

## Polypropylene (PP) Capacitors for High Pulse Applications with Metal Foil Electrodes and Metallized Internal Series Connection in PCM 15 mm to 37.5 mm. Capacitances from 100 pF to 4.7 μF. Rated Voltages from 400 VDC to 2000 VDC.

### Special Features

- High pulse duty
- Self-healing
- Internal series connection
- Very low dissipation factor
- Negative capacitance change versus temperature
- Smaller box sizes than FKP 1
- AEC-Q200 qualified
- According to RoHS 2011/65/EU

### Typical Applications

For high pulse and high frequency applications e.g.

- Switch mode power supplies
- Converter in drives and power electronics
- Deflection systems in monitors and TV-sets
- Electronic ballasts

### Construction

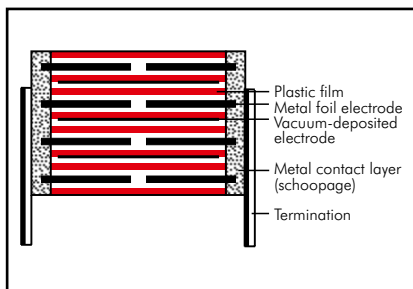
#### Dielectric:

Polypropylene (PP) film

#### Capacitor electrodes:

Aluminium foil and single-sided metallized plastic film

#### Internal construction:



#### Encapsulation:

Solvent-resistant, flame-retardant plastic case with epoxy resin seal, UL 94 V-0

#### Terminations:

Tinned wire.

#### Marking:

Colour: Red. Marking: Black.

### Electrical Data

#### Capacitance range:

100 pF to 4.7 μF (E12-values on request)

#### Rated voltages:

400 VDC, 630 VDC, 1000 VDC, 1250 VDC, 1600 VDC, 2000 VDC

#### Capacitance tolerances:

±20%, ±10%, ±5% (other tolerances are available subject to special enquiry)

#### Operating temperature range:

-55° C to +105° C

#### Climatic test category:

55/100/56 in accordance with IEC

#### Insulation resistance at +20° C:

$C \leq 0.1 \mu\text{F}$ :  $\geq 1 \times 10^5 \text{ M}\Omega$

$C > 0.1 \mu\text{F}$ :  $\geq 10000 \text{ sec (M}\Omega \times \mu\text{F)}$

Measuring voltage: 100 V/1 min.

#### Dissipation factors at +20° 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	$\leq 5 \times 10^{-4}$	$\leq 5 \times 10^{-4}$	$\leq 5 \times 10^{-4}$
10 kHz	$\leq 6 \times 10^{-4}$	$\leq 6 \times 10^{-4}$	-
100 kHz	$\leq 10 \times 10^{-4}$	-	-

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

#### Dielectric absorption:

0.05%

#### Voltage derating:

A voltage derating factor of 1.35 % per K must be applied from +85° C for DC voltages and from +75° C for AC voltages.

#### Reliability:

Operational life > 300 000 hours

Failure rate < 1 fit ( $0.5 \times U_r$  and 40° C)

#### Maximum pulse rise time:

Capacitance pF/μF	max. pulse rise time V/μsec at $T_A < 40^\circ \text{C}$					
	400 VDC	630 VDC	1000 VDC	1250 VDC	1600 VDC	2000 VDC
100 ... 220	-	-	-	-	-	39000
330 ... 680	-	-	-	-	-	39000
1000 ... 2200	-	-	-	-	27000	39000
3300 ... 6800	-	-	-	-	17000	21000
0.01 ... 0.022	7000	11000	11000	11000	11000	11000
0.033 ... 0.068	7000	9000	9000	9000	9000	9000
0.1 ... 0.22	6000	9000	9000	9000	9000	9000
0.33 ... 0.68	3000	5000	5000	5000	5000	5000
1.0 ... 4.7	1000	1600	2000	2000	2000	-

### 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/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	400 VDC/250 VAC*					630 VDC/400 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
0.01 µF	5	11	18	15	FKP4G021004B00	5	11	18	15	FKP4J021004B00
0.015 "	5	11	18	15	FKP4G021504B00	6	12.5	18	15	FKP4J021504C00
0.022 "	6	12.5	18	15	FKP4G022204C00	7	14	18	15	FKP4J022204D00
0.033 "	7	14	18	15	FKP4G023304D00	8	15	18	15	FKP4J023304F00
0.047 "	8	15	18	15	FKP4G024704F00	6	15	26.5	22.5	FKP4J023305B00
	6	15	26.5	22.5	FKP4G024705B00	9	16	18	15	FKP4J024704J00
0.068 "	7	16.5	26.5	22.5	FKP4G026805D00	7	16.5	26.5	22.5	FKP4J024705D00
0.1 µF	8.5	18.5	26.5	22.5	FKP4G031005F00	8.5	18.5	26.5	22.5	FKP4J026805F00
	11	21	26.5	22.5	FKP4G031505I00	10.5	19	26.5	22.5	FKP4J031005G00
0.15 "	9	19	31.5	27.5	FKP4G031506A00	11	21	31.5	27.5	FKP4J031006B00
	11	21	31.5	27.5	FKP4G032206B00	11	21	26.5	22.5	FKP4J031505I00
0.22 "	11	21	31.5	27.5	FKP4G032206D00	11	21	31.5	27.5	FKP4J031506B00
0.33 "	13	24	31.5	27.5	FKP4G033306D00	13	24	31.5	27.5	FKP4J032206D00
0.47 "	17	29	31.5	27.5	FKP4G034706G00	15	26	31.5	27.5	FKP4J033306F00
0.68 "	17	34.5	31.5	27.5	FKP4G036806I00	17	34.5	31.5	27.5	FKP4J034706I00
	17	34.5	31.5	27.5	FKP4G036806I00	17	34.5	31.5	27.5	FKP4J036806I00
1.0 µF	20	39.5	41.5	37.5	FKP4G041006J00	19	32	41.5	37.5	FKP4J036807F00
	20	39.5	41.5	37.5	FKP4G041507G00	20	39.5	41.5	37.5	FKP4J041007G00
1.5 "	24	45.5	41.5	37.5	FKP4G042207H00	24	45.5	41.5	37.5	FKP4J041507H00
2.2 "	31	46	41.5	37.5	FKP4G043307I00	31	46	41.5	37.5	FKP4J042207I00
4.7 "	40	55	41.5	37.5	FKP4G044707K00	40	55	41.5	37.5	FKP4J043307K00

Capacitance	1000 VDC/600 VAC*					1250 VDC/600 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
0.01 µF	6	12.5	18	15	FKP4O121004C00	9	16	18	15	FKP4R021004J00
	5	14	26.5	22.5	FKP4O121005A00	6	15	26.5	22.5	FKP4R021005B00
0.015 "	7	14	18	15	FKP4O121504D00	7	16.5	26.5	22.5	FKP4R021505D00
	6	15	26.5	22.5	FKP4O121505B00					
0.022 "	8	15	18	15	FKP4O122204F00	8.5	18.5	26.5	22.5	FKP4R022205F00
	6	15	26.5	22.5	FKP4O122205B00					
0.033 "	7	16.5	26.5	22.5	FKP4O123305D00	10.5	19	26.5	22.5	FKP4R023305G00
						9	19	31.5	27.5	FKP4R023306A00
0.047 "	8.5	18.5	26.5	22.5	FKP4O124705F00	11	21	31.5	27.5	FKP4R024706B00
	9	19	31.5	27.5	FKP4O124706A00					
0.068 "	11	21	26.5	22.5	FKP4O126805I00	13	24	31.5	27.5	FKP4R026806D00
	9	19	31.5	27.5	FKP4O126806A00					
0.1 µF	11	21	31.5	27.5	FKP4O131006B00	15	26	31.5	27.5	FKP4R031006F00
	13	24	31.5	27.5	FKP4O131506D00	15	26	31.5	27.5	FKP4R031506F00
0.15 "	15	26	31.5	27.5	FKP4O132206F00	20	39.5	31.5	27.5	FKP4R032206J00
						17	29	41.5	37.5	FKP4R032207E00
0.33 "	17	34.5	31.5	27.5	FKP4O133306I00	19	32	41.5	37.5	FKP4R033307F00
	19	32	41.5	37.5	FKP4O133307F00					
0.47 "	20	39.5	41.5	37.5	FKP4O134707G00	20	39.5	41.5	37.5	FKP4R034707G00
	24	45.5	41.5	37.5	FKP4O136807H00	24	45.5	41.5	37.5	FKP4R036807H00
1.0 µF	31	46	41.5	37.5	FKP4O141007I00	31	46	41.5	37.5	FKP4R041007I00
	35	50	41.5	37.5	FKP4O141507J00	35	50	41.5	37.5	FKP4R041507J00
1.5 "										
2.2 "	35	50	41.5	37.5	FKP4O142207J00					

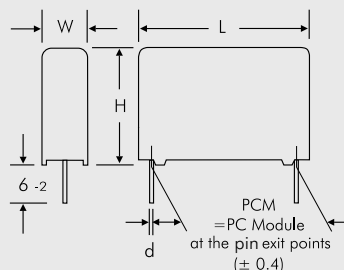
\* AC voltage:  $f = 1000 \text{ Hz}$ ;  $1.4 \times U_{\text{rms}} + U_{\text{DC}} \leq U_r$

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

Dims. in mm.

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

ø d	PCM
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 161.

Rights reserved to amend design data without prior notification.

## Continuation

### General Data

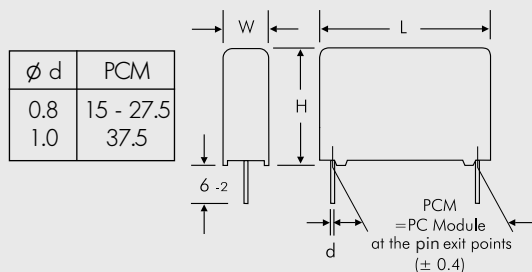
Capacitance	1600 VDC/650 VAC*					2000 VDC/700 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
100 pF						5	11	18	15	FKP4U001004B00
150 "						5	11	18	15	FKP4U001504B00
220 "						5	11	18	15	FKP4U002204B00
330 "						5	11	18	15	FKP4U003304B00
470 "						5	11	18	15	FKP4U004704B00
680 "						5	11	18	15	FKP4U006804B00
1000 pF	5	11	18	15	FKP4T011004B00	5	11	18	15	FKP4U011004B00
1500 "	5	11	18	15	FKP4T011504B00	6	12.5	18	15	FKP4U011504C00
2200 "	6	12.5	18	15	FKP4T012204C00	7	14	18	15	FKP4U012204D00
3300 "	7	14	18	15	FKP4T013304D00	9	16	18	15	FKP4U013304J00
						6	15	26.5	22.5	FKP4U013305B00
4700 "	8	15	18	15	FKP4T014704F00	7	16.5	26.5	22.5	FKP4U014705D00
6800 "	9	16	18	15	FKP4T016804J00	8.5	18.5	26.5	22.5	FKP4U016805F00
0.01 µF	6	15	26.5	22.5	FKP4T021005B00	10.5	19	26.5	22.5	FKP4U021005G00
0.015 "	8.5	18.5	26.5	22.5	FKP4T021505F00	11	21	26.5	22.5	FKP4U021505I00
						9	19	31.5	27.5	FKP4U021506A00
0.022 "	10.5	19	26.5	22.5	FKP4T022205H00	11	21	31.5	27.5	FKP4U022206B00
	9	19	31.5	27.5	FKP4T022206A00	11	22	41.5	37.5	FKP4U022207B00
0.033 "	11	21	31.5	27.5	FKP4T023306B00	13	24	31.5	27.5	FKP4U023306D00
0.047 "	13	24	31.5	27.5	FKP4T024706D00	15	26	31.5	27.5	FKP4U024706F00
						15	26	41.5	37.5	FKP4U024707D00
0.068 "	15	26	31.5	27.5	FKP4T026806F00	17	34.5	31.5	27.5	FKP4U026806I00
						17	29	41.5	37.5	FKP4U026807E00
0.1 µF	17	34.5	31.5	27.5	FKP4T031006I00	17	29	41.5	37.5	FKP4U031007E00
0.15 "	20	39.5	31.5	27.5	FKP4T031506J00	20	39.5	41.5	37.5	FKP4U031507G00
	19	32	41.5	37.5	FKP4T031507F00					
0.22 "	20	39.5	41.5	37.5	FKP4T032207G00	24	45.5	41.5	37.5	FKP4U032207H00
0.33 "	24	45.5	41.5	37.5	FKP4T033307H00	31	46	41.5	37.5	FKP4U033307I00
0.47 "	31	46	41.5	37.5	FKP4T034707I00	31	46	41.5	37.5	FKP4U034707I00
0.68 "	35	50	41.5	37.5	FKP4T036807J00	35	50	41.5	37.5	FKP4U036807J00
1.0 µF	40	55	41.5	37.5	FKP4T041007K00					

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

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

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

Dims. in mm.



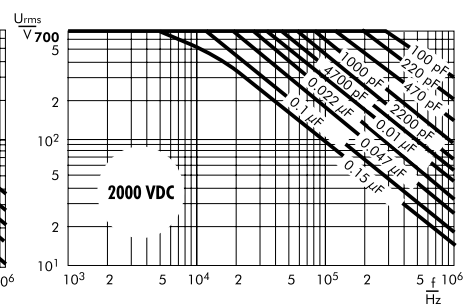
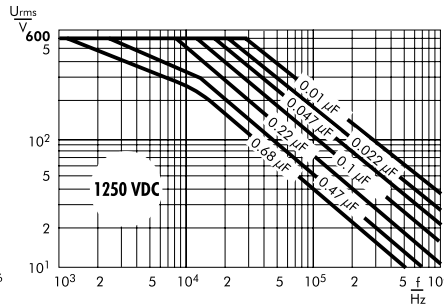
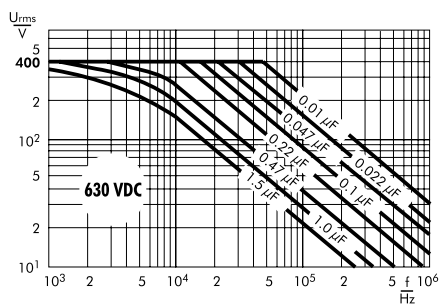
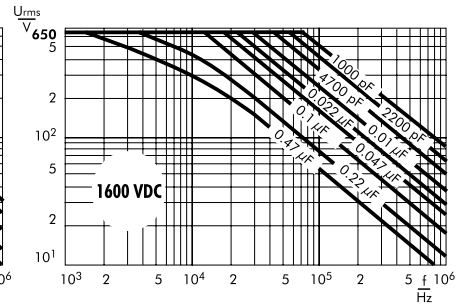
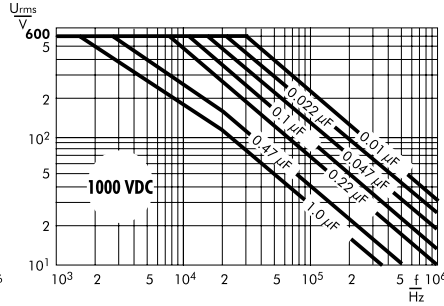
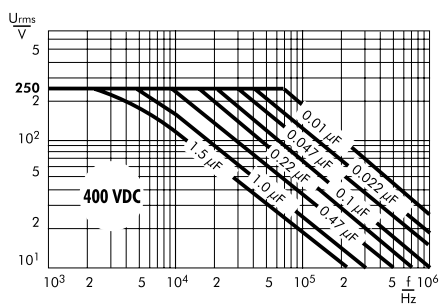
Part number completion:	
Tolerance:	20 % = M
	10 % = K
	5 % = J
Packing:	bulk = S
Pin length:	6-2 = SD
Taped version see page 161.	

Rights reserved to amend design data without prior notification.

Continuation page 78

## Continuation

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

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

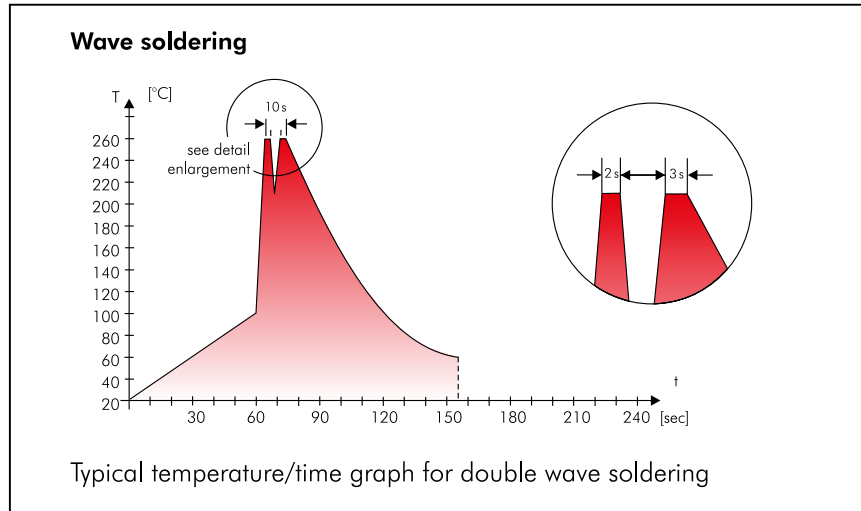
### Single wave soldering

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:  $\Sigma t < 5 \text{ sec}$

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 by the infaz (Institut für Auditierung und Zertifizierung) 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 2011/65/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 refrained from using such substances since years already.



WIMA Kondensatoren sind bleifrei konform RoHS 2011/65/EU

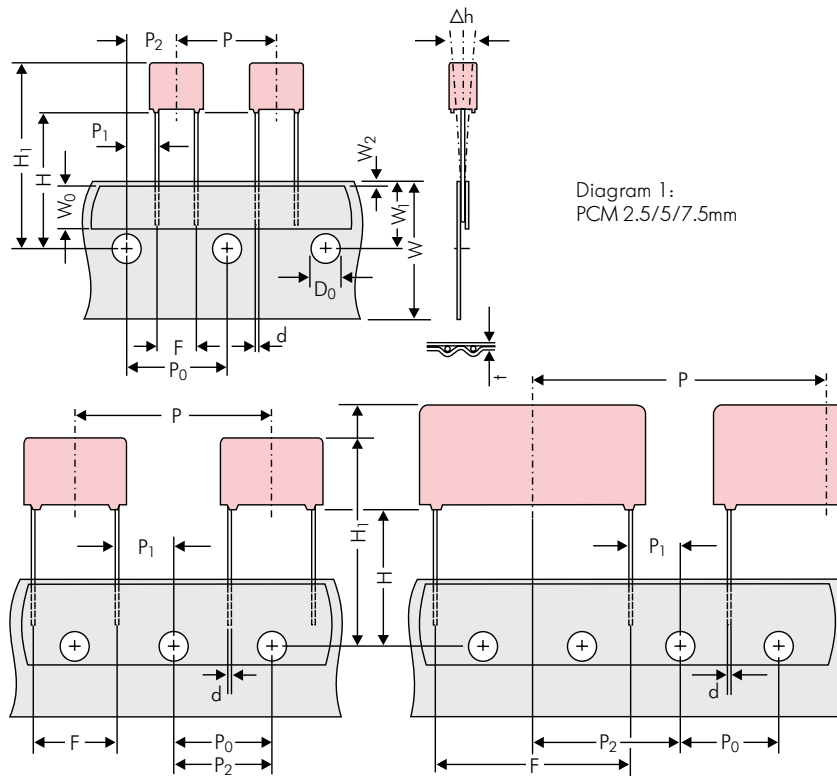
WIMA capacitors are lead free in accordance with RoHS 2011/65/EU

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



\*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	0.6 ±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 162)	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 163.							

Dims in mm.

\* Diameter of pins see General Data.

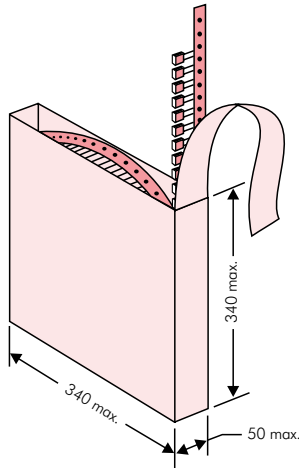
\* PCM 10 and PCM 15 can be crimped to PCM 7.5.

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

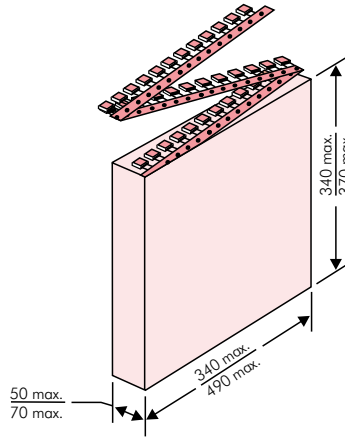
Please clarify customer-specific deviations with the manufacturer.

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

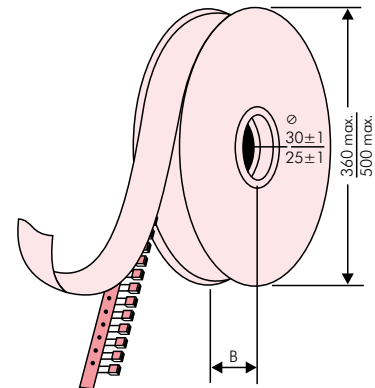
### ■ ROLL Packaging



### ■ AMMO Packaging



### ■ REEL Packaging



## BAR CODE (Labelling)

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

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

In addition part description of

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

<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%    Lose - Standard    Drähte 6-2	
Vorlage Debitor Inland	
	0001105072000100
1002021443	QTY: 459    Week 19/2021

BARCODE PDF417  
BARCODE 2D Datamatrix

# 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	H18.5	ø 360	ø 500	340 x 340	490 x 370		
					N	O	F	I	H	J	A	C	B	D
<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	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				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	
	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	
<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>	570*				420				380	
	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	
12	24	28	<b>FJ</b>	480*				350				310		

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

■ Moulded versions.

Rights reserved to amend design data without prior notification.





## Packing Quantities for Capacitors with Radial Pins in PCM 27.5 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			
								H16.5	H18.5	H16.5	H18.5	H16.5	H18.5	H16.5	H18.5	H16.5	H18.5	
								F	I	H	J	A	C	B	D			
<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	-	-	-	-	-	-	-	
	13	25	33	<b>FK</b>	405*	-	-	-	-	-	-	-	-	-	-	-	-	
	15	26	31.5	<b>6F</b>	324*	-	-	-	-	270	-	-	-	-	-	-	-	
	15	26	33	<b>FL</b>	324*	-	-	-	-	-	-	-	-	-	-	-	-	
	17	29	31.5	<b>6G</b>	198*	-	-	-	-	-	-	-	-	-	-	-	-	
	17	34.5	31.5	<b>6I</b>	198*	-	-	-	-	-	-	-	-	-	-	-	-	
	20	32	33	<b>FM</b>	162*	-	-	-	-	-	-	-	-	-	-	-	-	-
	20	39.5	31.5	<b>6J</b>	162*	-	-	-	-	-	-	-	-	-	-	-	-	-
<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*	-	-	-	-	-	-	-	-	-	-	-	-	

\* for 2-inch transport pitches.

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

■ Moulded versions. 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
<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-PEN = SMDN              SMD-PPS = SMDI              FKP 02 = FKPO              MKS 02 = MKS0              FKS 2 = FKS2              FKP 2 = FKP2              FKS 3 = FKS3              FKP 3 = FKP 3              MKS 2 = MKS2              MKP 2 = MKP2              MKS 4 = MKS4              MKP 4 = MKP4              MKP 10 = MKP1              FKP 4 = FKP4              FKP 1 = FKP1              MKP-X2 = MKX2              MKP-X1 R = MKX1              MKP-Y2 = MKY2              MP 3-X2 = MPX2              MP 3-X1 = MPX1              MP 3-Y2 = MPY2              MP 3R-Y2 = MPRY              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              250 VAC = 0W              275 VAC = 1W              300 VAC = 2W              305 VAC = AW              350 VAC = BW              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              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 = XA              15.3x13.7x7 Size 6054 = YA              2.5x7x4.6 PCM 2.5 = 0B              3x7.5x4.6 PCM 2.5 = 0C              2.5x6.5x7.2 PCM 5 = 1A              3x7.5x7.2 PCM 5 = 1B              2.5x7x10 PCM 7.5 = 2A              3x8.5x10 PCM 7.5 = 2B              3x9x13 PCM 10 = 3A              4x9x13 PCM 10 = 3C              5x11x18 PCM 15 = 4B              6x12.5x18 PCM 15 = 4C              5x14x26.5 PCM 22.5 = 5A              6x15x26.5 PCM 22.5 = 5B              9x19x31.5 PCM 27.5 = 6A              11x21x31.5 PCM 27.5 = 6B              9x19x41.5 PCM 37.5 = 7A              11x22x41.5 PCM 37.5 = 7B              19x31x56 PCM 48.5 = 8D              25x45x57 PCM 52.5 = 9D              ...</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>
---	---	---	--	---

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.