

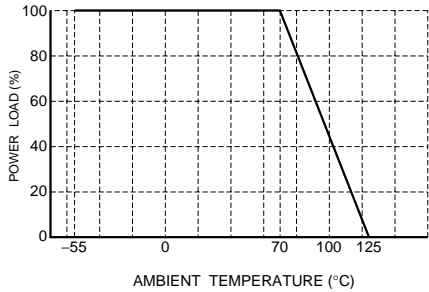
Compact Chip Resistor Networks

MNR12 (0603×2 size)

●Features

- 1) Convex electrodes
Easy to check the fillet after soldering is finished.
- 2) Small, light, rectangular 2-chip network
Area ratio is 65% smaller than that of MNR32, while weight ratio has been cut 75%.
- 3) High-density mounting
Can be mounted even more densely than two 0603 chips (MCR03), and mounting costs are lower.
- 4) Compatible with a wide range of mounting equipment.
Squared corners make it excellent for mounting using image recognition devices.
- 5) ROHM resistors have approved ISO9001- / ISO/TS 16949- certification.
Design and specifications are subject to change without notice. Carefully check the specification sheet supplied with the product before using or ordering it.

●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 | 0.063W (1 / 16W) at 70°C | | |
| Rated voltage | The voltage rating is calculated by the following equation. If the value obtained exceeds the limiting element voltage, the voltage rating is equal to the maximum operating voltage. $E = \sqrt{P \times R}$ E: Rated voltage (V) P: Rated power (W) R: Nominal resistance (Ω) | <table border="1"> <tr> <td>Limiting element voltage</td> <td>50V</td> </tr> </table> | Limiting element voltage | 50V |
| Limiting element voltage | 50V | | | |
| Nominal resistance | See Table 1. | | | |
| Operating temperature | | -55°C to +125°C | | |

Resistors

Jumper type

| | |
|-----------------------|-----------------|
| Resistance | Max. 50mΩ |
| Rated current | 1A |
| Operating temperature | -55°C to +125°C |

Table 1

| Resistance tolerance | Resistance range (Ω) | Resistance temperature coefficient (ppm / °C) |
|----------------------|----------------------|---|
| J (±5%) | 10 to 1M (E24) | ±200 |
| F (±1%) | 10 to 1M (E24) | ±100 |

•Before using components in circuits where they will be exposed to transients such as pulse loads (short-duration, high-level loads), be certain to evaluate the component in the mounted state. In addition, the reliability and performance of this component cannot be guaranteed if it is used with a steady state voltage that is greater than its rated voltage.

●Characteristics

| Item | Guaranteed value | | Test conditions (JIS C 5201-1) |
|--|--|-------------|--|
| | Resistor type | Jumper type | |
| Resistance | J : ±5% F : ±1% | Max. 50mΩ | JIS C 5201-1 4.5 |
| Variation of resistance with temperature | See Table.1 | | JIS C 5201-1 4.8 Measurement : -55 / +25 / +125°C |
| Overload | ± (2.0%+0.1Ω) | Max. 50mΩ | JIS C 5201-1 4.13 Rated voltage (current) ×2.5, 2s. Maximum Overload Voltage : 100V |
| 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±5°C Duration of immersion : 2.0±0.5s. |
| Resistance to soldering heat | ± (1.0%+0.05Ω) No remarkable abnormality on the appearance. | Max. 50mΩ | JIS C 5201-1 4.18 Soldering condition : 260±5°C Duration of immersion : 10±1s. |
| Rapid change of temperature | ± (1.0%+0.05Ω) | Max. 50mΩ | JIS C 5201-1 4.19 Test temp. : -55°C to +125°C 5cyc |
| Damp heat, steady state | ± (3.0%+0.1Ω) | Max. 50mΩ | JIS C 5201-1 4.24 40°C, 93%RH Test time : 1,000h to 1,048h |
| Endurance at 70°C | ± (3.0%+0.1Ω) | Max. 50mΩ | JIS C 5201-1 4.25.1 Rated voltage (current), 70°C 1.5h : ON – 0.5h : OFF Test time : 1,000h to 1,048h |
| Endurance | ± (3.0%+0.1Ω) | Max. 50mΩ | JIS C 5201-1 4.25.3 125°C Test time : 1,000h to 1,048h |
| Resistance to solvent | ± (1.0%+0.05Ω) | Max. 50mΩ | JIS C 5201-1 4.29 23±5°C, Immersion cleaning, 5±0.5min. Solvent : 2-propanol |
| Bend strength of the end face plating | ± (1.0%+0.05Ω) Without mechanical damage such as breaks. | Max. 50mΩ | JIS C 5201-1 4.33 |

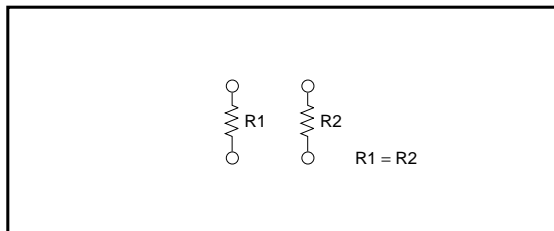
Resistors

●Dimensions (Unit : mm)

| No. | Material |
|-----|--|
| ① | Resistive element (Oxide metal thick film) |
| ② | Silver thick film electrode |
| ③ | Nickel electrode |
| ④ | Sn electrode |
| ⑤ | Alumina substrate |
| ⑥ | Overcoating (Resin) |

* Making may change to the one-character type.
** Pitch of the upper electrode.

●Equivalent circuit



●Packaging

Reel

EIAJ ET-7200B compliant
(Unit : mm)

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

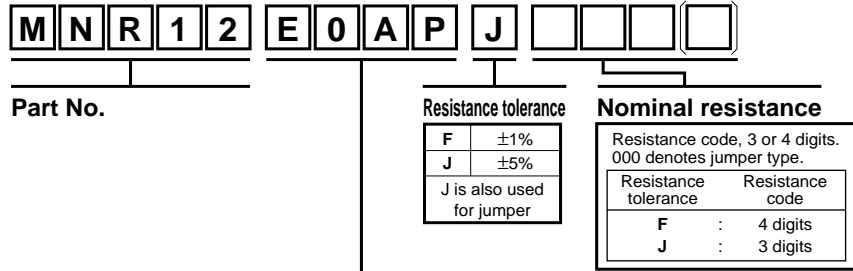
Taping

(Unit : mm)

| W | F | E | A0 | B0 |
|--|----------------|----------------|----------------|---------------|
| 8.0 ± 0.3 | 3.5 ± 0.05 | 1.75 ± 0.1 | 1.8 ± 0.1 | 1.8 ± 0.1 |
| D0 | P0 | P1 | P2 | T2 |
| $\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$ | 4.0 ± 0.1 | 4.0 ± 0.1 | 2.0 ± 0.05 | Max. 1.1 |

Resistors

●Part No. Explanation



Packaging Specifications Code

| Part No. | Code | Resistance tolerance | | Packaging specifications | Reel | Basic ordering unit (pcs) |
|----------|------|----------------------|--------|--------------------------|---------------|---------------------------|
| | | J(±5%) | F(±1%) | | | |
| MNR12 | E0AP | ◎ | ◎ | Paper tape (4mm Pitch) | φ180mm (7in.) | 5,000 |

Reel (φ180) : JEITA ET-7200B
 ◎ : Standard product

Notes

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