



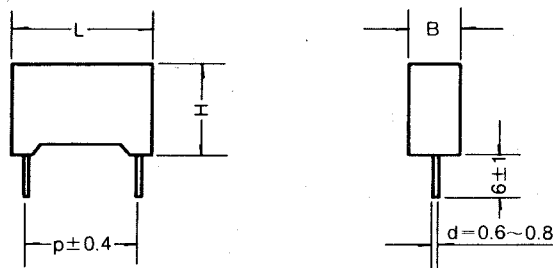
METALLIZED POLYESTER FILM CAPACITOR

MOLDED BOX, NON-INDUCTIVE, METALLIZED FILM CAPACITORS, RADIAL LEAD

FEATURES

- SEALED IN SPECIAL EXTERIOR RESIN CASES FOR SUPERIOR HEAT RESISTANCE, HUMIDITY RESISTANCE AND FLAME RETARDANT.
- SINGLE-ENDED CONSTRUCTION, UNIFORM DIMENSIONS, AND FIXED LEAD SPACING SIMPLIFY HAND INSERTION PROCEDURES.
- LOW SELF-INDUCTANCE, HIGH VOLTAGE STRESS CAPABILITY. IDEAL FOR IC DECOUPLING APPLICATIONS.

$p=10 \sim 27.5 \text{ mm}$



All dimensions are in mm.

B	≤ 4	> 4
φd	0.6	0.8

GENERAL TECHNICAL DATA

Dielectric :
polyester film

Plates :
aluminium layer deposited by evaporation under vacuum.

Winding :
non-inductive type.

Leads :
tinned wire(minimum lead content 5%).

Protection :
Plastic case, epoxy resin filled. Box made of solvent resistant material.

Marking :
capacitance, tolerance, DC nominal voltage.

Climatic category :
FME DIN 40040. 55/100/56 IEC 68-1

Technical terms and tests :
IEC 384-2 CECC 30400 DIN 44110 T1 DIN 45910 T11.

Detail specification :
CECC 30401-009/011/023 DIN 44112.

Reliability :

LR DIN 40040
L = 300 FIT
R = 10 ⁵ hours

1 FIT = 1 × 10⁻⁹ failures/components × h.
Considering a practical application at +40°C and 0.5 × V_n we can assume a failure quote of 10 FIT.

Failure criteria(according to DIN 44122)

Short or open circuit

Capacitance change $\Delta C/C$: > ±10%

Dissipation factor : > 2 × limit value

insulation resistance : < 0.005 × limit value.

ELECTRICAL DATA

Nominal voltage(V_n) : 63 Vdc-100Vdc-
160 Vdc-250 Vdc-
400 Vdc-630 Vdc-
1000 Vdc.

Category voltage(V_c) : up to 85°C V_c = V_n
For temperature between +85°C and +100°C a decreasing factor of 1.25% per degree °C on the nominal voltage V_n has to be applied.

Capacitance range : 1000pF to 10μF.

Capacitance values :
values in compliance with IEC 63 Norm. E6 series.

Capacitance tolerances
±10% : ±20% : (upon request ± 5%).

Total self inductance(L) :

pitch(mm)	10	15	22.5	27.5
L(nH) ≈	9	10	18	18

Dissipation Factor(DF) : tg δ × 10⁻⁴ 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 : 1minute

Voltage charge : 50Vdc for V_n < 100Vdc
100Vdc for V_n < 1000Vdc

For V_n > 100Vdc :

> 30,000MΩ for C < 0.33μF(5.10⁴MΩ) (*)

> 10,000sec. for C > 0.33μF(17000sec.) (*)

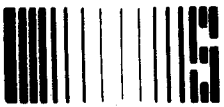
For V_n < 100Vdc :

> 10,000MΩ for C < 0.1μF(5.10⁴MΩ) (*)

> 1,000sec. for C > 0.1μF(5000sec.)

Test voltage between terminals :

1.6 × V_n applied for 2sec. at +25°C ±5°C



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SMMY 10 ~ 27.5 Series

Maximum pulse rise time dv/dt ($V/\mu\text{sec}$) :

Vn	Pitch(mm)			
	10	15	22.5	27.5
63	3	1.5	1	1
100	6	3	2	1
160	8	5	3	2
250	11	7	4	3
400	20	10	5.5	5
630	30	15	8	7
1000	60	25	15	10

If the working voltage(V) is lower than the nominal voltage(Vn), the capacitor can work at higher dv/dt . In this case the maximum value allowed is obtained by multiplying the above value(see table) with the ratio $\frac{Vn}{V}$

Soldering :

Test conditions
Soldering temperature: +260°C ± 5°C
Soldering duration : 10sec. ± 1sec.
Performance
Capacitance change $\Delta C/C$: < ± 2%
DF change $\Delta tg\delta$: < 30.10⁻⁴ at 10KHz for C<1μF
< 20.10⁻⁴ at 1KHz for C>1μF
Insulation resistance : < limit value.

Damp heat test :

Test conditions
Temperature : + 40°C
Relative humidity : 93% ± 2%
Test duration : 56days
Performance
Capacitance change $\Delta C/C$: < ± 5%
DF change $\Delta tg\delta$: < 50·10⁻⁴ at 1KHz
Insulation resistance: > 50% of limit value.

Life test :

Test conditions
Temperature : + 85°C
Test duration : 1000h
Voltage applied : 1.25×Vn
Performance
Capacitance change $\Delta C/C$: < ± 5%
DF change $\Delta tg\delta$: < 30·10⁻⁴ at 10KHz for C<1μF
< 20·10⁻⁴ at 1KHz for C<1μF
Insulation resistance < 50% of the limit value.

Long term stability(after two years)

Storage-Standard environmental conditions.

Performance

Capacitance change $\Delta C/C$: < ± 3% for C<0.1μF
< ± 3% for C>0.1μF

■ DIMENSIONS

Rated Capacitance(μF)	63V~/40V~				100V~/63V~				160V~/90V~				250V~/160V~				400V~/200V~				630V~/220V~				1000~/250V~			
	B	H	L	p	B	H	L	p	B	H	L	p	B	H	L	p	B	H	L	p	B	H	L	p	B	H	L	p
0.001	4	9	13	10	4	9	13	10	4	9	13	10	4	9	13	10	4	9	13	10	4	9	13	10	4	9	13	10
0.0015	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
0.0022	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
0.0033	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
0.0047	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	5	11	13	10	
0.0068	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	6	12	13	10	
0.010	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	5	11	18	15		
0.015	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	5	11	13	10		
0.022	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	6	12	13	10		
0.033	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	7.5	13.5	18	15		
0.047	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	6	12	13	10		
0.068	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	7.5	13.5	18	15		
0.10	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	6	12	13	10		
0.15	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	7	16	26.5	22.5		
0.22	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	8.5	17	26.5	22.5		
0.33	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	11	20	32	27.5		
0.47	5	11	13	10	"	"	"	"	6	12	18	15	6	15	26.5	22.5	8.5	17	26.5	22.5	13	22	32	27.5				
0.68	5	11	18	15	6	12	18	15	7.5	13.5	18	15	7	16	26.5	22.5	10	18.5	26.5	22.5								
1.0	"	"	"	"	"	"	"	"	8.5	14.5	18	15	"	"	"	"	11	20	32	27.5								
1.5	6	12	18	15	7	16	26.5	22.5	8.5	17	26.5	22.5	10	18.5	26.5	22.5												
2.2	7.5	13.5	18	15	8.5	17	26.5	22.5	10	18.5	26.5	22.5	11	20	32	27.5												
3.3	7	16	26.5	22.5	10	18.5	26.5	22.5	11	20	32	27.5	13	22	32	27.5												
4.7	8.5	17	26.5	22.5	11	20	32	27.5	13	22	32	27.5	15	30	32	27.5												
6.8	10	18.5	26.5	22.5	13	22	32	27.5	15	30	32	27.5	18	33	32	27.5												
10	11	20	32	27.5	15	30	32	27.5	18	33	32	27.5	22	37	32	27.5												

■ SMMY (OPTIONAL SIZES)

0.1													5	11	13	10	5	11	18	15	6	12	18	15	8.5	14.5	18	15
0.15													4	9	13	10	"	"	"	"	6	12	18	15	8.5	14.5	18	15
0.22					4	9	13	10	"	"	"	"	"	"	"	"	8.5	14.5	18	15	"	"	"	"	"	"	"	"
0.33					5	11	13	10	5	11	13	10	5	11	18	15	"	"	"	"	"	"	"	"	"	"	"	"
0.47	4	9	13	10	"	"	"	"	6	12	13	10	7.5	13.5	18	15												
0.68	5	11	13	10	6	12	13	10	5	11	18	15	8.5	14.5	18	15												
1.0	6	12	13	10	"	"	"	"	6	12	18	15	"	"	"	"												
1.5	5	11	18	15	6	12	18	15	7.5	13.5	18	15																
2.2	6	12	18	15	8.5	14.5	18	15																				

