VISHAY PRECISION GROUP

FPR 4-T221Q

Powertron

FEATURES

- Resistances from 0.001 Ohm to 0.010 Ohms
- Power Rating to 15Watt
- Resistance Tolerances to ±0.5%
- TCR to ±30ppm/K
- Load Stability to 0.1%
- TO-220 Housing

Pb-free Available
RoHS COMPLIANT

TABLE 1—SPECIFICATIONS

TYPE		FPR 4-T221Q
Resistance Range		0.001 to 0.010 Ohms
Power Rating	**Free air 70°C**	1.5 W
	With heatsink	15 W
Tolerances		0.5% / 1% / 2% / 5%
Thermal Resistance		4.8 K/W
Stability (1000h)		0.1% / 0.2% / 0.5% (depends on stress)
Temperature Coefficient		±30ppm/K (20 to 60°C) other specifications upon request
Voltage Proof		300 VDC
Maximum Current		50 A
Thermal EMF		< 0.1µV/K
Operating Temperature Range		-40 to 130°C
Resistor Material		CuNiMn-Foil
Substrate		Anodized aluminium
Housing		PPS
Connector Material		Cu / tinned
Terminals		4
Max. Torque		0.8 Nm
Packaging		Tube (50 pieces per tube)

ORDERING INFORMATION

Part Number - Resistance - Contact - Tolerance
FPR 4-T221Q 0R001 C 0.5%

FIGURE 1—TEMPERATURE COEFFICIENT

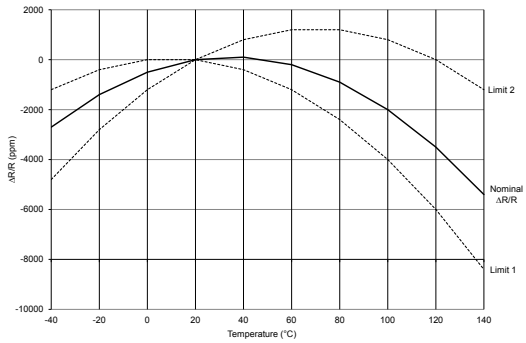
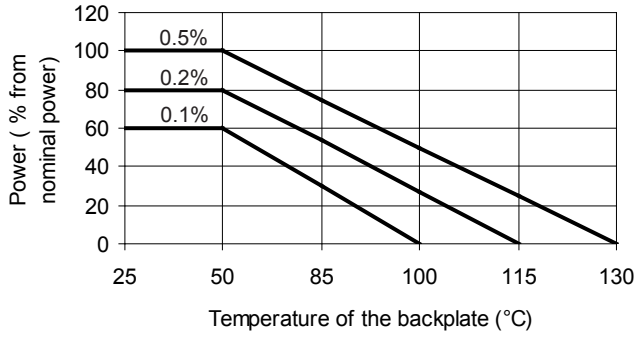


FIGURE 2—DERATING



Power Rating Notes -

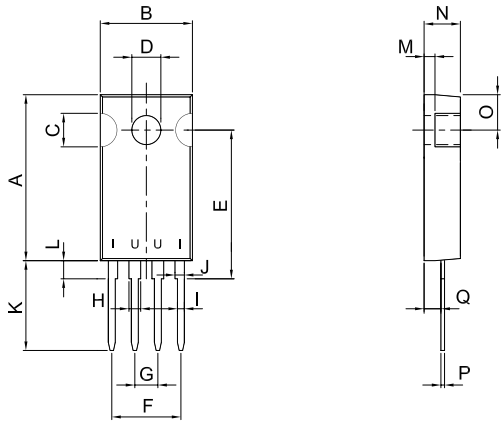
The FPR Series Resistors must be attached to a suitable heat-sink. The maximum internal resistor temperature is 130°C.

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	Standard contact S	C-contact
A ±0.2 (±0.008)	18.30 (0.72)	
B ±0.2 (±0.008)	10.16 (0.40)	
C ±0.1 (±0.004)	3.70 (0.15)	
D ±0.1 (±0.004)	Ø3.2 (Ø0.126)	
E ±0.2 (±0.008)	16.40 (0.65)	
F ±0.2 (±0.008)	7.62 (0.30)	
G ±0.1 (±0.004)	2.54 (0.10)	
H ±0.1 (±0.004)	1.30 (0.05)	
I ±0.1 (±0.004)	0.76 (0.03)	
J ±0.1 (±0.004)	1.03 (0.04)	
K ±0.2 (±0.008)	10.00 (0.39)	13.80 (0.54)
L ±0.1 (±0.004)	2.00 (0.08)	
M ±0.1 (±0.004)	1.20 (0.05)	
N ±0.1 (±0.004)	4.00 (0.16)	
O ±0.1 (±0.004)	3.90 (0.15)	
P ±0.1 (±0.004)	0.40 (0.02)	
Q ±0.1 (±0.004)	1.85 (0.07)	

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