ARCOTRONICS

NEW

R75 250Vdc

MKP Series

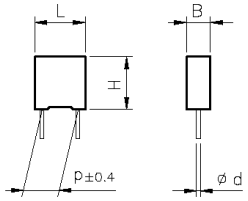
METALLIZED POLYPROPYLENE FILM CAPACITOR D.C. AND PULSE APPLICATIONS

Typical applications: deflection circuits in TV-sets and monitors (S-correction), resonant capacitor in electronic ballast and compact lamp, power factor correction and coupling capacitor in SMPS, timing, oscillator circuits.

PRODUCT CODE: **R75**

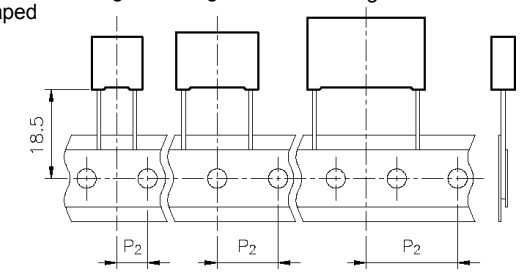
Preliminary

Loose



Taped

Fig. 1 Fig. 2 Fig. 3



⊘ d ± 0.05	p ≤ 10	15 ≤ p ≤ 27.5	p = 37.5
	0.6	0.8	1.0

All dimensions are in mm.

PRODUCT CODE SYSTEM

The part number, comprising 14 digits, is formed as follows:

1	2	3	4	5	6	7	8	9	10	11	12	13	14
R	7	5										–	

Digit 1 to 3 Series code.

Digit 4 d.c. rated voltage:
I = 250V

Digit 5 Pitch:
D = 7.5 mm; F = 10 mm; I = 15 mm;
N = 22.5 mm; R = 27.5mm; W = 37.5mm

Digit 6 to 9 Digits 7 - 8 - 9 indicate the first three digits of Capacitance value and the 6th digit indicates the number of zeros that must be added to obtain the Rated Capacitance in pF.

Digit 10 to 11 Mechanical version and/or packaging (table 1)

Digit 12 Identifies the dimensions and electrical characteristics.

Digit 13 Internal use.

Digit 14 Capacitance tolerance:
J=5%; K=10%; M=20%

GENERAL TECHNICAL DATA

Dielectric: polypropylene film.

Plates: aluminium layer deposited by evaporation under vacuum.

Winding: non-inductive type.

Leads: tinned wire.

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

Marking: manufacturer's logo, series (R75), dielectric code (MKP), capacitance, tolerance, D.C. rated voltage, manufacturing date code.

Climatic category: 55/100/56 IEC 60068-1

Operating temperature range: -55 to +105°C

Related documents: IEC 60384-16; CECC 31200

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	2	10.0/15.0	DQ
AMMO-PACK		19.05	3	22.5	DQ
REEL ⊘ 355mm		6.35	1	7.5	CK
REEL ⊘ 355mm		12.70	2	10.0/15.0	GY
REEL ⊘ 500mm		12.70	2	10.0/15.0	CK
REEL ⊘ 500mm		19.05	3	22.5/27.5	CK
Loose, short leads	4^{+2}				AA
Loose, long leads	30^{+5}				50

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

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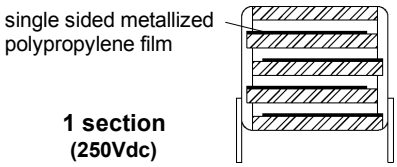

1 section
(250Vdc)

Rated Cap.	250Vdc / 160Vac				Max dv/dt	Max K_0	Part Number
	B	H	L	p	(V/µs)	(V^2/µs)	
0.015µF	4.0	9.0	10.5	7.5	225	115 E3	R75ID2150--0--
0.018µF	4.0	9.0	10.5	7.5	225	115 E3	R75ID2180--0--
0.022µF	4.0	9.0	10.5	7.5	225	115 E3	R75ID2220--0--
0.027µF	5.0	11.0	10.5	7.5	225	115 E3	R75ID2270--0--
0.033µF	5.0	11.0	10.5	7.5	225	115 E3	R75ID2330--0--
0.039µF	6.0	12.0	10.5	7.5	225	115 E3	R75ID2390--0--
0.047µF	6.0	12.0	10.5	7.5	225	115 E3	R75ID2470--0--
0.056µF	6.0	12.0	10.5	7.5	225	115 E3	R75ID2560--0--
0.022µF	4.0	9.0	13.0	10.0	125	65 E3	R75IF 2220--0--
0.027µF	4.0	9.0	13.0	10.0	125	65 E3	R75IF 2270--0--
0.033µF	4.0	9.0	13.0	10.0	125	65 E3	R75IF 2330--0--
0.039µF	4.0	9.0	13.0	10.0	125	65 E3	R75IF 2390--0--
0.047µF	5.0	11.0	13.0	10.0	125	65 E3	R75IF 2470--0--
0.056µF	5.0	11.0	13.0	10.0	125	65 E3	R75IF 2560--0--
0.068µF	6.0	12.0	13.0	10.0	125	65 E3	R75IF 2680--0--
0.082µF	6.0	12.0	13.0	10.0	125	65 E3	R75IF 2820--0--
0.10µF	6.0	12.0	13.0	10.0	125	65 E3	R75IF 3100--0--
0.12µF	5.0	11.0	18.0	15.0	200	100 E3	R75II 3120--3--
0.15µF	5.0	11.0	18.0	15.0	200	100 E3	R75II 3150--3--
0.18µF	5.0	11.0	18.0	15.0	200	100 E3	R75II 3180--4--
0.22µF	5.0	11.0	18.0	15.0	200	100 E3	R75II 3220--4--
0.27µF	6.0	12.0	18.0	15.0	200	100 E3	R75II 3270--4--
0.33µF	6.0	12.0	18.0	15.0	200	100 E3	R75II 3330--4--
0.39µF	7.5	13.5	18.0	15.0	200	100 E3	R75II 3390--4--
0.47µF	7.5	13.5	18.0	15.0	200	100 E3	R75II 3470--4--
0.56µF	7.5	13.5	18.0	15.0	200	100 E3	R75II 3560--4--
0.68µF	8.5	14.5	18.0	15.0	200	100 E3	R75II 3680--4--
0.82µF	10.0	16.0	18.0	15.0	200	100 E3	R75II 3820--4--
1.0µF	10.0	16.0	18.0	15.0	200	100 E3	R75II 4100--4--

Mechanical version and packaging (Table 1)
Internal use
Tolerance: J (±5%); K (±10%); M (±20%)

Rated Cap.	250Vdc / 160Vac				Max dv/dt	Max K_0	Part Number
	B	H	L	p	(V/µs)	(V^2/µs)	
0.39µF	6.0	15.0	26.5	22.5	125	63 E3	R75IN. 3390--3--
0.47µF	6.0	15.0	26.5	22.5	125	63 E3	R75IN. 3470--3--
0.56µF	6.0	15.0	26.5	22.5	125	63 E3	R75IN. 3560--4--
0.68µF	6.0	15.0	26.5	22.5	125	63 E3	R75IN. 3680--4--
0.82µF	7.0	16.0	26.5	22.5	125	63 E3	R75IN. 3820--4--
1.0µF	7.0	16.0	26.5	22.5	125	63 E3	R75IN. 4100--4--
1.2µF	8.5	17.0	26.5	22.5	125	63 E3	R75IN. 4120--4--
1.5µF	10.0	18.5	26.5	22.5	125	63 E3	R75IN. 4150--4--
1.8µF	10.0	18.5	26.5	22.5	125	63 E3	R75IN. 4180--4--
2.2µF	11.0	20.0	26.5	22.5	125	63 E3	R75IN. 4220--4--
1.2µF	9.0	17.0	32.0	27.5	100	50 E3	R75IR. 4120--3--
1.5µF	9.0	17.0	32.0	27.5	100	50 E3	R75IR. 4150--4--
1.8µF	9.0	17.0	32.0	27.5	100	50 E3	R75IR. 4180--4--
2.2µF	10.0	20.0	32.0	27.5	100	50 E3	R75IR. 4220--4--
2.7µF	11.0	20.0	32.0	27.5	100	50 E3	R75IR. 4270--4--
*3.3µF	13.0	22.0	32.0	27.5	100	50 E3	R75IR. 4330--4--
*3.9µF	13.0	22.0	32.0	27.5	100	50 E3	R75IR. 4390--4--
*4.7µF	15.0	24.5	32.0	27.5	100	50 E3	R75IR. 4470--4--
*5.6µF	14.0	28.0	32.0	27.5	100	50 E3	R75IR. 4560--4--
*6.8µF	18.0	33.0	32.0	27.5	100	50 E3	R75IR. 4680--4--
*8.2µF	18.0	33.0	32.0	27.5	100	50 E3	R75IR. 4820--4--
*10.0µF	22.0	37.0	32.0	27.5	100	50 E3	R75IR. 5100--4--
*12.0µF	22.0	37.0	32.0	27.5	100	50 E3	R75IR. 5120--4--
15.0µF	20.0	40.0	41.5	37.5	35	50 E3	R75IW 5150--4--
18.0µF	20.0	40.0	41.5	37.5	35	50 E3	R75IW 5180--4--
22.0µF	24.0	44.0	41.5	37.5	35	50 E3	R75IW 5220--4--

Mechanical version and packaging (Table 1)
Internal use
Tolerance: J (±5%); K (±10%); M (±20%)

All dimensions are in mm.

Note: If the working voltage (V) is lower than the rated voltage (V_R), the capacitor may work at higher dv/dt. In this case the maximum value allowed is obtained multiplying the above value (see table dv/dt) with the ratio V_R/V. The pulse characteristic K_0 depends on the voltage wave-form and in any case it cannot overcome the value given in the above table.
The dv/dt test is carried out at 2 times the above values.

*These values are available in pitch 37.5 mm upon request.

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ELECTRICAL CHARACTERISTICS

Rated voltage (V_R): 250Vdc
Rated temperature (T_R): +85°C
Temperature derated voltage:
The following decreasing factor has to be applied on the rated voltage:
+85°C to +105°C: 2.00% per °C for V_R (d.c.)
+85°C to +105°C: 1.25% per °C for V_R (a.c.)
Capacitance range:
1000 pF to 22µF for 1 section.
1500 pF to 0.82µF for 2 sections.
Capacitance values:
E12 series (IEC 60063 Norm).
Capacitance tolerances (measured at 1 kHz)**:**
±5% (J); ±10% (K); ±20% (M).
Total self-inductance (L)**:** (Lead length ~2 mm)

Pitch (mm)	7.5	10	15	22.5	27.5	37.5
L (nH) ≈	8	9	10	18	18	20

Dissipation factor (DF):
$tg\delta \times 10^{-4}$ at +25°C ±5°C

kHz	C ≤ 0.1µF	0.1 < C ≤ 1.0µF	1 < C ≤ 4.7µF	C > 4.7µF
1	≤ 4	≤ 5	≤ 6	≤ 10
10	≤ 6	≤ 8		
100	≤ 25			

Insulation resistance:
Test conditions
Temperature: +25°C ± 5°C
Voltage charge time: 1 min
Voltage charge: 100Vdc
Performance
$\geq 1 \times 10^5$ MΩ for C ≤ 0.33µF (5×10^5 MΩ)*
≥ 30000 s for C > 0.33µF (150000 s)*
* Typical value.
Test voltage between terminations:
$1.6 \times V_R$ applied for 2 s at +25°C ± 5°C

TEST METHOD AND PERFORMANCE

Damp heat, steady state:
Test conditions
Temperature: +40°C ± 2°C
Relative humidity (RH): 93% ± 2%
Test duration: 56 days
Performance
Capacitance change |ΔC/C|: ≤ 2%
DF change (Δtgδ): $\leq 10 \times 10^{-4}$ at 1kHz
Insulation resistance: ≥ 50% of initial limit.

Endurance:
Test conditions
Temperature: +85°C ± 2°C
Test duration: 2000 h
Voltage applied: $1.25 \times V_R$
Performance
Capacitance change |ΔC/C|: ≤ 3%
DF change (Δtgδ): $\leq 10 \times 10^{-4}$ at 10kHz for C ≤ 1µF
$\leq 10 \times 10^{-4}$ at 1kHz for C > 1µF
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|: ≤ 1%
DF change (Δtgδ): $\leq 10 \times 10^{-4}$ at 10kHz for C ≤ 1µF
$\leq 10 \times 10^{-4}$ at 1kHz for C > 1µF
Insulation resistance: ≥ initial limit.

Long term stability (after two years)**:**
Storage: standard environmental conditions (see page 10).
Performance
Capacitance change |ΔC/C|: ≤ 0.5%

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