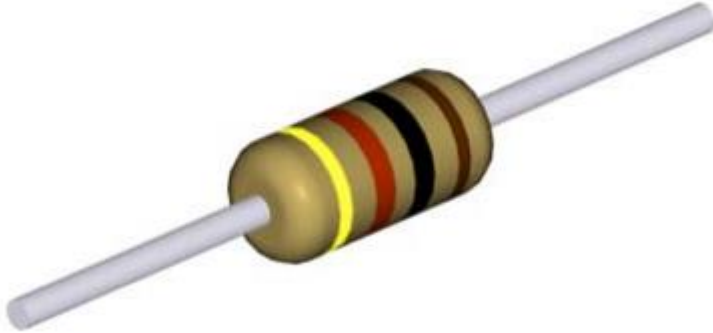


**Professionally approved products.**

## **Datasheet**

**RS Series Axial Carbon Resistor 470Ω ±5% 0.5W -500  
→ +350ppm/°C**

RS Stock number [707-8202](#)



### ■ Features

- The most economic industrial investment
- Standard tolerance: +/-5%
- Excellent long term stability
- Termination: Standard solder-plated copper lead

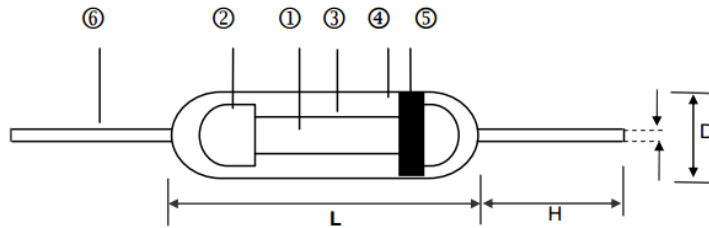
### ■ Applications

- Automotive
- Telecommunication
- Medical Equipment

# Professionally approved products.

## Datasheet

### Construction



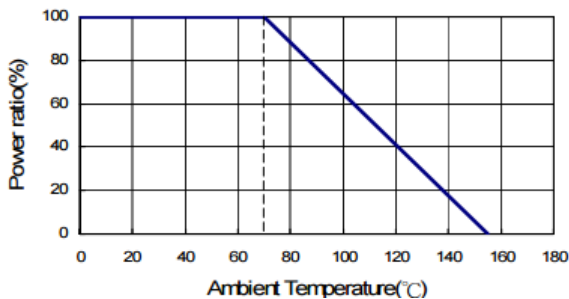
|                    |                                       |
|--------------------|---------------------------------------|
| ① Ceramic Rod      | ④ Non-flame Paint With Sol Vent-proof |
| ② Tinned Iron Caps | ⑤ Colour Code                         |
| ③ Carbon Film      | ⑥ Lead Wire                           |

### Dimensions

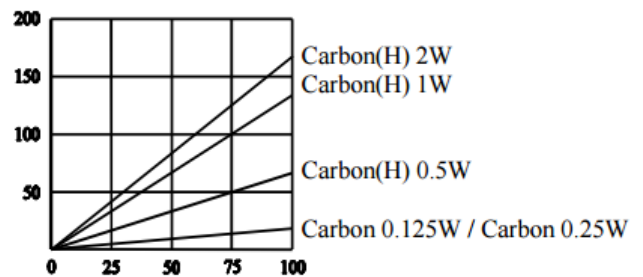
Unit: mm

| Type            | L            | D       | H        | d            | Weight (g)<br>(1000pcs) |
|-----------------|--------------|---------|----------|--------------|-------------------------|
| Carbon 0.125W   | 3.3+0.4/-0.2 | 1.8±0.3 | 29.3±2.0 | 0.452.3±0.03 | 92                      |
| Carbon 0.25W    | 6.3±0.5      | 2.3±0.3 | 28±2.0   | 0.55±0.03    | 155                     |
| Carbon 0.5W (H) | 6.3±0.5      | 2.3±0.3 | 28±2.0   | 0.55±0.03    | 155                     |
| Carbon 1W (H)   | 9.0±0.5      | 3.2±0.5 | 26±2.0   | 0.65±0.03    | 352                     |
| Carbon 2W (H)   | 11.5±1.0     | 4.5±0.5 | 35±2.0   | 0.78±0.03    | 775                     |

### Derating Curve



### Hop-Spot Temperature



# Professionally approved products.

## Datasheet

### ■Electrical Specifications

| Type \ Item | Power Rating at 70°C | Operating Temp. Range | Max. Working Voltage | Max. Overload Voltage | Dielectric Withstanding Voltage | Resistance Range |
|-------------|----------------------|-----------------------|----------------------|-----------------------|---------------------------------|------------------|
|             |                      |                       |                      |                       |                                 | ±5%              |
| Carbon      | 0.125W               | -55 ~ +155°C          | 150V                 | 300V                  | 300V                            | 0.1Ω - 22MΩ      |
| Carbon      | 0.25W                |                       | 250V                 | 500V                  | 500V                            | 1Ω - 10MΩ        |
| Carbon(H)   | 0.5W                 |                       | 300V                 | 500V                  | 500V                            | 0.1Ω - 22MΩ      |
| Carbon(H)   | 1W                   |                       | 400V                 | 800V                  | 800V                            | 1Ω - 10MΩ        |
| Carbon(H)   | 2W                   |                       | 500V                 | 1000V                 | 1000V                           | 0.1Ω - 10MΩ      |

### ■Environmental Characteristics

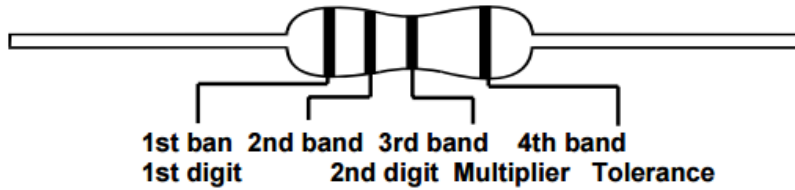
| Item                            | Requirement   | Test Method  |
|---------------------------------|---|--|
| Short Time Overload             | ±(0.75%+0.05Ω)  | <b>JIS-C-5201-1 5.5</b><br>RCWV*2.5 or Max. overload voltage for 5 seconds   |
| Insulation Resistance           | > 1000MΩ  | <b>JIS-C-5201-1 5.6</b><br>Apply 100V <sub>DC</sub> for 1 minute   |
| Endurance                       | ±(3%+0.05Ω)   | <b>JIS-C-5201-1 7.10</b><br>70±2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"            |
| Damp Heat with Load             | □100KΩ±3%<br>□100KΩ±5%  | <b>JIS-C-5201-1 7.9</b><br>40±2°C, 90~95% R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF" |
| Solderability                   | 90% min. Coverage   | <b>JIS-C-5201-1 6.5</b><br>245±5°C for 3 seconds   |
| Dielectric Withstanding Voltage | By Type   | <b>JIS-C-5201-1 5.7</b><br>Apply Max. Overload Voltage for 1 minute  |
| Temperature Coefficient         | < 100KΩ +350ppm~-500ppm<br>100KΩ~1MΩ -0ppm~-700ppm<br>> 1 MΩ -0ppm~-1500ppm | Resistance value at room temperature and room Temperature+100°C  |
| Pulse Overload                  | ±(1%+0.05Ω)   | <b>JIS-C-5201-1 5.8</b><br>4 times RCWV for 10000 cycles with 1 second "ON" and 25 seconds "OFF"                     |
| Resistance To Solvent           | No deterioration of coatings and markings                                   | <b>JIS-C-5201-1 6.9</b><br>Trichroethane for 1 min. with ultrasonic  |
| Terminal Strength               | Tensile: □2.5 kg  | Direct Load for 10 seconds<br>In the direction off the terminal leads  |

■ Rated Continuous Working Voltage(RCWV) =  $\sqrt{P \cdot R}$

■ Storage Temperature: 25±3°C; Humidity < 80%RH

# Professionally approved products. Datasheet

## ■ Marking & Resistance Tolerance



|     |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| ±5% | E-24 | 1.0 | 1.1 | 1.2 | 1.3 | 1.5 | 1.6 | 1.8 | 2.0 | 2.2 | 2.4 | 2.7 | 3.0 | 3.3 | 3.6 | 3.9 | 4.3 | 4.7 | 5.1 | 5.6 | 6.2 | 6.8 | 7.5 | 8.2 | 9.1 |
|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| Color   | Digit | Multiplier       | Tolerance |   |
|---------|-------|------------------|-----------|---|
| Without | -     | -                | -         | - |
| Silver  | -     | 10 <sup>-2</sup> | -         | - |
| Gold    | -     | 10 <sup>-1</sup> | ±5.0%     | J |
| Black   | 0     | 10 <sup>0</sup>  | -         | - |
| Brown   | 1     | 10 <sup>1</sup>  | -         | - |
| Red     | 2     | 10 <sup>2</sup>  | -         | - |
| Orange  | 3     | 10 <sup>3</sup>  | -         | - |
| Yellow  | 4     | 10 <sup>4</sup>  | -         | - |
| Green   | 5     | 10 <sup>5</sup>  | -         | - |
| Blue    | 6     | 10 <sup>6</sup>  | -         | - |
| Violet  | 7     | 10 <sup>7</sup>  | -         | - |
| Grey    | 8     | 10 <sup>8</sup>  | -         | - |
| White   | 9     | 10 <sup>9</sup>  | -         | - |