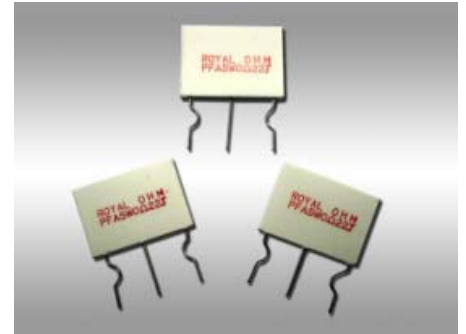


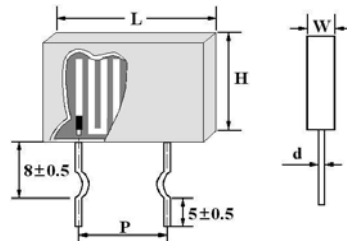
## POWER FLAT ALLOY RESISTOR

### Features

- Low Inductance
- Safety flameproof construction
- Thin & lightweight body save the PCB space considerably
- Automatically insertable



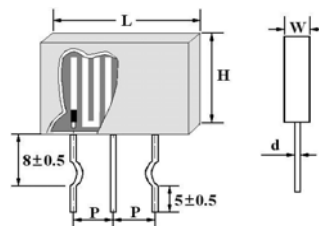
### (1) PFAS Type (Single Circuit)



Dimension (mm):

| Part No. | Style    | Power rating at 70°C | Dimension ( mm ) |       |       |                  |       | Resistance Range (5% & 10%) |
|----------|----------|----------------------|------------------|-------|-------|------------------|-------|-----------------------------|
|          |          |                      | W +0<br>-0.5     | H ± 1 | L ± 1 | d +0.02<br>-0.05 | P ± 1 |                             |
| PFAS2W   | PFAS 2W  | 2W                   | 5.5              | 9     | 14    | 0.6              | 10    | 0.1Ω ~ 0.68Ω                |
| PFAS3W   | PFAS 3W  | 3W                   | 5.5              | 13    | 14    | 0.8              | 10    | 0.1Ω ~ 0.68Ω                |
| PFAS5W   | PFAS 5W  | 5W                   | 5.5              | 17    | 14    | 0.8              | 10    | 0.1Ω ~ 1Ω                   |
| PFASAW   | PFAS 10W | 10W                  | 5.5              | 18    | 26    | 1.0              | 10    | 0.22Ω ~ 3.3Ω                |

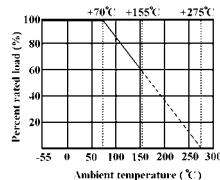
### (2) PFAT Type (Twin Circuit)



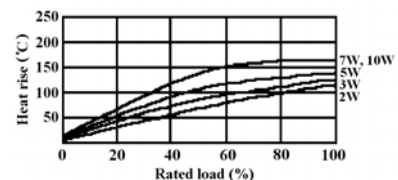
Dimension (mm):

| Part No. | Style        | Power rating at 70°C | Dimension ( mm ) |       |       |                  |       | Resistance Range (5% & 10%) |
|----------|--------------|----------------------|------------------|-------|-------|------------------|-------|-----------------------------|
|          |              |                      | W +0<br>-0.5     | H ± 1 | L ± 1 | d +0.02<br>-0.05 | P ± 1 |                             |
| PFAT2W   | PFAT 2W + 2W | 2W                   | 5.5              | 9     | 26    | 0.8              | 10    | 0.1Ω ~ 0.68Ω                |
| PFAT3W   | PFAT 3W + 3W | 3W                   | 5.5              | 13    | 26    | 0.8              | 10    | 0.1Ω ~ 0.68Ω                |
| PFAT5W   | PFAT 5W + 5W | 5W                   | 5.5              | 17    | 26    | 0.8              | 10    | 0.1Ω ~ 1Ω                   |
| PFAT7W   | PFAT 7W + 7W | 7W                   | 5.5              | 20    | 26    | 0.8              | 10    | 0.1Ω ~ 1Ω                   |

Derating Curve:



Heat Rise Chart:



## POWER FLAT ALLOY RESISTOR

### Performance Specifications:

| Characteristics                                       | Test Methods   | Limits  |             |      |   |           |          |   |            |               |   |              |          |   |            |               |   |
|---|--|---|-------------|------|---|-----------|----------|---|------------|---------------|---|--------------|----------|---|------------|---------------|---|
| Temperature coefficient<br>JIS - C - 5202 5.2         | Natural resistance change per temp. degree centigrade<br>$\frac{R_2 - R_1}{R_1 (t_2 - t_1)} \times 10^6 \text{ (PPM / } ^\circ\text{C)}$ R <sub>1</sub> : Resistance value at room temperature (t <sub>1</sub> )<br>R <sub>2</sub> : Resistance value at room temp. plus 100°C (t <sub>2</sub> )   | ± 350PPM / °C   |             |      |   |           |          |   |            |               |   |              |          |   |            |               |   |
| Short-time overload<br>JIS - C - 5202 5.5             | Permanent resistance change after the application of a potential of 2.5 times RCWV for 5 seconds.  | Resistance change rate is<br>± (2% + 0.05Ω)<br>No evidence of mechanical damage |             |      |   |           |          |   |            |               |   |              |          |   |            |               |   |
| Dielectric withstanding voltage<br>JIS - C - 5202 5.7 | Resistors shall be clamped in the trough of a 90° metallic V-block and shall be tested at AC potential respectively for 60 + 10 / -0 seconds.  | No evidence of flashover mechanical damage, arcing or insulation break down.    |             |      |   |           |          |   |            |               |   |              |          |   |            |               |   |
| Terminal strength<br>JIS - C - 5202 6.1               | <b>Direct load:</b> Resistance to a 2.5 kgs. direct load for 10 seconds in the direction of the longitudinal axis of the terminal leads.<br><b>Twist test:</b> Terminal leads shall be bent through 90° at a point of about 6mm from the body of the resistor and shall be rotated through 360° about the original axis of the bent terminal in alternating direction for a total of 3 rotations.  | No evidence of mechanical damage.   |             |      |   |           |          |   |            |               |   |              |          |   |            |               |   |
| Resistance to Soldering Heat<br>JIS - C - 5202 6.4    | Permanent resistance change when leads immersed to 3.2 mm to 4.8 mm from the body in 350°C ± 10°C solder for 3 ± 0.5 seconds   | Resistance change rate is ± ( 1%+0.05Ω)<br>No evidence of mechanical damage.    |             |      |   |           |          |   |            |               |   |              |          |   |            |               |   |
| Solderability<br>JIS - C - 5202 6.5                   | The area covered with a new, smooth, clean, shiny and continuous surface free from concentrated pinholes.<br>Test temp. of solder: 235°C ± 5°C<br>Dwell time in solder: 3 +0.5/ -0 seconds   | 95% coverage Min.   |             |      |   |           |          |   |            |               |   |              |          |   |            |               |   |
| Temperature cycling<br>JIS - C - 5202 7.4             | Resistance change after continuous five cycles for duty cycle specified below: <table border="1" data-bbox="487 1291 1036 1535"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-55°C±3°C</td> <td>30 mins.</td> </tr> <tr> <td>2</td> <td>Room temp.</td> <td>10 - 15 mins.</td> </tr> <tr> <td>3</td> <td>+155 °C±2 °C</td> <td>30 mins.</td> </tr> <tr> <td>4</td> <td>Room temp.</td> <td>10 - 15 mins.</td> </tr> </tbody> </table> | Step  | Temperature | Time | 1 | -55°C±3°C | 30 mins. | 2 | Room temp. | 10 - 15 mins. | 3 | +155 °C±2 °C | 30 mins. | 4 | Room temp. | 10 - 15 mins. | Resistance change rate is ± ( 5%+0.05 Ω)<br>No evidence of mechanical damage. |
| Step  | Temperature  | Time  |             |      |   |           |          |   |            |               |   |              |          |   |            |               |   |
| 1   | -55°C±3°C  | 30 mins.  |             |      |   |           |          |   |            |               |   |              |          |   |            |               |   |
| 2   | Room temp.   | 10 - 15 mins.   |             |      |   |           |          |   |            |               |   |              |          |   |            |               |   |
| 3   | +155 °C±2 °C   | 30 mins.  |             |      |   |           |          |   |            |               |   |              |          |   |            |               |   |
| 4   | Room temp.   | 10 - 15 mins.   |             |      |   |           |          |   |            |               |   |              |          |   |            |               |   |
| Load life in humidity<br>JIS - C - 5202 7.9           | Resistance change after 1,000 hours operating at RCWV with duty cycle of (1.5 hours "on", 0.5 hour "off") in a humidity test chamber controlled at 40°C ± 2°C and 90 to 95% relative humidity.   | Resistance change rate is<br>± (5% + 0.05Ω)<br>No evidence of mechanical damage |             |      |   |           |          |   |            |               |   |              |          |   |            |               |   |
| Load life<br>JIS - C - 5202 7.10                      | Permanent resistance change after 1,000 hours operating at RCWV with duty cycle of (1.5 hours "on", 0.5 hour "off") at 70° C ± 2°C ambient.  | Resistance change rate is<br>± (5% + 0.05Ω)<br>No evidence of mechanical damage |             |      |   |           |          |   |            |               |   |              |          |   |            |               |   |

\* RCWV = Rated Continuous Working Voltage =  $\sqrt{\text{Rated Power} \times \text{Resistance Value}}$