

B max	2.5	≥ 3.5
Ød ± 0.05	0.5 to 0.6	0.6

All dimensions are in mm.

PART NUMBERING SYSTEM



- Series code
- Capacitance value in pico farads. First 2 digits are significant and 3rd digit indicates number of zeros.
- Capacitance tolerance
J = 5% K = 10% M = 20%
- D.C. voltage
- Packaging code
B = bulk; A = ammo
- Lead length (mm) – (Applies to bulk packaging only. Omit for standard lead length 4-6mm.)
L = 15-18 T = 3.5-4.0 V = 2.7-3.3
- Construction
(omit for wound construction)
Q = Stacked version
- Internal code

METALLIZED POLYESTER FILM CAPACITOR MINIATURE TYPE

Typical application: this series combines small size, good performances in by-passing, blocking, pulse coupling and interference suppression in low voltage applications (i.e.: AUTOMOTIVE).

SERIES CODE: **R66**

p = 7.5 mm

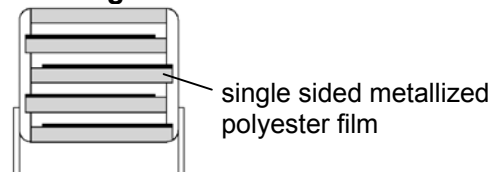
Construction:

- **STACKED and WOUND technology**

GENERAL TECHNICAL DATA

- Dielectric:** polyester film (polyethylene terephthalate).
Plates: aluminum 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, capacitance, tolerance, D.C. voltage
Climatic category: 55/100/56 IEC 60068-1
Operating temperature range: -55 to +105°C
 For stacked technology an upper operating temperature of +125°C is allowed for a max. operating time of 1000h.
Related documents: IEC 60384-2; CECC 30400
Detail specifications: CECC 30401-009

Winding scheme



METALLIZED POLYESTER FILM CAPACITOR MINIATURE TYPE

p = 7.5mm
SERIES CODE: R66

STACKED VERSION

Rated Cap.	63Vdc/40Vac				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	P			
0.33μF	2.5	7.0	10.0	7.5	120	15 E3	R66334-63-Q
0.47μF	3.0	8.0	10.0	7.5	120	15 E3	R66474-63-Q
0.68μF	3.5	8.5	10.5	7.5	120	15 E3	R66684-63-Q
1.0μF	4.0	9.0	10.5	7.5	120	15 E3	R66105-63-Q
1.5μF	5.0	11.0	10.5	7.5	120	15 E3	R66155-63-Q
2.2μF	6.0	12.0	10.5	7.5	120	15 E3	R66225-63-Q
3.3μF	6.0	12.0	10.5	7.5	120	15 E3	R66335-63-Q

Rated Cap.	400Vdc/200Vac				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	P			
6800pF	2.5	7.0	10.0	7.5	275	220 E3	R66682-400-Q
0.010μF	2.5	7.0	10.0	7.5	275	220 E3	R66103-400-Q
0.015μF	2.5	7.0	10.0	7.5	275	220 E3	R66153-400-Q
0.022μF	3.0	8.0	10.0	7.5	275	220 E3	R66223-400-Q
0.033μF	3.5	8.5	10.5	7.5	275	220 E3	R66333-400-Q
0.047μF	4.0	9.0	10.5	7.5	275	220 E3	R66473-400-Q
0.068μF	5.0	11.0	10.5	7.5	275	220 E3	R66683-400-Q
0.10μF	6.0	12.0	10.5	7.5	275	220 E3	R66104-400-Q
0.15μF	6.0	12.0	10.5	7.5	275	220 E3	R66154-400-Q

Rated Cap.	100Vdc/63Vac				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	P			
0.068μF	2.5	7.0	10.0	7.5	150	30 E3	R66683-100-Q
0.10μF	2.5	7.0	10.0	7.5	150	30 E3	R66104-100-Q
0.15μF	2.5	7.0	10.0	7.5	150	30 E3	R66154-100-Q
0.22μF	2.5	7.0	10.0	7.5	150	30 E3	R66224-100-Q
0.33μF	3.5	8.5	10.5	7.5	150	30 E3	R66334-100-Q
0.47μF	3.5	8.5	10.5	7.5	150	30 E3	R66474-100-Q
0.68μF	4.0	9.0	10.5	7.5	150	30 E3	R66684-100-Q
1.0μF	5.0	11.0	10.5	7.5	150	30 E3	R66105-100-Q
1.5μF	6.0	12.0	10.5	7.5	150	30 E3	R66155-100-Q

Rated Cap.	630Vdc/220Vac*				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	P			
1000pF	2.5	7.0	10.0	7.5	300	378 E3	R66102-630-Q
1500pF	2.5	7.0	10.0	7.5	300	378 E3	R66152-630-Q
2200pF	2.5	7.0	10.0	7.5	300	378 E3	R66222-630-Q
3300pF	2.5	7.0	10.0	7.5	300	378 E3	R66332-630-Q
4700pF	2.5	7.0	10.0	7.5	300	378 E3	R66472-630-Q
6800pF	3.0	8.0	10.0	7.5	300	378 E3	R66682-630-Q
0.010μF	3.5	8.5	10.5	7.5	300	378 E3	R66103-630-Q
0.015μF	4.0	9.0	10.5	7.5	300	378 E3	R66153-630-Q
0.022μF	5.0	11.0	10.5	7.5	300	378 E3	R66223-630-Q
0.033μF	6.0	12.0	10.5	7.5	300	378 E3	R66333-630-Q
0.047μF	6.0	12.0	10.5	7.5	300	378 E3	R66473-630-Q

Tolerance: J (±5%); K (±10%); M (±20%)
 Packaging code: B (bulk); A (ammo); R (reel)
 Lead length (mm): L (15-18); T (3.5-4.0); V (2.7-3.3)
 Omit for standard (4-6)

Rated Cap.	250Vdc/160Vac				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	P			
0.022μF	2.5	7.0	10.0	7.5	200	100 E3	R66223-250-Q
0.033μF	2.5	7.0	10.0	7.5	200	100 E3	R66333-250-Q
0.047μF	2.5	7.5	10.0	7.5	200	100 E3	R66473-250-Q
0.068μF	3.0	8.0	10.0	7.5	200	100 E3	R66683-250-Q
0.10μF	3.5	8.5	10.5	7.5	200	100 E3	R66104-250-Q
0.15μF	4.0	9.0	10.5	7.5	200	100 E3	R66154-250-Q
0.22μF	5.0	11.0	10.5	7.5	200	100 E3	R66224-250-Q
0.33μF	6.0	12.0	10.5	7.5	200	100 E3	R66334-250-Q

Tolerance: J (±5%); K (±10%); M (±20%)
 Packaging code: B (bulk); A (ammo); R (reel)
 Lead length (mm): L (15-18); T (3.5-4.0); V (2.7-3.3)
 Omit for standard (4-6)

In Progress

In progress C ≤ 6800pF @ 630Vdc

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

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 K₀ depends on the voltage waveform and in any case it cannot exceed the value given in the above table.

METALLIZED POLYESTER FILM CAPACITOR MINIATURE TYPE

p = 7.5mm
SERIES CODE: R66

WOUND VERSION

Rated Cap.	63Vdc/40Vac				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	P			
0.10μF	2.5	7.0	10.0	7.5	5	0.63 E3	R66104-63--
0.15μF	2.5	7.0	10.0	7.5	5	0.63 E3	R66154-63--
0.22μF	3.5	8.5	10.5	7.5	5	0.63 E3	R66224-63--
0.33μF	3.5	8.5	10.5	7.5	5	0.63 E3	R66334-63--
0.47μF	4.0	9.0	10.5	7.5	5	0.63 E3	R66474-63--
0.68μF	5.0	11.0	10.5	7.5	5	0.63 E3	R66684-63--
1.0μF	6.0	12.0	10.5	7.5	5	0.63 E3	R66105-63--

Rated Cap.	400Vdc/200Vac				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	P			
3300pF	2.5	7.0	10.0	7.5	30	24 E3	R66332-400--
4700pF	2.5	7.0	10.0	7.5	30	24 E3	R66472-400--
6800pF	2.5	7.0	10.0	7.5	30	24 E3	R66682-400--
0.010μF	2.5	7.0	10.0	7.5	30	24 E3	R66103-400--
0.015μF	3.5	8.5	10.5	7.5	30	24 E3	R66153-400--
0.022μF	3.5	8.5	10.5	7.5	30	24 E3	R66223-400--
0.033μF	4.0	9.0	10.5	7.5	30	24 E3	R66333-400--
0.047μF	5.0	11.0	10.5	7.5	30	24 E3	R66473-400--
0.068μF	5.0	11.0	10.5	7.5	30	24 E3	R66683-400--
0.10μF	6.0	12.0	10.5	7.5	30	24 E3	R66104-400--

Rated Cap.	100Vdc/63Vac				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	P			
0.047μF	2.5	7.0	10.0	7.5	6	1.2 E3	R66473-100--
0.068μF	2.5	7.0	10.0	7.5	6	1.2 E3	R66683-100--
0.10μF	3.5	8.5	10.5	7.5	6	1.2 E3	R66104-100--
0.15μF	3.5	8.5	10.5	7.5	6	1.2 E3	R66154-100--
0.22μF	3.5	8.5	10.5	7.5	6	1.2 E3	R66224-100--
0.33μF	5.0	11.0	10.5	7.5	6	1.2 E3	R66334-100--
0.47μF	6.0	12.0	10.5	7.5	6	1.2 E3	R66474-100--

Rated Cap.	630Vdc/220Vac*				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	P			
1000pF	2.5	7.0	10.0	7.5	40	50 E3	R66102-630--
1500pF	2.5	7.0	10.0	7.5	40	50 E3	R66152-630--
2200pF	2.5	7.0	10.0	7.5	40	50 E3	R66222-630--
3300pF	3.5	8.5	10.5	7.5	40	50 E3	R66332-630--
4700pF	3.5	8.5	10.5	7.5	40	50 E3	R66472-630--
6800pF	3.5	8.5	10.5	7.5	40	50 E3	R66682-630--
0.010μF	4.0	9.0	10.5	7.5	40	50 E3	R66103-630--
0.015μF	5.0	11.0	10.5	7.5	40	50 E3	R66153-630--
0.022μF	6.0	12.0	10.5	7.5	40	50 E3	R66223-630--

Rated Cap.	250Vdc/160Vac				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	P			
0.015μF	2.5	7.0	10.0	7.5	15	7.5 E3	R66153-250--
0.022μF	2.5	7.0	10.0	7.5	15	7.5 E3	R66223-250--
0.033μF	2.5	7.0	10.0	7.5	15	7.5 E3	R66333-250--
0.047μF	3.5	8.5	10.5	7.5	15	7.5 E3	R66473-250--
0.068μF	3.5	8.5	10.5	7.5	15	7.5 E3	R66683-250--
0.10μF	4.0	9.0	10.5	7.5	15	7.5 E3	R66104-250--
0.15μF	5.0	11.0	10.5	7.5	15	7.5 E3	R66154-250--
0.22μF	6.0	12.0	10.5	7.5	15	7.5 E3	R66224-250--

Tolerance: J (±5%); K (±10%); M (±20%)
 Packaging code: B (bulk); A (ammo); R (reel)
 Lead length (mm): L (15-18); T (3.5-4.0); V (2.7-3.3)
 Omit for standard (4-6)

Tolerance: J (±5%); K (±10%); M (±20%)
 Packaging code: B (bulk); A (ammo); R (reel)
 Lead length (mm): L (15-18); T (3.5-4.0); V (2.7-3.3)
 Omit for standard (4-6)

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

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 K₀ depends on the voltage waveform and in any case it cannot exceed the value given in the above table.

METALLIZED POLYESTER FILM CAPACITOR MINIATURE TYPE

p = 7.5mm
SERIES CODE: **R66**

ELECTRICAL CHARACTERISTICS

Rated voltage (V_R): 63Vdc - 100Vdc - 250Vdc
400Vdc - 630Vdc

Rated temperature (T_R): +85°C

Voltage derating vs. temperature:

for temperatures between +85°C and the upper operating temperature (+105°C for wound technology and +125°C for stacked technology) a decreasing factor of 1.25% per °C on the rated voltage V_R has to be applied.

Capacitance range: 1000pF to 3.3μF

Capacitance values:
E6 series (IEC 60063 Norm)

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

Total self-inductance (L): ≈ 8nH
(lead length ~2mm)

Dissipation factor (DF):

tgδ × 10⁻⁴ at +25°C ± 5°C

kHz	tgδ × 10 ⁻⁴
1	≤ 100
10	≤ 150

Insulation resistance:

Test conditions

Temperature: +25°C ± 5°C
Voltage charge time: 1 min
Voltage charge: 50Vdc for V_R < 100Vdc
100Vdc for V_R ≥ 100Vdc

Performance

For V_R ≤ 100Vdc

≥ 3750 MΩ for C ≤ 0.33μF (5000 MΩ)*

≥ 1250 s for C > 0.33μF (5000 s)*

For V_R > 100Vdc

≥ 30000MΩ (50000 MΩ)*

*Typical value

Test voltage between terminals:

1.6 × 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): ≤ 5%
DF change (Δtgδ): ≤ 50 × 10⁻⁴ at 1kHz
Insulation resistance: ≥ 50% of initial limit

Endurance:

Test conditions

Temperature: +100°C ± 2°C
Test duration: 2000 h
Voltage applied: 1.25 × V_C

Performance

Capacitance change (ΔC/C): ≤ 5%
DF change (Δtgδ): ≤ 50 × 10⁻⁴ at 10kHz
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): ≤ 50 × 10⁻⁴ at 10kHz
Insulation resistance: ≥ initial limit

Long term stability (after two years):

Storage: standard environmental conditions see general information section.

Performance

Capacitance change (ΔC/C): ≤ 3% for C ≤ 0.1μF
≤ 2% for C > 0.1μF

RELIABILITY

Reference MIL HDB 217

Application conditions:

Temperature: +40°C ± 2°C
Voltage: 0.5 × V_R
Failure rate: ≤ 2 FIT

(1 FIT = 1 × 10⁻⁹ failures/components × h)

Failure criteria:

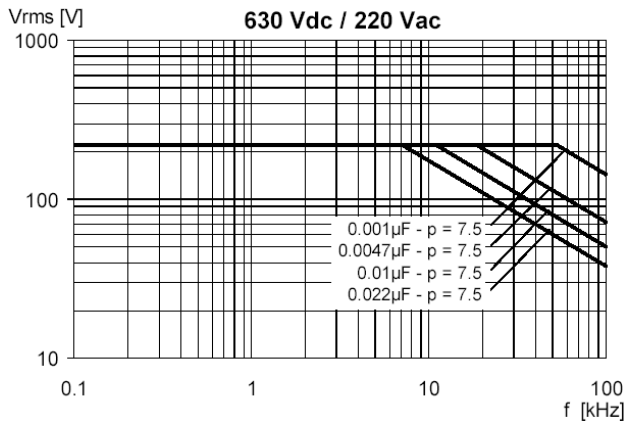
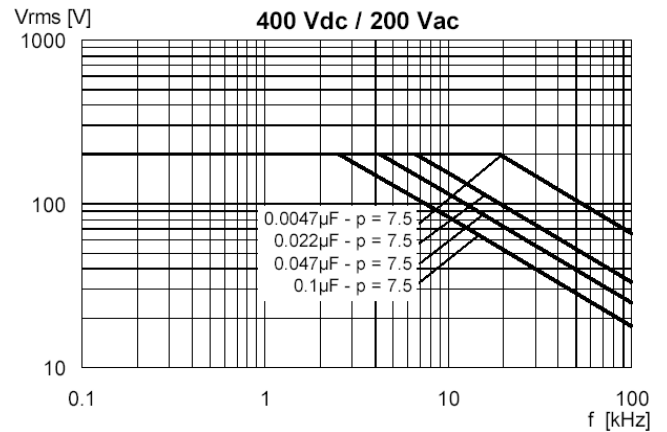
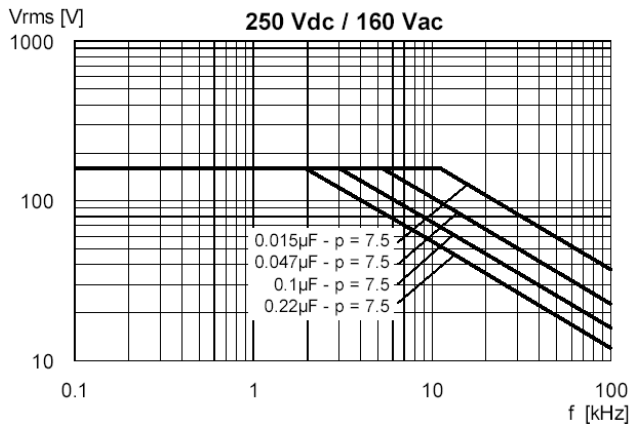
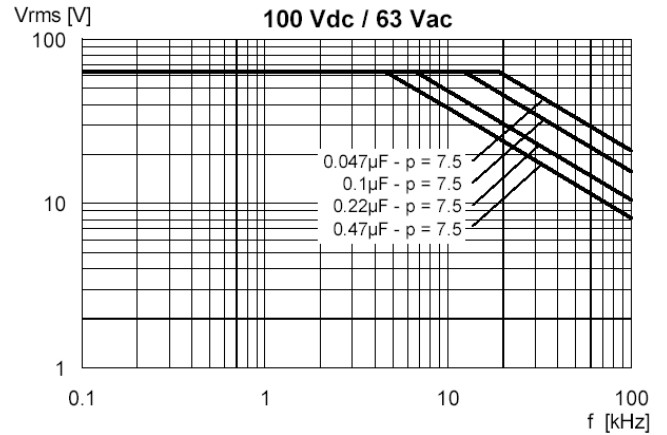
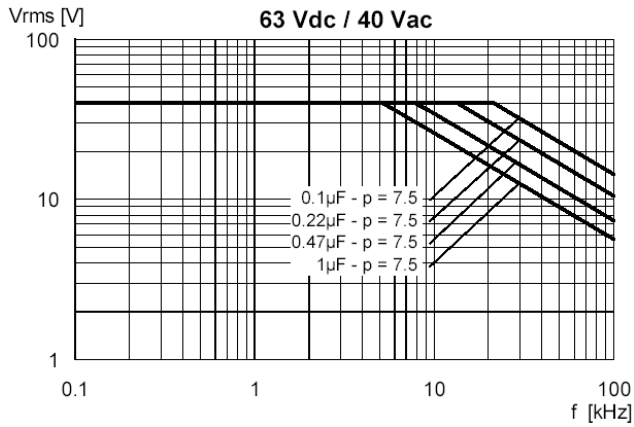
(according to DIN 44122)

Short or open circuit
Capacitance change (ΔC/C): > 10%
DF change (Δtgδ): > 2 × initial limit
Insulation resistance: < 0.005 × initial limit

METALLIZED POLYESTER FILM CAPACITOR MINIATURE TYPE

p = 7.5mm
SERIES CODE: **R66**

MAX. VOLTAGE (Vrms) VERSUS FREQUENCY (sinusoidal waveform / $T_h \leq 40^\circ \text{C}$)



Note: p (pitch) in mm.