

**FEATURES**

- Resistances from 0.05Ohm to 500Ohms
- Power Rating to 30Watt
- Resistance Tolerances to  $\pm 0.01\%$
- TCR to  $\pm 1\text{ppm/K}$
- Load Stability to 0.01%

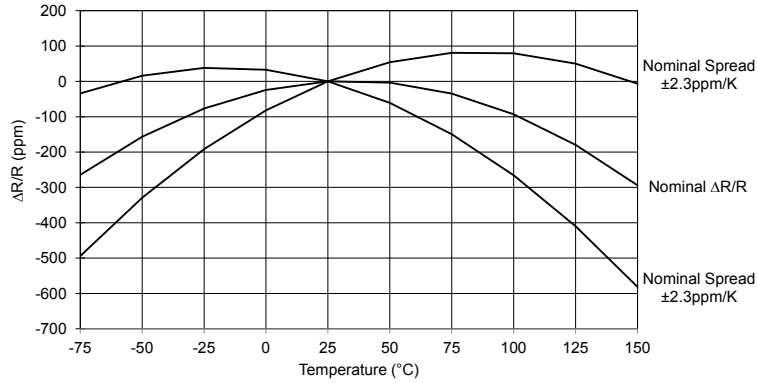


**RoHS\***  
COMPLIANT

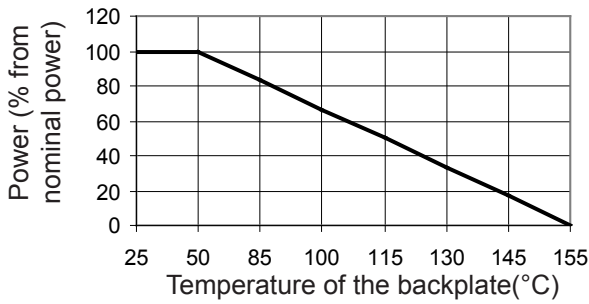
TABLE 1 – SPECIFICATIONS		
TYPE	PCS331	
Resistance Range	0.05 to 500 Ohms other resistance values upon request power rating depending on resistance value	
Power Rating	Free air 70°C	3W
	With heatsink	30W
Tolerances		
from 0.05 Ohms	0.1% / 0.25% / 0.5% / 1%	
from 10.0 Ohms	0.05% / 0.1% / 0.25% / 0.5% / 1%	
from 50.0 Ohms	0.01% / 0.02% / 0.05% / 0.1% / 0.25% / 0.5% / 1%	
Thermal Resistance	3.5 K/W	
Stability (1000h)	0.01%	
Shelf Life Stability	25ppm / $\Delta R$ after 1 year 50ppm / $\Delta R$ after 3 years	
Temperature Coefficient		
$\geq 0.05 \Omega$ to $< 0.25 \Omega$	$\pm 5\text{ppm/K}$ (0 to 60°C)	
$\geq 0.25 \Omega$ to $< 1.00 \Omega$	$\pm 3\text{ppm/K}$ (0 to 60°C)	
$\geq 1.00 \Omega$ to $< 10.0 \Omega$	$\pm 2\text{ppm/K}$ (0 to 60°C)	
$\geq 10.0 \Omega$ to 500.0 $\Omega$	$\pm 1\text{ppm/K}$ (0 to 60°C)	
Voltage Proof	750 VDC	
Maximum Current	15A	
Thermal EMF	$< 0.1\mu\text{V/K}$	
Operating Temperature Range	-40 to 130°C	
Resistor Material	Bulk Metal® Foil	
Substrate	Anodized aluminium	
Housing	Epoxy	
Connector Material	Cu / tinned	
Terminals	4 (standard contact S)	
Max. Torque	1 Nm	

ORDERING INFORMATION
Part Number - Resistance - Contact - Tolerance - TCR (if not standard)
PCS 331 10R0 S 0.1%

**FIGURE 1 – TEMPERATURE COEFFICIENT**



**FIGURE 2 – DERATING**



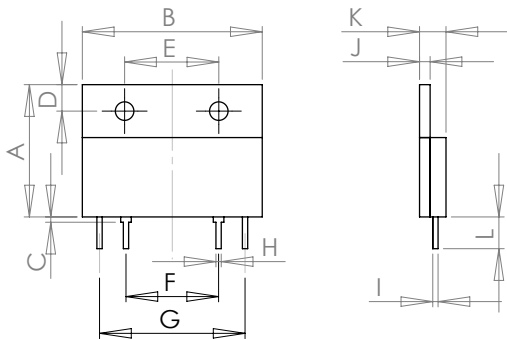
**Power Rating Notes -**

The PCS-Series Resistors must be attached to a suitable heat-sink. 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	D-contact
A ±0.2 (±0.008)	25.00 (0.98)
B ±0.5 (±0.02)	34.00 (1.34)
C ±0.1 (±0.004)	1.00 (0.04)
D ±0.1 (±0.004)	5.00 (0.2)
E ±0.2 (±0.008)	17.80 (0.70)
F ±0.2 (±0.008)	17.50 (0.69)
G ±0.2 (±0.008)	27.50 (1.08)
H ±0.1 (±0.004) rectangular ±0.1 (±0.004)	1.00 (0.04) 0.40 (0.02)
I ±0.1 (±0.004)	1.00 (0.04)
J ±0.2 (±0.008)	2.00 (0.08)
K ±0.2 (±0.008)	5.10 (0.20)
L (Minimum)	5.50 (0.22)



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