

Chip resistor networks

MNR35 (3216×5 size)

●Features

- 1) Common terminals yield area 40% smaller than that of the MNR38.
- 2) 8-element construction makes the MNR35 ideal for bus line pull-up / pull-down.
- 3) Convex electrodes
Easy to check the fillet after soldering is finished.
- 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 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

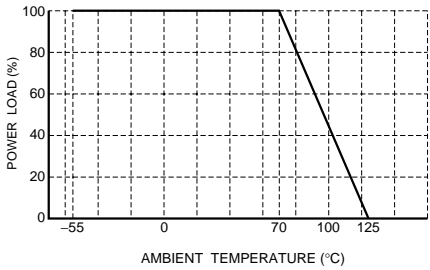
Item	Conditions	Specifications	
Rated power	Power must be derated according to the power derating curve in Figure 1 when ambient temperature exceeds 70°C.  Fig.1	0.063W (1 / 16W) at 70°C	
Rated voltage	The voltage rating is calculated by the following equation. If the value obtained exceeds the limiting 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	50V
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%)	15≤R≤100k (E12)	±200

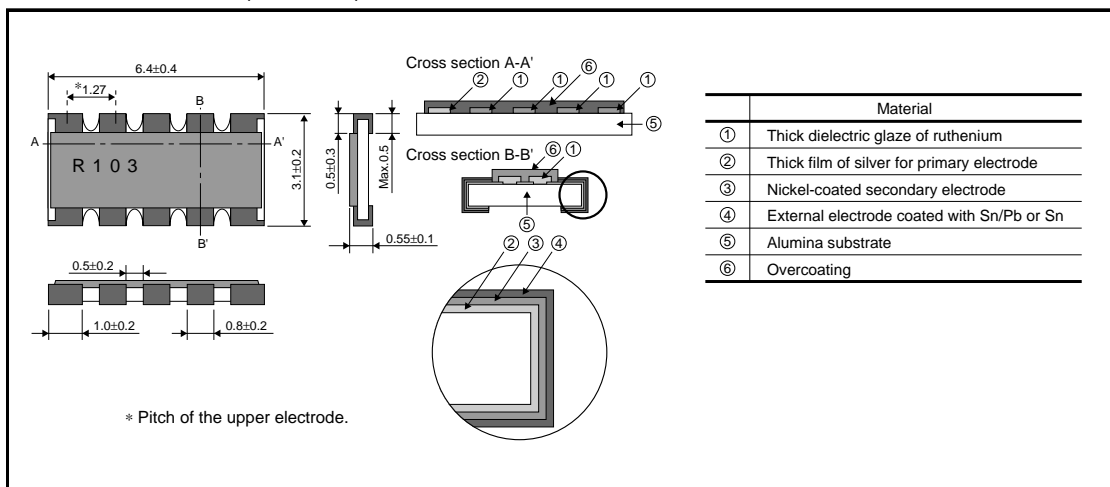
●Before using components in circuits where they will be exposed to transients such as pulse loads (short-duration, high-level loads), be certain to evaluate the component in the mounted state. In addition, the reliability and performance of this component cannot be guaranteed if it is used with a steady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

Resistors

●Characteristics

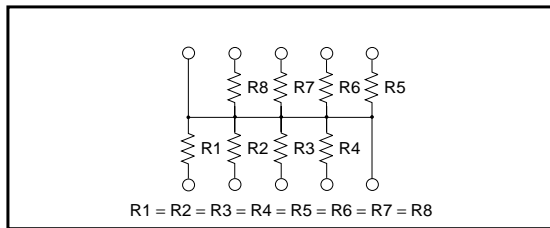
Item	Guaranteed value	Test conditions (JIS C 5201-1)
	Resistor type	
Resistance	J : ±5%	JIS C 5201-1 4.5
Variation of resistance with temperature	See Table.1	JIS C 5201-1 4.8 Measurement : -55 / +25 / +125°C
Overload	± (2.0%+0.1Ω)	JIS C 5201-1 4.13 Rated voltage (current) ×2.5, 2s. Limiting Element Voltage×2 : 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.	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 (current), 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)



Resistors

●Equivalent circuit



●Packaging

Reel	Taping																												
<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;"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <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;">13 ± 0.3</td> <td style="text-align: center;">$\phi 13 \pm 0.2$</td> </tr> </tbody> </table>	A	B	C	D	$\phi 180 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix}$	$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$	13 ± 0.3	$\phi 13 \pm 0.2$	<p style="text-align: center;">(Units: mm)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>W</th> <th>F</th> <th>E</th> <th>A₀</th> <th>B₀</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">12.0 ± 0.3</td> <td style="text-align: center;">5.5 ± 0.05</td> <td style="text-align: center;">1.75 ± 0.1</td> <td style="text-align: center;">3.4 ± 0.1</td> <td style="text-align: center;">6.6 ± 0.1</td> </tr> <tr> <th>D₀</th> <th>P₀</th> <th>P₁</th> <th>P₂</th> <th>K</th> </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;">1.0 ± 0.15</td> </tr> </tbody> </table>	W	F	E	A ₀	B ₀	12.0 ± 0.3	5.5 ± 0.05	1.75 ± 0.1	3.4 ± 0.1	6.6 ± 0.1	D ₀	P ₀	P ₁	P ₂	K	$\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	1.0 ± 0.15
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●Product designation

Part No.

M

N

R

3

5

J

5

R

J

Packaging / Processing specifications	Circuit configuration code	Resistance tolerance	Nominal resistance													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Code</th> <th>Part No.</th> <th>Packaging</th> <th>Package style</th> </tr> </thead> <tbody> <tr> <td>J5</td> <td>MNR35</td> <td>Taping</td> <td>Embossed reel</td> </tr> </tbody> </table>	Code	Part No.	Packaging	Package style	J5	MNR35	Taping	Embossed reel	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">R</td> <td>MNR35</td> </tr> </table>	R	MNR35	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">J</td> <td>±5%</td> </tr> </table>	J	±5%	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>3-digit IEC coding system</td> </tr> </table>	3-digit IEC coding system
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Resistors

●Electrical characteristics

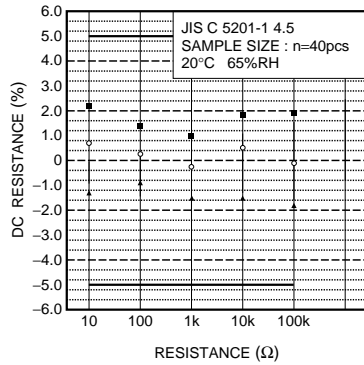


Fig.2 Resistance

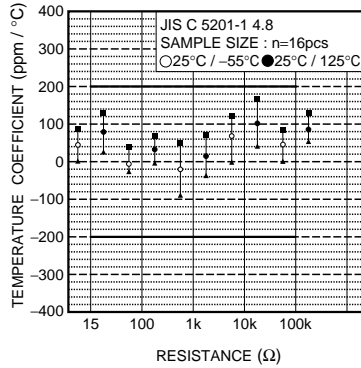


Fig.3 Variation resistance with temperature

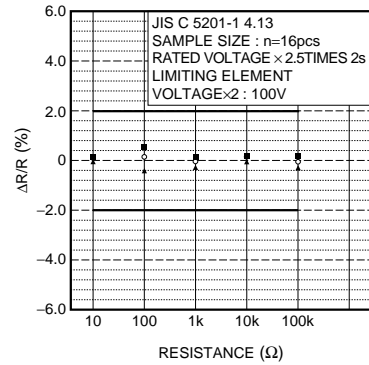


Fig.4 Overload

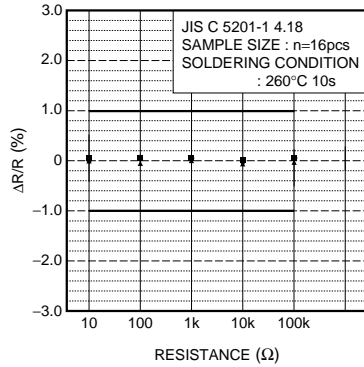


Fig.5 Resistance to soldering heat

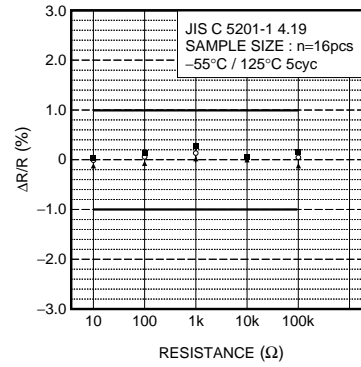


Fig.6 Rapid change of temperature

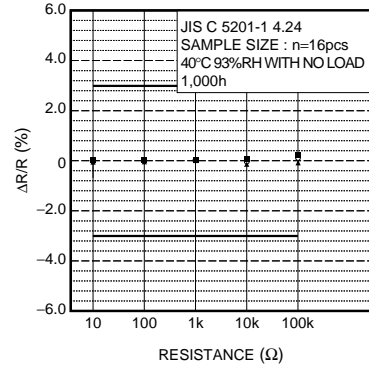


Fig.7 Damp heat, steady state

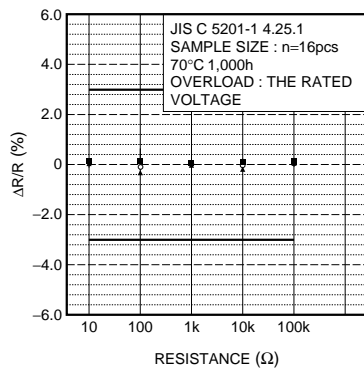


Fig.8 Endurance at 70°C

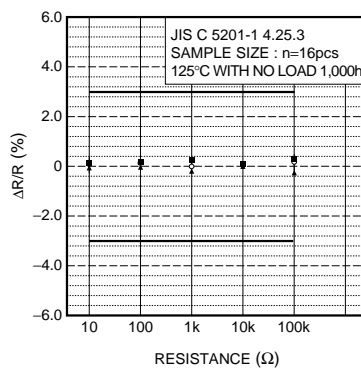


Fig.9 Endurance

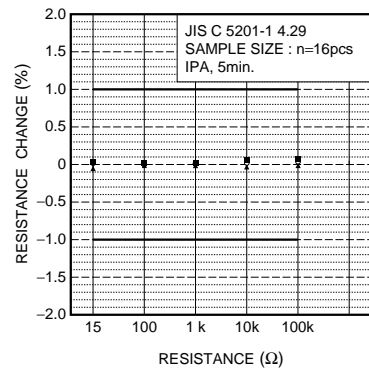


Fig.10 Resistance to solvents