KEMET CHARGED

R.41

Y2 / X1 CLASS (IEC 60384-14) MKP Series
METALLIZED POLYPROPYLENE FILM CAPACITOR
SELF-HEALING PROPERTIES

Typical applications: Interference suppression and «across-the-line» applications. Suitable for use in situations where failure of the capacitor could lead to danger of electric shock.

PRODUCT CODE: **R41**

Not for use in series with the mains.
See www.kemet.com for more information.

Note: R.41 series has replaced the R73 series (available only upon request). For new design we suggest the use of the R.41 series.

Loose

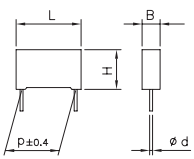

Fig.1

Taped

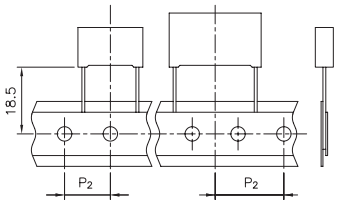

Fig.2

Ø d ±0.05	p = 7.5	p = 10	p = 15	15<p≤27.5	p = 37.5
	0.5	0.6	0.6 or 0.8*	0.8	1

* See size table.
All dimensions are in mm.

Pitch (mm)	Box thickness (B) (mm)	Maximum dimensions (mm) B max	H max	L max
7.5	All	B +0.1	H +0.1	L +0.2
10.0	All	B +0.2	H +0.1	L +0.2
15.0	<7.5	B +0.2	H +0.1	L +0.3
15.0	≥7.5	B +0.2	H +0.1	L +0.5
22.5	All	B +0.2	H +0.1	L +0.3
27.5	All	B +0.2	H +0.1	L +0.3
37.5	All	B +0.3	H +0.1	L +0.3

GENERAL TECHNICAL DATA

Dielectric: polypropylene film.
Plates: metal layer deposited by evaporation under vacuum.
Winding: non-inductive type.
Leads: Ø ≥ 0.6 tinned wire.
Ø = 0.5 tinned wire, low thermical conductivity.
Protection: plastic case, thermosetting resin filled. Box material is solvent resistant and flame retardant according to UL94 V0.
Marking: Manufacturer's logo, series, capacitance, tolerance, rated voltage, capacitor class, dielectric code, climatic category, passive flammability category, manufacturing date code, approvals, manufacturing plant.
Climatic category: 40/110/56 IEC 60068-1

Operating temperature range: -40 to+110°C
Related documents: IEC 60384-14, EN 60384-14.

ELECTRICAL CHARACTERISTICS

Rated voltage (V_R): 300Vac / 1000Vdc; 50/60Hz
Capacitance range: 1000pF to 1.0μF
Capacitance values: E6 series (IEC 60063 Norm).
Capacitance tolerances (measured at 1 kHz)**:**
±10% (K); ±20% (M).
Dissipation factor (DF):
tgδ x 10^{-4} at +25°C ±5°C: ≤30 (20)* at 1kHz
* Typical value
Insulation resistance:
Test conditions
Temperature: +25°C±5°C
Voltage charge time: 1 min
Voltage charge: 100 Vdc
Performance
≥1 x 10^5 MΩ (5×10^5 MΩ)* for C ≤0.33μF
≥30000 s (150000 s)* for C >0.33μF
* Typical value
Test voltage between terminations (on all pieces):
2500Vac for 1 s + 5000Vdc for 1 s at +25°C±5°C

TEST METHOD AND PERFORMANCE

Damp heat, steady state:
Test conditions
Temperature: +40±2°C
Relative humidity (RH): 93 ±2%
Test duration: 56 days
Performance
Dielectric strength: no dielectric breakdown or flashover at 1500Vac/1 min
Capacitance change |ΔC/C|: ≤5%
Insulation resistance: ≥50% of initial limit.
Endurance:
Test conditions
Temperature: 110°C±2°C
Test duration: 1000 h
Voltage applied: 1.7 x V_R + 1000Vac 0.1 s/h
Performance
Dielectric strength: no dielectric breakdown or flashover at 1500Vac/1 min
Capacitance change |ΔC/C|: ≤10%
Insulation resistance: ≥50% of initial limit.
Resistance to soldering heat:
Test conditions
Solder bath temperature: +260°C±5°C
Dipping time (with heat screen):10 s±1 s
Performance
Capacitance change |ΔC/C|: ≤2%

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Rated Cap.	300 Vac/1000Vdc Std dimensions B	H	L	p	Ø d	Max dv/dt at 420Vdc (V/ µs)	Part Number
1000 pF	4.0	9.0	10.0	7.5	0.5	800	R413D 1100 - - 00 -
2200 pF	4.0	9.0	10.0	7.5	0.5	800	R413D 1220 - - 00 -
3300 pF	5.0	10.5	10.0	7.5	0.5	800	R413D 1330 - - 00 -
4700 pF	6.0	12.0	10.5	7.5	0.5	800	R413D 1470 - - 00 -
1000 pF	4.0	9.0	13.0	10.0	0.6	800	R413F 1100 - - 00 -
1500 pF	4.0	9.0	13.0	10.0	0.6	800	R413F 1150 - - 00 -
2200 pF	4.0	9.0	13.0	10.0	0.6	800	R413F 1220 - - 00 -
3300 pF	4.0	9.0	13.0	10.0	0.6	800	R413F 1330 - - M1 -
4700 pF	5.0	11.0	13.0	10.0	0.6	800	R413F 1470 - - M1 -
6800 pF	6.0	12.0	13.0	10.0	0.6	800	R413F 1680 - - 00 -M
3300 pF	5.0	11.0	18.0	15.0	0.6	600	R413I 1330 - - 00 -
4700 pF	5.0	11.0	18.0	15.0	0.6	600	R413I 1470 - - 00 -
6800 pF	5.0	11.0	18.0	15.0	0.6	600	R413I 1680 - - 00 -
0.010 µF	5.0	11.0	18.0	15.0	0.6	600	R413I 2100 - - 00 -
0.015 µF	5.0	11.0	18.0	15.0	0.6	600	R413I 2150 - - M1 -
0.022 µF	6.0	12.0	18.0	15.0	0.6	600	R413I 2220 - - M1 -
0.033 µF	7.5	13.5	18.0	15.0	0.6	600	R413I 2330 - - M1 -
0.047 µF	8.5	14.5	18.0	15.0	0.6	600	R413I 2470 - - M1 -
0.068 µF	11.0	19.0	18.0	15.0	0.8	600	R413I 2680 - - 00 -
0.047 µF	6.0	15.0	26.5	22.5	0.8	500	R413N 2470 - - 00 -
0.068 µF	6.0	15.0	26.5	22.5	0.8	500	R413N 2680 - - M1M -
0.068 µF	7.0	16.0	26.5	22.5	0.8	500	R413N 2680 - - 00 -
0.10 µF	8.5	17.0	26.5	22.5	0.8	500	R413N 3100 - - M1 -
0.15 µF	10.0	18.5	26.5	22.5	0.8	500	R413N 3150 - - M1 -
0.22 µF	13.0	22.0	26.5	22.5	0.8	500	R413N 3220 - - 00
0.22 µF	13.0	22.0	32.0	27.5	0.8	400	R413R 3220 - - 00 -
0.33 µF	14.0	28.0	32.0	27.5	0.8	400	R413R 3330 - - 00 -
0.47 µF	18.0	33.0	32.0	27.5	0.8	400	R413R 3470 - - 00 -
0.68 µF	18.0	33.0	32.0	27.5	0.8	400	R413R 3680 - - 00 -
0.47 µF	13.0	24.0	41.5	37.5	1.0	300	R413W 3470 - - 00 -
0.68 µF	16.0	28.5	41.5	37.5	1.0	300	R413W 3680 - - 00 -
1.0 µF	20.0	40.0	41.5	37.5	1.0	300	R413W 4100 - - 00 -

Mechanical version and packaging (Table1)
Tolerance: K (±10%); M (±20%)

E12 Series available upon request

All dimensions are in mm.

Table 1

Standard packaging style	Lead length (mm)	Taping style P_2 (mm)	Fig. (No.)	Pitch (mm)	Ordering code (Digit 10 to 11)
AMMO-PACK		6.35	1	7.5	DQ
AMMO-PACK		12.70	1	10.0/15.0	DQ
AMMO-PACK		19.05	2	22.5	DQ
REEL Ø 355mm		6.35	1	7.5	CK
REEL Ø 500mm		12.70	1	10.0/15.0	CK
REEL Ø 500mm		19.05	2	22.5/27.5	CK
Loose, short leads	4 +2				00
Loose, long leads (p<10mm)	17 +1/-2				Z3
Loose, long leads (p=10mm)	25 ±1				JY
Loose, long leads (p≥15mm)	25 +2/-1				50
	30 +5				40

Note: Ammo-pack is the preferred packaging for taped version

APPROVALS

(*)	ENEC IEC 60384-14	Class Y2 / X1	File No. V4160
c UL us	UL 1414 (250Vac- 85°C)	Across-the-line	FileNo.E97797
	CSA - C22.2 No.1 (250Vac- 85°C)	Across-the-line certified for Canada	File No. E 97797
	UL 1283 (300 Vac-110°C)	Electromagnetic Interference Filters	File No. E85238
	CSA - C22.2 No.8 (300 Vac-110°C)	Electromagnetic Interference Filters certified for Canada	File No.E85238
CQC	GB IT 14472	Class Y2 / X1	File CQC03001006820 CQC03001006821 (in progress for pitch 7.5 mm)

Approved according to IEC 60384-14

According to IEC 60065.

(*) ENEC mark has replaced all the following European National marks: