

DC Filter Capacitors



TYPE ET

These capacitors are manufactured using a mixed dielectric material that consists of polyester / polypropylene film and capacitor tissue. They are impregnated and filled with a mineral oil. The container is a Synthetic Resin Bonded Paper (SRBP) tube sealed at both ends with resin assuring hermetic sealing. The capacitors are terminated with M5 x 12 mm studs or tinned copper wire.

Note

 The impregnant used is a non toxic highly refined, purified, and inhibited mineral oil

APPLICATIONS

The ET range is specifically designed for high voltage filters and can be successfully used in the following applications:

- By-pass
- Coupling
- Filter applications
- X-ray power supplies
- · Electrostatic air cleaners

TEMPERATURE RANGE

Temperature range is -55 °C to +85 °C. Derating is required for operation at higher temperatures.

TEMPERATURE COEFFICIENT

Capacitance will increase by 2 % per 100 °C temperature rise.

CAPACITANCE RANGE

 $0.0005~\mu F$ to $2~\mu F$. The tolerance is $\pm~10~\%$. Other tolerances are available on request. Nominal values measured at 1 kHz.

VOLTAGE RANGE

1000 V_{DC} to 60 000 V_{DC} , other values on request.

RIPPLE

The sum of the peak ripple voltage and the DC voltage should not exceed the rated voltage. Refer to graph Fig.1 for permissible peak-to-peak ripple voltage as a percentage of rated voltage for various frequencies.

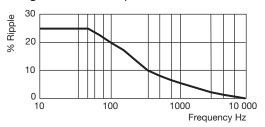


Fig. 1

POWER FACTOR

The power factor is variable, and is a function of temperature and frequency see Fig. 2. Nominal value < 0.5 % at 20 °C.

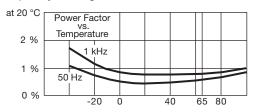


Fig. 2

DIELECTRIC RESISTANCE

(Parallel resistance) is indicated by the graph of insulance ($M\Omega \times \mu F$) vs. temperature Fig. 3. The insulance ($M\Omega \times \mu F$) is nominally 10 000 s at + 20 °C. (Measurements taken after 1 minute with an applied voltage of 500 V).

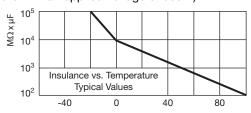


Fig. 3

LIFE EXPECTANCY

ET type capacitors are designed for a life expectancy of 5000 h at 65 °C. To achieve the same life expectancy at 85 °C derate to 60 % of rated voltage Fig. 4.

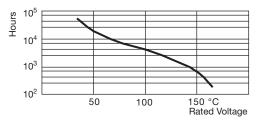


Fig. 4





TEST VOLTAGE

Terminal/terminal (Vt/t)
For DC rating < 20 kV
Vt/t = 2.0 x rated voltage 60 s
For DC rating > 20 kV
Vt/t = 1.5 x rated voltage 60 s

WEIGHT

The approximate weight in grams may be calculated by multiplying the volume of the capacitor container by 1.2×10^{-3} .

TERMINATIONS

Add suffix W to part number to indicate wire terminations.

CAPACITANCE

Capacitance tolerance of 20 % is standard with those marked $^{(1)}$.

DIMENSIONS in millimeters



TYPE DESCRIPTION						
PART NUMBER	CAP. (μF)	L (mm)	D (mm)			
1000 V _{DC} WKG						
ET10-103	0.01 (1)	42	17			
ET10-203	0.02 (1)	42	17			
ET10-503	0.05	48	17			
ET10-254	0.25	60	22			
ET10-504	0.5	70	30			
ET10-205	2.0	110	35			
1500 V _{DC} WKG						
ET15-103	0.01 (1)	42	17			
ET15-203	0.02 (1)	42	20			
ET15-254	0.25	60	30			
ET15-504	0.5	110	25			
ET15-105	1.0	110	35			
ET15-205	2.0	110	42			
2000 V _{DC} WKG						
ET20-103	0.01 (1)	48	17			
ET20-503	0.05	60	17			
ET20-104	0.1	60	22			
ET20-254	0.25	60	30			
ET20-504	0.5	75	35			
3000 V _{DC} WKG						
ET30-502	0.005 (1)	42	17			
ET30-103	0.01 (1)	42	20			
ET30-203	0.02	48	20			
ET30-503	0.05	55	25			
ET30-104	0.1	55	30			
ET30-254	0.25	60	35			
ET30-504	0.5	75	42			
ET30-105	1.0	110	42			
4000 V _{DC} WKG						
ET40-102	0.001 (1)	42	17			
ET40-502	0.005 (1)	42	17			
ET40-503	0.05	60	22			
ET40-103	0.01	42	20			
ET40-104	0.1	60	30			
ET40-504	0.5	95	42			
5000 V _{DC} WKG	5000 V _{DC} WKG					
ET50-102	0.001 (1)	42	17			
ET50-202	0.002 (1)	42	17			
ET50-502	0.005 (1)	42	20			
ET50-103	0.01	48	20			
ET50-203	0.02	48	22			
ET50-503	0.05	60	25			
ET50-104	0.1	75	30			
ET50-254	0.25	95	35			
ET50-504	0.5	110	42			

Notes

- Non standard size containers can be supplied on request
- (1) Capacitance tolerance of 20 % is standard







TYPE DESCRIPTION					
PART NUMBER	CAP. (μF)	L (mm)	D (mm)		
6000 V _{DC} WKG					
ET60-102	0.001 (1)	55	17		
ET60-202	0.002 (1)	55	17		
ET60-502	0.005 (1)	65	17		
ET60-103	0.01	65	20		
ET60-203	0.02	80	20		
ET60-503	0.05	100	25		
ET60-104	0.10	100	35		
ET60-254	0.25	135	42		
8000 V _{DC} WKG					
ET80-502	0.005 (1)	65	20		
ET80-103	0.01	80	20		
ET80-503	0.05	105	35		
ET80-104	0.10	105	42		
ET80-254	0.25	170	42		
10 000 V _{DC} WKG					
ET100-102	0.001 (1)	65	17		
ET100-502	0.005 (1)	65	22		
ET100-103	0.01	80	22		
ET100-203	0.02	80	30		
ET100-503	0.05	105	35		
ET100-104	0.10	170	35		
ET100-254	0.25	205	42		
12 000 V _{DC} WKG					
ET120-202	0.002 (1)	95	20		
ET120-502	0.005 (1)	95	30		
ET120-103	0.01	115	30		
ET120-203	0.02	115	35		
ET120-503	0.05	180	35		
ET120-104	0.10	180	42		
15 000 V _{DC} WKG					
ET150-102	0.001 (1)	95	17		
ET150-202	0.002 (1)	95	20		
ET150-502	0.005 (1)	110	20		
ET150-103	0.01	110	30		
ET150-203	0.02	110	35		
ET150-503	0.05	150	42		
ET150-104	0.10	245	42		
20 000 V _{DC} WKG					
ET200-102	0.001 (1)	115	22		
ET200-502	0.005 (1)	145	25		
ET200-103	0.01	145	30		
ET200-203	0.02	195	30		
ET200-503	0.05	245	42		
ET200-104	0.10	320	42		

TYPE DESCRIPTION					
PART NUMBER	CAP. (μF)	L (mm)	D (mm)		
25 000 V _{DC} WKG					
ET250-501	0.0005 (1)	145	17		
ET250-102	0.001 (1)	145	20		
ET250-502	0.005	175	30		
ET250-103	0.010	175	35		
ET250-503	0.05	300	42		
30 000 V _{DC} WKG					
ET300-501	0.0005 (1)	170	17		
ET300-102	0.001 (1)	170	20		
ET300-202	0.002	170	25		
ET300-502	0.005	205	30		
ET300-103	0.010	205	35		
ET300-203	0.02	280	35		
ET300-303	0.03	280	42		
40 000 V _{DC} WKG					
ET400-102	0.001 (1)	210	20		
ET400-202	0.002	275	20		
ET400-103	0.010	275	42		
50 000 V _{DC} WKG					
ET500-501	0.0005 (1)	275	22		
ET500-102	0.001 (1)	275	22		
ET500-202	0.002	340	22		
ET500-502	0.005	340	35		
ET500-103	0.010	340	42		
60 000 V _{DC} WKG					
ET600-102	0.001 (1)	330	25		
ET600-152	0.0015	330	30		

Notes

- Non standard size containers can be supplied on request
- (1) Capacitance tolerance of 20 % is standard



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