WIMA MP 3R-Y2

Metallized Paper (MP) RFI-Capacitors Class Y2 with Internal Series Connection PCM 15 mm to 27.5 mm

Special Features

- Particularly high reliability against active and passive flammability
- Twice the safety by internal series connection
- High degree of interference suppression due to good attenuation and low ESR
- For temperatures up to +110° C
 According to RoHS 2011/65/EC

Typical Applications

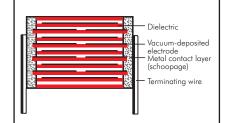
Class Y2 RFI applications to meet EMC regulations

- 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</p>

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 0.1 µF [E12-values on request] Rated voltage:

300 VAC

Continuous DC voltage^{*} (general guide): ≤ 1250 V

Capacitance tolerances: ±20%

Operating temperature range: -40° C to $+110^{\circ}$ C

Climatic test category: 40/110/56/B according to IEC

Insulation resistance at +20° C:

≥ 12 x 10³ MΩ Measuring voltage: 100 V/1 min.

Dissipation factors:

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

In accordance with IEC 60384-14

Approvals:

Country	Authority	Specification	Symbol	Approval-No.
Germany	VDE	IEC 60384-14/3	10	40032534
USA	UL	UL 1414 (250 VAC)	1	E 134915

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capacitors are operated with a DC voltage being above the specified AC voltage rating the given approvals are no longer valid (IEC 60384-14).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 $\sqrt{2} \mbox{ x UAC}$

Packing

Available taped and reeled up to and including PCM 22.5 mm.

Maximum pulse rise time:

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

according to IEC 60384-14

Test voltage: 3000 VDC, 2 sec.

Operational life > 300,000 hours

for pulses equal to a voltage amplitude

Failure rate < 1 fit (0.5 x U_r and 40° C)

Capacitance

pF/µF

1000 ... 2200

3300 ... 0.015

0.022 ... 0.1

Reliability:

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

For further details and graphs please refer to Technical Information.

Pulse rise time V/µsec

max. operation

2000

1500

500

WIMA MP 3R-Y2

Continuation

General Data

Canacitanaa	300 VAC*											
Capacitance	W	Н	L	PCM**	Part number							
1000 pF	5	13	19	15	MPRY2W1100FC00							
1500 "	5	13	19	15	MPRY2W1150FC00							
2200 "	5	13	19	15	MPRY2W1220FC00							
3300 "	5	13	19	15	MPRY2W1330FC00							
4700 "	6	14	19	15	MPRY2W1470FD00							
6800 "	7	15	19	15	MPRY2W1680FE00							
0.01 µF	8	17	19	15	MPRY2VV2100FF00							
0.015 "	10	18	19	15	MPRY2W2150FG00							
0.022 "	8	20	28	22.5	MPRY2W2220FH00							
0.033 "	8	20	28	22.5	MPRY2VV2330FH00							
0.047 "	10	22	28	22.5	MPRY2W2470FI00							
0.068 "	12	24	28	22.5	MPRY2W2680FJ00							
0.1 µF	13	25	33	27.5	MPRY2VV3100FK00							

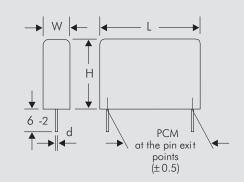
* f = 50/60 Hz

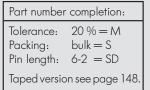
** PCM = Printed circuit module = pin spacing

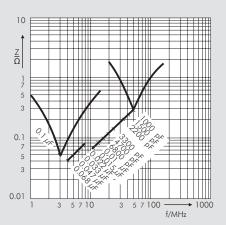
Upon request with long pins 35-2 mm max.

Dims. in mm.

d = 0.8 Ø







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

Soldering Process

A preheating of through-hole WIMA capacitors is allowed for temperatures T_{max} < 100 ° C. In practice a preheating duration of t < 5 min. has been proven to be best.

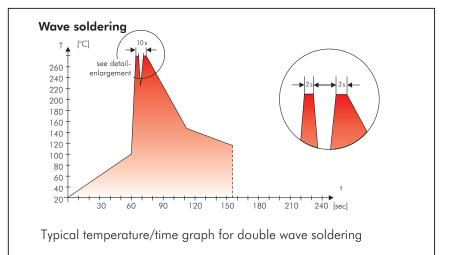
Single wave soldering

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

Double wave soldering

Soldering bath temperature: $T < 260 \,^{\circ}\,C$ Immersion time: $2 \times t < 3 \sec$

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
- AQL check

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.

- PBB/PBDE

- Arsenic

- Mercurv

- etc.

– Lead

- PCB
- CFC
- Hydrocarbon chloride
- Chromium 6+

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:

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

RoHS Compliance

According to the RoHS Directive 2011/65/EC 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 auidelines of DIN EN ISO 14001:2004 to optimize the production processes with regard to energy and resources.



Typical Dimensions for Taping Configuration

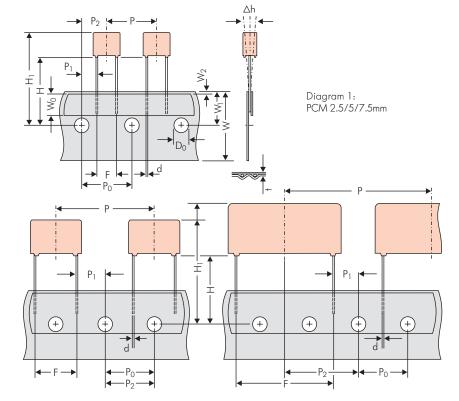


Diagram 2: PCM 10/15 mm

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

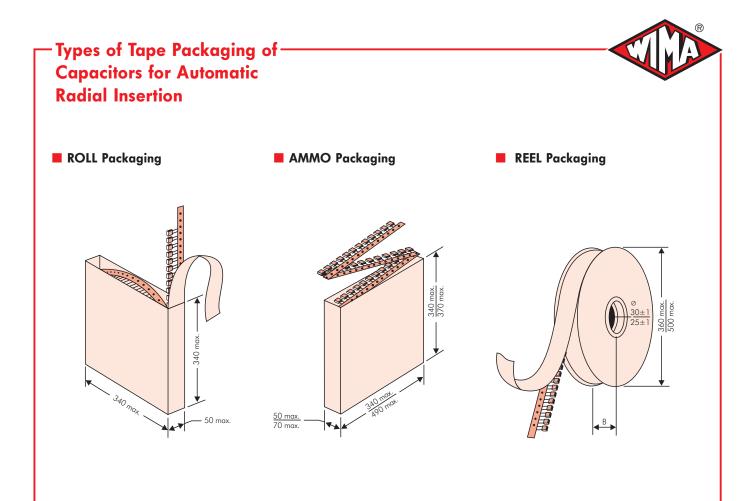
		Dimensions for Radial Taping												
Designation	Symbol	PCM 2.5 taping	PCM 5 taping	PCM 7.5 taping	PCM 10 taping*	PCM 15 taping*	PCM 22.5 taping	PCM 27.5 taping						
Carrier tape width	W	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5	18.0 ±0.5						
Hold-down tape width	W ₀	6.0 for 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 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 12.7 ±0.3 error max. 1.0 mm/20 pitch						
Feed hole centre to pin	P1	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	11	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	H1	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 -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	0.7 ±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 149)		REEL Ø 360 max. Ø 30 ±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 Ø 360 max. 52 ±2 \$8 9 ±2 or Ø 500 max. 54 ±2 Ø 25 ±1 depending Ø 30 ±1 6 ±2 Ø 25 ±1 6 0 ±2 (6 ±2) component dimensions										
Unit					see details page 150.									

Dims in mm.

٠ 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
- dimensions
- capacitance 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

PCM Final balk PC - P PC -							pcs. per packing unit											
H.M. Interpretation Book Product			Si	ze			ROLL											
Image Image <t< th=""><th>PCM</th><th></th><th>0.</th><th>20</th><th></th><th>bulk</th><th></th><th></th><th>Ø 500</th><th>340 × 340</th><th></th></t<>	PCM		0.	20		bulk			Ø 500	340 × 340								
2.5 mm 3. 7. 4.6 08 5000 2000 2300 2800 2.5 mm 3.8 8.5 4.6 00 5000 1500 1800 1800 5.5 10 4.6 0F 5000 2000 2000 2000 1800 3.5 7.5 7.7 18 5000 2000 2000 2000 3.5 7.5 7.7 18 5000 2000 1000 1000 2000 4.5 6.5 7.2 18 4000 1300 1500 100 5.5 10 7.2 17 4.8 4000 1300 1500 100 5.5 10 7.2 14 2000 1000 1200 100 100 5.6 10.2		W	н		Codes	S				· · · · · · · · · · · · · · · · · · ·								
2.5 mm 3 75 46 0C 5000 1000 1200 - 1800 - 45 9 46 9 5000 1200 1500 - 1500 - 5 75 72 18 5000 2200 2500 - 2800 - 3.5 8.5 7.2 18 5000 2200 2500 - 2800 - 3.5 8.5 7.2 16 5000 1000 1200 - 1000 - 4.5 9.5 7.2 16 4000 1000 1200 - 1000 - 5.5 7 7.2 16 4000 1000 1200 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 200 - 1000 </th <th></th> <th></th> <th></th> <th>4.6</th> <th></th> <th></th> <th><u> </u></th> <th></th> <th>· · · · · · · · · · · · · · · · · · ·</th> <th></th> <th></th>				4.6			<u> </u>		· · · · · · · · · · · · · · · · · · ·									
2.5 mm 3.8 4.6 9.0 5.000 15.00 1800 1800 5.5 10 4.6 0F 5000 700 1200 1 1200 5.5 10 4.6 0F 5000 2000 2300 2300 7.5 10 4.6 0F 5000 2000 2300 2300 7.5 10 7.2 18 5000 1600 1300 1500 1300 5.5 10 7.2 1F 4000 1300 1500 1400 5.5 10 7.2 1F 2500 1000 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200									_		-							
55 10 46 0F 5000 9200 2200 1200 35 75 72 18 5000 2200 2200 2200 35 8.5 72 10 6000 1600 1000 100 2000 35 8.5 72 16 6000 1600 1000 100 1000 55 15 72 16 3000 1100 1400 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 200 100 1000 100 100 100 100 100 100 -	2.5 mm	3.8		4.6	0D	5000			-		-							
5 mm 25 3 3 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5			9						-		-							
5 mm 3 5 5 72 16 5000 1600 2000 - 2000 - 5 mm 35 85 72 10 6000 1300 1500 1500 5 mm 72 16 6000 1300 1500 1400 5 mo 72 16 6000 1300 1500 1400 5 mo 72 17 60 1000 1000 1200									-		-							
5 mm 35 8.5 7.2 1C 5000 1600 2000 2000 5 mm 45.6 6.7.2 1E 4000 1300 1500 1500 5 5 17 7.2 1E 4000 1300 1300 1200 1500 5 5 15 7.2 1E 4000 1000 1200 1200 7.2 8.5 7.2 1H 2500 700 1000 1000 7.2 13 7.2 1H 2500 700 1000 1000 8.5 10 7.2 1M 2000 600 800 800 10 16 7.2 1M 2000 1000 2000 400 2000 11 16 7.2 10.3 20 3000 -									-		-							
5 mm 45 65 72 1D 6000 1300 1500 1500 5 mm 55 7.2 1F 3500 1100 1400 1500 5.5 7.7 7.2 1G 4300 1000 1200 1200 7.2 8.5 7.2 1H 2500 700 1000 1000 7.2 8.5 7.2 1H 2500 700 1000 1000 8.5 14 7.2 1M 2000 600 800 800 8.5 10 2A 5000 2500 4400 2500 3 8.5 10 2A 5000 1300 200 4 9 10 2C 4000 1300 200 5 <									-		-							
5 mm 45 9.5 7.2 1F 4000 1300 1500 1500 5 5 17 7.2 1G 4000 1000 1200 1200 65 15 7.2 1H 2500 1000 1200 1200 7.2 8.5 7.2 1H 2500 700 1000 1000 7.2 18.5 7.2 1H 2500 700 990 1000 8.5 14 7.2 1M 2000 600 800 800 11 16 7.2 1M 1000 500 600 400 200 12 10.3 20 3500 1700 3200 1400 200 7.2 10.3 20 2500 1000 200 100 <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>-</th> <th></th> <th>-</th>									-		-							
5 mm 5 00 7 20 1 F 3500 1100 1400 - 1400 - 5 5 1.5 7.2 1 H 2500 1000 1200 - 1200 - 6 5 8 7.2 1 H 2500 700 1000 - 1000 - 7.2 8.5 7.2 1 H 2500 700 1000 - 1000 - 7.5 8.5 1.0 7.2 1 K 2000 600 800 - 800 - 8.5 1.0 7.2 1 M 1000 600 800 - 400 - 1.1 1.6 7.2 1 M 1000 200 4400 200 - 400 - - 400 - - 400 200 1100 2200 1100 2200 1100 200 1100 200 1100 200 1100 200 1100 12									_		_							
5 mm 5.5 7 7.2 1G 4000 1000 1200 1000 7.5 8.5 7.2 11 2500 800 1000 1000 7.2 8.5 7.2 11 2500 700 1000 1000 7.2 8.5 10 7.2 11 2500 600 800 800 8.5 10 7.2 11 2000 600 800 800 8.5 10 7.2 10 7.2 11.4 2000 600 800 800 7.5 10.5 10.3 2E 3000 1500 2000 1700 3100 7.5 10.5 10.3 2E 3000 1000 2000 1100 1800 7.5 10.5									_		_							
J. IIIII 55 II.5 7.2 IH 2500 1000 1200 1000 6.5 8.5 7.2 IJ 2500 700 1000 1000 7.2 8.5 7.2 IJ 2500 700 900 1000 8.5 10 7.2 IK 2000 600 800 800 8.5 10 7.2 IM 1000 600 800 400 10 16 7.2 IM 1000 2500 4400 2500 400 3 9 10 28 5000 1000 2500 1000 2500 1000 1000 2500 1000 1000 2500 1000 2500 1000 1000 1000 100	5								-		-							
1 2 1 2 1 2 2 1 2 1 1 1000 1000 1000 8.5 10 7.2 1 1 2000 600 800 800 8.5 10 7.2 1 1 1000 600 800 800 11 14 7.2 1 1000 500 2500 4400 2500 3 4 9 10 2C 4000 1700 3000 1700 3000 5 10.5 10.3 2C 2000 1000 2200 1000 2200 1000 1200 100 1200 100 100 1200 100 1200 100 100 1100 1000 1000 1000 1000 1000 1000 1000 1000 1000 <t< th=""><th>5 mm</th><th></th><th>11.5</th><th></th><th>1H</th><th></th><th></th><th>1200</th><th>-</th><th></th><th>-</th></t<>	5 mm		11.5		1H			1200	-		-							
13 7.2 1X 7.2 1X 2000 700 950 1000 8.5 14 7.2 1N 1000 500 600 800 800 8.5 14 7.2 1N 1000 500 600 800 400 7.5 m 10 2A 5000 2200 4400 2200 4150 3 8.5 10 2B 5000 2200 4300 2300 4150 4.5 9.5 10.3 2D 3500 1000 2200 1000 2800 5.7 10.3 2F 2000 1000 2200 1100 2200 120 1300 1400 40 9.5 1450 40 9.5 13 3D 3000 900 1600 1450 40 1400									-		-							
8.5 10 7.2 11 2000 600 800 800 11 16 7.2 1N 1000 500 600 400 3 8.5 7 10 2A 5000 2500 4400 2200 4150 3 45 9.5 10.3 2D 280 5000 1700 3200 1700 3100 200 3100 4 9.5 10.3 2D 200 1700 3200 1700 3200 1700 1800 1700 3200 1800									-		-							
8.5 14 7.2 1M 1500 600 800 800 7.5 3 8.5 10 2A 5000 - 2200 4400 2500 4 9 10 2C 4000 - 2200 4300 2300 4150 4.5 9.5 10.3 2D 3500 - 1500 2200 1400 2800 5.7 12.5 10.3 2F 2000 - 1000 2200 1100 - 7.2 12.5 10.3 2F 2000 - 900 1800 1000 - 7.4 12.5 13.3 2C 13000 - 900 1600 - 1450 4 9 13 3C 3000 - 900 1600 - 1450 4 9 13 3D 3000 - 900 1600 -											-							
11 16 7.2 1N 1000 500 600 400 3 45 7 10 28 5000 2500 4400 2500 4150 4 9 10 22 4000 1700 3200 1700 3100 5 10.5 10.3 22 3000 1500 2900 1300 7.2 12.5 10.3 22 3000 1000 2200 1100 7.2 12.5 10.3 26 1500 900 1600 1900 4 9 13 30 3000 900 1600 1400 5 10 13.5 FB 3000 900 1600 1400 6 12.5 13 30 3000 900 1600									_		_							
2.5 7 10 2A 5000 - 2500 4400 2500 - 7.5 mm 3 8.5 10 2B 5000 - 2200 4300 2300 4150 4.5 9.5 10.3 2D 3500 - 1500 2900 1400 2800 5.7 12.5 10.3 2E 3000 - 1300 2500 1300 - 7.2 12.5 10.3 2G 1500 - 900 1800 1000 - 4 8.5 13.5 FA 3000 - 100 2200 - 1900 4 9.5 13 3D 3000 - 900 1600 - 1450 4 9.5 13 3D 3000 - 700 1300 - 1200 6 12 13 3D 2400 - 550 1100 - <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>_</th><th></th><th>_</th></td<>									_		_							
3 85 10 28 5000 2200 4300 2300 1450 7.5 mm 4.5 9.5 10.3 2D 4000 1700 3200 1700 3100 5.7 10.5 10.3 2D 3300 1300 2500 1300 7.2 12.5 10.3 2E 3000 1300 2500 1300 7.2 12.5 10.3 2C 1300 100 1200 1900 4 4.55 13.5 FA 3000 1900 1600 1450 4 9.5 13 3D 3000 900 1600 1450 5 10 13.5 FB 2000 700 1300 1200 6 12 13 3F 2400 500 1100							 		4400		_							
7.5 mm 4 9 10 2C 4000 - 1700 3200 1700 3100 5 10.5 10.3 2D 3500 - 1300 2200 1100 2800 7.7 12.5 10.3 2F 2000 - 1000 2200 1100 - 7.2 12.5 10.3 2F 2000 - 100 2200 100 - 4 8.5 13.5 FA 3000 - 900 1800 - 1450 4 9 13 3C 3000 - 900 1600 - 1450 4 9.5 13 3D 3000 - 700 1300 - 1200 5 10 13.5 FB 2000 - 700 1300 - 1200 6 12.5 18 4C 2000 - 550 1100 - 120																		
10 5 10.5 10.3 2E 3000 1300 2500 1300 72 12.5 10.3 2F 2000 1000 2200 1100 72 12.5 10.3 2F 2000 900 1800 100 4 8.5 13.5 FA 3000 900 1600 1450 4 9 13 3D 3000 900 1600 1450 4 95 13 3D 3000 900 1600 1400 5 10 13.5 FB 2000 700 1300 1200 6 12.5 13 3H 2000 550 1100 1000 6 12.5 18 4C 2000 600 1200							-											
57 12.5 10.3 2F 2000 1000 2200 1100 3 9 13 3A 3000 1000 1800 1000 4 8.5 13.5 FA 3000 900 1600 1450 4 9 13 3C 3000 900 1600 1450 5 10 13.5 FB 2000 900 1600 1200 5 11 13 3F 2000 700 1300 1200 6 12.5 13 3H 2400 550 1100 1000 8 12 13 3H 2400 600 1200 - 1000 6 12.5 18 4C 2000 550 1100 1200 <t< th=""><th>7.5 mm</th><th>4.5</th><th></th><th>10.3</th><th>2D</th><th></th><th>-</th><th>1500</th><th>2900</th><th></th><th></th></t<>	7.5 mm	4.5		10.3	2D		-	1500	2900									
12.510.32G15009001800100039133A33009001600190049133C300090016001450495133C30009001600145051013.5FB200070013001200511133F300070013001200612133G240055011001200612133G240055011001200612133G2000400800740612.5184C20006001200150612.5184C20006001200100061419FC100060012001000714184B120045090085071519FE1000450900850714184F120045090085071519FE1000-45090085071519FE5							-				-							
3 9 13 3A 3000 1100 2200 1900 4 8.5 13.5 FA 3000 900 1600 1450 4 9.5 13 3D 3000 900 1600 1450 5 10 13.5 FB 2000 700 1300 1200 6 12.5 13 3G 2400 550 1100 1000 6 12.5 13 3H 2400 400 800 1000 6 12.5 13 3H 2400 600 1200 1000 7 14 18 4B 2400 600 1200 1100 7 13 19 FC 1000 500 1000 1000 <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>-</th> <th>1000</th> <th></th> <th></th> <th>-</th>							-	1000			-							
4 8.5 13.5 FA 3000 900 1600 1450 4 9 13 3C 3000 900 1600 1450 5 10 13.5 FB 2000 900 1600 1400 5 10 13.5 FB 2000 900 1600 1400 6 12 13 3F 3000 900 1300 1200 6 12.5 13 3H 2400 550 1100 1000 8 12 13 3H 2400 600 1200 1000 6 11.8 4B 2400 600 1200 1200 6 12.5 18 4C 2000 500 1000 500 1000 </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>-</th> <th></th> <th></th> <th></th> <th></th>							-											
10 mm 4 9 13 3C 3000 900 1600 1450 10 mm 13.5 FB 2000 900 1600 1200 5 10 13.5 FB 2000 700 1300 1200 6 12 13 3G 2400 700 1300 1000 6 12.5 13 3G 2400 550 1100 1000 6 12.5 13 3H 2000 400 800 700 6 12.5 18 4B 2400 400 800 1000 6 12.5 18 4B 2400 400 1200 1000 6 12.5 18 4C 2000 450 1200 450 9					-													
10 mm 4 9.5 13 3D 3000 900 1600 1400 5 10 13.5 FB 2000 700 1300 1200 5 11 13 3G 2400 550 1100 1000 6 12.5 13 3H 2400 550 1100 1000 6 12.5 13 3H 2400 550 1100 1000 8 12 13 3H 2400 600 1200 1000 6 12.5 18 4C 2000 500 1000 1000 1000 1000 1000 1000 1000 450 900 850 7 14 18 4D 1600																		
10 mm 5 10 13.5 FB 2000 700 1300 1200 5 11 13 3F 3000 700 1300 1200 6 12.5 13 3G 2400 550 1100 1000 8 12 13 3H 2400 400 800 740 8 12 13 3H 2400 600 1200 1100 5 13 19 FC 1000 600 1200 1200 6 12.5 18 4C 2000 500 1000 1000 1000 1000 1000 1000 450 900 850 7 14 18 4D 1600 450 900										_								
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 6 12.5 13 3H 2400 - 400 800 - 1000 5 13 19 FC 1000 - 600 1200 - 1200 6 12.5 18 4C 2000 - 500 1000 - 1000 7 14 18 4D 1600 - 450 900 - 850 7 15 19 FE 1000 - 450 900 - 850 8 17 19 FE 1000 - 350 700 - 450 9 <t< th=""><th>10 mm</th><th></th><th></th><th></th><th></th><th></th><th>-</th><th></th><th></th><th>-</th><th></th></t<>	10 mm						-			-								
6 12.5 13 3H 2400 - 550 1100 - 740 8 12 13 3I 2000 - 400 800 - 740 5 11 18 4B 2400 - 600 1200 - 1150 5 13 19 FC 1000 - 600 1200 - 1000 6 14 19 FD 1000 - 500 1000 - 1000 6 14 19 FD 1000 - 450 900 - 850 7 15 18 4D 1600 - 450 900 - 850 7 15 18 4D 1600 - 450 900 - 850 7 15 18 4D 1200 - 450 90 - 850 9 14							-			-								
812133120004008007405111848240066001200115051319FC100060012001200612.5184C200050010001000714184D160050010001000714184D160045090085071519FE1000450900850715184F120040080074081719FE500400800740914184H1200350700650914184H1200350700650914184H1200350700650101819FG5003507006501114184M100030065054022.5555550760700640102026.5555004804808.518.526.555 </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>-</th> <th></th> <th></th> <th>-</th> <th></th>							-			-								
15 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 9 14 18 4H 1200 - 350 700 - 650 10 18 19 FG 500 - 300 600 - 540 11 14<							-			-								
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 7 15 19 FE 1000 400 800 740 8 17 19 FF 500 400 800 740 9 14 18 4H 1200 350 700 650 10 18 19 FG 500 300 660 540 7																		
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 7 15 19 FE 1000 450 900 850 8 17 19 FE 1000 400 800 740 8 17 19 FF 500 400 800 740 9 14 18 4H 1200 350 700 650 10 18 19 FG 500 300 600 500 11																		
15 mm 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 300 700 740 9 14 18 4H 1200 300 650 740 9 14 18 4J 900 350 700 650 10 18 19 FG 500 300 600 500																		
15 14 18 4D 1600 450 900 850 15 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 14 18 4H 1200 350 700 650 10 18 19 FG 500 300 660 590 11 14 18 4M 1000 - 800 540 7 16.5 26.5 5B 1000 - - 400 - 550										-								
15 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 11 14 18 4M 1000 300 600 - 540 11 14 26.5 5B 1000 - 800 - 550 8 <							-			-								
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 11 14 26.5 5A 1200 - 800 540 6 15 26.5 5B 1000 - 800 540 74 16.5 26.5 5B 1000 - 700 - 640 7 16.5 26.5 5D 760 - - 400 - 450 8	3.6	7	15	19	FE		-			-								
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 11 14 18 4M 1000 - 300 600 - 540 6 15 26.5 5B 1000 - - 800 - 770 6 15 26.5 5B 1000 - - - 600 - 550 7 16.5 26.5 5D 760 - - 400 - 480 7 16.5 26.5 5F 500 - - 480 - 450 10 <th>15 mm</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>-</th> <th></th> <th></th> <th>-</th> <th></th>	15 mm						-			-								
9 16 18 4J 900 350 700 650 10 18 19 FG 500 300 650 590 11 14 18 4M 1000 300 600 540 5 14 26.5 5A 1200 - 800 540 6 15 26.5 5B 1000 - 700 640 7 16.5 26.5 5D 760 - 600 550 8 20 28 FH 500 - 480 - 480 10 2.2 28 FF 500 - - 480 - 450 10.5 18.5 26.5 5F 500 - - 4200 - 360 10.5 <							-			-								
10 18 19 FG 500 300 650 590 11 14 18 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 - - 480 - 480 8.5 18.5 26.5 5F 500 - - 480 - 450 10 22 28 FI 540* - - 420 - 380 10.5 19 26.5 5G 680* - - - 400 - 360 10.5							-			-								
11 14 18 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 - - 480 - 480 8.5 18.5 26.5 5F 500 - - 480 - 450 10 22 28 FI 540* - - 420 - 380 10.5 19 26.5 5G 680* - - - 400 - 360 10.5 20.5 5H 680* - - 380 - 350										_								
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 - - 480 - 480 8.5 18.5 26.5 5F 500 - - 480 - 450 10 22 28 FI 540* - - 420 - 380 10.5 19 26.5 5G 680* - - 400 - 360 10.5 20.5 26.5 5H 680* - - 400 - 360 11 21 26.5 5I 680* - - 380 - 350										-								
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 540* - - 420 - 380 10.5 19 26.5 5G 680* - - 400 - 360 10.5 20.5 26.5 5H 680* - - 400 - 360 11 21 26.5 5I 680* - - 380 - 350				-					·	_								
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 540* - - 400 - 380 10.5 19 26.5 5G 680* - - 400 - 360 10.5 20.5 26.5 5H 680* - - 400 - 360 11 21 26.5 5I 680* - - 380 - 350										-								
8.5 18.5 26.5 5F 500 - - 480 - 450 10 22 28 FI 540* - - 420 - 380 10.5 19 26.5 5G 680* - - 400 - 360 10.5 20.5 26.5 5H 680* - - 400 - 360 11 21 26.5 5I 680* - - 380 - 350						760	-	-	600	-								
10 22 28 FI 540* - - 420 - 380 10.5 19 26.5 5G 680* - - 400 - 360 10.5 20.5 26.5 5H 680* - - 400 - 360 11 21 26.5 5I 680* - - 380 - 350							-	-		-								
10 22 26 FI 340 - - 420 - 380 10.5 19 26.5 5G 680* - - 400 - 360 10.5 20.5 26.5 5H 680* - - 400 - 360 11 21 26.5 5I 680* - - 380 - 350	22.5 mm						-	-		-								
10.5 20.5 26.5 5H 680* - - 400 - 360 11 21 26.5 5I 680* - - 380 - 350							-	-		-								
11 21 26.5 51 680* – – 380 – 350							_	_		_								
							_	_		_								
12 24 20 FJ 430 - 300 - 310		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.

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



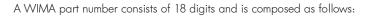
Packing Quantities for Capacitors with Radial Pins in PCM 27.5 mm to 52.5 mm

								pcs	. per p	acking u	init				
		Siz	70			RC	OLL		RE	EL			AM	MO	
PCM		JI.	Ze		bulk			øЗ	60	ø5	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	T	н	J	Α	С	В	D
	9	19	31.5	6A	640*	_	-	_		460/	340*	_	_	4	20
	11	21	31.5	6B	544*	-	-	-		380/	280*	-	-	3	50
	13	24	31.5	6D	448*	-	-	-		3	00	-	-	2	90
	13	25	33	FK	336*	-	-	-		-	-	-	-		
07.5	15	26	31.5	6F	384*	-	-	-		2	70	-	-	2	250
27.5 mm	15	26	33	FL	288*	-	-	-		-	-	-	-	MO 490 × 370 H16.5 H18 B D 420 350 290 - 250 - - - - - - - - - - - - -	-
	17	29	31.5	6G	176*	-	-	-		-	-	-	-		-
	17	34.5	31.5	61	176*	-	-	-		-	-	-	-		-
	19 20	30 32	31.5 33	6L FM	50* 216*	-	-	-		-	-	-	-	-	-
	20	39.5	31.5	6J	144*	-		_		-	-	-	_		_
	9	19	41.5	7A	480*		_	_		_	_	_	_	-	
	11	22	41.5	7B	408*	-	-	-		_		-		-	
	13	24	41.5	7C	252*	-	-	-		-	-	-	-		-
	15	26	41.5	7D	144*	-	-	-		-	-	-	-	-	-
37.5 mm	17	29	41.5	7E	132*	-	-	-		-	-	-	-	-	-
37.5 mm	19 20	32 39.5	41.5 41.5	7F 7G	108* 108*	-	-	-		-	-	-	-	-	-
	20 24	39.5 45.5	41.5	7G 7H	84*	-	-	-		-	-	-	-	-	-
	31	45.5	41.5	71	72 *						_	_	_		
	35	50	41.5	7J	35*		_	_		_	_		_		
	40	55	41.5	7K	28*	-	-	-		-	-	-	-	-	-
	19	31	56	8D	50*	-	-	-		-	-	-	-	-	-
40 5	23	34	56	8E	72*	-	-	-			-	-	-	-	-
48.5 mm	27	37.5	56	8H	60*	-	-	-		-	-	-	-	-	-
	33 37	48 54	56 56	8J 8L	48* 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)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18				
м	к	S	2	с	0	2	1	0	0	1	Α	0	0	м	S	S	D				
	MK	S 2		63 \	/DC		0.0)] µF		2.5×6	.5x7.2			20% bulk 6-2							
SMD-F SMD-F FKP 02 MKS 0 FKS 2 FKP 2 MKP 2 FKS 3 FKP 3 MKP 4 FKP 3 MKP 4 FKP 1 MKP-X MKP-Y MP 3-) MP	PS 22 22 22 22 22 22 22 22 22 22 22 22 22	= SK = = KK	ADI APO KS0 KS2 P2 KS2 KS2 KS2 KS2 KS2 KS2 KS2 KS2 KS2 KS	Rated v 2.5 VDC 4 VDC 14 VDC 28 VDC 5 VDC 5 VDC 50 VDC 63 VDC 100 VDC 160 VDC 400 VDC 400 VDC 400 VDC 400 VDC 600 VDC 600 VDC 600 VDC 600 VDC 800 VDC 800 VDC 800 VDC 1000 VE 1100 VD 1200 VE 1500 VE 1500 VE 1500 VE 3000 VE 4000 VE 6000 VE	$\begin{array}{c} = A \\ = B \\ = C \\ = D \\ = C \\ = D \\ = C \\$	1 22 47 22 47 3 33 10 4 15 55 22 6 33 50 47 00 68 00 10 10 10 00 15 22 00 33 00 47 68 0 0.0 0 00 0.0 0.0 0.0 0.0 0 0.1 1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0	² pF 30 pF 30 pF 30 pF 30 pF 30 pF 30 pF 30 pF 300	ance: = 0022 = 0100 = 0150 = 0220 = 0330 = 0470 = 0150 = 1150 = 1220 = 1330 = 1470 = 1680 = 2100 = 2470 = 3120 = 3470 = 4470 = 5120 = 5470 = 6100 = 6220 = A010	4.8x 5.7x 5.7x 7.2x 7.2x 10.2 12.7; 15.3; 2.5x 3x7. 2.5x 3x7. 2.5x 3x8. 3x9 4x9 5x11 6x12 5x14 6x13 9x19 11x2 9x19 11x2	3.3 x 3 S 3.3 x 4 S 5.1 x 3.5 5.1 x 4.5 6.1 x 3 S 6.1 x 3 S 6.1 x 5 S 6.1 x 5 S 6.1 x 5 S 6.1 x 5 S 7.4.6 F 5 x 4.6 F 6.5 x 7.2 F 7 x 10 PG x 13 PG x 14 PG x 14 PG x 14 PG x 15 PG x	CM7.5 CM7.5 W 10 W 10 CM 15 PCM 15 PCM 22 PCM 27 PCM 27 PCM 27 PCM 37 PCM 37 DCH_	2 = K G = G G G G = G G G G = G G G G G G		Toleran 20% 10% 5% 2.5% 1% Packing AMMO AMMO AMMO AMMO AMMO AMMO AMMO AMM	= M = K = J = H = E H16.5 3 H16.5 4 H18.5 3 H18.5 4 6.5 360 6.5 500 6.5 500 6.5 85 W12 18 W12 33 W12 33 W16 33 W12 33	90 x 37(40 x 34(90 x 37(90 x 37(30 30 30 30 30	B = B C = C				
DC-LIN DC-LIN Super(Super(NK HC NK HY Cap C Cap MC Cap C60	= DC = DC = SC = M	CH_ CHY CSC C CSC	250 VAC 275 VAC 300 VAC 400 VAC 440 VAC 500 VAC		N 50 N 10 N 11 N 60 N 12) F)0 F 0 F)0 F	= A500 = B100 = B110 = B600 = C120	Stan Versi Versi	ion cod dard on A1 on A1.1 on A2	= 00 = 1A			Pin lenç 3.5 ±0.5 6 -2 16 ±1 		aped)					

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.