



## Hivolt Capacitors Limited

Maydown Industrial Estate, Derry  
N. Ireland BT47 6UQ

### PMW



The PMW 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 manufactured from heavy gauge, cold rolled steel that is welded and hermetically sealed. The internal construction is designed to prevent movement when subjected to vibration or mechanical shock. The capacitors' containers are primed and glossed. The capacitors may be supplied with fixing brackets, handles or lugs for lifting. The larger capacitors are mounted on wheels.

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

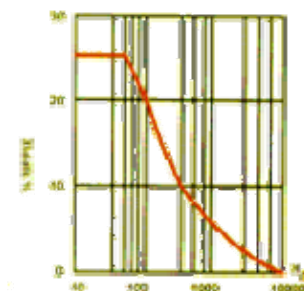
**Applications:** The PMW range of capacitors are specially designed for DC filtering and bypass applications such as high voltage power supplies for lasers, radar and x-ray, RF transmitters, traction equipment and generators where reliability and long life are prime considerations.

**Capacitance Range:** 0.01 $\mu$ F-100 $\mu$ 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. Derating is required for higher operating temperatures.

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

**Voltage Range:** 1kVDC - 80kVDC



**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.

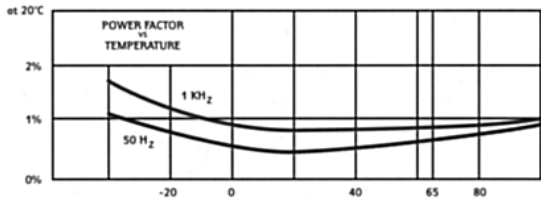
**Test Voltage: V Test** (Terminal to Terminal)  
 For DC rating <20kV: V Test = 2.0 x Rated Voltage for 1 minute.  
 For DC rating >20kV: V Test = 1.5 x Rated Voltage for 1 minute.

Case to terminal Test voltage =  $V_{Test} + 1kV$  (Note where necessary terminals are joined together during testing).

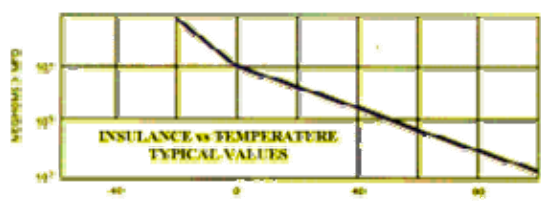
**Flashover:**

$V_{Rated} < 5kV$ , the terminals will withstand 125% of rated voltage without flashover @ 85mm Hg (equivalent to 50000 ft altitude).

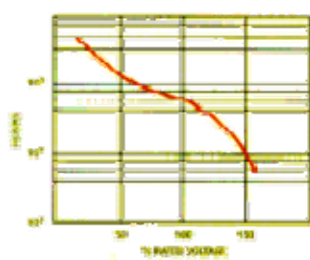
$V_{Rated} > 5kV$ , the terminals will withstand 125% of rated voltage without flashover @ 500mm Hg (equivalent to 10000 ft altitude).



**Fig 2.**  
**Power Factor:** Variable; function of temperature and frequency. See fig 2. Nominal value < 0.5% at 20°C.



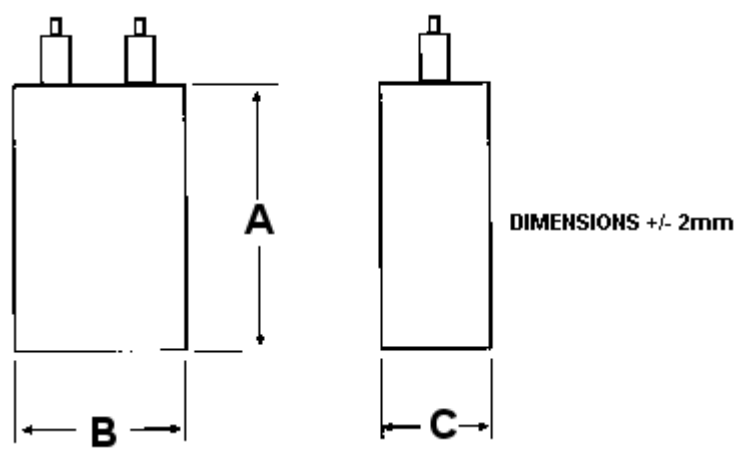
**Fig 3 .**  
**Dielectric Resistance:** (Parallel resistance) Indicated by the graph of insulance (Mohms x  $\mu F$ ) vs Temperature (Fig3) The Insulance (Mohms x  $\mu F$ ) is nominally 10000s at +20°C. (Measurements taken after 1 minute with an applied voltage of 500V).



**Fig 4.**  
**Life expectancy:** PMW type capacitors are designed for a life expectancy of 50000 hours at 65°C. To achieve the same life expectancy at 85°C derate 60% of rated voltage (fig 4).

**Starting Surge:** The capacitors are designed to withstand a starting surge of 25% without any detriment to the capacitor or reduction in life.

**Short Circuit Capability:** The capacitors are designed to withstand short circuit under fault conditions. The short circuit should, however be through at least a 20 ohm resistor.



**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.**

<b>Kilovolts DC</b>	<b>Capacitance <math>\mu\text{F}</math></b>	<b>A</b>	<b>B</b>	<b>C</b>
6	24	345	160	130
6	40	450	250	145
7.5	35	260	250	170
8	37	530	290	150
8	9	200	305	120
10	32	380	325	205
10	5	200	160	140
10	8	260	250	105
12	4	270	215	180
15	7	380	290	125
15	12	710	355	130
15	35	660	455	230
18	4	380	330	105
18	7	380	325	165
20	4	380	340	120
20	7	710	355	130
20	10	695	470	100
20	20	695	470	180
25	2	380	330	105
25	4	540	305	125
25	5	530	350	140
25	12	720	570	200
30	1	260	255	160
30	2	370	330	130
30	4	540	385	135
40	4	400	600	235
60	2	570	415	270
80	0.1	235	310	130

**DIMENSIONS IN MILLIMETRES +/- 2mm**