# Feature

- High quality performance
- Great economy
- Flame Retardant available
- Automatically insertable

## Dimension (mm)

![Dimensions](image)

## Specification

<table>
<thead>
<tr>
<th>Part No</th>
<th>Type</th>
<th>Power Rating 70°C</th>
<th>D (mm)</th>
<th>L (mm)</th>
<th>d ±0.05</th>
<th>H±3</th>
<th>PT</th>
<th>MAX. Working Voltage</th>
<th>MAX. Overload Voltage</th>
<th>Dielectric Withstanding Voltage</th>
<th>Resistance Range</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFR0W8</td>
<td>CFR-12</td>
<td>1/8W</td>
<td>1.9±0.3</td>
<td>3.3±0.3</td>
<td>0.45</td>
<td>28</td>
<td>52</td>
<td>200V</td>
<td>400V</td>
<td>400V</td>
<td>1Ω–1MΩ</td>
<td>±2%</td>
</tr>
<tr>
<td>CFR0S4</td>
<td>CFR-2S-S</td>
<td>1/4W-S</td>
<td>1.9±0.3</td>
<td>3.3±0.3</td>
<td>0.45</td>
<td>28</td>
<td>52</td>
<td>200V</td>
<td>400V</td>
<td>400V</td>
<td>1Ω–1MΩ</td>
<td>±2%</td>
</tr>
<tr>
<td>CFR0W4</td>
<td>CFR-25</td>
<td>1/4W</td>
<td>2.2±0.3</td>
<td>6.5±1.0</td>
<td>0.54</td>
<td>28</td>
<td>52</td>
<td>250V</td>
<td>500V</td>
<td>500V</td>
<td>1Ω–10MΩ</td>
<td>±5%</td>
</tr>
<tr>
<td>CFR0W2</td>
<td>CFR-50</td>
<td>1/2W</td>
<td>3.0±0.6</td>
<td>9.5±1.0</td>
<td>0.54</td>
<td>28</td>
<td>52</td>
<td>350V</td>
<td>700V</td>
<td>700V</td>
<td>1Ω–10MΩ</td>
<td>±10%</td>
</tr>
<tr>
<td>CFR0T5</td>
<td>CFR-100-S</td>
<td>1W-S</td>
<td>4.5±0.6</td>
<td>11.5±1.0</td>
<td>0.70</td>
<td>25</td>
<td>52</td>
<td>500V</td>
<td>1000V</td>
<td>1000V</td>
<td>1Ω–10MΩ</td>
<td>±2%</td>
</tr>
<tr>
<td>CFR01W</td>
<td>CFR-100</td>
<td>1W</td>
<td>5.0±0.6</td>
<td>15.5±1.0</td>
<td>0.70</td>
<td>28</td>
<td>64</td>
<td>500V</td>
<td>1000V</td>
<td>1000V</td>
<td>1Ω–10MΩ</td>
<td>±5%</td>
</tr>
<tr>
<td>CFR02S</td>
<td>CFR-200-S</td>
<td>2W-S</td>
<td>5.0±0.6</td>
<td>15.5±1.0</td>
<td>0.70</td>
<td>28</td>
<td>64</td>
<td>500V</td>
<td>1000V</td>
<td>1000V</td>
<td>1Ω–10MΩ</td>
<td>±10%</td>
</tr>
<tr>
<td>CFR02W</td>
<td>CFR-200</td>
<td>2W</td>
<td>6.0±0.6</td>
<td>17.5±1.0</td>
<td>0.75</td>
<td>28</td>
<td>64</td>
<td>500V</td>
<td>1000V</td>
<td>1000V</td>
<td>1Ω–10MΩ</td>
<td>±2%</td>
</tr>
<tr>
<td>CFR03S</td>
<td>CFR-300-S</td>
<td>3W-S</td>
<td>6.0±0.6</td>
<td>17.5±1.0</td>
<td>0.75</td>
<td>28</td>
<td>64</td>
<td>500V</td>
<td>1000V</td>
<td>1000V</td>
<td>1Ω–10MΩ</td>
<td>±5%</td>
</tr>
</tbody>
</table>

**High Power Products**

<table>
<thead>
<tr>
<th>Part No</th>
<th>Type</th>
<th>Power Rating 70°C</th>
<th>D (mm)</th>
<th>L (mm)</th>
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<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPR0W2</td>
<td>CPR-50</td>
<td>1/2W</td>
<td>2.2±0.5</td>
<td>6.5±1.0</td>
<td>0.54</td>
<td>28</td>
<td>52</td>
<td>300V</td>
<td>500V</td>
<td>700V</td>
<td>3Ω–10MΩ</td>
<td>±2%</td>
</tr>
<tr>
<td>CPR01W</td>
<td>CPR-100</td>
<td>1W</td>
<td>3.5±0.5</td>
<td>9.5±1.0</td>
<td>0.54</td>
<td>28</td>
<td>52</td>
<td>300V</td>
<td>700V</td>
<td>1000V</td>
<td>3Ω–10MΩ</td>
<td>±5%</td>
</tr>
<tr>
<td>CPR02W</td>
<td>CPR-200</td>
<td>2W</td>
<td>4.5±0.5</td>
<td>11.0±1.0</td>
<td>0.70</td>
<td>25</td>
<td>52</td>
<td>500V</td>
<td>1000V</td>
<td>1000V</td>
<td>3Ω–10MΩ</td>
<td>±10%</td>
</tr>
</tbody>
</table>

- Standard E-24 series values in ±5% ±10% & ±20% tolerance
- For any special inquiry such as too Low or too High ohmic values is available case by case.
**Performance Specification**

| **Temperature coefficient** | ≤10 Ω: ±300PPM/°C  
11Ω~99KΩ: ±450PPM/°C  
100KΩ~1MΩ: 0~700PPM/°C  
1.1MΩ~10MΩ: 0~1500PPM/°C |
|-------------------------------|-------------------|
| **Short-time Overload**       | CFR Products: ΔR/R ≤ ±(1%+0.05 Ω)  
CPR Products: ΔR/R ≤ ±(0.75%+0.05 Ω) |
| **Dielectric withstanding voltage** | With no evidence of flashover, mechanical damage, arcing or insulation breakdown |
| **Terminal strength**         | No evidence of mechanical damage |
| **Soldering heat**            | ΔR/R ≤ ±(1%+0.05 Ω) with no evidence of mechanical damage |
| **Solderability**             | Coverage must be over 95% |
| **Resistance to solvent**     | No deterioration of protective coating and markings |
| **Rapid change of temperature** | ΔR/R ≤ ±(1%+0.05 Ω) with no evidence of mechanical damage |
| **Load life in humidity**     | CFR Ordinary Products: ΔR/R ±3% for < 100Ω, ±5% for ≥ 100Ω  
CFR Flame retardant type: ΔR/R ±5% for < 100Ω, ±10% for ≥ 100Ω  
High Power Products: ΔR/R ±3%+0.05Ω |
| **Load life**                 | CFR Ordinary Products: ΔR/R ±2% for < 56Ω, ±3% for ≥ 56Ω  
CFR Flame retardant type: ΔR/R ±5% for < 100Ω, ±10% for ≥ 100Ω  
High Power Products: ΔR/R ±(3%+0.05Ω) |

**Ordering Procedure (Example: CFR 1/4WS  5% 10Ω T/B-5000)**

- **Product Type:** CFR=Carbon Film Fixed Resistors  
  CPR=Carbon Film Power Resistors
- **Wattage:**  
  W8=1/8W  
  W4=1/4W  
  W2=1/2W  
  1W=1W  
  2W=2W  
  S4=1/4WS  
  1S=1W-S  
  2S=2WS  
  3S=3WS  
  58=PT-58mm  
  64=PT-64mm  
  7H=Lead wire(H)38mm  
  A=PT-83mm  
  C=PT-73mm  
  D=PT-71mm
- **Resistance Value:**  
  2%, 5%, 10% (E-24 series):  
  the 1st digit is '0', the 2nd & 3rd digits are for the significant figures of the resistance and the 4th indicate the number of zeros following;  
  ≤1% (E-96 series):  
  the 1st to 3rd digits are for the significant figures of the resistance and the 4th indicate the number of zeros following.
- **Tolerance:**  
  G = ± 2%  
  J = ± 5%  
  K = ± 10%
- **Packing Qty.:**  
  1=1,000pcs  
  2=2,000pcs  
  3=3,000pcs  
  4=4,000pcs  
  5=5,000pcs  
  A=500pcs  
  B=2,500pcs  
  0=Bulk/Box
- **Packing Type:**  
  A=Tape/Box  
  T=Tape/Reel  
  B=Bulk/Box  
  P=Tape/Box of PT-26 product
- **Additional Information:**  
  0=NIL  
  P=Panasert type  
  1=Avisert type  
  2=Avisert type  
  3=Avisert type  
  B=PT-58mm  
  9=PT-64mm  
  7=Lead wire(H)38mm  
  A=PT-83mm  
  C=PT-73mm  
  D=PT-71mm

**Remark:** For more details, please check page 135, Part No. System