WIMA FKS 2

Polyester (PET) Film and Foil Capacitors for Pulse Applications in PCM 5 mm

Special Features

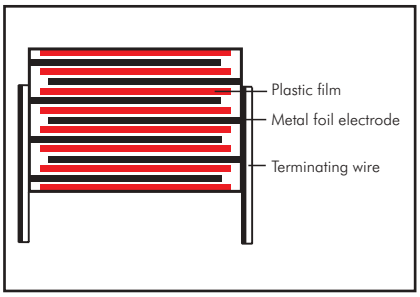
- Pulse duty construction
- According to RoHS 2002/95/EC

Typical Applications

For general DC-applications e.g.
- Coupling
- Decoupling

Construction

Dielectric:
Polyethylene-terephthalate (PET) film
Capacitor electrodes:
Metal foil
Internal construction:



Encapsulation:
Solvent-resistant, flame-retardent plastic case with epoxy resin seal, UL 94 V-0
Terminations:
Tinned wire.
Marking:
Colour: Red. Marking: Silver.
Epoxy resin seal: Yellow.

Electrical Data

Capacitance range:
1000 pF to 0.047 µF (E12-values on request)
Rated voltages:
100 VDC, 250 VDC, 400 VDC
Capacitance tolerances:
± 20%, ±10%, ±5%
Operating temperature range:
–55° C to +100° C
Test specifications:
In accordance with IEC 60384-11 and EN 130 100
Climatic test category:
55/100/56 in accordance with IEC
Insulation resistance at +20° C:
$\geqslant 3 \times 10^4$ MΩ
(mean value: 8×10^5 MΩ)
Measuring voltage: 100 V/1 min.
Test voltage: 2 U_r, 2 sec.
Maximum pulse rise time:
1000 V/µsec for pulses equal to the rated voltage

Dissipation factors at +20° C: tan δ

at f	C ⩽ 0.047 µF
1 kHz	⩽ 7×10^{-3}
10 kHz	⩽ 15×10^{-3}
100 kHz	⩽ 20×10^{-3}

Voltage derating:
A voltage derating factor of 1.25 % per K must be applied from +85° C for DC voltages and from +75° C for AC voltages.
Reliability:
Operational life > 300 000 hours
Failure rate < 5 fit (0.5 x U_r and 40° C)

Mechanical Tests

Pull test on leads:
10 N in direction of leads 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

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.

09.06

Continuation

General Data

Capacitance	100 VDC/63 VAC*				250 VDC/160 VAC*				400 VDC/200 VAC*			
	W	H	L	PCM**	W	H	L	PCM**	W	H	L	PCM**
1000 pF	2.5	6.5	7.2	5	2.5	6.5	7.2	5	2.5	6.5	7.2	5
1500 „	2.5	6.5	7.2	5	2.5	6.5	7.2	5	2.5	6.5	7.2	5
2200 „	2.5	6.5	7.2	5	2.5	6.5	7.2	5	2.5	6.5	7.2	5
3300 „	2.5	6.5	7.2	5	2.5	6.5	7.2	5	2.5	6.5	7.2	5
4700 „	2.5	6.5	7.2	5	2.5	6.5	7.2	5	2.5	6.5	7.2	5
6800 „	2.5	6.5	7.2	5	2.5	6.5	7.2	5	3	7.5	7.2	5
0.01 µF	3	7.5	7.2	5	3	7.5	7.2	5	3.5	8.5	7.2	5
0.015 „	3.5	8.5	7.2	5	3.5	8.5	7.2	5	4.5	9.5	7.2	5
0.022 „	4.5	8.5	7.2	5	4.5	8.5	7.2	5	5.5	11.5	7.2	5
0.033 „	5.5	11.5	7.2	5	5.5	11.5	7.2	5	7.2	13	7.2	5
0.047 „	7.2	13	7.2	5	7.2	13	7.2	5				

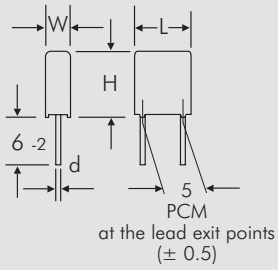
* AC voltage: f = 50 Hz; 1.4 x U_{rms} + UDC ⩽ U_r

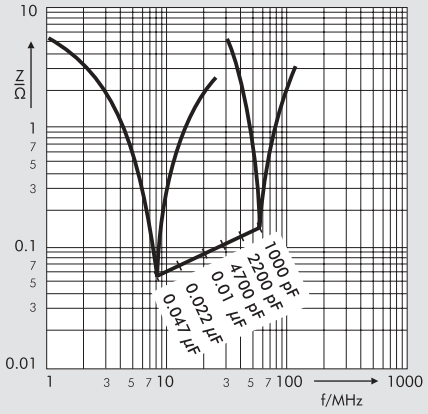
** PCM = Printed circuit module = lead spacing

Dims. in mm.

Taped version see page 104.

d = 0.5 ø





Impedance change with frequency (general guide).

Recommendation for Processing and Application of Through-Hole Capacitors

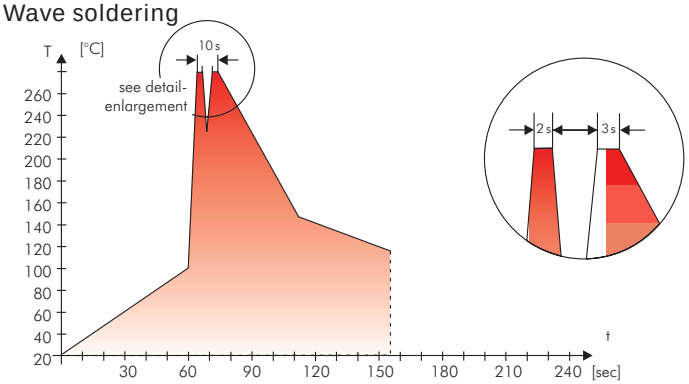
Soldering Process

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: $T < 260°C$
Immersion time: $t < 5$ sec

Double wave soldering
Soldering bath temperature: $T < 260°C$
Immersion time: $2 \times t < 3$ sec

Wave soldering



Temperature/time graph for the maximum permissible solder bath temperature for the wave soldering of through-hole WIMA capacitors

WIMA Quality and Environmental Philosophy

ISO 9001:2000 Certification

ISO 9001:2000 is an international basic standard of quality assurance systems for all branches of industry. The approval according to ISO 9001:2000 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
- lead 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.

- 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:

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

RoHS Compliance

According to the RoHS Directive 2002/95/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 14001:2005

WIMA's environmental management has been established in accordance with the guidelines of DIN EN ISO 14001:2005. The certification has been granted in June 2006.