

## 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 tinplate 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:  $0.01\mu F$  -  $100\mu F$ . 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: 200VDC - 40kVDC

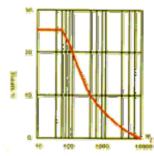


Fig 1.

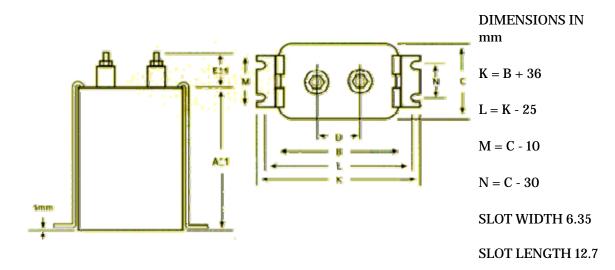
Ripple: The sum of the peak ripple voltage and the DC voltage should not exceed the rated voltage. Refer to graph fig 1 for permissible peak-to-peak ripple voltage as a percentage of rated voltage for various frequencies.

**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	CAP							PART	CAP					
NUMBER	μF	Α	В	С	D	E		NUMBER	uF	Α	В	С	D	Ε
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
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2kV DC WKG								3kV DC WKG						
PMR 20-104	0.1	60	48	28	3	20	20	PMR 30-104	0.1	60	48	28	20	20
PMR 20-504	0.5	60	48	28	3	20	20	PMR 30-504	0.5	75	48	28	20	20
PMR 20-205	2.0	75	54	48	3	22	35	PMR 30-105	1.0	115	48	28	20	20
PMR 20-605	6.0	135	60	54	Į.	25	35	PMR 30-405	4.0	155	60	54	25	35
PMR 20-126	12.0	135	85	67	7	40	35	PMR 30-106	10.0	95	130	100	50	35
PMR 20-206	20.0	115	130	10	0	50	35	PMR 30-256	25.0	180	130	100	50	35
4kV DC WKG								5kV DC WKG						
			1					í i			1		1	

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	
PMR 40-205	2.0	135	54	48	22	35	PMR 50-405	4.0	155	85	67	40	_
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
									1				
6kV DC WKG	ĺ						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				1			12kV DC WKG	_		-	-		
PMR 100-503	0.05	58	80	48	40	60	PMR 120-503	0.05	_	85	_	40	_
PMR 100-504	0.5	140		48	40	60	PMR 120-104	0.1	100			40	_
PMR 100-105	1.0	160		67	40 50	60	PMR 120-254	0.25			_	40	_
PMR 100-205 PMR 100-605	2.0 6.0	140 350	_	_	_	60 60	PMR 120-105 PMR 120-205	1.0 2.0	145 240	<del></del>	_		
PMR 100-156	15.0	350			_	60	PMR 120-205	4.0	280		_		_
FWIK 100-130	13.0	330	180	180	1/3	100	FWIK 120-403	4.0	200	) [19	0 12	<i>3</i>   <i>1</i> 3	00
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15kV DC WKG					1	1	20kV DC WKG				1		
PMR 150-103	0.01	60	60	54	* 6	0	PMR 200-103	0.01	70	80	48	*	60
PMR 150-503		85	_		_	0	PMR 200-104			85	67	40	60
PMR 150-254	0.25	125	85	67	40 6	0	PMR 200-254	0.25	190	85	67	40	60
PMR 150-504	0.5	190	85	67	40 6	0	PMR 200-504	0.5	160	130	100	75	60
PMR 150-105					_	0	PMR 200-105	1.0				75	60
PMR 150-205	2.0	190	159	121	75 6	0	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		_	-	PMR 300-104	0.1	200	_	67	*	70
PMR 250-254	_		130	100	65	-	PMR 300-104X		120	_		o	70
	0.25							10 =	1010	130	)  100	\ ler	70
PMR 250-504	0.25 0.5	130 250			65	70	PMR 300-504	0.5	310	_	_	_	
					65	70	PMR 300-504 PMR 300-105	1.0	295	_	_	_	100
PMR 250-504 40kV DC WKG					65	70				_	_	_	
	0.5		130		*	70 70				_	_	_	
40kV DC WKG	0.5	250 160	130	100						_	_	_	
40kV DC WKG PMR 400-303	0.5 0.03 0.05	250 160 210	) 130 ) 85 ) 85	67 67	*	70				_	_	_	
40kV DC WKG PMR 400-303 PMR 400-503	0.5 0.03 0.05	250 160 210	) 130 ) 85 ) 85	67 67	*	70 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

 $V_{\rm \,Rated}$  < 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).

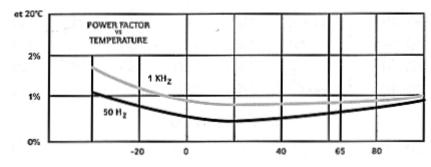


Fig 2.

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

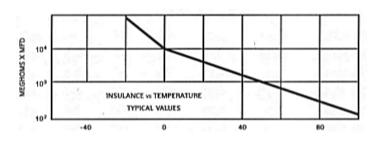


Fig 3.

Dieletric Resistance: (Parallel resistance) Indicated by the graph of insulance (Mohms  $x \mu F$ ) vs Temperature (fig 3). The insulance (Mohms  $x \mu F$ ) is nominally 10000s at  $+20^{\circ}$ C. (Measurements taken after 1 minute with an applied voltage of 500V).

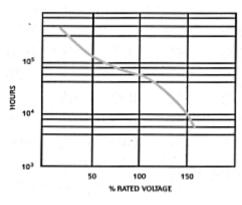


Fig 4.

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  $1.45 \times 10^{-6}$