P42

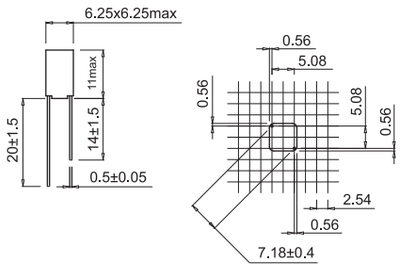
MKP-KP Series

METALLIZED AND FILM-FOIL POLYPROPYLENE CAPACITOR

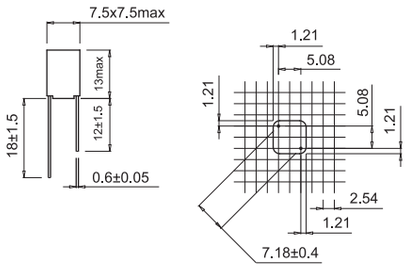
Typical applications: timing, LC-filters (i.e.:TELECOM, measurement equipment).

PRODUCT CODE: **P42**

P42



Case A



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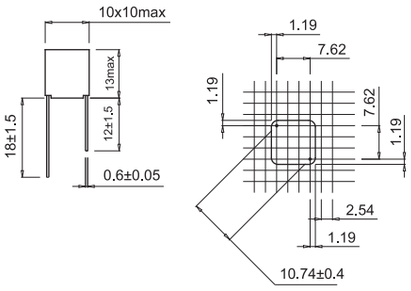

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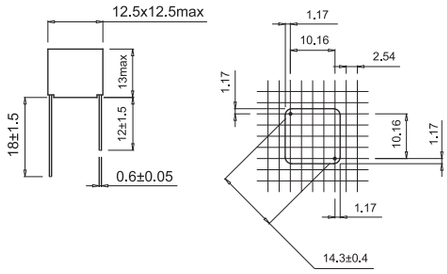

Case D

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

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ELECTRICAL CHARACTERISTICS

Rated voltage (V_R): 63 Vdc

Category voltage (V_c): up to +85°C $V_c=V_R$

Capacitance range (pF):

KP CAPACITORS	
CASE A	100 to 9200
CASE B	100 to 21000
CASE C	21001 to 44200

MKP CAPACITORS	
CASE A	5001 to 75000
CASE B	5001 to 120000
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:

±1% (F); ±1.25% (A); ±2% (G); ±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±70) ppm/°C for C≤5000pF
-(200±100) ppm/°C for C>5000pF

Dissipation factor (DF):

tgδ 10^{-4} at +25°C ±5°C

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

Insulation resistance:

Test conditions
Temperature: +25°C±5°C
Voltage charge time: 1 min
Voltage charge: 10Vdc

Performance
≥20x10^4 MΩ for C≤120nF
≥24000 s for C>120nF

Test voltage between terminations:

KP: 2.5xV_R
MKP: 1.6xV_R
applied for 2 s at +25°C±5°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±2°C
Relative humidity (RH): 93%
Test duration: 56 days

Performance
Capacitance change |ΔC/C|: ≤0.5% +1pF
Insulation resistance: ≥5 10^4 MΩ for C≤120nF
≥6000 s for C>120nF

Endurance:

Test conditions
Temperature: +85°C±2°C
Test duration: 2000 h
Voltage applied: 1.5xV_R

Performance
Capacitance change |ΔC/C|: ≤0.5% +1pF
DF change (Δtgδ): ≤20x10^{-4} for C≤0.1μF
≤30x10^{-4} for C >0.1μF
measured at 100kHz.
The typical capacitance variation after 8000 hours is±0.6%

Resistance to soldering heat:

Test conditions
Solder bath temperature: +260°C±5°C
Dipping time (with heat screen):5 s±1 s

Performance
Capacitance change |ΔC/C|: ≤0.5% +1pF

Thermal shock:

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

Performance
Capacitance change |ΔC/C|: ≤0.5% +1pF

Long term stability:

Test conditions
Temperature: +40°C±2°C
Relative humidity (RH): 70% max
Test duration: 2 years

Performance
Capacitance change |ΔC/C|: ≤0.5% +1pF

RELIABILITY:

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

1 FIT = 1x10^{-9} failure/comp.x h.