

# Leistungswiderstände Typ NPS NHS 2-T220

## Datenblatt

### FEATURES

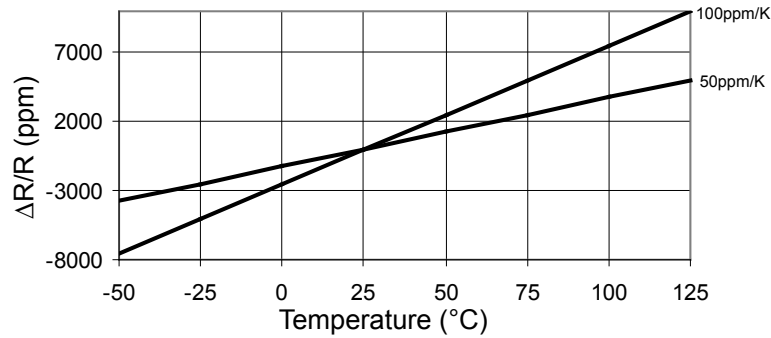
- Resistances from 0.02Ohm to 100kOhms
- Power Rating to 50Watt
- Resistance Tolerances to  $\pm 1\%$
- TCR to  $\pm 50\text{ppm/K}$
- Load Stability to 0.5%
- TO-220 Housing
- Convenient SMD D2Pak



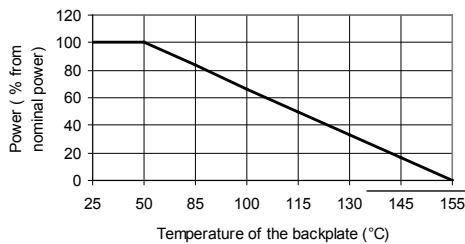
TABLE 1 – SPECIFICATIONS			
TYPE		NPS 2-T220	NHS 2-T220
Resistance Range		0.02 Ohms to 100kOhms	
Power Rating	Free air 70°C	1.5W	1.5W
	With heatsink	30W	50W
Tolerances from 0.02 Ohms from 1.0 Ohms		2% / 5% 1% / 2% / 5%	
Thermal Resistance		3.5 K/W	2.1 K/W
Stability (1000h)		0.5%	
Temperature Coefficient 0.02 to 0.049 Ohms 0.05 to 0.099 Ohms 0.1 Ohms to 100 kOhms		$\pm 600\text{ ppm/K}$ $\pm 300\text{ ppm/K}$ $\pm 100\text{ ppm/K}$ upon request $\pm 50\text{ ppm/K}$	
Voltage Proof		2.0 kVDC	1.5 kVDC
Max. Voltage depending on resistance value			
Operating Temperature Range		-40 to 155°C	
Resistor Material		Thick Film	
Substrate		Al <sub>2</sub> O <sub>3</sub>	
Housing		PPS	
Connector Material		Cu / tinned	
Terminals		2	

ORDERING INFORMATION
Part Number - Resistance - Tolerance
NHS 2-T220 1.1kOhms 1%

**FIGURE 1 – TEMPERATURE COEFFICIENT**



**FIGURE 2 – DERATING**



**Power Rating Notes -**

The NPS / NHS Series Resistors must be attached to a suitable heatsink.

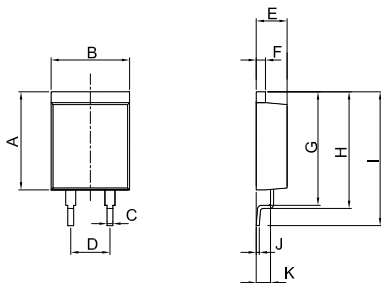
The maximum internal resistor temperature is 155°C.

To specify an appropriate heatsink use the following formula :

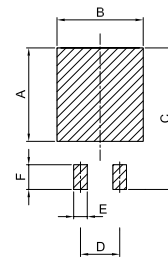
$$R_{\theta H} = \frac{T_{MAX} - (P \times R_{\theta R}) - T_A}{P}$$

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	mm
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	mm
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)