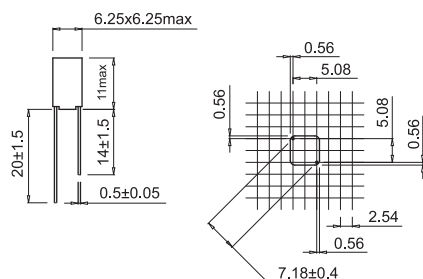


METALLIZED AND FILM-FOIL POLYPROPYLENE CAPACITOR

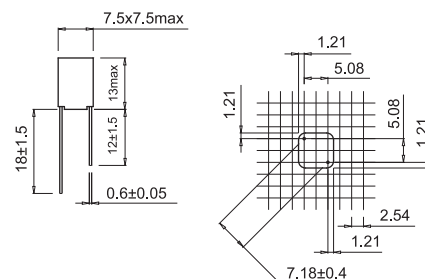
Typical applications: timing, LC-filters
(i.e.: TELECOM, measurement equipment).

PRODUCT CODE: P42

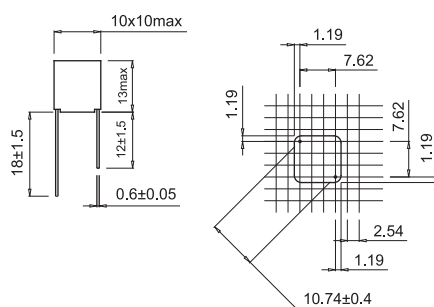
P42



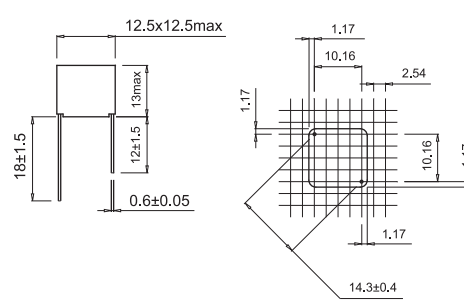
Case A



Case B



Case C



Case D

All dimensions are in mm.

Upon request different leads can be provided up to a minimum of 2.5mm (only for A, B and C constructions).

GENERAL TECHNICAL DATA

Dielectric: polypropylene film.

Plates: KP: tin foil;
MKP: aluminium layer deposited by evaporation under vacuum.

Winding: non-inductive type.

Leads: tinned wire.

Protection: plastic case, thermosetting resin filled.
Box material is solvent resistant and flame retardant according to UL94 V0.

Marking: series (P.42 for KP; 1.42 for MKP), outer foil, capacitance, tolerance, D.C. rated voltage, manufacturing date code.

Climatic category: 55/085/56 IEC 60068-1

Related documents:

KP: IEC 60384-13; DIN 41380 T4

MKP: IEC 60384-16; DIN 45910 T23

METALLIZED AND FILM-FOIL POLYPROPYLENE CAPACITOR

PRODUCT CODE: P42

ELECTRICAL CHARACTERISTICS

Rated voltage (V_R): 63 VdcCategory voltage (V_c): up to +85°C $V_c = V_R$

Capacitance range (pF):

KP CAPACITORS		MKP CAPACITORS	
CASE A	100 to 9200	CASE A	5001 to 75000
CASE B	100 to 21000	CASE B	5001 to 120000
CASE C	21001 to 44200	CASE C	120000 to 237000
		CASE D	210000 to 432000

Capacitance values:

values in compliance with IEC 63 Norms and as E192 series.

Capacitance tolerances:

 $\pm 1\%$ (F); $\pm 1.25\%$ (A); $\pm 2\%$ (G); $\pm 2.5\%$ (H);
with a min. ± 1 pF (Z).

Total self inductance:

max 1 nH per 1 mm lead and capacitor length.

Temperature coefficient:

 $-(150 \pm 70)$ ppm/°C for $C \leq 5000$ pF
 $-(200 \pm 100)$ ppm/°C for $C > 5000$ pF

Dissipation factor (DF):

 $\text{tg} \delta \cdot 10^{-4}$ at +25°C $\pm 5^\circ\text{C}$

KHz	$C \leq 33$ nF	$C \leq 100$ nF	$C > 100$ nF
1	≤ 3	≤ 3	≤ 5
100	≤ 20	≤ 50	≤ 100

Insulation resistance:

Test conditions

 Temperature: +25°C $\pm 5^\circ\text{C}$
 Voltage charge time: 1 min
 Voltage charge: 10Vdc

Performance

 $\geq 20 \times 10^4$ M Ω for $C \leq 120$ nF
 ≥ 24000 s for $C > 120$ nF

Test voltage between terminations:

KP: $2.5 \times V_R$ MKP: $1.6 \times V_R$ applied for 2 s at +25°C $\pm 5^\circ\text{C}$

Maximum pulse rise time (dv/dt)

C (pF)	dv/dt (V/ μs)	K_0 (V ² / μs)
≤ 9000	50	6300
≤ 21000	40	5000
≤ 120000	10	1300
> 120000	5	630

TEST METHOD AND PERFORMANCE

Damp heat, steady state:

Test conditions

 Temperature: +40°C $\pm 2^\circ\text{C}$
 Relative humidity (RH): 93%
 Test duration: 56 days

Performance

 Capacitance change $|\Delta C/C|$: $\leq 0.5\% + 1$ pF
 Insulation resistance: $\geq 5 \cdot 10^4$ M Ω for $C \leq 120$ nF
 ≥ 6000 s for $C > 120$ nF

Endurance:

Test conditions

 Temperature: +85°C $\pm 2^\circ\text{C}$
 Test duration: 2000 h
 Voltage applied: $1.5 \times V_R$

Performance

 Capacitance change $|\Delta C/C|$: $\leq 0.5\% + 1$ pF
 DF change ($\Delta \text{tg} \delta$): $\leq 20 \times 10^{-4}$ for $C \leq 0.1$ μF
 $\leq 30 \times 10^{-4}$ for $C > 0.1$ μF
 measured at 100kHz.
The typical capacitance variation after 8000 hours is $\pm 0.6\%$

Resistance to soldering heat:

Test conditions

 Solder bath temperature: +260°C $\pm 5^\circ\text{C}$
 Dipping time (with heat screen): 5 s ± 1 s

Performance

Capacitance change $|\Delta C/C|$: $\leq 0.5\% + 1$ pF

Thermal shock:

Test conditions

 Temperature: -40°C ... +85°C
 Cycles: nr. 5

Performance

Capacitance change $|\Delta C/C|$: $\leq 0.5\% + 1$ pF

Long term stability:

Test conditions

 Temperature: +40°C $\pm 2^\circ\text{C}$
 Relative humidity (RH): 70% max
 Test duration: 2 years

Performance

Capacitance change $|\Delta C/C|$: $\leq 0.5\% + 1$ pF

RELIABILITY:

KP	MKP
ZR	ZR
Z = 30 FIT	Z = 80 FIT
R = 10^5 hours	R = 10^5 hours

1 FIT = 1×10^{-9} failure/comp.x h.