

Chip resistor networks

MNR18 (1608×8 size)

●Features

- 1) Suitable for damping resistors.
- 2) Convex electrodes
Easy to check the fillet after soldering is finished.
- 3) High-density mounting
Can be mounted even densely than eight 1005 chips (MCR01), and mounting costs are lower.
- 4) Compatible with a wide range of mounting machines.
Squared corners make it excellent for mounting using image recognition machines.
- 5) ROHM resistors have approved ISO-9001 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

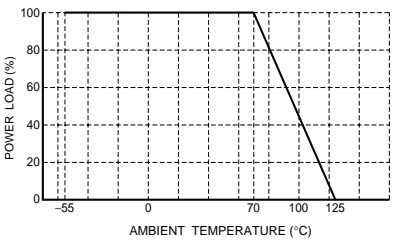
Item	Conditions	Specifications
Rated power	Power must be derated according to the power derating curve in Figure 1 when ambient temperature exceeds 70°C.  <p style="text-align: center;">Fig.1</p>	0.063W (1 / 16W) at 70°C
Rated voltage	The voltage rating is calculated by the following equation. If the 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)	Limiting element voltage 25V
Nominal resistance	See Table 1.	
Operating temperature		-55°C~+125°C

Table 1

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

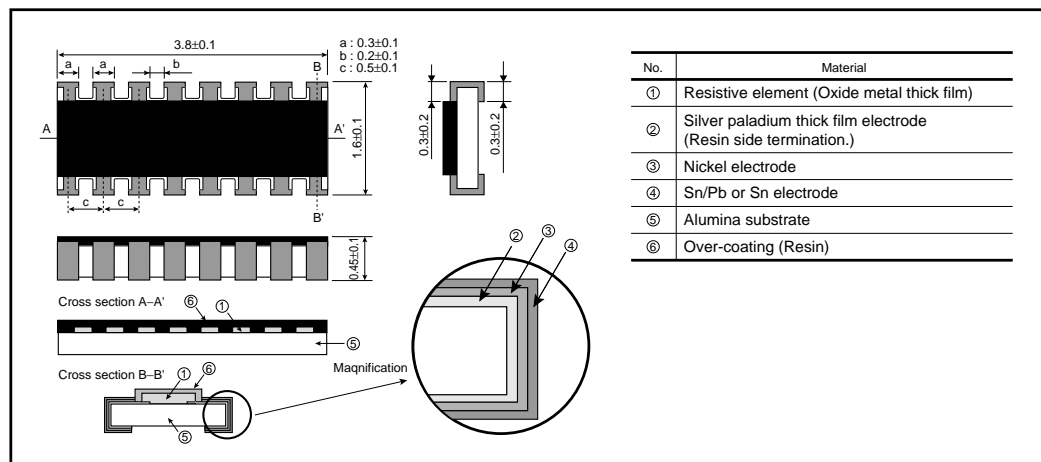
*Before using components in circuits where they will be exposed to transients such as pulse loads (short-duration, high-level loads), be certain to evaluate the component in the mounted state. In addition, the reliability and performance of this component cannot be guaranteed if it is used with a steady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

Resistors

● Characteristics

Item	Guaranteed value	Test conditions (JIS C 5201-1)
	Resistor type	
Resistance	J : $\pm 5\%$	JIS C 5201-1 4.5
Variation of resistance with temperature	See Table.1	JIS C 5201-1 4.8 Measurement : $-55 / +25 / +125^{\circ}\text{C}$
Overload	$\pm (2.0\%+0.1\Omega)$	JIS C 5201-1 4.13 Rated voltage $\times 2.5$, 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.	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	$\pm (1.0\%+0.05\Omega)$	JIS C 5201-1 4.19 Test temp. : $-55^{\circ}\text{C}\sim +125^{\circ}\text{C}$ 5cyc
Damp heat, steady state	$\pm (3.0\%+0.1\Omega)$	JIS C 5201-1 4.24 40°C , 93%RH Test time : 1,000h~1,048h
Endurance at 70°C	$\pm (3.0\%+0.1\Omega)$	JIS C 5201-1 4.25.1 Rated voltage, 70°C 1.5h : ON – 0.5h : OFF Test time : 1,000h~1,048h
Endurance	$\pm (3.0\%+0.1\Omega)$	JIS C 5201-1 4.25.3 125°C Test time : 1,000h~1,048h
Resistance to solvent	$\pm (1.0\%+0.05\Omega)$	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.	JIS C 5201-1 4.33

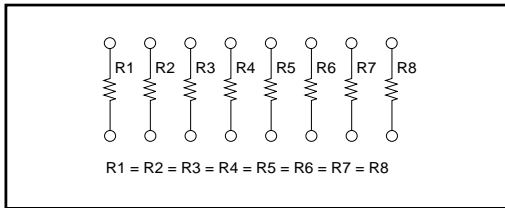
● External dimensions (Units : mm)



ROHM

Resistors

●Equivalent circuit



●Packaging

Reel	Taping																												
<p style="text-align: center;">Label</p> <p style="text-align: center;">EIAJ ET-7200A compliant</p> <p style="text-align: center;">(Units: mm)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">A</td> <td style="text-align: center;">B</td> <td style="text-align: center;">C</td> <td style="text-align: center;">D</td> </tr> <tr> <td style="text-align: center;">$\phi 180 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix}$</td> <td style="text-align: center;">$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$</td> <td style="text-align: center;">$9 \begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$</td> <td style="text-align: center;">$\phi 13 \pm 0.2$</td> </tr> </table>	A	B	C	D	$\phi 180 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix}$	$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$	$9 \begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$	$\phi 13 \pm 0.2$	<p style="text-align: right;">(Units: mm)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">W</td> <td style="text-align: center;">F</td> <td style="text-align: center;">E</td> <td style="text-align: center;">A₀</td> <td style="text-align: center;">B₀</td> </tr> <tr> <td style="text-align: center;">8.0±0.3</td> <td style="text-align: center;">3.5±0.05</td> <td style="text-align: center;">1.75±0.1</td> <td style="text-align: center;">1.95±0.15</td> <td style="text-align: center;">4.1±0.15</td> </tr> <tr> <td style="text-align: center;">D₀</td> <td style="text-align: center;">P₀</td> <td style="text-align: center;">P₁</td> <td style="text-align: center;">P₂</td> <td style="text-align: center;">T₂</td> </tr> <tr> <td style="text-align: center;">$\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$</td> <td style="text-align: center;">4.0±0.1</td> <td style="text-align: center;">4.0±0.1</td> <td style="text-align: center;">2.0±0.05</td> <td style="text-align: center;">Max. 1.1</td> </tr> </table>	W	F	E	A ₀	B ₀	8.0±0.3	3.5±0.05	1.75±0.1	1.95±0.15	4.1±0.15	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
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●Product designation

Part No.

M

N

R

1

8

E

0

A

P

J

Packaging / Processing specifications	Circuit configuration code	Resistance tolerance	Nominal resistance
Code Part No. Packaging Package style	AP MNR18	J ±5%	3-digit IEC coding system
E0 MNR18 Taping Paper tape with reel (5,000)			

Resistors

● Electrical characteristics

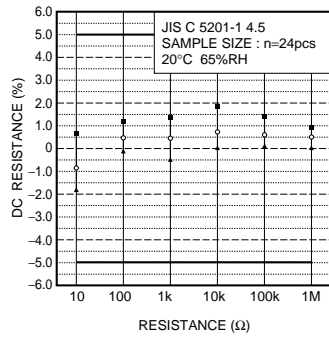


Fig.2 Resistance

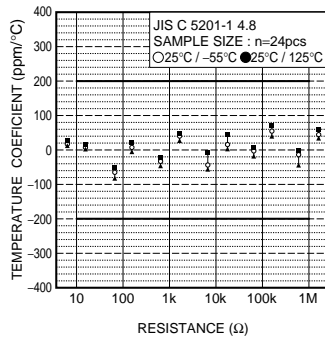


Fig.3 Variation resistance with temperature

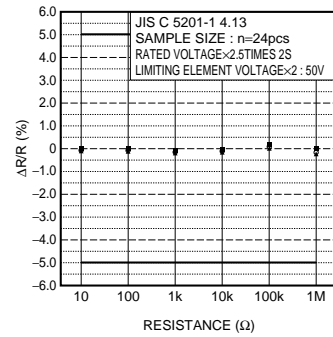


Fig.4 Overload

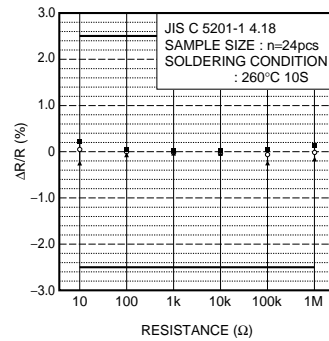


Fig.5 Resistance to soldering heat

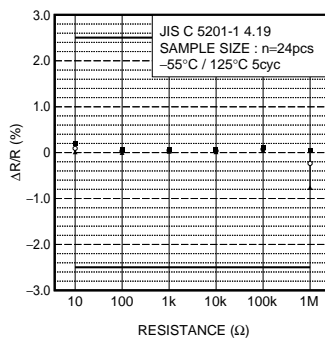


Fig.6 Rapid change of temperature

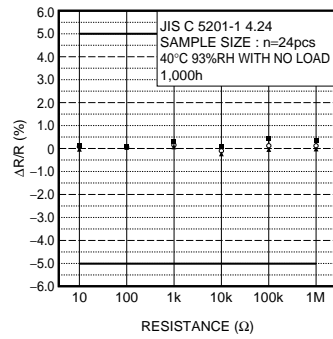


Fig.7 Damp heat, steady state

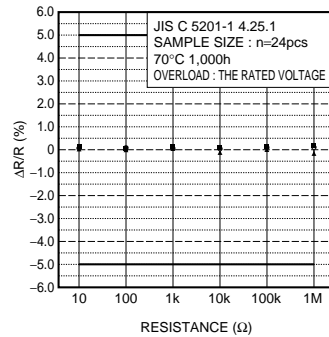


Fig.8 Endurance at 70°C

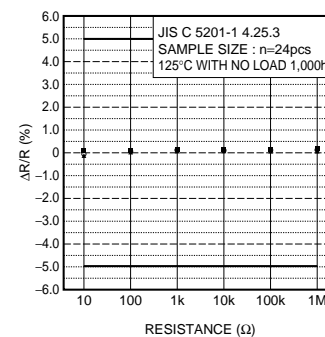


Fig.9 Endurance