

Ultra-Low Ohmic Resistors for Current Detection

PMR18

●Features

- 1) Ultra low-ohmic resistance range (1mΩ~)
- 2) Improved current detection accuracy by trimming-less structure.
Highly recommended for large current / High speed switching circuit.
- 3) Completely Pb free product
- 4) ISO9001- / ISO/TS 16949-approved

●Ratings

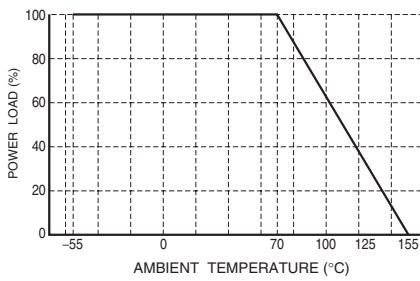
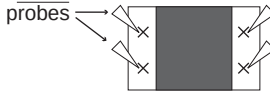
Item	Conditions	Specifications
Rated power	For resistors operated at the ambient temperature in excess of 70°C, the load shall be derated in accordance with Fig.1  Fig.1	1W at 70°C
Rated voltage Rated current	Rated voltage and current are determined from the following. $E = \sqrt{P \times R}$ E : Rated voltage (V) I : Rated current (A) $P = \sqrt{P / R}$ P : Rated power (W) R : Resistance (Ω)	
Nominal resistance	See Table 1.	
Operating temperature		-55°C to +155°C

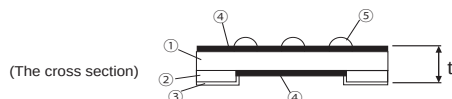
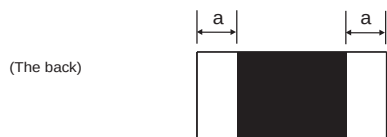
Table.1

RESISTANCE (mΩ)	TOLERANCE	SPECIAL CODE	TEMPERATURE COEFFICIENT (ppm / °C)
1,2,3,4	F (±1%)	V	±100
5,6,7,8,9,10	J (±5%)	U	

●Characteristics

Item	Guaranteed value	Test conditions (JIS C 5201-1)
	Resistor type	
Resistance	F : $\pm 1\%$ J : $\pm 5\%$	JIS C 5201-1 4.5 Measuring method : Measure under terminations by 4 probes. Fig.2 (Under terminations) probes 
Variation of resistance with temperature	See Table.1	JIS C 5201-1 4.8 Measurement : $+25 / +125^{\circ}\text{C}$
Overload	$\pm 2.0\%$	JIS C 5201-1 4.13 Rated voltage (current) $\times 2.5$, 2s.
Solderability	A new uniform coating of minimum of 95% of the surface being immersed and no soldering damage.	JIS C 5201-1 4.17 Rosin-Ethanol (25%WT) Soldering condition : $235 \pm 5^{\circ}\text{C}$ Duration of immersion : $2.0 \pm 0.5\text{s}$.
Resistance to soldering heat	$\pm 1.0\%$ No remarkable abnormality on the appearance.	JIS C 5201-1 4.18 Soldering condition : $260 \pm 5^{\circ}\text{C}$ Duration of immersion : $10 \pm 1\text{s}$.
Rapid change of temperature	$\pm 1.0\%$	JIS C 5201-1 4.19 Test temp. : -55°C to $+125^{\circ}\text{C}$ 5cyc
Damp heat, steady state	$\pm 3.0\%$	JIS C 5201-1 4.24 40°C , 93%RH Test time : 56days
Endurance at 70°C	$\pm 3.0\%$	JIS C 5201-1 4.25.1 Rated power, 70°C 1.5h : ON – 0.5h : OFF Test time : 1,000h to 1,048h
Endurance	$\pm 3.0\%$	JIS C 5201-1 4.25.3 155°C Test time : 1,000h to 1,048h
Component Solvent Resistance	$\pm 0.5\%$	JIS C 5201-1 4.29 $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Solvent : 2-propanol
Bend strength of the end face plating	Without open.	JIS C 5201-1 4.33

●Dimensions&Construction



Resistance	Measure			
	L ± 0.15	W ± 0.15	t ± 0.15	a ± 0.25
1mΩ	3.20	1.60	0.44	1.20
2mΩ			0.42	0.85
3mΩ				1.15
4mΩ				0.90
5mΩ				0.70
6mΩ				0.50
7mΩ			0.32	0.75
8mΩ				0.60
9mΩ			0.28	0.70
10mΩ				0.60

No.	Material
①	Resistive metal element (Ni-Cu/Ni-Cr Alloy)
②	Primary electrode(Cu)
③	External electrode(Sn)
④	Overcoat (Resin : Black)
⑤	Marking (Resin : Yellow)

●Part No. Explanation

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, D is the diameter of the central hub, and Label is the diameter of the central hole.

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 tape showing dimensions W, F, E, A₀, B₀, P₀, P₁, P₂, D₀, and T₂. The tape is rectangular with a central cavity and four components. The dimensions are defined as follows: W is the width, F is the height, E is the thickness, A₀ is the distance between components, B₀ is the distance between cavities, P₀, P₁, and P₂ are the pitch distances, D₀ is the diameter of the central hole, and T₂ is the thickness of the base paper.

(Unit : mm)

W	F	E	A ₀	B ₀
8.0 ± 0.3	3.5 ± 0.05	1.75 ± 0.1	$1.95 \begin{smallmatrix} +0.1 \\ -0.05 \end{smallmatrix}$	$3.5 \begin{smallmatrix} +0.15 \\ -0.05 \end{smallmatrix}$
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

●Packaging

P	M	R	1	8	E	Z	P	J	V																																					
Part No.					Resistance tolerance				Special part number				Nominal resistance																																	
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Packaging Specifications Code

Part No.	Code	Resistance tolerance	Packaging specifications	Reel	Basic ordering unit (pcs)
PMR18	EZP	⊙	Paper tape (4mm Pitch)	φ180mm (7in.)	5,000

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

Notes

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