MKS4D034702D	6	12	13	10	MKS4F034703G
	4	9	13	10	MKS4D034703C	6	12.5	18	15	MKS4F034704C
0.68 "	5	10.5	10.3	7.5	MKS4D036802E	7	14	18	15	MKS4F036804D
	4	9	13	10	MKS4D036803C					
1.0 µF	5.7	12.5	10.3	7.5	MKS4D041002F	8	15	18	15	MKS4F041004F
	5	11	13	10	MKS4D041003F	6	15	26.5	22.5	MKS4F041005B
1.5 "	6	12	13	10	MKS4D041503G	9	16	18	15	MKS4F041504J
	7	14	18	15	MKS4D041504D	7	16.5	26.5	22.5	MKS4F041505D
2.2 "	8	15	18	15	MKS4D042204F	10.5	19	26.5	22.5	MKS4F042205G
	6	15	26.5	22.5	MKS4D042205B	9	19	31.5	27.5	MKS4F042206A
3.3 "	9	16	18	15	MKS4D043304J	11	21	26.5	22.5	MKS4F043305I
	7	16.5	26.5	22.5	MKS4D043305D	11	21	31.5	27.5	MKS4F043306B
4.7 "	10.5	19	26.5	22.5	MKS4D044705G	11	21	31.5	27.5	MKS4F044706B
	9	19	31.5	27.5	MKS4D044706A					
6.8 "	10.5	19	26.5	22.5	MKS4D046805G	13	24	31.5	27.5	MKS4F046806D
	11	21	31.5	27.5	MKS4D046806B					
10 µF	9	19	31.5	27.5	MKS4D051006A	17	29	31.5	27.5	MKS4F051006G
						15	26	41.5	37.5	MKS4F051007D
15 "	11	21	31.5	27.5	MKS4D051506B	17	34.5	31.5	27.5	MKS4F051506I
						17	29	41.5	37.5	MKS4F051507E
18 "	11	21	31.5	27.5	MKS4D051806B	20	39.5	31.5	27.5	MKS4F051806J
						19	32	41.5	37.5	MKS4F051807F
22 "	13	24	31.5	27.5	MKS4D052206D	20	39.5	41.5	37.5	MKS4F052207G
	15	26	31.5	27.5	MKS4D052706F	20	39.5	41.5	37.5	MKS4F052707G
27 "	15	26	31.5	27.5	MKS4D053306F	24	45.5	41.5	37.5	MKS4F053307H
	13	24	41.5	37.5	MKS4D053307C					
33 "	17	29	31.5	27.5	MKS4D053906G	24	45.5	41.5	37.5	MKS4F053907H
	15	26	41.5	37.5	MKS4D053907D					
39 "	17	29	31.5	27.5	MKS4D054706I	31	46	41.5	37.5	MKS4F054707I
	17	29	41.5	37.5	MKS4D054707E					
47 "	20	39.5	31.5	27.5	MKS4D055606J	35	50	41.5	37.5	MKS4F055607J
	17	29	41.5	37.5	MKS4D055607E	25	45	57	52.5	MKS4F055609D
56 "	20	39.5	31.5	27.5	MKS4D056806J	35	50	41.5	37.5	MKS4F056807J
	19	32	41.5	37.5	MKS4D056807F	30	45	57	52.5	MKS4F056809E
68 "	20	39.5	41.5	37.5	MKS4D058207G	40	55	41.5	37.5	MKS4F058207K
	19	32	41.5	37.5	MKS4D058207G	35	50	57	52.5	MKS4F058209F
100 µF	20	39.5	41.5	37.5	MKS4D061007G	45	55	57	52.5	MKS4F061009H
	24	45.5	41.5	37.5	MKS4D061207H	45	55	57	52.5	MKS4F061209H
120 "	31	46	41.5	37.5	MKS4D061507I	45	65	57	52.5	MKS4F061509J
	31	46	41.5	37.5	MKS4D061807I					
150 "	25	45	57	52.5	MKS4D061809H					
	35	50	41.5	37.5	MKS4D062207J					
180 "	30	45	57	52.5	MKS4D062209E					
	40	55	41.5	37.5	MKS4D062707K					
220 "	35	50	57	52.5	MKS4D062709F					
	45	55	57	52.5	MKS4D063309H					
270 "	45	55	57	52.5	MKS4D063909H					
	45	65	57	52.5	MKS4D064709J					

\* AC voltage:  $f = 50 \text{ Hz}; 1.4 \times U_{\text{rms}} + U_{\text{DC}} \leq U_r$   
 \*\*PCM = Printed circuit module = pin spacing  
 Dims. in mm.

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## Continuation

### General Data

Capacitance	400 VDC/200 VAC*					630 VDC/400 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
0.01 µF	3	8.5	10	7.5	MKS4G021002B	3	8.5	10	7.5*	MKS4J021002B
	4	9	13	10	MKS4G021003C	4	9	13	10	MKS4J021003C
0.015 "	3	8.5	10	7.5	MKS4G021502B	4	9	10	7.5*	MKS4J021502C
	4	9	13	10	MKS4G021503C	4	9	13	10	MKS4J021503C
0.022 "	4	9	10	7.5	MKS4G022202C	4.5	9.5	10.3	7.5*	MKS4J022202D
	4	9	13	10	MKS4G022203C	4	9	13	10	MKS4J022203C
0.033 "	4	9	10	7.5	MKS4G023302C	5	10.5	10.3	7.5*	MKS4J023302E
	4	9	13	10	MKS4G023303C	5	11	13	10	MKS4J023303F
0.047 "	5	10.5	10.3	7.5	MKS4G024702E	5.7	12.5	10.3	7.5*	MKS4J024702F
	4	9	13	10	MKS4G024703C	6	12	13	10	MKS4J024703G
0.068 "	5	10.5	10.3	7.5	MKS4G026802E	6	12	13	10	MKS4J026803G
	4	9	13	10	MKS4G026803C	5	11	18	15	MKS4J026804B
0.1 µF	5	10.5	10.3	7.5	MKS4G031002E	6	12.5	18	15	MKS4J031004C
	5	11	13	10	MKS4G031003F	6	15	26.5	22.5	MKS4J031005B
0.15 "	5.7	12.5	10.3	7.5	MKS4G031502F	7	14	18	15	MKS4J031504D
	6	12	13	10	MKS4G031503G	6	15	26.5	22.5	MKS4J031505B
0.22 "	6	12	13	10	MKS4G032203G	8	15	18	15	MKS4J032204F
	6	12.5	18	15	MKS4G032204C	6	15	26.5	22.5	MKS4J032205B
0.33 "	8	15	18	15	MKS4G033304F	7	16.5	26.5	22.5	MKS4J033305D
						9	19	31.5	27.5	MKS4J033306A
0.47 "	8	15	18	15	MKS4G034704F	10.5	19	26.5	22.5	MKS4J034705G
	6	15	26.5	22.5	MKS4G034705B	9	19	31.5	27.5	MKS4J034706A
0.68 "	7	16.5	26.5	22.5	MKS4G036805D	11	21	26.5	22.5	MKS4J036805I
						11	21	31.5	27.5	MKS4J036806B
1.0 µF	10.5	19	26.5	22.5	MKS4G041005G	11	21	31.5	27.5	MKS4J041006B
	11	21	31.5	27.5	MKS4G041006B					
1.5 "	11	21	26.5	22.5	MKS4G041505I	15	26	31.5	27.5	MKS4J041506F
	11	21	31.5	27.5	MKS4G041506B					
2.2 "	11	21	31.5	27.5	MKS4G042206B	17	34.5	31.5	27.5	MKS4J042206I
						15	26	41.5	37.5	MKS4J042207D
3.3 "	13	24	31.5	27.5	MKS4G043306D	20	39.5	31.5	27.5	MKS4J043306J
						19	32	41.5	37.5	MKS4J043307F
4.7 "	17	29	31.5	27.5	MKS4G044706G	20	39.5	41.5	37.5	MKS4J044707G
6.8 "	17	34.5	31.5	27.5	MKS4G046806I	24	45.5	41.5	37.5	MKS4J046807H
	15	26	41.5	37.5	MKS4G046807D					
10 µF	19	32	41.5	37.5	MKS4G051007F	35	50	41.5	37.5	MKS4J051007J
15 "	20	39.5	41.5	37.5	MKS4G051507G	40	55	41.5	37.5	MKS4J051507K
18 "	31	46	41.5	37.5	MKS4G051807I	45	55	57	52.5	MKS4J051809H
22 "	31	46	41.5	37.5	MKS4G052207I	45	55	57	52.5	MKS4J052209H
27 "	35	50	41.4	37.5	MKS4G052707J					
33 "	35	50	41.5	37.5	MKS4G053307J					
39 "	35	50	57	52.5	MKS4G053909F					
47 "	35	50	57	52.5	MKS4G054709F					
56 "	45	65	57	52.5	MKS4G055609J					
68 "	45	65	57	52.5	MKS4G056809J					

\* AC voltages:  $f = 50 \text{ Hz}$ ;  $1.4 \times U_{\text{rms}} + U_{\text{DC}} \leq U_{\text{r}}$

\*\*PCM = printed circuit module = pin spacing

\* Admissible AC voltage 250 VAC max.

Dims. in mm.

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 page 58

## Continuation

### General Data

Capacitance	1000 VDC/400 VAC*					1500 VDC/400 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
1000 pF	3	8.5	10	7.5	MKS4O111002B	4	9	13	10	MKS4S011003C
	4	9	13	10	MKS4O111003C					
1500 "	3	8.5	10	7.5	MKS4O111502B	4	9	13	10	MKS4S011503C
	4	9	13	10	MKS4O111503C					
2200 "	3	8.5	10	7.5	MKS4O112202B	4	9	13	10	MKS4S012203C
	4	9	13	10	MKS4O112203C					
3300 "	4	9	10	7.5	MKS4O113302C	4	9	13	10	MKS4S013303C
	4	9	13	10	MKS4O113303C					
4700 "	4	9	10	7.5	MKS4O114702C	4	9	13	10	MKS4S014703C
	4	9	13	10	MKS4O114703C	5	11	18	15	MKS4S014704B
6800 "	4.5	9.5	10.3	7.5	MKS4O116802D	5	11	13	10	MKS4S016803F
	4	9	13	10	MKS4O116803C	5	11	18	15	MKS4S016804B
0.01 µF	5	10.5	10.3	7.5	MKS4O121002E	6	12	13	10	MKS4S021003G
	5	11	13	10	MKS4O121003F	5	11	18	15	MKS4S021004B
0.015 "	5.7	12.5	10.3	7.5	MKS4O121502F	6	12.5	18	15	MKS4S021504C
	6	12	13	10	MKS4O121503G					
0.022 "	5	11	18	15	MKS4O122204B	7	14	18	15	MKS4S022204D
						6	15	26.5	22.5	MKS4S022205B
0.033 "	6	12.5	18	15	MKS4O123304C	8	15	18	15	MKS4S023304F
	6	15	26.5	22.5	MKS4O123305B	6	15	26.5	22.5	MKS4S023305B
0.047 "	7	14	18	15	MKS4O124704D	7	16.5	26.5	22.5	MKS4S024705D
	6	15	26.5	22.5	MKS4O124705B					
0.068 "	8	15	18	15	MKS4O126804F	8.5	18.5	26.5	22.5	MKS4S026805F
	6	15	26.5	22.5	MKS4O126805B					
0.1 µF	9	16	18	15	MKS4O131004J	10.5	19	26.5	22.5	MKS4S031005G
	7	16.5	26.5	22.5	MKS4O131005D	9	19	31.5	27.5	MKS4S031006A
0.15 "	8.5	18.5	26.5	22.5	MKS4O131505F	11	21	31.5	27.5	MKS4S031506B
0.22 "	10.5	19	26.5	22.5	MKS4O132205G	13	24	31.5	27.5	MKS4S032206D
0.33 "	11	21	26.5	22.5	MKS4O133305I	17	34.5	31.5	27.5	MKS4S033306I
	11	21	31.5	27.5	MKS4O133306B	17	29	41.5	37.5	MKS4S033307E
0.47 "	13	24	31.5	27.5	MKS4O134706D	20	39.5	31.5	27.5	MKS4S034706J
						17	29	41.5	37.5	MKS4S034707E
0.68 "	15	26	31.5	27.5	MKS4O136806F	20	39.5	41.5	37.5	MKS4S036807G
1.0 µF	17	29	31.5	27.5	MKS4O141006G	24	45.5	41.5	37.5	MKS4S041007H
	17	29	41.5	37.5	MKS4O141007E					
1.5 "	19	32	41.5	37.5	MKS4O141507F	31	46	41.5	37.5	MKS4S041507I
2.2 "	20	39.5	41.5	37.5	MKS4O142207G	35	50	41.5	37.5	MKS4S042207J
						35	50	57	52.5	MKS4S042209F
3.3 "	24	45.5	41.5	37.5	MKS4O143307H	45	55	57	52.5	MKS4S043309H
4.7 "	35	50	41.5	37.5	MKS4O144707J	45	65	57	52.5	MKS4S044709J
6.8 "	40	55	41.5	37.5	MKS4O146807K					
	35	50	57	52.5	MKS4O146809F					
10 µF	45	55	57	52.5	MKS4O151009H					

\* AC voltages:  $f = 50 \text{ Hz}$ ;  $1.4 \times U_{\text{rms}} + \text{UDC} \leq U_r$

\*\* PCM = printed circuit module = pin spacing

Dims. in mm.

#### 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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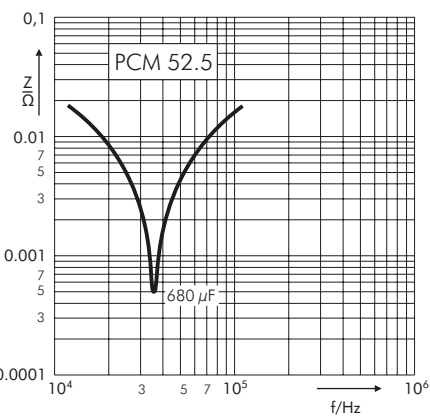
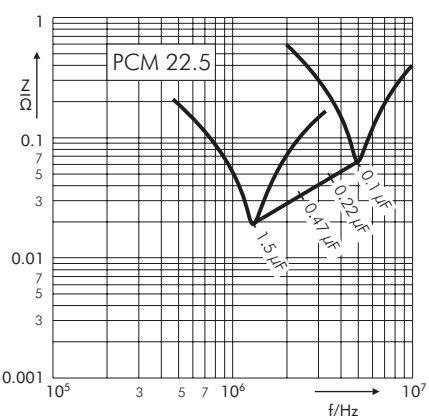
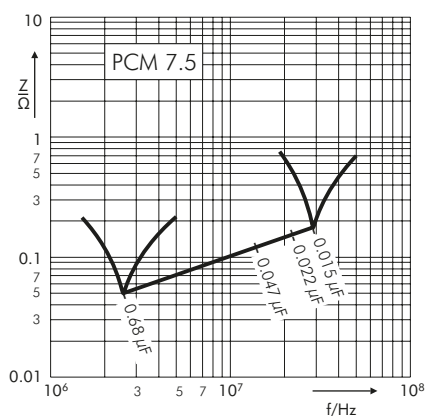
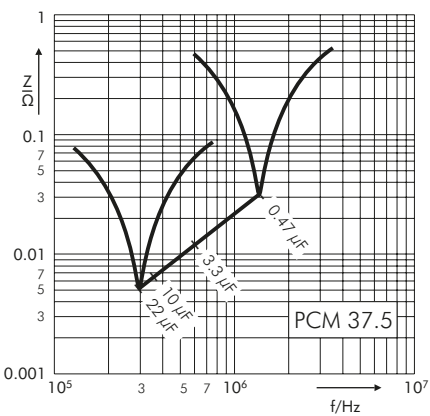
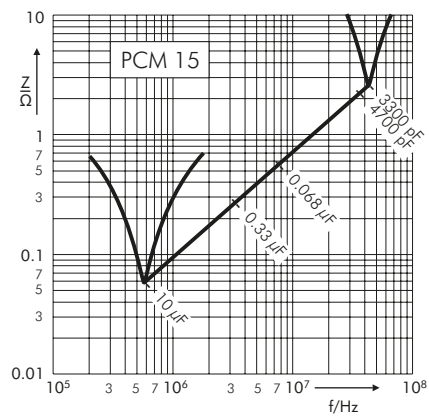
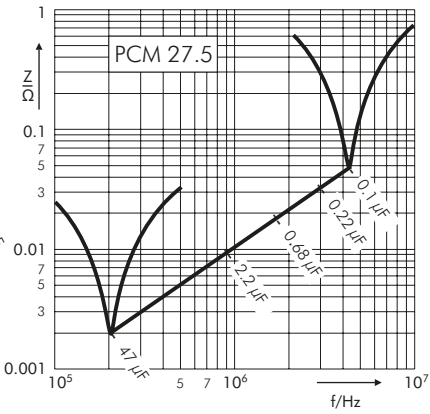
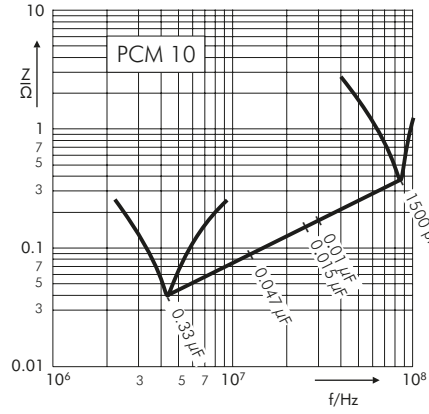
Continuation page 59





## Continuation

Impedance change with frequency  
(general guide).



## Recommendation for Processing and Application of Through-Hole Capacitors

### Soldering Process

Internal temperature of the capacitor must be kept as follows:

Polyester: preheating:  $T_{max.} \leq 125^{\circ}C$   
soldering:  $T_{max.} \leq 135^{\circ}C$

Polypropylene: preheating:  $T_{max.} \leq 100^{\circ}C$   
soldering:  $T_{max.} \leq 110^{\circ}C$

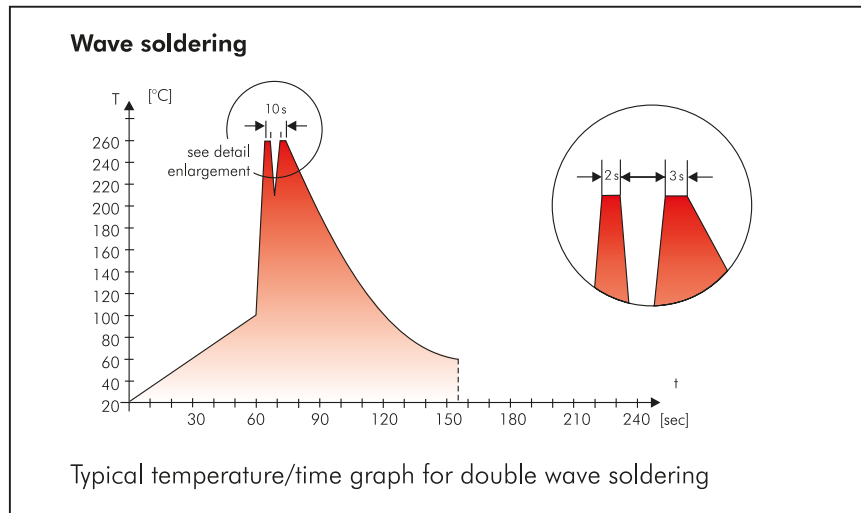
#### Single wave soldering

Soldering bath temperature:  $T < 260^{\circ}C$   
Dwell time:  $t < 5 \text{ sec}$

#### Double wave soldering

Soldering bath temperature:  $T < 260^{\circ}C$   
Dwell time:  $\sum t < 5 \text{ sec}$

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



## 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-frained from using such substances since years already.



WIMA Kondensatoren sind bleifrei konform RoHS 2015/863/EU

WIMA capacitors are lead free in accordance with RoHS 2015/863/EU

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

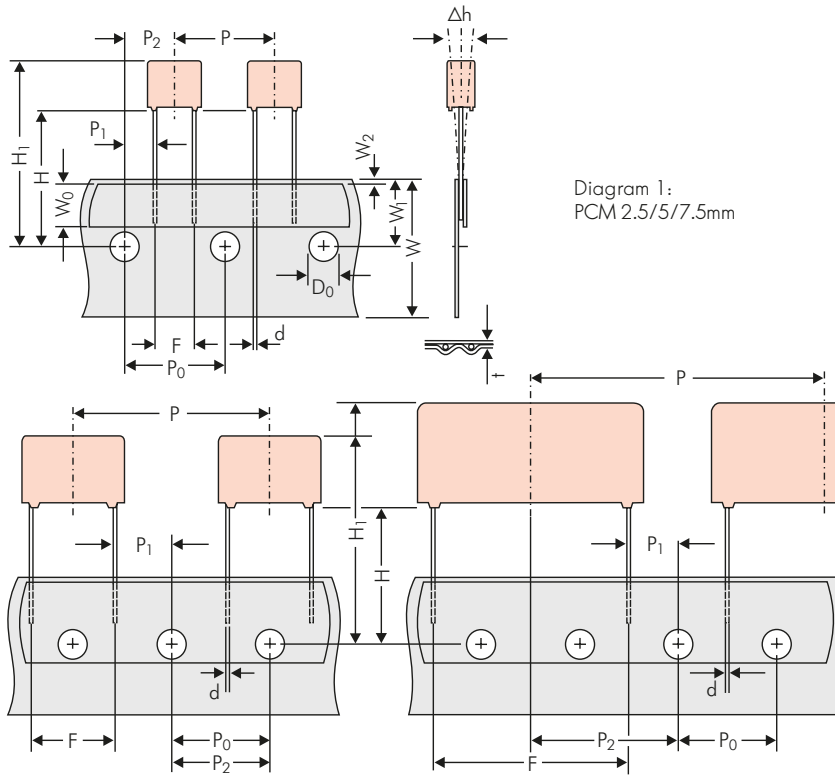


Diagram 1:  
PCM 2.5/5/7.5mm

Diagram 2: PCM 10/15 mm

Diagram 3: PCM 22.5 and 27.5\*mm

\*PCM 27.5 tapping possible with two feed holes between components

Designation	Symbol	Dimensions for Radial Taping						
		PCM 2.5 tapping	PCM 5 tapping	PCM 7.5 tapping	PCM 10 tapping*	PCM 15 tapping*	PCM 22.5 tapping	PCM 27.5 tapping
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 <sub>0</sub>	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 <sub>1</sub>	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 <sub>2</sub>	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 <sub>0</sub>	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 <sub>0</sub>	12.7 ±0.3 error max. 1.0 mm/20 pitch	12.7 ±0.3 error max. 1.0 mm/20 pitch	12.7 ±0.3 error max. 1.0 mm/20 pitch	12.7 ±0.3 error max. 1.0 mm/20 pitch	12.7 ±0.3 error max. 1.0 mm/20 pitch	12.7 ±0.3 error max. 1.0 mm/20 pitch	12.7 ±0.3 error max. 1.0 mm/20 pitch
Feed hole centre to pin	P <sub>1</sub>	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 <sub>2</sub>	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 <sub>▲</sub>	16.5 ±0.3 18.5 ±0.5	16.5 ±0.3 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5
Feed hole centre to top edge of the component	H <sub>1</sub>	H+H <sub>component</sub> < H <sub>1</sub> 32.25 max.	H+H <sub>component</sub> < H <sub>1</sub> 32.25 max.	H+H <sub>component</sub> < H <sub>1</sub> 24.5 to 31.5	H+H <sub>component</sub> < H <sub>1</sub> 25.0 to 31.5	H+H <sub>component</sub> < H <sub>1</sub> 26.0 to 37.0	H+H <sub>component</sub> < H <sub>1</sub> 30.0 to 43.0	H+H <sub>component</sub> < H <sub>1</sub> 35.0 to 45.0
Pin spacing at upper edge of carrier tape	F	2.5 ±0.5	5.0 <sup>+0.8</sup> <sub>-0.2</sub>	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 <sup>+0.06</sup> <sub>-0.05</sub>	•0.5 ±0.05 or 0.6 <sup>+0.06</sup> <sub>-0.05</sub>	0.8 <sup>+0.08</sup> <sub>-0.05</sub>	0.8 <sup>+0.08</sup> <sub>-0.05</sub>	0.8 <sup>+0.08</sup> <sub>-0.05</sub>
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
Unit		see details page 159.						

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

Dims in mm.

• Diameter of pins see General Data.

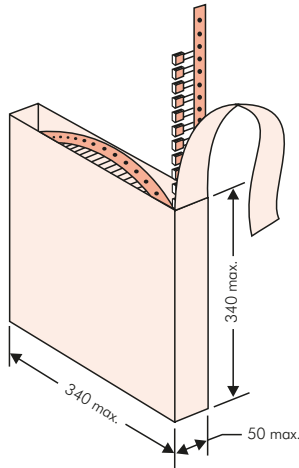
Please clarify customer-specific deviations with the manufacturer.

\* PCM 10 and PCM 15 can be crimped to PCM 7.5.

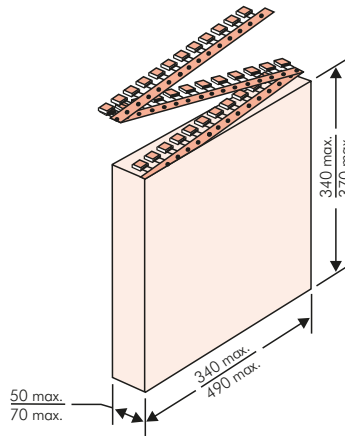
Position of components according to PCM 7.5 (sketch 1). P<sub>0</sub> = 12.7 or 15.0 is possible

## Types of Tape Packaging of Capacitors for Automatic Radial Insertion

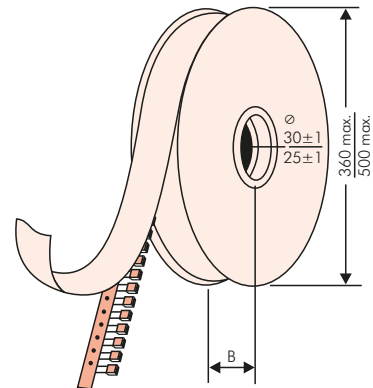
### ■ ROLL Packaging



### ■ AMMO Packaging



### ■ REEL Packaging



## BAR CODE (Labelling)

Labelling of package units in plain text and with alphanumeric 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

<b>WIMA</b> Best Capacitors Made in Germany	
Werk Aurich	
Supplier-ID: LIEF.NR.	Date Code: 20210419
Purchase Order No. (P/O): Bestellung xyz	P/O line: 100
Customer Part No.: KUNDENTEILENUMMER	
WIMA Part No.: MKP1F041006B00KSSD	Quantity: 459
WIMA Confirmation No.: 0001105072000100	
Customer No.: 0000100002	RoHS 2011/65/EU
Gross Weight [g]: 4557	COO: DE
WIMA – MKP 10	WIMA Part No.: MKP1F041006B00KSSD
MKP 10 1.0 µF 250 VDC 11x21x31.5 RM27.5	
Standard 10%	Loss – Standard
Drähte 6-2	
Vorlage Debitor Inland	
	0001105072000100
1002021443	QTY: 459 Week 19/2021

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

\* for 2-inch transport pitches.

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

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## 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			
	W	H	L	Codes		S	N	O	Ø 360		Ø 500		340 x 340		490 x 370
								F	I	H	J	A	C	B	D
<b>37.5 mm**</b>	9	19	41.5	<b>7A</b>	441*	-	-	-	-	-	-	-	-	-	-
	11	22	41.5	<b>7B</b>	357*	-	-	-	-	-	-	-	-	-	-
	13	24	41.5	<b>7C</b>	294*	-	-	-	-	-	-	-	-	-	-
	15	26	41.5	<b>7D</b>	252*	-	-	-	-	-	-	-	-	-	-
	17	29	41.5	<b>7E</b>	154*	-	-	-	-	-	-	-	-	-	-
	19	32	41.5	<b>7F</b>	140*	-	-	-	-	-	-	-	-	-	-
	20	39.5	41.5	<b>7G</b>	126*	-	-	-	-	-	-	-	-	-	-
	24	45.5	41.5	<b>7H</b>	112*	-	-	-	-	-	-	-	-	-	-
	28	38	41.5	<b>7L</b>	84*	-	-	-	-	-	-	-	-	-	-
	31	46	41.5	<b>7I</b>	84*	-	-	-	-	-	-	-	-	-	-
	35	50	41.5	<b>7J</b>	35*	-	-	-	-	-	-	-	-	-	-
	40	55	41.5	<b>7K</b>	28*	-	-	-	-	-	-	-	-	-	-
<b>48.5 mm**</b>	19	31	56	<b>8D</b>	120*	-	-	-	-	-	-	-	-	-	
	23	34	56	<b>8E</b>	80*	-	-	-	-	-	-	-	-	-	
	27	37.5	56	<b>8H</b>	84*	-	-	-	-	-	-	-	-	-	
	33	48	56	<b>8J</b>	25*	-	-	-	-	-	-	-	-	-	
	37	54	56	<b>8L</b>	25*	-	-	-	-	-	-	-	-	-	
<b>52.5 mm</b>	25	45	57	<b>9D</b>	70*	-	-	-	-	-	-	-	-	-	
	30	45	57	<b>9E</b>	60*	-	-	-	-	-	-	-	-	-	
	35	50	57	<b>9F</b>	25*	-	-	-	-	-	-	-	-	-	
	45	55	57	<b>9H</b>	20*	-	-	-	-	-	-	-	-	-	
	45	65	57	<b>9J</b>	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.

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Updated data on [www.wima.com](http://www.wima.com)



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			

<p><b>Type description:</b></p> <p>SMD-PET = SMDT              SMD-PEN = SMDN              SMD-PPS = SMDI              FKP 02 = FKPO              MKS 02 = MKSO              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</p>	<p><b>Rated voltage:</b></p> <p>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              ...</p>	<p><b>Capacitance:</b></p> <p>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              ...</p>	<p><b>Size:</b></p> <p>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 = YA              15.3x13.7x7 Size 6054 = YA              2.5x7x4.6 PCM2.5 = 0B              3x7.5x4.6 PCM2.5 = 0C              2.5x6.5x7.2 PCM5 = 1A              3x7.5x7.2 PCM5 = 1B              2.5x7x10 PCM7.5 = 2A              3x8.5x10 PCM7.5 = 2B              3x9x13 PCM10 = 3A              4x9x13 PCM10 = 3C              5x11x18 PCM15 = 4B              6x12.5x18 PCM15 = 4C              5x14x26.5 PCM22.5 = 5A              6x15x26.5 PCM22.5 = 5B              9x19x31.5 PCM27.5 = 6A              11x21x31.5 PCM27.5 = 6B              9x19x41.5 PCM37.5 = 7A              11x22x41.5 PCM37.5 = 7B              19x31x56 PCM 48.5 = 8D              25x45x57 PCM 52.5 = 9D              ...</p> <p><b>Version code:</b></p> <p>Standard = 00              Version A1 = 1A              Version A1.1.1 = 1B              Version A2 = 2A              ...</p>	<p><b>Tolerance:</b></p> <p>±20% = M              ±10% = K              ±5% = J              ±2.5% = H              ±1% = E              ...</p> <p><b>Packing:</b></p> <p>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              ...</p> <p><b>Pin length (untaped)</b></p> <p>3.5 ±0.5 = C9              6 -2 = SD              16 ±1 = P1              ...</p> <p><b>Pin length (taped)</b></p> <p>none = 00</p>
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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.

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