

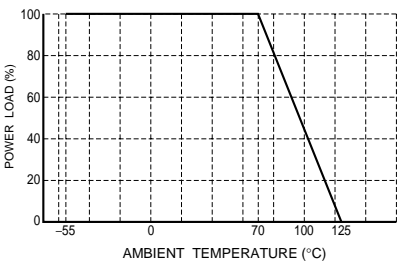
# Compact Film Chip Resistors

**MCR006 (0201 size : 1 / 20W)**

**●Features**

- 1) Extremely small light  
Area ratio is 60% smaller than that of chip 1005, while weight ratio has been cut 80%.
- 2) Highly reliable chip resistor  
Ruthenium oxide dielectric offers superior resistance to the elements.
- 3) Electrodes not corroded by soldering  
Thick film makes the electrodes very strong.
- 4) Flat surface further facilitates mounting
- 5) ROHM resistors have approved ISO9001- / ISO/TS 16949- 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.  Fig.1	0.05W (1 / 20W) 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   25V
Nominal resistance	See <u>Table 1.</u>	
Operating temperature		-55°C to +125°C

**Jumper type**

Resistance	Max. 50mΩ
Rated current	0.5A
Operating temperature	-55°C to +125°C

Table 1

Resistance tolerance	Resistance range (Ω)	Resistance temperature coefficient (ppm / °C)
J (±5%)	1.0 to 9.1 (E24)	+600/-200
	10 to 10M (E24)	±200
F (±1%)	10 to 10M (E24)	±200
	10 to 910 (E24)	±200
D (±0.5%)	1k to 1M (E24)	±100

●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 : $\pm 1\%$ D : $\pm 0.5\%$	Max. 50m $\Omega$	JIS C 5201-1 4.5
Variation of resistance with temperature	See <a href="#">Table.1</a>	Max. 100m $\Omega$	JIS C 5201-1 4.8 Measurement : +20 / -55 / +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 : 50V
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 100cyc
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 $\pm$ 3°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

●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 (Resin)

●Packaging

Reel

EIAJ ET-7200B compliant

(Unit : mm)

A	B	C	D
$\phi 180 \begin{smallmatrix} 0 \\ -15 \end{smallmatrix}$	$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$	$9 \begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$	$\phi 13 \pm 0.2$

Taping

(Unit : mm)

W	F	E	A <sub>0</sub>	B <sub>0</sub>
8.0±0.2	3.5±0.05	1.75±0.1	0.38±0.03	0.68±0.03
D <sub>0</sub>	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	T
$\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	4.0±0.1	2.0±0.05	2.0±0.05	Max. 0.50

●Part No. Explanation

M	C	R	0	0	6	Y	Z	P		J																	
Part No.								Resistance tolerance		Nominal resistance																	
								<table border="1" style="width: 100%; text-align: center;"> <tr> <td>D</td> <td>±0.5%</td> </tr> <tr> <td>F</td> <td>±1%</td> </tr> <tr> <td>J</td> <td>±5%</td> </tr> </table>		D	±0.5%	F	±1%	J	±5%	<table border="1" style="width: 100%; text-align: center;"> <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>D, 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	D, F	: 4 digits	J	: 3 digits
D	±0.5%																										
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Resistance tolerance	Resistance code																										
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J	: 3 digits																										
						J is also used for jumper																					

Packaging Specifications Code

Part No.	Code	Resistance tolerance			Packaging specifications	Reel	Basic ordering unit (pcs)
		J(±5%)	F(±1%)	D(±0.5%)			
MCR006	YZP	○	○	○	Paper tape (2mm Pitch)	φ180mm (7in.)	15,000

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

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