



Hivolt Capacitors Limited

Maydown Industrial Estate, Derry
N. Ireland BT47 6UQ

TPM



The TPM 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 Synthetic Resin Bonded Paper tube sealed at both ends with resin assuring hermetic sealing. The capacitors are terminated with M5 x 12mm studs or tinned copper wire.

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

Applications: The TPM range is specifically designed for high voltage power supplies, general purpose bypass, coupling, filter applications, electrostatic air cleaners, X-ray power supplies and traction.

Capacitance Range: 0.0005 μ F - 2 μ F. The tolerance is +/-10%. Other tolerances are available on request. Nominal values measured at 1kHz.

Temperature Range: -55°C to 85°C. The nominal voltage rating is applicable from -55°C to 85°C.

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

Voltage Range: 1kV - 100kVDC.

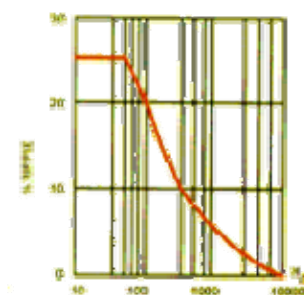


Fig 1.

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.

Test Voltage: V Test

For DC rating <20kV:

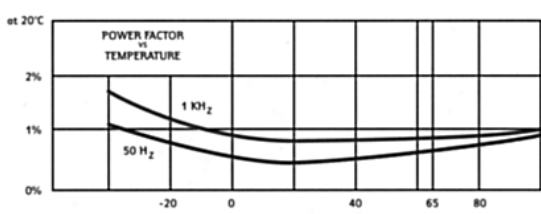
V Test = 2.0 x Rated Voltage for 1 minute.

For DC rating >20kV:

V Test = 1.5 x Rated Voltage for 1 minute.

Fig 2.

Power Factor: Variable; function of temperature and frequency see fig 2.



Nominal value <0.5% at 20°C.

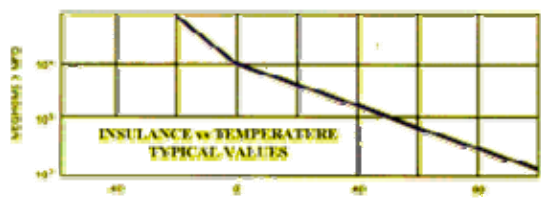


Fig 3

Dielectric Resistance: (Parallel resistance) Indicated by the graph of Insulance (Mohms x μ F) vs Temperature (fig 3). The insulance (Mohms x μ F) is nominally 10000s at +20°C. (Measurements taken after 1 minute with an applied voltage of 500V)

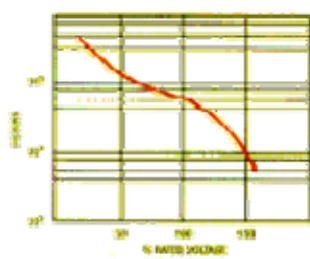


Fig 4

Life expectancy: TPM 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).

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



Custom designed capacitors are available to meet your specific application. Please complete and return our :-

CAPACITOR APPLICATION QUESTIONNAIRE.

Examples From Product List - Details of other values on request.

| Voltage (VDC W/kg) | Part No. | CAP (uF) | L mm | D mm | Voltage (VDC W/kg) | Part No. | CAP (uF) | L mm | D mm |
|--------------------|-----------|----------|------|------|--------------------|-----------|----------|------|------|
| 1000 | TPM10-103 | 0.01 | 42 | 17 | 1500 | TPM15-103 | 0.01* | 42 | 17 |
| | TPM10-503 | 0.05 | 48 | 20 | | TPM15-254 | 0.25 | 60 | 30 |
| | TPM10-254 | 0.25 | 60 | 22 | | TPM15-504 | 0.5 | 110 | 30 |
| | TPM10-504 | 0.5 | 70 | 30 | | TPM15-105 | 1.0 | 110 | 35 |
| | TPM10-205 | 2.0 | 110 | 35 | | TPM15-205 | 2.0 | 110 | 42 |
| | | | | | | | | | |
| | | | | | | | | | |

| | | | | | | | | | |
|--------------|------------|---------|-----|----|--------------|------------|---------|-----|----|
| 2000 | TPM20-103 | 0.01 | 48 | 17 | 3000 | TPM30-502 | 0.005* | 42 | 17 |
| | TPM20-503 | 0.05 | 60 | 17 | | TPM30-203 | 0.02 | 48 | 20 |
| | TPM20-104 | 0.1 | 60 | 22 | | TPM30-104 | 0.1 | 55 | 30 |
| | TPM20-254 | 0.25 | 60 | 30 | | TPM30-504 | 0.5 | 75 | 42 |
| | TPM20-504 | 0.5 | 75 | 35 | | TPM30-105 | 1.0 | 110 | 42 |
| | | | | | | | | | |
| 4000 | TPM40-102 | 0.001* | 42 | 17 | 5000 | TPM50-102 | 0.001* | 42 | 17 |
| | TPM40-103 | 0.01 | 42 | 20 | | TPM50-502 | 0.005* | 42 | 20 |
| | TPM40-503 | 0.05 | 60 | 22 | | TPM50-103 | 0.01 | 48 | 20 |
| | TPM40-104 | 0.1 | 60 | 30 | | TPM50-503 | 0.05 | 60 | 25 |
| | TPM40-504 | 0.5 | 95 | 42 | | TPM50-254 | 0.25 | 95 | 35 |
| | | | | | | | | | |
| 6000 | TPM60-102 | 0.001* | 55 | 17 | 8000 | TPM80-502 | 0.005* | 65 | 20 |
| | TPM60-502 | 0.005* | 65 | 17 | | TPM80-103 | 0.01 | 80 | 20 |
| | TPM60-203 | 0.02 | 80 | 20 | | TPM80-503 | 0.05 | 105 | 35 |
| | TPM60-104 | 0.1 | 100 | 35 | | TPM80-104 | 0.1 | 105 | 42 |
| | TPM60-254 | 0.25 | 135 | 42 | | TPM80-254 | 0.25 | 170 | 42 |
| | | | | | | | | | |
| 10000 | TPM100-102 | 0.001* | 65 | 17 | 12000 | TPM120-202 | 0.002* | 95 | 20 |
| | TPM100-103 | 0.01 | 80 | 22 | | TPM120-103 | 0.01 | 115 | 30 |
| | TPM100-503 | 0.05 | 105 | 35 | | TPM120-203 | 0.02 | 115 | 35 |
| | TPM100-104 | 0.1 | 170 | 35 | | TPM120-503 | 0.05 | 180 | 35 |
| | TPM100-254 | 0.25 | 205 | 42 | | TPM120-104 | 0.1 | 180 | 42 |
| | | | | | | | | | |
| 15000 | TPM150-102 | 0.001* | 95 | 17 | 20000 | TPM200-102 | 0.001* | 115 | 22 |
| | TPM150-502 | 0.005* | 110 | 20 | | TPM200-103 | 0.01 | 145 | 30 |
| | TPM150-103 | 0.01 | 110 | 30 | | TPM200-203 | 0.02 | 195 | 30 |
| | TPM150-503 | 0.05 | 150 | 42 | | TPM200-503 | 0.05 | 245 | 42 |
| | TPM150-104 | 0.1 | 245 | 42 | | TPM200-104 | 0.1 | 320 | 42 |
| | | | | | | | | | |
| 25000 | TPM250-501 | 0.0005* | 145 | 17 | 30000 | TPM300-501 | 0.0005* | 170 | 17 |
| | TPM250-102 | 0.001 | 145 | 20 | | TPM300-202 | 0.002 | 170 | 25 |
| | TPM250-502 | 0.005 | 175 | 30 | | TPM300-103 | 0.01 | 205 | 35 |
| | TPM250-103 | 0.01 | 175 | 35 | | TPM300-203 | 0.02 | 280 | 35 |
| | TPM250-503 | 0.05 | 300 | 42 | | TPM300-303 | 0.03 | 280 | 42 |
| | | | | | | | | | |
| 40000 | TPM400-102 | 0.001* | 210 | 20 | 50000 | TPM500-501 | 0.0005* | 275 | 22 |
| | TPM400-202 | 0.002 | 275 | 20 | | TPM500-202 | 0.002 | 340 | 22 |
| | TPM400-103 | 0.01 | 275 | 42 | | TPM500-103 | 0.01 | 340 | 42 |
| | | | | | | | | | |

DIMENSIONS IN MILLIMETRES +/- 1mm

Add suffix W to Part No. to indicate wire terminations. Capacitance tolerance of 20% is standard with those marked*.