

Polypropylene (PP) Film and Foil Capacitors for Pulse Applications in PCM 5 mm

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 2002/95/EC

Typical Applications

For high frequency applications e.g.

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

Construction

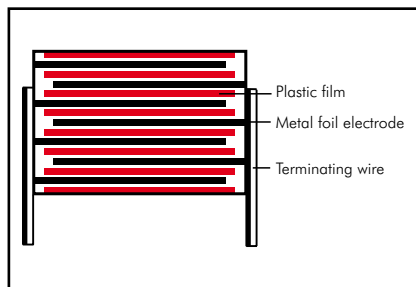
Dielectric:

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.

Epoxy resin seal: Yellow

Electrical Data

Capacitance range:

33 pF to 0.033 μ F (E12-values on request)

Rated voltages:

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

Capacitance tolerances:

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

Operating temperature range:

-55°C to $+100^\circ\text{C}$

Test specifications:

In accordance with IEC 60384-13 and EN 131 800

Climatic test category:

55/100/56 in accordance with IEC

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

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

(mean value: $1 \times 10^6 \text{ M}\Omega$)

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	$\leq 3 \times 10^{-4}$	$\leq 4 \times 10^{-4}$	$\leq 4 \times 10^{-4}$
10 kHz	$\leq 3 \times 10^{-4}$	$\leq 4 \times 10^{-4}$	$\leq 4 \times 10^{-4}$
100 kHz	$\leq 4 \times 10^{-4}$	$\leq 5 \times 10^{-4}$	–
1 MHz	$\leq 10 \times 10^{-4}$	–	–

Test voltage: $2 U_r$, 2 sec.

Maximum pulse rise time:

1000 V/ μ sec for pulses equal to the rated voltage

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 $< 5 \text{ fit}$ ($0.5 \times U_r$ 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	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_____					

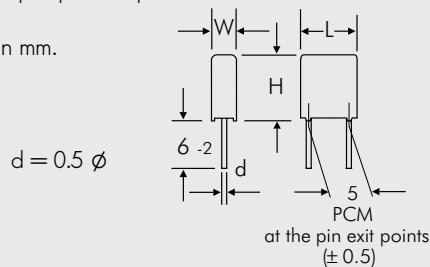
Capacitance	250 VDC/160 VAC*					400 VDC/220 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
100 pF	4.5	6	7.2	5	FKP2F001001D00_____	4.5	6	7.2	5	FKP2G001001D00_____
150 "	4.5	6	7.2	5	FKP2F001501D00_____	4.5	6	7.2	5	FKP2G001501D00_____
220 "	4.5	6	7.2	5	FKP2F002201D00_____	4.5	6	7.2	5	FKP2G002201D00_____
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: $f \leq 1000 \text{ Hz}$; $1.4 \times U_{\text{rms}} + U_{\text{DC}} \leq U_r$

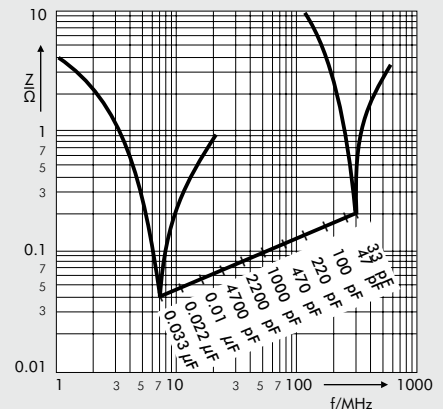
** PCM = Printed circuit module = pin spacing.

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

Dims. in mm.



Part number completion:	
Tolerance:	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 127.	



Impedance change with frequency (general guide).

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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.

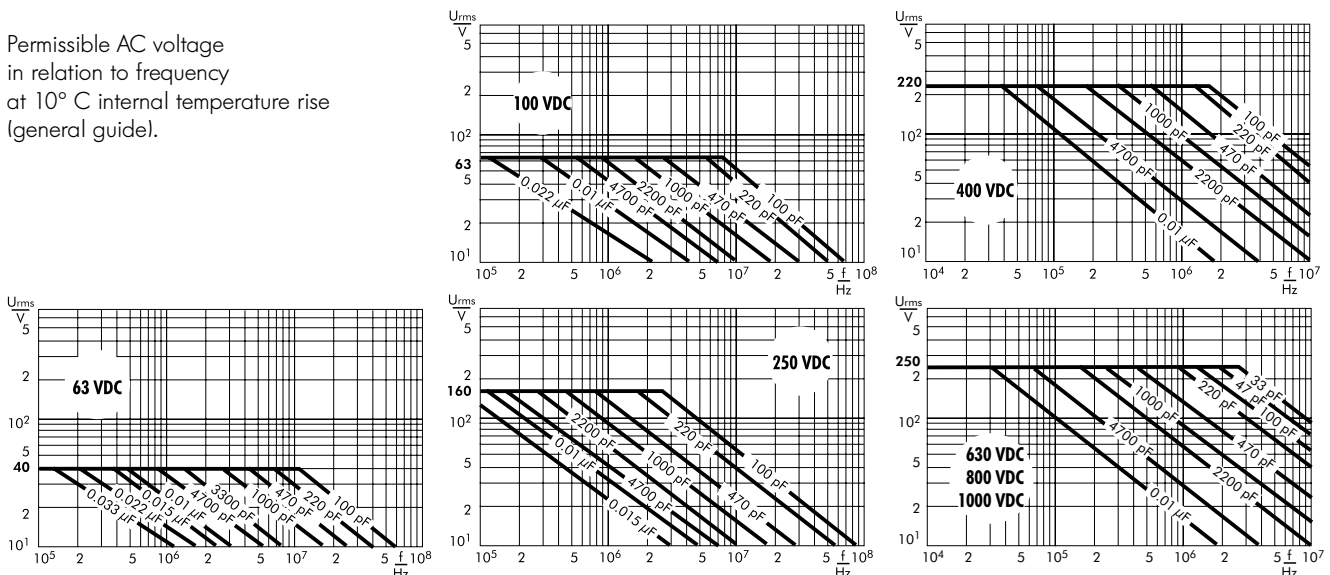
Part number completion:	
Tolerance:	10 % = K
	5 % = J
	2.5 % = H
	2 % = G
	1.5 % = F
	1 % = E
Packing:	bulk = S
Pin length:	6-2 = SD
Taped version see page 127.	

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

** PCM = Printed circuit module = pin spacing.

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Permissible AC voltage in relation to frequency at 10° C internal temperature rise (general guide).



Recommendation for Processing and Application of Through-Hole Capacitors

Soldering Process

A preheating of through-hole WIMA capacitors is allowed for temperatures $T_{\max} < 100^{\circ}\text{C}$. In practice a preheating duration of $t < 5$ min. has been proven to be best.

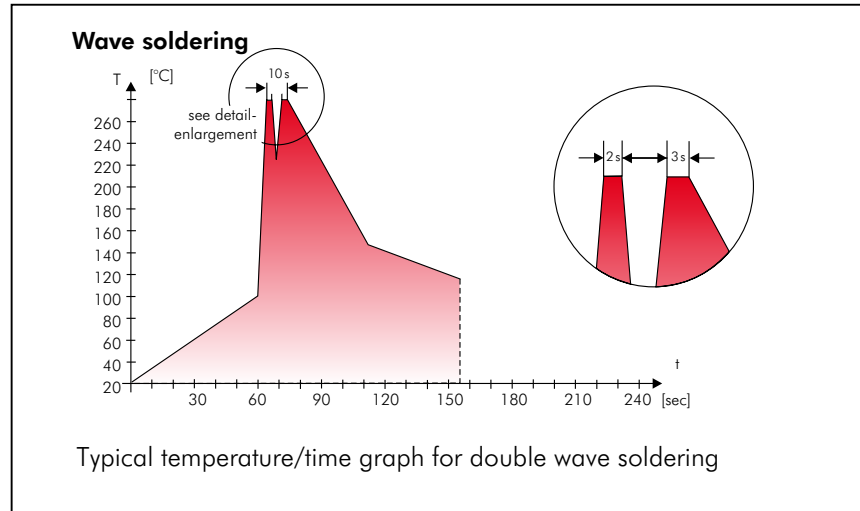
Single wave soldering

Soldering bath temperature: $T < 260^{\circ}\text{C}$
Immersion time: $t < 5$ sec

Double wave soldering

Soldering bath temperature: $T < 260^{\circ}\text{C}$
Immersion time: $2 \times t < 3$ sec

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



WIMA Quality and Environmental Philosophy

ISO 9001:2008 Certification

ISO 9001:2008 is an international basic standard of quality assurance systems for all branches of industry. The approval according to ISO 9001:2008 of our factories by the VDE inspectorate certifies that organisation, equipment and monitoring of quality assurance in our factories correspond to internationally recognized standards.

WIMA WPCS

The WIMA Process Control System (WPCS) is a quality surveillance and optimization system developed by WIMA. WPCS is a major part of the quality-oriented WIMA production. Points of application of WPCS during production process:

- incoming material inspection
- metallization
- film inspection
- schoopage
- pre-healing
- pin attachment
- cast resin preparation/encapsulation
- 100% final inspection
- AQL check

WIMA Environmental Policy

All WIMA capacitors, irrespective of whether through-hole devices or SMD, are made of environmentally friendly materials. Neither during manufacture nor in the product itself any toxic substances are used, e.g.

- Lead
- PCB
- CFC
- Hydrocarbon chloride
- Chromium 6+
- PBB/PBDE
- Arsenic
- Cadmium
- Mercury
- etc.

We merely use pure, recyclable materials for packing our components, such as:

- carton
- cardboard
- adhesive tape made of paper
- polystyrene

We almost completely refrain from using packing materials such as:

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

RoHS Compliance

According to the RoHS Directive 2002/95/EC certain hazardous substances like e.g. lead, cadmium, mercury must not be used any longer in electronic equipment as of July 1st, 2006. For the sake of the environment WIMA has refrained from using such substances since years already.



WIMA Kondensatoren sind bleifrei konform RoHS 2002/95/EG

WIMA capacitors are lead free in accordance with RoHS 2002/95/EC

Tape for lead-free WIMA capacitors

DIN EN ISO 14001:2004

WIMA's environmental management has been established in accordance with the guidelines of DIN EN ISO 14001:2004 to optimize the production processes with regard to energy and resources.

Typical Dimensions for Taping Configuration

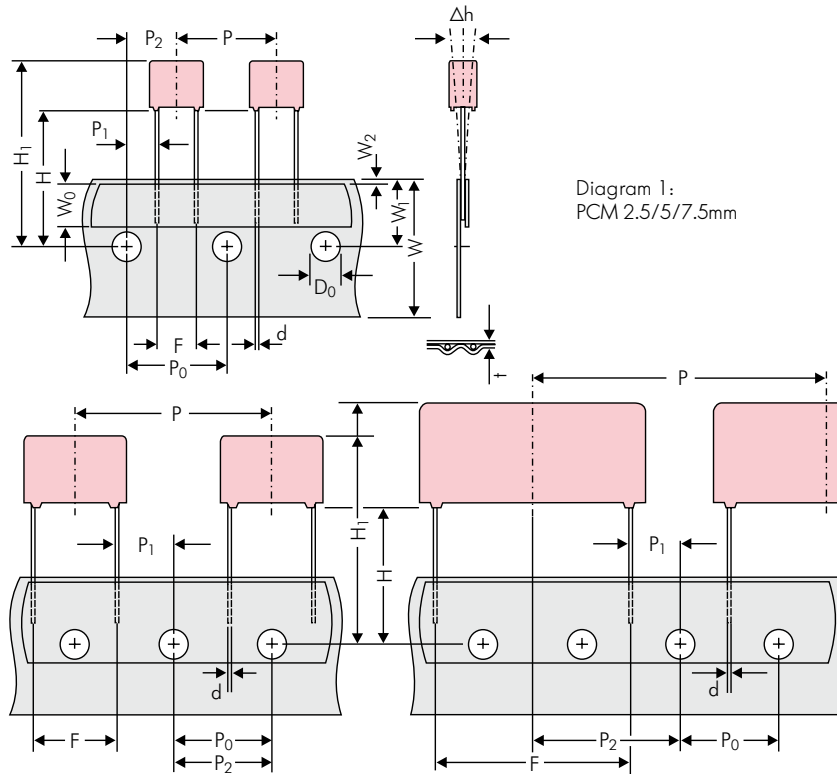


Diagram 1:
PCM 2.5/5/7.5mm

Diagram 2: PCM 10/15 mm

Diagram 3: PCM 22.5 and 27.5*mm

*PCM 27.5 taping possible with two feed holes between components

Designation	Symbol	Dimensions for Radial Taping						
		PCM 2.5 taping	PCM 5 taping	PCM 7.5 taping	PCM 10 taping*	PCM 15 taping*	PCM 22.5 taping	PCM 27.5 taping
Carrier tape width	W	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5
Hold-down tape width	W 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 128)	ROLL/AMMO			AMMO				
	REEL	φ 360 max. φ 30 ±1	B 52 ±2 58 ±2 } depending on comp. dimensions	REEL	φ 360 max. φ 30 ±1	52 ±2 58 ±2 or 66 ±2	REEL	φ 500 max. φ 25 ±1
Unit	see details page 130.							

Dims in mm.

* Diameter of pins see General Data.

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

Position of components according to PCM 7.5 (sketch 11). P₀ = 12.7 or 15.0 is possible

Please clarify customer-specific deviations with the manufacturer.

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



PCM	Size				bulk	pcs. per packing unit									
						ROLL		REEL				AMMO			
	W	H	L	Codes		S	H16.5	H18.5	ø 360	H16.5	H18.5	ø 500	H16.5	H18.5	340 x 340
					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		700		–		700		–	
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		2800
	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	540*		–		–		420		–		380
	10.5	19	26.5	5G	680*		–		–		400		–		360
	10.5	20.5	26.5	5H	680*		–		–		400		–		360
	11	21	26.5	5I	680*		–		–		380		–		350
	12	24	28	FJ	450*		–		–		350		–		310

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

■ Moulded versions.

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

PCM	Size				bulk	pcs. per packing units								
						ROLL		REEL				AMMO		
	W	H	L	Codes		S	H16.5	H18.5	ø 360		ø 500		340 × 340	
					N	O	F	I	H	J	A	C	B	D
27.5 mm	9	19	31.5	6A	640*	–	–	–	–	460/340*	–	–	–	420
	11	21	31.5	6B	544*	–	–	–	–	380/280*	–	–	–	350
	13	24	31.5	6D	448*	–	–	–	–	300	–	–	–	290
	13	25	33	6K	336*	–	–	–	–	270	–	–	–	250
	15	26	31.5	6F	384*	–	–	–	–	–	–	–	–	–
	15	26	33	6L	288*	–	–	–	–	–	–	–	–	–
	17	29	31.5	6G	176*	–	–	–	–	–	–	–	–	–
	17	34.5	31.5	6I	176*	–	–	–	–	–	–	–	–	–
	19	30	31.5	6L	50*	–	–	–	–	–	–	–	–	–
	20	32	33	6M	216*	–	–	–	–	–	–	–	–	–
20	39.5	31.5	6J	144*	–	–	–	–	–	–	–	–	–	
37.5 mm	9	19	41.5	7A	480*	–	–	–	–	–	–	–	–	–
	11	22	41.5	7B	408*	–	–	–	–	–	–	–	–	–
	13	24	41.5	7C	252*	–	–	–	–	–	–	–	–	–
	15	26	41.5	7D	144*	–	–	–	–	–	–	–	–	–
	17	29	41.5	7E	132*	–	–	–	–	–	–	–	–	–
	19	32	41.5	7F	108*	–	–	–	–	–	–	–	–	–
	20	39.5	41.5	7G	108*	–	–	–	–	–	–	–	–	–
	24	45.5	41.5	7H	84*	–	–	–	–	–	–	–	–	–
	31	46	41.5	7I	72*	–	–	–	–	–	–	–	–	–
	35	50	41.5	7J	35*	–	–	–	–	–	–	–	–	–
40	55	41.5	7K	28*	–	–	–	–	–	–	–	–	–	
48.5 mm	19	31	56	8D	50*	–	–	–	–	–	–	–	–	–
	23	34	56	8E	72*	–	–	–	–	–	–	–	–	–
	27	37.5	56	8H	60*	–	–	–	–	–	–	–	–	–
	33	48	56	8J	48*	–	–	–	–	–	–	–	–	–
	37	54	56	8L	25*	–	–	–	–	–	–	–	–	–
52.5 mm	35	50	57	9F	25*	–	–	–	–	–	–	–	–	–
	45	55	57	9H	20*	–	–	–	–	–	–	–	–	–
	45	65	57	9J	20*	–	–	–	–	–	–	–	–	–

* for 2-inch transport pitches.

* Tray Packing System

Samples and pre-production needs on request.

■ Moulded versions.

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A WIMA part number consists of 18 digits and is composed as follows:

- Field 1 - 4: Type description
- Field 5 - 6: Rated voltage
- Field 7 - 10: Capacitance
- Field 11 - 12: Size and PCM
- Field 13 - 14: Special features (e.g. Snubber versions)
- Field 15: Capacitance tolerance
- Field 16: Packing
- Field 17 - 18: Lead length (untaped)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
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		

<p>Type description:</p> <p>SMD-PET = SMDT SMD-PPS = SMDI FKP 02 = FKP0 MKS 02 = MKS0 FKS 2 = FKS2 FKP 2 = FKP2 MKS 2 = MKS2 MKP 2 = MKP2 FKS 3 = FKS3 FKP 3 = FKP3 MKS 4 = MKS4 MKP 4 = MKP4 MKP 10 = MKP1 FKP 4 = FKP4 FKP 1 = FKP1 MKP-X2 = MKX2 MKP-X2 R = MKXR MKP-Y2 = MKY2 MP 3-X2 = MPX2 MP 3-X1 = MPX1 MP 3-Y2 = MPY2 MP 3R-Y2 = MPRY Snubber MKP = SNMP Snubber FKP = SNFP GTO MKP = GTOM DC-LINK MKP 4 = DCP4 DC-LINK MKP 5 = DCP5 DC-LINK MKP 6 = DCP6 DC-LINK HC = DCH_ SuperCap C = SCSC SuperCap MC = SCMC SuperCap R = SCSR SuperCap MR = SCMR</p>	<p>Rated voltage:</p> <p>2.5 VDC = A1 4 VDC = A2 14 VDC = A3 28 VDC = A4 40 VDC = A5 5 VDC = A6 50 VDC = B0 63 VDC = C0 100 VDC = D0 160 VDC = E0 250 VDC = F0 400 VDC = G0 450 VDC = H0 600 VDC = I0 630 VDC = J0 700 VDC = K0 800 VDC = L0 850 VDC = M0 900 VDC = N0 1000 VDC = O1 1100 VDC = P0 1200 VDC = Q0 1250 VDC = R0 1500 VDC = S0 1600 VDC = T0 2000 VDC = U0 2500 VDC = V0 3000 VDC = W0 4000 VDC = X0 6000 VDC = Y0 250 VAC = 0W 275 VAC = 1W 300 VAC = 2W 400 VAC = 3W 440 VAC = 4W 500 VAC = 5W</p>	<p>Capacitance:</p> <p>22 pF = 0022 47 pF = 0047 100 pF = 0100 150 pF = 0150 220 pF = 0220 330 pF = 0330 470 pF = 0470 680 pF = 0680 1000 pF = 1100 1500 pF = 1150 2200 pF = 1220 3300 pF = 1330 4700 pF = 1470 6800 pF = 1680 0.01 µF = 2100 0.022 µF = 2220 0.047 µF = 2470 0.1 µF = 3100 0.22 µF = 3220 0.47 µF = 3470 1 µF = 4100 2.2 µF = 4220 4.7 µF = 4470 10 µF = 5100 22 µF = 5220 47 µF = 5470 100 µF = 6100 220 µF = 6220 1 F = A010 2.5 F = A025 50 F = A500 100 F = B100 110 F = B110 600 F = B600 1200 F = C120 ...</p>	<p>Size:</p> <p>4.8x3.3x3 Size 1812 = KA 4.8x3.3x4 Size 1812 = KB 5.7x5.1x3.5 Size 2220 = QA 5.7x5.1x4.5 Size 2220 = QB 7.2x6.1x3 Size 2824 = TA 7.2x6.1x5 Size 2824 = TB 10.2x7.6x5 Size 4030 = VA 12.7x10.2x6 Size 5040 = XA 15.3x13.7x7 Size 6054 = YA 2.5x7x4.6 PCM 2.5 = 0B 3x7.5x4.6 PCM 2.5 = 0C 2.5x6.5x7.2 PCM 5 = 1A 3x7.5x7.2 PCM 5 = 1B 2.5x7x10 PCM 7.5 = 2A 3x8.5x10 PCM 7.5 = 2B 3x9x13 PCM 10 = 3A 4x9x13 PCM 10 = 3C 5x11x18 PCM 15 = 4B 6x12.5x18 PCM 15 = 4C 5x14x26.5 PCM 22.5 = 5A 6x15x26.5 PCM 22.5 = 5B 9x19x31.5 PCM 27.5 = 6A 11x21x31.5 PCM 27.5 = 6B 9x19x41.5 PCM 37.5 = 7A 11x22x41.5 PCM 37.5 = 7B 94x49x182 DCH_ = H0 94x77x182 DCH_ = H1 ...</p> <p>Special features:</p> <p>Standard = 00 Version A1 = 1A Version A1.1.1 = 1B Version A1.2 = 1C ...</p>	<p>Tolerance:</p> <p>20% = M 10% = K 5% = J 2.5% = H 1% = E ...</p> <p>Packing:</p> <p>AMMO H16.5 340x340 = A AMMO H16.5 490x370 = B AMMO H18.5 340x340 = C AMMO H18.5 490x370 = D REEL H16.5 360 = F REEL H16.5 500 = H REEL H18.5 360 = I REEL H18.5 500 = J ROLL H16.5 = N ROLL H18.5 = O BLISTER W12 180 = P BLISTER W12 330 = Q BLISTER W16 330 = R BLISTER W24 330 = T Bulk Standard = S TPS Standard = Y ...</p> <p>Lead length (untaped)</p> <p>3.5 ±0.5 = C9 6 -2 = SD 16 ±1 = P1 ...</p>
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The data on this page is not complete and serves only to explain the part number system. Part number information is listed on the pages of the respective WIMA range.