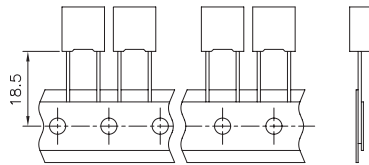


Fig.1

Fig. 2



B	<3.5	≥4.0
Ød ±0.05	0.5	0.6

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	6		D								-	

Digit 1 to 3 Series code.

Digit 4 d.c. rated voltage:

C = 50V D = 63V E = 100V

I = 250V M = 400V P = 630V

Digit 5 Pitch: D = 7.5 mm

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%.

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

Standard packaging style	Lead length	Taping style	Ordering code
	(mm)	Figure No.	(Digit 10 to 11)
AMMO-PACK		1	DQ
AMMO-PACK		2	28
Reel Ø 355 mm		1	CK
Loose, short leads	4 ⁺²		AA
Loose, long leads	17 ^{+1/-2}		Z3

METALLIZED POLYESTER FILM CAPACITOR D.C MULTIPURPOSE APPLICATIONS

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

 PRODUCT CODE: **R66**
p = 7.5mm
Note: R66 series has replaced the R84 series (available only upon request).

For new design we suggest the use of the R66 series

Pitch	Box thickness (B)	Maximum dimensions (mm)		
(mm)	(mm)	B max	H max	L max
7.5	All	B +0.1	H +0.1	L +0.2

GENERAL TECHNICAL DATA

Dielectric: polyester film (polyethylene terephthalate).

Plates: aluminium 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.

Marking: Capacitance, tolerance, D.C. rated voltage.

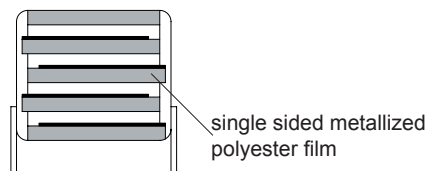
Climatic category: 55/105/56 IEC 60068-1

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 1000 h.

Related documents: IEC 60384-2

Winding scheme



**METALLIZED POLYESTER FILM CAPACITOR
 D.C. MULTIPURPOSE APPLICATIONS**

p = 7.5 mm

PRODUCT CODE: R66

STACKED VERSION

Rated Cap.	50Vdc/30Vac Std dimensions				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	p			
0.68 μF	3.0	8.0	10.0	7.5	100	10 E3	R66CD3680--6--
1.0 μF	3.0	8.0	10.0	7.5	100	10 E3	R66CD4100--6--
1.5 μF	4.0	9.0	10.0	7.5	100	10 E3	R66CD4150--6--
2.2 μF	5.0	10.5	10.0	7.5	100	10 E3	R66CD4220--6--
4.7 μF	6.0	12.0	10.5	7.5	100	10 E3	R66CD4470--6--

Rated Cap.	63Vdc/40Vac Std dimensions				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	p			
0.33 μF	3.0	8.0	10.0	7.5	120	15 E3	R66DD3330--7--
0.47 μF	3.0	8.0	10.0	7.5	120	15 E3	R66DD3470--6--
0.68 μF	4.0	9.0	10.0	7.5	120	15 E3	R66DD3680--7--
1.0 μF	4.0	9.0	10.0	7.5	120	15 E3	R66DD4100--7--
1.5 μF	5.0	10.5	10.0	7.5	120	15 E3	R66DD4150--7--
2.2 μF	6.0	12.0	10.5	7.5	120	15 E3	R66DD4220--6--
3.3 μF	6.0	12.0	10.5	7.5	120	15 E3	R66DD4330--6--

Rated Cap.	100Vdc/63Vac Std dimensions				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	p			
0.068 μF	3.0	8.0	10.0	7.5	150	30 E3	R66ED2680--7--
0.10 μF	3.0	8.0	10.0	7.5	150	30 E3	R66ED3100--7--
0.15 μF	3.0	8.0	10.0	7.5	150	30 E3	R66ED3150--7--
0.22 μF	3.0	8.0	10.0	7.5	150	30 E3	R66ED3220--7--
0.33 μF	4.0	9.0	10.0	7.5	150	30 E3	R66ED3330--7--
0.47 μF	4.0	9.0	10.0	7.5	150	30 E3	R66ED3470--7--
0.68 μF	4.0	9.0	10.0	7.5	150	30 E3	R66ED3680--7--
1.0 μF	5.0	10.5	10.0	7.5	150	30 E3	R66ED4100--7--
1.5 μF	6.0	12.0	10.5	7.5	150	30 E3	R66ED4150--6--

Mechanical version and packaging (Table1)

Internal use

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

Rated Cap.	250Vdc/160Vac Std dimensions				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	p			
0.022 μF	3.0	8.0	10.0	7.5	200	100 E3	R66ID 2220--7--
0.033 μF	3.0	8.0	10.0	7.5	200	100 E3	R66ID 2330--7--
0.047 μF	3.0	8.0	10.0	7.5	200	100 E3	R66ID 2470--7--
0.068 μF	3.0	8.0	10.0	7.5	200	100 E3	R66ID 2680--6--
0.10 μF	4.0	9.0	10.0	7.5	200	100 E3	R66ID 3100--7--
0.15 μF	4.0	9.0	10.0	7.5	200	100 E3	R66ID 3150--7--
0.22 μF	5.0	10.5	10.0	7.5	200	100 E3	R66ID 3220--7--
0.33 μF	6.0	12.0	10.5	7.5	200	100 E3	R66ID 3330--6--

Rated Cap.	400Vdc/200Vac Std dimensions				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	p			
6800 pF	3.0	8.0	10.0	7.5	275	220 E3	R66MD1680--7--
0.010 μF	3.0	8.0	10.0	7.5	275	220 E3	R66MD2100--7--
0.015 μF	3.0	8.0	10.0	7.5	275	220 E3	R66MD2150--7--
0.022 μF	3.0	8.0	10.0	7.5	275	220 E3	R66MD2220--6--
0.033 μF	4.0	9.0	10.0	7.5	275	220 E3	R66MD2330--7--
0.047 μF	4.0	9.0	10.0	7.5	275	220 E3	R66MD2470--7--
0.068 μF	5.0	10.5	10.0	7.5	275	220 E3	R66MD2680--7--
0.10 μF	6.0	12.0	10.5	7.5	275	220 E3	R66MD3100--6--
0.15 μF	6.0	12.0	10.5	7.5	275	220 E3	R66MD3150--6--

Mechanical version and packaging (Table1)

Internal use

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

a) WOUND version
b) STACKED version

Rated Cap.	630Vdc/220Vac* Std dimensions				Max dv/dt (V/μs)	Max K ₀ (V ² /μs)	Part Number
	B	H	L	p			
a) 1000 pF	3.0	8.0	10.0	7.5	40	50 E3	R66PD 1100--1--
a) 1500 pF	3.0	8.0	10.0	7.5	40	50 E3	R66PD 1150--1--
a) 2200 pF	3.0	8.0	10.0	7.5	40	50 E3	R66PD 1220--1--
a) 3300 pF	3.0	8.0	10.0	7.5	40	50 E3	R66PD 1330--1--
a) 4700 pF	3.0	8.0	10.0	7.5	40	50 E3	R66PD 1470--1--
a) 6800 pF	4.0	9.0	10.0	7.5	40	50 E3	R66PD 1680--1--
b) 0.010 μF	4.0	9.0	10.0	7.5	300	378 E3	R66PD 2100--7--
b) 0.015 μF	4.0	9.0	10.0	7.5	300	378 E3	R66PD 2150--7--
b) 0.022 μF	5.0	10.5	10.0	7.5	300	378 E3	R66PD 2220--7--
b) 0.033 μF	6.0	12.0	10.5	7.5	300	378 E3	R66PD 2330--6--
b) 0.047 μF	6.0	12.0	10.5	7.5	300	378 E3	R66PD 2470--6--

Mechanical version and packaging (Table1)

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 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).

**METALLIZED POLYESTER FILM CAPACITOR
 D.C. MULTIPURPOSE APPLICATIONS**

p = 7.5 mm

PRODUCT CODE: R66

ELECTRICAL CHARACTERISTICS
Rated voltage (V_R):

50 Vdc 63 Vdc 100 Vdc
 250 Vdc 400 Vdc 630 Vdc

Rated temperature (T_R): +85 °C

Temperature derated voltage:

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 degree °C on the rated voltage V_R (d.c. and a.c.) has to be applied.

Capacitance range: 1000 pF to 4.7 μ F

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 x 10 ⁻⁴
1	≤ 100
10	≤ 150

Insulation resistance:
Test conditions

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

Performance
For $V_R \leq 100$ Vdc

≥3750 MΩ for C ≤0.33 μ F (5000 MΩ)*
 ≥1250 s for C >0.33 μ F (5000 s)*

For $V_R > 100$ Vdc

≥30000MΩ (50000 MΩ)*

*Typical value

Test voltage between terminals:

1.6x 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 $|\Delta C/C|$: ≤5%
 DF change (Δ tgδ): ≤50x10⁻⁴ at 1kHz
 Insulation resistance: ≥50% of initial limit.

Endurance:
Test conditions

Temperature: +105°C ±2°C
 Test duration: 2000 h
 Voltage applied: 1.25x V_C

Performance

Capacitance change $|\Delta C/C|$: ≤5%
 DF change (Δ tgδ): ≤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 $|\Delta C/C|$: ≤2%
 DF change (Δ tgδ): ≤50x10⁻⁴ at 10kHz
 Insulation resistance: ≥ initial limit.

Long term stability (after two years):
Storage

standard environmental conditions (see page 12).

Performance

Capacitance change $|\Delta C/C|$: ≤3% for C≤0.1 μ F
 ≤2% for C>0.1 μ F

RELIABILITY

Reference MIL HDB 217

Application conditions:

Temperature: +40°C±2°C
 Voltage: 0.5x V_R
 Failure rate: ≤2 FIT
 (1 FIT = 1 10⁻⁹ failures/components h)

Failure criteria:

(according to DIN 44122)

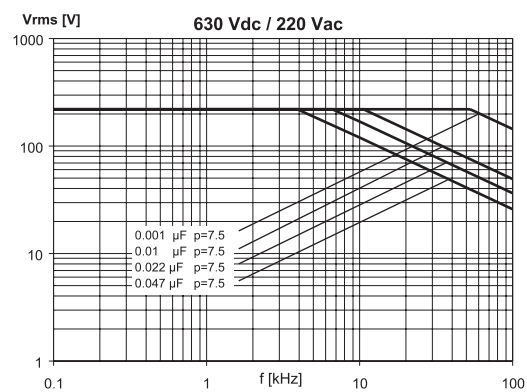
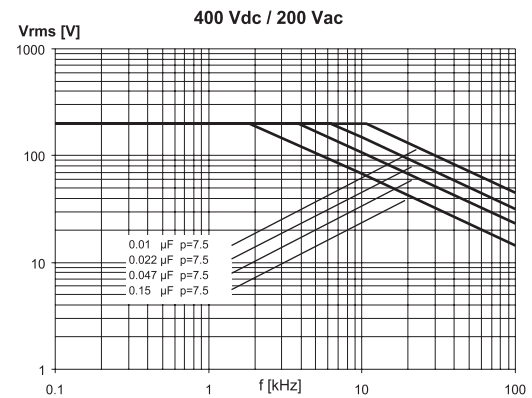
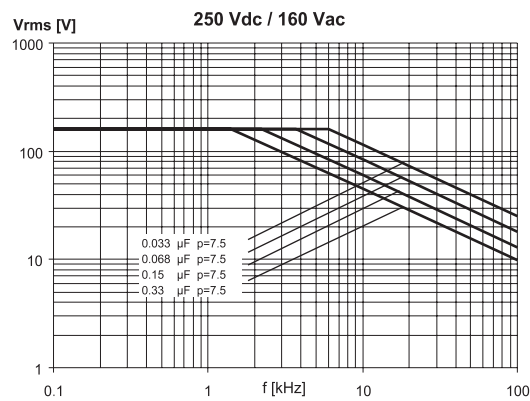
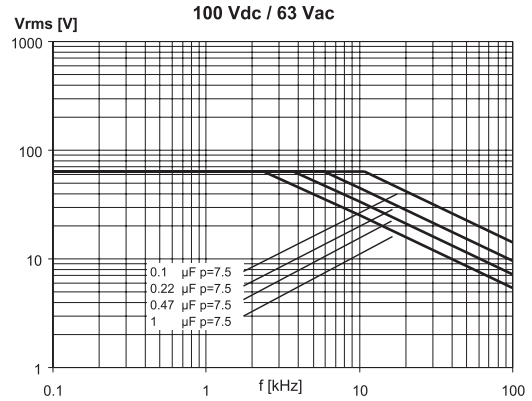
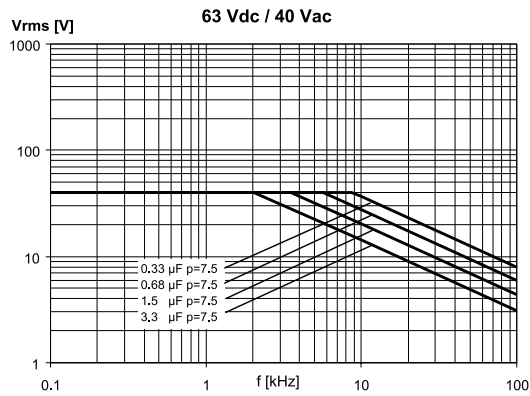
Short or open circuit
 Capacitance change $|\Delta C/C|$: >10%
 DF change (Δ tgδ): >2 x initial limit.
 Insulation resistance: <0.005 x initial limit.

**METALLIZED POLYESTER FILM CAPACITOR
D.C. MULTIPURPOSE APPLICATIONS**

p = 7.5 mm

PRODUCT CODE: R66

MAX. VOLTAGE (Vr.m.s.) VERSUS FREQUENCY (sinusoidal wave-form / Th ≤ 40°C)



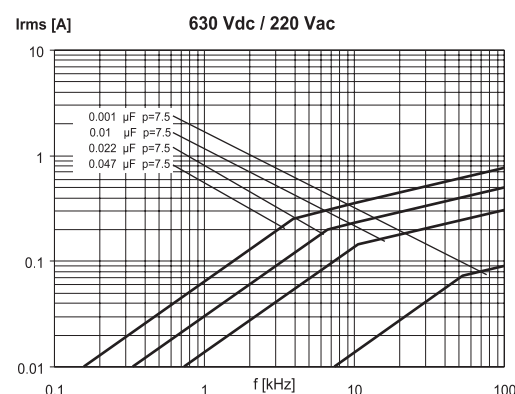
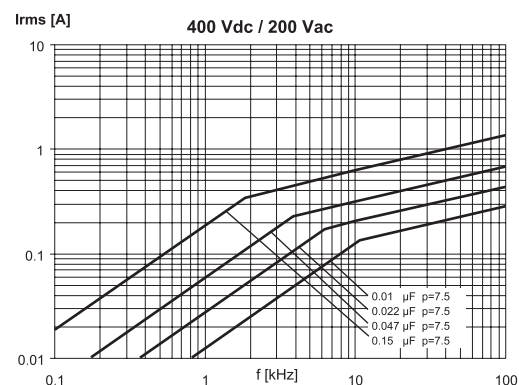
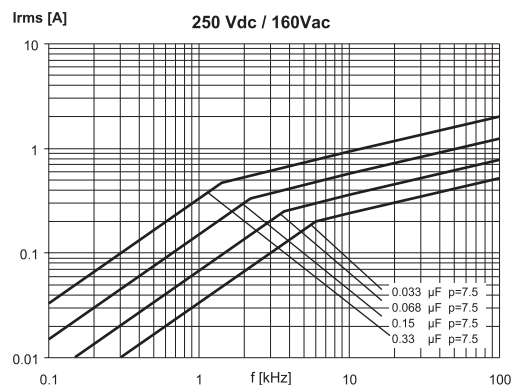
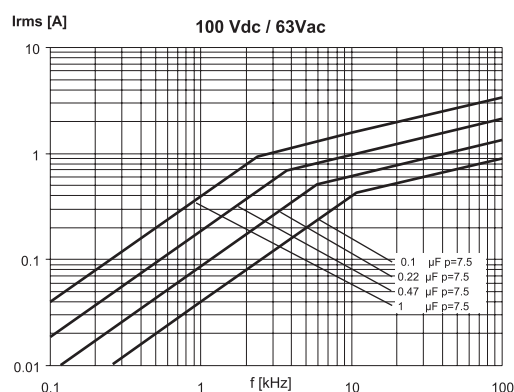
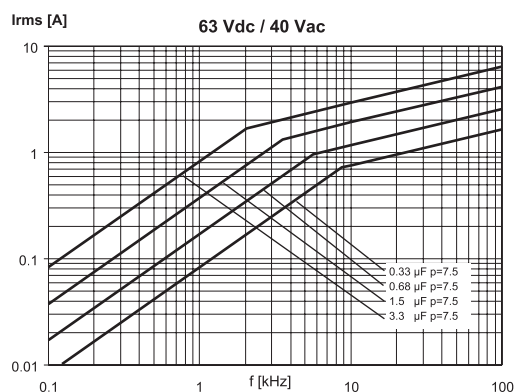
Note: p (pitch) in mm.

**METALLIZED POLYESTER FILM CAPACITOR
D.C. MULTIPURPOSE APPLICATIONS**

p = 7.5 mm

PRODUCT CODE: R66

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



Statements of suitability for certain applications are based on our knowledge of typical operating conditions for such applications, but are not intended to constitute – and we specifically disclaim – any warranty concerning suitability for a specific customer application or use. This Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by us with reference to the use of our products is given gratis, and we assume no obligation or liability for the advice given or results obtained.

Note: p (pitch) in mm.