

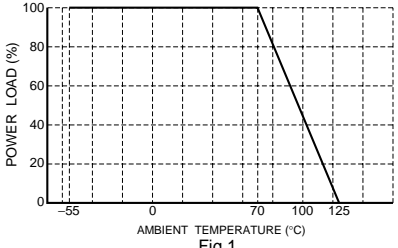
# Thick film rectangular

## MCR100 (2512 size : 1W)

### ●Features

- 1) Made of same material as the general purpose chip resistors (MCR10 / 18).
- 2) Highly reliable chip resistor  
Ruthenium oxide dielectric offers superior resistance to the elements.
- 3) Electrodes not corroded by soldering  
Suitable for re-flow soldering.
- 4) 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>	1W 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      200V
Nominal resistance	See Table 1.	
Operating temperature		-55°C to +125°C

### Jumper type

Resistance	Max. 50mΩ
Rated current	4A
Operating temperature	-55°C to +125°C

Table 1

Resistance tolerance	Resistance range (Ω)	Resistance temperature coefficient (ppm / °C)
F (±1%)	10≤R≤82k (E24,96)	±100
J (±5%)	1.0≤R<2.0 (E24)	500±350
	2.2≤R<9.1 (E24)	±500
	10≤R<22 (E24)	±350
	24≤R≤100k (E24)	±200

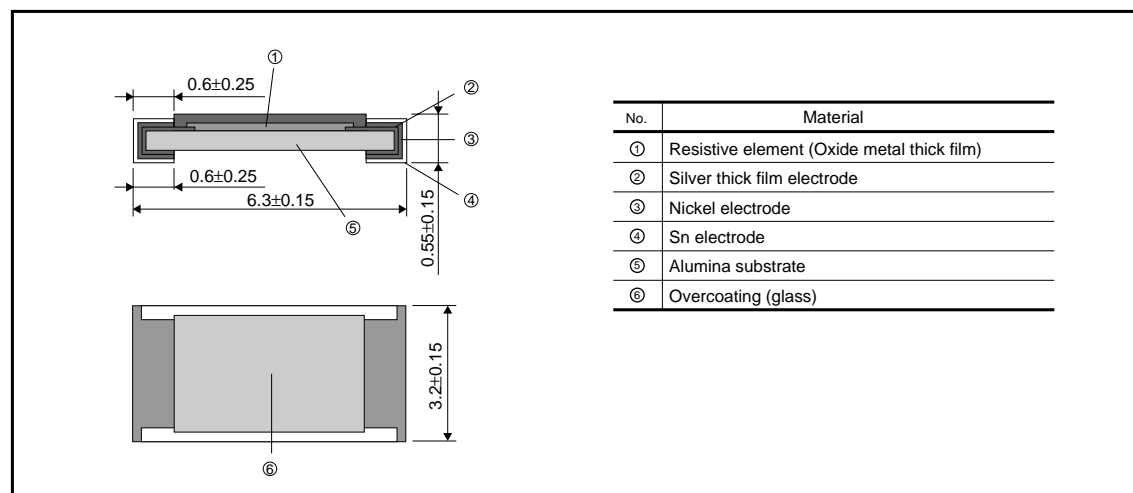
●Before using components in circuits where they will be exposed to transients such as pulse loads (short-duration, high-level loads), be certain to evaluate the component in the mounted state. In addition, the reliability and performance of this component cannot be guaranteed if it is used with a steady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

## Resistors

## ●Characteristics

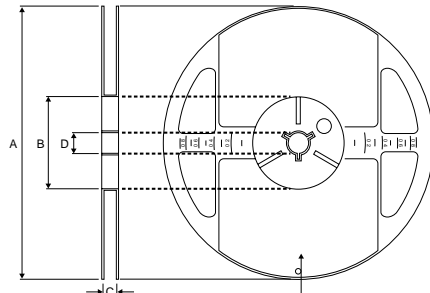
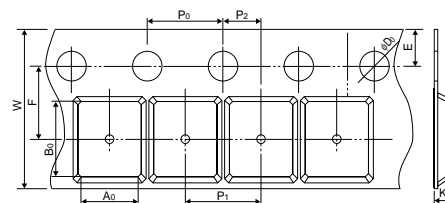
Item	Guaranteed value		Test conditions (JIS C 5201-1)
	Resistor type	Jumper type	
Resistance	J : $\pm 5\%$ F : $\pm 1\%$	Max. 50m $\Omega$	JIS C 5201-1 4.5
Variation of resistance with temperature	See Table.1		JIS C 5201-1 4.8 Measurement : -55 / +25 / +125°C
Overload	$\pm (2.0\%+0.1\Omega)$	Max. 50m $\Omega$	JIS C 5201-1 4.13 Rated voltage (current) $\times 2.5$ , 2s. Maximum Overload Voltage : 400V
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°C Duration of immersion : 2.0 $\pm$ 0.5s.
Resistance to soldering heat	$\pm (1.0\%+0.05\Omega)$ No remarkable abnormality on the appearance.	Max. 50m $\Omega$	JIS C 5201-1 4.18 Soldering condition : 260 $\pm$ 5°C Duration of immersion : 10 $\pm$ 1s.
Rapid change of temperature	$\pm (1.0\%+0.05\Omega)$	Max. 50m $\Omega$	JIS C 5201-1 4.19 Test temp. : -55°C to +125°C 5cyc
Damp heat, steady state	$\pm (3.0\%+0.1\Omega)$	Max. 100m $\Omega$	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 $\Omega$	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 $\Omega$	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 $\Omega$	JIS C 5201-1 4.29 23 $\pm$ 5°C, Immersion cleaning, 5 $\pm$ 0.5min. Solvent : 2-propanol
Bend strength of the end face plating	$\pm (1.0\%+0.05\Omega)$ Without mechanical damage such as breaks.	Max. 50m $\Omega$	JIS C 5201-1 4.33

## ●External dimensions (Unit : mm)



Resistors

●Packaging

Reel	Taping																												
 <p style="text-align: center;">EIAJ ET-7200B compliant</p> <p style="text-align: center;">(Unit : mm)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>A</td> <td>B</td> <td>C</td> <td>D</td> </tr> <tr> <td><math>\phi 180</math><sup>0</sup><sub>-3</sub></td> <td><math>\phi 60</math><sup>+1</sup><sub>0</sub></td> <td>13±0.3</td> <td><math>\phi 13</math>±0.2</td> </tr> </table>	A	B	C	D	$\phi 180$ <sup>0</sup> <sub>-3</sub>	$\phi 60$ <sup>+1</sup> <sub>0</sub>	13±0.3	$\phi 13$ ±0.2	 <p style="text-align: center;">(Unit : mm)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>W</td> <td>F</td> <td>E</td> <td>A<sub>0</sub></td> <td>B<sub>0</sub></td> </tr> <tr> <td>12.0±0.3</td> <td>5.5±0.05</td> <td>1.75±0.1</td> <td>3.5±0.2</td> <td>6.7±0.2</td> </tr> <tr> <td>D<sub>0</sub></td> <td>P<sub>0</sub></td> <td>P<sub>1</sub></td> <td>P<sub>2</sub></td> <td>K</td> </tr> <tr> <td><math>\phi 1.5</math><sup>+0.1</sup><sub>0</sub></td> <td>4.0±0.1</td> <td>4.0±0.1</td> <td>2.0±0.05</td> <td>Max. 1.1</td> </tr> </table>	W	F	E	A <sub>0</sub>	B <sub>0</sub>	12.0±0.3	5.5±0.05	1.75±0.1	3.5±0.2	6.7±0.2	D <sub>0</sub>	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	K	$\phi 1.5$ <sup>+0.1</sup> <sub>0</sub>	4.0±0.1	4.0±0.1	2.0±0.05	Max. 1.1
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●Makeup of the part number

<b>M</b>	<b>C</b>	<b>R</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>J</b>	<b>Z</b>	<b>H</b>	<b>J</b>																	
<b>Part No.</b>						<b>Resistance tolerance</b>		<b>Nominal resistance</b>																		
						<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td><b>F</b></td> <td>±1%</td> </tr> <tr> <td><b>J</b></td> <td>±5%</td> </tr> <tr> <td colspan="2">J is also used for jumper</td> </tr> </table>		<b>F</b>	±1%	<b>J</b>	±5%	J is also used for jumper		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td colspan="2">Resistance code, 3 or 4 digits. 000 denotes jumper type.</td> </tr> <tr> <td style="border: none;">Resistance tolerance</td> <td style="border: none;">Resistance code</td> </tr> <tr> <td><b>F</b></td> <td>: 4 digits</td> </tr> <tr> <td><b>J</b></td> <td>: 3 digits</td> </tr> </table>					Resistance code, 3 or 4 digits. 000 denotes jumper type.		Resistance tolerance	Resistance code	<b>F</b>	: 4 digits	<b>J</b>	: 3 digits
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Resistance tolerance	Resistance code																									
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<b>J</b>	: 3 digits																									

Packaging Specifications Code

Part No.	Code	Resistance tolerance		Packaging specifications	Reel	Basic ordering unit (pcs)
		J(±5%)	F(±1%)			
<b>MCR100</b>	JZH	⊙	⊙	Embossed tape (4mm Pitch)	φ180mm (7in.)	4,000

Reel (φ180) : JEITA ET-7200B  
 ⊙ : Standard product

●Dimensions

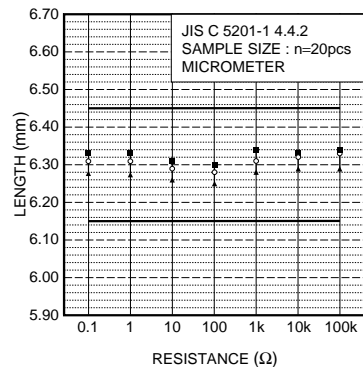


Fig.2 Dimensions (length)

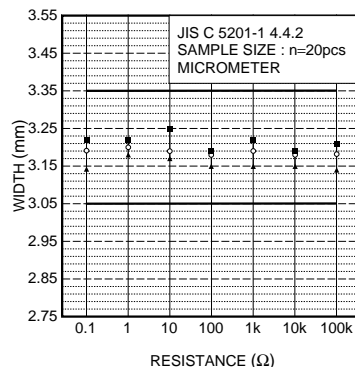


Fig.3 Dimensions (width)

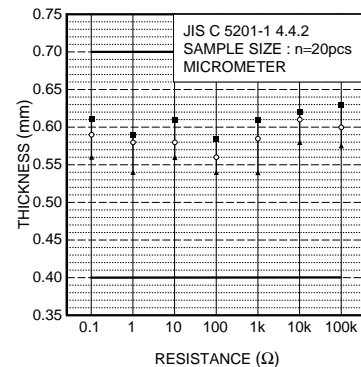


Fig.4 Dimensions (thickness)

Resistors

●Electrical characteristics

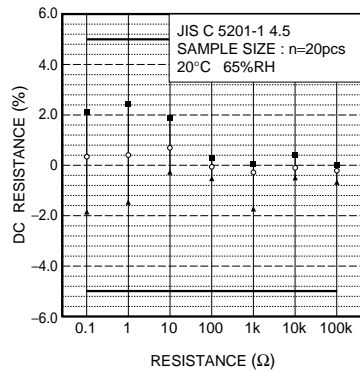


Fig.5 Resistance

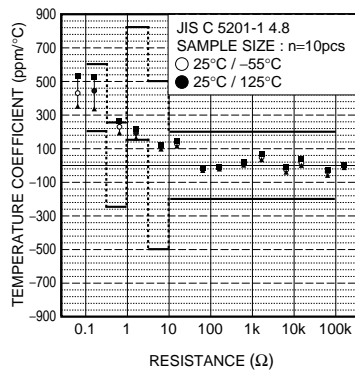


Fig.6 Variation resistance with temperature

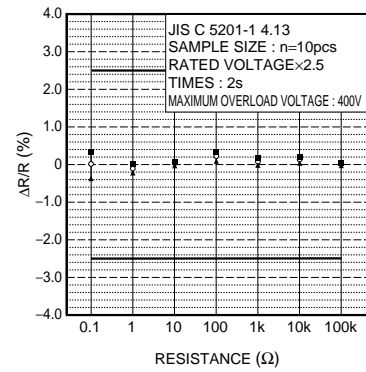


Fig.7 Overload

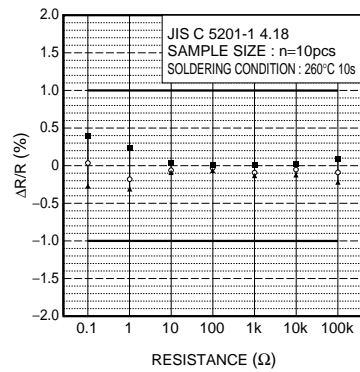


Fig.8 Resistance to soldering heat

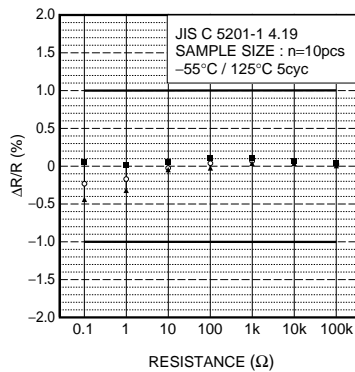


Fig.9 Rapid change of temperature

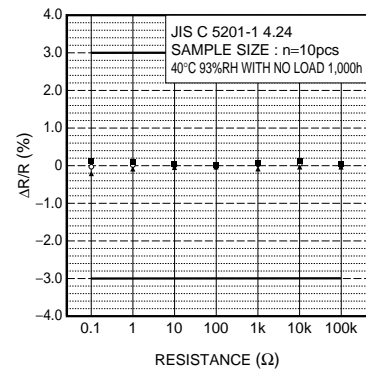


Fig.10 Damp heat, steady state

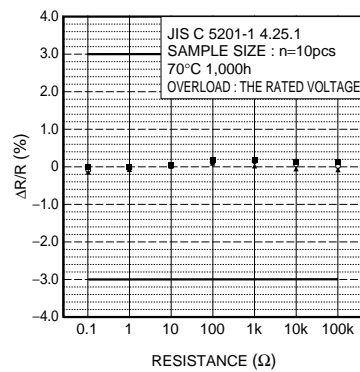


Fig.11 Endurance at 70°C

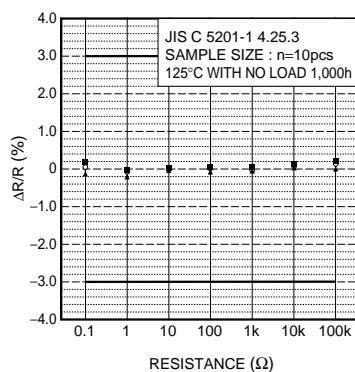


Fig.12 Endurance

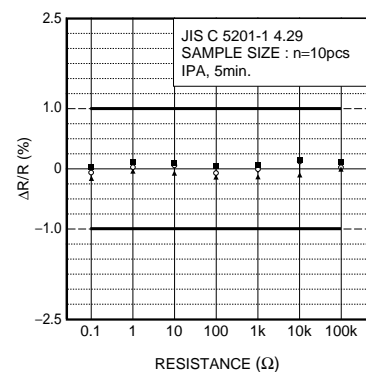


Fig.13 Resistance to solvents

## Resistors

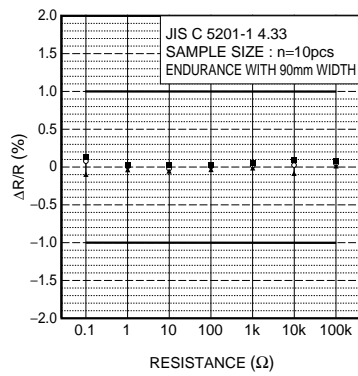


Fig.14 Bend strength of  
the end face plating

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