



**THE DATASHEET OF  
MKX2AW22202C00KI00**



## Metallized Polypropylene (PP) RFI-Capacitors Class X2 in PCM 7.5 mm to 37.5 mm. Capacitances from 1000 pF to 10 µF. Rated Voltage 305 VAC.

### Special Features

- Reliable self-healing
- High degree of interference suppression due to good attenuation and low ESR
- AEC-Q200 qualified
- According to RoHS 2015/863/EU

### Typical Applications

Class X2 RFI applications to meet EMC regulations

- Capacitors connected to the mains between phase and neutral or phase conductors
- General requirements, pulse peak voltage  $\leq 2.5$  kV

### Construction

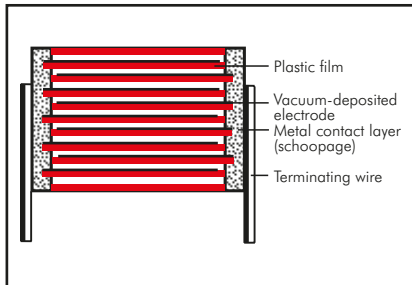
#### Dielectric:

Polypropylene (PP) 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: Black.

### Electrical Data

**Capacitance range:** 1000 pF to 10 µF

**Rated voltage:** 305 VAC

**Continuous DC voltage\*** (general guide):  $\leq 560$  V

**Capacitance tolerances:**

$\pm 20\%$ ,  $\pm 10\%$ ,  $\pm 5\%$

**Operating temperature range:**

$-55^\circ\text{C}$  to  $+105^\circ\text{C}$

**Climatic test category:**

55/105/56 in accordance with IEC

Passive flammability class:

B for capacitors with  $V > 1750$  mm<sup>3</sup>

C for capacitors with  $V \leq 1750$  mm<sup>3</sup>

**Test specifications:**

In accordance with IEC 60384-14

**Dissipation factors** at  $+20^\circ\text{C}$ :  $\tan \delta$

at f	$C \leq 0.1 \mu\text{F}$	$0.1 \mu\text{F} < C \leq 1.0 \mu\text{F}$	$C > 1.0 \mu\text{F}$
1 kHz	$\leq 18 \times 10^{-4}$	$\leq 20 \times 10^{-4}$	$\leq 20 \times 10^{-4}$
10 kHz	$\leq 20 \times 10^{-4}$	$\leq 60 \times 10^{-4}$	–
100 kHz	$\leq 50 \times 10^{-4}$	–	–

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

$C \leq 0.33 \mu\text{F}$ :  $\geq 1.5 \times 10^4$  MΩ

$C > 0.33 \mu\text{F}$ :  $\geq 5000$  sec (MΩ x µF)

Measuring voltage: 100 V/1 min.

**Maximum pulse rise time:**

100 V/µsec for pulses equal to a voltage

amplitude with  $\sqrt{2} \times 305$  VAC = 432 V

according to IEC 60384-14

**Test voltage:**

$C \leq 1.0 \mu\text{F}$ : 2260 VDC, 2 sec.

$C > 1.0 \mu\text{F}$ : 1800 VDC, 2 sec.

**Reliability:**

Operational life  $> 300000$  hours

Failure rate  $< 2$  fit ( $0.5 \times U_r$  and  $40^\circ\text{C}$ )

### Approvals:

Country	Authority	Specification	Symbol	Approval-No.
Germany	VDE	IEC 60384-14/4		40003472
USA/Canada	UL	UL 60384-14 CAN/CSA-E60384-14		E 134915
China	CQC	CQC11-471115-2016		CQC20001271097

### 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/sec<sup>2</sup> in accordance with IEC 60068-2-29

\* If safety-approved EMI suppression capacitors are operated with a DC voltage being above the specified AC voltage rating the given approvals are no longer valid (IEC 60384-14).

Furthermore the permissible pulse rise time  $du/dt$  ( $F_{\text{max.}}$ ) will be subject to a reduction according to

$$F_{\text{max.}} = F_r \times \sqrt{2} \times \text{UAC} / \text{UDC}$$

if the DC operating voltage UDC is higher than  $\sqrt{2} \times \text{UAC}$

### 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.

## Continuation

### General Data

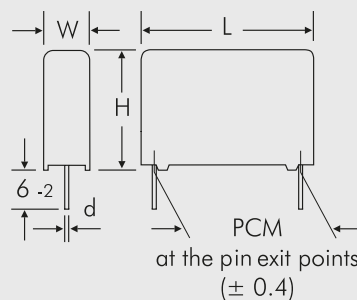
Capacitance	305 VAC*					Part number
	W	H	L	PCM**		
1000 pF	4	9	10	7.5	MKX2AW11002C00	
1200 "	4	9	10	7.5	MKX2AW11202C00	
1500 "	4	9	10	7.5	MKX2AW11502C00	
1800 "	4	9	10	7.5	MKX2AW11802C00	
2200 "	4	9	10	7.5	MKX2AW12202C00	
2700 "	4	9	10	7.5	MKX2AW12702C00	
3300 "	4	9	10	7.5	MKX2AW13302C00	
3900 "	4	9	10	7.5	MKX2AW13902C00	
4700 "	4	9	10	7.5	MKX2AW14702C00	
5600 "	4	9	10	7.5	MKX2AW15602C00	
6800 "	4	9	10	7.5	MKX2AW16802C00	
8200 "	4	9	10	7.5	MKX2AW18202C00	
0.01 µF	4	9	10	7.5	MKX2AW21002C00	
	5	11	13	10	MKX2AW21003F00	
0.012 "	4	9	10	7.5	MKX2AW21202C00	
	5	11	13	10	MKX2AW21203F00	
0.015 "	4	9	10	7.5	MKX2AW21502C00	
	5	11	13	10	MKX2AW21503F00	
0.018 "	4	9	10	7.5	MKX2AW21802C00	
	5	11	13	10	MKX2AW21803F00	
0.022 "	4	9	10	7.5	MKX2AW22202C00	
	5	11	13	10	MKX2AW22203F00	
0.027 "	5	10.5	10.3	7.5	MKX2AW22702E00	
	5	11	13	10	MKX2AW22703F00	
0.033 "	5	10.5	10.3	7.5	MKX2AW23302E00	
	5	11	13	10	MKX2AW23303F00	
0.039 "	5.7	12.5	10.3	7.5	MKX2AW23902F00	
	5	11	13	10	MKX2AW23903F00	
0.047 "	5.7	12.5	10.3	7.5	MKX2AW24702F00	
	6	12.5	13	10	MKX2AW24703H00	
	5	11	18	15	MKX2AW24704B00	
0.056 "	6	12.5	13	10	MKX2AW25603H00	
	5	11	18	15	MKX2AW25604B00	
0.068 "	6	12.5	13	10	MKX2AW26803H00	
	5	11	18	15	MKX2AW26804B00	
0.082 "	6	12.5	13	10	MKX2AW28203H00	
	5	11	18	15	MKX2AW28204B00	

\* f = 50/60 Hz

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

Dims. in mm.

d = 0.6 Ø if PCM < 15  
d = 0.8 Ø if PCM ≥ 15



Part number completion:

Tolerance: 20 % = M  
10 % = K  
5 % = J  
Packing: bulk = S  
Pin length: 6-2 = SD  
Taped version see page 157.

Rights reserved to amend design data without prior notification.

## Continuation

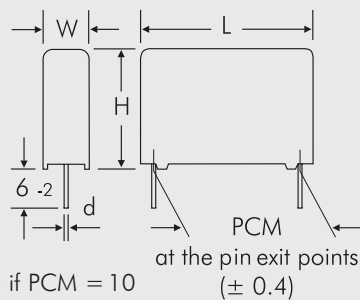
### General Data

Capacitance	305 VAC*				PCM**	Part number
	W	H	L			
0.1 $\mu$ F	8	12	13		10	MKX2AW31003I00
	5	11	18		15	MKX2AW31004B00
	6	12.5	18		15	MKX2AW31004C00
0.12 "	6	12.5	18		15	MKX2AW31204C00
	6	12.5	18		15	MKX2AW31504C00
0.15 "	8	15	18		15	MKX2AW31504F00
	6	15	26.5		22.5	MKX2AW31505B00
	8	15	18		15	MKX2AW31804F00
0.18 "	6	15	26.5		22.5	MKX2AW31805B00
	9	14	18		15	MKX2AW32204H00
0.22 "	8	15	18		15	MKX2AW32204F00
	6	15	26.5		22.5	MKX2AW32205B00
	8	15	18		15	MKX2AW32704F00
0.27 "	7	16.5	26.5		22.5	MKX2AW32705D00
	11	14	18		15	MKX2AW33304M00
0.33 "	9	16	18		15	MKX2AW33304J00
	7	16.5	26.5		22.5	MKX2AW33305D00
	8.5	18.5	26.5		22.5	MKX2AW33905F00
0.39 "	8.5	18.5	26.5		22.5	MKX2AW34705F00
	10.5	19	26.5		22.5	MKX2AW34705G00
0.47 "	9	19	31.5		27.5	MKX2AW34706A00
	10.5	19	26.5		22.5	MKX2AW35605G00
	9	19	31.5		27.5	MKX2AW35606A00
0.56 "	10.5	19	26.5		22.5	MKX2AW36805G00
	11	21	26.5		22.5	MKX2AW36805I00
0.68 "	9	19	31.5		27.5	MKX2AW36806A00
	11	21	26.5		22.5	MKX2AW38205I00
	9	19	31.5		27.5	MKX2AW38206A00

\* f = 50/60 Hz

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

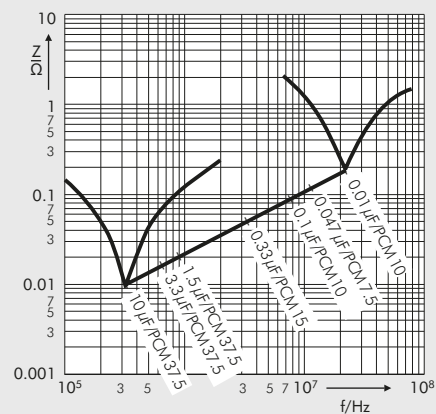
Dims. in mm.



Part number completion:	
Tolerance:	20 % = M
	10 % = K
	5 % = J
Packing:	bulk = S
Pin length:	6-2 = SD
Taped version see page 157.	

d = 0.6  $\varnothing$  if PCM = 10  
d = 0.8  $\varnothing$  if PCM  $\geq$  15

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Impedance change with frequency (general guide).

Continuation page 93

## Continuation

### General Data

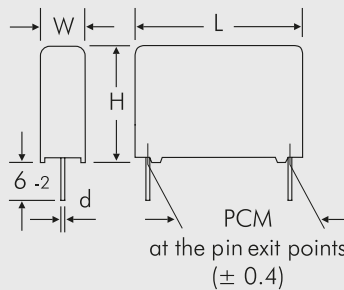
Capacitance	305 VAC*				Part number
	W	H	L	PCM**	
1.0 $\mu$ F	11	21	26.5	22.5	MKX2AW41005I00_____
	11	21	31.5	27.5	MKX2AW41006B00_____
	13	24	31.5	27.5	MKX2AW41006D00_____
1.2 "	11	21	31.5	27.5	MKX2AW41206B00_____
	13	24	31.5	27.5	MKX2AW41506D00_____
1.5 "	15	26	31.5	27.5	MKX2AW41506F00_____
	13	24	41.5	37.5	MKX2AW41507C00_____
	13	24	31.5	27.5	MKX2AW41806D00_____
1.8 "	13	24	41.5	37.5	MKX2AW41807C00_____
	15	26	31.5	27.5	MKX2AW42206F00_____
2.2 "	17	29	31.5	27.5	MKX2AW42206G00_____
	13	24	41.5	37.5	MKX2AW42207C00_____
	15	26	41.5	37.5	MKX2AW42207D00_____
2.7 "	17	29	31.5	27.5	MKX2AW42706G00_____
	15	26	41.5	37.5	MKX2AW42707D00_____
	17	29	41.5	37.5	MKX2AW42707E00_____
3.3 "	17	34.5	31.5	27.5	MKX2AW43306I00_____
	20	39.5	31.5	27.5	MKX2AW43306J00_____
	15	26	41.5	37.5	MKX2AW43307D00_____
3.9 "	17	29	41.5	37.5	MKX2AW43307E00_____
	17	34.5	31.5	27.5	MKX2AW43906I00_____
	17	29	41.5	37.5	MKX2AW43907E00_____
4.7 "	19	32	41.5	37.5	MKX2AW43907F00_____
	20	39.5	31.5	27.5	MKX2AW44706J00_____
	19	32	41.5	37.5	MKX2AW44707F00_____
5.6 "	20	39.5	41.5	37.5	MKX2AW44707G00_____
	19	32	41.5	37.5	MKX2AW45607F00_____
	20	39.5	41.5	37.5	MKX2AW45607G00_____
6.8 "	20	39.5	41.5	37.5	MKX2AW46807G00_____
	24	45.5	41.5	37.5	MKX2AW46807H00_____
8.2 "	24	45.5	41.5	37.5	MKX2AW48207H00_____
	31	46	41.5	37.5	MKX2AW48207I00_____
10 $\mu$ F	24	45.5	41.5	37.5	MKX2AW51007H00_____
	31	46	41.5	37.5	MKX2AW51007I00_____

\* f = 50/60 Hz

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

Dims. in mm.

d = 0.8  $\varnothing$  if PCM  $\leq$  27.5  
d = 1.0  $\varnothing$  if PCM = 37.5



Part number completion:

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

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

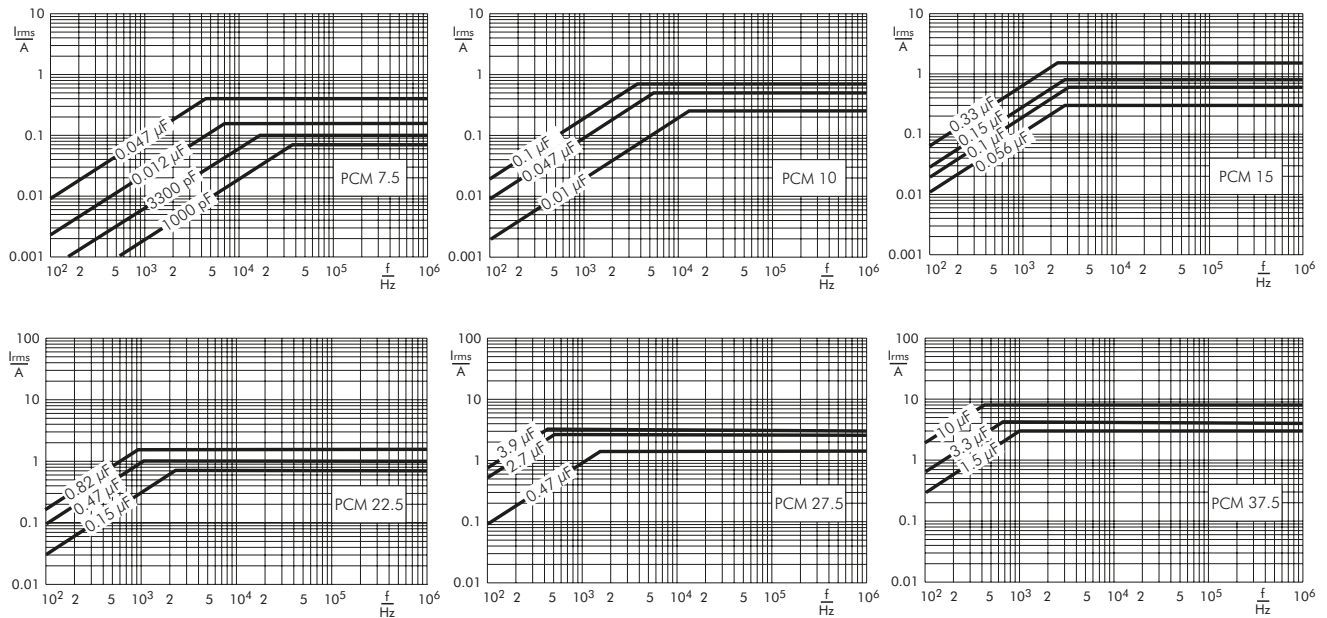
Taped version see page 157.

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Continuation page 94

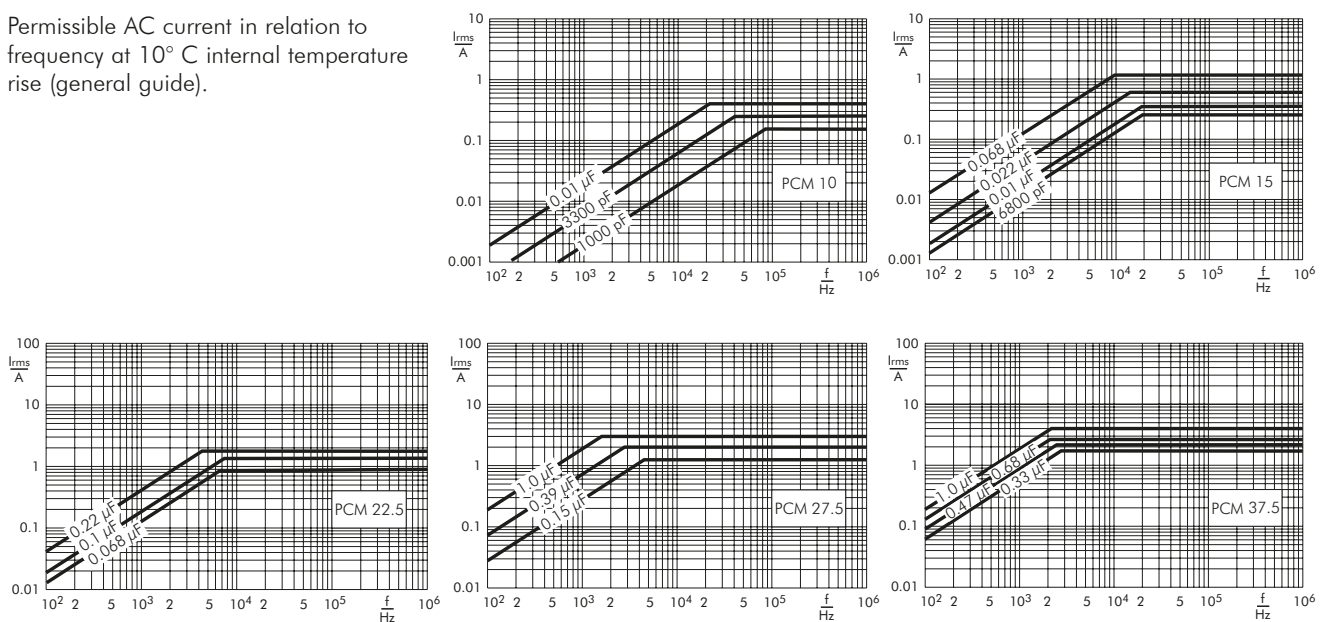
## Continuation

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



# WIMA MKP-Y2

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



Technical information and general data see page 95

## 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:  $T_{max.} \leq 110^{\circ} C$

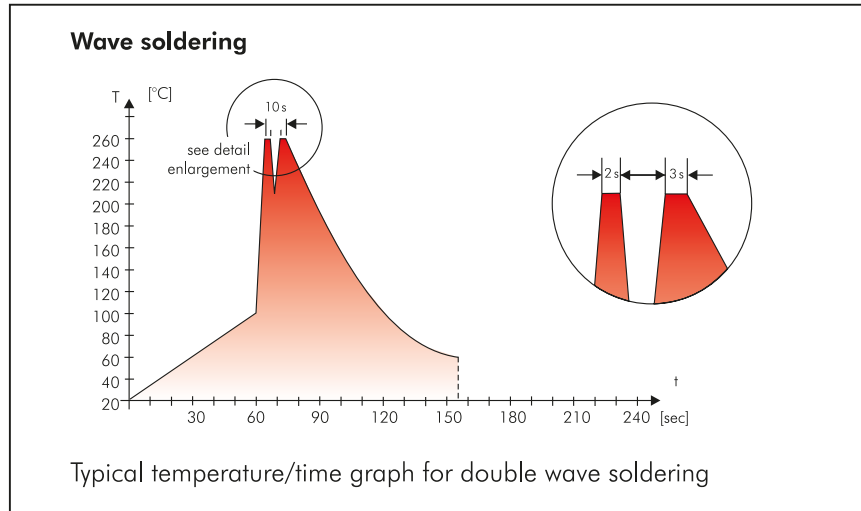
#### Single wave soldering

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:  $\sum t < 5 \text{ sec}$

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 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-frained from using such substances since years already.



WIMA Kondensatoren sind bleifrei konform RoHS 2015/863/EU

WIMA capacitors are lead free in accordance with RoHS 2015/863/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

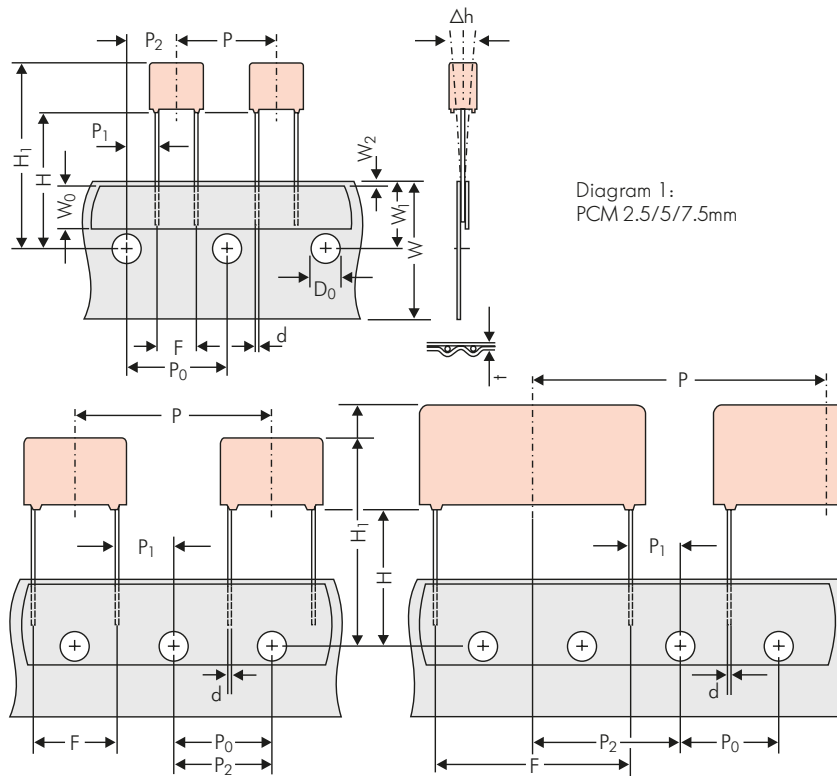


Diagram 1:  
PCM 2.5/5/7.5mm

Diagram 2: PCM 10/15 mm

Diagram 3: PCM 22.5 and 27.5\*mm

\*PCM 27.5 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 error max. 1.0 mm/20 pitch	12.7 ±0.3 error max. 1.0 mm/20 pitch	12.7 ±0.3 error max. 1.0 mm/20 pitch	12.7 ±0.3 error max. 1.0 mm/20 pitch	12.7 ±0.3 error max. 1.0 mm/20 pitch	12.7 ±0.3 error max. 1.0 mm/20 pitch	12.7 ±0.3 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 <sub>▲</sub>	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 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.

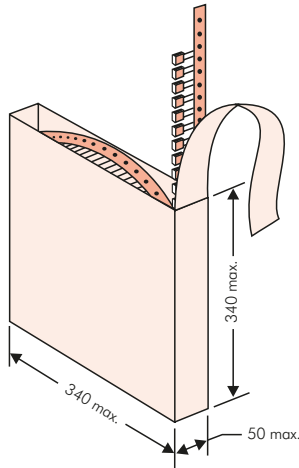
Please clarify customer-specific deviations with the manufacturer.

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

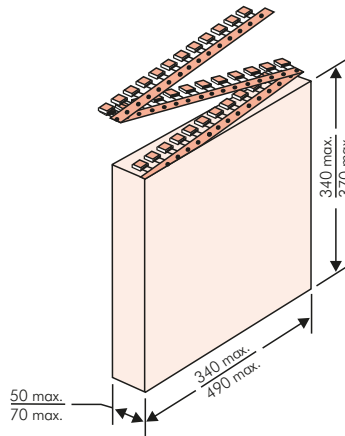
Position of components according to PCM 7.5 (sketch 1). P<sub>0</sub> = 12.7 or 15.0 is possible

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

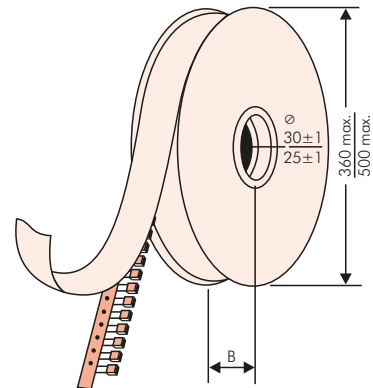
### ■ ROLL Packaging



### ■ AMMO Packaging



### ■ REEL Packaging



## BAR CODE (Labelling)

Labelling of package units in plain text and with alphanumeric 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

<b>WIMA Best Capacitors Made in Germany</b>	
Werk Aurich	
Supplier-ID: LIEF.NR.	Date Code: 20210419
Purchase Order No. (P/O): Bestellung xyz	P/O line: 100
Customer Part No.: KUNDENTEILENUMMER	
WIMA Part No.: MKP1F041006B00KSSD	Quantity: 459
WIMA Confirmation No.: 0001105072000100	RoHS 2011/65/EU
	COO: DE
Customer No.: 0000100002	
Gross Weight [g]: 4557	
WIMA - MKP 10	WIMA Part No.: MKP1F041006B00KSSD
MKP 10 1.0 µF 250 VDC 11x21x31.5 RM27.5	
Standard 10% Lose - Standard Drähte 6-2	
Vorlage Debitor Inland	
	0001105072000100
1002021443	QTY: 459 Week 19/2021



## 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				
	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
<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		3000	
	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	9	13	<b>3C</b>	3000				900		1600				1450	
	4	9.5	13	<b>3D</b>	3000				900		1600				1400	
	5	11	13	<b>3F</b>	3000				700		1300				1100	
	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	
	6	12.5	18	<b>4C</b>	2000				500		1000				1000	
	7	14	18	<b>4D</b>	1600				450		900				850	
	8	15	18	<b>4F</b>	1200				400		800				740	
	9	14	18	<b>4H</b>	1200				350		700				650	
	9	16	18	<b>4J</b>	900				350		700				650	
	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	
	8.5	18.5	26.5	<b>5F</b>	500						480				450	
	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		
<b>27.5 mm</b>	9	19	31.5	<b>6A</b>	567*						460/340*					
	11	21	31.5	<b>6B</b>	459*						380/280*					
	13	24	31.5	<b>6D</b>	378*						300					
	15	26	31.5	<b>6F</b>	324*						270					
	17	29	31.5	<b>6G</b>	198*											
	17	34.5	31.5	<b>6I</b>	198*											
	20	39.5	31.5	<b>6J</b>	162*											

\* for 2-inch transport pitches.

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

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

PCM	Size				bulk <b>S</b>	pcs. per packing unit									
						ROLL		REEL				AMMO			
	W	H	L	Codes		H16.5	H18.5	Ø 360		Ø 500		340 x 340		490 x 370	
				<b>N</b>	<b>O</b>	<b>F</b>	<b>I</b>	<b>H</b>	<b>J</b>	<b>A</b>	<b>C</b>	<b>B</b>	<b>D</b>		
<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*	–	–	–	–	–	–	–	–		
	28	38	41.5	<b>7L</b>	84*	–	–	–	–	–	–	–	–		
	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*	–	–	–	–	–	–	–			

\* 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.

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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 µF			2.5x6.5x7.2		-		20%	bulk	6 -2		

<p><b>Type description:</b></p> <p>SMD-PET = SMDT              SMD-PEN = SMDN              SMD-PPS = SMDI              FKP 02 = FKPO              MKS 02 = MKSO              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</p>	<p><b>Rated voltage:</b></p> <p>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              ...</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              1000 µF = 7100              1500 µF = 7150              ...</p>	<p><b>Size:</b></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 = YA              15.3x13.7x7 Size 6054 = YA              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              19x31x56 PCM 48.5 = 8D              25x45x57 PCM 52.5 = 9D              ...</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/TPS Standard = S              ...</p>
			<p><b>Version code:</b></p> <p>Standard = 00              Version A1 = 1A              Version A1.1.1 = 1B              Version A2 = 2A              ...</p>	<p><b>Pin length (untaped)</b></p> <p>3.5 ±0.5 = C9              6 -2 = SD              16 ±1 = P1              ...</p> <p><b>Pin length (taped)</b></p> <p>none = 00</p>

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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