

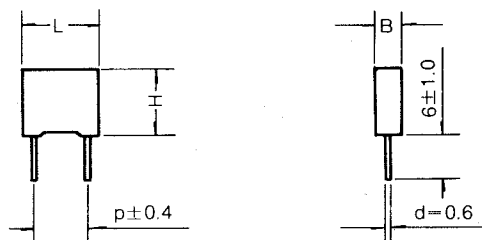
METALLIZED POLYESTER FILM CAPACITOR

MOLDED "MINIBOX," 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.
- 5mm LEAD SPACING FOR AUTO-INSERTION.

$p = 5mm$



All dimensions are in mm.

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. 55/100/21 IEC 68-1.
- Technical terms and tests :**
IEC 384-2 CECC 30400 DIN 44110 T1 DIN 45910 T11.
- Detail specification :**
CECC 30401-025.
- Reliability :**

LR DIN40040
L = 300 FIT
R = 10⁵ hours

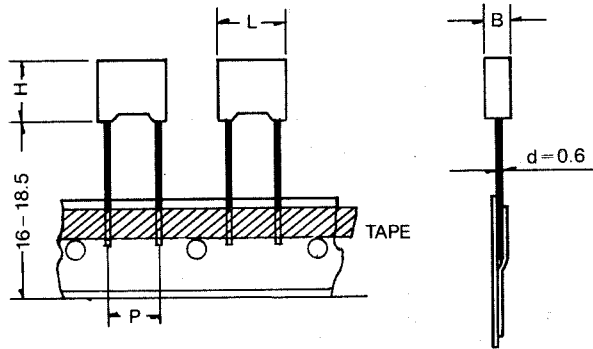
- 1 FIT = 1 × 10⁻⁹ failures/components × h.
Considering a practical application at +40°C and 0.5 × V_n. we can assume a failure quote of 2FIT.
Failure criteria(according to DIN 44122) :
Short or open circuit
Capacitance change $\Delta C/C$: > ±10%
Dissipation factor : > 2 × limit value
Insulation resistance : < 0.005 × limit value

ELECTRICAL DATA

- Nominal voltage(V_n) :** 50V dc-63Vdc-100Vdc.
Category voltage(V_c) : up to 85°C V = 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 1μF.
- Capacitance values :**
Values in compliance with IEC 63 Norm. E6 series.
- Capacitance tolerances (at 1KHz) :**
±5% ±10% : ±20%
- Total self inductance : ≈ 7nH**
- Dissipation factor(DF) :**
tg δ × 10⁻⁴ at +25°C ±5°C

KHz	C < 0.1 μF	C > 0.1 μF
1	< 100	< 100
10	< 150	< 150
100	< 300	

- Insulation resistance:**
Temperature
Test conditions : +25°C ±5°C
Voltage charge time : 1minute
Voltage charge : 50Vdc for V_n < 100Vdc
100Cdc for V_n = 100Vdc
> 10,000MΩ for C < 0.1μF (5.10⁴MΩ) (*) F
> 1,000sec. for C < 0.1μF (5000sec.) (*)
Test voltage between terminals :
1.6 × V_n applied for 2sec. at +25°C ±5°C
(*) Typical value



Maximum pulse rise time(dv/dt)

Vn	C(pF)	(V/μsec.)
100Vdc	C ≤ 3300	30
	3300 ≤ C ≤ 6800	15
	C > 6800	10
63Vdc		8
50Vdc		4

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 : 5sec. ± 1sec.
Performance
Capacitance change ΔC/C: < ± 2%
DF change Δtgδ. < 30 · 10⁻⁴ at 10KHz
Insulation resistance : < limit value

Damp heat test :

Test conditions
Temperature : + 40°C
Relative humidity : 93% ± 2%
Test duration : 21days
Performance
Capacitance change ΔC/C: < ± 5%
Dissipation factor change: Δtgδ:
< 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 ΔC/C: < ± 5%
DF change Δtgδ : < 50 · 10⁻⁴ at 10KHz
Insulation resistance: < 50% of limit value.

Long term stability

Storage-Standard environmental conditions.
Performance
Capacitance change ΔC/C: < ± 3%

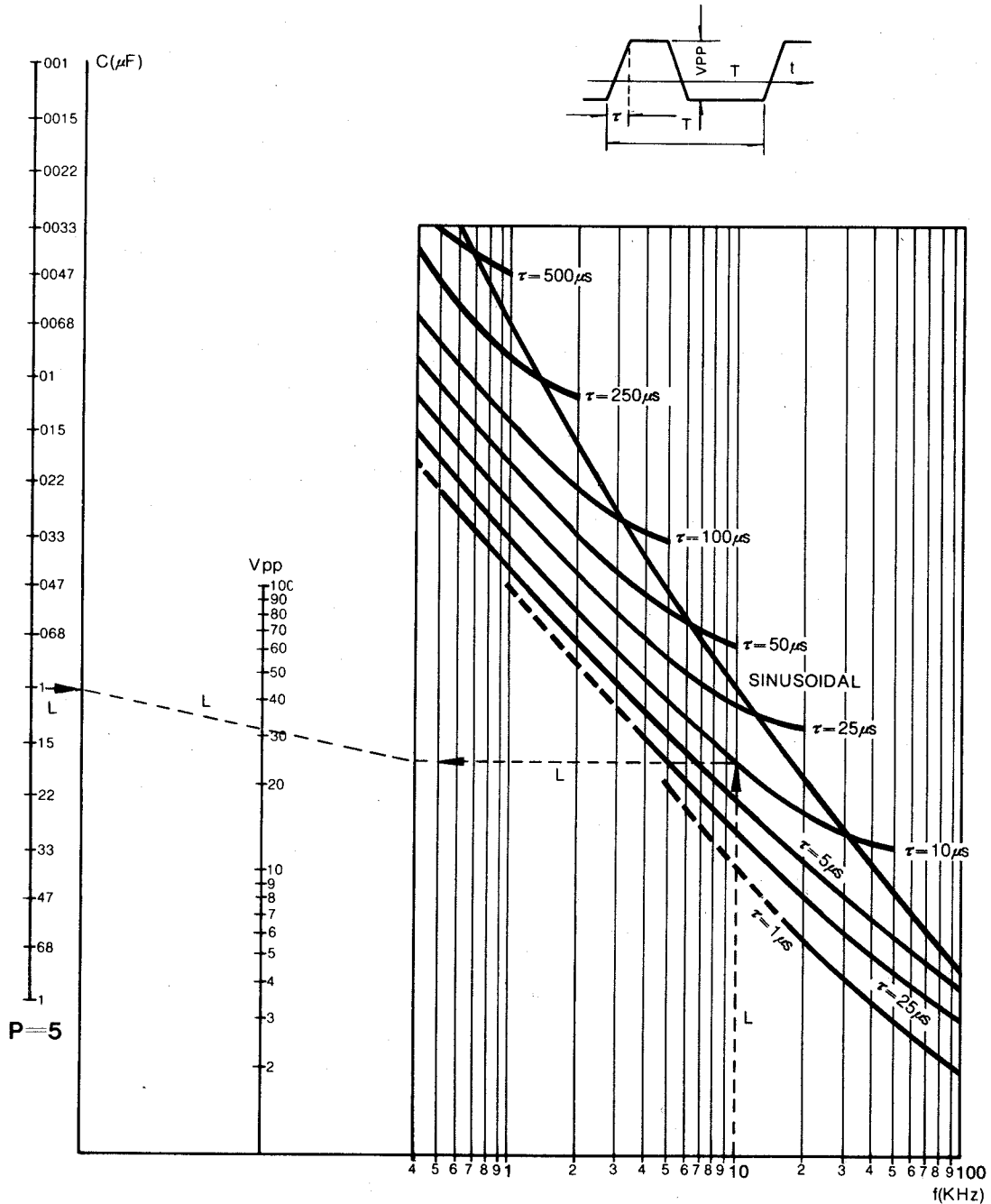
■ DIMENSIONS

Rated Capacitance (μF)	63V~/ 40V~				100V~/ 63V~			
	B	H	L	p	B	H	L	p
0.001	2.5	6.5	7.2	5	2.5	6.5	7.2	5
0.0015	"	"	"	"	"	"	"	"
0.0022	"	"	"	"	"	"	"	"
0.0033	"	"	"	"	"	"	"	"
0.0047	"	"	"	"	"	"	"	"
0.0068	"	"	"	"	"	"	"	"
0.010	"	"	"	"	"	"	"	"
0.015	"	"	"	"	"	"	"	"
0.022	"	"	"	"	"	"	"	"
0.033	"	"	"	"	"	"	"	"
0.047	"	"	"	"	"	"	"	"
0.068	"	"	"	"	"	"	"	"
0.10	"	"	"	"	3.5	7.5	7.2	5
0.15	3.5	7.5	7.2	5	4.5	9.5	7.2	5
0.22	"	"	"	"	"	"	"	"
0.33	4.5	9.5	7.2	5	5	10	7.2	5
0.47	"	"	"	"	6	11	7.2	5
0.68	6	11	7.2	5				
1.0	"	"	"	"				



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NOMOGRAPH OF THE ADMISSIBLE PEAK VOLTAGE V_{pp} AS A FUNCTION OF FREQUENCY AND τ



EXAMPLE

Let us consider the following working data:
 $f = 10$ KHz (Repetition frequency)
 $\tau = 10 \mu$ sec (Rise time)
 a capacitor $C = 1 \mu$ F
 with $p = 5$ mm (lead spacing)
 The dashed line L identifies a max admissible

peak voltage of 32 Vpp.
 If the result is lower than the requested voltage load, another capacitor with bigger dimension and/or lead spacing has to be chosen.