



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

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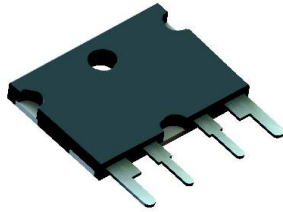
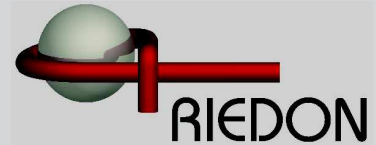
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FHR 4-2321

Current Sense Resistors



- Excellent Long Term Stability
- 0.001 to 50 Ohm
- Power Rating to 40Watt
- Resistance Tolerances to $\pm 0.1\%$
- TCR to $\pm 15\text{ppm}/^\circ\text{C}$
- Very Low Inductive
- Foil Technology

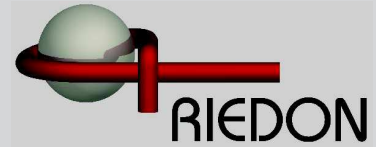
Applications: Power Modules, Current Monitoring, Frequency Converters, Switch Mode Power Supplies

SPECIFICATIONS

Type	FHR 4-2321
Resistance Range	0.001 to 50 Ohm
Power rating (70°C)	3 W
Power Rating with Heat Sink	40W
Tolerances: from 0.001 Ohm from 0.01 Ohm	0.5% / 1% / 2% / 5% 0.1% / 0.25% / 0.5% / 1% / 2% / 5%
Thermal Resistance	2.0 C/W
Stability (1000h)	0.1% / 0.2% / 0.5% (depends on stress)
Temperature Coefficient 0.001 to 50 Ohms Option 1 upon request for selected values	$\pm 25\text{ppm}/^\circ\text{C}$ (20 to 60°C) $\pm 15\text{ppm}/^\circ\text{C}$ (20 to 60°C) other specifications upon request
Insulation Resistance	300 VDC
Max. Current	150 A
Thermal EMF	< 1 $\mu\text{V}/\text{K}$
Operating Temperature Range	-40 to 130°C
Resistor Material	CuNiMn-Foil
Substrate	Anodized aluminium
Connector Material	Cu / tinned
Terminals	4
Max Torque	0.8 Nm

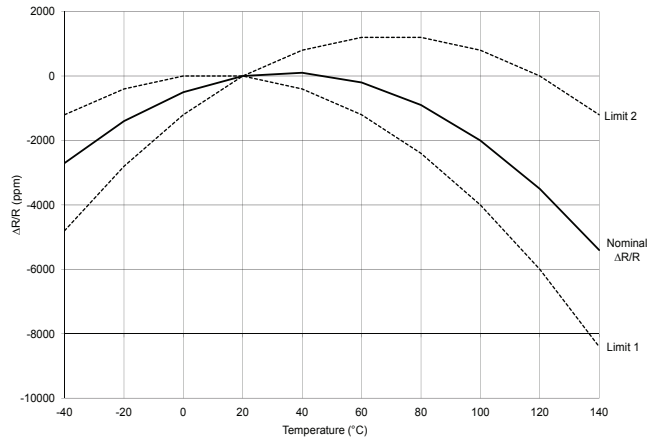
Ordering Information

Part Description: Part Type - Resistance - Tolerance - TCR
FHR 4-2321 0.035 Ohms 0.25% 25ppm

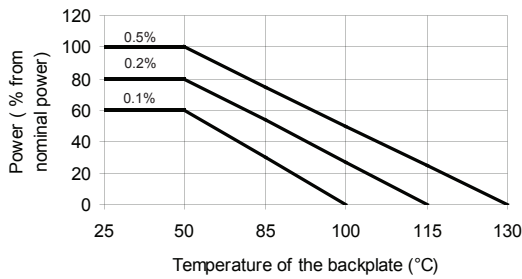


SPECIFICATIONS (continued)

Temperature Coefficient



Derating



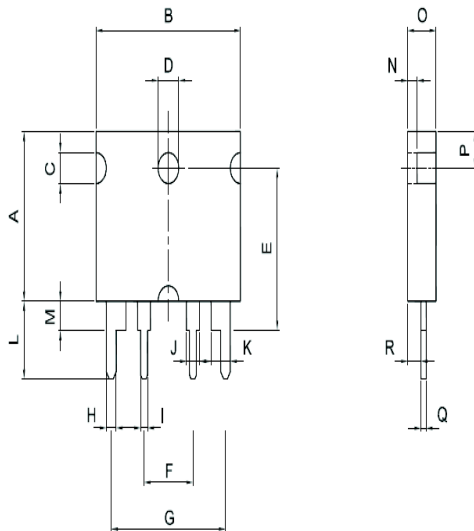
Power Rating Notes -

The FHR 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)

Dimensions



Dimension	mm	tol. (±mm)	inches	tol. (±inches)
A	17.25	±0.2	0.68	±0.008
B	22.30	±0.2	0.88	±0.008
C	3.20	±0.1	0.13	±0.004
D	Ø3.20	±0.1	Ø0.13	±0.004
E	16.75	±0.008	0.66	±0.2
F	7.62	±0.008	0.30	±0.2
G	17.78	±0.008	0.70	±0.2
H	1.50	±0.2	0.06	±0.008
I	1.10	±0.008	0.04	±0.2
J	2.00	±0.004	0.08	±0.1
K	3.00	±0.004	0.12	±0.1
L	8.00	±0.008	0.31	±0.2
M	3.00	±0.008	0.12	±0.2
N	1.50	±0.004	0.06	±0.1
O	4.50	±0.004	0.18	±0.1
P	3.75	±0.008	0.15	±0.2
Q	0.80	±0.1	0.03	±0.004
R	2.10	±0.008	0.08	±0.2