

APPROVAL SHEET

RPM18M0617

HIGH PULSE LOAD MELF RESISTORS

RPM18M0617 系列

PRODUCE	CHECK AND APPROVE	ACCEPTED BY
EM	CE	HONORABLE CUSTOMER
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RPM SERIES

HIGE PULSE LOAD MELF RESISTORS

1. FEATURE

- Advanced carbon film and thick film technology
- Excellent overall pulse load capability
- Compliant to RoHS directive 2011/65/EU
- Compliant to REACH (EC No. 1907/2006)) (last updated: 27/06/2018)

2. PART NUMBER:

Part number of the melf resistor is identified by the series name, power rating, metric size code, resistance tolerance, temperature coefficient, packing type and resistance value.

For example :

RPM	18M	0617	J	0	T	101
Series	Power	Size	Tolerance	TCR	Packing	Resistance

(1) Style: RPM SERIES Power Rating: please see the data sheet

(2) DIN size: DIN: 0617

(3) Tolerance: F=±1%; G=±2%; J=±5%

(4) T.C.R.: 0= ±350ppm/°C

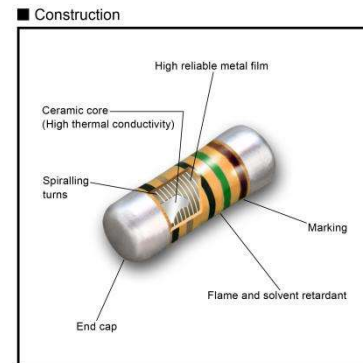
(5) Packaging Type: T=REEL/BOX

(6) Resistance Value: 100K(104); 22K(223); 2K1(212); 100R(101); 10R(100);

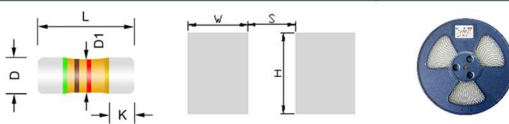
3. Structure of the resistors:

Four-color code rings designate the resistance value and tolerance ring in accordance with IEC 60062.

The fifth black code is identifying code to distinguish RP resistors with normal carbon film resistors. (There is no tolerance code for 0204 tiny size resistors that is replaced by the ID code)



4. ELECTRICAL CHARACTERISTICS

Type	RPM18M0617	型号		
Resistance range	2.2Ω to 1.5MΩ	阻值范围		
Resistance tolerance	F(±1%); G(±2%); J(±5.0%);	精度		
Temperature coefficient	±350ppm/°C	温度系数		
Rated dissipation, P_{70}	3.0W	70°C 以下额定功率		
Max. operating voltage	800V	最大工作电压		
Max Short time overload voltage	1600V	最大短时间过载电压		
Operating Temperature range	-55°C to 155°C	工作温度范围		
Max Surge compatibility (1.2/50 μs)	10000V	最高浪涌负荷试验(1.2/50 μs)		
Dimension	±0.2(mm)	L=10.6; D=4	±0.2(mm)	外型尺寸
	(mm)	K≥0.8; D ₁ ≥D-0.3		
Soldering pad (recommended in mm)	S=6; W=4.5; H=5	(mm)	建议焊盘尺寸	
Outlines				外观
Standard applied	Q\SLC032-2017	适用标准		

Unless otherwise specified, all values are tested at the following condition:

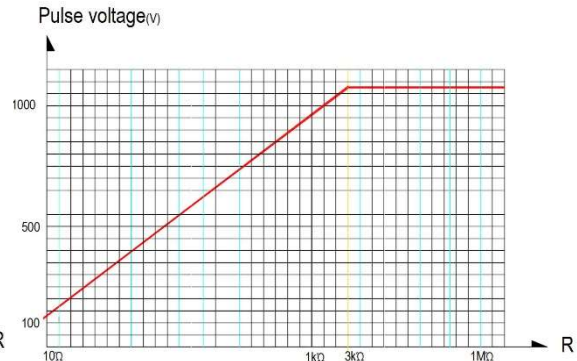
Temperature: 21°C to 25°C; Relative humidity: 45% to 70%;

- * Rated Continuous Working Voltage (RCWV)= $\sqrt{\text{Power Rating} \times \text{Resistance Value}}$
- * Resistance value out of range is available on request.

5. Pulse load capability

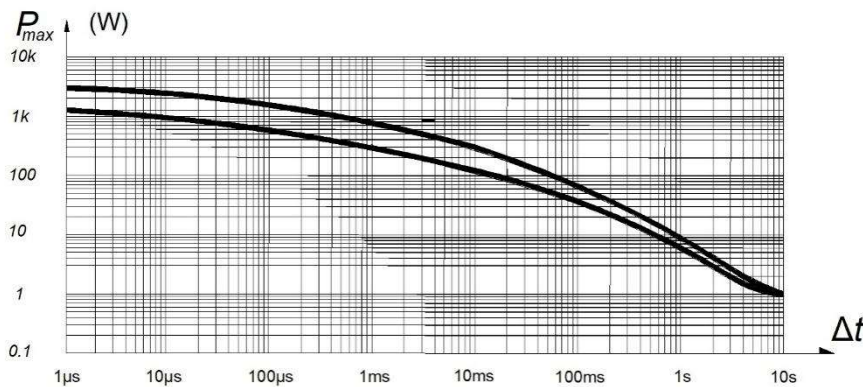


Pulse load rating in accordance with IEC 60115-1,4.27; **1.2µs/50µs**; 5 pulses loaded, for permissible resistance change $<\pm(0.5\%+0.05\Omega)$



Pulse load rating in accordance with IEC 60115-1,4.27; **10µs/700µs**; 10 pulses loaded, for permissible resistance change $<\pm(0.5\%+0.05\Omega)$

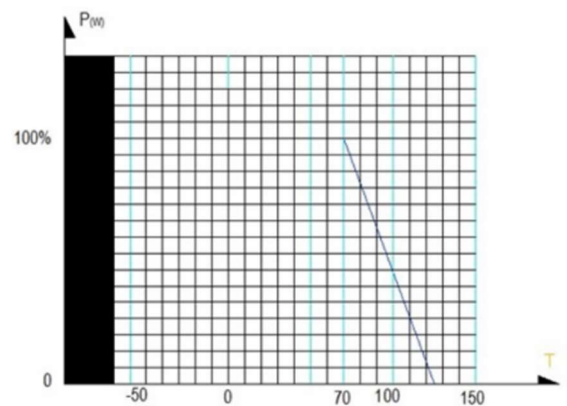
6. Single Pulse load capability



Maximum pulse load, single pulse; applicable if $P \rightarrow 0$ and $n \leq 1000$ and $\dot{U} \leq 4kV$; for permissible resistance change equivalent to 8000h operation in power operation mode.

7. Derating curves

The power dissipation on the resistor generates a temperature rise against the local ambient, depending on the heat flow support of the printed-circuit board (thermal resistance). The rated dissipation applies only if the permitted film temperature is not exceeded. These resistors do not feature a limited lifetime when operated within the permissible limits. However, resistance value drift increasing over operating time may result in exceeding a limit acceptable to the specific application, thereby establishing a functional lifetime.



8. ENVIRONMENTAL CHARACTERISTICS

(1) Temperature Coefficient Test

IEC 60115-1, 4.8: Test of resistors at room temperature and 60°C (or 100°C upon request) above room temperature. Then measure the resistance. The Temperature Coefficient is calculated by the following equation and its value should be within the range requested.

$$\text{Resistor Temperature Coefficient} = \frac{R - R_0}{R_0} \times \frac{1}{t - t_0} \times 10^6$$

R = Resistance value under the testing temperature

R₀ = Resistance value at the room temperature

t = the 2nd testing temperature

t₀ = Room temperature

Typical temperature coefficient of resistance of RPM series resistors is around 250ppm/°C.

(2) Short Time Overload Test

IEC60115-1 4.13: At 10 times rated voltage or 2 times the maximum working voltage whichever is lower for 5 seconds, the resistor should be free from defects. The change of the resistance value should be within ± (0.25%+0.05Ω) as compared with the value before the test.

(3) Solderability

IEC 60115-1, 4.17: 235±5°C for 3±0.5 Seconds, there are at least 95% solder coverage on the termination.

(4) Resistance to soldering heat:

IEC 60115-1, 4.18: 260±3°C for 10±1 Seconds, The change of the resistance value should be within ±(0.25%+0.05 Ω) as compared with the value before the test.

(5) ESD human body mode

IEC 60115-1, 4.38: 0204 size 6kV and 0207 size 16kV, 3 pos.+3 neg. (equivalent to MIL-STD-883, method 3015) The change of the resistance value should be within $\pm(0.50\%+0.05 \Omega)$ as compared with the value before the test.

(6) Climatic sequence

IEC 60115-1, 4.19: -55°C to Room Temp. to $+155^{\circ}\text{C}$ to Room Temp. (5 cycles). The change of the resistance value shall be within $\pm (2.0\%+0.05\Omega)$ as compared with the value before the load. After the test the resistors shall be free from the electrical or mechanical damage.

(7) Damp Heat Steady State

IEC 60115-1, 4.24: $40\pm 2^{\circ}\text{C}$, 90-95% RH for 56 days, loaded with 0.1 times RCWV or the maximum working voltage whichever is lower. The change of the resistance value should be within $\pm (5.0\%+0.05\Omega)$ as compared with the value before the load.

(8) Load Life Test

IEC 60115-1, 4.25: $70\pm 2^{\circ}\text{C}$ at RCWV or the maximum working voltage whichever is lower for 1,000+48/-0 Hr. (1.5Hr. on, 0.5Hr. off). The resistors shall be arranged not much effected mutually by the temperature of others and the excessive ventilation shall not be performed. The change of the resistance value should be within $\pm (5.0\%+0.05\Omega)$ as compared with the value before the load.

Disclaimer

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise.

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