

**Metallized Polypropylene (PP) RFI-Capacitors Class Y2**  
**in PCM 10 mm to 37.5 mm. Capacitances from 1000 pF to 1.0  $\mu$ F.**  
**Rated Voltage 300 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 Y2 RFI applications to meet EMC regulations**

- Capacitors connected to the mains between phase or neutral and earthed casing
- By-passing of the basic or supplementary insulation, pulse peak voltage  $\leq 5$  kV

## Construction

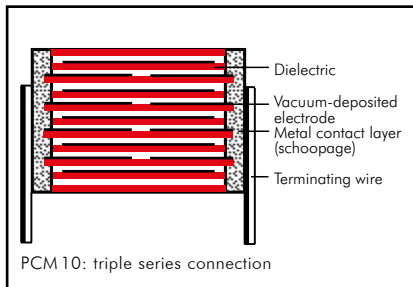
### Dielectric:

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 1.0  $\mu$ F

**Rated voltage:** 300 VAC

**Continuous DC voltage\*** (general guide):  $\leq 1000$  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>

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

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

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

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

$C > 0.33 \mu\text{F}$ :  $\geq 5000 \text{ sec (M}\Omega \times \mu\text{F)}$

Measuring voltage: 100 V/1 min.

### Test specifications:

In accordance with IEC 60384-14

### Maximum pulse rise time:

100 V/ $\mu$ sec for pulses equal to a voltage

amplitude with  $\sqrt{2} \times 300 \text{ VAC} = 425 \text{ V}$

according to IEC 60384-14

**Test voltage:** 2700 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                   |        | 40008997     |
| USA/Canada | UL        | UL 60384-14<br>CAN/CSA-E60384-14 |        | E 134915     |

## 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

## Packing

Available taped and reeled.

Detailed taping information and graphs at the end of the catalogue.

\* 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  $\sqrt{2} \times \text{UAC}$

For further details and graphs please refer to Technical Information.

## Continuation

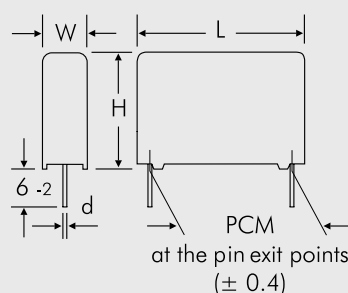
### General Data

| Capacitance | W | H    | 300 VAC*<br>L | PCM** | Part number    |
|-------------|---|------|---------------|-------|----------------|
| 1000 pF     | 4 | 9.5  | 13            | 10    | MKY22W11003D00 |
| 1200 "      | 4 | 9.5  | 13            | 10    | MKY22W11203D00 |
| 1500 "      | 4 | 9.5  | 13            | 10    | MKY22W11503D00 |
| 1800 "      | 4 | 9.5  | 13            | 10    | MKY22W11803D00 |
| 2200 "      | 4 | 9.5  | 13            | 10    | MKY22W12203D00 |
| 2700 "      | 4 | 9.5  | 13            | 10    | MKY22W12703D00 |
| 3300 "      | 4 | 9.5  | 13            | 10    | MKY22W13303D00 |
| 3900 "      | 4 | 9.5  | 13            | 10    | MKY22W13903D00 |
| 4700 "      | 5 | 11   | 13            | 10    | MKY22W14703F00 |
| 5600 "      | 5 | 11   | 13            | 10    | MKY22W15603F00 |
| 6800 "      | 6 | 12.5 | 13            | 10    | MKY22W16803H00 |
|             | 5 | 11   | 18            | 15    | MKY22W16804B00 |
| 8200 "      | 6 | 12.5 | 13            | 10    | MKY22W18203H00 |
|             | 5 | 11   | 18            | 15    | MKY22W18204B00 |
| 0.01 µF     | 8 | 12   | 13            | 10    | MKY22W21003I00 |
|             | 5 | 11   | 18            | 15    | MKY22W21004B00 |
| 0.012 "     | 5 | 11   | 18            | 15    | MKY22W21204B00 |
| 0.015 "     | 5 | 11   | 18            | 15    | MKY22W21504B00 |
| 0.018 "     | 5 | 11   | 18            | 15    | MKY22W21804B00 |
| 0.022 "     | 6 | 12.5 | 18            | 15    | MKY22W22204C00 |
| 0.027 "     | 6 | 12.5 | 18            | 15    | MKY22W22704C00 |
| 0.033 "     | 8 | 15   | 18            | 15    | MKY22W23304F00 |
| 0.039 "     | 8 | 15   | 18            | 15    | MKY22W23904F00 |
| 0.047 "     | 8 | 15   | 18            | 15    | MKY22W24704F00 |
| 0.056 "     | 8 | 15   | 18            | 15    | MKY22W25604F00 |
| 0.068 "     | 9 | 16   | 18            | 15    | MKY22W26804J00 |
|             | 6 | 15   | 26.5          | 22.5  | MKY22W26805B00 |
| 0.082 "     | 7 | 16.5 | 26.5          | 22.5  | MKY22W28205D00 |

\* f = 50/60 Hz

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

Dims. in mm.



d = 0.6 Ø if PCM = 10  
d = 0.8 Ø if PCM = 15 - 22.5

| Part number completion:     |          |
|-----------------------------|----------|
| Tolerance:                  | 20 % = M |
|                             | 10 % = K |
|                             | 5 % = J  |
| Packing:                    | bulk = S |
| Pin length:                 | 6-2 = SD |
| Taped version see page 151. |          |

Rights reserved to amend design data without prior notification.

Continuation page 91

## Continuation

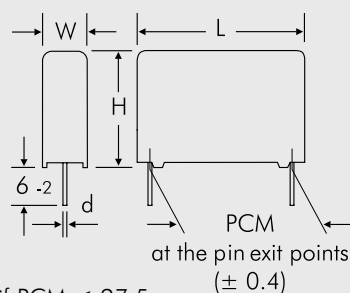
### General Data

| Capacitance | W    | H    | 300 VAC*<br>L | PCM** | Part number    |
|-------------|------|------|---------------|-------|----------------|
| 0.1 $\mu$ F | 7    | 16.5 | 26.5          | 22.5  | MKY22W31005D00 |
| 0.12 "      | 8.5  | 18.5 | 26.5          | 22.5  | MKY22W31205F00 |
| 0.15 "      | 8.5  | 18.5 | 26.5          | 22.5  | MKY22W31505F00 |
|             | 9    | 19   | 31.5          | 27.5  | MKY22W31506A00 |
| 0.18 "      | 10.5 | 19   | 26.5          | 22.5  | MKY22W31805G00 |
|             | 9    | 19   | 31.5          | 27.5  | MKY22W31806A00 |
| 0.22 "      | 11   | 21   | 26.5          | 22.5  | MKY22W32205I00 |
|             | 9    | 19   | 31.5          | 27.5  | MKY22W32206A00 |
| 0.27 "      | 11   | 21   | 31.5          | 27.5  | MKY22W32706B00 |
| 0.33 "      | 11   | 21   | 31.5          | 27.5  | MKY22W33306B00 |
|             | 13   | 24   | 41.5          | 37.5  | MKY22W33307C00 |
| 0.39 "      | 13   | 24   | 31.5          | 27.5  | MKY22W33906D00 |
|             | 13   | 24   | 41.5          | 37.5  | MKY22W33907C00 |
| 0.47 "      | 15   | 26   | 31.5          | 27.5  | MKY22W34706F00 |
|             | 13   | 24   | 41.5          | 37.5  | MKY22W34707C00 |
| 0.56 "      | 15   | 26   | 31.5          | 27.5  | MKY22W35606F00 |
|             | 13   | 24   | 41.5          | 37.5  | MKY22W35607C00 |
|             | 15   | 26   | 41.5          | 37.5  | MKY22W35607D00 |
| 0.68 "      | 17   | 29   | 31.5          | 27.5  | MKY22W36806G00 |
|             | 15   | 26   | 41.5          | 37.5  | MKY22W36807D00 |
|             | 17   | 29   | 41.5          | 37.5  | MKY22W36807E00 |
| 0.82 "      | 17   | 34.5 | 31.5          | 27.5  | MKY22W38206I00 |
|             | 17   | 29   | 41.5          | 37.5  | MKY22W38207E00 |
|             | 19   | 32   | 41.5          | 37.5  | MKY22W38207F00 |
| 1.0 $\mu$ F | 20   | 39.5 | 31.5          | 27.5  | MKY22W41006J00 |
|             | 17   | 29   | 41.5          | 37.5  | MKY22W41007E00 |
|             | 20   | 39.5 | 41.5          | 37.5  | MKY22W41007G00 |

\* f = 50/60 Hz

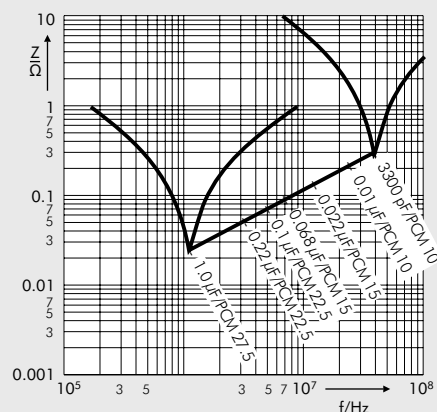
\*\* PCM = Printed circuit module = pin spacing

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 151. |          |



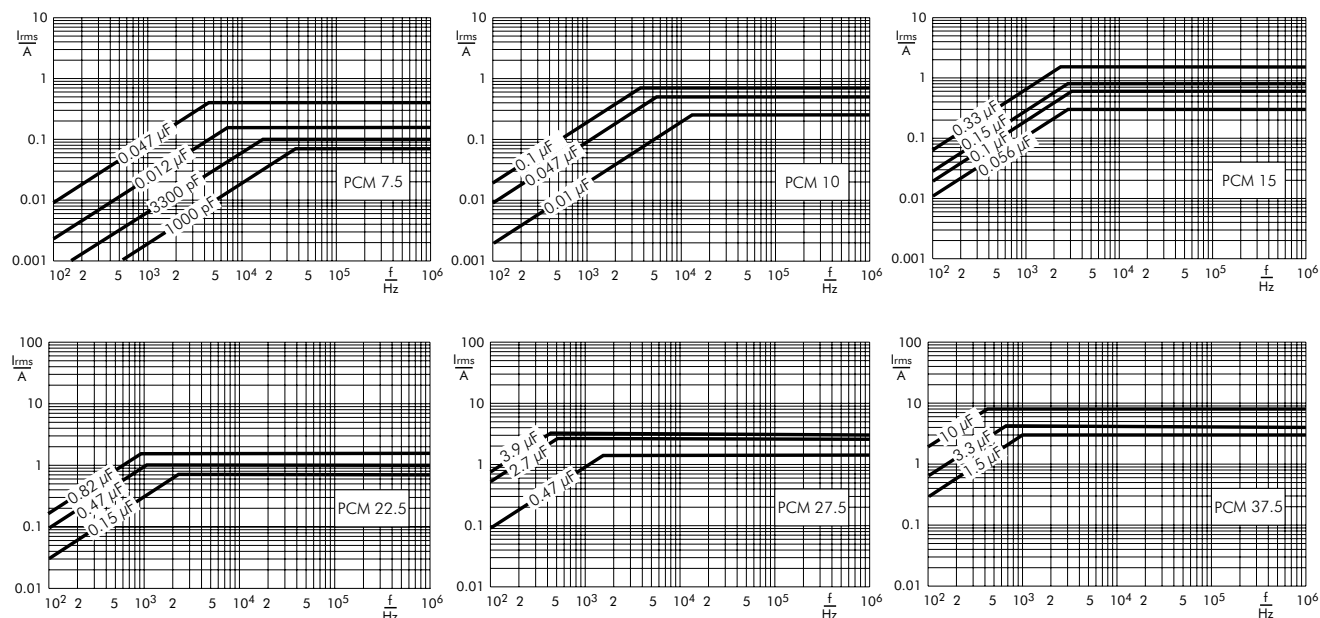
Impedance change with frequency  
(general guide).

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AC current graphs see page 88

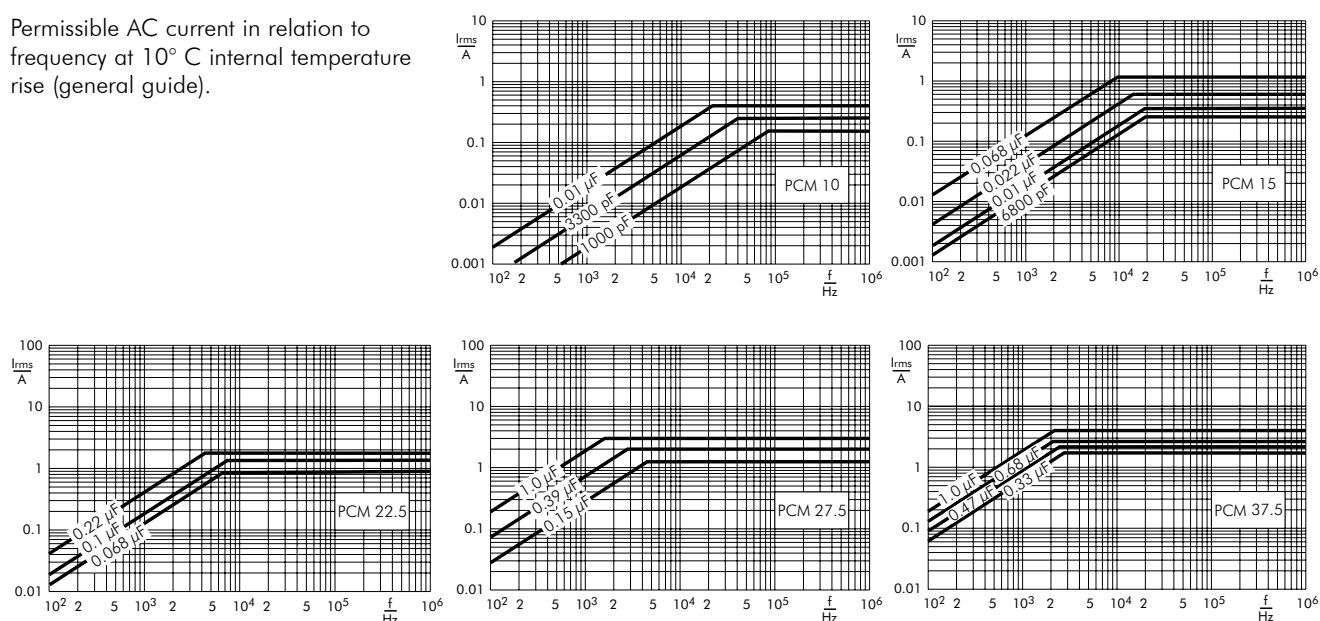
## Continuation

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 89

## Recommendation for Processing and Application of Through-Hole Capacitors

### Soldering Process

Internal temperature of the capacitor must be kept as follows:

Polyester: preheating:  $T_{\max.} \leq 125^{\circ}\text{C}$   
soldering:  $T_{\max.} \leq 135^{\circ}\text{C}$

Polypropylene: preheating:  $T_{\max.} \leq 100^{\circ}\text{C}$   
soldering:  $T_{\max.} \leq 110^{\circ}\text{C}$

#### Single wave soldering

Soldering bath temperature:  $T < 260^{\circ}\text{C}$

Dwell time:  $t < 5\text{ sec}$

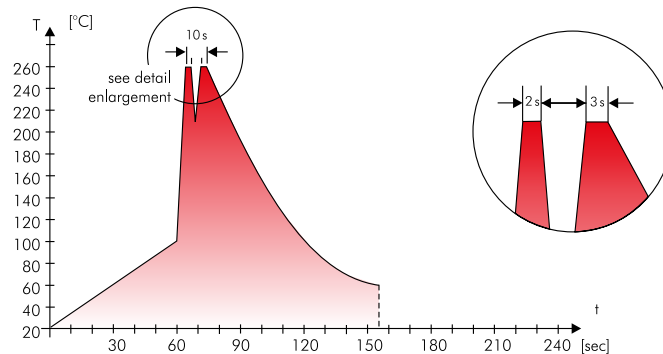
#### Double wave soldering

Soldering bath temperature:  $T < 260^{\circ}\text{C}$

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.

### Wave soldering



Typical temperature/time graph for double wave soldering

## WIMA Quality and Environmental Philosophy

### ISO 9001:2015 Certification

ISO 9001:2015 is an international basic standard of quality assurance systems for all branches of industry. The approval according to ISO 9001:2015 of our factories certifies that organisation, equipment and monitoring of quality assurance in our factories correspond to internationally recognized standards.

### WIMA WPCS

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

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

### WIMA Environmental Policy

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

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

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

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

We almost completely refrain from using packing materials such as:

- adhesive tapes made of plastic
- metal clips

### RoHS Compliance

According to the RoHS Directive 2015/863/EU as amended from time to time certain hazardous substances like e.g. lead, cadmium, mercury must not be used any longer in electronic equipment as of July 1st, 2006. For the sake of the environment WIMA has re-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

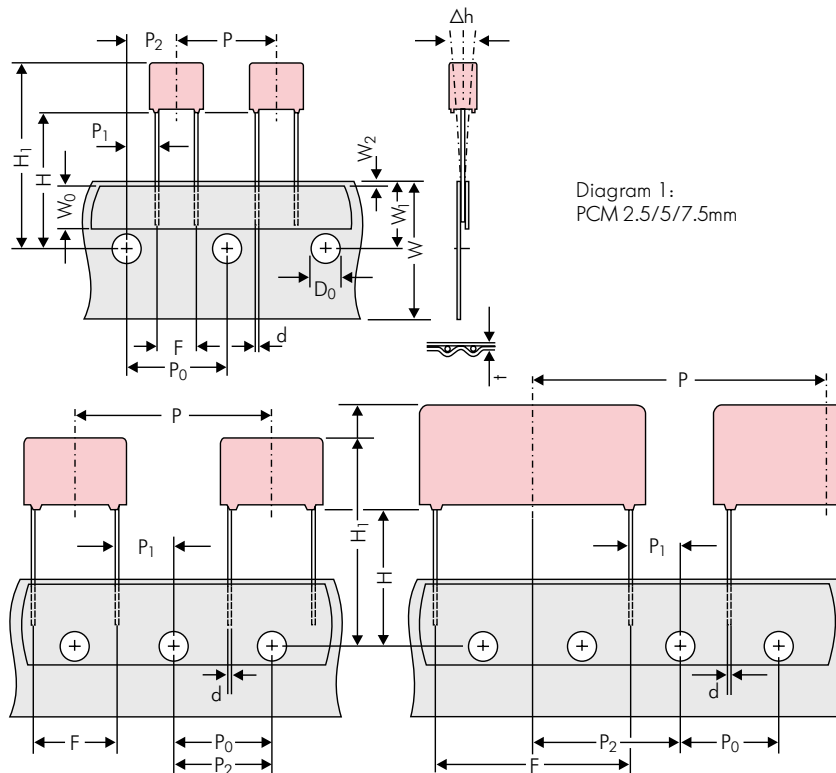


Diagram 2: PCM 10/15 mm

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 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 ▲            | 16.5 ±0.3<br>18.5 ±0.5                                  | 16.5 ±0.3<br>18.5 ±0.5                                  | 16.5 ±0.3<br>18.5 ±0.5                                    | 16.5 ±0.3<br>18.5 ±0.5                                    | 16.5 ±0.3<br>18.5 ±0.5                                    | 16.5 ±0.3<br>18.5 ±0.5                                    | 16.5 ±0.3<br>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><br>32.25 max. | H+H <sub>component</sub> < H <sub>1</sub><br>32.25 max. | H+H <sub>component</sub> < H <sub>1</sub><br>24.5 to 31.5 | H+H <sub>component</sub> < H <sub>1</sub><br>25.0 to 31.5 | H+H <sub>component</sub> < H <sub>1</sub><br>26.0 to 37.0 | H+H <sub>component</sub> < H <sub>1</sub><br>30.0 to 43.0 | H+H <sub>component</sub> < H <sub>1</sub><br>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<br>(see also page 152)                   | ▲              | ROLL/AMMO                                               |                                                         |                                                           | AMMO                                                      |                                                           |                                                           |                                                                     |
|                                                  |                | REEL Ø 360 max.<br>Ø 30 ±1                              | B 52 ±2<br>58 ±2 depending on comp. dimensions          |                                                           | REEL Ø 360 max.<br>Ø 30 ±1                                | B 52 ±2<br>58 ±2 or 66 ±2                                 | REEL Ø 500 max.<br>Ø 25 ±1                                | B 54 ±2<br>60 ±2 or 68 ±2 depending on PCM and component dimensions |
| Unit                                             |                | see details page 153.                                   |                                                         |                                                           |                                                           |                                                           |                                                           |                                                                     |

▲ When ordering please specify dimension H and required packaging type.

Dims in mm.

• Diameter of pins see General Data.

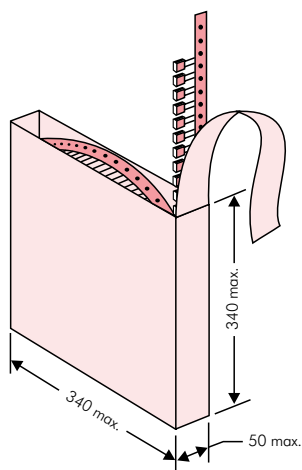
Please clarify customer-specific deviations with the manufacturer.

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

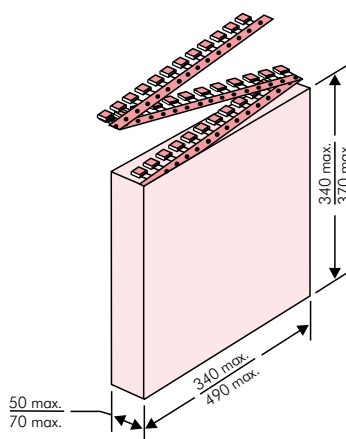
Position of components according to PCM 7.5 (sketch 1). P<sub>0</sub> = 12.7 or 15.0 is possible

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

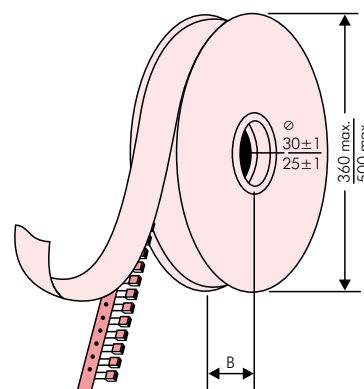
### ■ ROLL Packaging



### ■ 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</b> Best Capacitors Made in Germany<br>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                                                                                                                                        |                            |
|                                                                                                                                                                                |                            |
| Customer No.: 0000100002                                                                                                                                                       | RoHS 2011/65/EU            |
| Gross Weight [g]: 4557                                                                                                                                                         | COO: DE                    |
|                                                                                                                                                                                |                            |
| WIMA – MKP 10      WIMA Part No.: MKP1F041006B00KSSD<br>MKP 10 1.0 µF 250 VDC 11x21x31.5 RM27.5<br>Standard 10%      Loss – Standard      Drähte 6-2<br>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 | ROLL  |       | pcs. per packing unit |       |           |           | AMMO  |       |       |       |
|---------|------|------|------|-------|------|-------|-------|-----------------------|-------|-----------|-----------|-------|-------|-------|-------|
|         |      |      |      |       |      |       |       | REEL                  |       |           |           |       |       |       |       |
|         |      |      |      |       |      | H16.5 | H18.5 | Ø 360                 | Ø 500 | 340 x 340 | 490 x 370 | H16.5 | H18.5 | H16.5 | H18.5 |
|         | W    | H    | L    | Codes | S    | N     | O     | F                     | I     | H         | J         | A     | C     | B     | D     |
| 2.5 mm  | 2.5  | 7    | 4.6  | 0B    | 5000 | 2200  |       | 2500                  |       | –         |           | 2800  |       | –     |       |
|         | 3    | 7.5  | 4.6  | 0C    | 5000 | 2000  |       | 2300                  |       | –         |           | 2300  |       | –     |       |
|         | 3.8  | 8.5  | 4.6  | 0D    | 5000 | 1500  |       | 1800                  |       | –         |           | 1800  |       | –     |       |
|         | 4.6  | 9    | 4.6  | 0E    | 5000 | 1200  |       | 1500                  |       | –         |           | 1500  |       | –     |       |
|         | 5.5  | 10   | 4.6  | 0F    | 5000 | 900   |       | 1200                  |       | –         |           | 1200  |       | –     |       |
| 5 mm    | 2.5  | 6.5  | 7.2  | 1A    | 5000 | 2200  |       | 2500                  |       | –         |           | 2800  |       | –     |       |
|         | 3    | 7.5  | 7.2  | 1B    | 5000 | 2000  |       | 2300                  |       | –         |           | 2300  |       | –     |       |
|         | 3.5  | 8.5  | 7.2  | 1C    | 5000 | 1600  |       | 2000                  |       | –         |           | 2000  |       | –     |       |
|         | 4.5  | 6    | 7.2  | 1D    | 6000 | 1300  |       | 1500                  |       | –         |           | 1500  |       | –     |       |
|         | 4.5  | 9.5  | 7.2  | 1E    | 4000 | 1300  |       | 1500                  |       | –         |           | 1500  |       | –     |       |
|         | 5    | 10   | 7.2  | 1F    | 3500 | 1100  |       | 1400                  |       | –         |           | 1400  |       | –     |       |
|         | 5.5  | 7    | 7.2  | 1G    | 4000 | 1000  |       | 1200                  |       | –         |           | 1200  |       | –     |       |
|         | 5.5  | 11.5 | 7.2  | 1H    | 2500 | 1000  |       | 1200                  |       | –         |           | 1200  |       | –     |       |
|         | 6.5  | 8    | 7.2  | 1I    | 2500 | 800   |       | 1000                  |       | –         |           | 1000  |       | –     |       |
|         | 7.2  | 8.5  | 7.2  | 1J    | 2500 | 700   |       | 1000                  |       | –         |           | 1000  |       | –     |       |
|         | 7.2  | 13   | 7.2  | 1K    | 2000 | 700   |       | 950                   |       | –         |           | 1000  |       | –     |       |
|         | 8.5  | 10   | 7.2  | 1L    | 2000 | 600   |       | 800                   |       | –         |           | 800   |       | –     |       |
|         | 8.5  | 14   | 7.2  | 1M    | 1500 | 600   |       | 800                   |       | –         |           | 800   |       | –     |       |
|         | 11   | 16   | 7.2  | 1N    | 1000 | 500   |       | 600                   |       | –         |           | 640   |       | –     |       |
| 7.5 mm  | 2.5  | 7    | 10   | 2A    | 5000 | –     |       | 2500                  |       | 4400      |           | 2500  |       | –     |       |
|         | 3    | 8.5  | 10   | 2B    | 5000 | –     |       | 2200                  |       | 4300      |           | 2300  |       | 4150  |       |
|         | 4    | 9    | 10   | 2C    | 4000 | –     |       | 1700                  |       | 3200      |           | 1700  |       | 3000  |       |
|         | 4.5  | 9.5  | 10.3 | 2D    | 3500 | –     |       | 1500                  |       | 2900      |           | 1400  |       | 2700  |       |
|         | 5    | 10.5 | 10.3 | 2E    | 3000 | –     |       | 1300                  |       | 2500      |           | 1300  |       | –     |       |
|         | 5.7  | 12.5 | 10.3 | 2F    | 2000 | –     |       | 1000                  |       | 2200      |           | 1100  |       | –     |       |
|         | 7.2  | 12.5 | 10.3 | 2G    | 1500 | –     |       | 900                   |       | 1800      |           | 1000  |       | –     |       |
| 10 mm   | 3    | 9    | 13   | 3A    | 3000 | –     |       | 1100                  |       | 2200      |           | –     |       | 1900  |       |
|         | 4    | 9    | 13   | 3C    | 3000 | –     |       | 900                   |       | 1600      |           | –     |       | 1450  |       |
|         | 4    | 9.5  | 13   | 3D    | 3000 | –     |       | 900                   |       | 1600      |           | –     |       | 1400  |       |
|         | 5    | 11   | 13   | 3F    | 3000 | –     |       | 700                   |       | 1300      |           | –     |       | 1100  |       |
|         | 6    | 12   | 13   | 3G    | 2400 | –     |       | 550                   |       | 1100      |           | –     |       | 1000  |       |
|         | 6    | 12.5 | 13   | 3H    | 2400 | –     |       | 550                   |       | 1100      |           | –     |       | 1000  |       |
|         | 8    | 12   | 13   | 3I    | 2000 | –     |       | 400                   |       | 800       |           | –     |       | 740   |       |
| 15 mm   | 5    | 11   | 18   | 4B    | 2400 | –     |       | 600                   |       | 1200      |           | –     |       | 1150  |       |
|         | 6    | 12.5 | 18   | 4C    | 2000 | –     |       | 500                   |       | 1000      |           | –     |       | 1000  |       |
|         | 7    | 14   | 18   | 4D    | 1600 | –     |       | 450                   |       | 900       |           | –     |       | 850   |       |
|         | 8    | 15   | 18   | 4F    | 1200 | –     |       | 400                   |       | 800       |           | –     |       | 740   |       |
|         | 9    | 14   | 18   | 4H    | 1200 | –     |       | 350                   |       | 700       |           | –     |       | 650   |       |
|         | 9    | 16   | 18   | 4J    | 900  | –     |       | 350                   |       | 700       |           | –     |       | 650   |       |
|         | 11   | 14   | 18   | 4M    | 1000 | –     |       | 300                   |       | 600       |           | –     |       | 540   |       |
| 22.5 mm | 5    | 14   | 26.5 | 5A    | 1200 | –     |       | –                     |       | 800       |           | –     |       | 770   |       |
|         | 6    | 15   | 26.5 | 5B    | 1000 | –     |       | –                     |       | 700       |           | –     |       | 640   |       |
|         | 7    | 16.5 | 26.5 | 5D    | 760  | –     |       | –                     |       | 600       |           | –     |       | 550   |       |
|         | 8.5  | 18.5 | 26.5 | 5F    | 500  | –     |       | –                     |       | 480       |           | –     |       | 450   |       |
|         | 10.5 | 19   | 26.5 | 5G    | 594* | –     |       | –                     |       | 400       |           | –     |       | 360   |       |
|         | 10.5 | 20.5 | 26.5 | 5H    | 594* | –     |       | –                     |       | 400       |           | –     |       | 360   |       |
|         | 11   | 21   | 26.5 | 5I    | 561* | –     |       | –                     |       | 380       |           | –     |       | 350   |       |
| 27.5 mm | 9    | 19   | 31.5 | 6A    | 567* | –     |       | –                     |       | 460/340*  |           | –     |       | –     |       |
|         | 11   | 21   | 31.5 | 6B    | 459* | –     |       | –                     |       | 380/280*  |           | –     |       | –     |       |
|         | 13   | 24   | 31.5 | 6D    | 378* | –     |       | –                     |       | 300       |           | –     |       | –     |       |
|         | 15   | 26   | 31.5 | 6F    | 324* | –     |       | –                     |       | 270       |           | –     |       | –     |       |
|         | 17   | 29   | 31.5 | 6G    | 198* | –     |       | –                     |       | –         |           | –     |       | –     |       |
|         | 17   | 34.5 | 31.5 | 6I    | 198* | –     |       | –                     |       | –         |           | –     |       | –     |       |
|         | 20   | 39.5 | 31.5 | 6J    | 162* | –     |       | –                     |       | –         |           | –     |       | –     |       |

\* for 2-inch transport pitches.

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

Rights reserved to amend design data without prior notification.



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

| PCM              | Size |      |      |           | bulk | ROLL  |       | REEL  |       |       |       | AMMO      |       |           |       |
|------------------|------|------|------|-----------|------|-------|-------|-------|-------|-------|-------|-----------|-------|-----------|-------|
|                  |      |      |      |           |      | H16.5 | H18.5 | Ø 360 |       | Ø 500 |       | 340 x 340 |       | 490 x 370 |       |
|                  | W    | H    | L    | Codes     |      |       |       | H16.5 | H18.5 | H16.5 | H18.5 | H16.5     | H18.5 | H16.5     | H18.5 |
|                  |      |      |      |           | S    | N     | O     | F     | I     | H     | J     | A         | C     | B         | D     |
| <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.

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 µF             |   |   |    | 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>      |      |      |    |
| SMD-PET = SMDT           |   |   |   | 50 VDC = B0           |   | 22 pF = 0022        |   |   |    | 4.8x3.3x3 Size 1812 = KA   |    |    |    | ±20% = M               |      |      |    |
| SMD-PPS = SMDI           |   |   |   | 63 VDC = C0           |   | 47 pF = 0047        |   |   |    | 4.8x3.3x4 Size 1812 = KB   |    |    |    | ±10% = K               |      |      |    |
| FKP 02 = FKP0            |   |   |   | 100 VDC = D0          |   | 100 pF = 0100       |   |   |    | 5.7x5.1x3.5 Size 2220 = QA |    |    |    | ±5% = J                |      |      |    |
| MKS 02 = MKS0            |   |   |   | 250 VDC = F0          |   | 150 pF = 0150       |   |   |    | 5.7x5.1x4.5 Size 2220 = QB |    |    |    | ±2.5% = H              |      |      |    |
| FKS 2 = FKS2             |   |   |   | 400 VDC = G0          |   | 220 pF = 0220       |   |   |    | 7.2x6.1x3 Size 2824 = TA   |    |    |    | ±1% = E                |      |      |    |
| FKP 2 = FKP2             |   |   |   | 450 VDC = H0          |   | 330 pF = 0330       |   |   |    | 7.2x6.1x5 Size 2824 = TB   |    |    |    | ...                    |      |      |    |
| FKS 3 = FKS3             |   |   |   | 520 VDC = H2          |   | 470 pF = 0470       |   |   |    | 10.2x7.6x5 Size 4030 = VA  |    |    |    |                        |      |      |    |
| FKP 3 = FKP 3            |   |   |   | 600 VDC = I0          |   | 680 pF = 0680       |   |   |    | 12.7x10.2x6 Size 5040 = XA |    |    |    |                        |      |      |    |
| MKS 2 = MKS2             |   |   |   | 630 VDC = J0          |   | 1000 pF = 1100      |   |   |    | 15.3x13.7x7 Size 6054 = YA |    |    |    |                        |      |      |    |
| MKP 2 = MKP2             |   |   |   | 700 VDC = K0          |   | 1500 pF = 1150      |   |   |    | 2.5x7x4.6 PCM2.5 = 0B      |    |    |    | <b>Packing:</b>        |      |      |    |
| MKS 4 = MKS4             |   |   |   | 800 VDC = L0          |   | 2200 pF = 1220      |   |   |    | 3x7.5x4.6 PCM2.5 = 0C      |    |    |    | AMMO H16.5 340x340 = A |      |      |    |
| MKP 4 = MKP4             |   |   |   | 850 VDC = M0          |   | 3300 pF = 1330      |   |   |    | 2.5x6.5x7.2 PCM5 = 1A      |    |    |    | AMMO H16.5 490x370 = B |      |      |    |
| MKP 10 = MKP1            |   |   |   | 900 VDC = N0          |   | 4700 pF = 1470      |   |   |    | 3x7.5x7.2 PCM5 = 1B        |    |    |    | AMMO H18.5 340x340 = C |      |      |    |
| FKP 4 = FKP4             |   |   |   | 1000 VDC = O1         |   | 6800 pF = 1680      |   |   |    | 2.5x7x10 PCM7.5 = 2A       |    |    |    | AMMO H18.5 490x370 = D |      |      |    |
| FKP 1 = FKP1             |   |   |   | 1100 VDC = P0         |   | 0.01 µF = 2100      |   |   |    | 3x8.5x10 PCM7.5 = 2B       |    |    |    | REEL H16.5 360 = F     |      |      |    |
| MKP-X2 = MKX2            |   |   |   | 1200 VDC = Q0         |   | 0.022 µF = 2220     |   |   |    | 3x9x13 PCM10 = 3A          |    |    |    | REEL H16.5 500 = H     |      |      |    |
| MKP-X1 R = MKX1          |   |   |   | 1250 VDC = R0         |   | 0.047 µF = 2470     |   |   |    | 4x9x13 PCM10 = 3C          |    |    |    | REEL H18.5 360 = I     |      |      |    |
| MKP-Y2 = MKY2            |   |   |   | 1500 VDC = S0         |   | 0.1 µF = 3100       |   |   |    | 5x11x18 PCM15 = 4B         |    |    |    | REEL H18.5 500 = J     |      |      |    |
| MKP 4F = MKPF            |   |   |   | 1600 VDC = T0         |   | 0.22 µF = 3220      |   |   |    | 6x12.5x18 PCM15 = 4C       |    |    |    | ROLL H16.5 = N         |      |      |    |
| Snubber MKP = SNMP       |   |   |   | 1700 VDC = TA         |   | 0.47 µF = 3470      |   |   |    | 6x14x26.5 PCM22.5 = 5A     |    |    |    | ROLL H18.5 = O         |      |      |    |
| Snubber FKP = SNFP       |   |   |   | 2000 VDC = U0         |   | 1 µF = 4100         |   |   |    | 6x15x26.5 PCM22.5 = 5B     |    |    |    | BLISTER W12 180 = P    |      |      |    |
| GTO MKP = GTOM           |   |   |   | 2500 VDC = V0         |   | 2.2 µF = 4220       |   |   |    | 9x19x31.5 PCM27.5 = 6A     |    |    |    | BLISTER W12 330 = Q    |      |      |    |
| DC-LINK MKP 4 = DCP4     |   |   |   | 3000 VDC = W0         |   | 4.7 µF = 4470       |   |   |    | 11x21x31.5 PCM27.5 = 6B    |    |    |    | BLISTER W16 330 = R    |      |      |    |
| DC-LINK MKP 6 = DCP6     |   |   |   | 4000 VDC = X0         |   | 10 µF = 5100        |   |   |    | 9x19x41.5 PCM37.5 = 7A     |    |    |    | BLISTER W24 330 = T    |      |      |    |
| DC-LINK HC = DCHC        |   |   |   | 6000 VDC = Y0         |   | 22 µF = 5220        |   |   |    | 11x22x41.5 PCM37.5 = 7B    |    |    |    | Bulk/TPS Standard = S  |      |      |    |
|                          |   |   |   | 230 VAC = 3Y          |   | 47 µF = 5470        |   |   |    | 19x31x56 PCM 48.5 = 8D     |    |    |    | ...                    |      |      |    |
|                          |   |   |   | 275 VAC = 1W          |   | 100 µF = 6100       |   |   |    | 25x45x57 PCM 52.5 = 9D     |    |    |    |                        |      |      |    |
|                          |   |   |   | 300 VAC = 2W          |   | 220 µF = 6220       |   |   |    | ...                        |    |    |    |                        |      |      |    |
|                          |   |   |   | 305 VAC = AW          |   | 1000 µF = 7100      |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   | 350 VAC = BW          |   | 1500 µF = 7150      |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   | 440 VAC = 4W          |   | ...                 |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   | ...                   |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   |                     |   |   |    |                            |    |    |    |                        |      |      |    |
|                          |   |   |   |                       |   | </                  |   |   |    |                            |    |    |    |                        |      |      |    |

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.