WIMA MP 3-X1

Metallized Paper (MP) RFI-Capacitors Class X1 in PCM 10 mm to 15 mm. Capacitances from 1000 pF to 0.033 µF. Rated Voltages from 300 VAC to 500 VAC.

Special Features

- **Particularly high reliability against active and passive flammability**
- **Excellent self-healing as well as high voltage strength**
- **High degree of interference suppression due to good attenuation and low ESR**
- **For temperatures up to +110° C**
- **According to RoHS 2011/65/EU**

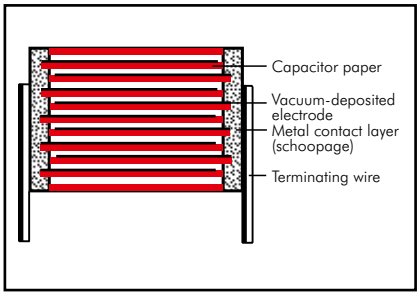
Typical Applications

Class X1 RFI applications to meet EMC regulations

- **Capacitors connected to the mains between phase and neutral or phase and phase conductors**
- **High peak voltage applications, pulse peak voltage ⩽ 4 kV**

Construction

Dielectric:
Paper, epoxy resin impregnated
Capacitor electrodes:
Vacuum-deposited
Internal construction:



Encapsulation:
Self-extinguishing epoxy resin, UL 94 V-0, metal foil
Terminations:
Tinned wire.
Marking:
Marking: Black on Silver.

Electrical Data

Capacitance range:
1000 pF to 0.033 µF (E12-values on request)
Rated voltages:
300 VAC, 440 VAC, 500 VAC
Continuous DC voltage* (general guide):
⩽ 730 V for 300 VAC
⩽ 850 V for 440 VAC and 500 VAC
Capacitance tolerances: ±20%
Operating temperature range:
–40° C to +110° C
Climatic test category:
40/110/56/C in accordance with IEC
Insulation resistance at +20° C:
⩾ 12 x 10^3 MΩ
Measuring voltage:
100 V/1 min. for 300 VAC and 440 VAC
500 V/1 min. for 500 VAC
Dissipation factors:
tan δ ⩽ 13 x 10^{-3} at 1 kHz and +20° C
Approvals:

Authority	Specification	Symbol	Approval-No
UL/Demko	EN 60384-14		ENEC-02830 (300 VAC) ENEC-02831(440/500 VAC)
UL	UL 60384-14 CAN/CSA-E60384-14		E 100438

Test specifications:
In accordance with IEC 60384-14
Maximum pulse rise time:

Capacitance pF/µF	Pulse rise time V/µsec max. operation
1000 ... 4700	2500
6800 ... 0.022	1750
0.033	750

for pulses equal to a voltage amplitude
with √2 x 300 VAC = 425 V,
with √2 x 440 VAC = 623 V,
with √2 x 500 VAC = 707 V
according to IEC 60384-14
Test voltage: 2300 VDC, 2 sec.
Reliability:
Operational life > 300 000 hours
Failure rate < 1 fit (0.5 x U_r and 40° C)

Mounting Recommendation

To minimize or avoid shock and/or vibration stresses to terminating wires and solder connections we recommend to fix voluminous resin-potted MP capacitors as from e.g. PCM 22.5 mm in an appropriate way since for constructional reasons they do not sit tight on the board.

* 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 ($F_{max.}$) will be subject to a reduction according to

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

if the DC operating voltage UDC is higher than √2 x UAC

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.

WIMA MP 3-X1

Continuation

General Data

Capacitance	300 VAC* W	H	L	PCM**	Part number	440 VAC* W	H	L	PCM**	Part number
1000 pF	4	8.5	13.5	10	MPX12W1100FA00_ _ _ _					
1500 „	4	8.5	13.5	10	MPX12W1150FA00_ _ _ _					
2200 „	4	8.5	13.5	10	MPX12W1220FA00_ _ _ _					
3300 „	4	8.5	13.5	10	MPX12W1330FA00_ _ _ _					
4700 „	5	10	13.5	10	MPX12W1470FB00_ _ _ _					
6800 „	5	13	19	15	MPX12W1680FC00_ _ _ _	5	13	19	15	MPX14W1680FC00_ _ _ _
0.01 µF	5	13	19	15	MPX12W2100FC00_ _ _ _	5	13	19	15	MPX14W2100FC00_ _ _ _
0.015 „	6	14	19	15	MPX12W2150FD00_ _ _ _	6	14	19	15	MPX14W2150FD00_ _ _ _
0.022 „	7	15	19	15	MPX12W2220FE00_ _ _ _	7	15	19	15	MPX14W2220FE00_ _ _ _
0.033 „	8	17	19	15	MPX12W2330FF00_ _ _ _	10	18	19	15	MPX14W2330FG00_ _ _ _

Capacitance	500 VAC* W	H	L	PCM**	Part number
6800 pF	5	13	19	15	MPX15W1680FC00_ _ _ _
0.01 µF	5	13	19	15	MPX15W2100FC00_ _ _ _
0.015 „	6	14	19	15	MPX15W2150FD00_ _ _ _
0.022 „	7	15	19	15	MPX15W2220FE00_ _ _ _
0.033 „	10	18	19	15	MPX15W2330FG00_ _ _ _

Part number completion:

Tolerance: 20 % = M
Packing: bulk = S
Pin length: 6-2 = SD

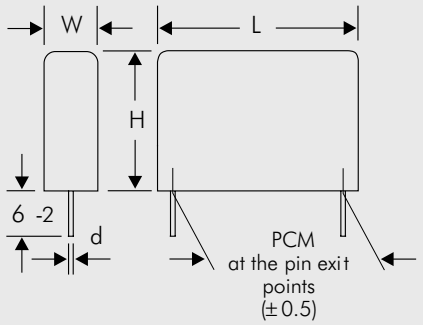
Taped version see page 161.

* f = 50/60 Hz

** PCM = Printed circuit module = pin spacing
Upon request with long pins 35-2 mm max.

Dims in mm.

d = 0.6 ø if PCM10
d = 0.8 ø if PCM≥15



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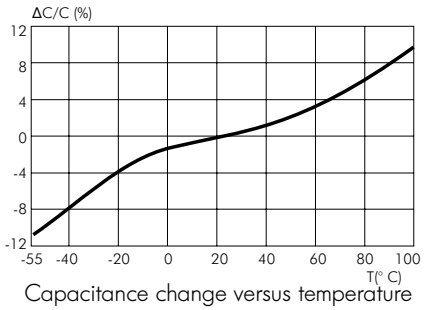
data without prior notification.

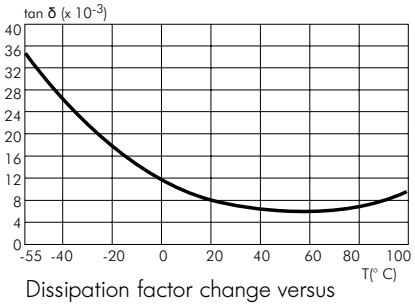
Typical Graphs of the Capacitor Paper Dielectric

valid for:

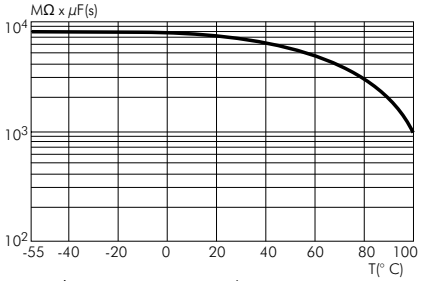
MP 3-X2
MP 3-X1
MP 3-Y2 / 3R-Y2



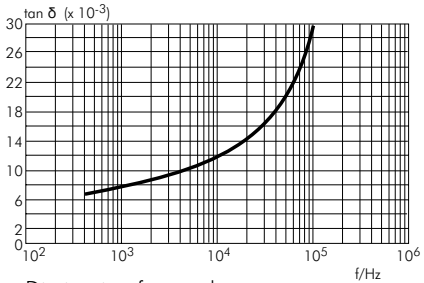
Capacitance change versus temperature (f=1 kHz) (general guide)



Dissipation factor change versus temperature (f= 1 kHz) (general guide)



Insulation resistance change versus temperature (general guide)



Dissipation factor change versus frequency (general guide).

Recommendation for Processing and Application of Through-Hole Capacitors

Soldering Process

Internal temperature of the capacitor must be kept as follows:

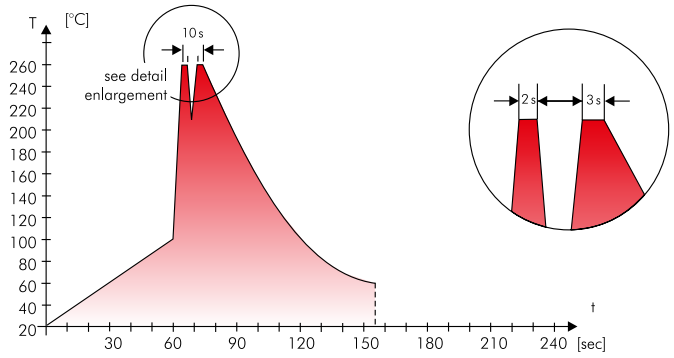
Polyester:	preheating:	$T_{max.} \leqslant 125°$ C
	soldering:	$T_{max.} \leqslant 135°$ C
Polypropylene:	preheating:	$T_{max.} \leqslant 100°$ C
	soldering:	$T_{max.} \leqslant 110°$ C

Single wave soldering
Soldering bath temperature: T < 260° C
Dwell time: t < 5 sec

Double wave soldering
Soldering bath temperature: T < 260° C
Dwell time: Σt < 5 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 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 refraind from using such substances since years already.

Tape for lead-free WIMA capacitors

DIN EN ISO 14001:2004

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

Typical Dimensions for Taping Configuration

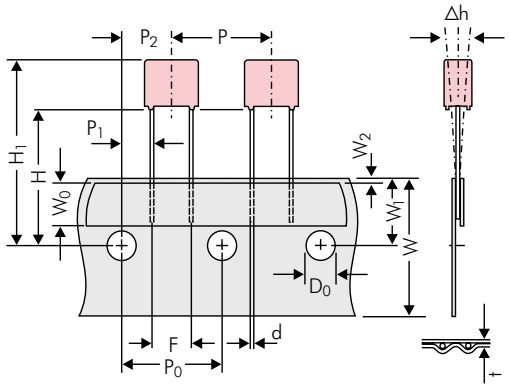


Diagram 1:
PCM 2.5/5/7.5mm

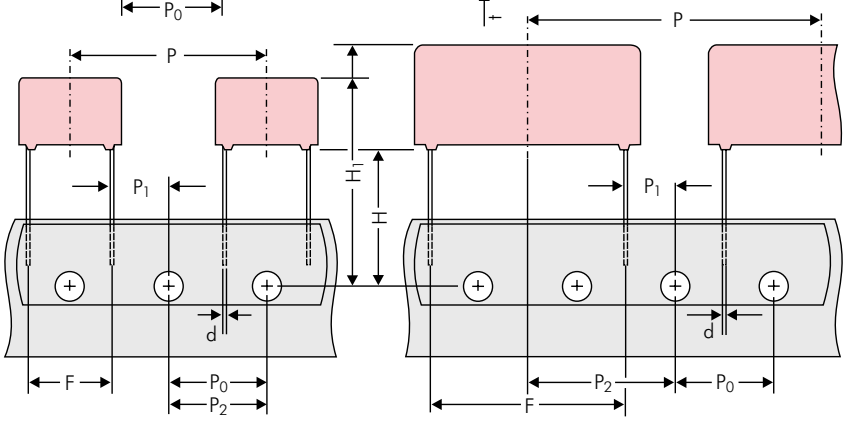


Diagram 2: PCM 10/15 mm

Diagram 3: PCM 22.5 and 27.5*mm
*PCM 27.5 taping possible with two feed holes between components

Designation	Symbol	Dimensions for Radial Taping						
		PCM 2.5 taping	**PCM 5 taping**	**PCM 7.5 taping**	**PCM 10 taping***	**PCM 15 taping***	**PCM 22.5 taping**	**PCM 27.5 taping**
Carrier tape width	W	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5
Hold-down tape width	W_0	6.0 for hot-sealing adhesive tape	6.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape	12.0 for hot-sealing adhesive tape
Hole position	W_1	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5	9.0 ±0.5
Hold-down tape position	W_2	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.	0.5 to 3.0 max.
Feed hole diameter	D_0	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2	4.0 ±0.2
Pitch of component	P	12.7 ±1.0	12.7 ±1.0	12.7 ±1.0	25.4 ±1.0	25.4 ±1.0	38.1 ±1.5	*38.1 ±1.5 or 50.8 ±1.5
Feed hole pitch	P_0	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch	12.7 ±0.3 cumulative pitch error max. 1.0 mm/20 pitch
Feed hole centre to pin	P_1	5.1 ±0.5	3.85 ±0.7	2.6 ±0.7	7.7 ±0.7	5.2 ±0.7	7.8 ±0.7	5.3 ±0.7
Hole centre to component centre	P_2	6.35 ±1.3	6.35 ±1.3	6.35 ±1.3	12.7 ±1.3	12.7 ±1.3	19.05 ±1.3	19.05 ±1.3
Feed hole centre to bottom edge of the component	H	16.5 ±0.3 18.5 ±0.5	16.5 ±0.3 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5	16.5 ±0.5 18.5 ±0.5
Feed hole centre to top edge of the component	H_1	$H+H_{component} < H_1$ 32.25 max.	$H+H_{component} < H_1$ 32.25 max.	$H+H_{component} < H_1$ 24.5 to 31.5	$H+H_{component} < H_1$ 25.0 to 31.5	$H+H_{component} < H_1$ 26.0 to 37.0	$H+H_{component} < H_1$ 30.0 to 43.0	$H+H_{component} < H_1$ 35.0 to 45.0
Pin spacing at upper edge of carrier tape	F	2.5 ±0.5	5.0 +0.8 −0.2	7.5 ±0.8	10.0 ±0.8	15 ±0.8	22.5 ±0.8	27.5 ±0.8
Pin diameter	d	0.4 ±0.05	0.5 ±0.05	•0.5 ±0.05 or 0.6 +0.06 −0.05	•0.5 ±0.05 or 0.6 +0.06 −0.05	0.8 +0.08 −0.05	0.8 +0.08 −0.05	0.8 +0.08 −0.05
Component alignment	Δh	± 2.0 max.	± 2.0 max.	± 3.0 max.	± 3.0 max.	± 3.0 max.	± 3.0 max.	± 3.0 max.
Total tape thickness	t	0.6 ±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 162)		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 163.						

Dims in mm.

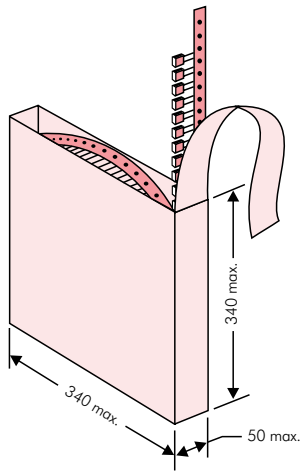
• Diameter of pins see General Data.

Please clarify customer-specific deviations with the manufacturer.

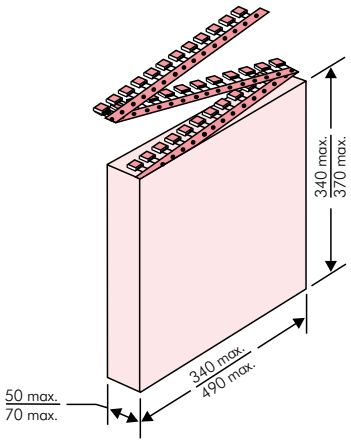
* PCM 10 and PCM 15 can be crimped to PCM 7.5.
Position of components according to PCM 7.5 (sketch 1). P_0 = 12.7 or 15.0 is possible

Types of Tape Packaging of Capacitors for Automatic Radial Insertion

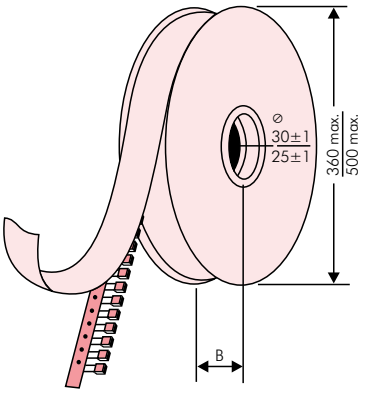
ROLL Packaging



AMMO Packaging



REEL Packaging



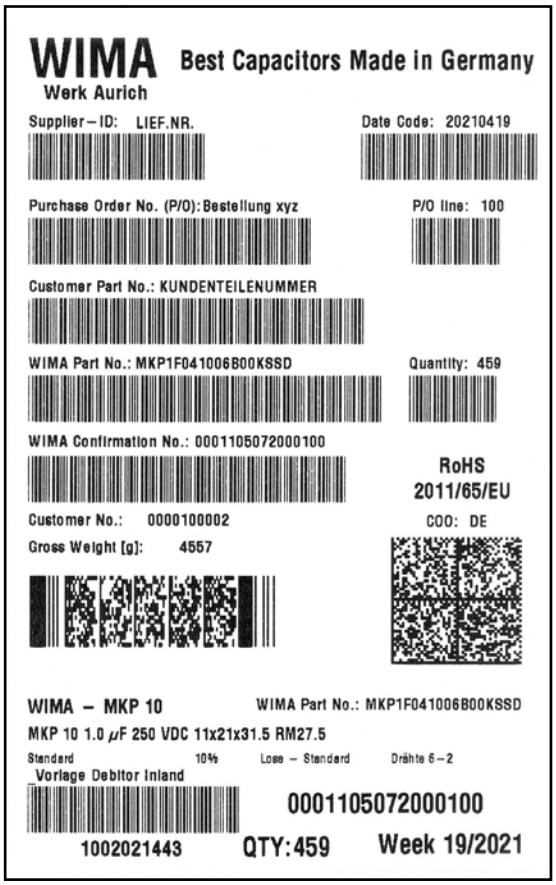
BAR CODE (Labelling)

Labelling of package units in plain text and with alphanumerical 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

05.21

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			
								ø 360		ø 500		340 × 340		490 × 370	
						H16.5	H18.5	H16.5	H18.5	H16.5	H18.5	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		3100	
	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	8.5	13.5	**FA**	3000	–		900		1600		–		1450	
	4	9	13	**3C**	3000	–		900		1600		–		1450	
	4	9.5	13	**3D**	3000	–		900		1600		–		1400	
	5	10	13.5	**FB**	2000	–		700		1300		–		1200	
	5	11	13	**3F**	3000	–		700		1300		–		1200	
	6	12	13	**3G**	2400	–		550		1100		–		1000	
	6	12.5	13	**3H**	2400	–		550		1100		–		1000	
	8	12	13	**3I**	2000	–		400		800		–		740	
15 mm	5	11	18	**4B**	2400	–		600		1200		–		1150	
	5	13	19	**FC**	1000	–		600		1200		–		1200	
	6	12.5	18	**4C**	2000	–		500		1000		–		1000	
	6	14	19	**FD**	1000	–		500		1000		–		1000	
	7	14	18	**4D**	1600	–		450		900		–		850	
	7	15	19	**FE**	1000	–		450		900		–		850	
	8	15	18	**4F**	1200	–		400		800		–		740	
	8	17	19	**FF**	500	–		400		800		–		740	
	9	14	18	**4H**	1200	–		350		700		–		650	
	9	16	18	**4J**	900	–		350		700		–		650	
	10	18	19	**FG**	500	–		300		650		–		590	
	11	14	18	**4M**	1000	–		300		600		–		540	
22.5 mm	5	14	26.5	**5A**	1200	–		–		800		–		770	
	6	15	26.5	**5B**	1000	–		–		700		–		640	
	7	16.5	26.5	**5D**	760	–		–		600		–		550	
	8	20	28	**FH**	500	–		–		500		–		480	
	8.5	18.5	26.5	**5F**	500	–		–		480		–		450	
	10	22	28	**FI**	570*	–		–		420		–		380	
	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	
	12	24	28	**FJ**	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				pcs. per packing unit											
					bulk	ROLL		REEL				AMMO				
								ø 360		ø 500		340 × 340		490 × 370		
						H16.5	H18.5	H16.5	H18.5	H16.5	H18.5	H16.5	H18.5	H16.5	H18.5	
	W	H	L	Codes	S	N	O	F	I	H	J	A	C	B	D	
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		–		–		
	13	25	33	**FK**	405*	–		–		–		–		–		
	15	26	31.5	**6F**	324*	–		–		270		–		–		
	15	26	33	**FL**	324*	–		–		–		–		–		
	17	29	31.5	**6G**	198*	–		–		–		–		–		
	17	34.5	31.5	**6I**	198*	–		–		–		–		–		
	20	32	33	**FM**	162*	–		–		–		–		–		
	20	39.5	31.5	**6J**	162*	–		–		–		–		–		
37.5 mm	9	19	41.5	**7A**	441*	–		–		–		–		–		
	11	22	41.5	**7B**	357*	–		–		–		–		–		
	13	24	41.5	**7C**	294*	–		–		–		–		–		
	15	26	41.5	**7D**	252*	–		–		–		–		–		
	17	29	41.5	**7E**	154*	–		–		–		–		–		
	19	32	41.5	**7F**	140*	–		–		–		–		–		
	20	39.5	41.5	**7G**	126*	–		–		–		–		–		
	24	45.5	41.5	**7H**	112*	–		–		–		–		–		
	28	38	41.5	**7L**	84*	–		–		–		–		–		
	31	46	41.5	**7I**	84*	–		–		–		–		–		
	35	50	41.5	**7J**	35*	–		–		–		–		–		
	40	55	41.5	**7K**	28*	–		–		–		–		–		
48.5 mm	19	31	56	**8D**	120*	–		–		–		–		–		
	23	34	56	**8E**	80*	–		–		–		–		–		
	27	37.5	56	**8H**	84*	–		–		–		–		–		
	33	48	56	**8J**	25*	–		–		–		–		–		
	37	54	56	**8L**	25*	–		–		–		–		–		
52.5 mm	25	45	57	**9D**	70*	–		–		–		–		–		
	30	45	57	**9E**	60*	–		–		–		–		–		
	35	50	57	**9F**	25*	–		–		–		–		–		
	45	55	57	**9H**	20*	–		–		–		–		–		
	45	65	57	**9J**	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

WIMA Part Number System

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

Field 1 - 4: Type description
Field 5 - 6: Rated voltage
Field 7 - 10: Capacitance
Field 11 - 12: Size and PCM
Field 13 - 14: 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				2.5 x 6.5 x 7.2		-		20%	bulk	6 -2	

Type description:

SMD-PET	= SMDT
SMD-PEN	= SMDN
SMD-PPS	= SMDI
FKP 02	= FKP0
MKS 02	= MKS0
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
MP 3-X2	= MPX2
MP 3-X1	= MPX1
MP 3-Y2	= MPY2
MP 3R-Y2	= MPRY
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

Rated voltage:

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
250 VAC	= 0W
275 VAC	= 1W
300 VAC	= 2W
305 VAC	= AW
350 VAC	= BW
440 VAC	= 4W
500 VAC	= 5W
...	

Capacitance:

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
...	

Size:

4.8 x 3.3 x 3 Size 1812	= KA
4.8 x 3.3 x 4 Size 1812	= KB
5.7 x 5.1 x 3.5 Size 2220	= QA
5.7 x 5.1 x 4.5 Size 2220	= QB
7.2 x 6.1 x 3 Size 2824	= TA
7.2 x 6.1 x 5 Size 2824	= TB
10.2 x 7.6 x 5 Size 4030	= VA
12.7 x 10.2 x 6 Size 5040	= XA
15.3 x 13.7 x 7 Size 6054	= YA
2.5 x 7 x 4.6 PCM 2.5	= 0B
3 x 7.5 x 4.6 PCM 2.5	= 0C
2.5 x 6.5 x 7.2 PCM 5	= 1A
3 x 7.5 x 7.2 PCM 5	= 1B
2.5 x 7 x 10 PCM 7.5	= 2A
3 x 8.5 x 10 PCM 7.5	= 2B
3 x 9 x 13 PCM 10	= 3A
4 x 9 x 13 PCM 10	= 3C
5 x 11 x 18 PCM 15	= 4B
6 x 12.5 x 18 PCM 15	= 4C
5 x 14 x 26.5 PCM 22.5	= 5A
6 x 15 x 26.5 PCM 22.5	= 5B
9 x 19 x 31.5 PCM 27.5	= 6A
11 x 21 x 31.5 PCM 27.5	= 6B
9 x 19 x 41.5 PCM 37.5	= 7A
11 x 22 x 41.5 PCM 37.5	= 7B
19 x 31 x 56 PCM 48.5	= 8D
25 x 45 x 57 PCM 52.5	= 9D
...	

Version code:

Standard	= 00
Version A1	= 1A
Version A1.1.1	= 1B
Version A2	= 2A
...	

Tolerance:

±20%	= M
±10%	= K
±5%	= J
±2.5%	= H
±1%	= E
...	

Packing:

AMMO H16.5 340 x 340	= A
AMMO H16.5 490 x 370	= B
AMMO H18.5 340 x 340	= C
AMMO H18.5 490 x 370	= 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
...	

Pin length (untaped)

3.5 ±0.5	= C9
6 -2	= SD
16 ±1	= P1
...	

Pin length (taped)

none	= 00

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.