

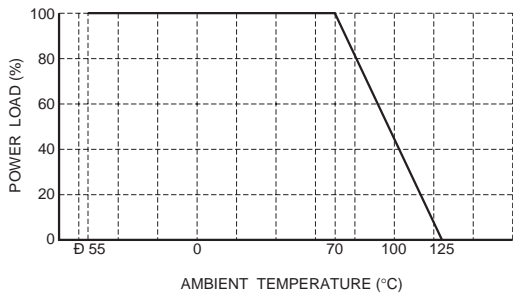
Compact Chip Resistor Networks

MNR04 (1005 × 4 size)

●Features

- 1) Extremely small and light
Area ratio is 60% smaller than that of chip 3216 (MNR14), while weight ratio has been cut 75%.
- 2) High-density mounting
Can be mounted even more densely than four 1005 chips (MCR01), and mounting costs are lower.
- 3) Can be mounted on a wide variety of devices
Squared corners make it excellent for mounting on image recognition devices.
- 4) Convex electrodes
Easy to check the fillet after soldering is finished.
- 5) ROHM resistors have approved ISO9001- / ISO/TS 16949- certification.
Furthermore, changes to the design and specifications of products may occur without notice. Therefore, before ordering or using this product, please make sure to reconfirm the specification sheet before ordering or using this product.

●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 maximum operating voltage. $E = \sqrt{P \times R}$ E : Voltage rating (V) P : Power rating (W) R : Nominal resistance (Ω)	Limiting element voltage 25V
Nominal resistance	See Table 1.	
Operating temperature		-55°C to +155°C

Jumper type

Resistance	Max.50mΩ
Rated current	1A
Operating temperature	-55°C to +155°C

Table 1

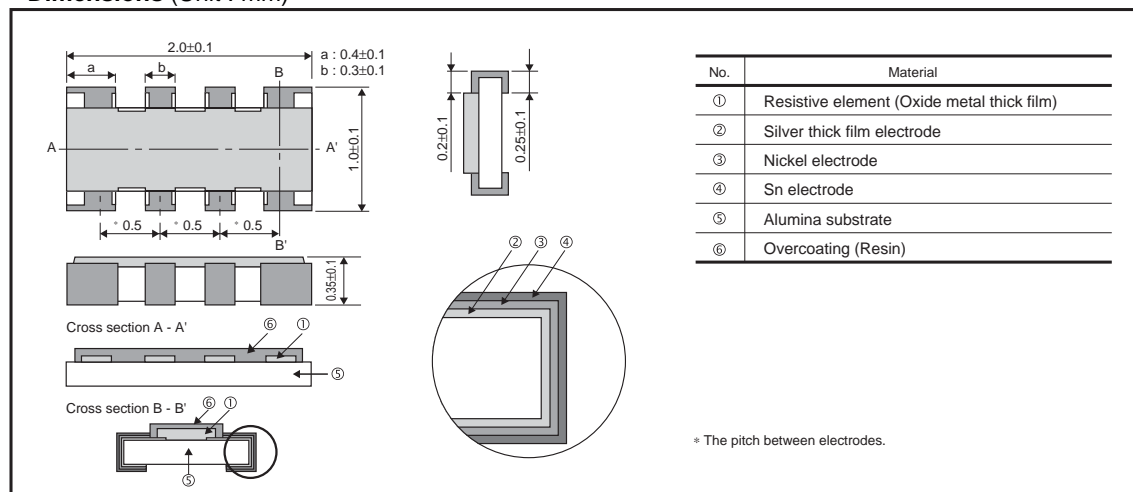
Resistance tolerance	Resistance range (Ω)	Resistance temperature coefficient (ppm / °C)
J (±5%)	1≤R<10 (E24)	±500 / -250
	10≤R≤1M (E24)	±200

●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.

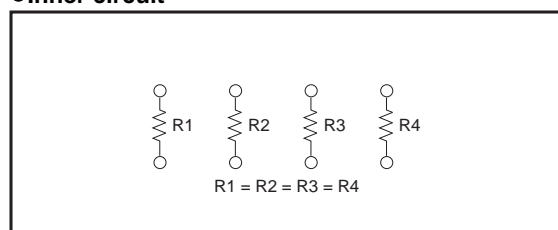
●Characteristics

Item	Guaranteed value		Test conditions (JIS C 5201-1)
	Resistor type	Jumper type	
Resistance	J : $\pm 5\%$	Max. 50m Ω	JIS C 5201-1 4.5
Variation of resistance with temperature	See Table.1		JIS C 5201-1 4.8 Measurement : $+25 / +125^{\circ}\text{C}$
Overload	$\pm (2.0\%+0.1\Omega)$	Max. 50m Ω	JIS C 5201-1 4.13 Rated voltage (current) $\times 2.5$, 2s. Limiting Element Voltage $\times 2$: 50V
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	$\pm (1.0\%+0.05\Omega)$ No remarkable abnormality on the appearance.	Max. 50m Ω	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	$\pm (1.0\%+0.05\Omega)$	Max. 50m Ω	JIS C 5201-1 4.19 Test temp. : -55°C to $+125^{\circ}\text{C}$ 5cyc
Damp heat, steady state	$\pm (3.0\%+0.1\Omega)$	Max. 100m Ω	JIS C 5201-1 4.24 40°C , 93%RH Test time : 1,000h to 1,048h
Endurance at 70°C	$\pm (3.0\%+0.1\Omega)$	Max. 100m Ω	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	$\pm (3.0\%+0.1\Omega)$	Max. 100m Ω	JIS C 5201-1 4.25.3 125°C Test time : 1,000h to 1,048h
Resistance to solvent	$\pm (1.0\%+0.05\Omega)$	Max. 50m Ω	JIS C 5201-1 4.29 $23\pm 5^{\circ}\text{C}$, Immersion cleaning, $5\pm 0.5\text{min}$. Solvent : 2-propanol
Bend strength of the end face plating	$\pm (1.0\%+0.05\Omega)$ Without mechanical damage such as breaks.	Max. 50m Ω	JIS C 5201-1 4.33

●Dimensions (Unit : mm)



●Inner circuit



●Packaging

Reel

Diagram of a reel showing dimensions A, B, C, D and a label. The reel is EIAJ ET-7200B (RRM) compliant.

Diagram of a reel showing dimensions A, B, C, D and a label. The reel is EIAJ ET-7200B (RRV) 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 paper tape showing dimensions W, F, E, A₀, B₀, P₀, P₁, P₂, D₀, T₂. Labels include Thick paper mount, Heat crimp cover / Tape, Chip network resistors (Underside paper tape), and Square punchout hole.

(Unit : mm)

W	F	E	A ₀	B ₀
8.0±0.3	3.5±0.05	1.75±0.1	1.2±0.1	2.2±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

●Part No. Explanation

M	N	R	0	4	M	0	A	P	J			
Part No.					Resistance tolerance			Nominal resistance				
					J ±5%			Resistance code,3 digits, 000 denotes Jumper type.				
					J is also used for jumper							

Packaging Specifications Code

Part No.	Code	Resistance tolerance J (±5%)	Packaging specifications	Reel	Basic ordering unit (pcs)
MNR04	MOAP	⊙	Paper tape (2mm Pitch)	φ180mm (7inch)	10,000

Reel (φ180mm) : Compatible with JEITA standard "EIAJ ET-7200B"
⊙ : Standard product

Notes

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