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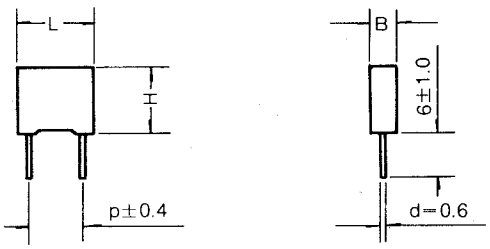
METALLIZED POLYESTER FILM CAPACITOR

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=10^5 hours

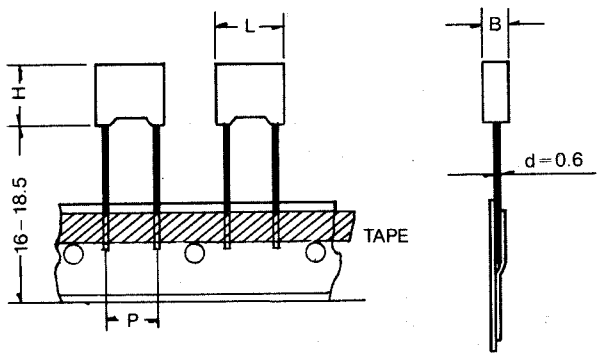
1 FIT = 1×10^{-9} failures/components × h.
Considering a practical application at +40℃ and 0.5 × Vn. we can assume a failure quote of 2FIT.
Failure criteria (according to DIN 44122) :
Short or open circuit
Capacitance change △C/C : > ±10%
Dissipation factor : > 2 × limit value
Insulation resistance :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

ELECTRICAL DATA

Nominal voltage(Vn) : 50V dc-63Vdc-100Vdc.
Category voltage(Vc) : up to 85℃ V = Vn
For temperature between +85℃ and +100℃ a decreasing factor of 1.25% per degree℃ on the nominal voltage Vn has to be applied.
Capacitance range :
1000pF to 1 μF.
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) :
tgδ × 10^{-4} at +25℃ ±5℃

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

Insulation resistance:
Temperature
Test conditions : +25℃ ±5℃
Voltage charge time : 1minute
Voltage charge : 50Vdc for Vn<100Vdc
100Cdc for Vn=100Vdc
>10,000MΩ for C<0.1 μF(5.10^4MΩ) (*) F
>1,000sec. for C<0.1 μF(5000sec.) (*)
Test voltage between terminals :
1.6 × Vn applied for 2sec. at +25℃ ±5℃
(*) 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℃ ± 5℃
Soldering duration : 5sec. ± 1sec.
Performance
Capacitance change △C/C: < ± 2%
DF change △tgδ. < 30. 10^{-4} at 10KHz
Insulation resistance : < limit value

Damp heat test :
Test conditions
Temperature : + 40℃
Relative humidity : 93% ± 2%
Test duration : 21days
Performance
Capacitance change △C/C: < ± 5%
Dissipation factor change: △tgδ:
< 50·10^{-4} at 1KHz
Insulation resistance : < 50% of limit value.

Life test :
Test conditions
Temperature : + 85℃
Test duration : 1000h
Voltage applied : 1.25 × Vn
Performance
Capacitance change △C/C: < ± 5%
DF change △tgδ : < 50·10^{-4} at 10KHz
Insulation resistance: < 50% of limit value.

Long term stability
Storage-Standard environmental conditions.
Performance
Capacitance change △C/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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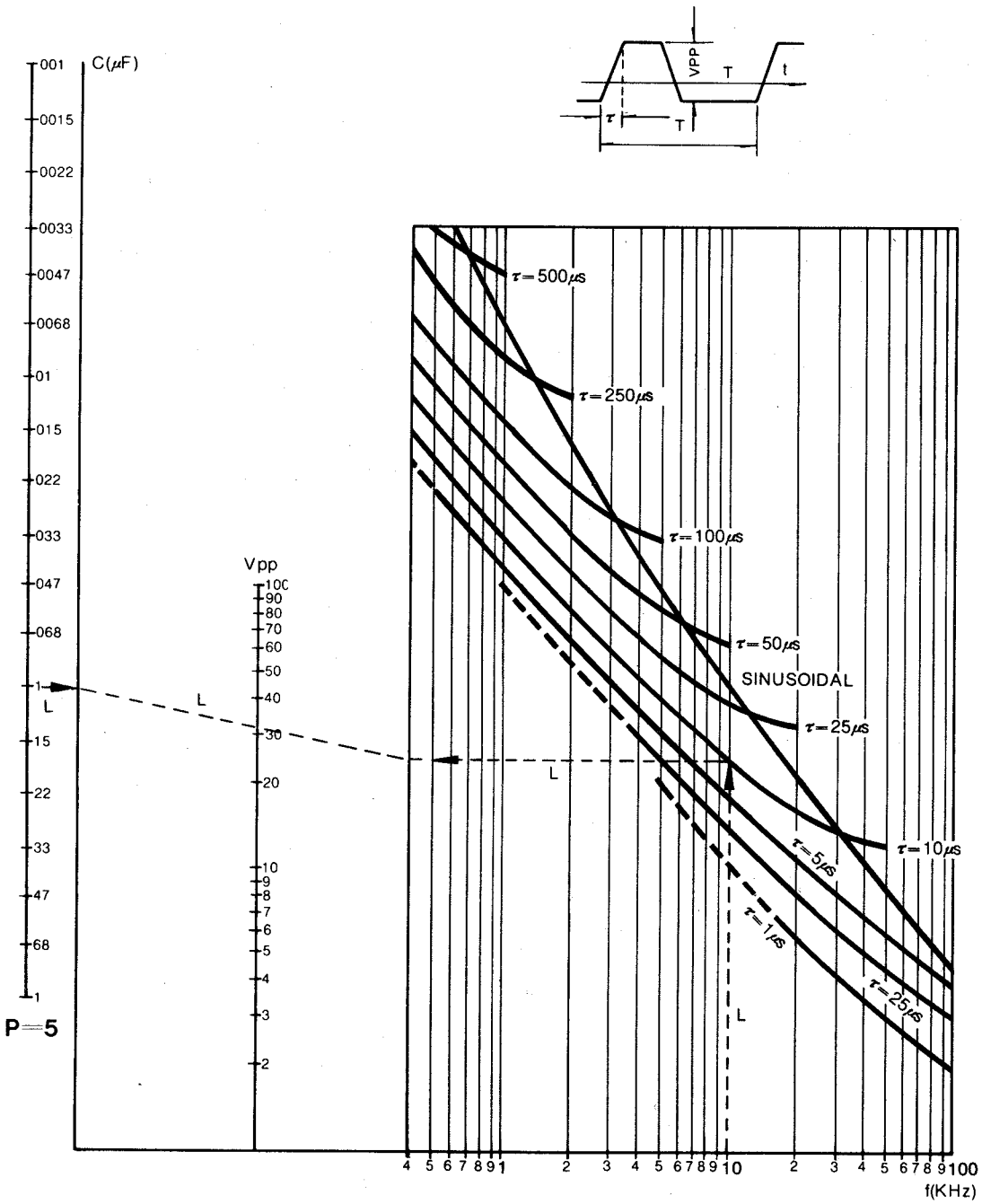
NOMOGRAPH OF THE ADMISSIBLE PEAK VOLTAGE Vpp AS A FUNCTION OF FREQUENCY AND τ



EXAMPLE Let us consider the following working data:
f=10 KHz(Repetition frequency)
τ=10 μsec(Rise time)
a capacitor C=1 μF
with p=5mm(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.