

## 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

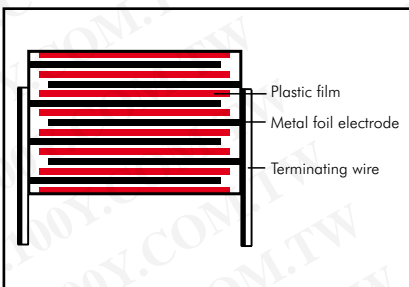
#### Dielectric:

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  $\mu$ 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:

$-55^\circ\text{C}$  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/ $\mu$ 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  $40^\circ\text{C}$ )

### Mechanical Tests

#### Pull test on pins:

10 N in direction of pins according to IEC 60068-2-21

#### Vibration:

6 hours at 10...2000 Hz and 0.75 mm displacement amplitude or 10 g in accordance with IEC 60068-2-6

#### Low air density:

1kPa = 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.

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					

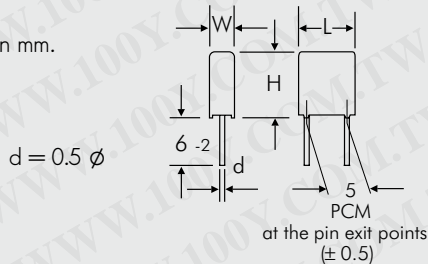
Capacitance	250 VDC/160 VAC*					400 VDC/220 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
100 pF	4.5	6	7.2	5	FKP2F001001D00	4.5	6	7.2	5	FKP2G001001D00
150 "	4.5	6	7.2	5	FKP2F001501D00	4.5	6	7.2	5	FKP2G001501D00
220 "	4.5	6	7.2	5	FKP2F002201D00	4.5	6	7.2	5	FKP2G002201D00
330 "	4.5	6	7.2	5	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.

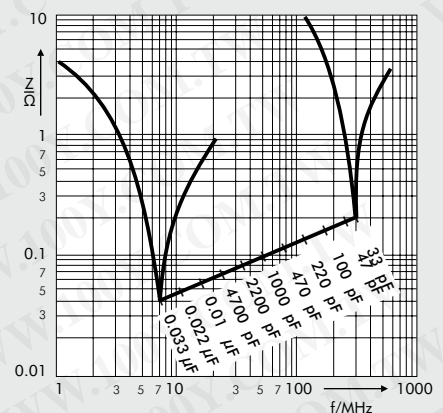
E12 values and individual values available from 27 pF up on request.

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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## 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.

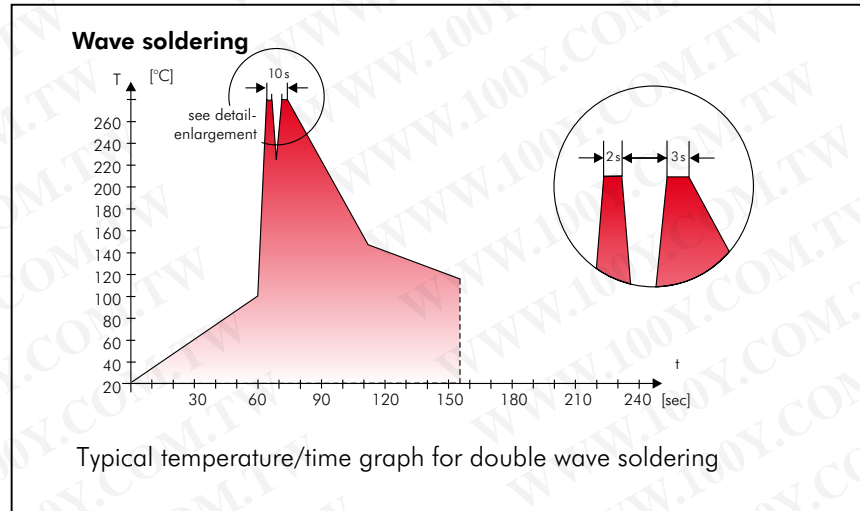
#### Single wave soldering

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 14001:2009

WIMA's environmental management has been established in accordance with the guidelines of DIN EN ISO 14001:2009 to optimize the production processes with regard to energy and resources.

# Typical Dimensions for Taping Configuration

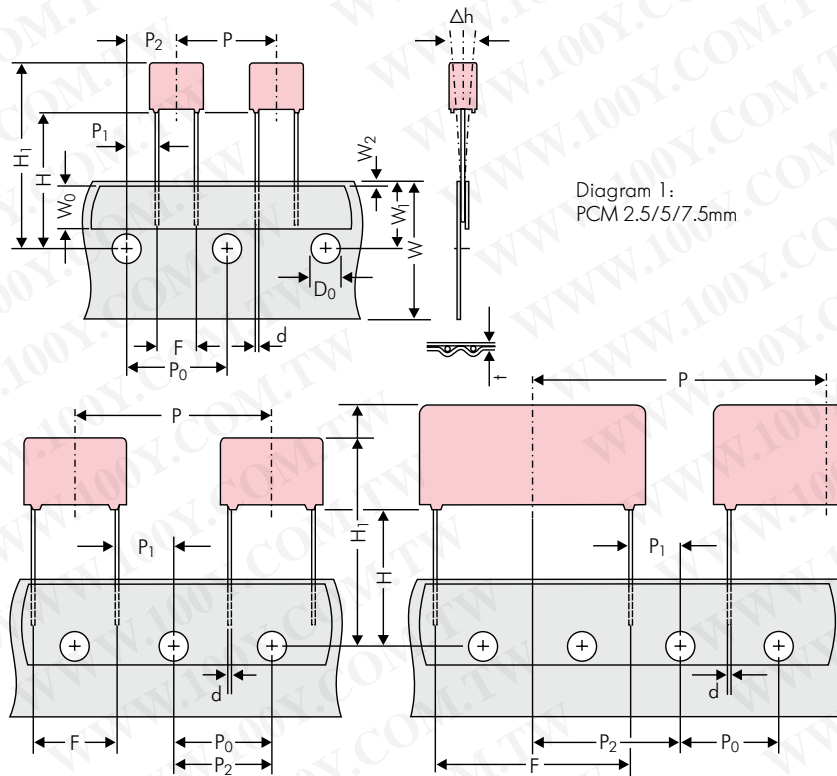


Diagram 1:  
PCM 2.5/5/7.5mm

Diagram 2: PCM 10/15 mm

Diagram 3: PCM 22.5 and 27.5\*mm

\*PCM 27.5 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 <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	0.7 ±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). P<sub>0</sub> = 12.7 or 15.0 is possible

Please clarify customer-specific deviations with the manufacturer.

# Packing Quantities for Bulk Capacitors and TPS\*



PCM	Size				pcs. per packaging unit bulk			pcs. per packaging unit/TPS*	
	W	H	L	Codes	Mini <b>M</b>	Standard <b>S</b>	Maxi <b>G</b>	Mini <b>X</b>	Standard <b>Y</b>
<b>2.5 mm</b>	2.5	7	4.6	<b>0B</b>	1000	5000	10000	-	-
	3	7.5	4.6	<b>0C</b>	1000	5000	10000	-	-
	3.8	8.5	4.6	<b>0D</b>	1000	5000	10000	-	-
	4.6	9	4.6	<b>0E</b>	1000	5000	10000	-	-
	5.5	10	4.6	<b>0F</b>	1000	5000	10000	-	-
<b>5 mm</b>	2.5	6.5	7.2	<b>1A</b>	2000	5000	10000	-	-
	3	7.5	7.2	<b>1B</b>	1000	5000	-	-	-
	3.5	8.5	7.2	<b>1C</b>	1000	5000	-	-	-
	4.5	6	7.2	<b>1D</b>	1000	6000	-	-	-
	4.5	9.5	7.2	<b>1E</b>	1000	4000	-	-	-
	5	10	7.2	<b>1F</b>	1000	3500	-	-	-
	5.5	7	7.2	<b>1G</b>	1000	4000	-	-	-
	5.5	11.5	7.2	<b>1H</b>	500	2500	-	-	-
	6.5	8	7.2	<b>1I</b>	1000	2500	-	-	-
	7.2	8.5	7.2	<b>1J</b>	500	2500	-	-	-
	7.2	13	7.2	<b>1K</b>	500	2000	-	-	-
8.5	10	7.2	<b>1L</b>	500	2000	-	-	-	
8.5	14	7.2	<b>1M</b>	500	1500	-	-	-	
11	16	7.2	<b>1N</b>	250	1000	-	-	-	
<b>7.5 mm</b>	2.5	7	10	<b>2A</b>	1000	5000	-	-	-
	3	8.5	10	<b>2B</b>	1000	5000	-	-	-
	4	9	10	<b>2C</b>	1000	4000	-	-	-
	4.5	9.5	10.3	<b>2D</b>	1000	3500	-	-	-
	5	10.5	10.3	<b>2E</b>	1000	3000	-	-	-
	5.7	12.5	10.3	<b>2F</b>	500	2000	-	-	-
	7.2	12.5	10.3	<b>2G</b>	500	1500	-	-	-
<b>10 mm</b>	3	9	13	<b>3A</b>	1000	3000	-	-	-
	4	8.5	13.5	<b>3A</b>	500	3000	-	-	-
	4	9	13	<b>3C</b>	1000	3000	-	-	-
	4	9.5	13	<b>3D</b>	1000	3000	-	-	-
	5	10	13.5	<b>3B</b>	500	2000	-	-	-
	5	11	13	<b>3F</b>	1000	3000	-	-	-
	6	12	13	<b>3G</b>	800	2400	-	-	-
	6	12.5	13	<b>3H</b>	800	2400	-	-	-
8	12	13	<b>3I</b>	500	2000	-	-	-	
<b>15 mm</b>	5	11	18	<b>4B</b>	800	2400	-	-	-
	5	13	19	<b>4C</b>	200	1000	-	-	-
	6	12.5	18	<b>4C</b>	500	2000	-	-	-
	6	14	19	<b>4D</b>	250	1000	-	-	-
	7	14	18	<b>4D</b>	400	1600	-	-	-
	7	15	19	<b>4E</b>	250	1000	-	-	-
	8	15	18	<b>4F</b>	400	1200	-	-	-
	8	17	19	<b>4F</b>	100	500	-	-	-
	9	14	18	<b>4H</b>	400	1200	-	-	-
	9	16	18	<b>4J</b>	300	900	-	-	-
	10	18	19	<b>4G</b>	100	500	-	-	-
11	14	18	<b>4M</b>	300	1000	-	-	-	
<b>22.5 mm</b>	5	14	26.5	<b>5A</b>	300	1200	-	-	-
	6	15	26.5	<b>5B</b>	250	1000	-	-	-
	7	16.5	26.5	<b>5D</b>	190	760	-	-	-
	8	20	28	<b>5H</b>	125	500	-	-	-
	8.5	18.5	26.5	<b>5F</b>	125	500	-	-	-
	10	22	28	<b>5I</b>	-	-	-	90	540
	10.5	19	26.5	<b>5G</b>	-	-	-	170	680
	10.5	20.5	26.5	<b>5H</b>	-	-	-	170	680
	11	21	26.5	<b>5I</b>	-	-	-	170	680
12	24	28	<b>5J</b>	-	-	-	75	450	
<b>27.5 mm</b>	9	19	31.5	<b>6A</b>	-	-	-	160	640
	11	21	31.5	<b>6B</b>	-	-	-	136	544
	13	24	31.5	<b>6D</b>	-	-	-	112	448
	13	25	33	<b>6K</b>	-	-	-	56	336
	15	26	31.5	<b>6F</b>	-	-	-	96	384
	15	26	33	<b>6L</b>	-	-	-	48	288
	17	29	31.5	<b>6G</b>	-	-	-	88	176
	17	34.5	31.5	<b>6I</b>	-	-	-	88	176
	20	32	33	<b>6M</b>	-	-	-	36	216
20	39.5	31.5	<b>6J</b>	-	-	-	36	144	
<b>37.5 mm</b>	9	19	41.5	<b>7A</b>	-	-	-	60	480
	11	22	41.5	<b>7B</b>	-	-	-	51	408
	13	24	41.5	<b>7C</b>	-	-	-	84	252
	15	26	41.5	<b>7D</b>	-	-	-	72	144
	17	29	41.5	<b>7E</b>	-	-	-	66	132
	19	32	41.5	<b>7F</b>	-	-	-	54	108
	20	39.5	41.5	<b>7G</b>	-	-	-	27	108
	24	45.5	41.5	<b>7H</b>	-	-	-	21	84

08.11

Rights reserved to amend design data without prior notification.  
Samples and pre-production needs on request.

■ Moulded versions.

\* Tray-Packing-System



## Packing Units for Taped Capacitors with Radial Leads

PCM	Size				ROLL		REEL				AMMO			
					H16.5	H18.5	ø 360		ø 500		340 × 340		490 × 370	
	W	H	L	Codes	N	O	F	I	H	J	A	C	B	D
<b>2.5 mm</b>	2.5	7	4.6	<b>0B</b>	2200		2500		–		2800		–	
	3	7.5	4.6	<b>0C</b>	2000		2300		–		2300		–	
	3.8	8.5	4.6	<b>0D</b>	1500		1800		–		1800		–	
	4.6	9	4.6	<b>0E</b>	1200		1500		–		1500		–	
	5.5	10	4.6	<b>0F</b>	900		1200		–		1200		–	
<b>5 mm</b>	2.5	6.5	7.2	<b>1A</b>	2200		2500		–		2800		–	
	3	7.5	7.2	<b>1B</b>	2000		2300		–		2300		–	
	3.5	8.5	7.2	<b>1C</b>	1600		2000		–		2000		–	
	4.5	6	7.2	<b>1D</b>	1300		1500		–		1500		–	
	4.5	9.5	7.2	<b>1E</b>	1300		1500		–		1500		–	
	5	10	7.2	<b>1F</b>	1100		1400		–		1400		–	
	5.5	7	7.2	<b>1G</b>	1000		1200		–		1200		–	
	5.5	11.5	7.2	<b>1H</b>	1000		1200		–		1200		–	
	6.5	8	7.2	<b>1I</b>	800		1000		–		1000		–	
	7.2	8.5	7.2	<b>1J</b>	700		1000		–		1000		–	
	7.2	13	7.2	<b>1K</b>	700		950		–		1000		–	
	8.5	10	7.2	<b>1L</b>	600		800		–		800		–	
	8.5	14	7.2	<b>1M</b>	600		800		–		800		–	
11	16	7.2	<b>1N</b>	500		700		–		700		–		
<b>7.5 mm</b>	2.5	7	10	<b>2A</b>	–		2500		4400		2500		–	
	3	8.5	10	<b>2B</b>	–		2200		4300		2300		4150	
	4	9	10	<b>2C</b>	–		1700		3200		1700		3100	
	4.5	9.5	10.3	<b>2D</b>	–		1500		2900		1400		2800	
	5	10.5	10.3	<b>2E</b>	–		1300		2500		1300		–	
	5.7	12.5	10.3	<b>2F</b>	–		1000		2200		1100		–	
	7.2	12.5	10.3	<b>2G</b>	–		900		1800		1000		–	
<b>10 mm</b>	3	9	13	<b>3A</b>	–		1100		2200		–		1900	
	4	8.5	13.5	<b>FA</b>	–		900		1600		–		1450	
	4	9	13	<b>3C</b>	–		900		1600		–		1450	
	4	9.5	13	<b>3D</b>	–		900		1600		–		1400	
	5	10	13.5	<b>FB</b>	–		700		1300		–		1200	
	5	11	13	<b>3F</b>	–		700		1300		–		1200	
	6	12	13	<b>3G</b>	–		550		1100		–		1000	
	6	12.5	13	<b>3H</b>	–		550		1100		–		1000	
8	12	13	<b>3I</b>	–		400		800		–		740		
<b>15 mm</b>	5	11	18	<b>4B</b>	–		600		1200		–		1150	
	5	13	19	<b>FC</b>	–		600		1200		–		1200	
	6	12.5	18	<b>4C</b>	–		500		1000		–		1000	
	6	14	19	<b>FD</b>	–		500		1000		–		1000	
	7	14	18	<b>4D</b>	–		450		900		–		850	
	7	15	19	<b>FE</b>	–		450		900		–		850	
	8	15	18	<b>4F</b>	–		400		800		–		740	
	8	17	19	<b>FF</b>	–		400		800		–		740	
	9	14	18	<b>4H</b>	–		350		700		–		650	
	9	16	18	<b>4J</b>	–		350		700		–		650	
	10	18	19	<b>FG</b>	–		300		650		–		590	
11	14	18	<b>4M</b>	–		300		600		–		540		
<b>22.5 mm</b>	5	14	26.5	<b>5A</b>	–		–		800		–		770	
	6	15	26.5	<b>5B</b>	–		–		700		–		640	
	7	16.5	26.5	<b>5D</b>	–		–		600		–		550	
	8	20	28	<b>FH</b>	–		–		500		–		480	
	8.5	18.5	26.5	<b>5F</b>	–		–		480		–		450	
	10	22	28	<b>FI</b>	–		–		420		–		380	
	10.5	19	26.5	<b>5G</b>	–		–		400		–		360	
	10.5	20.5	26.5	<b>5H</b>	–		–		400		–		360	
	11	21	26.5	<b>5I</b>	–		–		380		–		350	
12	24	28	<b>FJ</b>	–		–		350		–		310		
<b>27.5 mm</b>	9	19	31.5	<b>6A</b>	–		–		460/340*		–		420	
	11	21	31.5	<b>6B</b>	–		–		380/280*		–		350	
	13	24	31.5	<b>6D</b>	–		–		300		–		290	
	15	26	31.5	<b>6F</b>	–		–		270		–		250	

\* for 2-inch transport pitches.

■ Moulded versions.

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Samples and pre-production needs 1 packing unit minimum.

# 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: 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
<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-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><b>Rated voltage:</b></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><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              1 F = A010              2.5 F = A025              50 F = A500              100 F = B100              110 F = B110              600 F = B600              1200 F = C120              ...</p>	<p><b>Size:</b></p> <p>4.8x3.3x3 Size 1812 = X1              4.8x3.3x4 Size 1812 = X2              5.7x5.1x3.5 Size 2220 = Y1              5.7x5.1x4.5 Size 2220 = Y2              7.2x6.1x3 Size 2824 = T1              7.2x6.1x5 Size 2824 = T2              10.2x7.6x5 Size 4030 = K1              12.7x10.2x6 Size 5040 = V1              15.3x13.7x7 Size 6054 = Q1              2.5x7x4.6 PCM2.5 = 0B              3x7.5x4.6 PCM2.5 = 0C              2.5x6.5x7.2 PCM5 = 1A              3x7.5x7.2 PCM5 = 1B              2.5x7x10 PCM7.5 = 2A              3x8.5x10 PCM7.5 = 2B              3x9x13 PCM10 = 3A              4x9x13 PCM10 = 3C              5x11x18 PCM15 = 4B              6x12.5x18 PCM15 = 4C              5x14x26.5 PCM22.5 = 5A              6x15x26.5 PCM22.5 = 5B              9x19x31.5 PCM27.5 = 6A              11x21x31.5 PCM27.5 = 6B              9x19x41.5 PCM37.5 = 7A              11x22x41.5 PCM37.5 = 7B              94x49x182 DCH_ = H0              94x77x182 DCH_ = H1              ...</p> <p><b>Special features:</b></p> <p>Standard = 00              Version A1 = 1A              Version A1.1.1 = 1B              Version A1.2 = 1C              ...</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 Mini = M              Bulk Standard = S              Bulk Maxi = G              TPS Mini = X              TPS Standard = Y              ...</p> <p><b>Lead length (untaped)</b></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.

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