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**
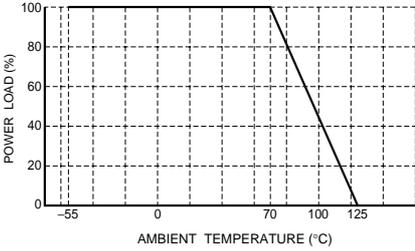
Item	Conditions	Specifications	
Rated power	Power must be derated according to the power derating curve in Figure 1 when ambient temperature exceeds 70°C. Fig.1	0.063W (1 / 16W) at 70°C	
Rated voltage	The voltage rating is calculated by the following equation. If the value obtained exceeds the limiting 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)		
		Limiting element voltage	25V
Nominal resistance	See Table 1.		
Operating temperature		−55°C~+125°C	

Table 1

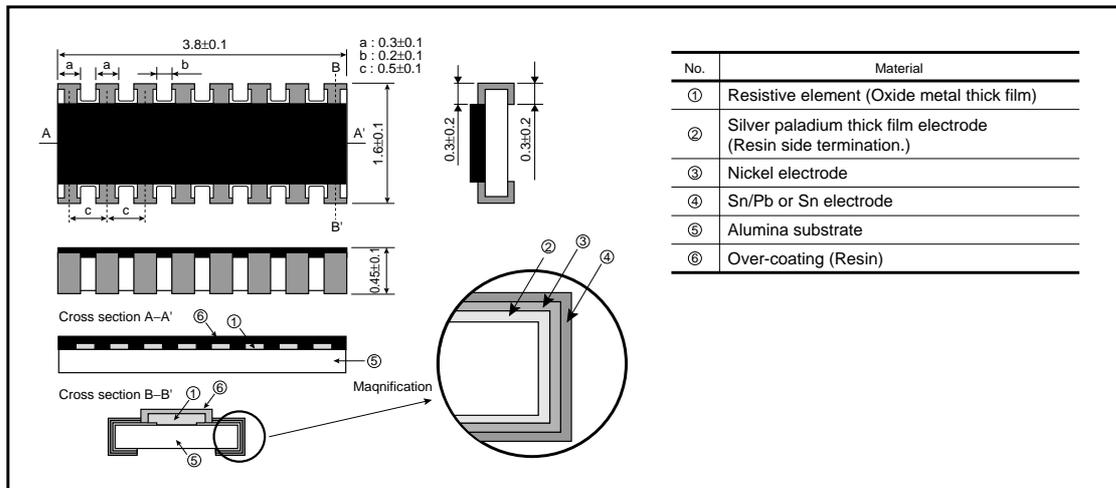| Resistance tolerance	Resistance range (Ω)	Resistance temperature coefficient (ppm / °C)
J (±5%)	10≤R≤1M (E24)	±200

∗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.
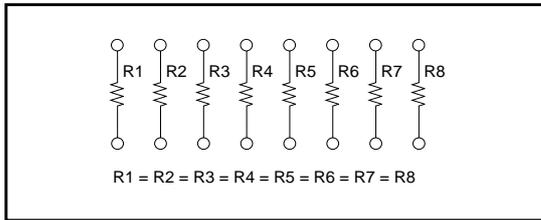
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●Characteristics

Item	Guaranteed value	Test conditions (JIS C 5201-1)
	Resistor type	
Resistance	J : ±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°C
Overload	± (2.0%+0.1Ω)	JIS C 5201-1 4.13 Rated voltage×2.5, 2s. Limiting element voltage×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±5°C Duration of immersion : 2.0±0.5s.
Resistance to soldering heat	± (1.0%+0.05Ω) No remarkable abnormality on the appearance.	JIS C 5201-1 4.18 Soldering condition : 260±5°C Duration of immersion : 10±1s.
Rapid change of temperature	± (1.0%+0.05Ω)	JIS C 5201-1 4.19 Test temp. : −55°C~+125°C 5cyc
Damp heat, steady state	± (3.0%+0.1Ω)	JIS C 5201-1 4.24 40°C, 93%RH Test time : 1,000h~1,048h
Endurance at 70°C	± (3.0%+0.1Ω)	JIS C 5201-1 4.25.1 Rated voltage, 70°C 1.5h : ON − 0.5h : OFF Test time : 1,000h~1,048h
Endurance	± (3.0%+0.1Ω)	JIS C 5201-1 4.25.3 125°C Test time : 1,000h~1,048h
Resistance to solvent	± (1.0%+0.05Ω)	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.	JIS C 5201-1 4.33

●External dimensions (Units : mm)

No.	Material
①	Resistive element (Oxide metal thick film)
②	Silver paladium thick film electrode (Resin side termination.)
③	Nickel electrode
④	Sn/Pb or Sn electrode
⑤	Alumina substrate
⑥	Over-coating (Resin)

Resistors

●Equivalent circuit

R1 R2 R3 R4 R5 R6 R7 R8

R1 = R2 = R3 = R4 = R5 = R6 = R7 = R8

●Packaging

Reel	Taping

Reel

EIAJ ET-7200A compliant

(Units: mm)

A	B	C	D
$\phi 180 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix}$	$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$	$9 \begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$	$\phi 13 \pm 0.2$

Taping

Heat crimp cover / Tape

Thick paper mount (Underside paper tape)

Chip network resistors

Square punchout hole

(Units: mm)

W	F	E	A0	B0
8.0±0.3	3.5±0.05	1.75±0.1	1.95±0.15	4.1±0.15
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

●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
E0	MNR18	Taping	Paper tape with reel (5,000)

AP	MNR18

J	±5%

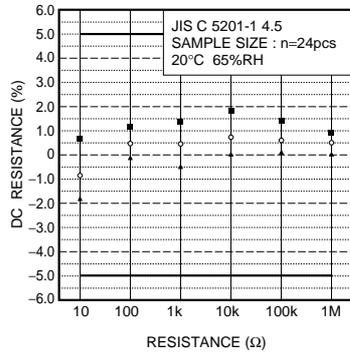| 3-digit IEC coding system |
|---------------------------|

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Resistors

●**Electrical characteristics**
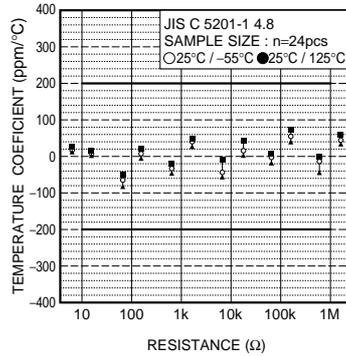

Fig.2 Resistance
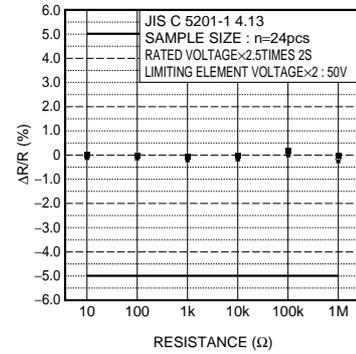

Fig.3 Vatiation resistance with temperature
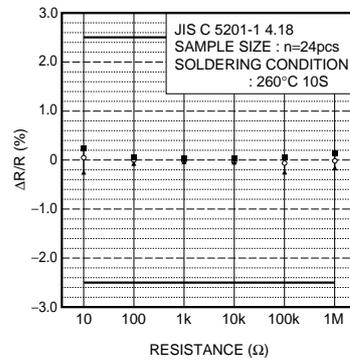

Fig.4 Overload
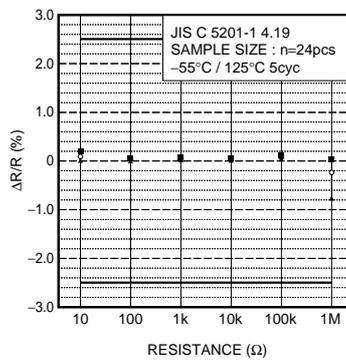

Fig.5 Resistance to soldering heat
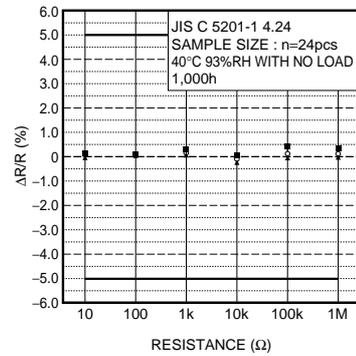
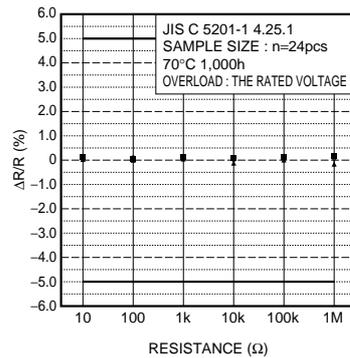

Fig.6 Rapid change of temperature

Fig.7 Damp heat, steady state
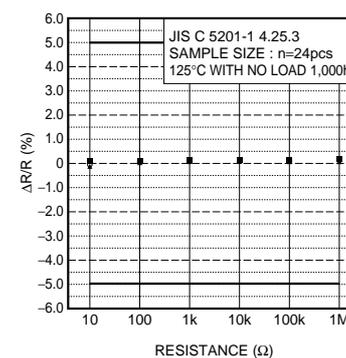

Fig.8 Endurance at 70°C

Fig.9 Endurance

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