

Polypropylene (PP) Film and Foil Capacitors for Pulse Applications in PCM 7.5 mm to 15 mm. Capacitances from 100 pF to 0.22 µF. Rated Voltages from 63 VDC to 1000 VDC.

Special Features

- Pulse duty construction
- Very low dissipation factor
- Negative capacitance change versus temperature
- Very low dielectric absorption
- According to RoHS 2011/65/EU

Typical Applications

For high frequency applications e.g.

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

Construction

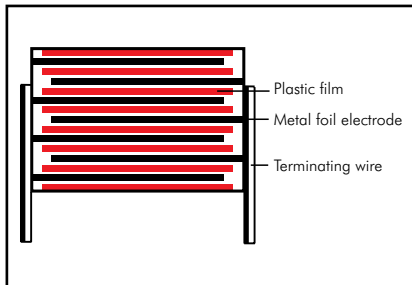
Dielectric:

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:

100 pF to 0.22 µF (E12-values on request)

Rated voltages:

63 VDC, 100 VDC, 250 VDC, 400 VDC, 630 VDC, 850 VDC, 1000 VDC

Capacitance tolerances:

±20%, ±10%, ±5%

Operating temperature range:

-55° C to +100° C

Test specifications:

In accordance with IEC 60384-13

Climatic test category:

55/100/56 in accordance with IEC

Insulation resistance at +20° C:

≥ 3 x 10⁵ MΩ

Measuring voltage:

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

U_r ≥ 100 V: U_{test} = 100 V/1 min.

Test voltage: 2 U_r, 2 sec.

Maximum pulse rise time:

1000 V/µsec for pulses equal to the rated voltage

Dielectric absorption:

0.05 %

Temperature coefficient:

-200 x 10⁻⁶/° C (general guide)

Dissipation factors at +20° C: tan δ

at f	C ≤ 0.1 µF	0.1 µF < C ≤ 0.22 µF
1 kHz	≤ 5 x 10 ⁻⁴	≤ 5 x 10 ⁻⁴
10 kHz	≤ 6 x 10 ⁻⁴	≤ 6 x 10 ⁻⁴
100 kHz	≤ 8 x 10 ⁻⁴	-

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 < 5 fit (0.5 x U_r and 40° 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 m/sec² 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						3	8.5	10	7.5	FKP3D001002B00_____
150 "						3	8.5	10	7.5	FKP3D001502B00_____
220 "						3	8.5	10	7.5	FKP3D002202B00_____
330 "						3	8.5	10	7.5	FKP3D003302B00_____
470 "						3	8.5	10	7.5	FKP3D004702B00_____
680 "						3	8.5	10	7.5	FKP3D006802B00_____
1000 pF						3	8.5	10	7.5	FKP3D011002B00_____
1500 "						3	8.5	10	7.5	FKP3D011502B00_____
2200 "						3	8.5	10	7.5	FKP3D012202B00_____
3300 "						3	8.5	10	7.5	FKP3D013302B00_____
4700 "						3	8.5	10	7.5	FKP3D014702B00_____
6800 "						4	9	10	7.5	FKP3D016802C00_____
0.01 µF						4	9	10	7.5	FKP3D021002C00_____
0.015 "	4	9	10	7.5	FKP3C021502C00_____	4	9.5	13	10	FKP3D021503D00_____
0.022 "	4	9.5	13	10	FKP3C022203D00_____	5	11	13	10	FKP3D022203F00_____
0.033 "	4	9.5	13	10	FKP3C023303D00_____	6	12	13	10	FKP3D023303G00_____
0.047 "	5	11	13	10	FKP3C024703F00_____	5	11	18	15	FKP3D024704B00_____
0.068 "	6	12	13	10	FKP3C026803G00_____	6	12.5	18	15	FKP3D026804C00_____
0.1 µF	6	12.5	18	15	FKP3C031004C00_____	7	14	18	15	FKP3D031004D00_____
0.15 "	8	15	18	15	FKP3C031504F00_____	9	16	18	15	FKP3D031504J00_____
0.22 "	9	16	18	15	FKP3C032204J00_____					

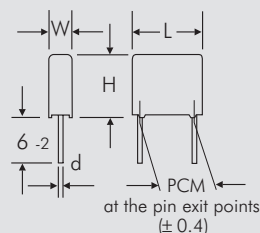
Capacitance	250 VDC/160 VAC*					400 VDC/250 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
100 pF	3	8.5	10	7.5	FKP3F001002B00_____	3	8.5	10	7.5	FKP3G001002B00_____
150 "	3	8.5	10	7.5	FKP3F001502B00_____	3	8.5	10	7.5	FKP3G001502B00_____
220 "	3	8.5	10	7.5	FKP3F002202B00_____	3	8.5	10	7.5	FKP3G002202B00_____
330 "	3	8.5	10	7.5	FKP3F003302B00_____	3	8.5	10	7.5	FKP3G003302B00_____
470 "	3	8.5	10	7.5	FKP3F004702B00_____	3	8.5	10	7.5	FKP3G004702B00_____
680 "	3	8.5	10	7.5	FKP3F006802B00_____	3	8.5	10	7.5	FKP3G006802B00_____
1000 pF	3	8.5	10	7.5	FKP3F011002B00_____	3	8.5	10	7.5	FKP3G011002B00_____
1500 "	3	8.5	10	7.5	FKP3F011502B00_____	4	9	10	7.5	FKP3G011502C00_____
2200 "	4	9	10	7.5	FKP3F012202C00_____	4	9	10	7.5	FKP3G012202C00_____
3300 "	3	9	13	10	FKP3F013303A00_____	4	9.5	13	10	FKP3G012203D00_____
4700 "	4	9.5	13	10	FKP3F014703D00_____	4	9.5	13	10	FKP3G013303D00_____
6800 "	5	11	13	10	FKP3F016803F00_____	5	11	13	10	FKP3G014703F00_____
0.01 µF	5	11	13	10	FKP3F021003F00_____	6	12	13	10	FKP3G016803G00_____
0.015 "	6	12	13	10	FKP3F021503G00_____	5	11	18	15	FKP3G021004B00_____
0.022 "	5	11	18	15	FKP3F021504B00_____	6	12.5	18	15	FKP3G021504C00_____
0.033 "	6	12.5	18	15	FKP3F022204C00_____	7	14	18	15	FKP3G022204D00_____
0.047 "	7	14	18	15	FKP3F023304D00_____	8	15	18	15	FKP3G023304F00_____
0.068 "	8	15	18	15	FKP3F024704F00_____	9	16	18	15	FKP3G024704J00_____
0.068 "	9	16	18	15	FKP3F026804J00_____					

* 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

Dims. in mm.

$d = 0.5 \phi$ if $W = 3$
 $d = 0.6 \phi$ if $W \geq 4$ } PCM 7.5 and 10
 $d = 0.8 \phi$ if PCM = 15



Part number completion:

Tolerance: 20 % = M
10 % = K
5 % = J

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

Taped version see page 148.

Rights reserved to amend design data without prior notification.

Continuation

General Data

Capacitance	630 VDC/300 VAC*					850 VDC/300 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
100 pF	3	8.5	10	7.5	FKP3J001002B00	3	8.5	10	7.5	FKP3M001002B00
150 "	3	8.5	10	7.5	FKP3J001502B00	3	8.5	10	7.5	FKP3M001502B00
220 "	3	8.5	10	7.5	FKP3J002202B00	3	8.5	10	7.5	FKP3M002202B00
330 "	3	8.5	10	7.5	FKP3J003302B00	3	8.5	10	7.5	FKP3M003302B00
470 "	3	8.5	10	7.5	FKP3J004702B00	3	8.5	10	7.5	FKP3M004702B00
680 "	3	8.5	10	7.5	FKP3J006802B00	3	8.5	10	7.5	FKP3M006802B00
1000 pF	4	9	10	7.5	FKP3J011002C00	4	9	10	7.5	FKP3M011002C00
1500 "	4	9.5	13	10	FKP3J011503D00	4	9.5	13	10	FKP3M011503D00
2200 "	4	9.5	13	10	FKP3J012203D00	4	9.5	13	10	FKP3M012203D00
3300 "	5	11	13	10	FKP3J013303F00	5	11	13	10	FKP3M013303F00
4700 "	6	12	13	10	FKP3J014703G00	6	12	13	10	FKP3M014703G00
6800 "	5	11	18	15	FKP3J016804B00	5	11	18	15	FKP3M016804B00
0.01 µF	6	12.5	18	15	FKP3J021004C00	6	12.5	18	15	FKP3M021004C00
0.015 "	8	15	18	15	FKP3J021504F00	8	15	18	15	FKP3M021504F00
0.022 "	9	16	18	15	FKP3J022204J00	9	16	18	15	FKP3M022204J00
0.033 "	9	16	18	15	FKP3J023304J00					

Capacitance	1000 VDC/300 VAC*				
	W	H	L	PCM**	Part number
100 pF	3	8.5	10	7.5	FKP3O101002B00
150 "	3	8.5	10	7.5	FKP3O101502B00
220 "	3	8.5	10	7.5	FKP3O102202B00
330 "	3	8.5	10	7.5	FKP3O103302B00
470 "	3	8.5	10	7.5	FKP3O104702B00
680 "	3	8.5	10	7.5	FKP3O106802B00
1000 pF	4	9	10	7.5	FKP3O111002C00
1500 "	4	9.5	13	10	FKP3O111503D00
2200 "	4	9.5	13	10	FKP3O112203D00
3300 "	5	11	13	10	FKP3O113303F00
4700 "	6	12	13	10	FKP3O114703G00
6800 "	5	11	18	15	FKP3O116804B00
0.01 µF	6	12.5	18	15	FKP3O121004C00
0.015 "	8	15	18	15	FKP3O121504F00
0.022 "	9	16	18	15	FKP3O122204J00

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

■ New range

** PCM = Printed circuit module = pin spacing

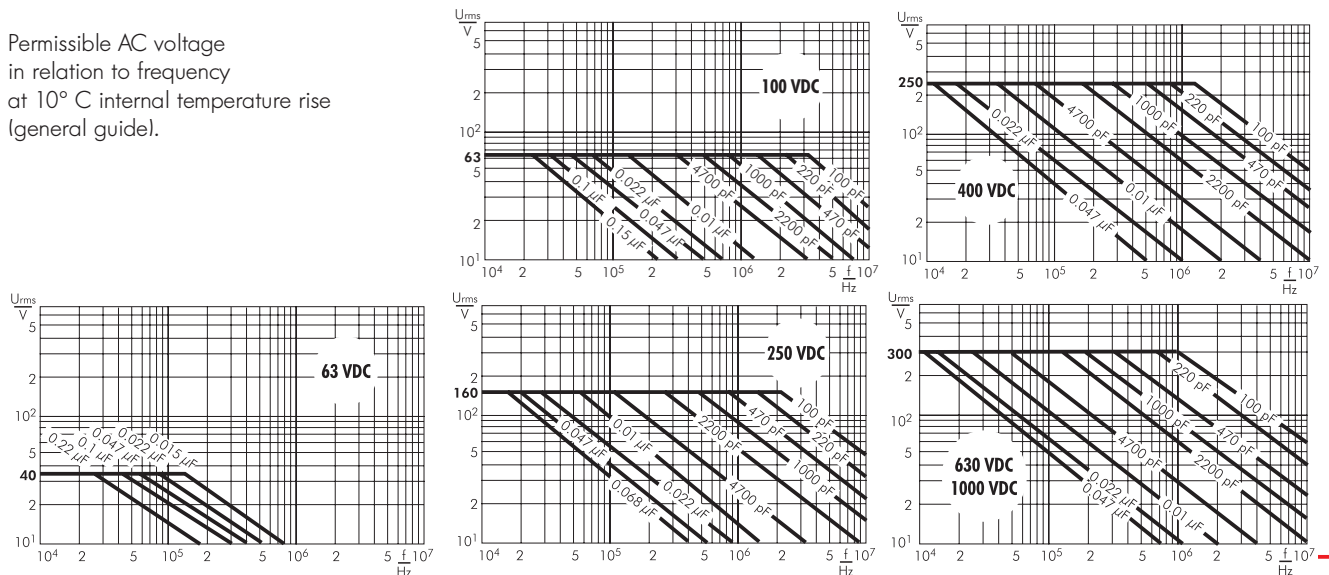
Dims. in mm.

Part number completion:

Tolerance: 20 % = M
 10 % = K
 5 % = J
 Packing: bulk = S
 Pin length: 6-2 = SD
 Taped version see page 148.

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: $T_{max.} \leq 125^{\circ}C$
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 9001:2008 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 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:

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

RoHS Compliance

According to the RoHS Directive 2011/65/EU 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

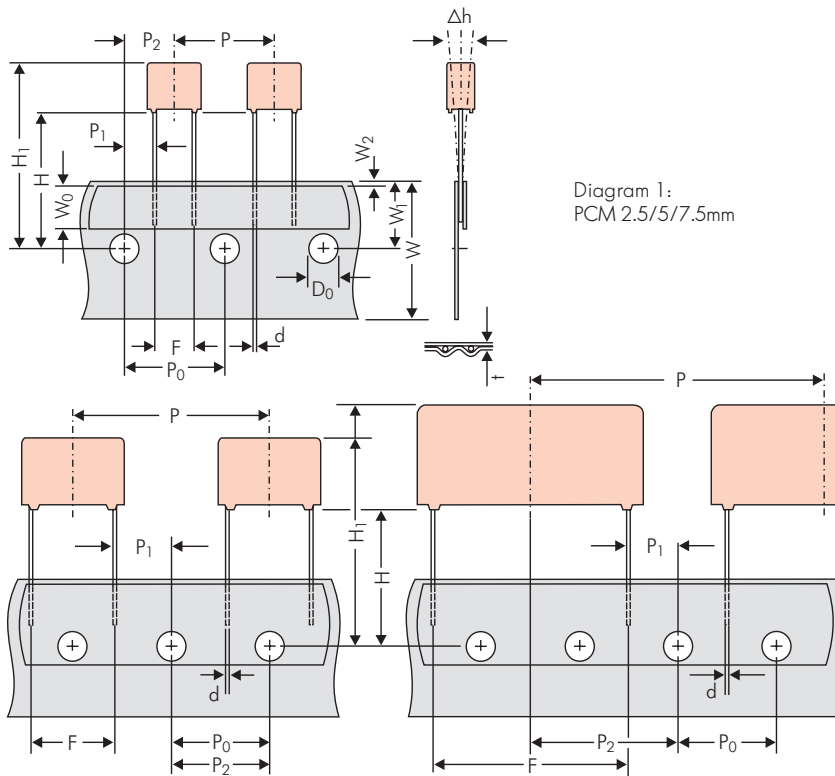


Diagram 2: PCM 10/15 mm

Diagram 3: PCM 22.5 and 27.5*mm

*PCM 27.5 tapping possible with two feed holes between components

Designation	Symbol	Dimensions for Radial Taping										
		PCM 2.5 tapping	PCM 5 tapping	PCM 7.5 tapping	PCM 10 tapping*	PCM 15 tapping*	PCM 22.5 tapping	PCM 27.5 tapping				
Carrier tape width	W	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5				
Hold-down tape width	W 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 149)	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	B 52 ±2 58 ±2 or 66 ±2	REEL	φ 500 max. φ 25 ±1	B 60 ±2 68 ±2	depending on PCM and component dimensions
Unit	see details page 150.											

Dims in mm.

* Diameter of pins see General Data.

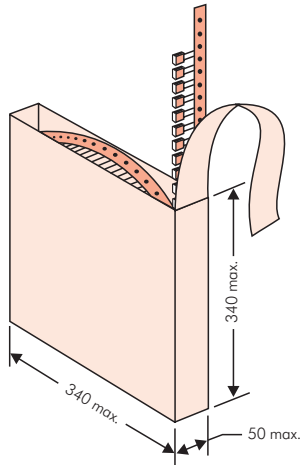
* PCM 10 and PCM 15 can be crimped to PCM 7.5.

Position of components according to PCM 7.5 (sketch 1). P₀ = 12.7 or 15.0 is possible

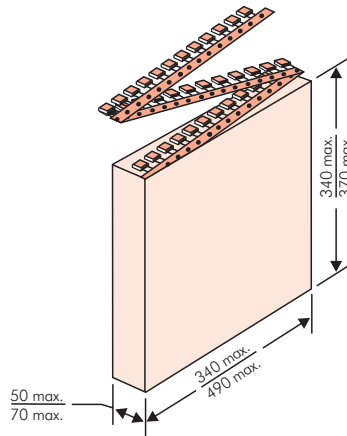
Please clarify customer-specific deviations with the manufacturer.

Types of Tape Packaging of Capacitors for Automatic Radial Insertion

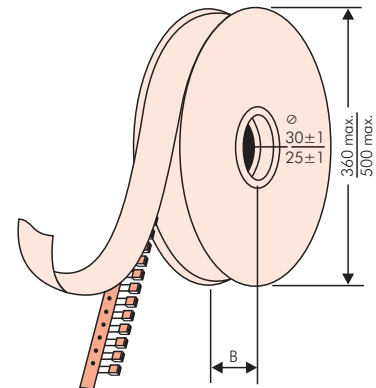
■ ROLL Packaging



■ AMMO Packaging



■ REEL Packaging



BAR CODE (Labelling)

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

Scanner decoding of

- WIMA supplier number
- Customer's P/O number
- Customer's part number
- WIMA confirmation number
- WIMA part number
- Lot number
- Date code
- Quantity

In addition part description of

- article
- capacitance value
- rated voltage
- dimensions
- capacitance tolerance
- packing

as well as gross weight and customer's name are indicated in plain text.

WIMA Best Capacitors Made in Germany		Werk Unna	
Supplier-ID: 123456789	RoHS 2011/65/EU	Date Code: 08.10.10	
Purchase Order No. (P/O): Bestellung xyz		Quantity: 5.000	
Customer Part No.: KUNDETEILENUMMER		Customer No.: 0000100002	
		Gross Weight [g]: 1870	
WIMA Confirmation No.: 0001004053000100	WIMA Part No.: MKS2C034701C00K88D		
Handling Unit: MKS 2	QTY: 5.000	COO: DE	
	MKS 2 0.47 µF 63 VDC 3.5x8.5x7.2 RMS		
1000067326	Standard 10% Loss - Standard	Drühte 6-2	Week 03/2011
	Vorlage Debitor Inland		

BARCODE „Code 39“



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 × 340	490 × 370			
					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				400				
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			3100	
	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	8.5	13.5	FA	3000			900	1600					1450	
	4	9	13	3C	3000			900	1600					1450	
	4	9.5	13	3D	3000			900	1600					1400	
	5	10	13.5	FB	2000			700	1300					1200	
	5	11	13	3F	3000			700	1300					1200	
	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	
	5	13	19	FC	1000			600	1200					1200	
	6	12.5	18	4C	2000			500	1000					1000	
	6	14	19	FD	1000			500	1000					1000	
	7	14	18	4D	1600			450	900					850	
	7	15	19	FE	1000			450	900					850	
	8	15	18	4F	1200			400	800					740	
	8	17	19	FF	500			400	800					740	
	9	14	18	4H	1200			350	700					650	
	9	16	18	4J	900			350	700					650	
	10	18	19	FG	500			300	650					590	
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	20	28	FH	500				500					480	
	8.5	18.5	26.5	5F	500				480					450	
	10	22	28	FI	570*				420					380	
	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	
	12	24	28	FJ	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	H16.5	H18.5	ø 360		ø 500		340 × 340		490 × 370
					N	O	F	I	H	J	A	C	B	D	
27.5 mm	9	19	31.5	6A	567*	–	–	–	–	460/340*	–	–	420		
	11	21	31.5	6B	459*	–	–	–	–	380/280*	–	–	350		
	13	24	31.5	6D	378*	–	–	–	–	300	–	–	290		
	13	25	33	FK	405*	–	–	–	–	–	–	–	–		
	15	26	31.5	6F	324*	–	–	–	–	270	–	–	250		
	15	26	33	FL	324*	–	–	–	–	–	–	–	–		
	17	29	31.5	6G	198*	–	–	–	–	–	–	–	–		
	17	34.5	31.5	6I	198*	–	–	–	–	–	–	–	–		
	20	32	33	FM	162*	–	–	–	–	–	–	–	–		
	20	39.5	31.5	6J	162*	–	–	–	–	–	–	–	–		
37.5 mm	9	19	41.5	7A	441*	–	–	–	–	–	–	–	–		
	11	22	41.5	7B	357*	–	–	–	–	–	–	–	–		
	13	24	41.5	7C	294*	–	–	–	–	–	–	–	–		
	15	26	41.5	7D	252*	–	–	–	–	–	–	–	–		
	17	29	41.5	7E	154*	–	–	–	–	–	–	–	–		
	19	32	41.5	7F	140*	–	–	–	–	–	–	–	–		
	20	39.5	41.5	7G	126*	–	–	–	–	–	–	–	–		
	24	45.5	41.5	7H	112*	–	–	–	–	–	–	–	–		
	31	46	41.5	7I	84*	–	–	–	–	–	–	–	–		
	35	50	41.5	7J	35*	–	–	–	–	–	–	–	–		
40	55	41.5	7K	28*	–	–	–	–	–	–	–	–			
48.5 mm	19	31	56	8D	120*	–	–	–	–	–	–	–	–		
	23	34	56	8E	80*	–	–	–	–	–	–	–	–		
	27	37.5	56	8H	84*	–	–	–	–	–	–	–	–		
	33	48	56	8J	25*	–	–	–	–	–	–	–	–		
	37	54	56	8L	25*	–	–	–	–	–	–	–	–		
52.5 mm	25	45	57	9D	70*	–	–	–	–	–	–	–	–		
	30	45	57	9E	60*	–	–	–	–	–	–	–	–		
	35	50	57	9F	25*	–	–	–	–	–	–	–	–		
	45	55	57	9H	20*	–	–	–	–	–	–	–	–		
	45	65	57	9J	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

WIMA Part Number System



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 μ F			2.5x6.5x7.2		-	20%	bulk	6-2			

Type description:	Rated voltage:	Capacitance:	Size:	Tolerance:	Packing:
SMD-PET = SMDT	50 VDC = B0	22 pF = 0022	4.8x3.3x3 Size 1812 = KA	\pm 20% = M	AMMO H16.5 340x340 = A
SMD-PEN = SMDN	63 VDC = C0	47 pF = 0047	4.8x3.3x4 Size 1812 = KB	\pm 10% = K	AMMO H16.5 490x370 = B
SMD-PPS = SMDI	100 VDC = D0	100 pF = 0100	5.7x5.1x3.5 Size 2220 = QA	\pm 5% = J	AMMO H18.5 340x340 = C
FKP 02 = FKPO	250 VDC = F0	150 pF = 0150	5.7x5.1x4.5 Size 2220 = QB	\pm 2.5% = H	AMMO H18.5 490x370 = D
MKS 02 = MKS0	400 VDC = G0	220 pF = 0220	7.2x6.1x3 Size 2824 = TA	\pm 1% = E	REEL H16.5 360 = F
FKS 2 = FKS2	450 VDC = H0	330 pF = 0330	7.2x6.1x5 Size 2824 = TB	...	REEL H16.5 500 = H
FKP 2 = FKP2	520 VDC = H2	470 pF = 0470	10.2x7.6x5 Size 4030 = VA		REEL H18.5 360 = I
FKS 3 = FKS3	600 VDC = I0	680 pF = 0680	12.7x10.2x6 Size 5040 = XA		REEL H18.5 500 = J
FKP 3 = FKP 3	630 VDC = J0	1000 pF = 1100	15.3x13.7x7 Size 6054 = YA		ROLL H16.5 = N
MKS 2 = MKS2	700 VDC = K0	1500 pF = 1150	2.5x7x4.6 PCM 2.5 = 0B		ROLL H18.5 = O
MKP 2 = MKP2	800 VDC = L0	2200 pF = 1220	3x7.5x4.6 PCM 2.5 = 0C		BLISTER W12 180 = P
MKS 4 = MKS4	850 VDC = M0	3300 pF = 1330	2.5x6.5x7.2 PCM 5 = 1A		BLISTER W12 330 = Q
MKP 4C = MKPC	900 VDC = N0	4700 pF = 1470	3x7.5x7.2 PCM 5 = 1B		BLISTER W16 330 = R
MKP 4 = MKP4	1000 VDC = O1	6800 pF = 1680	2.5x7x10 PCM 7.5 = 2A		BLISTER W24 330 = T
MKP 10 = MKP1	1100 VDC = P0	0.01 μ F = 2100	3x8.5x10 PCM 7.5 = 2B		Bulk/TPS Standard = S
FKP 1 = FKP1	1200 VDC = Q0	0.022 μ F = 2220	3x9x13 PCM 10 = 3A		...
MKP-X2 = MKX2	1250 VDC = R0	0.047 μ F = 2470	4x9x13 PCM 10 = 3C		
MKP-X1 R = MKX1	1500 VDC = S0	0.1 μ F = 3100	5x11x18 PCM 15 = 4B		
MKP-Y2 = MKY2	1600 VDC = T0	0.22 μ F = 3220	6x12.5x18 PCM 15 = 4C		
MP 3-X2 = MPX2	2000 VDC = U0	0.47 μ F = 3470	5x14x26.5 PCM 22.5 = 5A		
MP 3-X1 = MPX1	2500 VDC = V0	1 μ F = 4100	6x15x26.5 PCM 22.5 = 5B		
MP 3-Y2 = MPY2	3000 VDC = W0	2.2 μ F = 4220	9x19x31.5 PCM 27.5 = 6A		
MP 3R-Y2 = MPRY	4000 VDC = X0	4.7 μ F = 4470	11x21x31.5 PCM 27.5 = 6B		
MKP 4F = MKPF	6000 VDC = Y0	10 μ F = 5100	9x19x41.5 PCM 37.5 = 7A		
Snubber MKP = SNMP	250 VAC = 0W	22 μ F = 5220	11x22x41.5 PCM 37.5 = 7B		
Snubber FKP = SNFP	275 VAC = 1W	47 μ F = 5470	19x31x56 PCM 48.5 = 8D		
GTO MKP = GTOM	300 VAC = 2W	100 μ F = 6100	25x45x57 PCM 52.5 = 9D		
DC-LINK MKP 3 = DCP3	305 VAC = AW	220 μ F = 6220	...		
DC-LINK MKP 4 = DCP4	350 VAC = BW	1000 μ F = 7100			
DC-LINK MKP 4S = DCP5	440 VAC = 4W	1500 μ F = 7150			
DC-LINK MKP 5 = DCP5	500 VAC = 5W	...			
DC-LINK MKP 6 = DCP6	...				
DC-LINK HC = DCHC					
DC-LINK HY = DCHY					

Version code:	Pin length (untaped)	Pin length (taped)
Standard = 00	3.5 \pm 0.5 = C9	none = 00
Version A1 = 1A	6-2 = SD	
Version A1.1.1 = 1B	16 \pm 1 = P1	
Version A2 = 2A	...	
...		

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.