

Polypropylene (PP) Film/Foil Capacitors for Pulse Applications in PCM 5 mm. Capacitances from 33 pF to 0.033 μF. Rated Voltages from 63 VDC to 1000 VDC.

Special Features

- Pulse duty construction
- Close tolerances up to ±2.5 % (±1 % on request)
- Very low dissipation factor
- Negative capacitance change versus temperature
- Very low dielectric absorption
- According to RoHS 2011/65/EU

Typical Applications

For high frequency applications e.g.

- Sample and hold
- Timing
- LC-Filtering
- Oscillating circuits
- Audio equipment

Construction

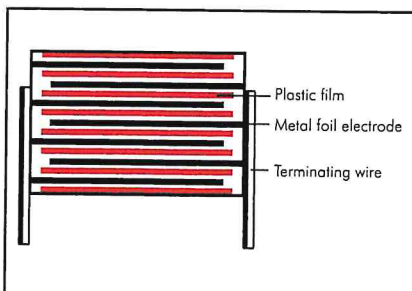
Dielectric:

Polypropylene (PP) film

Capacitor electrodes:

Metal foil

Internal construction:



Encapsulation:

Solvent-resistant, flame-retardant plastic case with epoxy resin seal, UL 94 V-0

Terminations:

Tinned wire.

Marking:

Colour: Red. Marking: Black.

Electrical Data

Capacitance range:

33 pF to 0.033 μF (E12-values on request)

Rated voltages:

63 VDC, 100 VDC, 250 VDC, 400 VDC, 630 VDC, 800 VDC, 1000 VDC

Capacitance tolerances:

±20%, ±10%, ±5%, ±2.5% (±2%, ±1.5% or ±1% available as precision capacitors subject to special enquiry)

Operating temperature range:

-55° C to +100° C

Test specifications:

In accordance with IEC 60384-13

Climatic test category:

55/100/56 in accordance with IEC

Insulation resistance at +20° C:

≥ 3 × 10⁵ MΩ

Measuring voltage:

U_r = 63 V: U_{test} = 50 V/1 min.

U_r ≥ 100 V: U_{test} = 100 V/1 min.

Dissipation factors at +20° C: tan δ

at f	C ≤ 1000 pF	1000 pF < C ≤ 4700 pF	C > 4700 pF
1 kHz	≤ 5 × 10 ⁻⁴	≤ 5 × 10 ⁻⁴	≤ 5 × 10 ⁻⁴
10 kHz	≤ 6 × 10 ⁻⁴	≤ 6 × 10 ⁻⁴	≤ 6 × 10 ⁻⁴
100 kHz	≤ 8 × 10 ⁻⁴	≤ 8 × 10 ⁻⁴	-
1 MHz	≤ 10 × 10 ⁻⁴	-	-

Test voltage: 2 U_r, 2 sec.

Maximum pulse rise time:

1000 V/μsec

Dielectric absorption:

0.05%

Temperature coefficient:

-200 × 10⁻⁶/° C (typical)

Voltage derating:

A voltage derating factor of 1.35 % 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 × U_r and 40° C)

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:

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

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.

Continuation

General Data

Capacitance	63 VDC/40 VAC*					100 VDC/63 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
100 pF	4.5	6	7.2	5	FKP2C001001D00_	4.5	6	7.2	5	FKP2D001001D00_
150 "	4.5	6	7.2	5	FKP2C001501D00_	4.5	6	7.2	5	FKP2D001501D00_
220 "	4.5	6	7.2	5	FKP2C002201D00_	4.5	6	7.2	5	FKP2D002201D00_
330 "	4.5	6	7.2	5	FKP2C003301D00_	4.5	6	7.2	5	FKP2D003301D00_
470 "	4.5	6	7.2	5	FKP2C004701D00_	4.5	6	7.2	5	FKP2D004701D00_
680 "	4.5	6	7.2	5	FKP2C006801D00_	4.5	6	7.2	5	FKP2D006801D00_
1000 pF	4.5	6	7.2	5	FKP2C011001D00_	4.5	6	7.2	5	FKP2D011001D00_
1500 "	4.5	6	7.2	5	FKP2C011501D00_	4.5	6	7.2	5	FKP2D011501D00_
2200 "	4.5	6	7.2	5	FKP2C012201D00_	4.5	6	7.2	5	FKP2D012201D00_
3300 "	4.5	6	7.2	5	FKP2C013301G00_	5.5	7	7.2	5	FKP2D013301G00_
4700 "	4.5	6	7.2	5	FKP2C014701D00_	5.5	7	7.2	5	FKP2D014701G00_
6800 "	4.5	6	7.2	5	FKP2C016801D00_	5.5	7	7.2	5	FKP2D016801G00_
0.01 µF	5.5	7	7.2	5	FKP2C021001G00_	6.5	8	7.2	5	FKP2D021001I00_
0.015 "	6.5	8	7.2	5	FKP2C021501I00_	7.2	8.5	7.2	5	FKP2D021501J00_
0.022 "	7.2	8.5	7.2	5	FKP2C022201J00_	8.5	10	7.2	5	FKP2D022201L00_
0.033 "	8.5	10	7.2	5	FKP2C023301L00_					

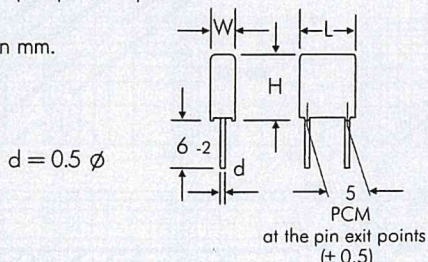
Capacitance	250 VDC/160 VAC*					400 VDC/220 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
100 pF	4.5	6	7.2	5	FKP2F001001D00_	4.5	6	7.2	5	FKP2G001001D00_
150 "	4.5	6	7.2	5	FKP2F001501D00_	4.5	6	7.2	5	FKP2G001501D00_
220 "	4.5	6	7.2	5	FKP2F002201D00_	4.5	6	7.2	5	FKP2G002201D00_
330 "	4.5	6	7.2	5	FKP2F003301D00_	4.5	6	7.2	5	FKP2G003301D00_
470 "	4.5	6	7.2	5	FKP2F004701D00_	4.5	6	7.2	5	FKP2G004701D00_
680 "	4.5	6	7.2	5	FKP2F006801D00_	4.5	6	7.2	5	FKP2G006801D00_
1000 pF	4.5	6	7.2	5	FKP2F011001D00_	4.5	6	7.2	5	FKP2G011001D00_
1500 "	4.5	6	7.2	5	FKP2F011501D00_	4.5	6	7.2	5	FKP2G011501D00_
2200 "	4.5	6	7.2	5	FKP2F012201D00_	4.5	6	7.2	5	FKP2G012201D00_
3300 "	5.5	7	7.2	5	FKP2F013301G00_	5.5	7	7.2	5	FKP2G013301G00_
4700 "	6.5	8	7.2	5	FKP2F014701I00_	6.5	8	7.2	5	FKP2G014701I00_
6800 "	6.5	8	7.2	5	FKP2F016801I00_	7.2	8.5	7.2	5	FKP2G016801J00_
0.01 µF	7.2	8.5	7.2	5	FKP2F021001J00_	8.5	10	7.2	5	FKP2G021001L00_
0.015 "	8.5	10	7.2	5	FKP2F021501L00_					

* AC voltage: $f \leq 1000 \text{ Hz}$; $1.4 \times U_{\text{rms}} + U_{\text{DC}} \leq U_r$

** PCM = Printed circuit module = pin spacing.

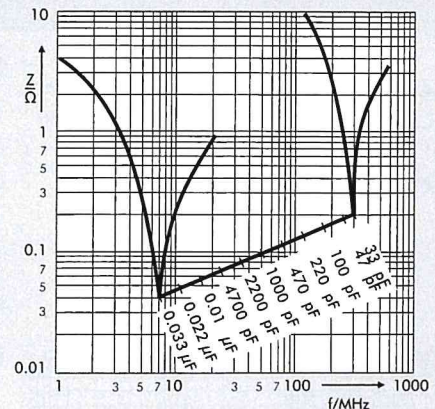
E12 values and individual values available from 27 pF up on request.

Dims. in mm.



Part number completion:

Tolerance: 20 % = M
 10 % = K
 5 % = J
 2.5 % = H
 2 % = G
 1.5 % = F
 1 % = E
 Packing: bulk = S
 Pin length: 6-2 = SD
 Taped version see page 161.



Impedance change with frequency (general guide).

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Continuation

General Data

Capacitance	630 VDC/250 VAC*					800 VDC/250 VAC*				
	W	H	L	PCM**	Part number	W	H	L	PCM**	Part number
100 pF	4.5	6	7.2	5	FKP2J001001D00	4.5	6	7.2	5	FKP2L001001D00
150 "	4.5	6	7.2	5	FKP2J001501D00	4.5	6	7.2	5	FKP2L001501D00
220 "	4.5	6	7.2	5	FKP2J002201D00	4.5	6	7.2	5	FKP2L002201D00
330 "	4.5	6	7.2	5	FKP2J003301D00	4.5	6	7.2	5	FKP2L003301D00
470 "	4.5	6	7.2	5	FKP2J004701D00	5.5	7	7.2	5	FKP2L004701G00
680 "	4.5	6	7.2	5	FKP2J006801D00	5.5	7	7.2	5	FKP2L006801G00
1000 pF	4.5	6	7.2	5	FKP2J011001D00	5.5	7	7.2	5	FKP2L011001G00
1500 "	4.5	6	7.2	5	FKP2J011501D00	5.5	7	7.2	5	FKP2L011501G00
2200 "	5.5	7	7.2	5	FKP2J012201G00	6.5	8	7.2	5	FKP2L012201I00
3300 "	6.5	8	7.2	5	FKP2J013301I00	7.2	8.5	7.2	5	FKP2L013301J00
4700 "	6.5	8	7.2	5	FKP2J014701I00	8.5	10	7.2	5	FKP2L014701L00
6800 "	7.2	8.5	7.2	5	FKP2J016801J00					
0.01 µF	8.5	10	7.2	5	FKP2J021001L00					

Capacitance	1000 VDC/250 VAC*				
	W	H	L	PCM**	Part number
33 pF	4.5	6	7.2	5	FKP2O100331D00
47 "	4.5	6	7.2	5	FKP2O100471D00
68 "	4.5	6	7.2	5	FKP2O100681D00
100 pF	4.5	6	7.2	5	FKP2O101001D00
150 "	4.5	6	7.2	5	FKP2O101501D00
220 "	4.5	6	7.2	5	FKP2O102201D00
330 "	4.5	6	7.2	5	FKP2O103301D00
470 "	5.5	7	7.2	5	FKP2O104701G00
680 "	5.5	7	7.2	5	FKP2O106801G00
1000 pF	6.5	8	7.2	5	FKP2O111001I00
1500 "	7.2	8.5	7.2	5	FKP2O111501J00
2200 "	8.5	10	7.2	5	FKP2O112201L00

E12 values and individual values available from 27 pF up on request.

Dims. in mm.

Part number completion:

- Tolerance: 20 % = M
- 10 % = K
- 5 % = J
- 2.5 % = H
- 2 % = G
- 1.5 % = F
- 1 % = E

- Packing: bulk = S
- Pin length: 6-2 = SD

Taped version see page 161.

* AC voltage: $f \leq 1000 \text{ Hz}$; $1.4 \times U_{\text{rms}} + \text{UDC} \leq U_r$

** PCM = Printed circuit module = pin spacing.

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Permissible AC voltage in relation to frequency at 10° C internal temperature rise (general guide).

