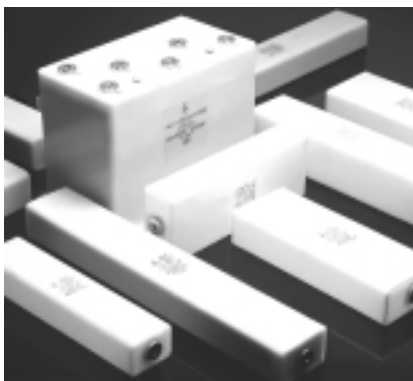


High Voltage DC Capacitors



TYPE EPR

The EPR range of 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 robust rectangular polypropylene case. The internal construction is designed to prevent movement when the capacitor is subjected to mechanical shock or vibration. An inert welding process ensures hermetic sealing. Standard terminations are M10 threaded inserts which eliminates the necessity for large voltage terminals. The case has an extremely low affinity for moisture and is resistant to virtually all electrical environments. Brackets can be welded on as required.

Note: The impregnant used is a non toxic highly purified and inhibited mineral oil.

APPLICATIONS

The EPR range is designed specifically for DC applications such as filters:

- By-pass
- Coupling
- Rapid discharge
- Pulse forming networks
- Radar
- Laser
- X-ray equipment

TEMPERATURE RANGE

Temperature range is - 40°C to + 85°C. Derating is required for operation at higher temperatures.

TEMPERATURE COEFFICIENT

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

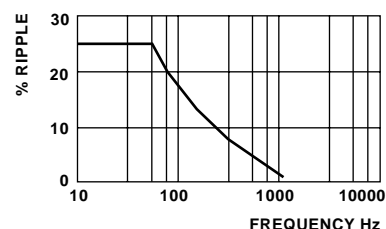
CAPACITANCE RANGE

0.002 μ F - 2 μ F. The tolerance is $\pm 10\%$. Other tolerance are available on request. Normal values measured at 1kHz.

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.

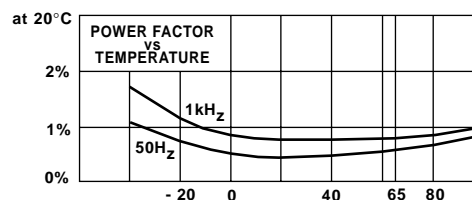
FIG 1



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

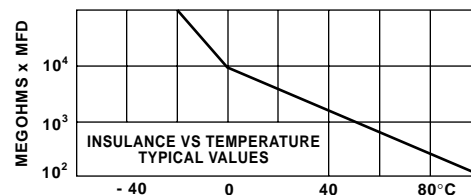
FIG 2



DIELECTRIC RESISTANCE

(Parallel resistance) is indicated by the graph of insulation ($M\Omega \times \mu F$) vs temperature fig.3. The insulation ($M\Omega \times \mu F$) is nominally 10000s at + 20°C. (Measurements taken after 1 minute with an applied voltage of 500V)

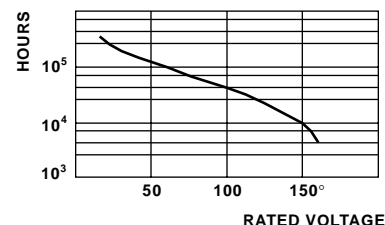
FIG 3



LIFE EXPECTANCY

EPR type capacitors are designed for a life expectancy of 50000 hours at 65 °C. To achieve the same life expectancy at 85°C derate to 60% of rated voltage fig.4.

FIG 4



**VOLTAGE RANGE**

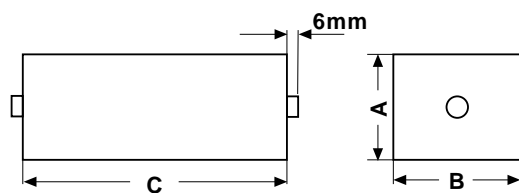
1kVDC - 300kVDV

TEST VOLTAGE**Terminal/terminal (Vt/t)**

For DC rating < 20kV

 $V_t/t = 2.0 \times \text{rated voltage } 60s$

For DC rating > 20kV

 $V_t/t = 1.5 \times \text{rated voltage } 60s$ 

PART NUMBER	μF	DC KILO-VOLTS	A	B	C
EPR150-104	0.1	15	75	75	142
EPR300-504	0.5	30	130	220	185
EPR500-103	0.01	50	70	90	245
EPR500-504	0.5	50	175	235	280
EPR750-503	0.05	75	80	110	365
EPR750-104	0.1	75	115	130	365
EPR750-254	0.25	75	175	190	365
EPR1000-253	0.025	100	80	90	420
EPR1000-403	0.04	100	120	200	285
EPR1000-104	0.1	100	125	175	445
EPR2000-502	0.005	200	90	90	385
EPR3000-252	0.0025	300	70	95	555