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 µF to 2 µF. The tolerance is ± 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.

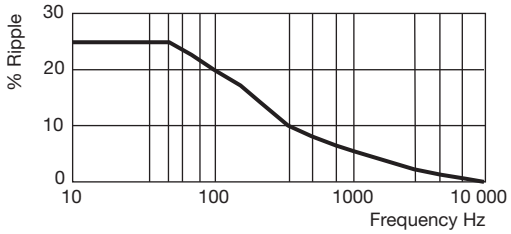

Fig. 1

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.

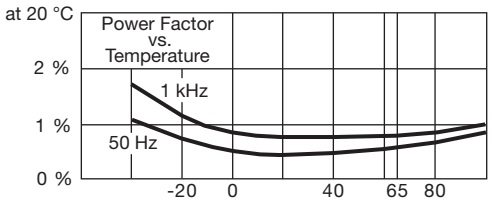

Fig. 2

DIELECTRIC RESISTANCE

(Parallel resistance) is indicated by the graph of insulance (MΩ x µF) vs. temperature Fig. 3. The insulance (MΩ x µF) is nominally 10 000 s at + 20 °C. (Measurements taken after 1 minute with an applied voltage of 500 V).

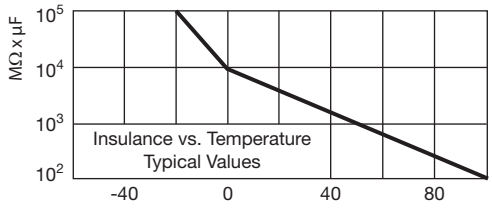

Fig. 3

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.

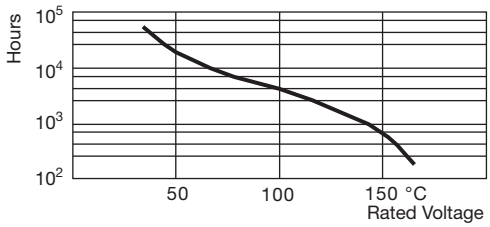

Fig. 4

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			
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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