

Ultra low ohmic resistors for current detection

PMR03

●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) 0 to +150ppm/°C of TCR (Temperature Coefficient of Resistance) is realized at ultra-low resistance of 10mΩ
- 4) Completely Pb free product

●Rating

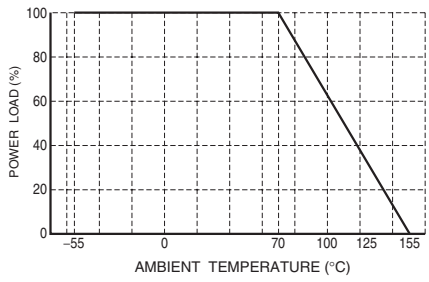
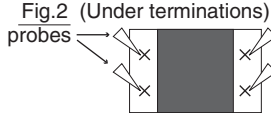
| Item | Conditions | Specifications |
|--------------------------------|--|-------------------------|
| Rated power | For resistors operated at the ambient temperature in excess of 70°C, the load shall be derated in accordance with Fig.1  <p style="text-align: center;">Fig.1</p> | 0.25W (1/4W) at 70°C |
| Rated voltage Rated current | Rated voltage and current are determined from the following. $E = \sqrt{P \times R}$ $E = \sqrt{P / R}$ 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 |

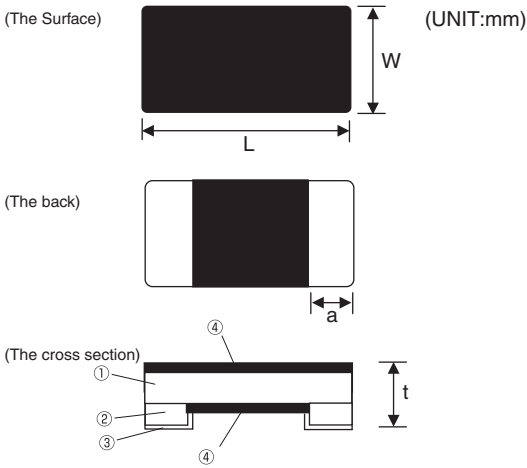
Table.1

| RESISTANCE (mΩ) | TOLERANCE | SPECIAL CODE | TEMPERATURE COEFFICIENT (ppm / °C) |
|-----------------|--------------------|--------------|------------------------------------|
| 10 | F (±1%) J (±5%) | U | 0 to +150 |

●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)  |
| Variation of resistance with temperature | See <u>Table.1</u> | 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°C Duration of immersion : 2.0 \pm 0.5s. |
| 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°C Duration of immersion : 10 \pm 1s. |
| Rapid change of temperature | $\pm (1.0\%+0.0005\Omega)$ | JIS C 5201-1 4.19 Test temp. : -55°C to +125°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°C \pm 5°C Solvent : 2-propanol |
| Bend strength of the end face plating | Without open. | JIS C 5201-1 4.33 |

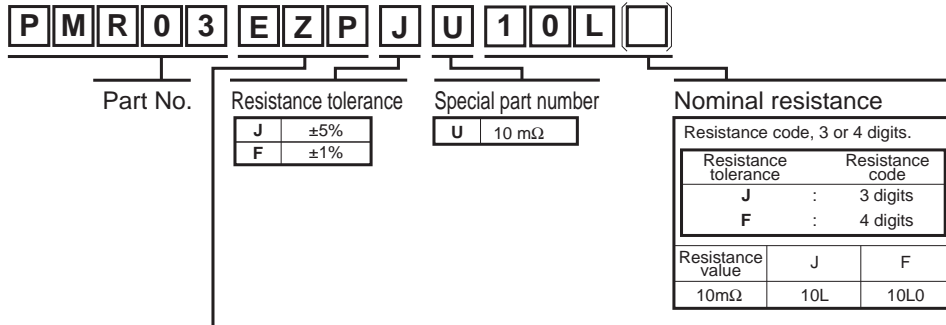
●Dimensions&Construction



| Resistance | Measure | | | |
|------------|---------|--------|--------|--------|
| | L±0.15 | W±0.15 | t±0.10 | a±0.15 |
| 10mΩ | 1.60 | 0.80 | 0.25 | 0.35 |

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

●Product designation

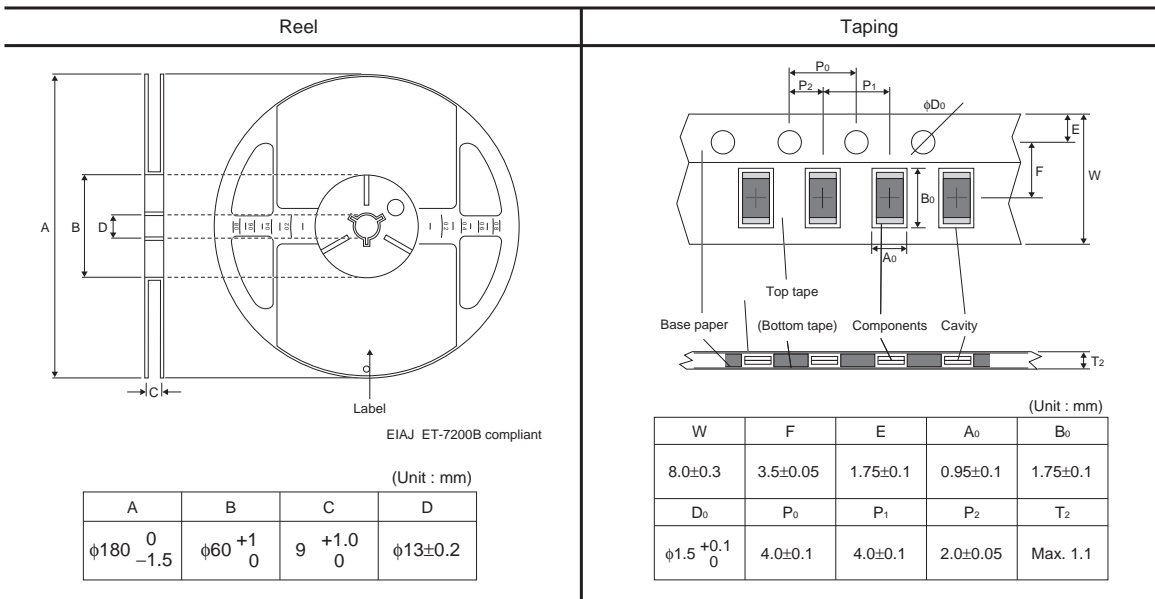


Packaging Specifications Code

| Part No. | Code | Resistance tolerance | | Packaging specifications | Reel | Basic ordering unit (pcs) |
|----------|------|----------------------|---------|---------------------------|----------------|---------------------------|
| | | J (±5%) | F (±1%) | | | |
| PMR03 | EZP | ◎ | ◎ | Embossed tape (4mm Pitch) | φ180mm (7inch) | 5,000 |

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

●Packaging



Notes

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