

FPR 2-T218

Precision Shunt Resistors



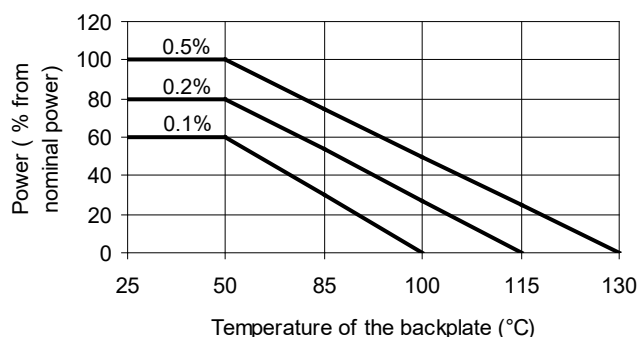
- Resistances from 0.002 Ohm to 20 Ohms
- Power Rating to 30Watt
- Resistance Tolerances to $\pm 0.25\%$
- TCR to ± 30 ppm/ $^{\circ}\text{C}$
- Load Stability to 0.1%
- TO-218 (TO-247) Housing
- Non-Inductive Planar Construction



SPECIFICATIONS

Type	FPR 2-T218			
Resistance Range	0.002 to 20 Ohms			
Power rating free air 70°C with heatsink	2 W 30 W			
Thermal Resistance	2.5 $^{\circ}\text{C}/\text{W}$			
Tolerances from 0.002 Ohms from 0.01 Ohms from 0.02 Ohms	1% / 2% / 5% 0.5% / 1% / 2% / 5% 0.25% / 0.5% / 1% / 2% / 5%			
Stability (1000h)	0.1% / 0.2% / 0.5% (depends on stress)			
Temperature Coefficient	$R \leq 0.01$ Ohm ± 300	$R \leq 0.05$ Ohm ± 100	$R \leq 0.5$ Ohm ± 50	$R > 0.5$ Ohm ± 30
Voltage Proof	300 VDC			
Thermal EMF	$< 0.1 \mu\text{V}/^{\circ}\text{C}$			
Operating Temperature Range	-40°C to 130°C			
Resistor Material	CuNiMn-Foil			
Substrate	anodized aluminium			
Housing	PPS			
Connector Material	Cu / Tinned			
Terminals	2			
Max. Torque	1 Nm			

Derating



Power Rating Notes -

The FPR Series Resistors must be attached to a suitable heatsink.

The maximum internal resistor temperature is 130°C .

To specify an appropriate heatsink use the following formula :

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

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 ($^{\circ}\text{C}$)
- P = Power Through Resistor (W)

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SPECIFICATIONS (continued)

Temperature Coefficient

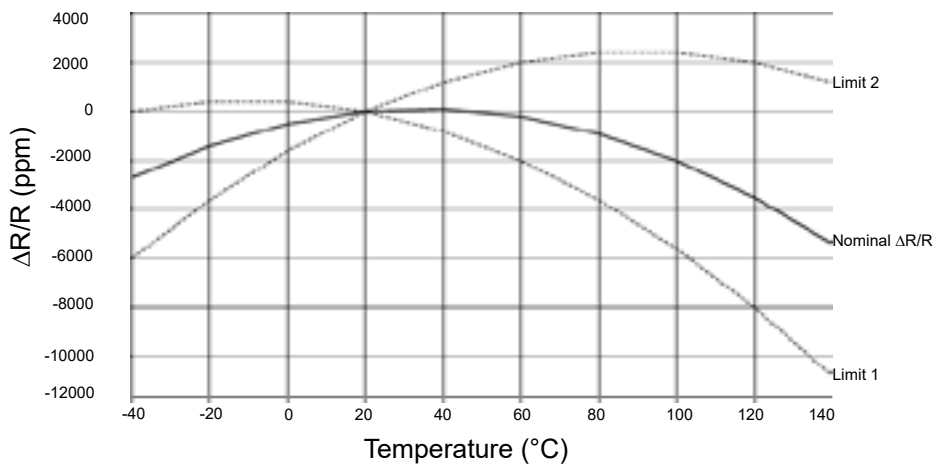
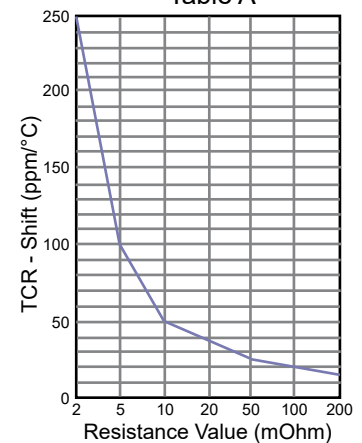
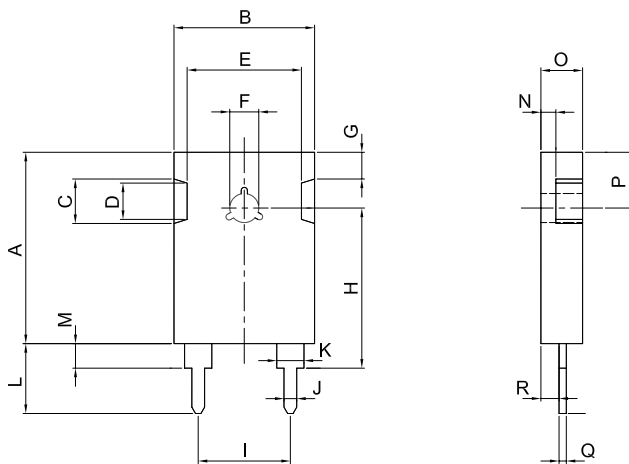


Table A



DIMENSIONS



Dimension	mm / tol.	inches / tol.	A - Contact	B - Contact	C - Contact
A	21.10 ± 0.2	0.83 ± 0.008	21.10 (0.83)		
B	15.50 ± 0.2	0.61 ± 0.008	15.50 (0.61)		
C	4.90 ± 0.1	0.19 ± 0.004	4.90 (0.19)		
D	4.00 ± 0.1	0.16 ± 0.004	4.00 (0.16)		
E	12.60 ± 0.2	0.50 ± 0.008	12.60 (0.50)		
F	Ø3.2 ± 0.1	0.13 ± 0.004	Ø3.2 (0.13)		
G	2.95 ± 0.1	0.12 ± 0.004	2.95 (0.12)		
H	17.75 ± 0.2	0.70 ± 0.008	17.65 (0.69)	16.85 (0.66)	17.75 (0.70)
I	10.16 ± 0.2	0.40 ± 0.008	10.16 (0.40)		
J	1.40 ± 0.1	0.06 ± 0.004	1.40 (0.06)		
K	3.00 ± 0.1	0.12 ± 0.004	3.00 (0.12)		
L	14.50 ± 0.2	0.57 ± 0.008	7.70 (0.30)	5.00 (0.20)	14.50 (0.57)
M	2.80 ± 0.1	0.11 ± 0.004	2.70 (0.11)	1.90 (0.07)	2.80 (0.11)
N	1.65 ± 0.1	0.06 ± 0.004	1.65 (0.06)		
O	4.60 ± 0.1	0.18 ± 0.004	4.60 (0.18)		
P	6.15 ± 0.2	0.24 ± 0.008	6.15 (0.24)		
Q	0.80 ± 0.1	0.03 ± 0.004	0.80 (0.03)		
R	2.00 ± 0.1	0.08 ± 0.004	2.00 (0.08)		

Ordering Information

Part Description: Part Type - Resistance - Contact - Tolerance
FPR 2-T218 0.068 Ohms C 0.5%