

**Polypropylene (PP) Film/Foil Capacitors for Pulse Applications in PCM 5 mm.**  
**Capacitances from 33 pF to 0.033 µF. Rated Voltages from 63 VDC to 1000 VDC.**

## Special Features

- Pulse duty construction
- Close tolerances up to  $\pm 2.5\%$  ( $\pm 1\%$  on request)
- Very low dissipation factor
- Negative capacitance change versus temperature
- Very low dielectric absorption
- According to RoHS 2015/863/EU

## Typical Applications

For high frequency applications e.g.

- Sample and hold
- Timing
- LC-Filtering
- Oscillating circuits
- Audio equipment

## Construction

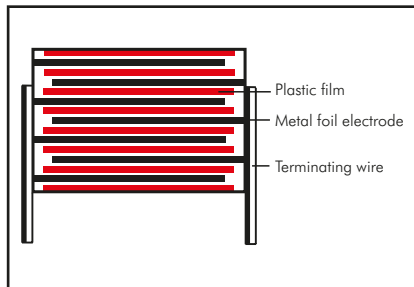
### Dielectric:

Polypropylene (PP) film

### Capacitor electrodes:

Metal foil

### 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:

33 pF to 0.033 µF (E12-values on request)

### Rated voltages:

63 VDC, 100 VDC, 250 VDC, 400 VDC, 630 VDC, 800 VDC, 1000 VDC

### Capacitance tolerances:

$\pm 20\%$ ,  $\pm 10\%$ ,  $\pm 5\%$ ,  $\pm 2.5\%$  ( $\pm 2\%$ ,  $\pm 1.5\%$  or  $\pm 1\%$  available as precision capacitors subject to special enquiry)

### Operating temperature range:

$-55^\circ\text{C}$  to  $+100^\circ\text{C}$

### Test specifications:

In accordance with IEC 60384-13

### Climatic test category:

55/100/56 in accordance with IEC

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

$\geq 3 \times 10^5 \text{ M}\Omega$

Measuring voltage:

$U_r = 63 \text{ V}$ :  $U_{\text{test}} = 50 \text{ V/1 min.}$

$U_r \geq 100 \text{ V}$ :  $U_{\text{test}} = 100 \text{ V/1 min.}$

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

at f	$C \leq 1000 \text{ pF}$	$1000 \text{ pF} < C \leq 4700 \text{ pF}$	$C > 4700 \text{ pF}$
1 kHz	$\leq 5 \times 10^{-4}$	$\leq 5 \times 10^{-4}$	$\leq 5 \times 10^{-4}$
10 kHz	$\leq 6 \times 10^{-4}$	$\leq 6 \times 10^{-4}$	$\leq 6 \times 10^{-4}$
100 kHz	$\leq 8 \times 10^{-4}$	$\leq 8 \times 10^{-4}$	—
1 MHz	$\leq 10 \times 10^{-4}$	—	—

**Test voltage:**  $2 U_r$ , 2 sec.

### Maximum pulse rise time:

1000 V/µsec

### Dielectric absorption:

0.05%

### Temperature coefficient:

$-200 \times 10^{-6}/^\circ\text{C}$  (typical)

### 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 < 5 fit ( $0.5 \times U_r$  and  $40^\circ\text{C}$ )

## 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  $390 \text{ m/sec}^2$  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	63 VDC/40 VAC*					100 VDC/63 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
100 pF	4.5	6	7.2	5	FKP2C001001D00	4.5	6	7.2	5	FKP2D001001D00
150 "	4.5	6	7.2	5	FKP2C001501D00	4.5	6	7.2	5	FKP2D001501D00
220 "	4.5	6	7.2	5	FKP2C002201D00	4.5	6	7.2	5	FKP2D002201D00
330 "	4.5	6	7.2	5	FKP2C003301D00	4.5	6	7.2	5	FKP2D003301D00
470 "	4.5	6	7.2	5	FKP2C004701D00	4.5	6	7.2	5	FKP2D004701D00
680 "	4.5	6	7.2	5	FKP2C006801D00	4.5	6	7.2	5	FKP2D006801D00
1000 pF	4.5	6	7.2	5	FKP2C011001D00	4.5	6	7.2	5	FKP2D011001D00
1500 "	4.5	6	7.2	5	FKP2C011501D00	4.5	6	7.2	5	FKP2D011501D00
2200 "	4.5	6	7.2	5	FKP2C012201D00	4.5	6	7.2	5	FKP2D012201D00
3300 "	4.5	6	7.2	5	FKP2C013301D00	5.5	7	7.2	5	FKP2D013301G00
4700 "	4.5	6	7.2	5	FKP2C014701D00	5.5	7	7.2	5	FKP2D014701G00
6800 "	4.5	6	7.2	5	FKP2C016801D00	5.5	7	7.2	5	FKP2D016801G00
0.01 µF	5.5	7	7.2	5	FKP2C021001G00	6.5	8	7.2	5	FKP2D021001I00
0.015 "	6.5	8	7.2	5	FKP2C021501I00	7.2	8.5	7.2	5	FKP2D021501J00
0.022 "	7.2	8.5	7.2	5	FKP2C022201J00	8.5	10	7.2	5	FKP2D022201L00
0.033 "	8.5	10	7.2	5	FKP2C023301L00					

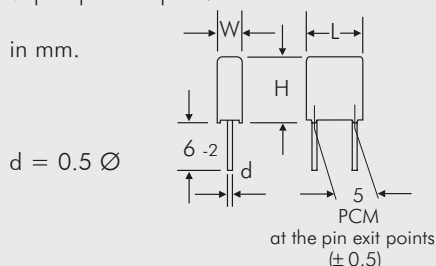
Capacitance	250 VDC/160 VAC*					400 VDC/220 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
100 pF	4.5	6	7.2	5	FKP2F001001D00	4.5	6	7.2	5	FKP2G001001D00
150 "	4.5	6	7.2	5	FKP2F001501D00	4.5	6	7.2	5	FKP2G001501D00
220 "	4.5	6	7.2	5	FKP2F002201D00	4.5	6	7.2	5	FKP2G002201D00
330 "	4.5	6	7.2	5	FKP2F003301D00	4.5	6	7.2	5	FKP2G003301D00
470 "	4.5	6	7.2	5	FKP2F004701D00	4.5	6	7.2	5	FKP2G004701D00
680 "	4.5	6	7.2	5	FKP2F006801D00	4.5	6	7.2	5	FKP2G006801D00
1000 pF	4.5	6	7.2	5	FKP2F011001D00	4.5	6	7.2	5	FKP2G011001D00
1500 "	4.5	6	7.2	5	FKP2F011501D00	4.5	6	7.2	5	FKP2G011501D00
2200 "	4.5	6	7.2	5	FKP2F012201D00	4.5	6	7.2	5	FKP2G012201D00
3300 "	5.5	7	7.2	5	FKP2F013301G00	5.5	7	7.2	5	FKP2G013301G00
4700 "	6.5	8	7.2	5	FKP2F014701I00	6.5	8	7.2	5	FKP2G014701I00
6800 "	6.5	8	7.2	5	FKP2F016801I00	7.2	8.5	7.2	5	FKP2G016801J00
0.01 µF	7.2	8.5	7.2	5	FKP2F021001J00	8.5	10	7.2	5	FKP2G021001L00
0.015 "	8.5	10	7.2	5	FKP2F021501L00					

\* AC voltage:  $f \leq 1000 \text{ Hz}$ ;  $1.4 \times U_{\text{rms}} + U_{\text{DC}} \leq U_r$

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

E12 values and individual values available from 27 pF up on request.

Dims. in mm.



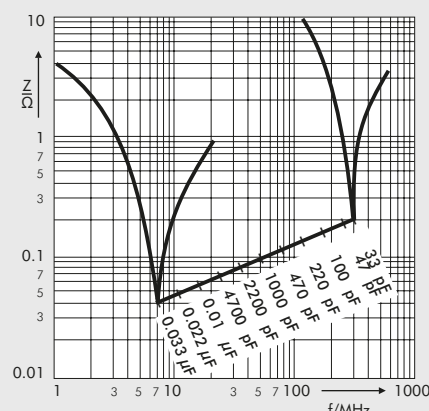
Part number completion:

Tolerance: 20 % = M  
10 % = K  
5 % = J  
2.5 % = H  
2 % = G  
1.5 % = F  
1 % = E

Packing: bulk = S

Pin length: 6-2 = SD

Taped version see page 157.



Impedance change with frequency (general guide).

Rights reserved to amend design data without prior notification.

Continuation page 39

## Continuation

### General Data

Capacitance	630 VDC/250 VAC*					800 VDC/250 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
100 pF	4.5	6	7.2	5	FKP2J001001D00	4.5	6	7.2	5	FKP2L001001D00
150 "	4.5	6	7.2	5	FKP2J001501D00	4.5	6	7.2	5	FKP2L001501D00
220 "	4.5	6	7.2	5	FKP2J002201D00	4.5	6	7.2	5	FKP2L002201D00
330 "	4.5	6	7.2	5	FKP2J003301D00	4.5	6	7.2	5	FKP2L003301D00
470 "	4.5	6	7.2	5	FKP2J004701D00	5.5	7	7.2	5	FKP2L004701G00
680 "	4.5	6	7.2	5	FKP2J006801D00	5.5	7	7.2	5	FKP2L006801G00
1000 pF	4.5	6	7.2	5	FKP2J011001D00	5.5	7	7.2	5	FKP2L011001G00
1500 "	4.5	6	7.2	5	FKP2J011501D00	5.5	7	7.2	5	FKP2L011501G00
2200 "	5.5	7	7.2	5	FKP2J012201G00	6.5	8	7.2	5	FKP2L012201I00
3300 "	6.5	8	7.2	5	FKP2J013301I00	7.2	8.5	7.2	5	FKP2L013301J00
4700 "	6.5	8	7.2	5	FKP2J014701I00	8.5	10	7.2	5	FKP2L014701L00
6800 "	7.2	8.5	7.2	5	FKP2J016801J00					
0.01 µF	8.5	10	7.2	5	FKP2J021001L00					

Capacitance	1000 VDC/250 VAC*				
	W	H	L	PCM**	Part number
33 pF	4.5	6	7.2	5	FKP2O100331D00
47 "	4.5	6	7.2	5	FKP2O100471D00
68 "	4.5	6	7.2	5	FKP2O100681D00
100 pF	4.5	6	7.2	5	FKP2O101001D00
150 "	4.5	6	7.2	5	FKP2O101501D00
220 "	4.5	6	7.2	5	FKP2O102201D00
330 "	4.5	6	7.2	5	FKP2O103301D00
470 "	5.5	7	7.2	5	FKP2O104701G00
680 "	5.5	7	7.2	5	FKP2O106801G00
1000 pF	6.5	8	7.2	5	FKP2O111001I00
1500 "	7.2	8.5	7.2	5	FKP2O111501J00
2200 "	8.5	10	7.2	5	FKP2O112201L00

E12 values and individual values available from 27 pF up on request.

Dims. in mm.

Part number completion:

Tolerance: 20 % = M  
10 % = K  
5 % = J  
2.5 % = H  
2 % = G  
1.5 % = F  
1 % = E

Packing: bulk = S  
Pin length: 6-2 = SD

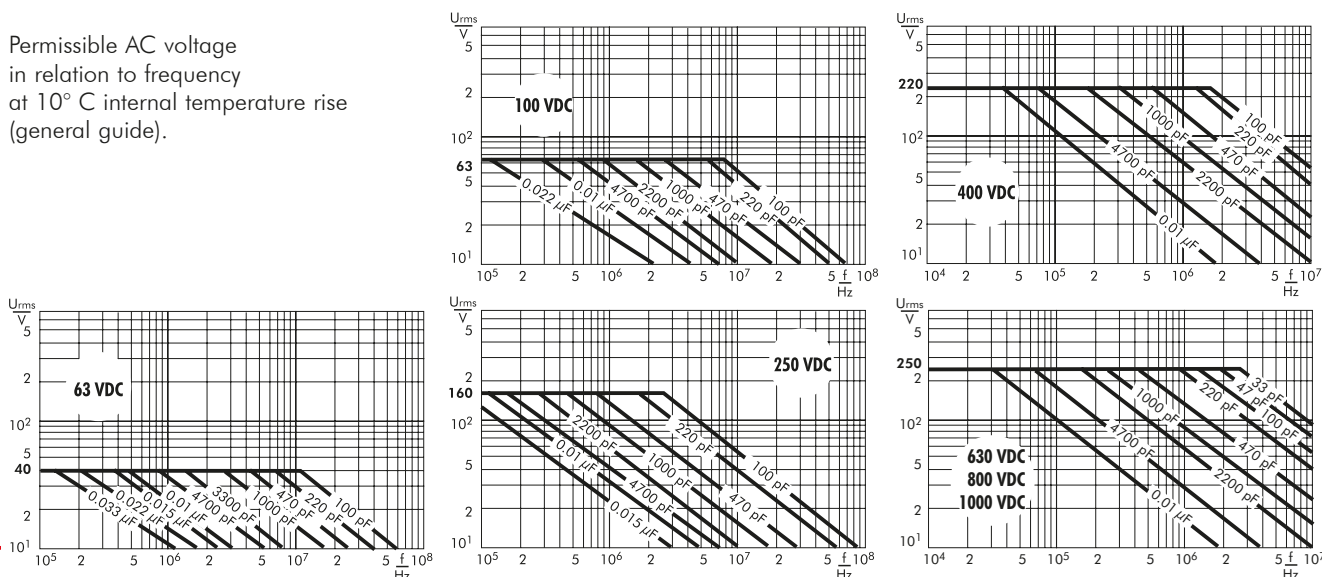
Taped version see page 157.

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

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

Rights reserved to amend design data without prior notification.

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

Internal temperature of the capacitor must be kept as follows:

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

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

#### Single wave soldering

Soldering bath temperature:  $T < 260^{\circ}\text{C}$

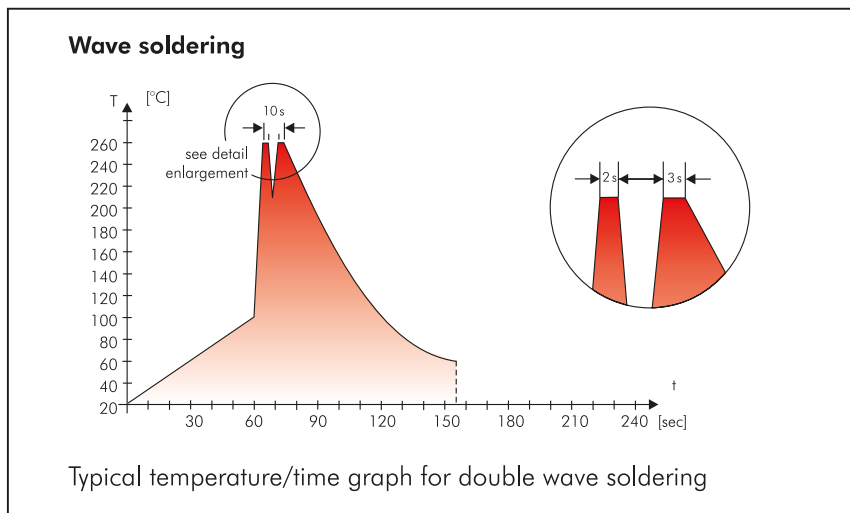
Dwell time:  $t < 5\text{ sec}$

#### Double wave soldering

Soldering bath temperature:  $T < 260^{\circ}\text{C}$

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

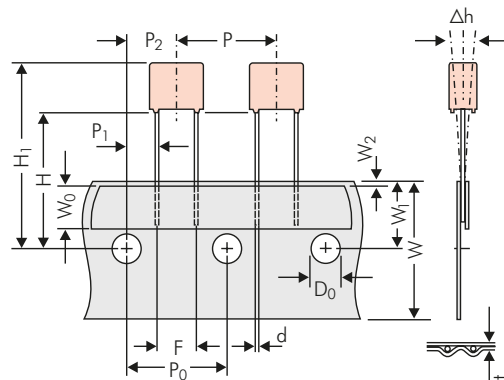


Diagram 1:  
PCM 2.5/5/7.5mm

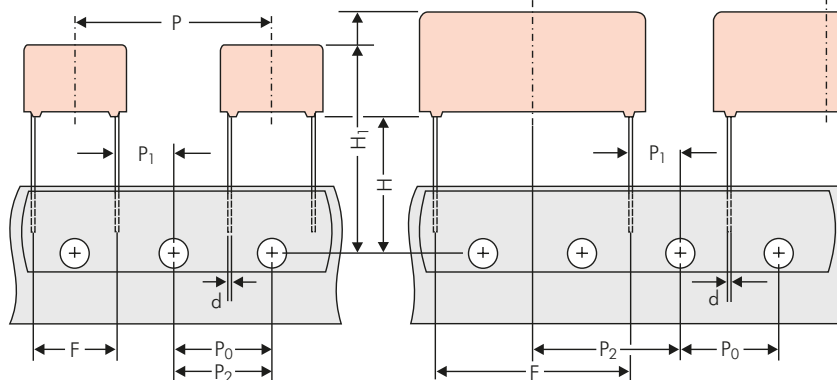


Diagram 2: PCM 10/15 mm

Diagram 3: PCM 22.5 and 27.5\*mm

\*PCM 27.5 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 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 ▲	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 or 66 ±2	REEL Ø 500 max. Ø 25 ±1	B 54 ±2 60 ±2 or 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.

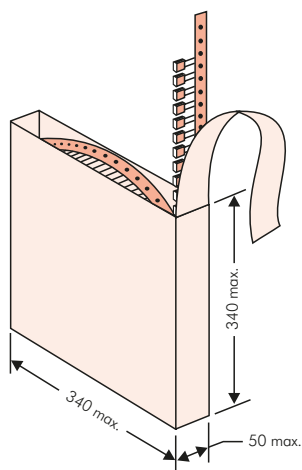
Please clarify customer-specific deviations with the manufacturer.

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

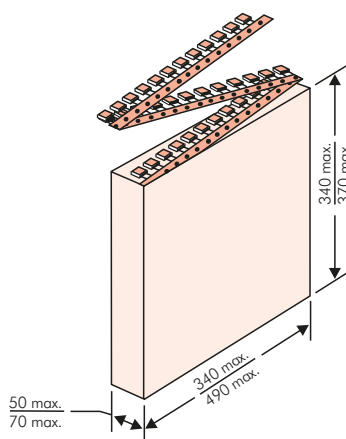
Position of components according to PCM 7.5 (sketch 1). P<sub>0</sub> = 12.7 or 15.0 is possible

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

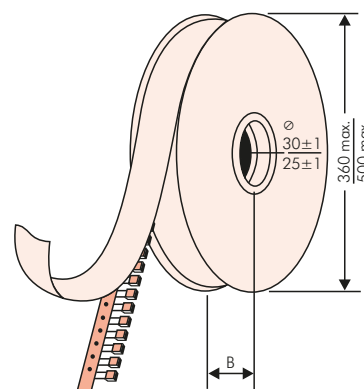
### ■ ROLL Packaging



### ■ 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	ROLL		pcs. per packing unit				AMMO			
								REEL							
						H16.5	H18.5	Ø 360	Ø 500	340 x 340	490 x 370	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.

Rights reserved to amend design data without prior notification.

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

PCM	Size				bulk	ROLL		REEL				AMMO			
						H16.5	H18.5	Ø 360		Ø 500		340 x 340		490 x 370	
	W	H	L	Codes				H16.5	H18.5	H16.5	H18.5	H16.5	H18.5	H16.5	H18.5
					S	N	O	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.

Rights reserved to amend design data without prior notification.

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		
<b>Type description:</b>				<b>Rated voltage:</b>		<b>Capacitance:</b>			<b>Size:</b>				<b>Tolerance:</b>				
SMD-PET = SMDT				50 VDC = B0		22 pF = 0022			4.8x3.3x3 Size1812 = KA				±20% = M				
SMD-PEN = SMDN				63 VDC = C0		47 pF = 0047			4.8x3.3x4 Size1812 = KB				±10% = K				
SMD-PPS = SMDI				100 VDC = D0		100 pF = 0100			5.7x5.1x3.5 Size2220 = QA				±5% = J				
FKP 02 = FKPO				250 VDC = F0		150 pF = 0150			5.7x5.1x4.5 Size2220 = QB				±2.5% = H				
MKS 02 = MKS0				400 VDC = G0		220 pF = 0220			7.2x6.1x3 Size2824 = TA				±1% = E				
FKS 2 = FKS2				450 VDC = H0		330 pF = 0330			7.2x6.1x5 Size2824 = TB				...				
FKP 2 = FKP2				520 VDC = H2		470 pF = 0470			10.2x7.6x5 Size4030 = VA								
FKS 3 = FKS3				600 VDC = I0		680 pF = 0680			12.7x10.2x6 Size5040 = XA								
FKP 3 = FKP 3				630 VDC = J0		1000 pF = 1100			15.3x13.7x7 Size6054 = YA								
MKS 2 = MKS2				700 VDC = K0		1500 pF = 1150			2.5x7x4.6 PCM2.5 = 0B				<b>Packing:</b>				
MKP 2 = MKP2				800 VDC = L0		2200 pF = 1220			3x7.5x4.6 PCM2.5 = 0C				AMMO H16.5 340x340 = A				
MKS 4 = MKS4				850 VDC = M0		3300 pF = 1330			2.5x6.5x7.2 PCM5 = 1A				AMMO H16.5 490x370 = B				
MKP 4 = MKP4				900 VDC = N0		4700 pF = 1470			3x7.5x7.2 PCM5 = 1B				AMMO H18.5 340x340 = C				
MKP 10 = MKP1				1000 VDC = O1		6800 pF = 1680			2.5x7x10 PCM7.5 = 2A				AMMO H18.5 490x370 = D				
FKP 4 = FKP4				1100 VDC = P0		0.01 µF = 2100			3x8.5x10 PCM7.5 = 2B				REEL H16.5 360 = F				
FKP 1 = FKP1				1200 VDC = Q0		0.022 µF = 2220			3x9x13 PCM10 = 3A				REEL H16.5 500 = H				
MKP-X2 = MKX2				1250 VDC = R0		0.047 µF = 2470			4x9x13 PCM10 = 3C				REEL H18.5 360 = I				
MKP-X1 R = MKX1				1500 VDC = S0		0.1 µF = 3100			5x11x18 PCM15 = 4B				REEL H18.5 500 = J				
MKP-Y2 = MKY2				1600 VDC = T0		0.22 µF = 3220			6x12.5x18 PCM15 = 4C				ROLL H16.5 = N				
MKP 4F = MKPF				1700 VDC = TA		0.47 µF = 3470			5x14x26.5 PCM22.5 = 5A				ROLL H18.5 = O				
Snubber MKP = SNMP				2000 VDC = U0		1 µF = 4100			6x15x26.5 PCM22.5 = 5B				BLISTER W12 180 = P				
Snubber FKP = SNFP				2500 VDC = V0		2.2 µF = 4220			9x19x31.5 PCM27.5 = 6A				BLISTER W12 330 = Q				
GTO MKP = GTOM				3000 VDC = W0		4.7 µF = 4470			11x21x31.5 PCM27.5 = 6B				BLISTER W16 330 = R				
DC-LINK MKP 4 = DCP4				4000 VDC = X0		10 µF = 5100			9x19x41.5 PCM37.5 = 7A				BLISTER W24 330 = T				
DC-LINK MKP 6 = DCP6				6000 VDC = Y0		22 µF = 5220			11x22x41.5 PCM37.5 = 7B				Bulk/TPS Standard = S				
DC-LINK HC = DCHC				230 VAC = 3Y		47 µF = 5470			19x31x56 PCM 48.5 = 8D				...				
				275 VAC = 1W		100 µF = 6100			25x45x57 PCM 52.5 = 9D								
				300 VAC = 2W		220 µF = 6220			...								
				305 VAC = AW		1000 µF = 7100											
				350 VAC = BW		1500 µF = 7150											
				440 VAC = 4W		...											
				...													
									<b>Version code:</b>				<b>Pin length (untaped)</b>				
									Standard = 00				3.5 ±0.5 = C9				
									Version A1 = 1A				6 -2 = SD				
									Version A1.1.1 = 1B				16 ±1 = P1				
									Version A2 = 2A				...				
									...				<b>Pin length (taped)</b>				
													none = 00				