



Hivolt Capacitors Limited

Maydown Industrial Estate, Derry
N. Ireland BT47 6UQ

PMR



The PMR 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 rolled-seamed tinfoil case that is hermetically sealed. The internal construction is designed to prevent movement when the capacitor is subjected to mechanical shock or vibration. External connections are via ceramic terminals with threaded studs or solder tags. Capacitors are supplied with clip on brackets. Other brackets are available on request. These capacitors can be mounted in any position. The finish consists of two coats of high build light grey weather work cellulose enamel (other colours available on request).

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

Applications: The PMR range of capacitors is specifically designed for DC applications such as filters, bypass and coupling of low frequency audio. Other applications include:

Pulse Forming Networks;
Arc and Spark Suppression;
RF bypass

Oscillator Circuits;
Integrating Circuits;

Energy Storage;
High Voltage Smoothing;

Capacitors required for AC applications and High Discharge rates can also be designed from the PMR range. Consult Hivolt Capacitors for your specific requirements.

Capacitance Range: 0.01 μ F - 100 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. Derating is required for higher operating temperatures.

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

Voltage Range: 200VDC - 40kVDC

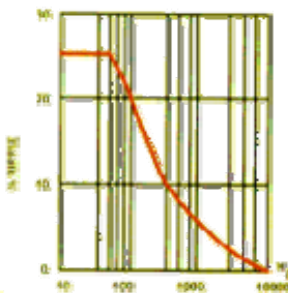


Fig 1.

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.

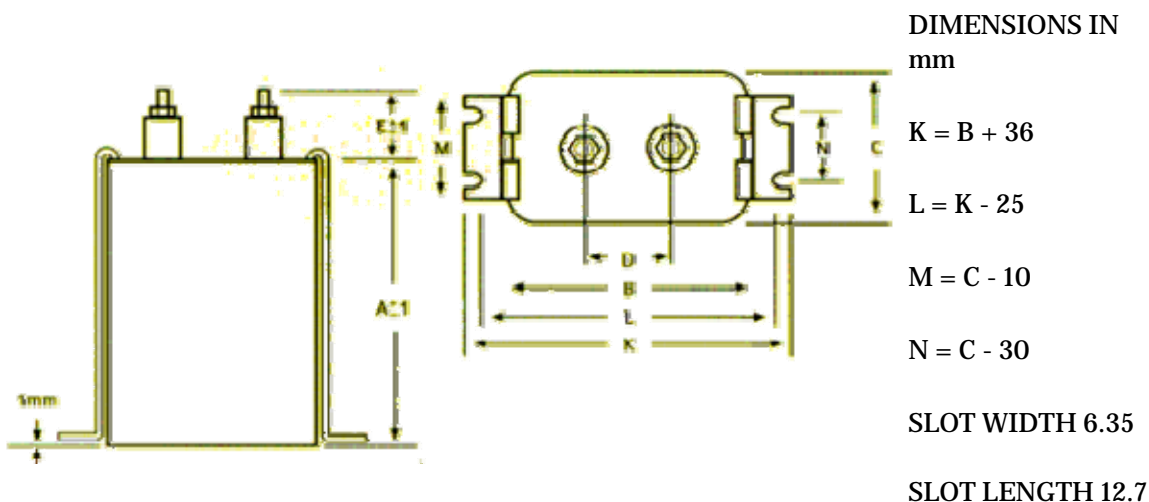
Test Voltage: V Test

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.

Case to terminal Test voltage = $V_{Test} + 1kV$

The test voltage is applied and discharged through a resistance of at least one ohm per rated volt up to a maximum of 5000 ohms.



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.

PART NUMBER	CAP μF	A	B	C	D	E	PART NUMBER	CAP μF	A	B	C	D	E
1kV DC WKG							1.5kV DC WKG						
PMR10-104	0.1	50	48	28	20	20	PMR 15-104	0.1	60	48	28	20	20
PMR10-504	0.5	50	48	28	20	20	PMR 15-504	0.5	60	48	28	20	20
PMR10-105	1.0	75	48	28	20	20	PMR 15-205	2	75	54	48	22	35
PMR10-405	4.0	75	60	54	25	35	PMR 15-805	8	95	85	67	40	35
PMR10-106	10.0	115	80	48	40	35	PMR 15-126	12	135	85	67	40	35
PMR10-256	25	115	85	67	40	35	PMR 15-256	25	115	130	100	50	35

2kV DC WKG							3kV DC WKG						
PMR 20-104	0.1	60	48	28	20	20	PMR 30-104	0.1	60	48	28	20	20
PMR 20-504	0.5	60	48	28	20	20	PMR 30-504	0.5	75	48	28	20	20
PMR 20-205	2.0	75	54	48	22	35	PMR 30-105	1.0	115	48	28	20	20
PMR 20-605	6.0	135	60	54	25	35	PMR 30-405	4.0	155	60	54	25	35
PMR 20-126	12.0	135	85	67	40	35	PMR 30-106	10.0	95	130	100	50	35
PMR 20-206	20.0	115	130	100	50	35	PMR 30-256	25.0	180	130	100	50	35

4kV DC WKG							5kV DC WKG						

PMR 40-104	0.1	60	48	28	20	20	PMR 50-104	0.1	60	48	28	20	20
PMR 40-504	0.5	95	48	28	20	20	PMR 50-105	1.0	115	54	48	22	35
PMR 40-205	2.0	135	54	48	22	35	PMR 50-405	4.0	155	85	67	40	35
PMR 40-805	8.0	115	130	100	50	35	PMR 50-805	8.0	135	130	100	50	35
PMR 40-206	20.0	230	130	100	50	35	PMR 50-206	20.0	290	130	100	50	35
PMR 40-306	30.0	320	130	100	50	35	PMR 50-506	50.0	295	180	180	75	35

6kV DC WKG							8kV DC WKG						
PMR 60-104	0.1	65	54	48	*	35	PMR 80-503	0.05	58	60	54	*	60
PMR 60-504	0.5	100	80	48	40	35	PMR 80-254	0.25	85	60	54	*	60
PMR 60-205	2.0	100	130	100	50	35	PMR 80-105	1.0	120	85	67	40	60
PMR 60-605	6.0	180	130	100	50	35	PMR 80-405	4.0	200	130	100	50	60
PMR 60-106	10	290	130	100	50	35	PMR 80-805	8.0	345	130	100	50	60
PMR 60-206	20.0	180	220	164	125	60	PMR 80-156	15.0	280	180	180	75	60

10kV DC WKG							12kV DC WKG						
PMR 100-503	0.05	58	80	48	40	60	PMR 120-503	0.05	75	85	67	40	60
PMR 100-504	0.5	140	80	48	40	60	PMR 120-104	0.1	100	85	67	40	60
PMR 100-105	1.0	160	85	67	40	60	PMR 120-254	0.25	105	85	67	40	60
PMR 100-205	2.0	140	130	100	50	60	PMR 120-105	1.0	145	130	100	75	60
PMR 100-605	6.0	350	130	100	50	60	PMR 120-205	2.0	240	130	100	75	60
PMR 100-156	15.0	350	180	180	75	60	PMR 120-405	4.0	280	190	120	75	60

15kV DC WKG							20kV DC WKG						
PMR 150-103	0.01	60	60	54	*	60	PMR 200-103	0.01	70	80	48	*	60
PMR 150-503	0.05	85	60	54	*	60	PMR 200-104	0.1	105	85	67	40	60
PMR 150-254	0.25	125	85	67	40	60	PMR 200-254	0.25	190	85	67	40	60
PMR 150-504	0.5	190	85	67	40	60	PMR 200-504	0.5	160	130	100	75	60
PMR 150-105	1.0	160	130	100	75	60	PMR 200-105	1.0	300	130	100	75	60
PMR 150-205	2.0	190	159	121	75	60	PMR 200-405	4.0	305	240	180	100	100

25kV DC WKG							30kV DC WKG						
PMR 250-503	0.05	110	85	67	*	70	PMR 300-303	0.03	120	85	67	*	70
PMR 250-104X	0.1	95	130	100	65	70	PMR 300-104	0.1	200	85	67	*	70
PMR 250-254	0.25	130	130	100	65	70	PMR 300-104X	0.1	120	130	100	65	70
PMR 250-504	0.5	250	130	100	65	70	PMR 300-504	0.5	310	130	100	65	70
							PMR 300-105	1.0	295	180	180	75	100
40kV DC WKG													
PMR 400-303	0.03	160	85	67	*	70							
PMR 400-503	0.05	210	85	67	*	70							
PMR 400-503X	0.05	125	130	100	65	70							

DIMENSIONS IN MILLIMETRES +/- 2mm

* These capacitors are fitted with one high voltage terminal and one case terminal. An additional terminal for connection to case is available as an optional extra. Add suffix M to Part Number.

Note: Non standard size containers can be supplied on request

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).

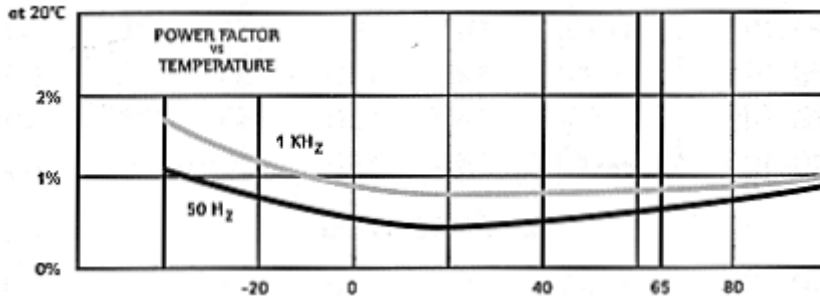


Fig 2.

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

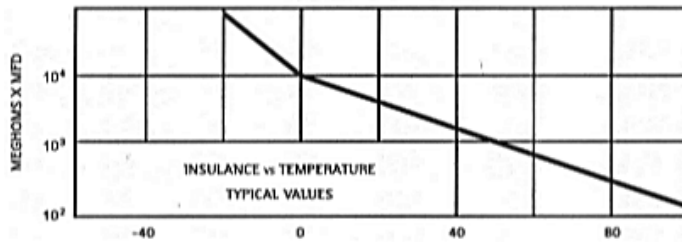


Fig 3.

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

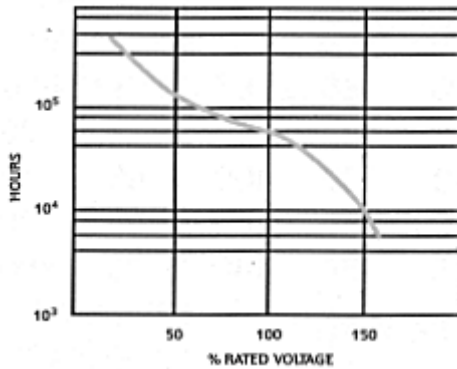


Fig 4.

Life expectancy: PMR 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 kg of capacitors in the PMR range can be estimated by multiplying the volume of the capacitor container by 1.45×10^{-6}