

## Metallized Polyester (PET) Capacitors in PCM 5 mm. Capacitances from 0.01 µF to 10 µF. Rated Voltages from 50 VDC to 630 VDC.

### Special Features

- High volume/capacitance ratio
- Self-healing
- AEC-Q200 qualified
- According to RoHS 2011/65/EU

### Typical Applications

For general DC-applications e.g.

- By-pass
- Blocking
- Coupling and decoupling
- Timing

### Construction

#### Dielectric:

Polyethylene-terephthalate (PET) film

#### Capacitor electrodes:

Vacuum-deposited

#### Internal construction:



#### Encapsulation:

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

#### Terminations:

Tinned wire.

#### Marking:

Colour: Red. Marking: Silver/White.

### Electrical Data

#### Capacitance range:

0.01 µF to 10 µF (E12-values on request)

#### Rated voltages:

50 VDC, 63 VDC, 100 VDC, 250 VDC, 400 VDC, 630 VDC

#### Capacitance tolerances:

±20%, ±10%, ±5%

#### Operating temperature range:

$U_r = 50$  VDC: -55° C to +100° C

$U_r \geq 63$  VDC: -55° C to +125° C

#### Climatic test category:

55/100/21 in accordance with IEC

#### Insulation resistance at +20° C:

$U_r$	$U_{test}$	$C \leq 0.33 \mu F$	$0.33 \mu F < C \leq 10 \mu F$
50 VDC	10V	$\geq 5 \times 10^3 M\Omega$	$\geq 1000 \text{ sec } (M\Omega \times \mu F)$
63 VDC	50V	$\geq 1 \times 10^4 M\Omega$	$\geq 1250 \text{ sec } (M\Omega \times \mu F)$
$\geq 100$ VDC	100V	$\geq 1.5 \times 10^4 M\Omega$	$\geq 3000 \text{ sec } (M\Omega \times \mu F)$

Measuring time: 1 min.

#### Dissipation factors at +20° C: $\tan \delta$

at f	$C \leq 0.1 \mu F$	$0.1 \mu F < C \leq 1.0 \mu F$	$C > 1.0 \mu F$
1 kHz	$\leq 8 \times 10^{-3}$	$\leq 8 \times 10^{-3}$	$\leq 10 \times 10^{-3}$
10 kHz	$\leq 15 \times 10^{-3}$	$\leq 15 \times 10^{-3}$	-
100 kHz	$\leq 30 \times 10^{-3}$	-	-

#### Maximum pulse rise time: for pulses equal to the rated voltage

Capacitance µF	Pulse rise time V/µsec max. operation/test					
	50 VDC	63 VDC	100 VDC	250 VDC	400 VDC	630 VDC
0.01 ... 0.022	-	35/350	35/350	50/500	80/800	110/1100
0.033 ... 0.068	-	20/200	25/250	50/500	80/800	90/900
0.1 ... 0.47	10/100	15/150	20/200	50/500	80/800	-
0.68 ... 1.0	8/80	12/120	15/150	25/250	-	-
1.5 ... 3.3	8/80	7.5/75	10/100	-	-	-
4.7	5/50	5/50	-	-	-	-
6.8	3/30	3/30	-	-	-	-
10	2.5/25	-	-	-	-	-

### 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	50 VDC/30 VAC*					63 VDC/40 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
0.01 $\mu$ F						2.5	6.5	7.2	5	MKS2C021001A00_____
0.015 "						2.5	6.5	7.2	5	MKS2C021501A00_____
0.022 "						2.5	6.5	7.2	5	MKS2C022201A00_____
0.033 "						2.5	6.5	7.2	5	MKS2C023301A00_____
0.047 "						2.5	6.5	7.2	5	MKS2C024701A00_____
0.068 "						2.5	6.5	7.2	5	MKS2C026801A00_____
0.1 $\mu$ F						2.5	6.5	7.2	5	MKS2C031001A00_____
0.15 "						2.5	6.5	7.2	5	MKS2C031501A00_____
0.22 "						3	7.5	7.2	5	MKS2C032201B00_____
0.33 "	2.5	6.5	7.2	5	MKS2B033301A00_____	3.5	8.5	7.2	5	MKS2C033301C00_____
0.47 "	3	7.5	7.2	5	MKS2B034701B00_____	3.5	8.5	7.2	5	MKS2C034701C00_____
0.68 "	3.5	8.5	7.2	5	MKS2B036801C00_____	4.5	9.5	7.2	5	MKS2C036801E00_____
1.0 $\mu$ F	3.5	8.5	7.2	5	MKS2B041001C00_____	5	10	7.2	5	MKS2C041001F00_____
1.5 "	4.5	9.5	7.2	5	MKS2B041501E00_____	5.5	11.5	7.2	5	MKS2C041501H00_____
2.2 "	5	10	7.2	5	MKS2B042201F00_____	7.2	13	7.2	5	MKS2C042201K00_____
3.3 "	5.5	11.5	7.2	5	MKS2B043301H00_____	7.2	13	7.2	5	MKS2C043301K00_____
4.7 "	7.2	13	7.2	5	MKS2B044701K00_____	8.5	14	7.2	5	MKS2C044701M00_____
6.8 "	8.5	14	7.2	5	MKS2B046801M00_____	11	16	7.2	5	MKS2C046801N00_____
10 $\mu$ F	11	16	7.2	5	MKS2B051001N00_____					

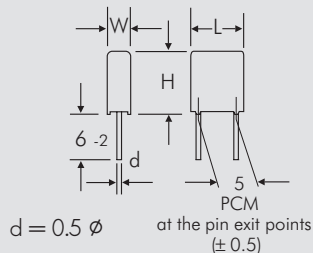
  

Capacitance	100 VDC/63 VAC*					250 VDC/160 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
0.01 $\mu$ F	2.5	6.5	7.2	5	MKS2D021001A00_____	2.5	6.5	7.2	5	MKS2F021001A00_____
0.015 "	2.5	6.5	7.2	5	MKS2D021501A00_____	2.5	6.5	7.2	5	MKS2F021501A00_____
0.022 "	2.5	6.5	7.2	5	MKS2D022201A00_____	2.5	6.5	7.2	5	MKS2F022201A00_____
0.033 "	2.5	6.5	7.2	5	MKS2D023301A00_____	3.5	8.5	7.2	5	MKS2F023301C00_____
0.047 "	2.5	6.5	7.2	5	MKS2D024701A00_____	3.5	8.5	7.2	5	MKS2F024701C00_____
0.068 "	2.5	6.5	7.2	5	MKS2D026801A00_____	3.5	8.5	7.2	5	MKS2F026801C00_____
0.1 $\mu$ F	2.5	6.5	7.2	5	MKS2D031001A00_____	4.5	9.5	7.2	5	MKS2F031001E00_____
0.15 "	3.5	8.5	7.2	5	MKS2D031501C00_____	5	10	7.2	5	MKS2F031501F00_____
0.22 "	3.5	8.5	7.2	5	MKS2D032201C00_____	5.5	11.5	7.2	5	MKS2F032201H00_____
0.33 "	4.5	9.5	7.2	5	MKS2D033301E00_____	7.2	13	7.2	5	MKS2F033301K00_____
0.47 "	4.5	9.5	7.2	5	MKS2D034701E00_____	8.5	14	7.2	5	MKS2F034701M00_____
0.68 "	5	10	7.2	5	MKS2D036801F00_____	11	16	7.2	5	MKS2F036801N00_____
1.0 $\mu$ F	7.2	13	7.2	5	MKS2D041001K00_____					
1.5 "	8.5	14	7.2	5	MKS2D041501M00_____					
2.2 "	11	16	7.2	5	MKS2D042201N00_____					

\* AC voltage:  $f = 50 \text{ Hz}$ ;  $1.4 \times U_{\text{rms}} + \text{UDC} \leq U_r$

\*\* 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 149.

Rights reserved to amend design data without prior notification.

Continuation page 46

## Continuation

### General Data

Capacitance	400 VDC/200 VAC*					630 VDC/220 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
0.01 $\mu\text{F}$	2.5	6.5	7.2	5	MKS2G021001A00	5.5	11.5	7.2	5	MKS2J021001H00
0.015 "	2.5	6.5	7.2	5	MKS2G021501A00	7.2	13	7.2	5	MKS2J021501K00
0.022 "	3.5	8.5	7.2	5	MKS2G022201C00	7.2	13	7.2	5	MKS2J022201K00
0.033 "	4.5	9.5	7.2	5	MKS2G023301E00	7.2	13	7.2	5	MKS2J023301K00
0.047 "	4.5	9.5	7.2	5	MKS2G024701E00	8.5	14	7.2	5	MKS2J024701M00
0.068 "	5.5	11.5	7.2	5	MKS2G026801H00					
0.1 $\mu\text{F}$	7.2	13	7.2	5	MKS2G031001K00					
0.15 "	8.5	14	7.2	5	MKS2G031501M00					
0.22 "	11	16	7.2	5	MKS2G032201N00					

\* AC voltage:  $f = 50 \text{ Hz}$ ;  $1.4 \times U_{\text{rms}} + U_{\text{DC}} \leq U_r$

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

Dims. in mm.

The values of the WIMA MKM 2 range according to the main catalogue 2009 are still available on request.

#### Part number completion:

Tolerance: 20 % = M

10 % = K

5 % = J

Packing: bulk = S

Pin length: 6-2 = SD

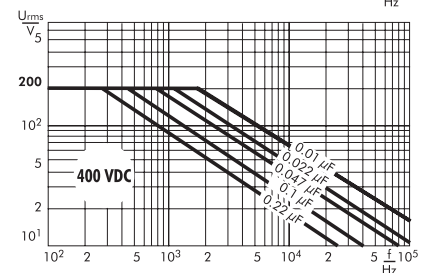
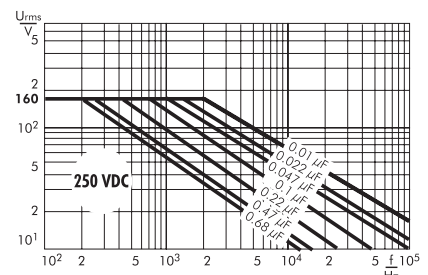
Taped version see page 149.



Impedance change with frequency (general guide).

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 9001:2015 Certification

ISO 9001:2015 is an international basic standard of quality assurance systems for all branches of industry. The approval according to ISO 9001:2015 of our factories by the infaz (Institut für Auditierung und Zertifizierung) certifies that organisation, equipment and monitoring of quality assurance in our factories correspond to internationally recognized standards.

### WIMA WPCS

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

- incoming material inspection
- metallization
- film inspection
- schoopage
- pre-healing
- pin attachment
- cast resin preparation/encapsulation
- 100% final inspection
- Testing as per customer requirements

### WIMA Environmental Policy

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

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

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

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

We almost completely refrain from using packing materials such as:

- adhesive tapes made of plastic
- metal clips

### RoHS Compliance

According to the RoHS Directive 2011/65/EU as amended from time to time certain hazardous substances like e.g. lead, cadmium, mercury must not be used any longer in electronic equipment as of July 1st, 2006. For the sake of the environment WIMA has refrained from using such substances since years already.



WIMA Kondensatoren sind bleifrei konform RoHS 2011/65/EU

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

Tape for lead-free WIMA capacitors

### DIN EN ISO 14001:2004

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

# Typical Dimensions for Taping Configuration



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 <sub>0</sub>	6.0 for hot-sealing adhesive tape	6.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape
Hole position	W <sub>1</sub>	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5
Hold-down tape position	W <sub>2</sub>	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.
Feed hole diameter	D <sub>0</sub>	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2
Pitch of component	P	12.7 ±1.0	12.7 ±1.0	12.7 ±1.0	25.4 ±1.0	25.4 ±1.0	38.1 ±1.5	38.1 ±1.5 or 50.8 ±1.5
Feed hole pitch	P <sub>0</sub>	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch
Feed hole centre to pin	P <sub>1</sub>	5.1 ±0.5	3.85 ±0.7	2.6 ±0.7	7.7 ±0.7	5.2 ±0.7	7.8 ±0.7	5.3 ±0.7
Hole centre to component centre	P <sub>2</sub>	6.35 ±1.3	6.35 ±1.3	6.35 ±1.3	12.7 ±1.3	12.7 ±1.3	19.05 ±1.3	19.05 ±1.3
Feed hole centre to bottom edge of the component	H	16.5 ±0.3 18.5 ±0.5	16.5 ±0.3 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5
Feed hole centre to top edge of the component	H <sub>1</sub>	H+H <sub>component</sub> < H <sub>1</sub> 32.25 max.	H+H <sub>component</sub> < H <sub>1</sub> 32.25 max.	H+H <sub>component</sub> < H <sub>1</sub> 24.5 to 31.5	H+H <sub>component</sub> < H <sub>1</sub> 25.0 to 31.5	H+H <sub>component</sub> < H <sub>1</sub> 26.0 to 37.0	H+H <sub>component</sub> < H <sub>1</sub> 30.0 to 43.0	H+H <sub>component</sub> < H <sub>1</sub> 35.0 to 45.0
Pin spacing at upper edge of carrier tape	F	2.5 ±0.5	5.0 <sup>+0.8</sup> <sub>-0.2</sub>	7.5 ±0.8	10.0 ±0.8	15 ±0.8	22.5 ±0.8	27.5 ±0.8
Pin diameter	d	0.4 ±0.05	0.5 ±0.05	0.5 ±0.05 or 0.6 <sup>+0.06</sup> <sub>-0.05</sub>	0.5 ±0.05 or 0.6 <sup>+0.06</sup> <sub>-0.05</sub>	0.8 <sup>+0.08</sup> <sub>-0.05</sub>	0.8 <sup>+0.08</sup> <sub>-0.05</sub>	0.8 <sup>+0.08</sup> <sub>-0.05</sub>
Component alignment	Δh	± 2.0 max.	± 2.0 max.	± 3.0 max.	± 3.0 max.	± 3.0 max.	± 3.0 max.	± 3.0 max.
Total tape thickness	t	0.6 ±0.2	0.6 ±0.2	0.6 ±0.2	0.6 ±0.2	0.6 ±0.2	0.6 ±0.2	0.6 ±0.2
Package (see also page 150)	ROLL/AMMO			AMMO				
	REEL	$\phi$ 360 max. $\phi$ 30 ±1	$B$ 52 ±2 $B$ 58 ±2	depending on comp. dimensions REEL $\phi$ 360 max. $B$ 52 ±2 or $B$ 58 ±2 REEL $\phi$ 500 max. $B$ 60 ±2 or $B$ 66 ±2				
Unit	see details page 151.							

Dims in mm.

\* Diameter of pins see General Data.

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

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

Please clarify customer-specific deviations with the manufacturer.

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

### ■ ROLL Packaging



### ■ AMMO Packaging



### ■ REEL Packaging



## BAR CODE (Labelling)

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

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.

<b>WIMA</b> Best Capacitors Made In Germany		Werk Unna
Supplier-ID: 123456789	<b>RoHS</b> 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
1000067326	MKS 2 0.47 $\mu$ F 63 VDC 3.5x8.5x7.2 RM5	
	Standard 10% Loss - Standard Dichte 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	H16.5	H18.5	ø 500	H16.5	H18.5	340 x 340
					N	O	F	I	H	J	A	C	B	D	
<b>2.5 mm</b>	2.5	7	4.6	<b>0B</b>	5000		2200		2500		-		2800		-
	3	7.5	4.6	<b>0C</b>	5000		2000		2300		-		2300		-
	3.8	8.5	4.6	<b>0D</b>	5000		1500		1800		-		1800		-
	4.6	9	4.6	<b>0E</b>	5000		1200		1500		-		1500		-
	5.5	10	4.6	<b>0F</b>	5000		900		1200		-		1200		-
<b>5 mm</b>	2.5	6.5	7.2	<b>1A</b>	5000		2200		2500		-		2800		-
	3	7.5	7.2	<b>1B</b>	5000		2000		2300		-		2300		-
	3.5	8.5	7.2	<b>1C</b>	5000		1600		2000		-		2000		-
	4.5	6	7.2	<b>1D</b>	6000		1300		1500		-		1500		-
	4.5	9.5	7.2	<b>1E</b>	4000		1300		1500		-		1500		-
	5	10	7.2	<b>1F</b>	3500		1100		1400		-		1400		-
	5.5	7	7.2	<b>1G</b>	4000		1000		1200		-		1200		-
	5.5	11.5	7.2	<b>1H</b>	2500		1000		1200		-		1200		-
	6.5	8	7.2	<b>1I</b>	2500		800		1000		-		1000		-
	7.2	8.5	7.2	<b>1J</b>	2500		700		1000		-		1000		-
	7.2	13	7.2	<b>1K</b>	2000		700		950		-		1000		-
	8.5	10	7.2	<b>1L</b>	2000		600		800		-		800		-
8.5	14	7.2	<b>1M</b>	1500		600		800		-		800		-	
11	16	7.2	<b>1N</b>	1000		500		600		-		640		-	
<b>7.5 mm</b>	2.5	7	10	<b>2A</b>	5000		-		2500		4400		2500		-
	3	8.5	10	<b>2B</b>	5000		-		2200		4300		2300		4150
	4	9	10	<b>2C</b>	4000		-		1700		3200		1700		3100
	4.5	9.5	10.3	<b>2D</b>	3500		-		1500		2900		1400		2700
	5	10.5	10.3	<b>2E</b>	3000		-		1300		2500		1300		-
	5.7	12.5	10.3	<b>2F</b>	2000		-		1000		2200		1100		-
	7.2	12.5	10.3	<b>2G</b>	1500		-		900		1800		1000		-
<b>10 mm</b>	3	9	13	<b>3A</b>	3000		-		1100		2200		-		1900
	4	8.5	13.5	<b>FA</b>	3000		-		900		1600		-		1450
	4	9	13	<b>3C</b>	3000		-		900		1600		-		1450
	4	9.5	13	<b>3D</b>	3000		-		900		1600		-		1400
	5	10	13.5	<b>FB</b>	2000		-		700		1300		-		1200
	5	11	13	<b>3F</b>	3000		-		700		1300		-		1200
	6	12	13	<b>3G</b>	2400		-		550		1100		-		1000
	6	12.5	13	<b>3H</b>	2400		-		550		1100		-		1000
8	12	13	<b>3I</b>	2000		-		400		800		-		740	
<b>15 mm</b>	5	11	18	<b>4B</b>	2400		-		600		1200		-		1150
	5	13	19	<b>FC</b>	1000		-		600		1200		-		1200
	6	12.5	18	<b>4C</b>	2000		-		500		1000		-		1000
	6	14	19	<b>FD</b>	1000		-		500		1000		-		1000
	7	14	18	<b>4D</b>	1600		-		450		900		-		850
	7	15	19	<b>FE</b>	1000		-		450		900		-		850
	8	15	18	<b>4F</b>	1200		-		400		800		-		740
	8	17	19	<b>FF</b>	500		-		400		800		-		740
	9	14	18	<b>4H</b>	1200		-		350		700		-		650
	9	16	18	<b>4J</b>	900		-		350		700		-		650
	10	18	19	<b>FG</b>	500		-		300		650		-		590
11	14	18	<b>4M</b>	1000		-		300		600		-		540	
<b>22.5 mm</b>	5	14	26.5	<b>5A</b>	1200		-		-		800		-		770
	6	15	26.5	<b>5B</b>	1000		-		-		700		-		640
	7	16.5	26.5	<b>5D</b>	760		-		-		600		-		550
	8	20	28	<b>FH</b>	500		-		-		500		-		480
	8.5	18.5	26.5	<b>5F</b>	500		-		-		480		-		450
	10	22	28	<b>FI</b>	570*		-		-		420		-		380
	10.5	19	26.5	<b>5G</b>	594*		-		-		400		-		360
	10.5	20.5	26.5	<b>5H</b>	594*		-		-		400		-		360
	11	21	26.5	<b>5I</b>	561*		-		-		380		-		350
	12	24	28	<b>FJ</b>	480*		-		-		350		-		310

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

■ Moulded versions.

Rights reserved to amend design data without prior notification.



## Packing Quantities for Capacitors with Radial Pins in PCM 27.5 mm to 52.5 mm

PCM	Size				bulk	pcs. per packing unit											
						ROLL		REEL				AMMO					
	W	H	L	Codes		S	N	O	ø 360		ø 500		340 x 340		490 x 370		
								H16.5	H18.5	H16.5	H18.5	H16.5	H18.5	H16.5	H18.5	H16.5	H18.5
								F	I	H	J	A	C	B	D		
<b>27.5 mm</b>	9	19	31.5	<b>6A</b>	567*	-	-	-	-	460/340*	-	-	420				
	11	21	31.5	<b>6B</b>	459*	-	-	-	-	380/280*	-	-	350				
	13	24	31.5	<b>6D</b>	378*	-	-	-	-	300	-	-	290				
	13	25	33	<b>FK</b>	405*	-	-	-	-	-	-	-	-				
	15	26	31.5	<b>6F</b>	324*	-	-	-	-	270	-	-	250				
	15	26	33	<b>FL</b>	324*	-	-	-	-	-	-	-	-				
	17	29	31.5	<b>6G</b>	198*	-	-	-	-	-	-	-	-				
	17	34.5	31.5	<b>6I</b>	198*	-	-	-	-	-	-	-	-				
	20	32	33	<b>FM</b>	162*	-	-	-	-	-	-	-	-				
	20	39.5	31.5	<b>6J</b>	162*	-	-	-	-	-	-	-	-				
<b>37.5 mm</b>	9	19	41.5	<b>7A</b>	441*	-	-	-	-	-	-	-	-				
	11	22	41.5	<b>7B</b>	357*	-	-	-	-	-	-	-	-				
	13	24	41.5	<b>7C</b>	294*	-	-	-	-	-	-	-	-				
	15	26	41.5	<b>7D</b>	252*	-	-	-	-	-	-	-	-				
	17	29	41.5	<b>7E</b>	154*	-	-	-	-	-	-	-	-				
	19	32	41.5	<b>7F</b>	140*	-	-	-	-	-	-	-	-				
	20	39.5	41.5	<b>7G</b>	126*	-	-	-	-	-	-	-	-				
	24	45.5	41.5	<b>7H</b>	112*	-	-	-	-	-	-	-	-				
	31	46	41.5	<b>7I</b>	84*	-	-	-	-	-	-	-	-				
	35	50	41.5	<b>7J</b>	35*	-	-	-	-	-	-	-	-				
	40	55	41.5	<b>7K</b>	28*	-	-	-	-	-	-	-	-				
<b>48.5 mm</b>	19	31	56	<b>8D</b>	120*	-	-	-	-	-	-	-	-				
	23	34	56	<b>8E</b>	80*	-	-	-	-	-	-	-	-				
	27	37.5	56	<b>8H</b>	84*	-	-	-	-	-	-	-	-				
	33	48	56	<b>8J</b>	25*	-	-	-	-	-	-	-	-				
	37	54	56	<b>8L</b>	25*	-	-	-	-	-	-	-	-				
<b>52.5 mm</b>	25	45	57	<b>9D</b>	70*	-	-	-	-	-	-	-	-				
	30	45	57	<b>9E</b>	60*	-	-	-	-	-	-	-	-				
	35	50	57	<b>9F</b>	25*	-	-	-	-	-	-	-	-				
	45	55	57	<b>9H</b>	20*	-	-	-	-	-	-	-	-				
	45	65	57	<b>9J</b>	20*	-	-	-	-	-	-	-	-				

\* for 2-inch transport pitches.

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

■ Moulded versions.

Rights reserved to amend design data without prior notification.

Updated data on [www.wima.com](http://www.wima.com)





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

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

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
M	K	S	2	C	0	2	1	0	0	1	A	0	0	M	S	S	D
MKS 2				63 VDC		0.01 $\mu$ F			2.5x6.5x7.2		-	20%	bulk	6 -2			
<b>Type description:</b>				<b>Rated voltage:</b>		<b>Capacitance:</b>			<b>Size:</b>		<b>Tolerance:</b>			<b>Packing:</b>			
SMD-PET = SMDT				50 VDC = B0		22 pF = 0022			4.8x3.3x3 Size 1812 = KA		±20% = M			<b>AMMO H16.5 340x340 = A</b> <b>AMMO H16.5 490x370 = B</b> <b>AMMO H18.5 340x340 = C</b> <b>AMMO H18.5 490x370 = D</b> <b>REEL H16.5 360 = F</b> <b>REEL H16.5 500 = H</b> <b>REEL H18.5 360 = I</b> <b>REEL H18.5 500 = J</b> <b>ROLL H16.5 = N</b> <b>ROLL H18.5 = O</b> <b>BLISTER W12 180 = P</b> <b>BLISTER W12 330 = Q</b> <b>BLISTER W16 330 = R</b> <b>BLISTER W24 330 = T</b> <b>Bulk/TPS Standard = S</b> ...			
SMD-PEN = SMDN				63 VDC = C0		47 pF = 0047			4.8x3.3x4 Size 1812 = KB		±10% = K						
SMD-PPS = SMDI				100 VDC = D0		100 pF = 0100			5.7x5.1x3.5 Size 2220 = QA		±5% = J						
FKP 02 = FKPO				250 VDC = F0		150 pF = 0150			5.7x5.1x4.5 Size 2220 = QB		±2.5% = H						
MKS 02 = MKS0				400 VDC = G0		220 pF = 0220			7.2x6.1x3 Size 2824 = TA		±1% = E						
FKS 2 = FKS2				450 VDC = H0		330 pF = 0330			7.2x6.1x5 Size 2824 = TB		...						
FKP 2 = FKP2				520 VDC = H2		470 pF = 0470			10.2x7.6x5 Size 4030 = VA		<b>Tolerance:</b> ±20% = M ±10% = K ±5% = J ±2.5% = H ±1% = E ...						
FKS 3 = FKS3				600 VDC = I0		680 pF = 0680			12.7x10.2x6 Size 5040 = XA								
FKP 3 = FKP 3				630 VDC = J0		1000 pF = 1100			15.3x13.7x7 Size 6054 = YA		<b>Packing:</b> 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 ...						
MKS 2 = MKS2				700 VDC = K0		1500 pF = 1150			2.5x7x4.6 PCM 2.5 = 0B								
MKP 2 = MKP2				800 VDC = L0		2200 pF = 1220			3x7.5x4.6 PCM 2.5 = 0C		<b>Version code:</b> Standard = 00 Version A1 = 1A Version A1.1.1 = 1B Version A2 = 2A ...						
MKS 4 = MKS4				850 VDC = M0		3300 pF = 1330			2.5x6.5x7.2 PCM 5 = 1A								
MKP 4C = MKPC				900 VDC = N0		4700 pF = 1470			3x7.5x7.2 PCM 5 = 1B		<b>Pin length (untaped)</b> 3.5 ±0.5 = C9 6 -2 = SD 16 ±1 = P1 ... <b>Pin length (taped)</b> none = 00						
MKP 4 = MKP4				1000 VDC = O1		6800 pF = 1680			2.5x7x10 PCM 7.5 = 2A								
MKP 10 = MKP1				1100 VDC = P0		0.01 $\mu$ F = 2100			3x8.5x10 PCM 7.5 = 2B		<b>Pin length (untaped)</b> 3.5 ±0.5 = C9 6 -2 = SD 16 ±1 = P1 ... <b>Pin length (taped)</b> none = 00						
FKP 1 = FKP1				1200 VDC = Q0		0.022 $\mu$ F = 2220			3x9x13 PCM 10 = 3A								
MKP-X2 = MKX2				1250 VDC = R0		0.047 $\mu$ F = 2470			4x9x13 PCM 10 = 3C		<b>Pin length (untaped)</b> 3.5 ±0.5 = C9 6 -2 = SD 16 ±1 = P1 ... <b>Pin length (taped)</b> none = 00						
MKP-X1 R = MKX1				1500 VDC = S0		0.1 $\mu$ F = 3100			5x11x18 PCM 15 = 4B								
MKP-Y2 = MKY2				1600 VDC = T0		0.22 $\mu$ F = 3220			6x12.5x18 PCM 15 = 4C		<b>Pin length (untaped)</b> 3.5 ±0.5 = C9 6 -2 = SD 16 ±1 = P1 ... <b>Pin length (taped)</b> none = 00						
MP 3-X2 = MPX2				2000 VDC = U0		0.47 $\mu$ F = 3470			5x14x26.5 PCM 22.5 = 5A								
MP 3-X1 = MPX1				2500 VDC = V0		1 $\mu$ F = 4100			6x15x26.5 PCM 22.5 = 5B		<b>Pin length (untaped)</b> 3.5 ±0.5 = C9 6 -2 = SD 16 ±1 = P1 ... <b>Pin length (taped)</b> none = 00						
MP 3-Y2 = MPY2				3000 VDC = W0		2.2 $\mu$ F = 4220			9x19x31.5 PCM 27.5 = 6A								
MP 3R-Y2 = MPRY				4000 VDC = X0		4.7 $\mu$ F = 4470			11x21x31.5 PCM 27.5 = 6B		<b>Pin length (untaped)</b> 3.5 ±0.5 = C9 6 -2 = SD 16 ±1 = P1 ... <b>Pin length (taped)</b> none = 00						
MKP 4F = MKPF				6000 VDC = Y0		10 $\mu$ F = 5100			9x19x41.5 PCM 37.5 = 7A								
Snubber MKP = SNMP				250 VAC = 0W		22 $\mu$ F = 5220			11x22x41.5 PCM 37.5 = 7B		<b>Pin length (untaped)</b> 3.5 ±0.5 = C9 6 -2 = SD 16 ±1 = P1 ... <b>Pin length (taped)</b> none = 00						
Snubber FKP = SNFP				275 VAC = 1W		47 $\mu$ F = 5470			19x31x56 PCM 48.5 = 8D								
GTO MKP = GTOM				300 VAC = 2W		100 $\mu$ F = 6100			25x45x57 PCM 52.5 = 9D		<b>Pin length (untaped)</b> 3.5 ±0.5 = C9 6 -2 = SD 16 ±1 = P1 ... <b>Pin length (taped)</b> none = 00						
DC-LINK MKP 3 = DCP3				305 VAC = AW		220 $\mu$ F = 6220			...								
DC-LINK MKP 4 = DCP4				350 VAC = BW		1000 $\mu$ F = 7100			...		<b>Pin length (untaped)</b> 3.5 ±0.5 = C9 6 -2 = SD 16 ±1 = P1 ... <b>Pin length (taped)</b> none = 00						
DC-LINK MKP 4S = DCP4S				440 VAC = 4W		1500 $\mu$ F = 7150			...								
DC-LINK MKP 5 = DCP5				500 VAC = 5W		...			...		<b>Pin length (untaped)</b> 3.5 ±0.5 = C9 6 -2 = SD 16 ±1 = P1 ... <b>Pin length (taped)</b> none = 00						
DC-LINK MKP 6 = DCP6				...		...			...								
DC-LINK HC = DCHC				...		...			...		<b>Pin length (untaped)</b> 3.5 ±0.5 = C9 6 -2 = SD 16 ±1 = P1 ... <b>Pin length (taped)</b> none = 00						
DC-LINK HY = DCHY				...		...			...								

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.

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А