

MKT Series for 300 Vac

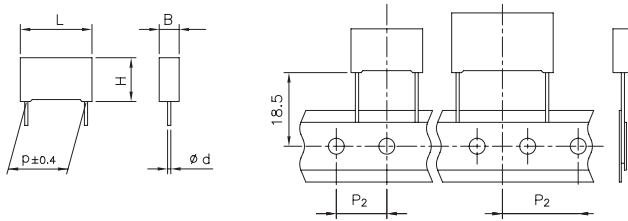
## METALLIZED POLYESTER FILM CAPACITOR DESIGNED FOR A.C. APPLICATIONS

Loose

Taped

Fig.1

Fig.2



Ø d ±0.05	P = 22.5 ÷ 27.5	P = 37.5
	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	6	0	3									-	

- Digit 1 to 3 Series code.
- Digit 4 A.C. Rated voltage:  
3 = 300 Vac / 560 Vdc
- Digit 5 Pitch (mm): N = 22.5; R = 27.5; W = 37.5
- 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:** polyester film (polyethylene terephthalate), impregnated.
- Plates:** metal 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:** Manufacturer's logo, series, capacitance, tolerance, A.C. rated voltage, dielectric code, manufacturing data code.

**Climatic category:** 55/105/56 IEC 60068-1.

**Operating temperature range:** -55 to +105°C

**Related documents:** IEC 60384-2

**Typical applications:** This special R60 3 release is specifically designed for applications in series with the main, i.e.: power capacitive supply, line divider, with the request to long stability of capacitance value.

### HIGH Capacitance Stability

PRODUCT CODE: **R60 3**

Pitch (mm)	Box thickness (B) (mm)	Maximum dimensions (mm)		
		B max	H max	L max
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

### ELECTRICAL CHARACTERISTICS

**Rated voltage (V<sub>R</sub>)** 300 Vac / 560 Vdc

**Rated temperature (T<sub>R</sub>)** +85°C

#### Temperature derated voltage:

for temperatures between +85°C and the upper operating temperature a decreasing factor of 1.25 % per degree °C on the rated voltage V<sub>R</sub> has to be applied.

**Capacitance range** 0.15µF to 6.8µF

**Capacitance values** E6 series (IEC 60063 Norm)

**Capacitance tolerances** (measured at 1 kHz):

±5% (J); ±10% (K); ±20% (M).

**Total self-inductance (L):** (lead length ~2mm)

Pitch (mm)	22.5	27.5	37.5
L(nH) ≈	18	18	22

**Dissipation factor (DF):** tgδ × 10<sup>-4</sup> at +25°C ±5°C:

kHz	C ≤ 1µF	C > 1µF
1	≤ 100	≤ 100
10	≤ 150	-

### Insulation resistance:

#### Test conditions

Temperature: +25°C ±5°C

Voltage charge time: 1 min

Voltage charge: 100 Vdc

#### Performance

≥ 30000 MΩ for C ≤ 0.33µF (50000 MΩ)\*

≥ 10000 s for C > 0.33µF (17000 s)\*

\*Typical value

### Test voltage between terminations:

2200 Vdc for 2 s at +25°C ±5°C

Table 1

Standard packaging style	Lead length (mm)	P <sub>2</sub> (mm)	Taping style Fig. (No.)	Pitch (mm)	Ordering code (Digit 10 to 11)
AMMO-PACK		19.05	2	22.5	DQ
REEL Ø 500mm		19.05	2	22.5/27.5	CK
Loose, short leads	4 <sup>+2</sup>				AA
Loose, long leads	25 <sup>-1/+2</sup>				50
Loose, long leads	30 <sup>+5</sup>				40

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

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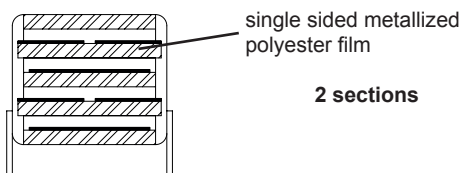
Rated Cap.	300Vac / 560Vdc Std dimensions				Max dv/dt (V/μs)	Max K <sub>0</sub> (V <sup>2</sup> /μs)	Part Number
	B	H	L	p			
0.15 μF	7.0	16.0	26.5	22.5	200	120 E3	R603N 3150--0--
0.18 μF	7.0	16.0	26.5	22.5	200	120 E3	R603N 3180--0--
0.22 μF	7.0	16.0	26.5	22.5	200	120 E3	R603N 3220--0--
0.27 μF	8.5	17.0	26.5	22.5	200	120 E3	R603N 3270--0--
0.33 μF	10.0	18.5	26.5	22.5	200	120 E3	R603N 3330--0--
0.39 μF	10.0	18.5	26.5	22.5	200	120 E3	R603N 3390--0--
0.47 μF	11.0	20.0	26.5	22.5	200	120 E3	R603N 3470--0--
0.56 μF	11.0	20.0	26.5	22.5	200	120 E3	R603N 3560--0--
0.68 μF	13.0	22.0	26.5	22.5	200	120 E3	R603N 3680--0--
0.47 μF	9.0	17.0	32.0	27.5	150	90 E3	R603R 3470--0--
0.56 μF	11.0	20.0	32.0	27.5	150	90 E3	R603R 3560--0--
0.68 μF	11.0	20.0	32.0	27.5	150	90 E3	R603R 3680--0--
0.82 μF	11.0	20.0	32.0	27.5	150	90 E3	R603R 3820--0--
1.0 μF	13.0	22.0	32.0	27.5	150	90 E3	R603R 4100--0--
1.2 μF	13.0	22.0	32.0	27.5	150	90 E3	R603R 4120--0--
1.5 μF	14.0	28.0	32.0	27.5	150	90 E3	R603R 4150--0--
1.8 μF	14.0	28.0	32.0	27.5	150	90 E3	R603R 4180--0--
2.2 μF	18.0	33.0	32.0	27.5	150	90 E3	R603R 4220--0--
2.7 μF	18.0	33.0	32.0	27.5	150	90 E3	R603R 4270--0--
3.3 μF	22.0	37.0	32.0	27.5	150	90 E3	R603R 4330--0--
1.0 μF	11.0	22.0	41.5	37.5	100	60 E3	R603W 4100--0--
1.2 μF	13.0	24.0	41.5	37.5	100	60 E3	R603W 4120--0--
1.5 μF	16.0	28.5	41.5	37.5	100	60 E3	R603W 4150--0--
1.8 μF	16.0	28.5	41.5	37.5	100	60 E3	R603W 4180--0--
2.2 μF	19.0	32.0	41.5	37.5	100	60 E3	R603W 4220--0--
2.7 μF	19.0	32.0	41.5	37.5	100	60 E3	R603W 4270--0--
3.3 μF	20.0	40.0	41.5	37.5	100	60 E3	R603W 4330--0--
3.9 μF	20.0	40.0	41.5	37.5	100	60 E3	R603W 4390--0--
4.7 μF	24.0	44.0	41.5	37.5	100	60 E3	R603W 4470--0--
5.6 μF	24.0	44.0	41.5	37.5	100	60 E3	R603W 4560--0--
6.8 μF	30.0	45.0	41.5	37.5	100	60 E3	R603W 4680--0--

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

All dimensions are in mm  
E12 series available upon request.

Appropriate for permanent operation at nominal voltage  
(means 300 Vac at rated temperature 85°C).

**Winding scheme**



**TEST METHOD AND PERFORMANCE**

**Damp heat, steady state:**

**Test conditions 1st**

Temperature: +40°C±2°C  
Voltage: 300 Vac (V<sub>R</sub>)  
Relative humidity (RH): 93% ±2%  
Test duration: 56 days

**Test conditions 2nd**

Temperature: +70°C±2°C  
Voltage: 300 Vac (V<sub>T</sub>)  
Relative humidity (RH): 93% ±2%  
Test duration: 7 days

**Performance**

Capacitance change |ΔC/C|: ≤5%  
DF change (Δtgδ): ≤50x10<sup>-4</sup> at 1kHz  
Insulation resistance: ≥50% of initial limit.

**Endurance:**

**Test conditions**

Temperature: +105°C±2°C  
Test duration: 1000 h  
Voltage applied: 1.25xV<sub>R</sub> (375 Vac)

**Performance**

Capacitance change |ΔC/C|: ≤10%  
DF change (Δtgδ): ≤30x10<sup>-4</sup> at 1kHz  
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%  
DF change (Δtgδ): ≤30x10<sup>-4</sup> at 1kHz  
Insulation resistance: ≥ initial limit.

**Long term stability (after two years):**

**Storage:** standard environmental conditions  
(see page12)

**Performance:**

Capacitance change |ΔC/C|: ≤2%

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