

Metallized Polypropylene (PP) Capacitors PCM 7.5 mm to 37.5 mm

Special Features

- High volume/capacitance ratio
- Self-healing
- Very low dissipation factor
- Negative capacitance change versus temperature
- Very low dielectric absorption
- According to RoHS 2002/95/EC

Typical Applications

For high frequency applications e.g.

- Sample and hold
- Timing
- Oscillating circuits
- High frequency coupling and decoupling

Construction

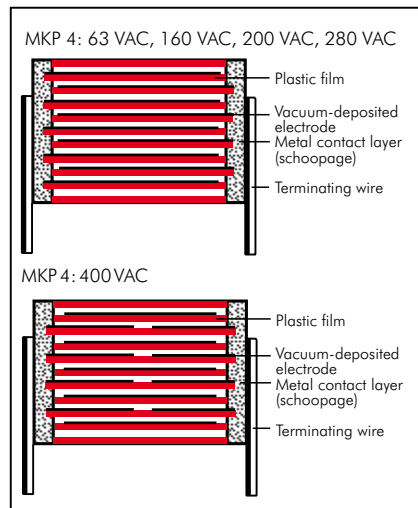
Dielectric:

Polypropylene (PP) 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.
Epoxy resin seal: Red

Electrical Data

Capacitance range:

0.01 μ F to 33 μ F (E12-values on request)

Rated voltages:

100 VDC, 250 VDC, 400 VDC,
630 VDC, 1000 VDC

Capacitance tolerances:

$\pm 20\%$, $\pm 10\%$, $\pm 5\%$

Operating temperature range:

-55°C to $+100^{\circ}\text{C}$

Climatic test category:

55/100/56 in accordance with IEC

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

$C \leq 0.33 \mu\text{F}$: $\geq 1 \times 10^5 \text{ M}\Omega$

(mean value: $5 \times 10^5 \text{ M}\Omega$)

$C > 0.33 \mu\text{F}$: $\geq 30\,000 \text{ sec (M}\Omega \times \mu\text{F)}$

(mean value: 100 000 sec)

Measuring voltage: 100 V/1 min.

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

$\tan \delta \leq 10 \times 10^{-4}$ at 1 kHz

Maximum pulse rise time:

Capacitance μF	max. pulse rise time V/ μsec at $T_A < 40^{\circ}\text{C}$				
	100 VDC	250 VDC	400 VDC	630 VDC	1000 VDC
0.01 ... 0.022	450	450	450	500	550
0.033 ... 0.068	250	250	300	350	400
0.1 ... 0.22	150	150	200	250	300
0.33 ... 0.68	100	100	150	200	200
1.0 ... 2.2	75	100	100	150	150
3.3 ... 4.7	60	100	100	120	–
6.8 ... 10	40	50	60	85	–
15 ... 33	35	50	–	–	–

for pulses equal to the rated voltage

Test specifications:

In accordance with IEC 60384-16
and EN 131 200

Test voltage:

$1.6 U_r$, 2 sec.

Dielectric absorption:

0.05%

Voltage derating:

A voltage derating factor of 1.35 % per K
must be applied from $+85^{\circ}\text{C}$ for DC
voltages and from $+75^{\circ}\text{C}$ for AC
voltages.

Reliability:

Operational life $> 300\,000$ hours

Failure rate < 2 fit ($0.5 \times U_r$ and 40°C)

Mechanical Tests

Pull test on pins:

$d \leq 0.8 \phi$: 10 N in direction of pins

$d > 0.8 \phi$: 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/sec²

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

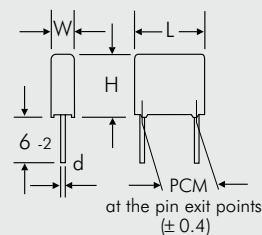
Capacitance	100 VDC/63 VAC*					250 VDC/160 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
0.01 μF	3	8.5	10	7.5	MKP4D021002B00_____	3	8.5	10	7.5	MKP4F021002B00_____
0.015 "	3	8.5	10	7.5	MKP4D021502B00_____	3	8.5	10	7.5	MKP4F021502B00_____
0.022 "	3	8.5	10	7.5	MKP4D022202B00_____	3	8.5	10	7.5	MKP4F022202B00_____
0.033 "	3	8.5	10	7.5	MKP4D023302B00_____	3	8.5	10	7.5	MKP4F023302B00_____
	4	9	13	10	MKP4D023303C00_____	4	9	13	10	MKP4F023303C00_____
0.047 "	4	9	10	7.5	MKP4D024702C00_____	4	9	10	7.5	MKP4F024702C00_____
	4	9	13	10	MKP4D024703C00_____	4	9	13	10	MKP4F024703C00_____
0.068 "	4	9	10	7.5	MKP4D026802C00_____	4	9	10	7.5	MKP4F026802C00_____
	4	9	13	10	MKP4D026803C00_____	4	9	13	10	MKP4F026803C00_____
0.1 μF	4.5	9.5	10.3	7.5	MKP4D031002D00_____	4.5	9.5	10.3	7.5	MKP4F031002D00_____
	4	9	13	10	MKP4D031003C00_____	4	9	13	10	MKP4F031003C00_____
0.15 "	5	10.5	10.3	7.5	MKP4D031502E00_____	5	10.5	10.3	7.5	MKP4F031502E00_____
	5	11	13	10	MKP4D031503F00_____	5	11	13	10	MKP4F031503F00_____
0.22 "	6	12	13	10	MKP4D032203G00_____	6	12	13	10	MKP4F032203G00_____
	5	11	18	15	MKP4D032204B00_____	5	11	18	15	MKP4F032204B00_____
0.33 "	6	12.5	18	15	MKP4D033304C00_____	6	12.5	18	15	MKP4F033304C00_____
0.47 "	7	14	18	15	MKP4D034704D00_____	7	14	18	15	MKP4F034704D00_____
0.68 "	8	15	18	15	MKP4D036804F00_____	8	15	18	15	MKP4F036804F00_____
	6	15	26.5	22.5	MKP4D036805B00_____	6	15	26.5	22.5	MKP4F036805B00_____
1.0 μF	7	16.5	26.5	22.5	MKP4D041005D00_____	7	16.5	26.5	22.5	MKP4F041005D00_____
1.5 "	10.5	19	26.5	22.5	MKP4D041505G00_____	10.5	19	26.5	22.5	MKP4F041505G00_____
2.2 "	11	21	26.5	22.5	MKP4D042205I00_____	11	21	26.5	22.5	MKP4F042205I00_____
	11	21	31.5	27.5	MKP4D042206B00_____	11	21	31.5	27.5	MKP4F042206B00_____
3.3 "	13	24	31.5	27.5	MKP4D043306D00_____	13	24	31.5	27.5	MKP4F043306D00_____
4.7 "	13	24	31.5	27.5	MKP4D044706D00_____	15	26	31.5	27.5	MKP4F044706F00_____
6.8 "	15	26	31.5	27.5	MKP4D046806F00_____	17	29	31.5	27.5	MKP4F046806G00_____
	13	24	41.5	37.5	MKP4D046807C00_____	15	26	41.5	37.5	MKP4F046807D00_____
10 μF	17	29	41.5	37.5	MKP4D051007E00_____	19	32	41.5	37.5	MKP4F051007F00_____
15 "	19	32	41.5	37.5	MKP4D051507F00_____	20	39.5	41.5	37.5	MKP4F051007G00_____
22 "	20	39.5	41.5	37.5	MKP4D052207G00_____	24	45.5	41.5	37.5	MKP4F051007H00_____
33 "	24	45.5	41.5	37.5	MKP4D053307H00_____					

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

** PCM = Printed circuit module = pin spacing

Dims. in mm.

$\varnothing d$	PCM	W
0.5	7.5	≤ 3
0.6	7.5	≥ 4
0.6	10	
0.8	15 - 27.5	
1.0	37.5	



Part number completion:	
Tolerance:	20 % = M
	10 % = K
	5 % = J
Packing:	bulk = S
Pin length:	6-2 = SD
Taped version see page 127.	

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Continuation

General Data

Capacitance	400 VDC/220 VAC*					630 VDC/280 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
0.01 μ F	3	8.5	10	7.5	MKP4G021002B00_____	3	8.5	10	7.5	MKP4J021002B00_____
0.015 "	3	8.5	10	7.5	MKP4G021502B00_____	4	9	13	10	MKP4J021003C00_____
	4	9	13	10	MKP4G021503C00_____	4	9	10	7.5	MKP4J021502C00_____
0.022 "	4	9	10	7.5	MKP4G022202C00_____	4.5	9.5	10.3	7.5	MKP4J021503C00_____
	4	9	13	10	MKP4G022203C00_____	4	9	13	10	MKP4J022202D00_____
0.033 "	4.5	9.5	10.3	7.5	MKP4G023302D00_____	5	10.5	10.3	7.5	MKP4J022203C00_____
	4	9	13	10	MKP4G023303C00_____	4	9	13	10	MKP4J023302E00_____
0.047 "	5	10.5	10.3	7.5	MKP4G024702E00_____	5.7	12.5	10.3	7.5	MKP4J023303C00_____
	4	9	13	10	MKP4G024703C00_____	5	11	13	10	MKP4J024702F00_____
0.068 "	5.7	12.5	10.3	7.5	MKP4G026802F00_____	6	12	13	10	MKP4J024703F00_____
	5	11	13	10	MKP4G026803F00_____	6	12.5	18	15	MKP4J026803G00_____
0.1 μ F	6	12	13	10	MKP4G031003G00_____	7	14	18	15	MKP4J026804C00_____
0.15 "	5	11	18	15	MKP4G031004B00_____	8	15	18	15	MKP4J031004D00_____
	6	12.5	18	15	MKP4G031504C00_____	6	15	26.5	22.5	MKP4J031504F00_____
0.22 "	7	14	18	15	MKP4G032204D00_____	9	16	18	15	MKP4J031505B00_____
						7	16.5	26.5	22.5	MKP4J032204J00_____
0.33 "	8	15	18	15	MKP4G033304F00_____	8.5	18.5	26.5	22.5	MKP4J032205D00_____
	6	15	26.5	22.5	MKP4G033305B00_____	10.5	19	26.5	22.5	MKP4J033305F00_____
0.47 "	7	16.5	26.5	22.5	MKP4G034705D00_____	11	21	31.5	27.5	MKP4J034705G00_____
	8.5	18.5	26.5	22.5	MKP4G036805F00_____	11	21	31.5	27.5	MKP4J034706B00_____
0.68 "						11	21	31.5	27.5	MKP4J036806B00_____
1.0 μ F	11	21	26.5	22.5	MKP4G041005I00_____	13	24	31.5	27.5	MKP4J041006D00_____
1.5 "	11	21	31.5	27.5	MKP4G041006B00_____	15	26	31.5	27.5	MKP4J041006F00_____
	11	21	31.5	27.5	MKP4G041506B00_____	17	29	41.5	37.5	MKP4J041506F00_____
2.2 "	15	26	31.5	27.5	MKP4G042206F00_____	19	32	41.5	37.5	MKP4J042207E00_____
3.3 "	17	29	31.5	27.5	MKP4G043306G00_____	20	39.5	41.5	37.5	MKP4J043307F00_____
	17	29	41.5	37.5	MKP4G043307E00_____	24	45.5	41.5	37.5	MKP4J0444707G00_____
4.7 "	19	32	41.5	37.5	MKP4G044707F00_____	24	45.5	41.5	37.5	MKP4J046807H00_____
6.8 "	20	39.5	41.5	37.5	MKP4G046807G00_____					
10 μ F	24	45.5	41.5	37.5	MKP4G051007H00_____					

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

** PCM = Printed circuit module = pin spacing

Dims. in mm.

Part number completion:

Tolerance: 20 % = M

10 % = K

5 % = J

Packing: bulk = S

Pin length: 6-2 = SD

Taped version see page 127.

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Continuation

General Data

Capacitance	1000 VDC/400 VAC*				
	W	H	L	PCM**	Part number
0.01 μF	5.7	12.5	10.3	7.5	MKP4O121002F00_____
	5	11	13	10	MKP4O121003F00_____
0.015 "	5	11	13	10	MKP4O121503F00_____
	5	11	18	15	MKP4O121504B00_____
0.022 "	5	11	18	15	MKP4O122204B00_____
0.033 "	6	12.5	18	15	MKP4O123304C00_____
0.047 "	7	14	18	15	MKP4O124704D00_____
0.068 "	8	15	18	15	MKP4O126804F00_____
	6	15	26.5	22.5	MKP4O126805B00_____
0.1 μF	9	16	18	15	MKP4O131004J00_____
	7	16.5	26.5	22.5	MKP4O131005D00_____
0.15 "	8.5	18.5	26.5	22.5	MKP4O131505F00_____
0.22 "	11	21	26.5	22.5	MKP4O132205I00_____
	11	21	31.5	27.5	MKP4O132206B00_____
0.33 "	11	21	31.5	27.5	MKP4O133306B00_____
0.47 "	13	24	31.5	27.5	MKP4O134706D00_____
0.68 "	17	29	31.5	27.5	MKP4O136806G00_____
1.0 μF	17	29	41.5	37.5	MKP4O141007E00_____
1.5 "	20	39.5	41.5	37.5	MKP4O141507G00_____
2.2 "	24	45.5	41.5	37.5	MKP4O142207H00_____

Part number completion:

Tolerance: 20 % = M

10 % = K

5 % = J

Packing: bulk = S

Pin length: 6-2 = SD

Taped version see page 127.

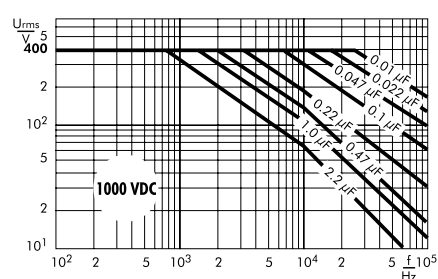
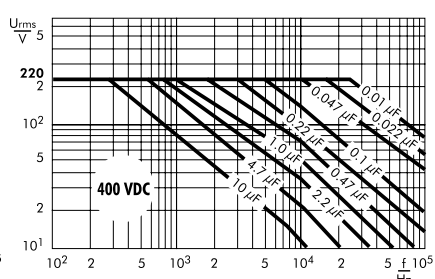
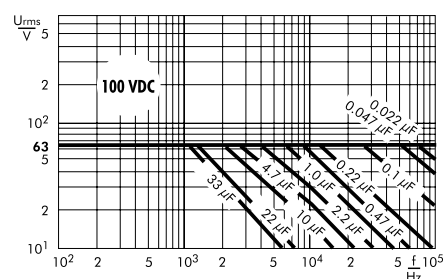
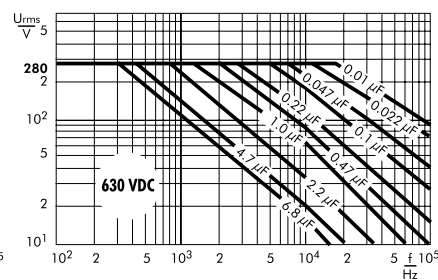
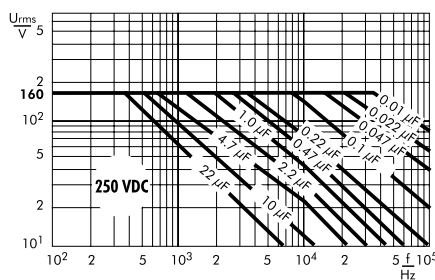
* AC voltage: $f \leq 400 \text{ Hz}$; $1.4 \times U_{\text{rms}} + \text{UDC} \leq U_r$

** PCM = Printed circuit module = pin spacing

Dims. in mm.

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



Recommendation for Processing and Application of Through-Hole Capacitors

Soldering Process

A preheating of through-hole WIMA capacitors is allowed for temperatures $T_{\max} < 100^{\circ}\text{C}$. In practice a preheating duration of $t < 5$ min. has been proven to be best.

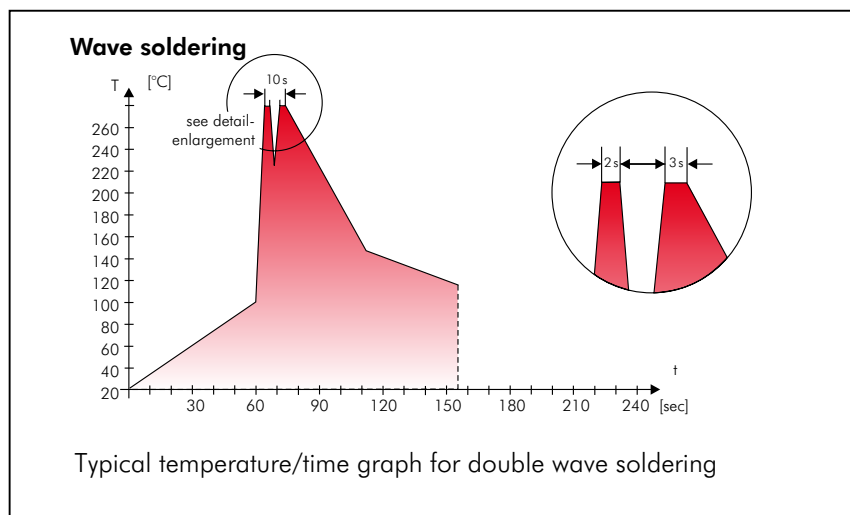
Single wave soldering

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

Double wave soldering

Soldering bath temperature: $T < 260^{\circ}\text{C}$
Immersion time: $2 \times t < 3$ 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 9001:2008 Certification

ISO 9001:2008 is an international basic standard of quality assurance systems for all branches of industry. The approval according to ISO 9001:2008 of our factories by the VDE inspectorate 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 of WPCS during production process:

- incoming material inspection
- metallization
- film inspection
- schoopage
- pre-healing
- pin attachment
- cast resin preparation/encapsulation
- 100% final inspection
- AQL check

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 | – PBB/PBDE |
| – PCB | – Arsenic |
| – CFC | – Cadmium |
| – Hydrocarbon chloride | – Mercury |
| – Chromium 6+ | – 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:

- foamed polystyrene (Styropor®)
- adhesive tapes made of plastic
- metal clips

RoHS Compliance

According to the RoHS Directive 2002/95/EC 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 refrained from using such substances since years already.



WIMA Kondensatoren sind bleifrei
konform RoHS 2002/95/EG

WIMA capacitors are lead free
in accordance with RoHS 2002/95/EC

Tape for lead-free WIMA capacitors

DIN EN ISO 14001:2009

WIMA's environmental management has been established in accordance with the guidelines of DIN EN ISO 14001:2009 to optimize the production processes with regard to energy and resources.

Typical Dimensions for Taping Configuration

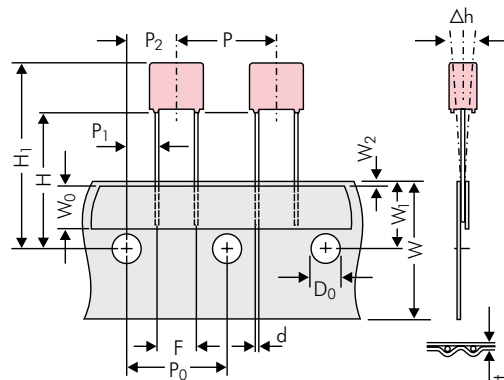


Diagram 1:
PCM 2.5/5/7.5mm

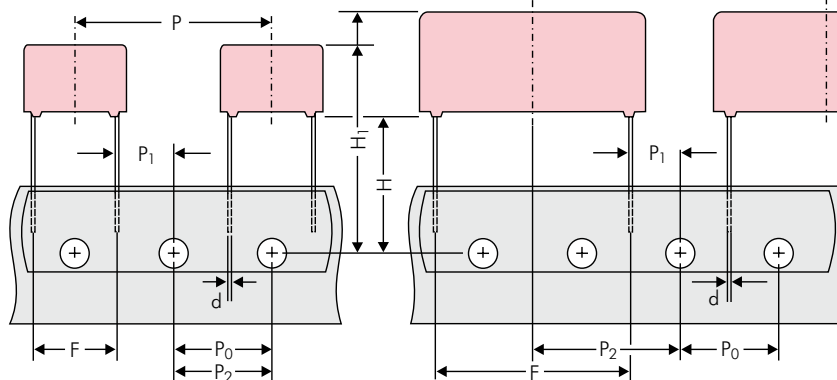


Diagram 2: PCM 10/15 mm

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 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 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	0.7 ±0.2	0.7 ±0.2	0.7 ±0.2	0.7 ±0.2	0.7 ±0.2	0.7 ±0.2	0.7 ±0.2
Package (see also page 128)		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	52 ±2 58 ±2 or 66 ±2	REEL ø 500 max. ø 25 ±1	54 ±2 60 ±2 or 68 ±2 } depending on PCM and component dimensions
Unit		see details page 130.						

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 11). P₀ = 12.7 or 15.0 is possible

Packing Quantities for Bulk Capacitors and TPS*



PCM	Size				pcs. per packaging unit bulk			pcs. per packaging unit/TPS*	
	W	H	L	Codes	Mini	Standard	Maxi	Mini	Standard
2.5 mm	2.5	7	4.6	0B	1000	5000	10 000	–	–
	3	7.5	4.6	0C	1000	5000	10 000	–	–
	3.8	8.5	4.6	0D	1000	5000	10 000	–	–
	4.6	9	4.6	0E	1000	5000	10 000	–	–
	5.5	10	4.6	0F	1000	5000	10 000	–	–
5 mm	2.5	6.5	7.2	1A	2000	5000	10 000	–	–
	3	7.5	7.2	1B	1000	5000	–	–	–
	3.5	8.5	7.2	1C	1000	5000	–	–	–
	4.5	6	7.2	1D	1000	6000	–	–	–
	4.5	9.5	7.2	1E	1000	4000	–	–	–
	5	10	7.2	1F	1000	3500	–	–	–
	5.5	7	7.2	1G	1000	4000	–	–	–
	5.5	11.5	7.2	1H	500	2500	–	–	–
	6.5	8	7.2	1I	1000	2500	–	–	–
	7.2	8.5	7.2	1J	500	2500	–	–	–
	7.2	13	7.2	1K	500	2000	–	–	–
	8.5	10	7.2	1L	500	2000	–	–	–
	8.5	14	7.2	1M	500	1500	–	–	–
	11	16	7.2	1N	250	1000	–	–	–
7.5 mm	2.5	7	10	2A	1000	5000	–	–	–
	3	8.5	10	2B	1000	5000	–	–	–
	4	9	10	2C	1000	4000	–	–	–
	4.5	9.5	10.3	2D	1000	3500	–	–	–
	5	10.5	10.3	2E	1000	3000	–	–	–
	5.7	12.5	10.3	2F	500	2000	–	–	–
	7.2	12.5	10.3	2G	500	1500	–	–	–
10 mm	3	9	13	3A	1000	3000	–	–	–
	4	8.5	13.5	FA	500	3000	–	–	–
	4	9	13	3C	1000	3000	–	–	–
	4	9.5	13	3D	1000	3000	–	–	–
	5	10	13.5	FB	500	2000	–	–	–
	5	11	13	3F	1000	3000	–	–	–
	6	12	13	3G	800	2400	–	–	–
	6	12.5	13	3H	800	2400	–	–	–
15 mm	8	12	13	3I	500	2000	–	–	–
	5	11	18	4B	800	2400	–	–	–
	5	13	19	FC	200	1000	–	–	–
	6	12.5	18	4C	500	2000	–	–	–
	6	14	19	FD	250	1000	–	–	–
	7	14	18	4D	400	1600	–	–	–
	7	15	19	FE	250	1000	–	–	–
	8	15	18	4F	400	1200	–	–	–
	8	17	19	FF	100	500	–	–	–
	9	14	18	4H	400	1200	–	–	–
	9	16	18	4J	300	900	–	–	–
22.5 mm	10	18	19	FG	100	500	–	–	–
	11	14	18	4M	300	1000	–	–	–
	5	14	26.5	5A	300	1200	–	–	–
	6	15	26.5	5B	250	1000	–	–	–
	7	16.5	26.5	5D	190	760	–	–	–
	8	20	28	5H	125	500	–	–	–
27.5 mm	8.5	18.5	26.5	5F	125	500	–	–	–
	10	22	28	FI	–	–	–	90	540
	10.5	19	26.5	5G	–	–	–	170	680
	10.5	20.5	26.5	5H	–	–	–	170	680
	11	21	26.5	5I	–	–	–	170	680
	12	24	28	5J	–	–	–	75	450
	9	19	31.5	6A	–	–	–	160	640
	11	21	31.5	6B	–	–	–	136	544
37.5 mm	13	24	31.5	6D	–	–	–	112	448
	13	25	33	6K	–	–	–	56	336
	15	26	31.5	6F	–	–	–	96	384
	15	26	33	6L	–	–	–	48	288
	17	29	31.5	6G	–	–	–	88	176
	17	34.5	31.5	6I	–	–	–	88	176
	20	32	33	6M	–	–	–	36	216
	20	39.5	31.5	6J	–	–	–	36	144
	9	19	41.5	7A	–	–	–	60	480
	11	22	41.5	7B	–	–	–	51	408
37.5 mm	13	24	41.5	7C	–	–	–	84	252
	15	26	41.5	7D	–	–	–	72	144
	17	29	41.5	7E	–	–	–	66	132
	19	32	41.5	7F	–	–	–	54	108
	20	39.5	41.5	7G	–	–	–	27	108
	24	45.5	41.5	7H	–	–	–	21	84

Rights reserved to amend design data without prior notification.
Samples and pre-production needs on request.

Moulded versions.

* Tray-Packing-System



Packing Units for Taped Capacitors with Radial Leads

PCM	Size				ROLL		REEL				AMMO			
					H16.5	H18.5	ø 360		ø 500		340 × 340		490 × 370	
	W	H	L	Codes	N	O	F	I	H	J	A	C	B	D
2.5 mm	2.5	7	4.6	0B	2200		2500		–		2800		–	
	3	7.5	4.6	0C	2000		2300		–		2300		–	
	3.8	8.5	4.6	0D	1500		1800		–		1800		–	
	4.6	9	4.6	0E	1200		1500		–		1500		–	
	5.5	10	4.6	0F	900		1200		–		1200		–	
5 mm	2.5	6.5	7.2	1A	2200		2500		–		2800		–	
	3	7.5	7.2	1B	2000		2300		–		2300		–	
	3.5	8.5	7.2	1C	1600		2000		–		2000		–	
	4.5	6	7.2	1D	1300		1500		–		1500		–	
	4.5	9.5	7.2	1E	1300		1500		–		1500		–	
	5	10	7.2	1F	1100		1400		–		1400		–	
	5.5	7	7.2	1G	1000		1200		–		1200		–	
	5.5	11.5	7.2	1H	1000		1200		–		1200		–	
	6.5	8	7.2	1I	800		1000		–		1000		–	
	7.2	8.5	7.2	1J	700		1000		–		1000		–	
	7.2	13	7.2	1K	700		950		–		1000		–	
	8.5	10	7.2	1L	600		800		–		800		–	
	8.5	14	7.2	1M	600		800		–		800		–	
	11	16	7.2	1N	500		700		–		700		–	
7.5 mm	2.5	7	10	2A	–		2500		4400		2500		–	
	3	8.5	10	2B	–		2200		4300		2300		4150	
	4	9	10	2C	–		1700		3200		1700		3100	
	4.5	9.5	10.3	2D	–		1500		2900		1400		2800	
	5	10.5	10.3	2E	–		1300		2500		1300		–	
	5.7	12.5	10.3	2F	–		1000		2200		1100		–	
	7.2	12.5	10.3	2G	–		900		1800		1000		–	
10 mm	3	9	13	3A	–		1100		2200		–		1900	
	4	8.5	13.5	FA	–		900		1600		–		1450	
	4	9	13	3C	–		900		1600		–		1450	
	4	9.5	13	3D	–		900		1600		–		1400	
	5	10	13.5	FB	–		700		1300		–		1200	
	5	11	13	3F	–		700		1300		–		1200	
	6	12	13	3G	–		550		1100		–		1000	
	6	12.5	13	3H	–		550		1100		–		1000	
15 mm	8	12	13	3I	–		400		800		–		740	
	5	11	18	4B	–		600		1200		–		1150	
	5	13	19	FC	–		600		1200		–		1200	
	6	12.5	18	4C	–		500		1000		–		1000	
	6	14	19	FD	–		500		1000		–		1000	
	7	14	18	4D	–		450		900		–		850	
	7	15	19	FE	–		450		900		–		850	
	8	15	18	4F	–		400		800		–		740	
	8	17	19	FF	–		400		800		–		740	
	9	14	18	4H	–		350		700		–		650	
	9	16	18	4J	–		350		700		–		650	
22.5 mm	10	18	19	FG	–		300		650		–		590	
	11	14	18	4M	–		300		600		–		540	
	5	14	26.5	5A	–		–		800		–		770	
	6	15	26.5	5B	–		–		700		–		640	
	7	16.5	26.5	5D	–		–		600		–		550	
	8	20	28	FH	–		–		500		–		480	
	8.5	18.5	26.5	5F	–		–		480		–		450	
27.5 mm	10.5	22	28	FI	–		–		420		–		380	
	10.5	19	26.5	5G	–		–		400		–		360	
	10.5	20.5	26.5	5H	–		–		400		–		360	
	11	21	26.5	5I	–		–		380		–		350	
	12	24	28	FJ	–		–		350		–		310	
	9	19	31.5	6A	–		–		460/340*		–		420	
	11	21	31.5	6B	–		–		380/280*		–		350	
27.5 mm	13	24	31.5	6D	–		–		300		–		290	
	15	26	31.5	6F	–		–		270		–		250	

* for 2-inch transport pitches.

Samples and pre-production needs 1 packing unit minimum.

■ Moulded versions.

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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: Special features (e.g. Snubber versions)
- Field 15: Capacitance tolerance
- Field 16: Packing
- Field 17 - 18: Lead 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:				Rated voltage:				Capacitance:				Size:				Tolerance:			
SMD-PET = SMDT				2.5 VDC = A1				22 pF = 0022				4.8x3.3x3 Size 1812 = X1				20% = M			
SMD-PPS = SMDI				4 VDC = A2				47 pF = 0047				4.8x3.3x4 Size 1812 = X2				10% = K			
FKP 02 = FKP0				14 VDC = A3				100 pF = 0100				5.7x5.1x3.5 Size 2220 = Y1				5% = J			
MKS 02 = MKS0				28 VDC = A4				150 pF = 0150				5.7x5.1x4.5 Size 2220 = Y2				2.5% = H			
FKS 2 = FKS2				40 VDC = A5				220 pF = 0220				7.2x6.1x3 Size 2824 = T1				1% = E			
FKP 2 = FKP2				5 VDC = A6				330 pF = 0330				7.2x6.1x5 Size 2824 = T2				...			
MKS 2 = MKS2				50 VDC = B0				470 pF = 0470				10.2x7.6x5 Size 4030 = K1				Packing:			
MKP 2 = MKP2				63 VDC = C0				680 pF = 0680				12.7x10.2x6 Size 5040 = V1							
FKS 3 = FKS3				100 VDC = D0				1000 pF = 1100				15.3x13.7x7 Size 6054 = Q1							
FKP 3 = FKP3				160 VDC = E0				1500 pF = 1150				2.5x7x4.6 PCM 2.5 = 0B							
MKS 4 = MKS4				250 VDC = F0				2200 pF = 1220				3x7.5x4.6 PCM 2.5 = 0C				AMMO H16.5 340x340 = A			
MKP 4 = MKP4				400 VDC = G0				3300 pF = 1330				2.5x6.5x7.2 PCM 5 = 1A				AMMO H16.5 490x370 = B			
MKP 10 = MKP1				450 VDC = H0				4700 pF = 1470				2.5x6.5x7.2 PCM 5 = 1A				AMMO H18.5 340x340 = C			
FKP 4 = FKP4				600 VDC = I0				6800 pF = 1680				3x7.5x7.2 PCM 5 = 1B				AMMO H18.5 490x370 = D			
FKP 1 = FKP1				630 VDC = J0				0.01 µF = 2100				2.5x7x10 PCM 7.5 = 2A				REEL H16.5 360 = F			
MKP-X2 = MKX2				700 VDC = K0				0.022 µF = 2220				3x8.5x10 PCM 7.5 = 2B				REEL H16.5 500 = H			
MKP-X2 R = MKXR				800 VDC = L0				0.047 µF = 2470				3x9x13 PCM 10 = 3A				REEL H18.5 360 = I			
MKP-Y2 = MKY2				850 VDC = M0				0.1 µF = 3100				4x9x13 PCM 10 = 3C				REEL H18.5 500 = J			
MP 3-X2 = MPX2				900 VDC = N0				0.22 µF = 3220				5x11x18 PCM 15 = 4B				ROLL H16.5 = N			
MP 3-X1 = MPX1				1000 VDC = O1				0.47 µF = 3470				6x12.5x18 PCM 15 = 4C				ROLL H18.5 = O			
MP 3-Y2 = MPY2				1100 VDC = P0				1 µF = 4100				6x14x26.5 PCM 22.5 = 5A				BLISTER W12 180 = P			
MP 3R-Y2 = MPRY				1200 VDC = Q0				2.2 µF = 4220				6x15x26.5 PCM 22.5 = 5B				BLISTER W12 330 = Q			
Snubber MKP = SNMP				1250 VDC = R0				4.7 µF = 4470				9x19x31.5 PCM 27.5 = 6A				BLISTER W16 330 = R			
Snubber FKP = SNFP				1500 VDC = S0				10 µF = 5100				11x21x31.5 PCM 27.5 = 6B				BLISTER W24 330 = T			
GTO MKP = GTOM				1600 VDC = T0				22 µF = 5220				9x19x41.5 PCM 37.5 = 7A				Bulk Mini = M			
DC-LINK MKP 4 = DCP4				2000 VDC = U0				47 µF = 5470				11x22x41.5 PCM 37.5 = 7B				Bulk Standard = S			
DC-LINK MKP 5 = DCP5				2500 VDC = V0				100 µF = 6100				94x49x182 DCH_ = H0				Bulk Maxi = G			
DC-LINK MKP 6 = DCP6				3000 VDC = W0				220 µF = 6220				94x77x182 DCH_ = H1				TPS Mini = X			
DC-LINK HC = DCH_				4000 VDC = X0				1 F = A010				...				TPS Standard = Y			
SuperCap C = SCSC				6000 VDC = Y0				2.5 F = A025								...			
SuperCap MC = SCMC				250 VAC = 0W				50 F = A500				Special features:				Lead length (untaped)			
SuperCap R = SCSR				275 VAC = 1W				100 F = B100				Standard = 00							
SuperCap MR = SCMR				300 VAC = 2W				110 F = B110				Version A1 = 1A							
				400 VAC = 3W				600 F = B600				Version A1.1.1 = 1B							
				440 VAC = 4W				1200 F = C120				Version A1.2 = 1C							
				500 VAC = 5W				...				...							

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.