

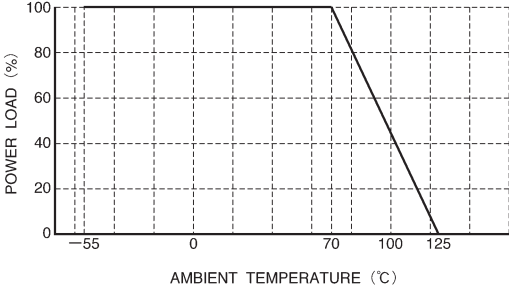
# Chip resistor networks

## MNR04 (1005 × 4 size)

### ●Features

- 1) Extremely small and light  
Area ratio is 60% smaller than that of chip 1632 (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 comply with the international standard ISO-9001.  
Furthermore, changes to the design and specifications of products may occur without notice. Therefore, before ordering or using this product, be sure to reconfirm the specifications sheet.

### ●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	0.031W (1 / 32W) at 70°C	
Rated voltage	The voltage rating is calculated by the following equation. If the value obtained exceeds the maximum operating 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)	Max. operating voltage	25V
		Max. overload voltage	50V
		Max. intermittent overload voltage	50V
Nominal resistance	See Table 1.		
Operating temperature		-55°C to +125°C	

## Jumper type

Resistance	Max.50mΩ
Rated current	1A
Peak current	2A
Operating temperature	-55°C to +125°C

Table 1

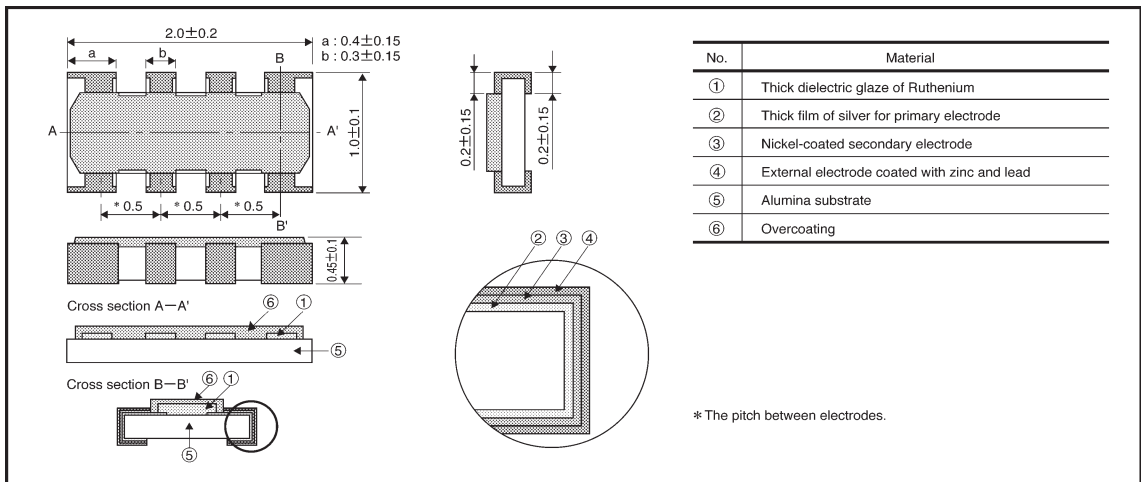
Resistance tolerance	Resistance range (Ω)	Resistance temperature coefficient (ppm / °C)
J (±5%)	10≤R≤1M (E12)	±300

- 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.

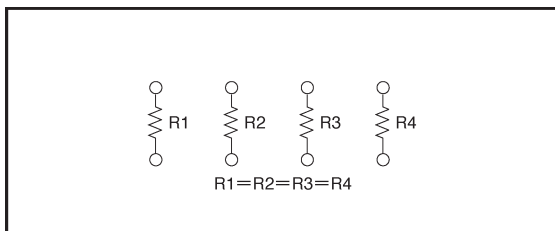
## ● Characteristics

Characteristics	Specifications	Test method (JIS C 5202)
DC resistance	J : ±5%	JIS C 5202 5.1 Applied voltage : A
Resistance temperature characteristics	See <a href="#">Table 1</a>	JIS C 5202 5.2 Test conditions : +25 / -55 / +25 / +125°C
Short time overload	± (5.0%+0.1 Ω)	JIS C 5202 5.5 Rated voltage (current) ×2.5, 5s Maximum overload voltage : 50V
Resistance to soldering heat	± (2.5%+0.1 Ω) Outside must not be noticeably damaged.	JIS C 5202 6.4 Soldering conditions : 260±5°C Soldering time : 10±1s.
Solderability	95% of terminal surface must be covered by new soldering, and there must be no soldering corrosion.	JIS C 5202 6.5 Rosin methanol : (25%WT) Soldering conditions : 235±5°C Soldering time : 2±0.5s.
Resistance to dry heat	± (5.0%+0.1 Ω)	JIS C 5202 7.2 125°C Test time : 1,000 to 1,048 hrs.
Endurance (rated load)	± (5.0%+0.1 Ω)	JIS C 5202 7.10 Rated voltage (current) , 70°C 1.5h : ON — 0.5h : OFF Test time : 1,000 to 1,048 hrs.
Endurance (under load in damp environment)	± (5.0%+0.1 Ω)	JIS C 5202 7.9 Rated voltage (current) , 60°C, 95%RH 1.5h : ON — 0.5h : OFF Test time : 1,000 to 1,048 hrs.
Resistance to humidity (steady state)	± (5.0%+0.1 Ω)	JIS C 5202 7.5 85°C, 85%RH Test time : 1,000 to 1,048 hrs.
Temperature cycling	± (2.5%+0.1 Ω)	JIS C 5202 7.4 Test temperature : -55°C to +125°C 100cyc.
Resistance to solvents	± (1.0%+0.05 Ω)	JIS C 5202 6.9 Room temperature, static immersion, 1 min. Solvent : Isopropyl alcohol

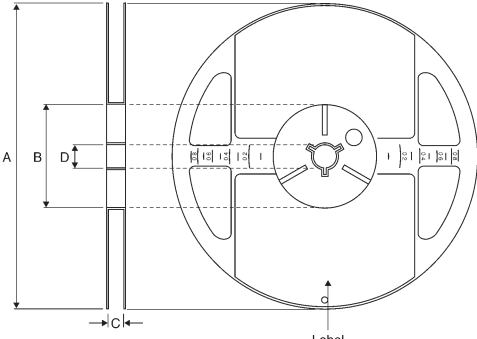
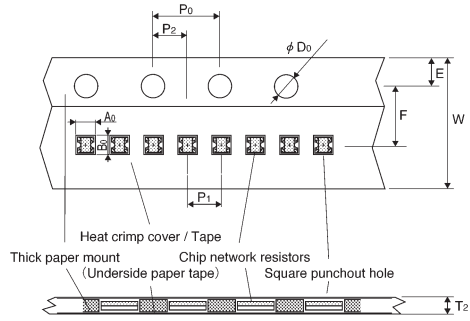
● External dimensions (Units: mm)



● Equivalent circuit



●Packaging

Reel	Taping																												
 <p style="text-align: center;">Label</p> <p style="text-align: center;">EIAJ ET-7001 compliant</p> <p style="text-align: center;">(Units : mm)</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 25%;">A</th> <th style="width: 25%;">B</th> <th style="width: 25%;">C</th> <th style="width: 25%;">D</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><math>\phi 180 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix}</math></td> <td style="text-align: center;"><math>\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}</math></td> <td style="text-align: center;"><math>9 \pm 0.3</math></td> <td style="text-align: center;"><math>\phi 13 \pm 0.2</math></td> </tr> </tbody> </table>	A	B	C	D	$\phi 180 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix}$	$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$	$9 \pm 0.3$	$\phi 13 \pm 0.2$	 <p style="text-align: right;">(Units : mm)</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 20%;">W</th> <th style="width: 20%;">F</th> <th style="width: 20%;">E</th> <th style="width: 20%;">A<sub>0</sub></th> <th style="width: 20%;">B<sub>0</sub></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><math>8.0 \pm 0.3</math></td> <td style="text-align: center;"><math>3.5 \pm 0.05</math></td> <td style="text-align: center;"><math>1.75 \pm 0.1</math></td> <td style="text-align: center;"><math>1.2 \pm 0.1</math></td> <td style="text-align: center;"><math>2.2 \pm 0.1</math></td> </tr> <tr> <th style="width: 20%;">D<sub>0</sub></th> <th style="width: 20%;">P<sub>0</sub></th> <th style="width: 20%;">P<sub>1</sub></th> <th style="width: 20%;">P<sub>2</sub></th> <th style="width: 20%;">T<sub>2</sub></th> </tr> <tr> <td style="text-align: center;"><math>\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}</math></td> <td style="text-align: center;"><math>4.0 \pm 0.1</math></td> <td style="text-align: center;"><math>2.0 \pm 0.1</math></td> <td style="text-align: center;"><math>2.0 \pm 0.05</math></td> <td style="text-align: center;">Max. 0.5</td> </tr> </tbody> </table>	W	F	E	A <sub>0</sub>	B <sub>0</sub>	$8.0 \pm 0.3$	$3.5 \pm 0.05$	$1.75 \pm 0.1$	$1.2 \pm 0.1$	$2.2 \pm 0.1$	D <sub>0</sub>	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	T <sub>2</sub>	$\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	$4.0 \pm 0.1$	$2.0 \pm 0.1$	$2.0 \pm 0.05$	Max. 0.5
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●Product designation

Part no.

M

N

R

0

4

M

0

A

B

J

Packaging / Processing specifications				Circuit configuration code	Resistance tolerance	Nominal resistance
Code	Part no.	Packaging	Package style	AB   MNR04 / 12 / 14 / 32 / 34	J   $\pm 5\%$	3-digit IEC coding system
M0	MNR02 / 04	Taping	Paper reel tape (10,000)			