

**FEATURES**

- Resistances from 0.005Ohm to 10Ohms
- Power Rating to 15Watt
- Resistance Tolerances to  $\pm 0.1\%$
- TCR to  $\pm 5\text{ppm/K}$
- Load Stability to 0.1%
- SMD D2Pak

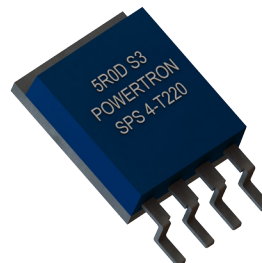
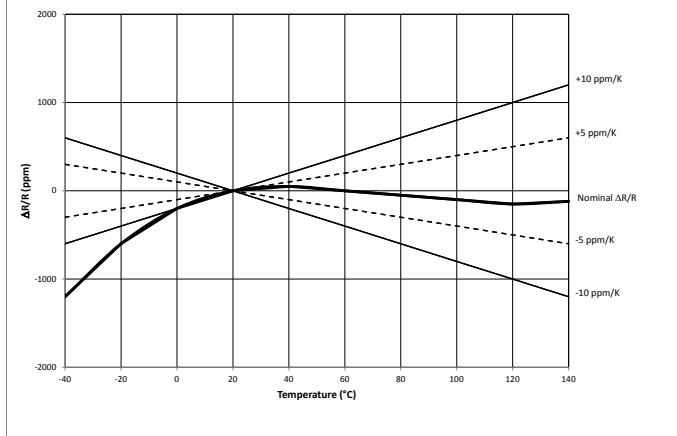


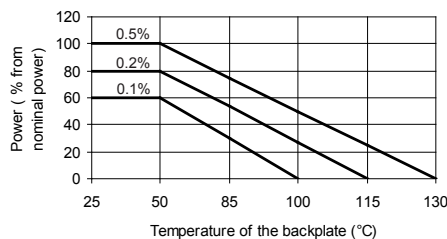
TABLE 1 – SPECIFICATIONS		
TYPE		SPS 4-T220
Resistance Range		0.005 to 10 Ohms
Power Rating	Free air 70°C	1.5W
	With heatsink	15W
Tolerances from 0.005 Ohms from 0.01 Ohms		1% / 2% / 5% 0.1% / 0.25% / 0.5% / 1% / 2% / 5%
Thermal Resistance		4.8 K/W
Stability (1000h)		0.1% / 0.2% / 0.5% (depends on stress)
Temperature Coefficient ( $R \geq 1 \text{ Ohm}$ ) Standard (M)		$\pm 5\text{ppm/K}$ (20 to 60°C) $\pm 8\text{ppm/K}$ (20 to 100°C)
Voltage Proof		300 VDC
Maximum Current		50A
Thermal EMF		$< 1\mu\text{V/K}$
Operating Temperature Range		-40 to 130°C
Resistor Material		CuMnSn-Foil
Substrate		Anodized aluminium
Backplate		Copper / Nickel-plated
Housing		PPS
Connector Material		Cu / tinned
Terminals		4 (standard contact S)
Soldering Profile		lead free soldering time above 220°C max. 90 s max. temperature 245°C and JEDEC-J-STD-020
Product Weight		1.83 g / piece
Packaging Unit		500 pieces tape & reel

ORDERING INFORMATION
Part Number - Resistance - Tolerance
SPS 4-T220 5R000 S 0.1% M

**FIGURE 1 – TEMPERATURE COEFFICIENT**



**FIGURE 2 – DERATING**



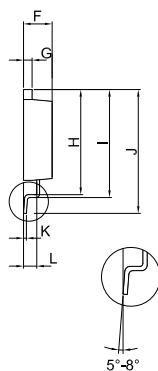
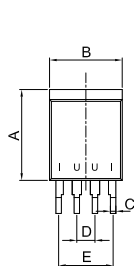
**Power Rating Notes -**

The SPS 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 :

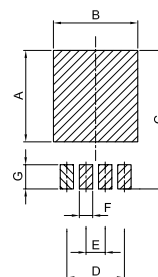
$$R_{0H} = \frac{T_{MAX} - (P \times R_{0R}) - T_A}{P}$$

Where:  $R_{0H}$  = Thermal Resistance of Heatsink ( K/W )  
 $R_{0R}$  = 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)	2.54 (0.10)
E ±0.1 (±0.004)	7.62 (0.30)
F ±0.1 (±0.004)	4.00 (0.16)
G ±0.1 (±0.004)	1.20 (0.05)
H ±0.2 (±0.008)	14.60 (0.57)
I ±0.2 (±0.008)	15.00 (0.59)
J ±0.2 (±0.008)	17.33 (0.68)
K ±0.1 (±0.004)	0.40 (0.20)
L ±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	7.62 (0.300)
E	2.54 (0.100)
F	1.76 (0.069)
G	3.20 (0.126)



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