

# Thick film rectangular Low resistance series

## MCR50 (5025 size (2010 size) : 1 / 2W)

### ●Features

- 1) Highly reliable chip resistor  
Ruthenium oxide dielectric offers superior resistance to the elements.
- 2) Electrodes not corroded by soldering  
Suitable for re-flow soldering.
- 3) 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

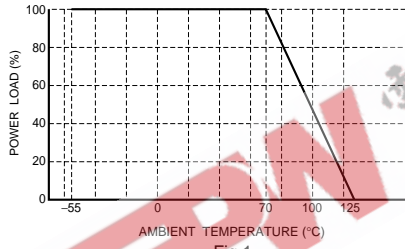
Item	Conditions	Specifications
Rated power	Power must be derated according to the power derating curve in Figure 1 when ambient temperature exceeds 70°C.  <p style="text-align: center;">Fig.1</p>	0.5W (1 / 2W) at 70°C
Rated voltage	The voltage rating is calculated by the following equation. If the value 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   2.23V(10Ω)
Nominal resistance	See Table 1.	
Operating temperature		-55°C to +125°C

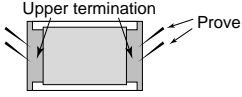
Table 1

Resistance tolerance	Special code	Resistance range (Ω)	Resistance temperature coefficient (ppm / °C)
F (±1%)	L	0.15≤R≤9.1 (E24)	±250
	L	0.1≤R≤0.13 (E24)	400±200
	S	0.047≤R≤0.091 (E24)	500±300
J (±5%)	L	0.15≤R≤0.91 (E24)	±250
	L	0.1≤R<0.13 (E24)	400±200
	S	0.047≤R≤0.091 (E24)	500±300

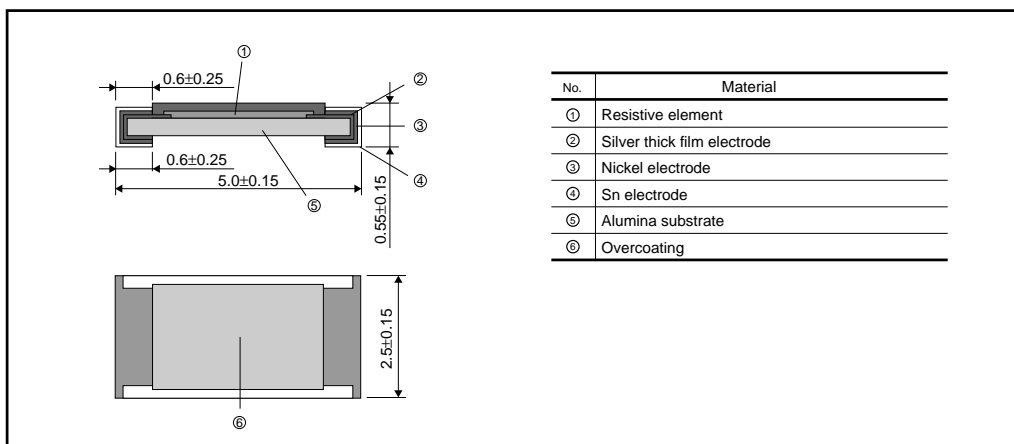
●Before using components in circuits where they will be exposed to transients such as pulse loads (short-duration, high-level loads), be certain to evaluate the component in the mounted state. In addition, the reliability and performance of this component cannot be guaranteed if it is used with a steady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

## Resistors

## ●Characteristics

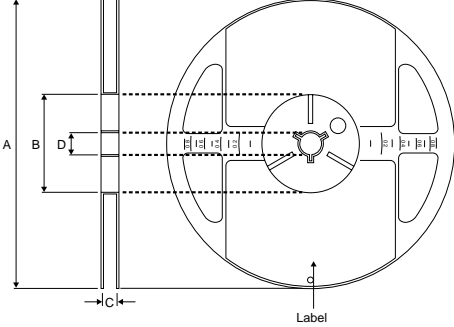
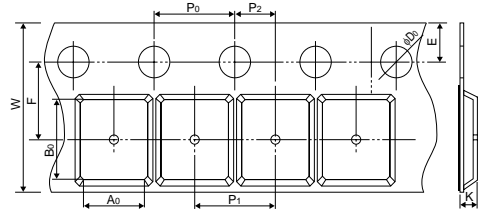
Item	Guaranteed value	Test conditions (JIS C 5201-1)
	Resistor type	
Resistance	J : $\pm 5\%$ F : $\pm 1\%$	JIS C 5201-1 4.5 Load voltage : A Measuring method : measure upper termination by 4 probes. 
Variation of resistance with temperature	See Table.1	JIS C 5201-1 4.8 Measurement : +25 / -55 / +25 / +125°C
Overload	$\pm (2.0\%+0.005\Omega)$	JIS C 5201-1 4.13 Rated voltage (current) $\times 2.5, 2s.$
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	$\pm (1.0\%+0.005\Omega)$ No remarkable abnormality on the appearance.	JIS C 5201-1 4.18 Soldering condition : 260 $\pm$ 5°C Duration of immersion : 10 $\pm$ 1s.
Rapid change of temperature	$\pm (1.0\%+0.005\Omega)$	JIS C 5201-1 4.19 Test temp. : -55°C to +125°C 5cyc
Damp heat, steady state	$\pm (3.0\%+0.005\Omega)$	JIS C 5201-1 4.24 40°C, 93%RH Test time : 56days
Endurance at 70°C	$\pm (3.0\%+0.005\Omega)$	JIS C 5201-1 4.25.1 70°C, Rated voltage 1.5h : ON - 0.5h : OFF Test time : 1,000h
Endurance	$\pm (3.0\%+0.005\Omega)$	JIS C 5201-1 4.25.3 125°C Test time : 1,000h to 1,048h
Resistance to solvent	$\pm (0.5\%+0.005\Omega)$	JIS C 5201-1 4.29 23°C $\pm$ 5°C Solvent : 2-propanol
Bend strength of the end face plating	Without mechanical damage such as breaks.	JIS C 5201-1 4.33

## ●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 \begin{smallmatrix} 0 \\ -1.5 \end{smallmatrix}</math></td> <td><math>\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}</math></td> <td><math>13 \begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}</math></td> <td><math>\phi 13 \pm 0.2</math></td> </tr> </table>	A	B	C	D	$\phi 180 \begin{smallmatrix} 0 \\ -1.5 \end{smallmatrix}$	$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$	$13 \begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$	$\phi 13 \pm 0.2$	 <p style="text-align: right;">(Unit : mm)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>W</td> <td>F</td> <td>E</td> <td>A<sub>0</sub></td> <td>B<sub>0</sub></td> </tr> <tr> <td><math>12.0 \pm 0.3</math></td> <td><math>5.5 \pm 0.05</math></td> <td><math>1.75 \pm 0.1</math></td> <td><math>3.4 \pm 0.2</math></td> <td><math>5.6 \pm 0.2</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>	$12.0 \pm 0.3$	$5.5 \pm 0.05$	$1.75 \pm 0.1$	$3.4 \pm 0.2$	$5.6 \pm 0.2$	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

<b>M</b>	<b>C</b>	<b>R</b>	<b>5</b>	<b>0</b>	<b>J</b>	<b>Z</b>	<b>H</b>	<b>J</b>	<b>L</b>																			
<b>Part No.</b>					<b>Resistance tolerance</b>		<b>Special part number</b>			<b>Nominal resistance</b>																		
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●Packaging Specifications Code

Part No.	Code	Resistance tolerance		Packaging specifications	Reel	Basic ordering unit(pcs)
		J(±5%)	F(±1%)			
MCR50	JZH	⊙	⊙	Embossed tape (4mm Pitch)	φ180mm (7in.)	4,000

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

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