

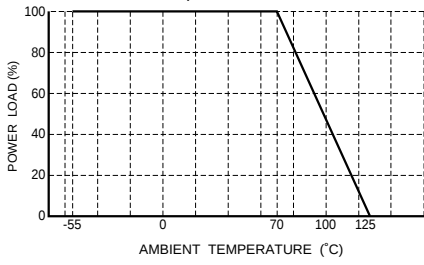
Thick Film Chip Resistors

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 +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%)	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

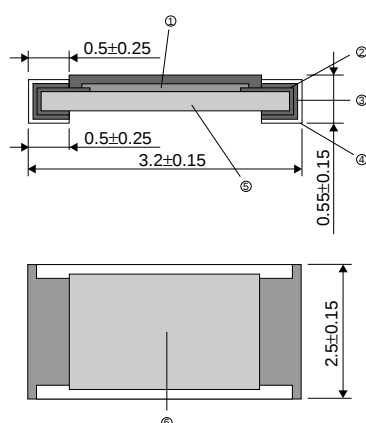
●Before using components in circuits where they will be exposed to transients such as pulse loads (short-duration, high-level loads), be certain to evaluate the component in the mounted state. In addition, the reliability and performance of this component cannot be guaranteed if it is used with a steady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

Resistors

●Characteristics

Item	Guaranteed value		Test conditions (JIS C 5201-1)
	Resistor type	Jumper type	
Resistance	J : $\pm 5\%$ F : $\pm 1\%$	Max. 50m Ω	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 Ω	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 Ω	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 Ω	JIS C 5201-1 4.19 Test temp. : -55°C to $+125^{\circ}\text{C}$ 5cyc
Damp heat, steady state	$\pm (3.0\%+0.1\Omega)$	Max. 100m Ω	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 Ω	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 Ω	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 Ω	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 Ω	JIS C 5201-1 4.33

●Dimensions (Unit : mm)



No.	Material
①	Resistive element (Oxide metal thick film)
②	Silver thick film electrode
③	Nickel electrode
④	Sn electrode
⑤	Alumina substrate
⑥	Overcoating (glass)

Resistors

●Packaging

Reel

Diagram of a reel showing dimensions A, B, D, C, and a label. The label is EIAJ ET-7200B compliant.

(Unit : mm)

A	B	C	D
$\phi 180 \begin{smallmatrix} 0 \\ -3 \end{smallmatrix}$	$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$	$9 \begin{smallmatrix} +1.0 \\ -0 \end{smallmatrix}$	$\phi 13 \pm 0.2$

Taping

Diagram of a resistor tape showing dimensions W, F, E, A₀, B₀, P₀, P₁, P₂, D₀, and K.

(Unit : mm)

W	F	E	A ₀	B ₀
8.0±0.3	3.5±0.05	1.75±0.1	3.0±0.1	3.5±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	Max. 1.1

●Part No. Explanation

M	C	R	2	5	J	Z	H	J																		
Part No.					Resistance tolerance				Nominal resistance																	
					<table><tr><td>F</td><td>±1%</td></tr><tr><td>J</td><td>±5%</td></tr><tr><td colspan="2">J is also used for jumper</td></tr></table>				F	±1%	J	±5%	J is also used for jumper		<table><tr><td colspan="2">Resistance code, 3 or 4 digits. 000 denotes jumper type.</td></tr><tr><td>Resistance tolerance</td><td>Resistance code</td></tr><tr><td>F</td><td>: 4 digits</td></tr><tr><td>J</td><td>: 3 digits</td></tr></table>				Resistance code, 3 or 4 digits. 000 denotes jumper type.		Resistance tolerance	Resistance code	F	: 4 digits	J	: 3 digits
F	±1%																									
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Resistance tolerance	Resistance code																									
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Packaging Specifications Code

Part No.	Code	Resistance tolerance	Packaging specifications	Reel	Basic ordering unit (pcs)
		J(±5%)			
		F(±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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