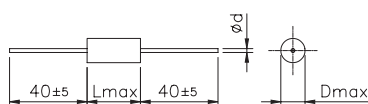
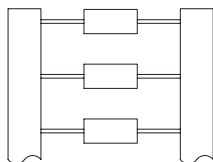


Loose



Taped



FILM-FOIL POLYPROPYLENE CAPACITOR HIGH CURRENT APPLICATIONS

Typical applications: switching spikes suppression and resonant capacitor in SMPS, deflection circuits in TV-sets (S-correction and fly-back tuning), applications with high voltage and high current.

PRODUCT CODE: A72

D max	5	>5 ≤ 7	>7<16	≥16
Ød ±0.05	0.5	0.6	0.8	1

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
A	7	2										-	

Digit 1 to 3 Series code.

Digit 4 d.c. rated voltage:

E =100V I = 250V M= 400V

P =630V Q =1000V S=1500V U = 2000V

Digit 5 Length (mm):

F=11; H=14; K=20.5; Q=28; T=33

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 (table1)

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: metal foil for 1 section;
metal foil + metallized film for 2 sections.

Winding: non-inductive type.

Leads: tinned wire.

Protection: polyester tape wrapping and thermosetting resin end fill.

Marking: manufacturer's logo, series (1.72), dielectric code (KP), capacitance, tolerance, D.C. rated voltage.

Climatic category: 55/105/56 IEC 68-1

Operating temperature range: -55 to +105°C

Related documents: IEC 60384-13

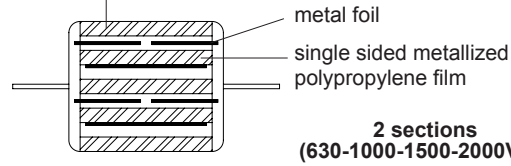
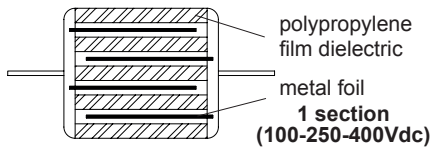
Table 1 (for more detailed information, please refer to page 14).

Standard packaging style	Ordering code
	(Digit 10 to 11)
Reel Ø 355 mm	26
Loose	AA

**FILM-FOIL POLYPROPYLENE CAPACITOR
HIGH CURRENT APPLICATIONS**

PRODUCT CODE: **A72**

polypropylene film dielectric



Rated Cap.	100Vdc/63Vac		Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	D max	L max			
4700 pF	5.0	11.0	3000	0.60 E6	A72EF1470--0--
6800 pF	5.0	11.0	3000	0.60 E6	A72EF1680--0--
0.010 μF	5.0	11.0	3000	0.60 E6	A72EF2100--0--

Rated Cap.	250Vdc/125Vac*		Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	D max	L max			
2200 pF	5.0	11.0	5000	2.50 E6	A72IF 1220--0--
3300 pF	5.0	11.0	5000	2.50 E6	A72IF 1330--0--
4700 pF	7.0	16.5	4500	2.30 E6	A72II 1470--0--
6800 pF	7.0	16.5	4500	2.30 E6	A72II 1680--0--
0.010 μF	7.5	16.5	4500	2.30 E6	A72II 2100--0--
0.015 μF	8.5	16.5	4500	2.30 E6	A72II 2150--0--

Rated Cap.	400Vdc/160Vac		Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	D max	L max			
47 pF	5.0	11.0	13000	10.0 E6	A72MF 0047--0--
68 pF	5.0	11.0	13000	10.0 E6	A72MF 0068--0--
100 pF	5.0	11.0	13000	10.0 E6	A72MF 0100--0--
150 pF	5.0	11.0	13000	10.0 E6	A72MF 0150--0--
220 pF	5.0	11.0	13000	10.0 E6	A72MF 0220--0--
330 pF	5.0	11.0	13000	10.0 E6	A72MF 0330--0--
470 pF	5.0	11.0	13000	10.0 E6	A72MF 0470--0--
680 pF	5.0	11.0	13000	10.0 E6	A72MF 0680--0--
1000 pF	5.0	11.0	13000	10.0 E6	A72MF 1100--0--
1500 pF	5.0	11.0	13000	10.0 E6	A72MF 1150--0--
2200 pF	6.5	16.5	6500	5.2 E6	A72MI 1220--0--
3300 pF	6.5	16.5	6500	5.2 E6	A72MI 1330--0--
4700 pF	7.0	16.5	6500	5.2 E6	A72MI 1470--0--
6800 pF	8.0	16.5	6500	5.2 E6	A72MI 1680--0--
0.010 μF	9.0	16.5	6500	5.2 E6	A72MI 2100--0--

Mechanical version and packaging (Table1)

Internal use

Tolerance: J (±5%); K (±10%); M (±20%)

All dimensions are in mm.

Rated Cap.	630Vdc/300Vac		Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	D max	L max			
0.015 μF	8.5	20.5	4300	5.4 E6	A72PK 2150--0--
0.022 μF	9.5	20.5	4300	5.4 E6	A72PK 2220--0--
0.033 μF	9.0	28.0	2600	3.3 E6	A72PQ 2330--0--
0.047 μF	10.0	28.0	2600	3.3 E6	A72PQ 2470--0--
0.068 μF	11.5	28.0	2600	3.3 E6	A72PQ 2680--0--
0.10 μF	13.5	28.0	2600	3.3 E6	A72PQ 3100--0--
0.15 μF	14.0	33.0	1800	2.3 E6	A72PT 3150--0--
0.22 μF	16.5	33.0	1800	2.3 E6	A72PT 3220--0--
0.33 μF	19.5	33.0	1800	2.3 E6	A72PT 3330--0--

Rated Cap.	1000Vdc/400Vac		Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	D max	L max			
3300 pF	8.5	20.5	14000	28.0 E6	A72QK 1330--0--
4700 pF	9.5	20.5	14000	28.0 E6	A72QK 1470--0--
6800 pF	8.0	28.0	5000	10.0 E6	A72QQ 1680--0--
0.010 μF	8.5	28.0	5000	10.0 E6	A72QQ 2100--0--
0.015 μF	10.0	28.0	5000	10.0 E6	A72QQ 2150--0--
0.022 μF	11.0	28.0	5000	10.0 E6	A72QQ 2220--0--
0.033 μF	13.0	28.0	5000	10.0 E6	A72QQ 2330--0--
0.047 μF	14.0	33.0	3700	7.4 E6	A72QT 2470--0--
0.068 μF	16.0	33.0	3700	7.4 E6	A72QT 2680--0--
0.10 μF	19.0	33.0	3700	7.4 E6	A72QT 3100--0--

Rated Cap.	1500Vdc/450Vac		Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	D max	L max			
2200 pF	8.0	20.5	17000	51 E6	A72SK 1220--0--
3300 pF	9.5	20.5	17000	51 E6	A72SK 1330--0--
4700 pF	8.5	28.0	6000	18 E6	A72SQ 1470--0--
6800 pF	8.5	28.0	6000	18 E6	A72SQ 1680--0--
0.010 μF	9.5	28.0	6000	18 E6	A72SQ 2100--0--
0.015 μF	11.0	28.0	6000	18 E6	A72SQ 2150--0--
0.022 μF	12.5	28.0	6000	18 E6	A72SQ 2220--0--
0.033 μF	13.5	33.0	4500	13 E6	A72ST 2330--0--
0.047 μF	16.0	33.0	4500	13 E6	A72ST 2470--0--
0.068 μF	18.0	33.0	4500	13 E6	A72ST 2680--0--

Rated Cap.	2000Vdc/500Vac		Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	D max	L max			
1000 pF	8.5	20.5	27000	108 E6	A72UK 1100--0--
1500 pF	9.5	20.5	27000	108 E6	A72UK 1150--0--
2200 pF	11.0	20.5	27000	108 E6	A72UK 1220--0--
3300 pF	9.0	28.0	9800	39 E6	A72UQ 1330--0--
4700 pF	9.5	28.0	9800	39 E6	A72UQ 1470--0--
6800 pF	11.0	28.0	9800	39 E6	A72UQ 1680--0--
0.010 μF	13.0	28.0	9800	39 E6	A72UQ 2100--0--
0.015 μF	13.5	33.0	7000	28 E6	A72UT 2150--0--
0.022 μF	16.0	33.0	7000	28 E6	A72UT 2220--0--
0.033 μF	20.0	33.0	7000	28 E6	A72UT 2330--0--
0.047 μF	22.5	33.0	7000	28 E6	A72UT 2470--0--

Mechanical version and packaging (Table1)

Internal use

Tolerance: J (±5%); K (±10%); M (±20%)

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 dv/dt test is carried out at 2 times the above values.

The pulse characteristic K₀ depends on the voltage wave-form and in any case it cannot overcome the value given in the above table.

*Not suitable for across-the-line applications. Please refer to Interference Suppression Capacitors (page 145).

**FILM-FOIL POLYPROPYLENE CAPACITOR
HIGH CURRENT APPLICATIONS**

PRODUCT CODE: A72

ELECTRICAL CHARACTERISTICS

Rated voltage (V_R): 100 Vdc - 250 Vdc - 400 Vdc
for 1 section.
630Vdc- 1000Vdc-1500Vdc-2000Vdc
for 2 sections.

Rated temperature (T_R): +85°C

Temperature derated voltage:

for temperatures between +85°C and +105°C a decreasing factor of 1.25% per degree °C on the rated voltage V_R (d.c. and a.c.) has to be applied.

Capacitance range: 47pF to 0.015μF for 1 section
1000pF to 0.33μF for 2 sections

Capacitance values:

E6 series (IEC 63 Norm)

Capacitance tolerances (measured at 1 kHz):
±5% (J); ±10% (K); ±20% (M).

Total self-inductance (L):

max 1 nH per 1 mm lead and capacitor length.

Dissipation factor (DF):

tgδ 10⁻⁴ at +25°C ±5°C

kHz	C≤0.1μF	>0.1 μF
10	≤ 5	≤ 5
100	≤10	

Insulation resistance:
Test conditions

Temperature: +25°C±5°C
Voltage charge time: 1 min
Voltage charge: 100Vdc

Performance

≥1x10⁵ MΩ (Typ.value: 5x10⁵ MΩ)

Test voltage between terminations:

2xV_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): ≤5x10⁻⁴ at 1kHz
Insulation resistance: ≥50% of initial limit.

Endurance:
Test conditions

Temperature: +85°C
Test duration: 1000 h
Voltage applied: 1.5xV_R

Performance

Capacitance change |ΔC/C|: ≤2%
DF change (Δtgδ): ≤5x10⁻⁴ 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|: ≤1%
DF change (Δtgδ): ≤5x10⁻⁴ at 1kHz
Insulation resistance: ≥ initial limit.

Long term stability (after two years):

Storage: standard environmental conditions (see page 12).

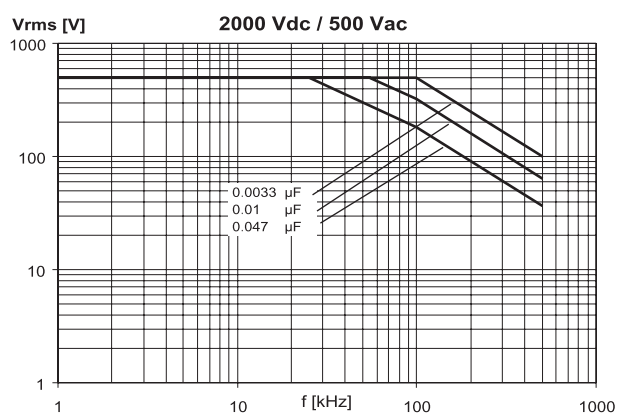
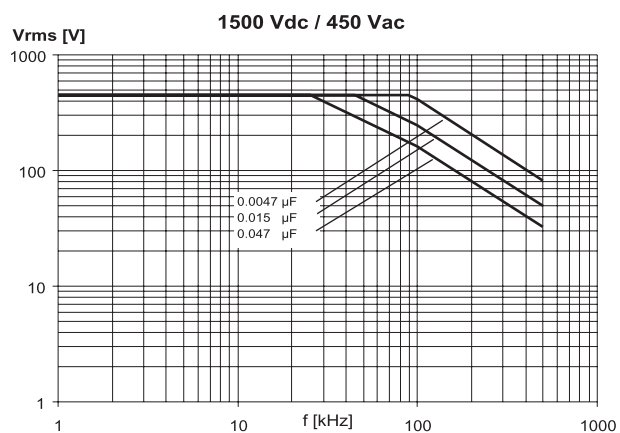
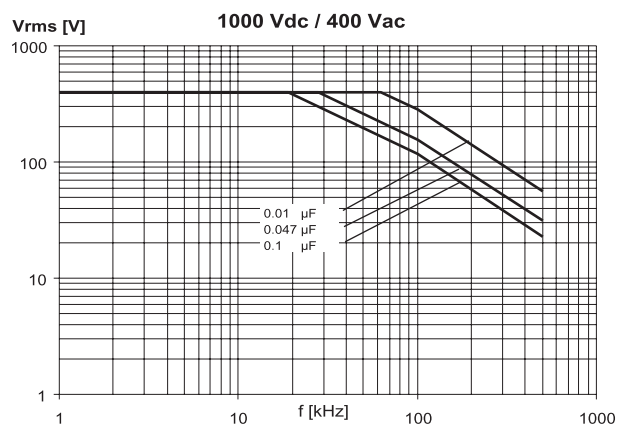
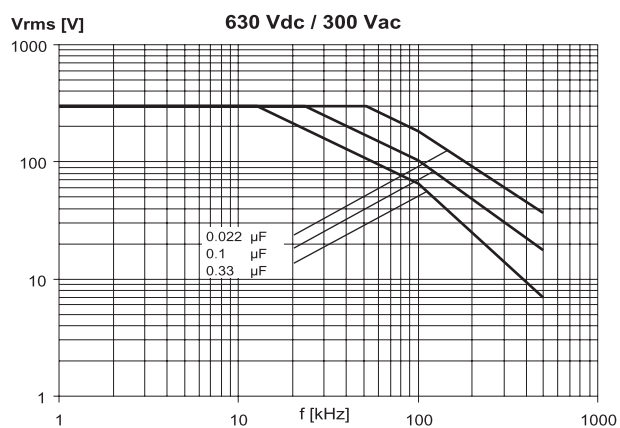
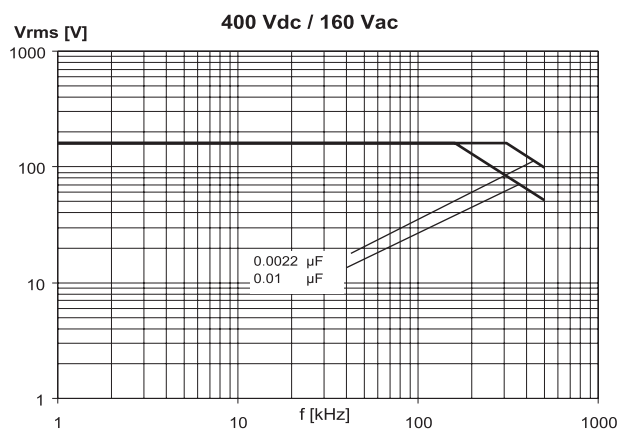
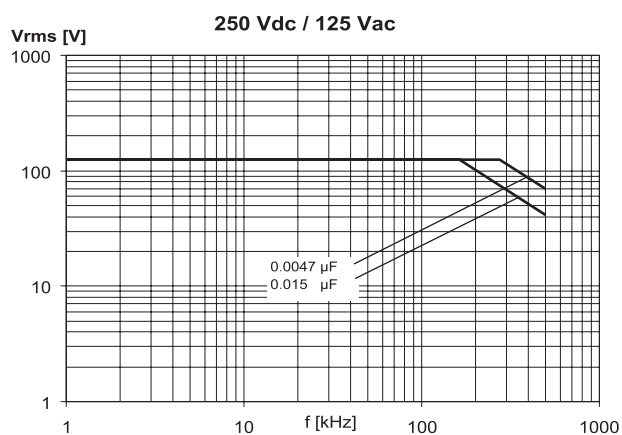
Performance

Capacitance change |ΔC/C|: ≤0.5%

**FILM-FOIL POLYPROPYLENE CAPACITOR
HIGH CURRENT APPLICATIONS**

PRODUCT CODE: **A72**

MAX. VOLTAGE ($V_{r.m.s.}$) VERSUS FREQUENCY (sinusoidal wave-form / $T_h \leq 40^\circ\text{C}$)



**FILM-FOIL POLYPROPYLENE CAPACITOR
HIGH CURRENT APPLICATIONS**

PRODUCT CODE: **A72**

MAX. CURRENT (I_{rms} .) VERSUS FREQUENCY (sinusoidal wave-form / $T_h \leq 40^\circ C$)

