

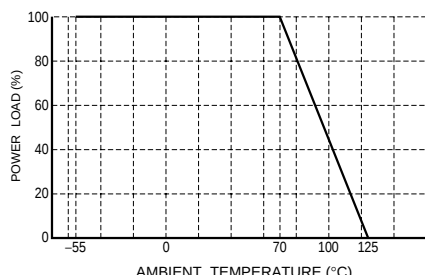
# Thick film rectangular

## 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           | <p>Power must be derated according to the power derating curve in Figure 1 when ambient temperature exceeds 70°C.</p> <div></div> <p>Fig.1</p>                                                                                                               | 0.063W (1 / 16W)<br>at 70°C |     |
|                       |                                                                                                                                                                                                                                                                                                                                                 |                             |     |
| Rated voltage         | <p>The voltage rating is calculated by the following equation.<br/>If the value obtained exceeds the limiting element voltage,<br/>the voltage rating is equal to the maximum operating voltage.</p> <div><math display="block">E=\sqrt{P\times R}</math><p>E: Rated voltage (V)<br/>P: Rated power (W)<br/>R: Nominal resistance (Ω)</p></div> | Limiting element voltage    | 50V |
|                       |                                                                                                                                                                                                                                                                                                                                                 |                             |     |
| Nominal resistance    | See Table 1.                                                                                                                                                                                                                                                                                                                                    |                             |     |
| Operating temperature |                                                                                                                                                                                                                                                                                                                                                 | -55°C to +125°C             |     |

## Resistors

Jumper type

|                       |                 |
|-----------------------|-----------------|
| Resistance            | Max. 50mΩ       |
| Rated current         | 1A              |
| Operating temperature | -55°C to +125°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)       | ±250                                          |
| F (±1%)              | 100≤R≤2.2M (E24)     | ±250                                          |
| D (±0.5%)            | 10≤R≤100K (E24)      | ±100                                          |
|                      | 100≤R≤1MΩ (E24)      | ±50                                           |

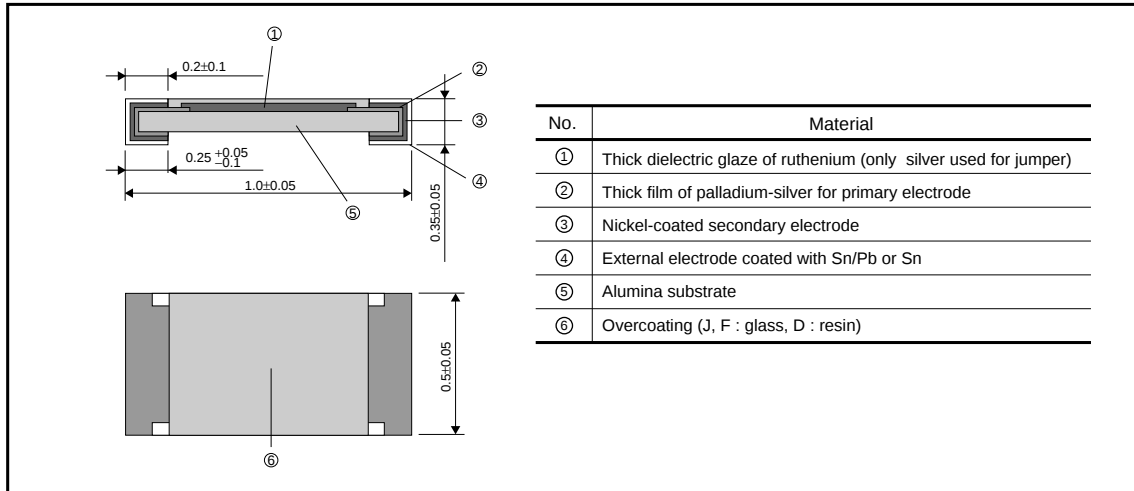
- Before using components in circuits where they will be exposed to transients such as pulse loads (short-duration, high-level loads), be certain to evaluate the component in the mounted state. In addition, the reliability and performance of this component cannot be guaranteed if it is used with a steady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

## ●Characteristics

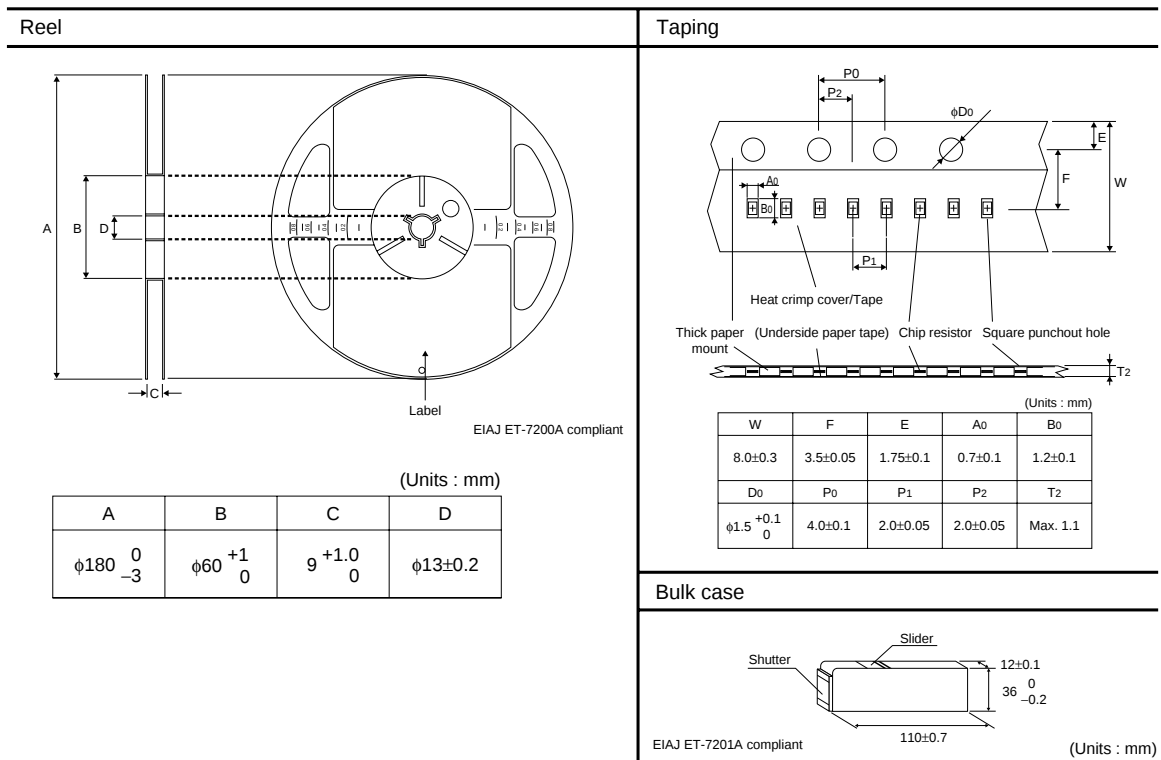
| Item                                     | Guaranteed value                                                                               |             | Test conditions (JIS C 5201-1)                                                                                   |
|------------------------------------------|------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------|
|                                          | Resistor type                                                                                  | Jumper type |                                                                                                                  |
| Resistance                               | J : ±5%<br>F : ±1%<br>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<br>Measurement : -55 / +25 / +125°C                                                             |
| Overload                                 | ± (2.0%+0.1Ω)                                                                                  | Max. 50mΩ   | JIS C 5201-1 4.13<br>Rated voltage (current) ×2.5, 2s.<br>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<br>Rosin-Ethanol (25%WT)<br>Soldering condition : 235±5°C<br>Duration of immersion : 2.0±0.5s. |
| Resistance to soldering heat             | ± (1.0%+0.05Ω)<br>No remarkable abnormality on the appearance.                                 | Max. 50mΩ   | JIS C 5201-1 4.18<br>Soldering condition : 260±5°C<br>Duration of immersion : 10±1s.                             |
| Rapid change of temperature              | ± (1.0%+0.05Ω)                                                                                 | Max. 50mΩ   | JIS C 5201-1 4.19<br>Test temp. : -55°C~+125°C 5cyc                                                              |
| Damp heat, steady state                  | ± (3.0%+0.1Ω)                                                                                  | Max. 50mΩ   | JIS C 5201-1 4.24<br>40°C, 93%RH<br>Test time : 1,000h~1,048h                                                    |
| Endurance at 70°C                        | ± (3.0%+0.1Ω)                                                                                  | Max. 50mΩ   | JIS C 5201-1 4.25.1<br>Rated voltage (current), 70°C<br>1.5h : ON – 0.5h : OFF<br>Test time : 1,000h~1,048h      |
| Endurance                                | ± (3.0%+0.1Ω)                                                                                  | Max. 50mΩ   | JIS C 5201-1 4.25.3<br>125°C<br>Test time : 1,000h~1,048h                                                        |
| Resistance to solvent                    | ± (1.0%+0.05Ω)                                                                                 | Max. 50mΩ   | JIS C 5201-1 4.29<br>23±5°C, Immersion cleaning, 5±0.5min.<br>Solvent : 2-propanol                               |
| Bend strength of the end face plating    | ± (1.0%+0.05Ω)<br>Without mechanical damage such as breaks.                                    | Max. 50mΩ   | JIS C 5201-1 4.33                                                                                                |

## Resistors

## ●External dimensions (Units : mm)

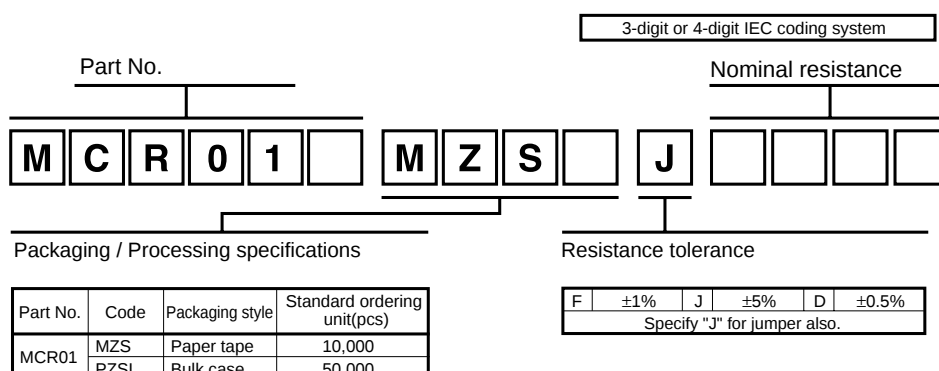


## ●Packaging



## Resistors

## ●Part designation



## ●Dimensions

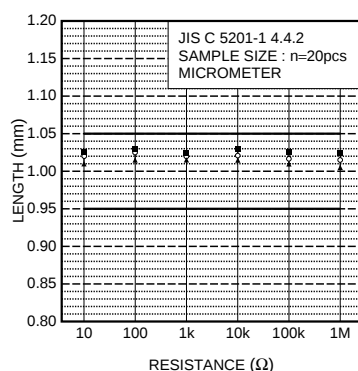


Fig.2 Dimensions (length)

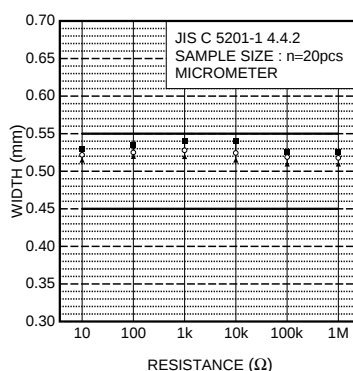


Fig.3 Dimensions (width)

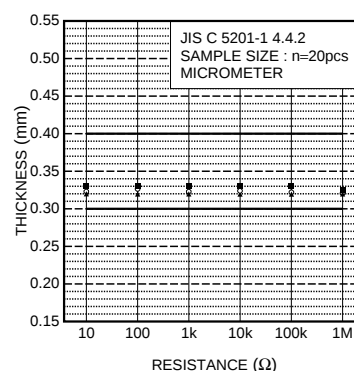


Fig.4 Dimensions (thickness)

## ●Electrical characteristics

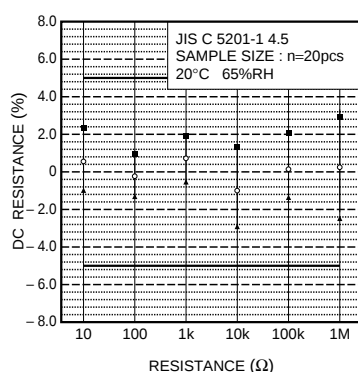


Fig.5 Resistance

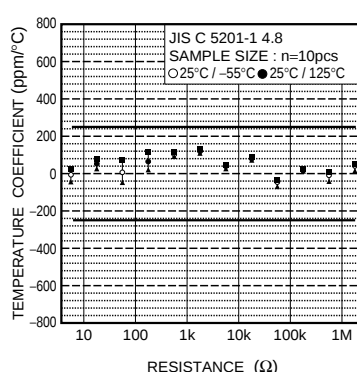


Fig.6 Variation of resistance with temperature

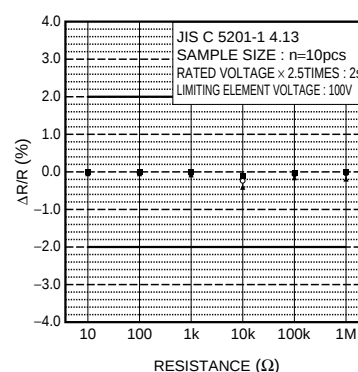


Fig.7 Overload

## Resistors

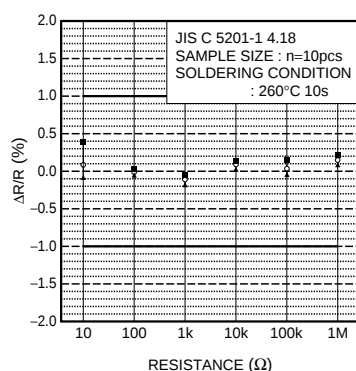


Fig.8 Resistance to soldering heat

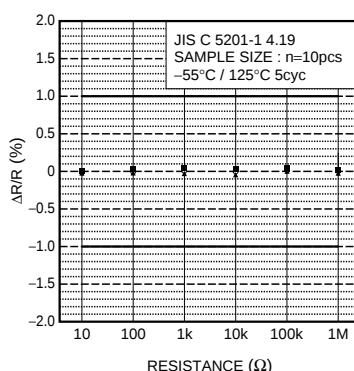


Fig.9 Rapid change of temperature

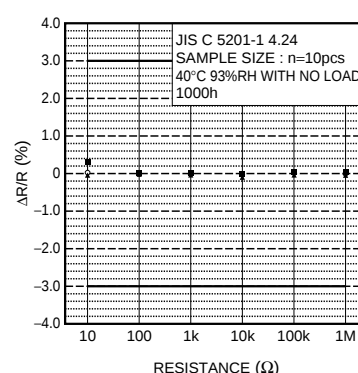


Fig.10 Damp heat, steady state

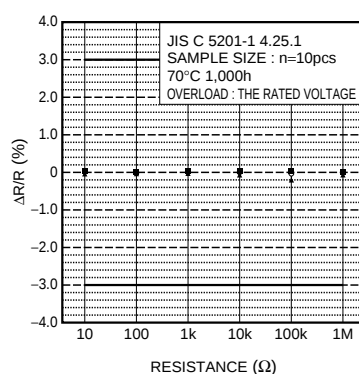


Fig.11 Endurance at 70°C

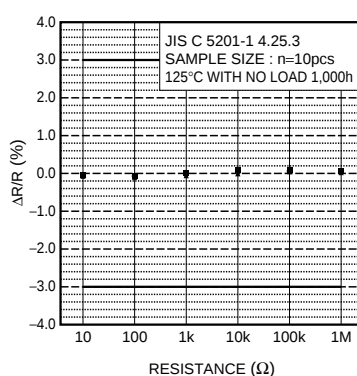


Fig.12 Endurance

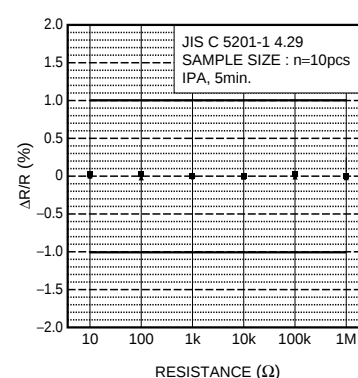


Fig.13 Resistance to solvents

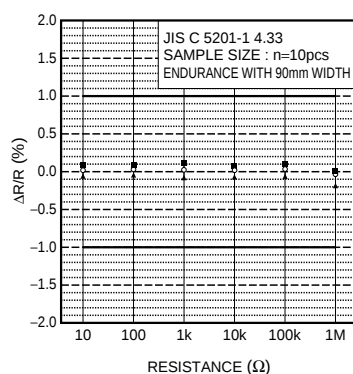


Fig.14 Bend strength of the end face plating