

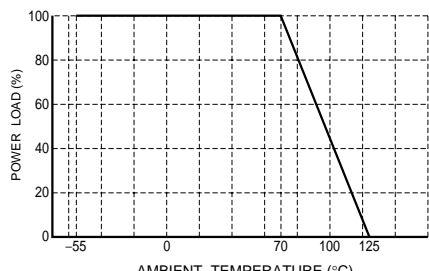
# Compact Film Chip Resistors

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

●Features

- 1) Extremely small light  
Area ratio is 60% smaller than that of chip 0402, 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.   <p style="text-align: center;">Fig.1</p>	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.  $E = \sqrt{P \times R}$ <p style="margin-left: 40px;">E: Rated voltage (V) P: Rated power (W) R: Nominal resistance (Ω)</p>	Limiting element voltage 25V
Nominal resistance	See Table 1.	
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)	±250
F (±1%)	10 to 10M (E24)	±250
D (±0.5%)	10 to 910 (E24)	±200
	1k to 1M (E24)	±100

## ●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 Table.1	Max. 50m $\Omega$	JIS C 5201-1 4.8 Measurement : +20 / -55 / +20 / +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. Limiting element voltage $\times 2$ : 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 $\pm 5^\circ\text{C}$ Duration of immersion : 2.0 $\pm 0.5$ 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 $\pm 1$ s.
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 $\pm 3^\circ\text{C}$ 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°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 $\pm 0.5$ 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)

No.	Material
①	Resistive element
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	A0	B0
$8.0 \pm 0.2$	$3.5 \pm 0.05$	$1.75 \pm 0.1$	$0.38 \pm 0.03$	$0.68 \pm 0.03$
D0	P0	P1	P2	T
$\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	$4.0 \pm 0.1$	$2.0 \pm 0.05$	$2.0 \pm 0.05$	Max. 0.50

●Part No. Explanation

M	C	R	0	0	6	Y	Z	P	J																	
<b>Part No.</b>						<b>Resistance tolerance</b>			<b>Nominal resistance</b>																	
						<table border="1" style="border-collapse: collapse; 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="border-collapse: collapse; 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
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						<p>J is also used for jumper</p>																				

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(7inch)	15,000

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

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