WIMA FKP 4

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** AEC-Q200
- **According to RoHS 2015/863/EU**

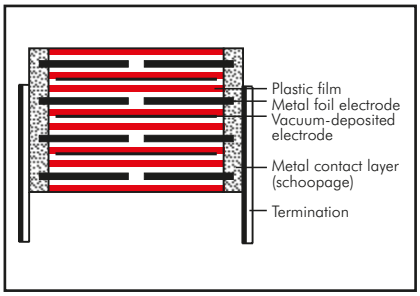
Typical Applications

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 ⩽ 0.1 µF: ⩾ 1 x 10^5 MΩ
C > 0.1 µF: ⩾ 10 000 sec (MΩ x µF)
Measuring voltage: 100 V/1 min.
Dissipation factors at +20° C: tan δ

at f	C⩽0.1 µF	0.1 µF < C ⩽ 1.0 µF	C>1.0 µF
1 kHz	⩽ 5x10^{-4}	⩽5x10^{-4}	⩽ 5x10^{-4}
10 kHz	⩽ 6x10^{-4}	⩽6x10^{-4}	–
100 kHz	⩽10x10^{-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 x U_r and 40° C)

Maximum pulse rise time:

Capacitance pF/µF	max. pulse rise time V/µsec at T_A < 40° 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 ⩽ 0.8 Ø: 10 N in direction of pins
d > 0.8 Ø: 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:
1kPa = 10 mbar in accordance with IEC 60068-2-13
Bump test:
4000 bumps at 390 m/sec^2
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.

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Continuation

General Data

Capacitance	400 VDC/250 VAC* W	H	L	PCM**	Part number	630 VDC/400 VAC* 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____
						6	15	26.5	22.5	FKP4J023305B00____
0.047 „	8	15	18	15	FKP4G024704F00____	9	16	18	15	FKP4J024704J00____
	6	15	26.5	22.5	FKP4G024705B00____	7	16.5	26.5	22.5	FKP4J024705D00____
0.068 „	7	16.5	26.5	22.5	FKP4G026805D00____	8.5	18.5	26.5	22.5	FKP4J026805F00____
0.1 µF	8.5	18.5	26.5	22.5	FKP4G031005F00____	10.5	19	26.5	22.5	FKP4J031005G00____
						11	21	31.5	27.5	FKP4J031006B00____
0.15 „	11	21	26.5	22.5	FKP4G031505I00____	11	21	26.5	22.5	FKP4J031505I00____
	9	19	31.5	27.5	FKP4G031506A00____	11	21	31.5	27.5	FKP4J031506B00____
0.22 „	11	21	31.5	27.5	FKP4G032206B00____	13	24	31.5	27.5	FKP4J032206D00____
0.33 „	13	24	31.5	27.5	FKP4G033306D00____	15	26	31.5	27.5	FKP4J033306F00____
0.47 „	17	29	31.5	27.5	FKP4G034706G00____	17	34.5	31.5	27.5	FKP4J034706I00____
0.68 „	17	34.5	31.5	27.5	FKP4G036806I00____	17	34.5	31.5	27.5	FKP4J036806I00____
						19	32	41.5	37.5	FKP4J036807F00____
1.0 µF	20	39.5	31.5	27.5	FKP4G041006J00____	20	39.5	41.5	37.5	FKP4J041007G00____
1.5 „	20	39.5	41.5	37.5	FKP4G041507G00____	24	45.5	41.5	37.5	FKP4J041507H00____
2.2 „	24	45.5	41.5	37.5	FKP4G042207H00____	31	46	41.5	37.5	FKP4J042207I00____
3.3 „	31	46	41.5	37.5	FKP4G043307I00____	40	55	41.5	37.5	FKP4J043307K00____
4.7 „	40	55	41.5	37.5	FKP4G044707K00____					

Capacitance	1000 VDC/600 VAC* W	H	L	PCM**	Part number	1250 VDC/600 VAC* 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____
0.15 „	13	24	31.5	27.5	FKP4O131506D00____	15	26	31.5	27.5	FKP4R031506F00____
0.22 „	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____
0.68 „	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____
1.5 „	35	50	41.5	37.5	FKP4O141507J00____	35	50	41.5	37.5	FKP4R041507J00____
2.2 „	35	50	41.5	37.5	FKP4O142207J00____					

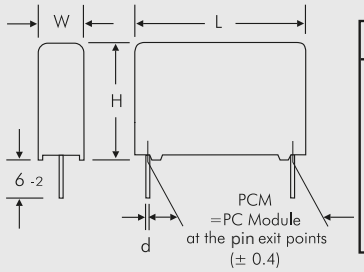
* AC voltage: f = 1000 Hz; 1.4 x U_{rms} + UDC ⩽ U_r

** 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 157.

Continuation page 80

Continuation

General Data

Capacitance	1600 VDC/650 VAC* W	H	L	PCM**	Part number	2000 VDC/700 VAC* 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____					

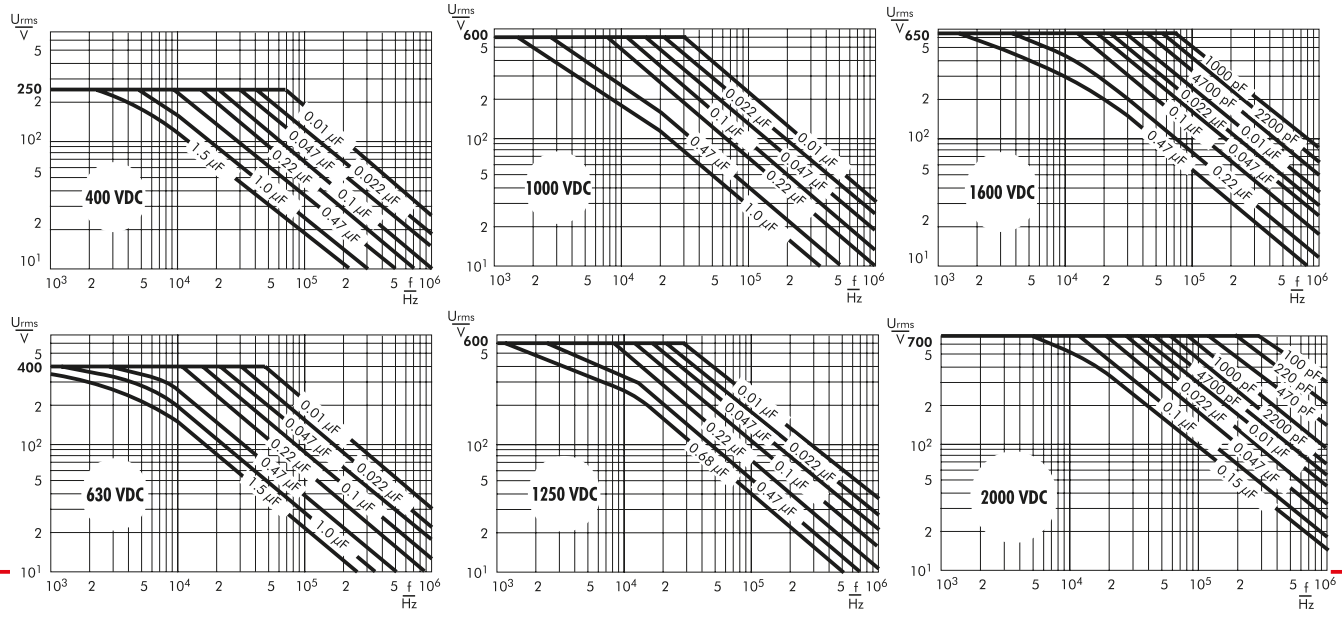
* AC voltage: f = 1000 Hz; 1.4 x U_{rms} + UDC ⩽ U_r

** PCM = Printed circuit module = pin spacing

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

Dims. in mm.

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: $T_{max.} \leqslant 125°$ C
soldering: $T_{max.} \leqslant 135°$ C

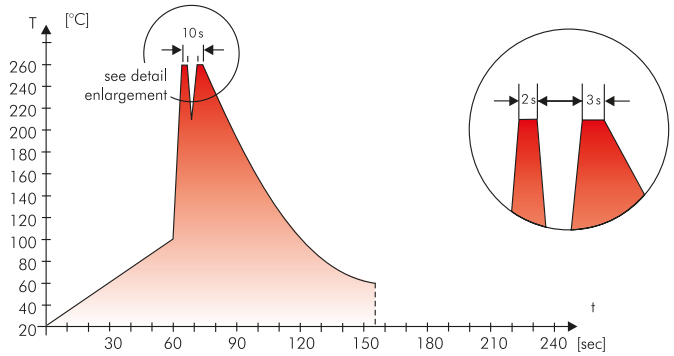
Polypropylene: preheating: $T_{max.} \leqslant 100°$ C
soldering: $T_{max.} \leqslant 110°$ C

Single wave soldering
Soldering bath temperature: T < 260° C
Dwell time: t < 5 sec

Double wave soldering
Soldering bath temperature: T < 260° C
Dwell time: ∑t < 5 sec

Due to different soldering processes and heat requirements the graphs are to be regarded as a recommendation only.

Wave soldering



Typical temperature/time graph for double wave soldering

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-fraind from using such substances since years already.

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

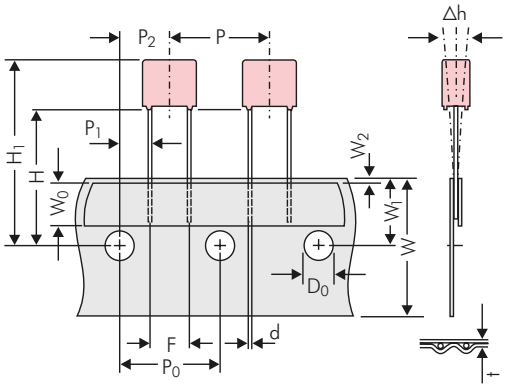


Diagram 1:
PCM 2.5/5/7.5mm

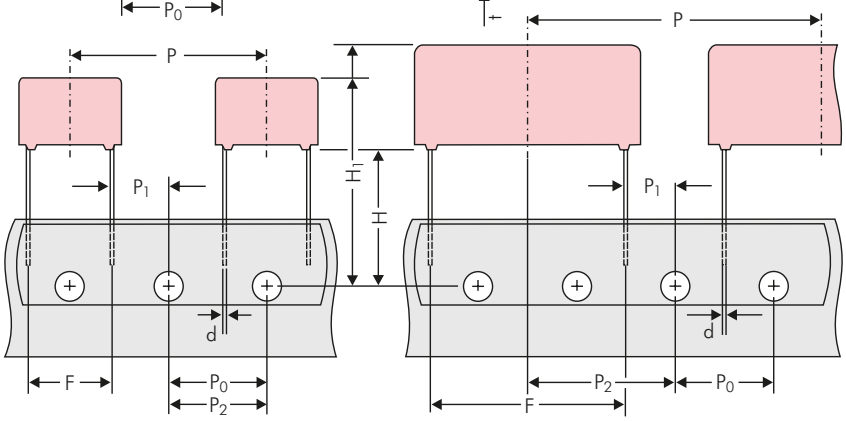


Diagram 2: PCM 10/15 mm

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_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	16.5 ±0.3	16.5 ±0.5	16.5 ±0.5	16.5 ±0.5	16.5 ±0.5	16.5 ±0.5
		18.5 ±0.5	18.5 ±0.5	18.5 ±0.5	18.5 ±0.5	18.5 ±0.5	18.5 ±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	0.6 ±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 / 66 ±2 or REEL Ø 500 max. Ø 25 ±1 B 54 ±2 / 60 ±2 / 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_0 = 12.7 or 15.0 is possible

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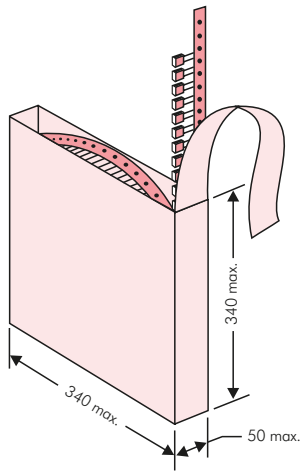
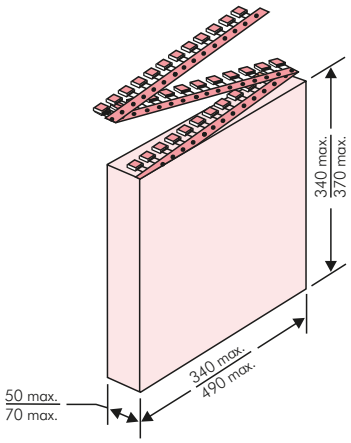
Types of Tape Packaging of Capacitors for Automatic Radial Insertion

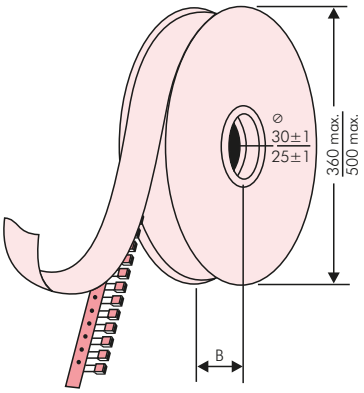
ROLL Packaging



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

BARCODE PDF417
BARCODE 2D Datamatrix

04.23

Packing Quantities for Capacitors with Radial Pins in PCM 2.5 mm to 27.5 mm

PCM	Size				bulk	pcs. per packing unit									
						ROLL		REEL				AMMO			
								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
	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.

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

PCM	Size				bulk	pcs. per packing unit									
						ROLL		REEL				AMMO			
								∅ 360		∅ 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
	W	H	L	Codes	S	N	O	F	I	H	J	A	C	B	D
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*	–		–		–		–		–	
	28	38	41.5	**7L**	84*	–		–		–		–		–	
	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*	–		–		–		–		–	

* 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.

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 µF				2.5x6.5x7.2		-		20%	bulk	6 -2	

Type description:

SMD-PET	= SMDT
SMD-PEN	= SMDN
SMD-PPS	= SMDI
FKP 02	= FKP0
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
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

Rated voltage:

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
230 VAC	= 3Y
275 VAC	= 1W
300 VAC	= 2W
305 VAC	= AW
350 VAC	= BW
440 VAC	= 4W
...	

Capacitance:

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
...	

Size:

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
...	

Version code:

Standard	= 00
Version A1	= 1A
Version A1.1.1	= 1B
Version A2	= 2A
...	

Tolerance:

±20%	= M
±10%	= K
±5%	= J
±2.5%	= H
±1%	= E
...	

Packing:

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
...	

Pin length (untaped)

3.5 ±0.5	= C9
6 -2	= SD
16 ±1	= P1
...	

Pin length (taped)

none	= 00

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.