

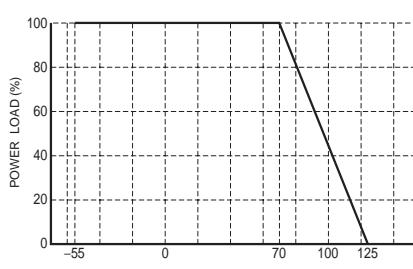
Compact Film Chip Resistors

MCR004 (0402 size : 1 / 32W)

●Features

- 1) Extremely small
Area ratio is 50% smaller than that of chip 0603.
- 2) High dimensional precision
Novel semiconductor process technology guarantees an external dimensional tolerance of $\pm 20\text{ }\mu\text{m}$.
- 3) Pressed carrier tape applications
Using a pressed carrier tape reduces mounting errors compared with conventional carrier tapes.
- 4) 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.	0.031W (1 / 32W) at 70°C	
	 <p>Fig.1</p>		
Rated voltage	<p>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.</p> $E = \sqrt{P \times R}$ <p>E: Rated voltage (V) P: Rated power (W) R: Nominal resistance (Ω)</p>	Limiting element voltage	15V
Nominal resistance	See Table 1.		
Operating temperature		-55°C to +125°C	

Jumper type

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

Table 1

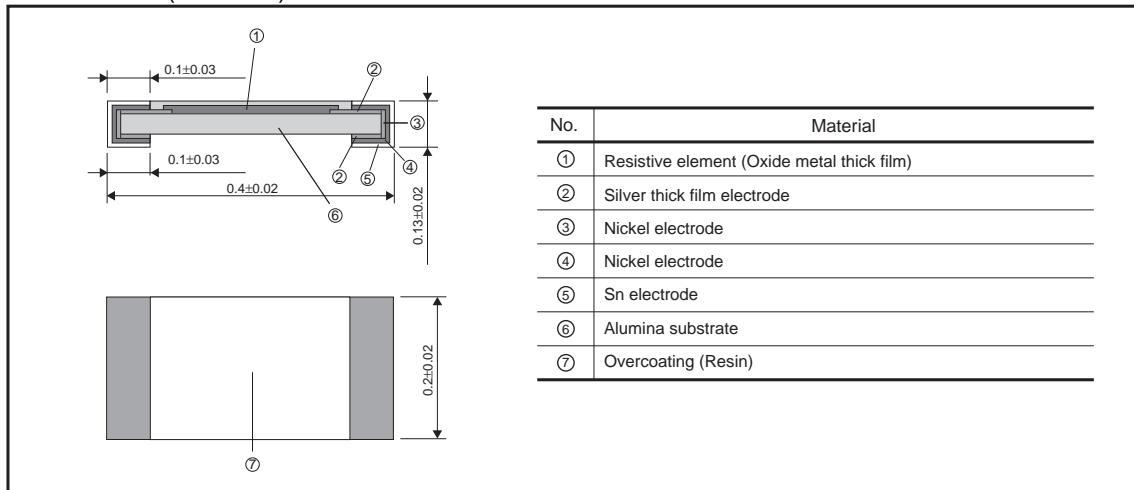
Resistance tolerance	Resistance range (Ω)	Resistance temperature coefficient (ppm / °C)
J ($\pm 5\%$)	10≤R≤3M (E24)	±250
F ($\pm 1\%$)	10≤R≤3M (E24)	±250

- 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

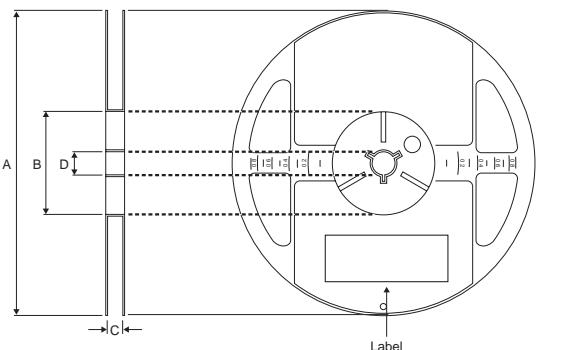
Item	Guaranteed value		Test conditions (JIS C 5201-1)
	Resistor type	Jumper type	
Resistance	J : $\pm 5\%$ F : $\pm 1\%$	Max. 50mΩ	JIS C 5201-1 4.5
Variation of resistance with temperature	See <u>Table.1</u>	Max. 50mΩ	JIS C 5201-1 4.8 Measurement : +20 / -55 / +125°C
Overload	$\pm (2.0\%+0.1\Omega)$	Max. 50mΩ	JIS C 5201-1 4.13 Rated voltage (current) $\times 2.5$, 2s. Maximum overload voltage : 30V
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. 50mΩ	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. 50mΩ	JIS C 5201-1 4.19 Test temp. : -55°C to $+125^\circ\text{C}$ 100cyc
Damp heat, steady state	$\pm (3.0\%+0.1\Omega)$	Max. 100mΩ	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. 100mΩ	JIS C 5201-1 4.25.1 Rated voltage (current), $70^\circ\text{C}\pm 3^\circ\text{C}$ $1.5\text{h} : \text{ON} - 0.5\text{h} : \text{OFF}$ Test time : 1,000h to 1,048h
Endurance	$\pm (3.0\%+0.1\Omega)$	Max. 100mΩ	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. 50mΩ	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. 50mΩ	JIS C 5201-1 4.33

●Dimensions (Unit : mm)

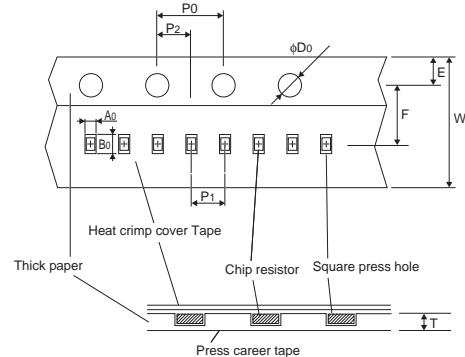


●Packaging

Reel

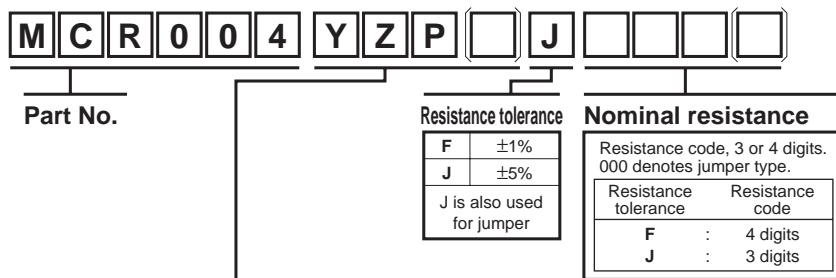


Taping



W	F	E	A0	Bo
8.0 ± 0.2	3.5 ± 0.05	1.75 ± 0.1	0.24 ± 0.03	0.45 ± 0.03
Do	P0	P1	P2	T
$\phi 1.5$ 0	4.0 ± 0.1	2.0 ± 0.05	2.0 ± 0.05	Max. 0.50

●Part No. Explanation



Packaging Specifications Code

Part No.	Code	Resistance tolerance		Packaging specifications	Reel	Basic ordering unit (pcs)
		J(±5%)	F(±1%)			
MCR004	YZP	○	○	Paper tape (2mm Pitch)	φ180mm	15.000

Reel (φ180) : JEITA ET-7200B

○ : Standard product

Notes

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