

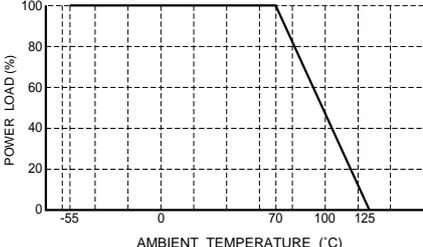
# Thick film rectangular

## MCR25 (1210 size: 1 / 4W)

### ●Features

- 1) Made of same material as the general purpose chip resistors (MCR10 / 18).
- 2) Highly reliable chip resistor  
Ruthenium oxide resistive material 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 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>	0.25W (1 / 4W) 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. $E = \sqrt{P \times R}$ <div style="display: flex; justify-content: space-between;"> <div>E: Rated voltage (V)</div> <div>P: Rated power (W)</div> <div>R: Nominal resistance (Ω)</div> </div>	Limiting element voltage   200V
Nominal resistance	See Table 1.	
Operating temperature		-55°C to +125°C

#### Jumper type

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

Table 1

Resistance tolerance	Resistance range (Ω)	Resistance temperature coefficient (ppm/°C)
F (±1%)	0.1 ≤ R < 10 (E24)	±250
	10 ≤ R ≤ 1M (E24,96)	±200
J (±5%)	0.1 ≤ R < 1 (E24)	±250
	1.0 ≤ R < 2.2 (E24)	500±350
	2.2 ≤ R < 5.6 (E24)	±500
	5.6 ≤ R ≤ 3.3M (E24)	±200

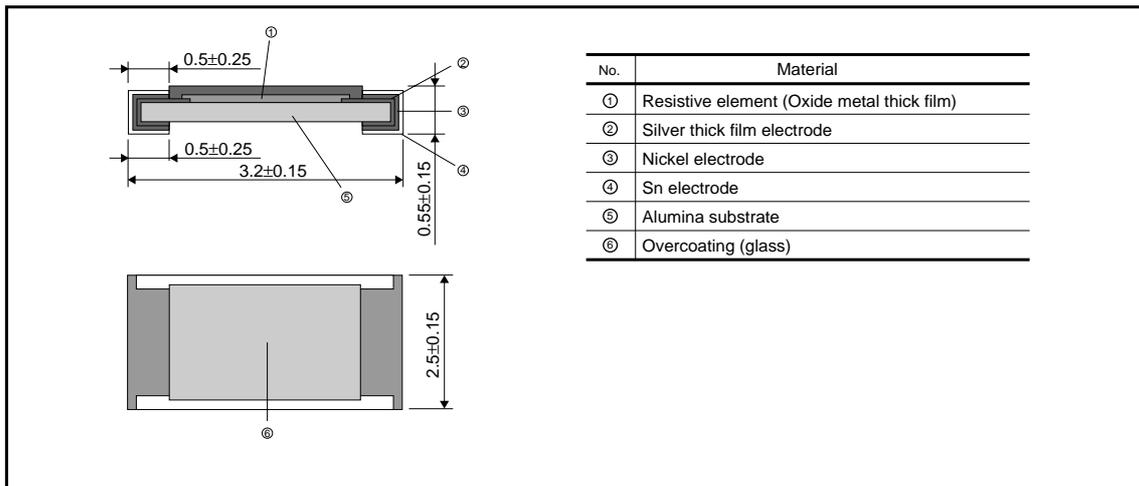
●Before using components in circuits where they will be exposed to transients such as pulse loads (short-duration, high-level loads), be certain to evaluate the component in the mounted state. In addition, the reliability and performance of this component cannot be guaranteed if it is used with a steady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

## Resistors

## ●Characteristics

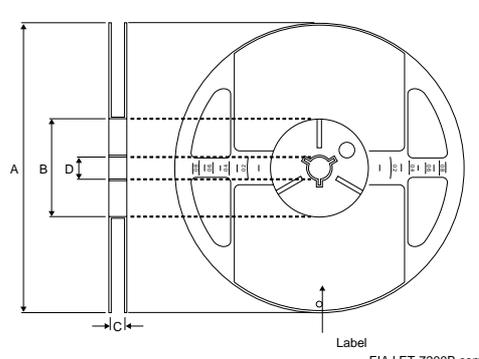
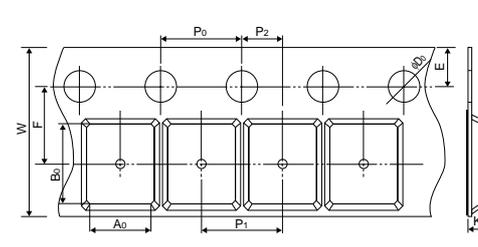
Item	Guaranteed value		Test conditions (JIS C 5201-1)
	Resistor type	Jumper type	
Resistance	J : $\pm 5\%$ F : $\pm 1\%$	Max. 50m $\Omega$	JIS C 5201-1 4.5
Variation of resistance with temperature	See Table.1		JIS C 5201-1 4.8 Measurement : -55 / +25 / +125°C
Overload	$\pm (2.0\%+0.1\Omega)$	Max. 50m $\Omega$	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;">Label 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 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix}</math></td> <td><math>\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}</math></td> <td><math>13 \pm 0.3</math></td> <td><math>\phi 13 \pm 0.2</math></td> </tr> </table>	A	B	C	D	$\phi 180 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix}$	$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$	$13 \pm 0.3$	$\phi 13 \pm 0.2$	 <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><math>8.0 \pm 0.3</math></td> <td><math>3.5 \pm 0.05</math></td> <td><math>1.75 \pm 0.1</math></td> <td><math>3.0 \pm 0.1</math></td> <td><math>3.5 \pm 0.1</math></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 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}</math></td> <td><math>4.0 \pm 0.1</math></td> <td><math>4.0 \pm 0.1</math></td> <td><math>2.0 \pm 0.05</math></td> <td>Max. 1.1</td> </tr> </table>	W	F	E	A <sub>0</sub>	B <sub>0</sub>	$8.0 \pm 0.3$	$3.5 \pm 0.05$	$1.75 \pm 0.1$	$3.0 \pm 0.1$	$3.5 \pm 0.1$	D <sub>0</sub>	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	K	$\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	$4.0 \pm 0.1$	$4.0 \pm 0.1$	$2.0 \pm 0.05$	Max. 1.1
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●Makeup of the part number

<table border="1" style="border-collapse: collapse;"> <tr> <td style="padding: 2px;">M</td><td style="padding: 2px;">C</td><td style="padding: 2px;">R</td><td style="padding: 2px;">2</td><td style="padding: 2px;">5</td><td style="padding: 2px;">J</td><td style="padding: 2px;">Z</td><td style="padding: 2px;">H</td><td style="padding: 2px;">J</td><td style="padding: 2px;"> </td><td style="padding: 2px;"> </td><td style="padding: 2px;"> </td><td style="padding: 2px;"> </td> </tr> </table>	M	C	R	2	5	J	Z	H	J					<p><b>Part No.</b></p>	<p><b>Resistance tolerance</b></p> <table border="1" style="border-collapse: collapse; text-align: left;"> <tr> <td style="padding: 2px;">F</td> <td style="padding: 2px;"><math>\pm 1\%</math></td> </tr> <tr> <td style="padding: 2px;">J</td> <td style="padding: 2px;"><math>\pm 5\%</math></td> </tr> <tr> <td colspan="2" style="padding: 2px;">J is also used for jumper</td> </tr> </table>	F	$\pm 1\%$	J	$\pm 5\%$	J is also used for jumper		<p><b>Nominal resistance</b></p> <p>Resistance code, 3 or 4 digits. 000 denotes jumper type.</p> <table border="1" style="border-collapse: collapse; text-align: left;"> <tr> <th style="padding: 2px;">Resistance tolerance</th> <th style="padding: 2px;">Resistance code</th> </tr> <tr> <td style="padding: 2px;">F</td> <td style="padding: 2px;">: 4 digits</td> </tr> <tr> <td style="padding: 2px;">J</td> <td style="padding: 2px;">: 3 digits</td> </tr> </table>	Resistance tolerance	Resistance code	F	: 4 digits	J	: 3 digits
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Packaging Specifications Code

Part No.	Code	Resistance tolerance		Packaging specifications	Reel	Basic ordering unit (pcs)
		J( $\pm 5\%$ )	F( $\pm 1\%$ )			
MCR25	JZH	⊙	⊙	Embossed tape (4mm Pitch)	$\phi 180\text{mm}$ (7in.)	4,000

Reel ( $\phi 180$ ) : JEITA ET-7200B  
 ⊙ : Standard product

●Dimensions

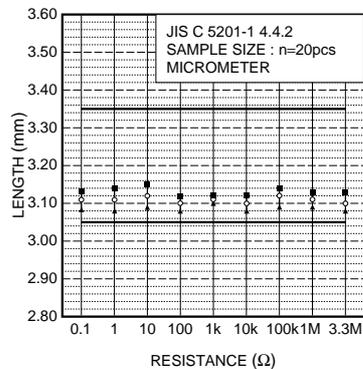


Fig.2 Dimensions (length)

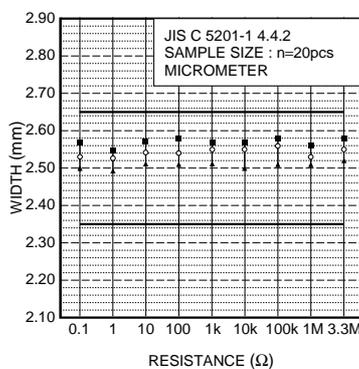


Fig.3 Dimensions (width)

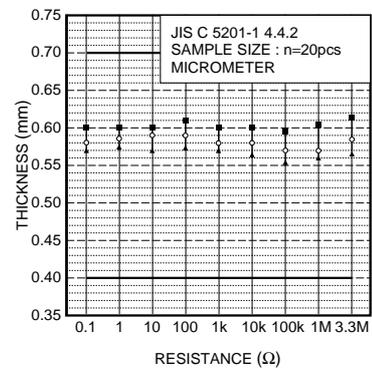


Fig.4 Dimensions (thickness)

Resistors

●Electrical characteristics

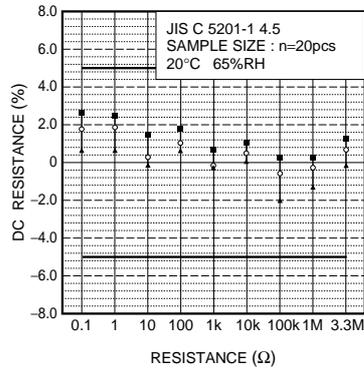


Fig.5 Resistance

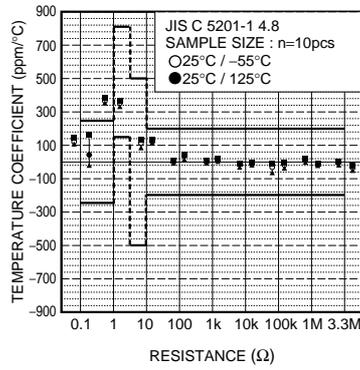


Fig.6 Variation resistance with temperature

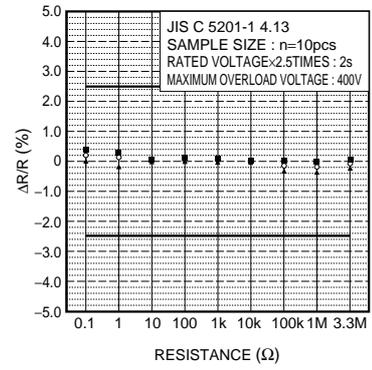


Fig.7 Overload

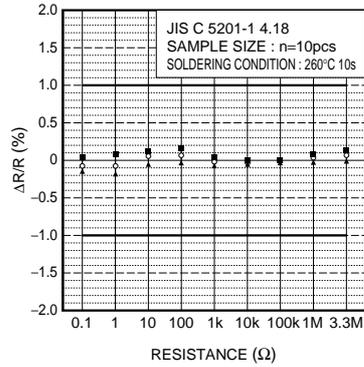


Fig.8 Resistance to soldering heat

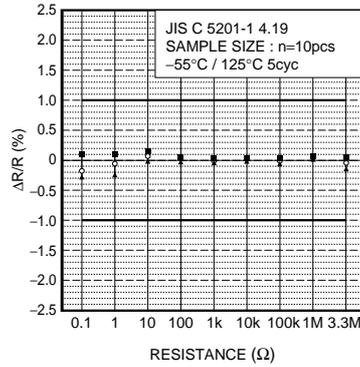


Fig.9 Rapid change of temperature

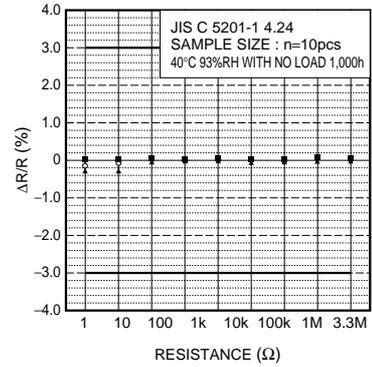


Fig.10 Damp heat, steady state

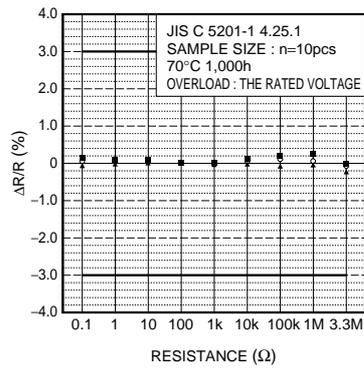


Fig.11 Endurance at 70°C

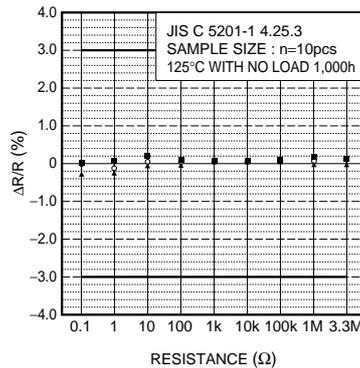


Fig.12 Endurance

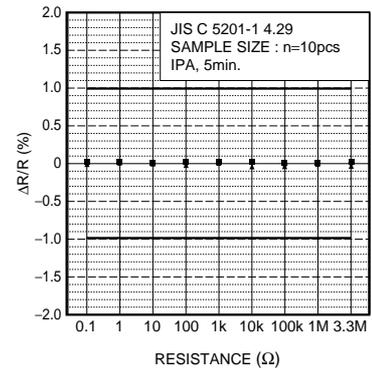


Fig.13 Resistance to solvents

Resistors

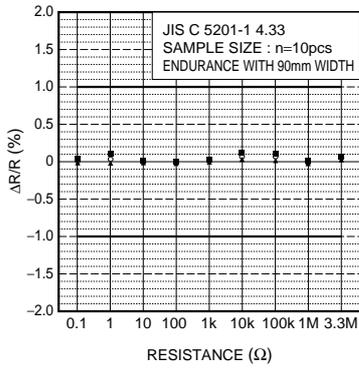


Fig.14 Bend strength of the end face plating

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