

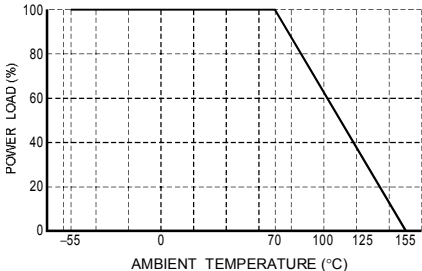
# Thick film rectangular

## MCR01 (1005 size : 1 / 16W)

### ●Features

- 1) Extremely small light  
Area ratio is 60% smaller than that of chip 1608, while weight ratio has been cut 75%.
- 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  
Mounting can also be automated.
- 5) 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. <div style="text-align: center;">  <p>Fig.1</p> </div>	0.063W (1 / 16W) 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. <div style="display: flex; align-items: center; margin-top: 10px;"> <math display="block">E = \sqrt{P \times R}</math> <div style="margin-left: 20px;"> <p>E: Rated voltage (V)</p> <p>P: Rated power (W)</p> <p>R: Nominal resistance (Ω)</p> </div> </div>	Limiting element voltage	50V
Nominal resistance	See Table 1.		
Operating temperature		-55°C to +155°C	

## Resistors

Jumper type

Resistance	Max. 50mΩ
Rated current	1A
Operating temperature	-55°C to +155°C

Table 1

Resistance tolerance	Resistance range (Ω)	Resistance temperature coefficient (ppm / °C)
J (±5%)	1.0≤R<10 (E24)	+500 / -250
	10≤R≤10M (E24)	±200
F (±1%)	10≤R≤2.2M (E24)	±100
D (±0.5%)	10≤R<91 (E24)	±100
	100≤R≤1M (E24)	±50

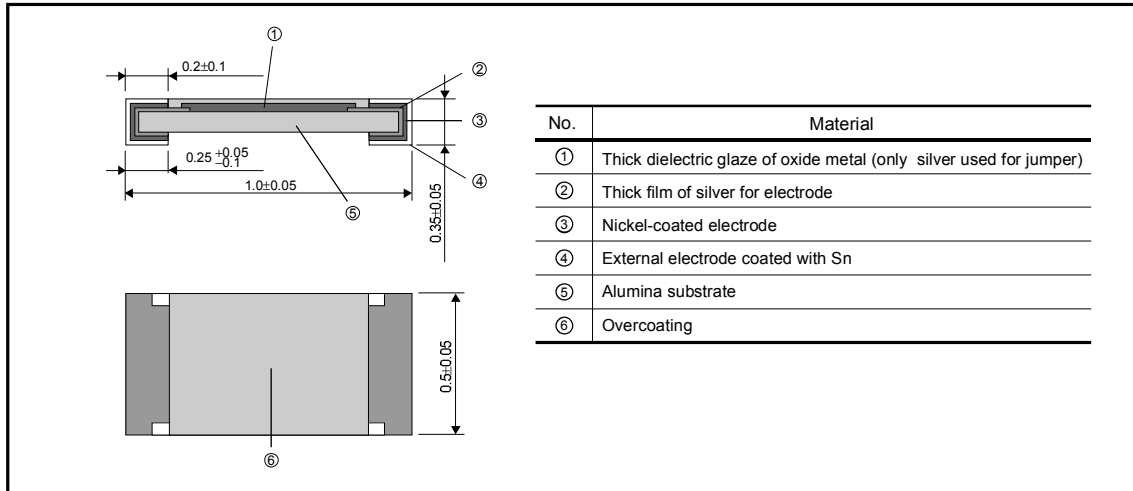
●Before using components in circuits where they will be exposed to transients such as pulse loads (short-duration, high-level loads), be certain to evaluate the component in the mounted state. In addition, the reliability and performance of this component cannot be guaranteed if it is used with a steady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

## ●Characteristics

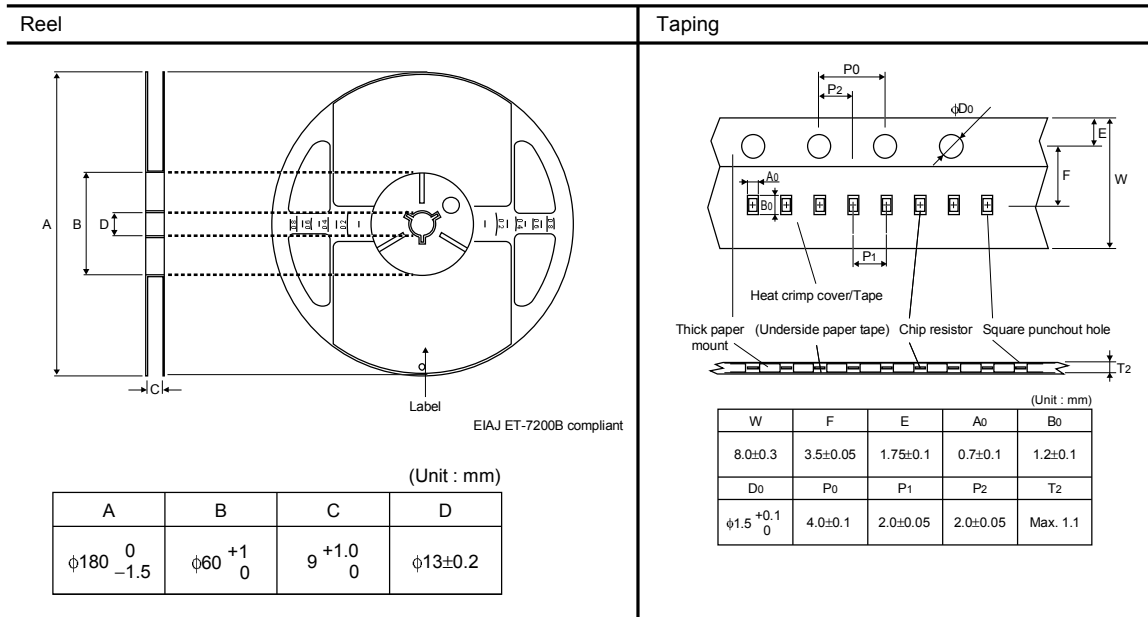
Item	Guaranteed value		Test conditions (JIS C 5201-1)
	Resistor type	Jumper type	
Resistance	J : ±5% F : ±1% D : ±0.5%	Max. 50mΩ	JIS C 5201-1 4.5
Variation of resistance with temperature	See Table.1		JIS C 5201-1 4.8 Measurement : +25 / +125°C
Overload	± (2.0%+0.1Ω)	Max. 50mΩ	JIS C 5201-1 4.13 Rated voltage (current) ×2.5, 2s. Limiting Element Voltage×2 : 100V
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±5°C Duration of immersion : 2.0±0.5s.
Resistance to soldering heat	± (1.0%+0.05Ω) No remarkable abnormality on the appearance.	Max. 50mΩ	JIS C 5201-1 4.18 Soldering condition : 260±5°C Duration of immersion : 10±1s.
Rapid change of temperature	± (1.0%+0.05Ω)	Max. 50mΩ	JIS C 5201-1 4.19 Test temp. : -55°C to +125°C 5cyc
Damp heat, steady state	± (3.0%+0.1Ω)	Max. 50mΩ	JIS C 5201-1 4.24 40°C, 93%RH Test time : 1,000h to 1,048h
Endurance at 70°C	± (3.0%+0.1Ω)	Max. 50mΩ	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	± (3.0%+0.1Ω)	Max. 50mΩ	JIS C 5201-1 4.25.3 125°C Test time : 1,000h to 1,048h
Resistance to solvent	± (1.0%+0.05Ω)	Max. 50mΩ	JIS C 5201-1 4.29 23±5°C, Immersion cleaning, 5±0.5min. Solvent : 2-propanol
Bend strength of the end face plating	± (1.0%+0.05Ω) Without mechanical damage such as breaks.	Max. 50mΩ	JIS C 5201-1 4.33

## Resistors

## ●External dimensions (Unit : mm)

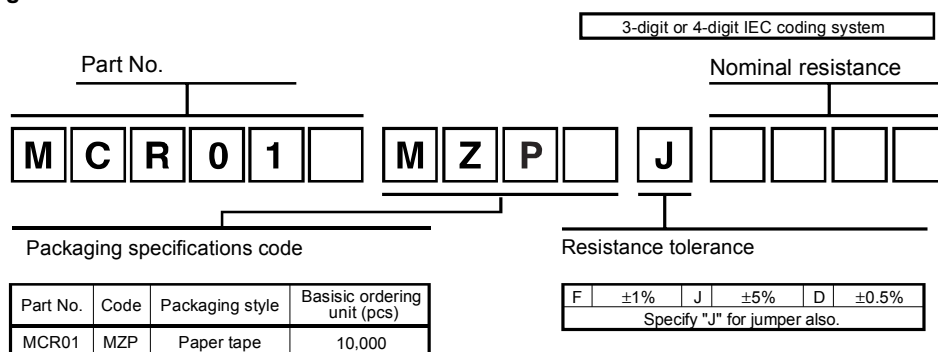


## ●Packaging



## Resistors

## ●Part designation



## ●Dimensions

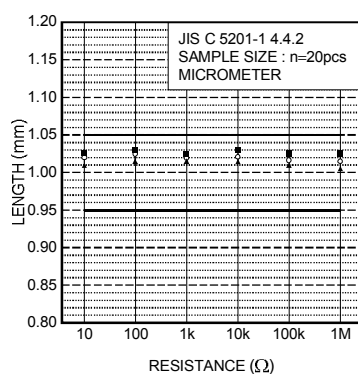


Fig.2 Dimensions (length)

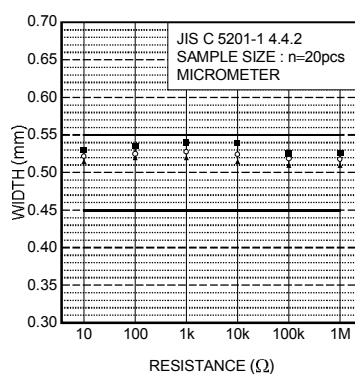


Fig.3 Dimensions (width)

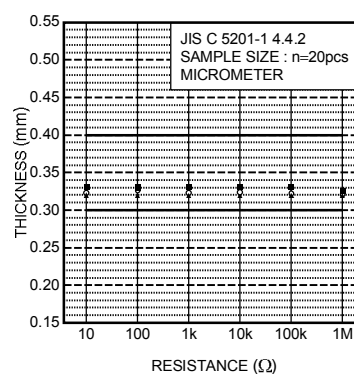


Fig.4 Dimensions (thickness)

## ●Electrical characteristics

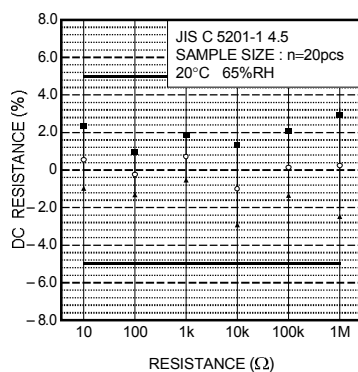


Fig.5 Resistance

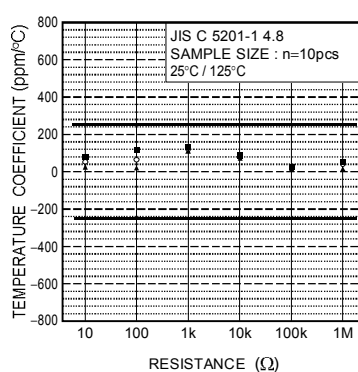


Fig.6 Variation of resistance with temperature

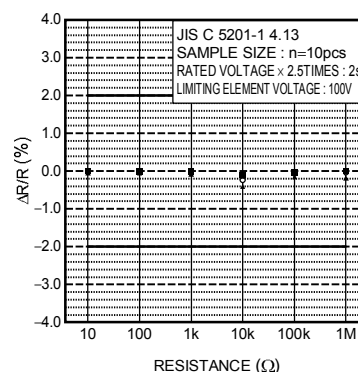


Fig.7 Overload

## Resistors

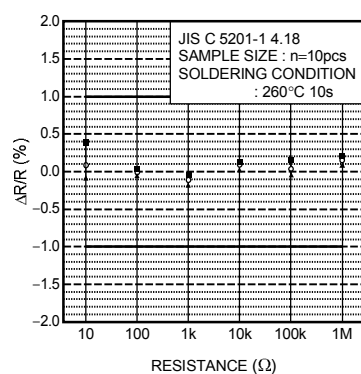


Fig.8 Resistance to soldering heat

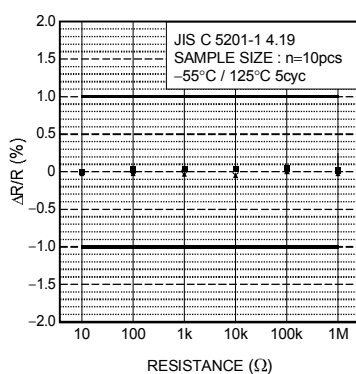


Fig.9 Rapid change of temperature

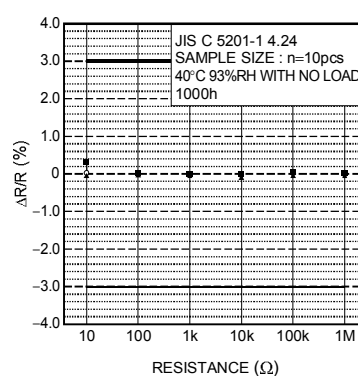


Fig.10 Damp heat, steady state

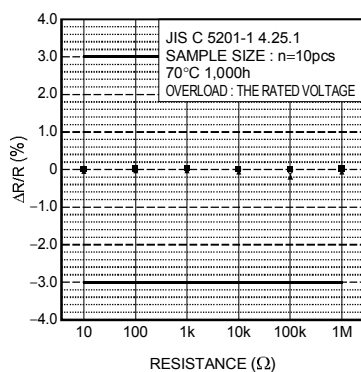
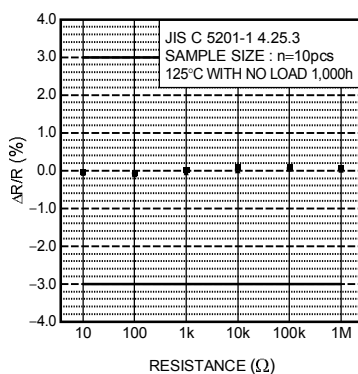
Fig.11 Endurance at  $70^\circ\text{C}$ 

Fig.12 Endurance

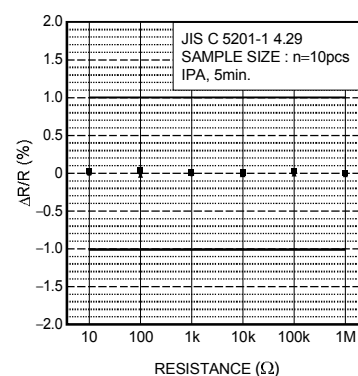


Fig.13 Resistance to solvents

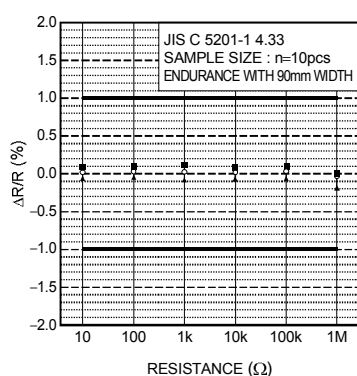


Fig.14 Bend strength of the end face plating

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