

Ultra-Low Ohmic Resistors for Current Detection

PMR25

●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

●Rating

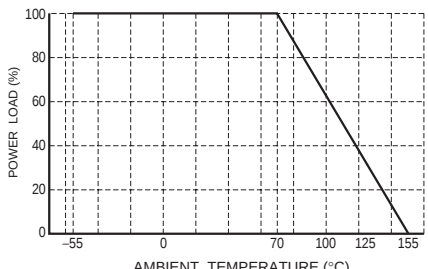
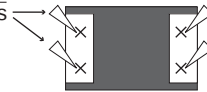
Item	Conditions	Specifications
Rated power	For resistors operated at the ambient temperature in excess of 70°C, the load shall be derated in accordance with Fig.1  Fig.1	1W at 70°C
Rated voltage Rated current	Rated voltage and current are determined from the following. $E = \sqrt{P \times R}$ $E = \sqrt{P / R}$ E: Rated voltage (V) I: Rated current (A) 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 to 4	F (±1%)	V	±100
5	J (±5%)	U	

●Characteristics

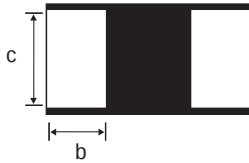
Item	Guaranteed value	Test conditions (JIS C 5201-1)
	Resistor type	
Resistance	F : $\pm 1\%$ J : $\pm 5\%$	JIS C 5201-1 4.5 Measuring method : Measure under terminations by 4 probes. Fig.2 (Under terminations) probes 
Variation of resistance with temperature	See Table.1	JIS C 5201-1 4.8 Measurement : 25 / -55 / +25 / +125°C
Overload	$\pm (2.0\%+0.0005\Omega)$	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	$\pm (1.0\%+0.0005\Omega)$ 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	$\pm (1.0\%+0.0005\Omega)$	JIS C 5201-1 4.19 Test temp. : -55°C to $+125^\circ\text{C}$ 5cyc
Damp heat, steady state	$\pm (3.0\%+0.0005\Omega)$	JIS C 5201-1 4.24 40°C , 93%RH Test time : 56days
Endurance at 70°C	$\pm (3.0\%+0.0005\Omega)$	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	$\pm (3.0\%+0.0005\Omega)$	JIS C 5201-1 4.25.3 155°C Test time : 1,000h to 1,048h
Component Solvent Resistance	$\pm (0.5\%+0.0005\Omega)$	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

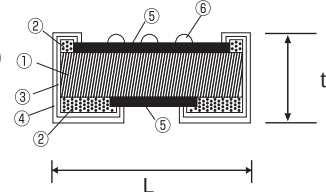
(The Surface)



(The back)



(The cross section)



Resistance	Measure				
	L ± 0.20	W ± 0.20	t ± 0.15	a ± 0.20	b ± 0.20
1mΩ	3.20	2.50	0.52	0.50	0.90
2mΩ			0.52		1.00
3mΩ			0.42		0.80
4mΩ			0.32		0.90
5mΩ			0.32		0.90

(Unit:mm)

No.	Material
①	Resistive metal element(Ni-Cu/Ni-Cr Alloy)
②	Primary electrode(Cu)
③	Middle electrode(Ni)
④	External electrode(Sn)
⑤	Overcoat(Resin:Black)
⑥	Marking(Resin:Yellow)

●Part No. Explanation

Part No.	Resistance tolerance	Special part number	Nominal resistance
P M R 2 5 H Z P J V	F ±1% J ±5%	U 5mΩ V 1 to 4mΩ	Resistance code, 3 or 4 digits. Resistance tolerance F : 4 digits J : 3 digits
			Resistance Value (Ω) Resistance Tolerance J F 1mΩ 1L0 1L00 2mΩ 2L0 2L00 3mΩ 3L0 3L00 4mΩ 4L0 4L00 5mΩ 5L0 5L00

Packaging Specifications Code

Part No.	Code	Resistance tolerance J(±5%) F(±1%)	Packaging specifications	Reel	Basic ordering unit (pcs)
PMR25	HZP	◎ ◎	Embossed tape (4mm Pitch)	φ180mm (7in.)	2,000

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 thickness of the reel. A label is shown on the central hub.

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 W, F, E, A₀, B₀, P₀, P₁, P₂, and K. The tape is rectangular with a central hub and four spokes. The dimensions are defined as follows: W is the width of the tape, F is the thickness of the tape, E is the height of the tape, A₀ is the width of the central hub, B₀ is the width of the spokes, P₀ is the pitch between the central hub and the first spoke, P₁ is the pitch between the first and second spokes, P₂ is the pitch between the second and third spokes, and K 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	3.0 ± 0.1	3.5 ± 0.1
D ₀	P ₀	P ₁	P ₂	K
$\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	Max. 1.1

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