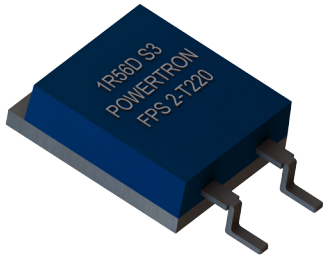
POWERTRON
A VPG Brand

## FEATURES

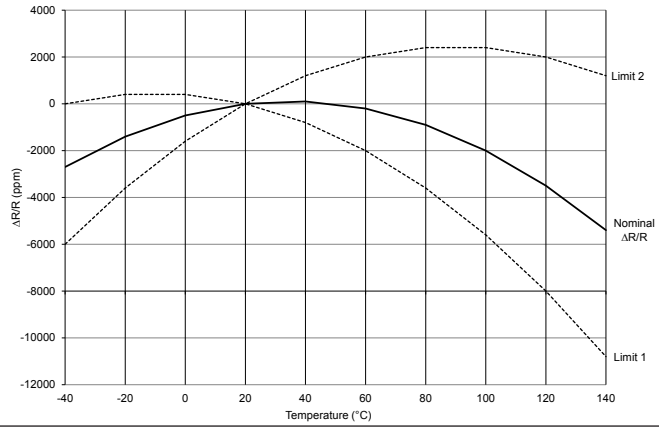
- Resistances from 0.002Ohm to 10Ohms
- Power Rating to 15Watt
- Resistance Tolerances to ±0.5%
- TCR to ±50ppm/K
- Load Stability to 0.1%
- SMD D2Pak



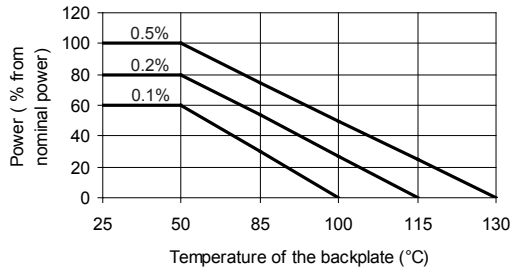

| TABLE 1—SPECIFICATIONS | | |
|---|---|---|
| **TYPE** | | FPS 2-T220 |
| **Resistance Range** | | 0.002 to 10 Ohms |
| **Power Rating** | **Free air 70°C** | 1.5W |
| | **With heatsink** | 15W |
| **Tolerances**<br>**from 0.002 Ohms**<br>**from 0.01 Ohms**<br>**from 0.1 Ohms** | | <br>2% / 5%<br>1% / 2% / 5%<br>0.5% / 1% / 2% / 5% |
| **Thermal Resistance** | | 4.8 K/W |
| **Stability (1000h)** | | 0.1% / 0.2% / 0.5%<br>(depends on stress) |
| **Temperature Coefficient** | | ±50ppm/K (20 to 60°C)<br>other specification upon request |
| **Voltage Proof** | | 300 VDC |
| **Maximum Current** | | 50A |
| **Thermal EMF** | | < 0.1µV/K |
| **Operating Temperature Range** | | -40 to 130°C |
| **Resistor Material** | | CuNiMn-Foil |
| **Substrate** | | Anodized aluminium |
| **Backplate** | | Copper / Nickel-plated |
| **Housing** | | PPS |
| **Connector Material** | | Cu / tinned |
| **Soldering Profile** | | lead free soldering<br>time above 220°C max. 90 s<br>max. temperature 245°C<br>and JEDEC-J-STD-020 |
| **Terminals** | | 2 (standard contact S) |

| ORDERING INFORMATION |
|---|
| **Part Number - Resistance - Contact - Tolerance** |
| FPS 2-T220 0R010 S 0.5% |

## FIGURE 1—TEMPERATURE COEFFICIENT




## FIGURE 2—DERATING

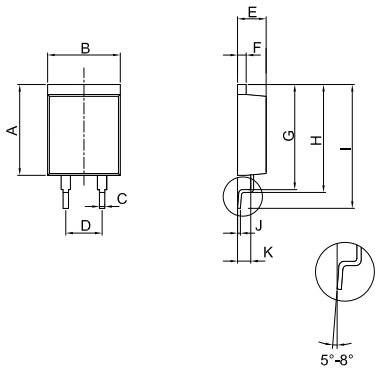



Power Rating Notes -
The FPR Series Resistors must be attached to a suitable heat-sink. The maximum internal resistor temperature is 130°C.
To specify an appropriate heatsink use the following formula :

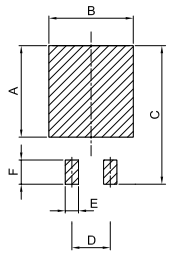
$$R_{\theta H} = \frac{T_{MAX} - ( P \times R_{\theta R} ) - T_A}{P}$$

Where: $R_{\theta H}$ = Thermal Resistance of Heatsink ( K/W )
$R_{\theta R}$ = Thermal Resistance of Resistor ( K/W )
$T_{MAX}$ = Maximum Temperature of Resistor
$T_A$ = Ambient Temperature of Heatsink ( °C )
P = Power Through Resistor ( W )

## FIGURE 3—DIMENSIONS in mm (inches)




| Dimension | |
|---|---|
| **A** ±0.2 (±0.008) | 12.70 (0.50) |
| **B** ±0.2 (±0.008) | 10.16 (0.40) |
| **C** ±0.1 (±0.004) | 0.76 (0.03) |
| **D** ±0.1 (±0.004) | 5.08 (0.20) |
| **E** ±0.1 (±0.004) | 4.00 (0.16) |
| **F** ±0.1 (±0.004) | 1.20 (0.05) |
| **G** ±0.2 (±0.008) | 14.60 (0.57) |
| **H** ±0.2 (±0.008) | 15.00 (0.59) |
| **I** ±0.2 (±0.008) | 17.33 (0.68) |
| **J** ±0.1 (±0.004) | 0.40 (0.02) |
| **K** ±0.1 (±0.004) | 1.85 (0.07) |




| Dimension | |
|---|---|
| **A** | 12.10 (0.476) |
| **B** | 11.16 (0.439) |
| **C** | 18.33 (0.722) |
| **D** | 5.08 (0.200) |
| **E** | 1.76 (0.069) |
| **F** | 3.20 (0.126) |

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