

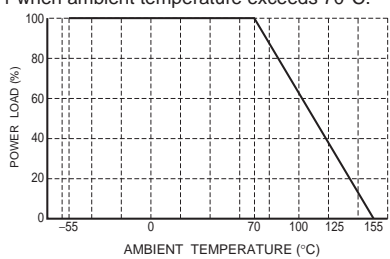
# Thick Film Chip Resistors

## 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 ISO9001-/ ISO/TS 16949- 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.  Fig.1	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. $E = \sqrt{P \times R}$ 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 +155°C

#### Jumper type

Resistance	Max. 50mΩ
Rated current	2A
Operating temperature	-55°C to +155°C

Table 1

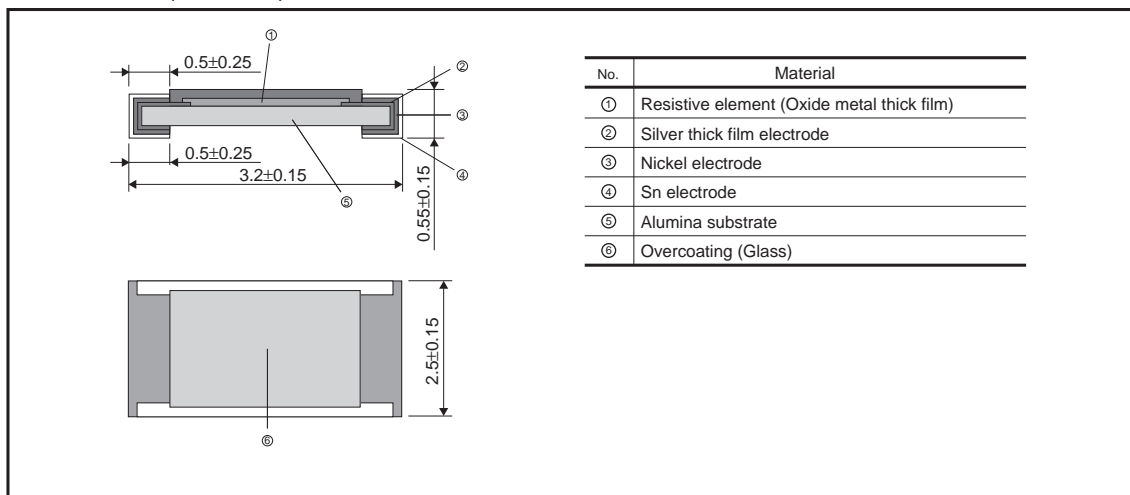
Resistance tolerance	Resistance range (Ω)	Resistance temperature coefficient (ppm/°C)
F (±1%)	10 ≤ R ≤ 1M (E24,96)	±100
J (±5%)	1.0 ≤ R ≤ 2.0 (E24)	500±350
	2.2 ≤ R ≤ 5.1 (E24)	±500
	5.6 ≤ R ≤ 3.3M (E24)	±200

●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.

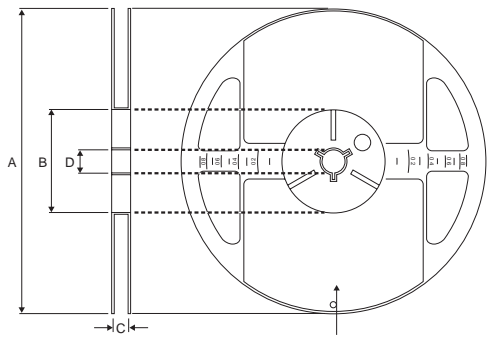
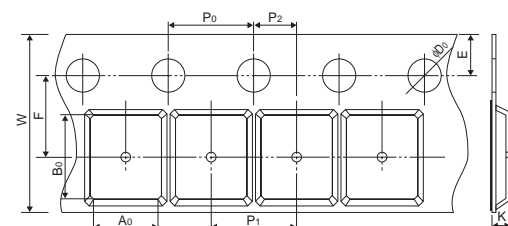
## ●Characteristics

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 : $-55 / +25 / +125^{\circ}\text{C}$
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 : $235\pm 5^{\circ}\text{C}$ Duration of immersion : $2.0\pm 0.5\text{s}$ .
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 : $260\pm 5^{\circ}\text{C}$ Duration of immersion : $10\pm 1\text{s}$ .
Rapid change of temperature	$\pm (1.0\%+0.05\Omega)$	Max. 50m $\Omega$	JIS C 5201-1 4.19 Test temp. : $-55^{\circ}\text{C}$ to $+125^{\circ}\text{C}$ 5cyc
Damp heat, steady state	$\pm (3.0\%+0.1\Omega)$	Max. 100m $\Omega$	JIS C 5201-1 4.24 $40^{\circ}\text{C}$ , 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), $70^{\circ}\text{C}$ 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 $125^{\circ}\text{C}$ 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 $23\pm 5^{\circ}\text{C}$ , Immersion cleaning, $5\pm 0.5\text{min}$ . 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

## ●Dimensions (Unit : mm)



●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 style="text-align: center;">A</td> <td style="text-align: center;">B</td> <td style="text-align: center;">C</td> <td style="text-align: center;">D</td> </tr> <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 \begin{smallmatrix} +1.0 \\ -0 \end{smallmatrix}</math></td> <td style="text-align: center;"><math>\phi 13 \pm 0.2</math></td> </tr> </table>	A	B	C	D	$\phi 180 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix}$	$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$	$9 \begin{smallmatrix} +1.0 \\ -0 \end{smallmatrix}$	$\phi 13 \pm 0.2$	 <p style="text-align: right;">(Unit : mm)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">W</td> <td style="text-align: center;">F</td> <td style="text-align: center;">E</td> <td style="text-align: center;">A<sub>0</sub></td> <td style="text-align: center;">B<sub>0</sub></td> </tr> <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>3.0 \pm 0.1</math></td> <td style="text-align: center;"><math>3.5 \pm 0.1</math></td> </tr> <tr> <td style="text-align: center;">D<sub>0</sub></td> <td style="text-align: center;">P<sub>0</sub></td> <td style="text-align: center;">P<sub>1</sub></td> <td style="text-align: center;">P<sub>2</sub></td> <td style="text-align: center;">K</td> </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>4.0 \pm 0.1</math></td> <td style="text-align: center;"><math>2.0 \pm 0.05</math></td> <td style="text-align: center;">Max. 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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●Part No. Explanation

M	C	R	2	5	J	Z	H	J										
<b>Part No.</b>					<b>Resistance tolerance</b>		<b>Nominal resistance</b>											
					F	$\pm 1\%$	Resistance code, 3 or 4 digits. 000 denotes jumper type. <table border="1" style="margin-top: 5px; width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Resistance tolerance</th> <th style="text-align: left;">Resistance code</th> </tr> <tr> <td style="text-align: center;">F</td> <td style="text-align: left;">: 4 digits</td> </tr> <tr> <td style="text-align: center;">J</td> <td style="text-align: left;">: 3 digits</td> </tr> </table>						Resistance tolerance	Resistance code	F	: 4 digits	J	: 3 digits
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					J	$\pm 5\%$												
					J is also used for jumper													

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

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