WIMA MP 3-Y2

Metallized Paper (MP) **RFI-Capacitors Class Y2** PCM 10 mm and 15 mm

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 Y2 RFI applications to meet EMC regulations

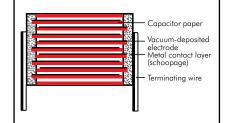
- Capacitors connected to the mains between phase or neutral and earthed casing
- By-passing of the basic or supplementary insulation, pulse peak voltage ≤ 5 kV

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 0.022 µF (E12-values on request) **Rated voltage:**

250 VAC

Continuous DC voltage* (general guide): ≤ 1000 V

Capacitance tolerances: $\pm 20\%$

Operating temperature range: -40° C to +110° C

Climatic test category:

40/110/56/C in accordance with IEC **Insulation resistance** at +20° C:

 $\geq 12 \times 10^3 M\Omega$ Measuring voltage: 100 V/1 min.

Dissipation factors:

tan $\delta \leq 13 \times 10^{-3}$ at 1 kHz and +20° C

Approvals:

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

Test specifications:

Capacitance	Pulse rise time V/µsec
pF/ µ F	max. operation
1000 4700	2500
6800 0.022	1750

for pulses equal to a voltage amplitude with $\sqrt{2} \times 250$ VAC = 355 V according to IEC 60384-14 Test voltage: 2700 VDC, 2 sec.

Reliability:

Operational life > 300 000 hours Failure rate < 1 fit (0.5 x U_r and 40° C)

Country	Authority	Specification	Symbol	Approval-No.
Germany	VDE	IEC 60384-14/3	EN 60384-14	87455
USA/Canada	UL	UL 60384-14 CAN/CSA-E60384-14	GU us	E 100438

Mechanical Tests

Pull test on pins:

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

Vibration:

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

Low air density:

1kPa = 10 mbar in accordance with IEC 60068-2-13

Bump test:

4000 bumps at 390 m/sec² 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 (Fmax.) 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 $\sqrt{2} \times UAC$

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-Y2

Continuation

General Data

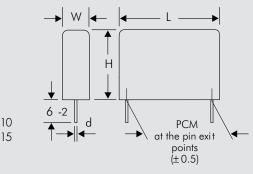
Carponitanos	250 VAC*									
Capacitance	W	Н	L	PCM**	Part number					
1000 pF	4	8.5	13.5	10	MPY20VV1100FA00					
1500 "	4	8.5	13.5	10	MPY20VV1150FA00					
2200 "	4	8.5	13.5	10	MPY20W1220FA00					
3300 "	4	8.5	13.5	10	MPY20W1330FA00					
4700 "	5	10	13.5	10	MPY20W1470FB00					
6800 "	5	13	19	15	MPY20W1680FC00					
0.01 µF	5	13	19	15	MPY20VV2100FC00					
0.015 "	6	14	19	15	MPY20W2150FD00					
0.022 "	7	15	19	15	MPY20W2220FE00					

* f = 50/60 Hz

** PCM = Printed circuit module = pin spacing

Upon request with long pins 35-2 mm max.

Dims. in mm.



b	=	0.6	ø	if	PCM	1
Ч	_	08	Ø	;f	PCM	



Part number completion:

Pin length: 6-2 = SD

Taped version see page 140.

20 % = M

bulk = S

Tolerance:

Packing:

10

ZΩ

3

0.1

5 3

Rights reserved to amend design data without prior notification.

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

Soldering Process

Internal temperature of the capacitor must be kept as follows:

Polyester:	preheating: soldering:	$\begin{array}{l} T_{max.} \leqslant 125^{\circ}\text{C} \\ T_{max.} \leqslant 135^{\circ}\text{C} \end{array}$
Polypropylene:	preheating: soldering:	$\begin{array}{l} T_{max.} \leqslant 100^{\circ}\mathrm{C} \\ T_{max.} \leqslant 110^{\circ}\mathrm{C} \end{array}$

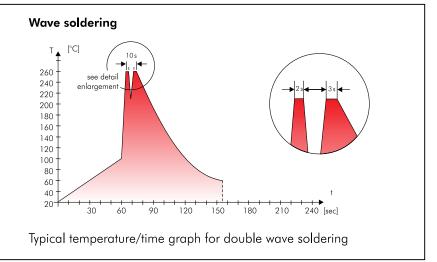
Single wave soldering

Soldering bath temperature: $T < 260 \circ C$ Dwell time: t < 5 sec

Double wave soldering

Soldering bath temperature: $T < 260 \,^{\circ}$ C Dwell time: $\Sigma t < 5 \text{ sec}$

Due to different soldering processes and heat requirements the graphs are to be regarded as a recommendation only.



WIMA Quality and Environmental Philosophy

ISO 9001:2008 Certification

ISO 9001:2008 is an international basic standard of quality assurance systems for all branches of industry. The approval according to ISO 9001:2008 of our factories by the VDE inspectorate certifies that organisation, equipment and monitoring of quality assurance in our factories correspond to internationally recognized standards.

WIMA WPCS

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

- incoming material inspection
- metallization
- film inspection
- schoopage
- pre-healing
- pin attachment
- cast resin preparation/ encapsulation
- 100% final inspection
- 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+ - etc.

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

- PBB/PBDE

- Arsenic

- Mercury

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

We almost completely refrain from using packing materials such as:

- foamed polystyrene (Styropor®)
- adhesive tapes made of plastic
- metal clips

RoHS Compliance

According to the RoHS Directive 2011/65/EU 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

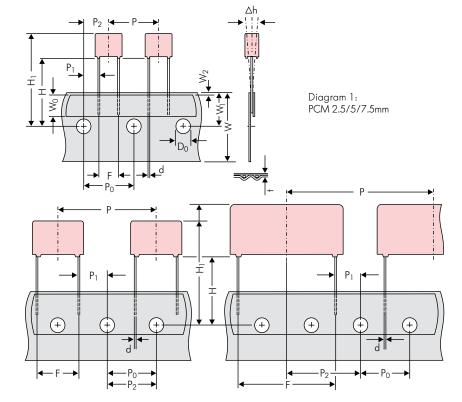


Diagram 2: PCM 10/15 mm

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

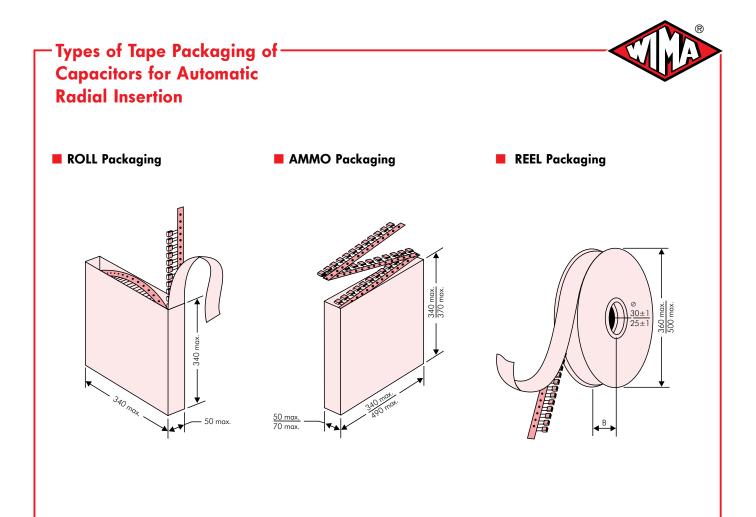
		Dimensions for Radial Taping												
Designation	Symbol	PCM 2.5 taping	PCM 5 taping	PCM 7.5 taping	PCM 10 taping*	PCM 15 taping*	PCM 22.5 taping	PCM 27.5 taping						
Carrier tape width	W	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5						
Hold-down tape width	W ₀	6.0 for 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	Р	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	Po	cumulative pitch 12.7 ±0.3 error max. 1.0 mm/20 pitch	cumulative pitch error max. 1.0 mm/20 pitch	cumulative pitch 12.7 ±0.3 error max. 1.0 mm/20 pitch	cumulative pitch 12.7 ±0.3 error max. 1.0 mm/20 pitch	cumulative pitch error max. 1.0 mm/20 pitch	cumulative pitch 12.7 ±0.3 error max. 1.0 mm/20 pitch	cumulative pitcl 12.7 ±0.3 error max. 1.0 mm/20 pitcl						
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	н	16.5 ±0.3	16.5 ±0.3	16.5 ±0.5	16.5 ±0.5	16.5 ±0.5	16.5 ±0.5	16.5 ±0.5						
edge of the component		18.5 ±0.5	18.5 ±0.5	18.5 ±0.5	18.5 ±0.5	18.5 ±0.5	18.5 ±0.5	18.5 ±0.5						
Feed hole centre to top edge of the component	H	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	$^{\circ}0.5 \pm 0.05 \text{ or } 0.6 + 0.06 \\ -0.05$	$^{\circ}0.5 \pm 0.05 \text{ or } 0.6 + 0.06 - 0.05$	0.8 +0,08	0.8 +0,08	0.8 +0.08						
Component alignment	Δh	± 2.0 max.	± 2.0 max.	± 3.0 max.	± 3.0 max.	± 3.0 max.	± 3.0 max.	± 3.0 max.						
Total tape thickness	t	0.7 ±0.2	0.7 ±0.2	0.7 ±0.2	0.7 ±0.2	0.7 ±0.2	0.7 ±0.2	0.7 ±0.2						
		ROLL//	AMMO	AMMO										
Package (see also page 141)		REEL \$\overline{\phi}\$ 360 max. \$\overline{\phi}\$ 30 \pm 1	$\left. B \begin{array}{c} 52 \pm 2 \\ 58 \pm 2 \end{array} \right\} \begin{array}{c} \text{depending on} \\ \text{comp. dimensions} \end{array}$		REEL \$\overline{\phi}\$ 360 max. B 52 \pm 2 \overline{\phi}\$ 58 \pm 2 \overline{\phi}\$ 66 \pm 2 \overline{\pm}\$ 66 \pm 2 \overline{\pm}\$ 70 \pm 2 \									
Unit					see details page 142.									

Dims in mm.

• Diameter of pins see General Data.

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

Please clarify customer-specific deviations with the manufacturer.



BAR CODE (Labelling)

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

Scanner decoding of

- WIMA supplier number
- Customer's P/O number
- Customer's part number
- WIMA confirmation number
- WIMA part number
- Lot number
- Date code
- Quantity

In addition part description of

- article
- capacitance value
- rated voltage
- dimensionscapacitance tolerance
- packing

as well as gross weight and customer's name are indicated in plain text.



Packing Quantities for Capacitors with -Radial Pins in PCM 2.5 mm to 22.5 mm

					pcs. per packing unit									
5014		Si	ze			ROLL		EL		MO				
PCM					bulk		Ø 360 H16.5 H18.5	Ø 500	340 × 340	490 × 370				
	W	Н		Codes	S	N 0	F I	H J	A C	B D				
	2.5	7	4.6	OB	5000	2200	2500		2800					
	5 mm 3 7.5 4.6 0C		5000	2000	2300	-	2300	-						
2.5 mm	3.8	8.5	4.6	0D	5000	1500	1800	-	1800	-				
	4.6	9	4.6	0E	5000	1200	1500	-	1500 1200	-				
	5.5	10	4.6	OF	5000	900	1200			-				
	2.5	6.5	7.2	1A	5000	2200	2500	-	2800	-				
	3 3.5	7.5 8.5	7.2 7.2	1B 1C	5000 5000	2000 1600	2300 2000	-	2300 2000	-				
	3.5 4.5	6.5	7.2	1D	6000	1300	1500	_	1500	_				
	4.5	9.5	7.2	16	4000	1300	1500	_	1500	_				
	5	10	7.2	1F	3500	1100	1400	-	1400	-				
5 mm	5.5	7	7.2	1G	4000	1000	1200	-	1200	-				
5	5.5	11.5	7.2	1H	2500	1000	1200	-	1200	-				
	6.5 7.2	8 8.5	7.2 7.2	11 1J	2500 2500	800 700	1000 1000	-	1000 1000	-				
	7.2	13	7.2	1J 1K	2000	700	950	_	1000	_				
	8.5	10	7.2	11	2000	600	800	_	800	_				
	8.5	14	7.2	1M	1500	600	800	-	800	-				
	11	16	7.2	1N	1000	500	600	-	400	-				
	2.5	7	10	2A	5000	_	2500	4400	2500	-				
	3 8.5 10 2B 5000			-	2200	4300	2300	4150						
7 5	4	9	10	2C	4000	-	1700	3200	1700	3100				
7.5 mm	4.5	9.5	10.3	2D	3500	-	1500	2900	1400	2800				
	5 5.7	10.5 12.5	10.3 10.3	2E 2F	3000 2000	-	1300 1000	2500 2200	1300 1100	-				
	7.2	12.5	10.3	2G	1500	_	900	1800	1000	_				
	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				
10 mm	4	9.5 10	13 13.5	3D FB	3000 2000	-	900 700	1600 1300	-	1400 1200				
	5	10	13.5	гь 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	31	2000	-	400	800	-	740				
	5	11	18	4B	2400	-	600	1200	-	1150				
	5	13	19	FC	1000	-	600	1200	-	1200				
	6	12.5 14	18 19	4C FD	2000 1000	-	500 500	1000	-	1000 1000				
	7	14	19	4D	1600	_	450	900	_	850				
	7	15	19	FE	1000	_	450	900	_	850				
15 mm	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 10	16 18	18 19	4J FG	900 500	-	350 300	700 650	-	650 590				
	10	14	19	4M	1000	-	300	600	_	540				
	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				
22.5 mm	8.5	18.5	26.5	5F	500	-	-	480	-	450				
	10	22	28	FI	540*	-	-	420	—	380				
	10.5 10.5	19 20.5	26.5 26.5	5G 5H	680* 680*	_	_	400 400	_	360 360				
	10.5	20.5	20.5 26.5	51	680*	_	_	380	_	350				
	12	24	28	FJ	450*	-	-	350	-	310				

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

ions. Rights reserved to amend design data without prior notification.

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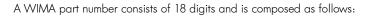
Packing Quantities for Capacitors with Radial Pins in PCM 27.5 mm to 52.5 mm

					pcs. per packing unit												
		Siz	70			RO	DLL		RE	EL			AM	MO			
PCM		01.	20		bulk			ø3		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	Н	L	Codes	S	N	0	F		н	J	Α	С	В	D		
	9	19	31.5	6A	640*	-	-		-	460/	340*	.	-	4	20		
	11	21	31.5	6B	544*	- - - -		-	-	380/			-		350		
	13	24	31.5	6D	448*			-	-	3	00		-	2	290		
	13	25	33	FK	336*			-	-	-	-		-		-		
27.5 mm	15	26	31.5	6F	384*			-		2	70		-	2	250		
	15	26	33	FL	288*			-		-	-		-	· ·	-		
	17 17	29 34.5	31.5 31.5	6G 6I	176* 176*		-		-	-	-		-		-		
	20	34.5	33	FM	216*	_		-		-	-		_	_			
	20	39.5	31.5	6J	144*		_		_		_		_		_		
	9	19	41.5	7A	480*	_		_		_		_			_		
	11	22	41.5	7B	408*	-	-	- 1		-		-			-		
	13	24	41.5	7C	252*	-		-		-		-		-			
	15	26	41.5	7D	144*	-		-	-	-	-	-		-			
	17 19	29 32	41.5 41.5	7E 7F	132* 108*	-	-		-		-		-		-		
37.5 mm	20	32 39.5	41.5	7G	108*		_	-		_		_					
	20	45.5	41.5	70 7H	84*		_	_		_		_					
	27	15	41.5	7M	100*												
	31	46	41.5	71	72*	-	-	-		·					-		
	35	50	41.5	7J	35*	-	-	-				-			-		
	40	55	41.5	7K	28*	-		-		-		-					
	19	31	56	8D	50*	-		-		-	-	-	-		-		-
48.5 mm	23	34	56	8E	72*	-	-	-			-		-	-			
40.5 mm	27 33	37.5 48	56 56	8H 8J	60* 48*	-		-		-		-			-		
	37	40 54	56	8L	40 25*	-		-							_		
	35	50	57	9F	25*	_	_	_			_	_			_		
52.5 mm	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.

WIMA Part Number System



- 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)

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.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Safety Capacitors category:

Click to view products by WIMA manufacturer:

Other Similar products are found below :

 PME264NE5470MR04
 46KI3470DQM1K
 46KR410000M1M
 49AR410000B1M
 46KI333050M1K
 46KN333000M1M
 46KN422000P0M

 49AN3470ZB01M
 46KN347000M1M
 46KR422000M1K
 DE1E3KX472MJ4BN01F
 ECQ-U2A224MLC
 46KI3100DQM1M
 04068

 46KF268000M1M
 46KI3150NDM2M
 MKPX2R-1/400/10P27
 YP102271K050B20C6P
 YP102391K050BAND5P
 YP501101K040BAND5P

 YP102681K060B20C6P
 YP501121K040B20C6P
 YP501471K040B20C6P
 YP501102K050HAND5P
 YP500101K040B20C2P
 BX4002J

 GX2003C
 GX3009C
 GX3010
 GX3024C
 GX3045
 GX3047
 GX3053
 GX3074C
 GX3083C
 GX4015
 GX4015C

 GX4017
 GX4017-Z
 GX4018
 GX4053J
 GX4056C
 GX4070C
 GX4097C
 GX4100C
 GX4103J