

## Metallized Polyester (PET) Capacitors in PCM 5 mm

### Special Features

- High volume/capacitance ratio
- Self-healing
- According to RoHS 2002/95/EC

### Typical Applications

For general DC-applications e.g.

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

### Construction

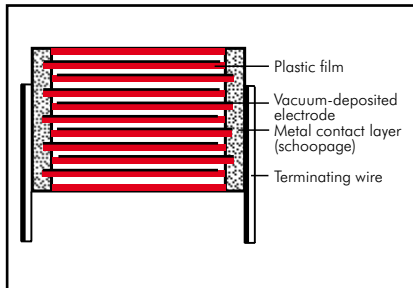
#### Dielectric:

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: Silver/White.  
Epoxy resin seal: Red

### Electrical Data

#### Capacitance range:

0.01  $\mu\text{F}$  to 10  $\mu\text{F}$  (E12-values on request)

#### Rated voltages:

50 VDC, 63 VDC, 100 VDC, 250 VDC,  
400 VDC, 630 VDC

#### Capacitance tolerances:

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

#### Operating temperature range:

$-55^\circ\text{C}$  to  $+100^\circ\text{C}$  ( $+125^\circ\text{C}$  available  
subject to special enquiry)

#### Climatic test category:

55/100/21 in accordance with IEC

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

$U_r$	$U_{\text{test}}$	$C \leq 0.33 \mu\text{F}$	$0.33 \mu\text{F} < C \leq 10 \mu\text{F}$
50 VDC	10V	$\geq 5 \times 10^3 \text{ M}\Omega$ (mean value: $3 \times 10^4 \text{ M}\Omega$ )	$\geq 1000 \text{ sec (M}\Omega \times \mu\text{F)}$ (mean value: 3000 sec)
63 VDC	50V	$\geq 1 \times 10^4 \text{ M}\Omega$ (mean value: $5 \times 10^4 \text{ M}\Omega$ )	$\geq 1250 \text{ sec (M}\Omega \times \mu\text{F)}$ (mean value: 3000 sec)
$\geq 100 \text{ VDC}$	100V	$\geq 1.5 \times 10^4 \text{ M}\Omega$ (mean value: $1 \times 10^5 \text{ M}\Omega$ )	$\geq 3000 \text{ sec (M}\Omega \times \mu\text{F)}$ (mean value: 6000 sec)

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: for pulses equal to the rated voltage

Capacitance $\mu\text{F}$	Pulse rise time V/ $\mu\text{sec}$ max. operation/test					
	50 VDC	63 VDC	100 VDC	250 VDC	400 VDC	630 VDC
0.01 ... 0.022	-	35/350	35/350	50/500	80/800	110/1100
0.033 ... 0.068	-	20/200	25/250	50/500	80/800	90/900
0.1 ... 0.47	10/100	15/150	20/200	50/500	80/800	-
0.68 ... 1.0	8/80	12/120	15/150	25/250	-	-
1.5 ... 3.3	8/80	7.5/75	10/100	-	-	-
4.7	5/50	5/50	-	-	-	-
6.8	3/30	3/30	-	-	-	-
10	2.5/25	-	-	-	-	-

### Mechanical Tests

#### Pull test on pins:

10 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.

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
0.01 $\mu\text{F}$						2.5	6.5	7.2	5	MKS2C021001A00_
0.015 "						2.5	6.5	7.2	5	MKS2C021501A00_
0.022 "						2.5	6.5	7.2	5	MKS2C022201A00_
0.033 "						2.5	6.5	7.2	5	MKS2C023301A00_
0.047 "						2.5	6.5	7.2	5	MKS2C024701A00_
0.068 "						2.5	6.5	7.2	5	MKS2C026801A00_
0.1 $\mu\text{F}$						2.5	6.5	7.2	5	MKS2C031001A00_
0.15 "						2.5	6.5	7.2	5	MKS2C031501A00_
0.22 "						3	7.5	7.2	5	MKS2C032201B00_
0.33 "	2.5	6.5	7.2	5	MKS2B033301A00_	3.5	8.5	7.2	5	MKS2C033301C00_
0.47 "	3	7.5	7.2	5	MKS2B034701B00_	3.5	8.5	7.2	5	MKS2C034701C00_
0.68 "	3.5	8.5	7.2	5	MKS2B036801C00_	4.5	9.5	7.2	5	MKS2C036801E00_
1.0 $\mu\text{F}$	3.5	8.5	7.2	5	MKS2B041001C00_	5	10	7.2	5	MKS2C041001F00_
1.5 "	4.5	9.5	7.2	5	MKS2B041501E00_	5.5	11.5	7.2	5	MKS2C041501H00_
2.2 "	5	10	7.2	5	MKS2B042201F00_	7.2	13	7.2	5	MKS2C042201K00_
3.3 "	5.5	11.5	7.2	5	MKS2B043301H00_	7.2	13	7.2	5	MKS2C043301K00_
4.7 "	7.2	13	7.2	5	MKS2B044701K00_	8.5	14	7.2	5	MKS2C044701M00_
6.8 "	8.5	14	7.2	5	MKS2B046801M00_	11	16	7.2	5	MKS2C046801N00_
10 $\mu\text{F}$	11	16	7.2	5	MKS2B051001N00_					

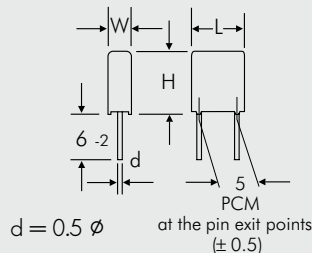
Capacitance	100 VDC/63 VAC*					250 VDC/160 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
0.01 $\mu\text{F}$	2.5	6.5	7.2	5	MKS2D021001A00_	2.5	6.5	7.2	5	MKS2F021001A00_
0.015 "	2.5	6.5	7.2	5	MKS2D021501A00_	2.5	6.5	7.2	5	MKS2F021501A00_
0.022 "	2.5	6.5	7.2	5	MKS2D022201A00_	2.5	6.5	7.2	5	MKS2F022201A00_
0.033 "	2.5	6.5	7.2	5	MKS2D023301A00_	3.5	8.5	7.2	5	MKS2F023301C00_
0.047 "	2.5	6.5	7.2	5	MKS2D024701A00_	3.5	8.5	7.2	5	MKS2F024701C00_
0.068 "	2.5	6.5	7.2	5	MKS2D026801A00_	3.5	8.5	7.2	5	MKS2F026801C00_
0.1 $\mu\text{F}$	2.5	6.5	7.2	5	MKS2D031001A00_	4.5	9.5	7.2	5	MKS2F031001E00_
0.15 "	3.5	8.5	7.2	5	MKS2D031501C00_	5	10	7.2	5	MKS2F031501F00_
0.22 "	3.5	8.5	7.2	5	MKS2D032201C00_	5.5	11.5	7.2	5	MKS2F032201H00_
0.33 "	4.5	9.5	7.2	5	MKS2D033301E00_	7.2	13	7.2	5	MKS2F033301K00_
0.47 "	4.5	9.5	7.2	5	MKS2D034701E00_	8.5	14	7.2	5	MKS2F034701M00_
0.68 "	5	10	7.2	5	MKS2D036801F00_	11	16	7.2	5	MKS2F036801N00_
1.0 $\mu\text{F}$	7.2	13	7.2	5	MKS2D041001K00_					
1.5 "	8.5	14	7.2	5	MKS2D041501M00_					
2.2 "	11	16	7.2	5	MKS2D042201N00_					

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

\*\* PCM = Printed circuit module = pin spacing.

Dims. in mm.

The value 10  $\mu\text{F}$  has been transferred from the former WIMA MKS 2-XL range.



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 page 35

## Continuation

### General Data

Capacitance	400 VDC/200 VAC*					630 VDC/220 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
0.01 $\mu\text{F}$	2.5	6.5	7.2	5	MKS2G021001A00_	5.5	11.5	7.2	5	MKS2J021001H00_
0.015 "	2.5	6.5	7.2	5	MKS2G021501A00_	7.2	13	7.2	5	MKS2J021501K00_
0.022 "	3.5	8.5	7.2	5	MKS2G022201C00_	7.2	13	7.2	5	MKS2J022201K00_
0.033 "	4.5	9.5	7.2	5	MKS2G023301E00_	7.2	13	7.2	5	MKS2J023301K00_
0.047 "	4.5	9.5	7.2	5	MKS2G024701E00_	8.5	14	7.2	5	MKS2J024701M00_
0.068 "	5.5	11.5	7.2	5	MKS2G026801H00_					
0.1 $\mu\text{F}$	7.2	13	7.2	5	MKS2G031001K00_					
0.15 "	8.5	14	7.2	5	MKS2G031501M00_					
0.22 "	11	16	7.2	5	MKS2G032201N00_					

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

\*\* PCM = Printed circuit module = pin spacing.

Dims. in mm.

The values of the WIMA MKM 2 and WIMA MKI 2 ranges according to the main catalogue 2009 are still available on request.

#### Part number completion:

Tolerance: 20 % = M

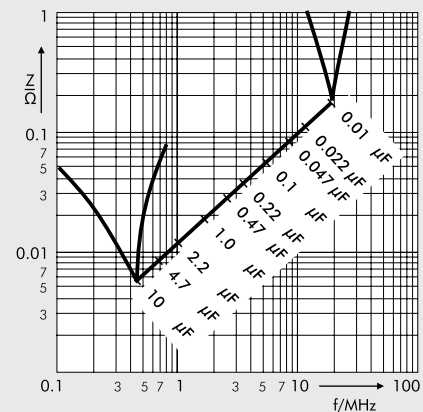
10 % = K

5 % = J

Packing: bulk = S

Pin length: 6-2 = SD

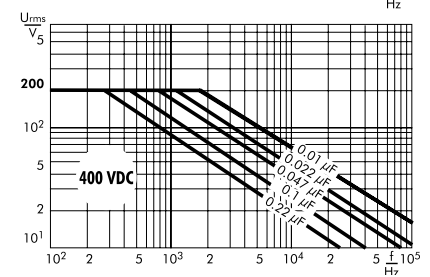
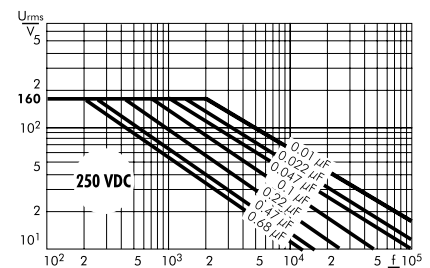
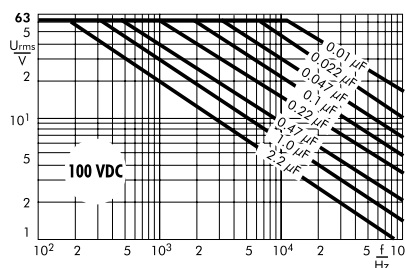
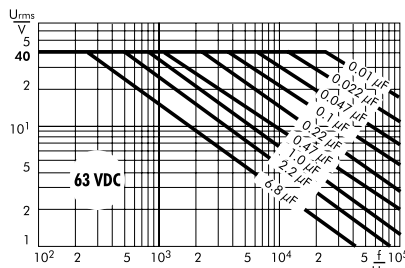
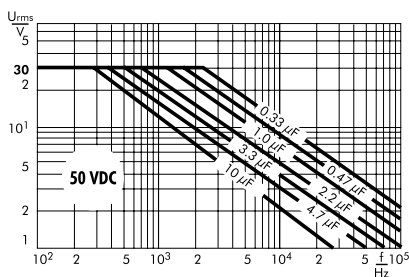
Taped version see page 127.



Impedance change with frequency (general guide).

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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.

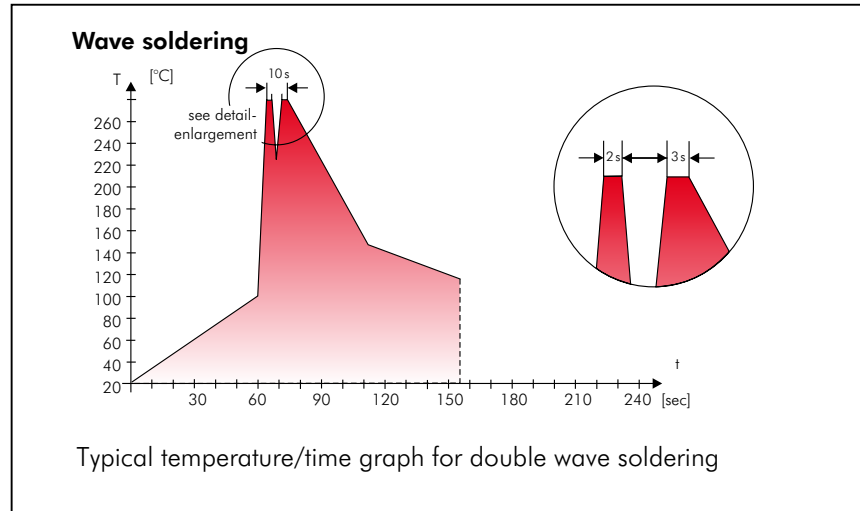
#### Single wave soldering

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
- 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:

- 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 14001:2004

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

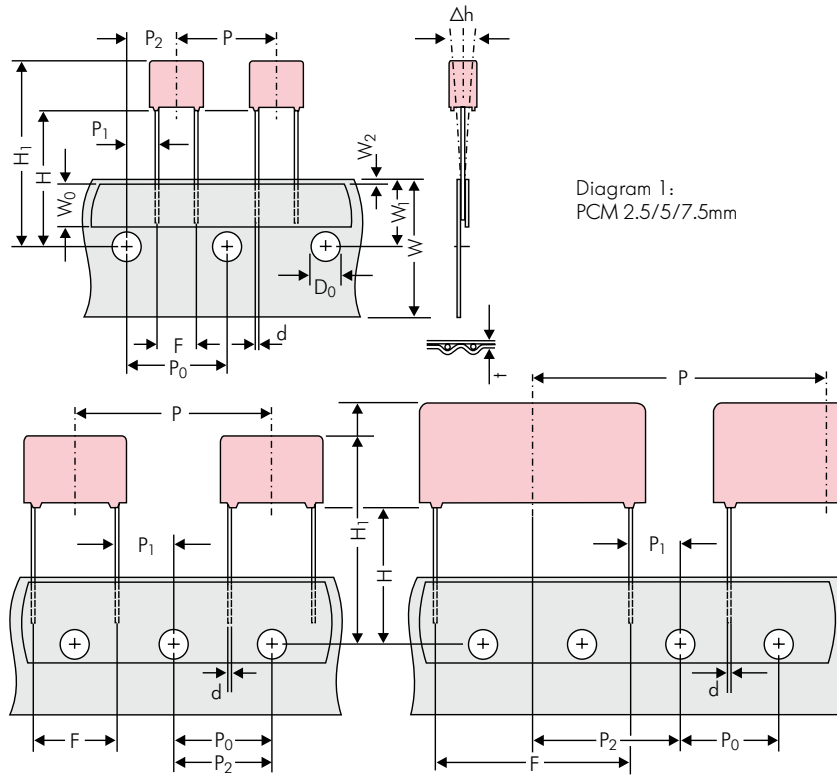


Diagram 1:  
PCM 2.5/5/7.5mm

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 <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 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 <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	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	0.7 ±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	φ 360 max. φ 30 ±1	B 52 ±2 58 ±2 } depending on comp. dimensions	REEL	φ 360 max. φ 30 ±1	52 ±2 58 ±2 or 66 ±2	REEL	φ 500 max. φ 25 ±1
Unit	see details page 130.							

Dims in mm.

\* Diameter of pins see General Data.

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

Position of components according to PCM 7.5 (sketch 11). P<sub>0</sub> = 12.7 or 15.0 is possible

Please clarify customer-specific deviations with the manufacturer.

# Packing Quantities for Capacitors with Radial Pins in PCM 2.5 mm to 22.5 mm



PCM	Size				bulk	pcs. per packing unit									
						ROLL		REEL				AMMO			
	W	H	L	Codes		S	H16.5 N	H18.5 O	ø 360 H16.5 F	ø 500 H18.5 I	H16.5 H	H18.5 J	340 x 340 H16.5 A	490 x 370 H18.5 C	H16.5 B
<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		700		-		700		-	
<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		3100
	4.5	9.5	10.3	<b>2D</b>	3500		-		1500		2900		1400		2800
	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	8.5	13.5	<b>FA</b>	3000		-		900		1600		-		1450
	4	9	13	<b>3C</b>	3000		-		900		1600		-		1450
	4	9.5	13	<b>3D</b>	3000		-		900		1600		-		1400
	5	10	13.5	<b>FB</b>	2000		-		700		1300		-		1200
	5	11	13	<b>3F</b>	3000		-		700		1300		-		1200
	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
	5	13	19	<b>FC</b>	1000		-		600		1200		-		1200
	6	12.5	18	<b>4C</b>	2000		-		500		1000		-		1000
	6	14	19	<b>FD</b>	1000		-		500		1000		-		1000
	7	14	18	<b>4D</b>	1600		-		450		900		-		850
	7	15	19	<b>FE</b>	1000		-		450		900		-		850
	8	15	18	<b>4F</b>	1200		-		400		800		-		740
	8	17	19	<b>FF</b>	500		-		400		800		-		740
	9	14	18	<b>4H</b>	1200		-		350		700		-		650
	9	16	18	<b>4J</b>	900		-		350		700		-		650
	10	18	19	<b>FG</b>	500		-		300		650		-		590
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	20	28	<b>FH</b>	500		-		-		500		-		480
	8.5	18.5	26.5	<b>5F</b>	500		-		-		480		-		450
	10	22	28	<b>FI</b>	540*		-		-		420		-		380
	10.5	19	26.5	<b>5G</b>	680*		-		-		400		-		360
	10.5	20.5	26.5	<b>5H</b>	680*		-		-		400		-		360
	11	21	26.5	<b>5I</b>	680*		-		-		380		-		350
	12	24	28	<b>FJ</b>	450*		-		-		350		-		310

\* Tray Packing-System  
Samples and pre-production needs on request.

■ Moulded versions.

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## Packing Quantities for Capacitors with Radial Pins in PCM 2.5 mm to 22.5 mm

PCM	Size				bulk	pcs. per packing units								
						ROLL		REEL				AMMO		
	W	H	L	Codes		S	H16.5	H18.5	ø 360		ø 500		340 × 340	
					N	O	F	I	H	J	A	C	B	D
<b>27.5 mm</b>	9	19	31.5	<b>6A</b>	640*	–	–	–	–	460/340*	–	–	420	
	11	21	31.5	<b>6B</b>	544*	–	–	–	–	380/280*	–	–	350	
	13	24	31.5	<b>6D</b>	448*	–	–	–	–	300	–	–	290	
	13	25	33	<b>6K</b>	336*	–	–	–	–	270	–	–	250	
	15	26	31.5	<b>6F</b>	384*	–	–	–	–	–	–	–	–	
	15	26	33	<b>6L</b>	288*	–	–	–	–	–	–	–	–	
	17	29	31.5	<b>6G</b>	176*	–	–	–	–	–	–	–	–	
	17	34.5	31.5	<b>6I</b>	176*	–	–	–	–	–	–	–	–	
	19	30	31.5	<b>6L</b>	50*	–	–	–	–	–	–	–	–	
	20	32	33	<b>6M</b>	216*	–	–	–	–	–	–	–	–	
20	39.5	31.5	<b>6J</b>	144*	–	–	–	–	–	–	–	–		
<b>37.5 mm</b>	9	19	41.5	<b>7A</b>	480*	–	–	–	–	–	–	–	–	
	11	22	41.5	<b>7B</b>	408*	–	–	–	–	–	–	–	–	
	13	24	41.5	<b>7C</b>	252*	–	–	–	–	–	–	–	–	
	15	26	41.5	<b>7D</b>	144*	–	–	–	–	–	–	–	–	
	17	29	41.5	<b>7E</b>	132*	–	–	–	–	–	–	–	–	
	19	32	41.5	<b>7F</b>	108*	–	–	–	–	–	–	–	–	
	20	39.5	41.5	<b>7G</b>	108*	–	–	–	–	–	–	–	–	
	24	45.5	41.5	<b>7H</b>	84*	–	–	–	–	–	–	–	–	
	31	46	41.5	<b>7I</b>	72*	–	–	–	–	–	–	–	–	
	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>	50*	–	–	–	–	–	–	–	–	
	23	34	56	<b>8E</b>	72*	–	–	–	–	–	–	–	–	
	27	37.5	56	<b>8H</b>	60*	–	–	–	–	–	–	–	–	
	33	48	56	<b>8J</b>	48*	–	–	–	–	–	–	–	–	
	37	54	56	<b>8L</b>	25*	–	–	–	–	–	–	–	–	
<b>52.5 mm</b>	35	50	57	<b>9F</b>	25*	–	–	–	–	–	–	–	–	
	45	55	57	<b>9H</b>	20*	–	–	–	–	–	–	–	–	
	45	65	57	<b>9J</b>	20*	–	–	–	–	–	–	–	–	

\* for 2-inch transport pitches.

\* Tray Packing System

Samples and pre-production needs on request.

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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
<b>M</b>	<b>K</b>	<b>S</b>	<b>2</b>	<b>C</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>A</b>	<b>0</b>	<b>0</b>	<b>M</b>	<b>S</b>	<b>S</b>	<b>D</b>
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-PPS = SMDI              FKP 02 = FKP0              MKS 02 = MKS0              FKS 2 = FKS2              FKP 2 = FKP2              MKS 2 = MKS2              MKP 2 = MKP2              FKS 3 = FKS3              FKP 3 = FKP3              MKS 4 = MKS4              MKP 4 = MKP4              MKP 10 = MKP1              FKP 4 = FKP4              FKP 1 = FKP1              MKP-X2 = MKX2              MKP-X2 R = MKXR              MKP-Y2 = MKY2              MP 3-X2 = MPX2              MP 3-X1 = MPX1              MP 3-Y2 = MPY2              MP 3R-Y2 = MPRY              Snubber MKP = SNMP              Snubber FKP = SNFP              GTO MKP = GTOM              DC-LINK MKP 4 = DCP4              DC-LINK MKP 5 = DCP5              DC-LINK MKP 6 = DCP6              DC-LINK HC = DCH_              SuperCap C = SCSC              SuperCap MC = SCMC              SuperCap R = SCSR              SuperCap MR = SCMR</p>	<p><b>Rated voltage:</b></p> <p>2.5 VDC = A1              4 VDC = A2              14 VDC = A3              28 VDC = A4              40 VDC = A5              5 VDC = A6              50 VDC = B0              63 VDC = C0              100 VDC = D0              160 VDC = E0              250 VDC = F0              400 VDC = G0              450 VDC = H0              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              2000 VDC = U0              2500 VDC = V0              3000 VDC = W0              4000 VDC = X0              6000 VDC = Y0              250 VAC = 0W              275 VAC = 1W              300 VAC = 2W              400 VAC = 3W              440 VAC = 4W              500 VAC = 5W</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              1 F = A010              2.5 F = A025              50 F = A500              100 F = B100              110 F = B110              600 F = B600              1200 F = C120              ...</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 = 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              94x49x182 DCH_ = H0              94x77x182 DCH_ = H1              ...</p> <p><b>Special features:</b></p> <p>Standard = 00              Version A1 = 1A              Version A1.1.1 = 1B              Version A1.2 = 1C              ...</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 Standard = S              TPS Standard = Y              ...</p> <p><b>Lead length (untaped)</b></p> <p>3.5 ±0.5 = C9              6 -2 = SD              16 ±1 = P1              ...</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.