

Ultra low ohmic resistors for current detection

PMR03

●Outline

PMR03 in the 0603 package (1.6x0.8mm) works at the rated power of 0.25W, which is the first in the industry for its size using metal-plate as resistive element and is achieved by Rohm's unique production method.

The suitable application is the battery meter in portable appliances, and also the current control circuit (which is down-sizing these days) and the over-current protection circuit.

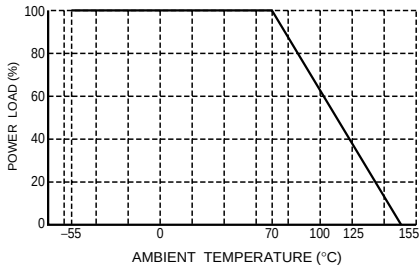
●Features

- 1) Metal-plate, which is an excellent material in view of electrical characteristics, is employed as resistive element by Rohm's unique production method.
- 2) 0.25W is achieved; the industry's first for 0603 sized metal-plate type.
- 3) 150ppm/°C of TCR (Temperature Coefficient of Resistance) is realized at ultra-low resistance of 10mΩ
- 4) Completely Pb free product

●Applications

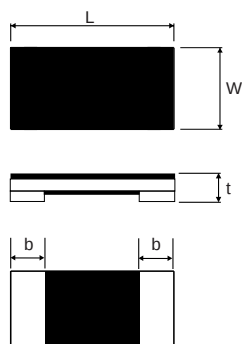
Note PC, HDD, mobile phone, small battery-unit, charger, DC/DC converter, general power-supply units

●Ratings

Item	Conditions	Specifications
Rated power	Power must be derated according to the power derating curve in Figure 1 when ambient temperature exceeds 70°C.  Fig.1	0.25W (1 / 4W) at 70°C
Rated voltage Rated current	Rated voltage and current are determined from the following. $E = \sqrt{P \times R}$ $I = \sqrt{P / R}$ E: Rated voltage (V) I: Rated current (A) P: Rated power (W) R: Resistance (Ω)	
Nominal resistance		10mΩ
Tolerance	J	±5%
Temperature coefficient	+25/-55/+25/+125°C (JIS C 5201-1 4.8)	±150ppm/°C
Operating temperature		-55°C to +155°C

Resistors

●Dimensions (Unit : mm)



Part No.	Size code	L	W	t	b
PMR03	1608 (0603)	1.60±0.15	0.80±0.15	0.25±0.15	0.35±0.15

●Product designation



Part No.

Resistance tolerance

Special part number

Nominal resistance

J ±5%

U 10mΩ

Resistance code, 3 or 4 digits.

Resistance tolerance	Resistance code
J	: 3 digits

Resistance value

10mΩ

10L

Packaging Specifications Code

Part No.	Code	Resistance tolerance J(±5%)	Packaging specifications	Reel	Basic ordering unit (pcs)
PMR03	EZP	◎	Embossed tape (4mm Pitch)	φ180mm (7inch)	5,000

Reel (φ180) : Compatible with JEITA standard "EIAJ ET-7200B"

◎ : Standard product

●Packaging

Reel

Diagram of a reel showing dimensions A, B, C, D, and a label. The reel is circular with a central hub and four spokes. The dimensions are defined as follows: A is the outer diameter, B is the inner diameter, C is the width of the reel, and D is the distance from the center to the outer edge. The label is located on the outer edge.

EIAJ ET-7200B compliant

(Unit : mm)

A	B	C	D
$\phi 180 \begin{smallmatrix} 0 \\ -1.5 \end{smallmatrix}$	$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$	$9 \begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$	$\phi 13 \pm 0.2$

Taping

Diagram of a resistor tape showing dimensions P₀, P₁, P₂, P, F, E, W, A₀, B₀, D₀, and T₂. The tape is shown with components (resistors) and cavities. The dimensions are defined as follows: P₀ is the pitch between components, P₁ is the pitch between cavities, P₂ is the pitch between components and cavities, P is the pitch between components and cavities, F is the width of the tape, E is the thickness of the tape, W is the width of the tape, A₀ is the width of the component, B₀ is the width of the cavity, D₀ is the diameter of the component, and T₂ is the thickness of the tape.

(Unit : mm)

W	F	E	A ₀	B ₀
8.0 ± 0.3	3.5 ± 0.05	1.75 ± 0.1	1.1 ± 0.1	1.9 ± 0.1
D ₀	P ₀	P ₁	P ₂	T ₂
$\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	Max. 1.1

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