



WIMA FKC 2



Polycarbonate film and foil capacitors for pulse applications in PCM 5 mm

- Low induction and low damping with high resonant frequency.
- With almost linear capacitance temperature coefficient.
- High pulse duty.
- Reservoir and decoupling capacitors for high-speed digital circuits.
- Great variety of applications with severe temperature changes.
- Close tolerances up to 2.5 %.
- Available taped and reeled.

Technical Data

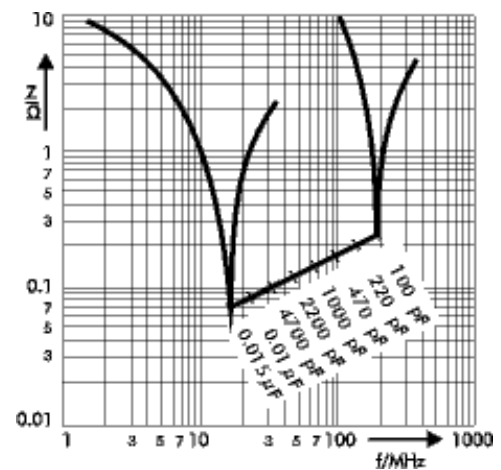
Dielectric: Polycarbonate film.
Capacitor electrodes: Metal foil.
Encapsulation: Flame retardant plastic case, UL 94 V-0, with epoxy resin seal.
Colour: Yellow. **Marking:** Black.
Temperature range: -55° C to +100° C.
Test specifications: In accordance with IEC 60384-12 and EN 131700.
Test category: 55/100/56 in accordance with IEC.
Insulation resistance at +20° C:
 >= 5 x 10⁵ megohms
 (mean value: 1 x 10⁶ megohms).
 In accordance with IEC 60384-12 and EN 131700.
Measuring voltage: 100 V/1 min.
Dissipation factors at +20° C:
 tan delta <= 2 x 10⁻³ at 1 kHz
 tan delta <= 4 x 10⁻³ at 10 kHz
 tan delta <= 8 x 10⁻³ at 100 kHz
Capacitance tolerances: +/-20%, +/-10%, +/-5%, +/-2.5%.
Maximum pulse rise time: 1000 V/microsecond for pulses equal to the rated voltage.
Test voltage: 2 Ur, 2 sec.

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/sec² in accordance with IEC 60068-2-29.
Voltage derating: A voltage derating factor of 1% per K must be applied from +85° C for DC voltages and from +75° C for AC voltages.

Graphs:

Taping:

Impedance change with frequency (general guide)



General Data

Capacitance	100VDC/63VAC*				250VDC/160VAC*				400VDC/220VAC*			
	W	H	L	PCM**	W	H	L	PCM**	W	H	L	PCM**
100 pF	2.5	6.5	7.2	5	2.5	6.5	7.2	5	2.5	6.5	7.2	5
150 "	2.5	6.5	7.2	5	2.5	6.5	7.2	5	2.5	6.5	7.2	5
220 "	2.5	6.5	7.2	5	2.5	6.5	7.2	5	2.5	6.5	7.2	5
330 "	2.5	6.5	7.2	5	2.5	6.5	7.2	5	2.5	6.5	7.2	5
470 "	2.5	6.5	7.2	5	2.5	6.5	7.2	5	2.5	6.5	7.2	5
680 "	2.5	6.5	7.2	5	2.5	6.5	7.2	5	3.5	8.5	7.2	5
1000pF	2.5	6.5	7.2	5	3.5	8.5	7.2	5	3.5	8.5	7.2	5
1500 "	2.5	6.5	7.2	5	3.5	8.5	7.2	5	3.5	8.5	7.2	5
2200 "	2.5	6.5	7.2	5	3.5	8.5	7.2	5	4.5	9.5	7.2	5
3300 "	2.5	6.5	7.2	5	4.5	9.5	7.2	5				
4700 "	3.5	8.5	7.2	5								
6800 "	3.5	8.5	7.2	5								
0.01 uF	4.5	9.5	7.2	5								
0.015 "	4.5	9.5	7.2	5								

*AC voltage: f <= 400 Hz;
 1.4 x Urms + UDC <= Ur
 **PCM = Printed circuit module
 = lead spacing.

Dims. in mm

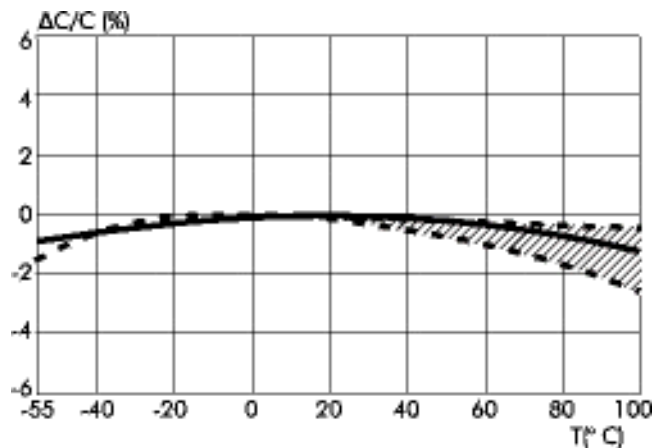
d = 0.5 ø

PCM = P.C. Module at the lead exit points (± 0.5)

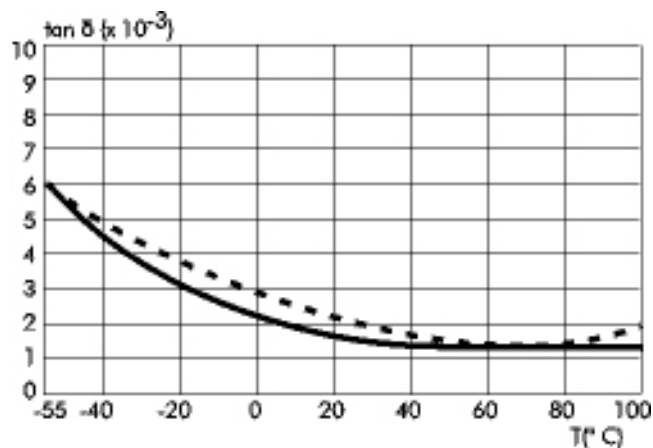
Rights reserved to amend design data without prior notification.

Polycarbonate

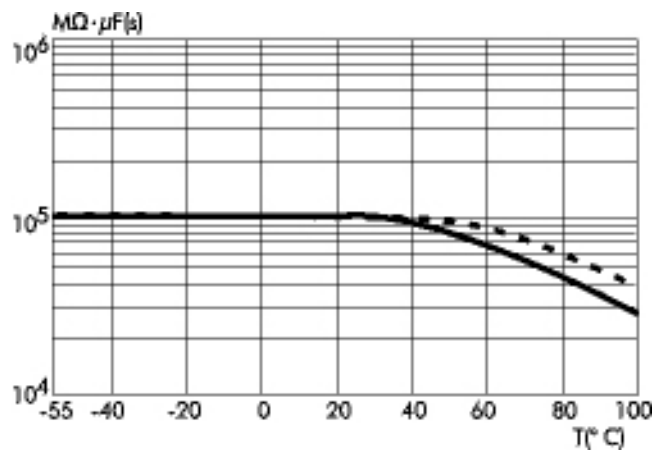
Typical graphs of the polycarbonate dielectric



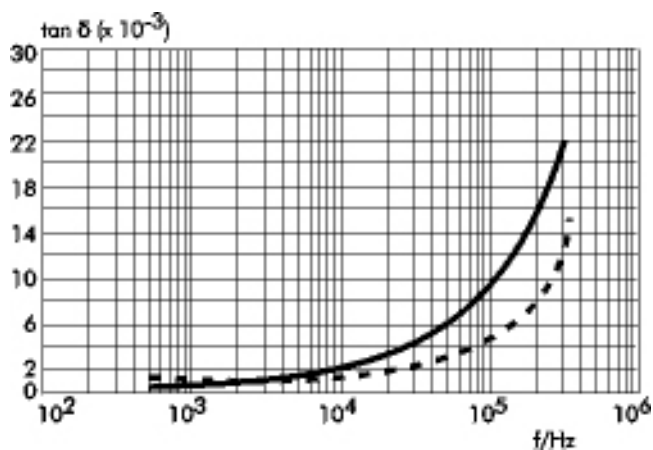
Capacitance change with temperature
(f=1 kHz) (general guide)



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



Insulation resistance change with temperature
(general guide)



Dissipation factor change with frequency
(general guide)

Annotation:

The full lines characterize the metallized versions

The broken lines show the film/foil types

Typical dimensions for taping configuration

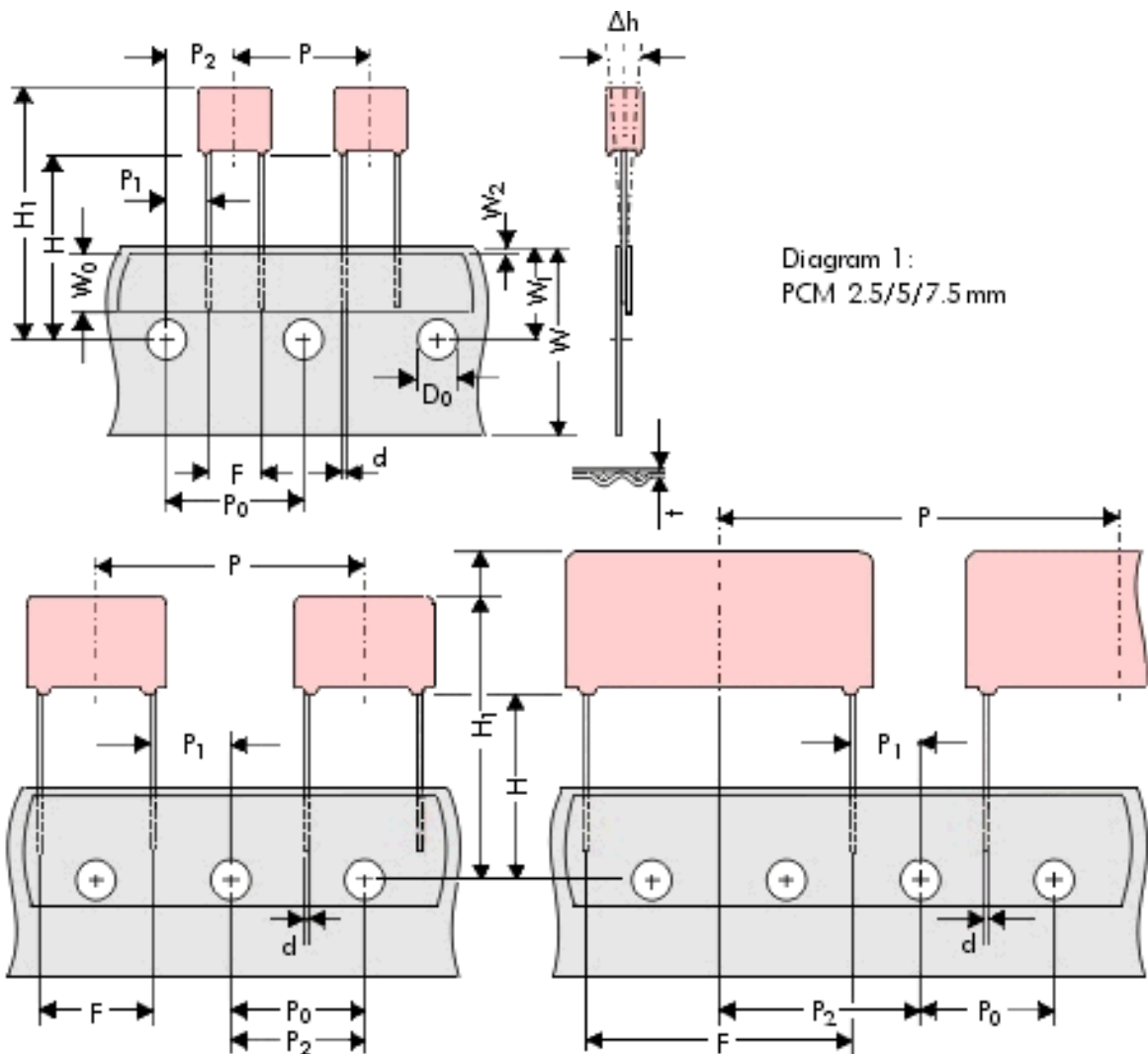


Diagram 1:
PCM 2.5/5/7.5 mm

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 insertion						
Designation	Symbol	PCM 2.5	PCM 5	PCM 7.5	PCM 10**	PCM 15**	PCM 22.5	PCM 27.5
Carrier tape width	W	18.0 \pm 0.5	18.0 \pm 0.5	18.0 \pm 0.5	18.0 \pm 0.5	18.0 \pm 0.5	18.0 \pm 0.5	18.0 \pm 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 \pm 0.5	9.0 \pm 0.5	9.0 \pm 0.5	9.0 \pm 0.5	9.0 \pm 0.5	9.0 \pm 0.5	9.0 \pm 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 \pm 0.2	4.0 \pm 0.2	4.0 \pm 0.2	4.0 \pm 0.2	4.0 \pm 0.2	4.0 \pm 0.2	4.0 \pm 0.2
Pitch of component	P	12.7 \pm 1.0	12.7 \pm 1.0	12.7 \pm 1.0	25.4 \pm 1.0	25.4 \pm 1.0	38.1 \pm 1.5	*38.1 \pm 1.5 or 50.8 \pm 1.5
Feed hole pitch	P ₀	12.7 \pm 0.3 cumulative pitch error max. 1.0mm/20pitch	12.7 \pm 0.3 cumulative pitch error max. 1.0mm/20pitch	12.7 \pm 0.3 cumulative pitch error max. 1.0mm/20pitch	12.7 \pm 0.3 cumulative pitch error max. 1.0mm/20pitch	12.7 \pm 0.3 cumulative pitch error max. 1.0mm/20pitch	12.7 \pm 0.3 cumulative pitch error max. 1.0mm/20pitch	12.7 \pm 0.3 cumulative pitch error max. 1.0mm/20pitch
Feed hole centre to lead	P ₁	5.1 \pm 0.5	3.85 \pm 0.7	2.6 \pm 0.7	7.7 \pm 0.7	5.2 \pm 0.7	7.8 \pm 0.7	5.3 \pm 0.7

Taping

Hole centre to component centre	P2	6.35 \pm 1.3	6.35 \pm 1.3	6.35 \pm 1.3	12.7 \pm 1.3	12.7 \pm 1.3	19.05 \pm 1.3	19.05 \pm 1.3
Feed hole centre to bottom edge of the component	H**	16.5 \pm 0.3	16.5 \pm 0.3	16.5 \pm 0.3	16.5 \pm 0.3	16.5 \pm 0.3	16.5 \pm 0.3	16.5 \pm 0.3
		18.5 \pm 0.5	18.5 \pm 0.5	18.5 \pm 0.5	18.5 \pm 0.5	18.5 \pm 0.5	18.5 \pm 0.5	18.5 \pm 0.5
Feed hole centre to top edge of the component	H1	H+H _{component} < H1 32.25 max.	H+H _{component} < H1 32.25 max.	H+H _{component} < H1 24.25 to 31.5	H+H _{component} < H1 25.0 to 31.5.	H+H _{component} < H1 26.0 to 37.0	H+H _{component} < H1 30.0 to 43.0	H+H _{component} < H1 35.0 to 45.0
Lead spacing	F	2.5 \pm 0.5	5 \pm 0.8/-0.2	7.5 \pm 0.8	10.0 \pm 0.8	15.0 \pm 0.8	22.5 \pm 0.8	27.5 \pm 0.8
Lead diameter	d	0.4 \pm 0.05	0.5 \pm 0.05	*0.5 \pm 0.05 or 0.7 \pm 0.07/-0.05	*0.5 \pm 0.05 or 0.7 \pm 0.07/-0.05	0.8 \pm 0.08/-0.05	0.8 \pm 0.08/-0.05	*0.8 \pm 0.08/-0.05 or 1.0 \pm 0.1/-0.05
Component alignment	delta h	\pm 2.0 max.	\pm 2.0 max.	\pm 3.0 max.	\pm 3.0 max.	\pm 3.0 max.	\pm 3.0 max.	\pm 3.0 max.
Total tape thickness	t	0.7 \pm 0.2	0.7 \pm 0.2	0.7 \pm 0.2	0.7 \pm 0.2	0.7 \pm 0.2	0.7 \pm 0.2	0.7 \pm 0.2
Package	**	ROLL / AMMO / REEL			AMMO / REEL			

** Please give "H" dimension and desired packaging type when ordering.

* Diameter of leads see General Data.

** PCM 10 and PCM 15 can be crimped to PCM 7.5 mm. Position of components according to PCM 7.5 (sketch 1). P₀ = 12.7 or 15.0 is possible.

Dims. in mm.

Minimum packing units for capacitors with radial leads

Please clarify customer-specific deviations with the manufacturer.