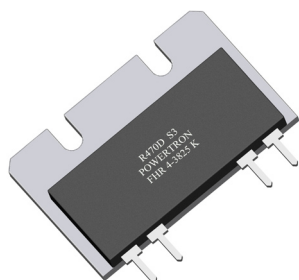


FHR 2-3025 3818

FHR 4-3825 3825H 4618

Precision Shunt Resistors



- Resistances from 0.001Ohm to 100Ohms
- Power Rating to 50Watt
- Resistance Tolerances to $\pm 0.1\%$
- TCR to $\pm 10\text{ppm/K}$
- Very Low Inductance

SPECIFICATIONS

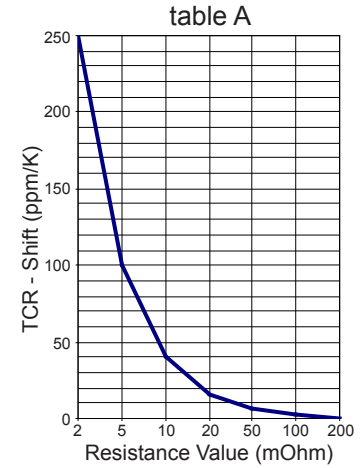
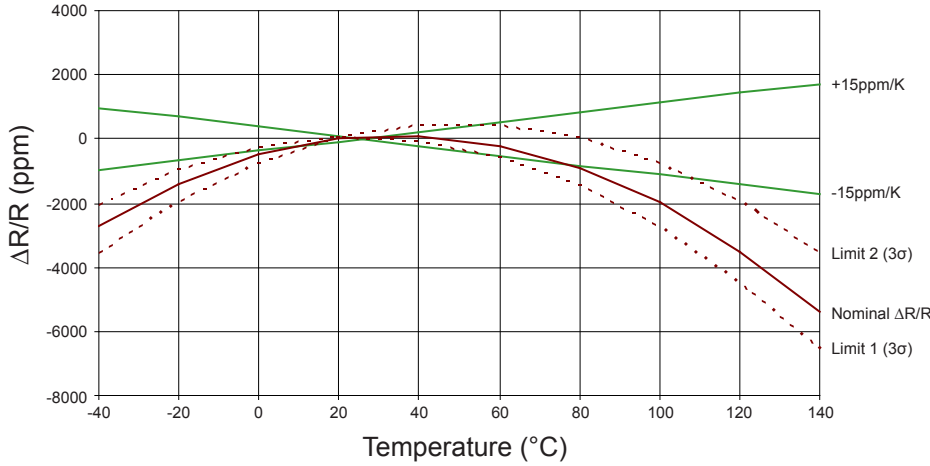
Type	FHR 2-3025 FHR 2-3818	FHR 4-3825 FHR 4-3525H FHR 4-4618
Resistance Range	0.010 to 100Ohms	0.001 to 100Ohms
Power rating free air 70°C for 3825H with heatsink	3 W 40 W	3 W 5 W 50 W
Thermal Resistance Rthj-c	2.0 K/W	1.6 K/W
Tolerances from 0R001 from 0R005 from 0R01 from 0R02	0.5% / 1% / 2% / 5% 0.25% / 0.5% / 1% / 2% / 5%	1% / 2% / 5% 0.5% / 1% / 2% / 5% 0.1% / 0.25% / 0.5% / 1% / 2% / 5% 0.1% / 0.25% / 0.5% / 1% / 2% / 5%
Stability	0.1% / 0.2% / 0.5% (depends on stress)	
Temperature Coefficient Standard	$\pm 15\text{ppm/K}$ (20 to 60°C) $R \leq 0R2$ TCR see table A next page	$\pm 15\text{ppm/K}$ (20 to 60°C) $\pm 25\text{ppm/K}$ (20 to 60°C) for contact F
Option 1		$\pm 10\text{ppm/K}$ (20 to 60°C) (only contact A and K)
Max. Current	150 A / 200 A for contact F	
Voltage Proof	500 VDC	
Thermal EMF	< 0.1 $\mu\text{V/K}$	
Operating Temperature Range	-40 to 130°C	
Resistor Material	CuNiMn-Foil	
Substrate	anodized aluminium	
Housing	Epoxy	
Connector Material	Cu tinned	
Terminals	2	4
Max. torque	1 Nm	

Ordering Information

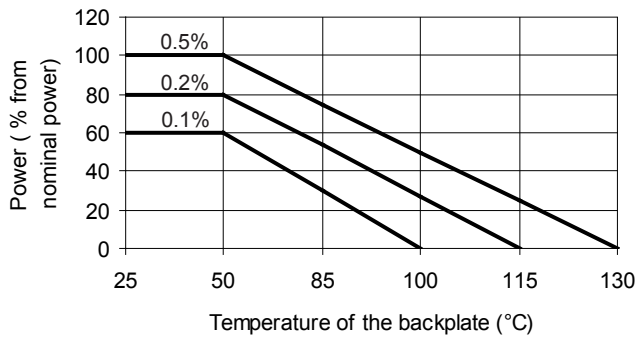
Part Number - Resistance - Contact - Tolerance
FHR 4-4618 0.050 Ohms A 1%

SPECIFICATIONS (continued)

Temperature Coefficient



Derating



Power Rating Notes -

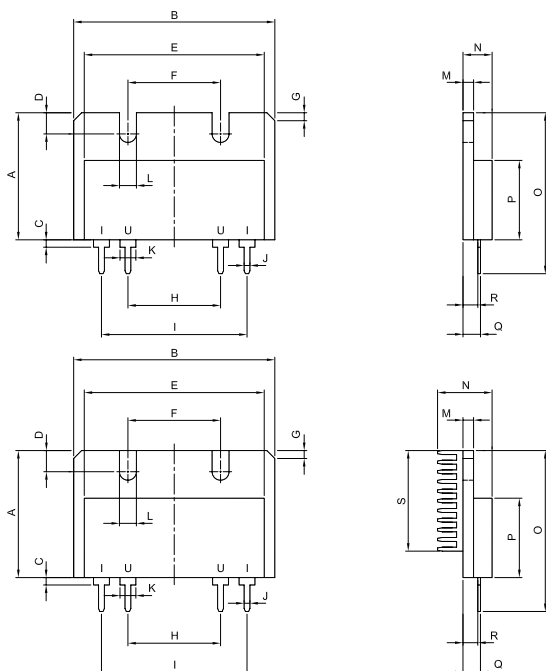
The FHR Series Resistors must be attached to a suitable heat-sink. The maximum internal resistor temperature is 130°C. To specify an appropriate heatsink use the following formula :

$$R_{0H} = \frac{T_{MAX} - (P \times R_{0R}) - T_A}{P}$$

Where: R_{0H} = Thermal Resistance of Heatsink (K/W)
 R_{0R} = 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

FHR 4-3825 / FHR 4-3825H



Dimension	mm	tol. (±mm)	inches	tol. (±inches)
A	24.00	0.2	0.94	0.008
B	38.00	0.3	1.50	0.012
C	1.40	0.4	0.06	0.016
D	4.00	0.1	0.16	0.004
E	34.00	0.3	1.34	0.012
F	17.50	0.2	0.69	0.008
G	1.5x45°	0.1	0.06x45°	0.004
H	17.50	0.2	0.69	0.008
I	27.50	0.2	1.08	0.008
J (A-Contact)	1.50	0.1	0.06	0.004
J (K-Contact)	1.10	0.1	0.04	0.004
K	3.00	0.1	0.12	0.004
L	3.20	0.1	0.13	0.004
M	2.00	0.1	0.08	0.004
N	max.5.5	0.2	max.0.22	0.008
N (Variante H)	max.10.3	0.2	max.0.4	0.008
O	30.40	0.4	1.20	0.016
P	15.00	0.2	0.59	0.008
Q (A-Contact)	3.60	0.1	0.14	0.004
Q (K-Contact)	3.30	0.1	0.13	0.004
R	2.80	0.1	0.11	0.004
S (Variante H)	19.00	0.2	0.75	0.008

FHR 2-3025 3818

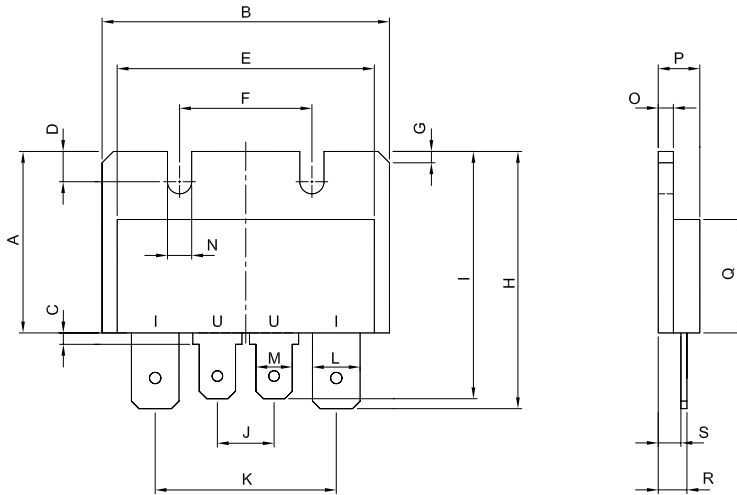
FHR 4-3825 3825H 4618

Precision Shunt Resistors



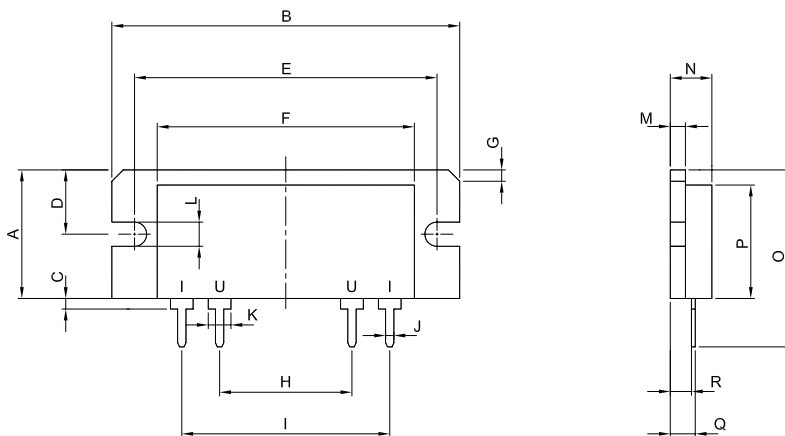
SPECIFICATIONS (continued)

FHR 4-3825F



Dimension	mm	tol. (±mm)	inches	tol. (±inches)
A	24.00	0.2	0.94	0.008
B	38.00	0.3	1.50	0.012
C	1.50	0.2	0.06	0.008
D	4.00	0.1	0.16	0.004
E	34.00	0.3	1.34	0.012
F	17.50	0.2	0.69	0.008
G	1.5x45°	0.1	0.06x45°	0.004
H	34.00	0.2	1.34	0.008
I	32.70	0.2	1.29	0.008
J	7.50	0.2	0.30	0.008
K	24.00	0.2	0.94	0.008
L	6.30	0.2	0.25	0.008
M	4.80	0.1	0.19	0.004
N	3.20	0.1	0.13	0.004
O	2.00	0.1	0.08	0.004
P	6.00	0.2	0.24	0.008
Q	15.00	0.2	0.59	0.008
R	4.10	0.7	0.16	0.028
S	3.30	0.7	0.13	0.028

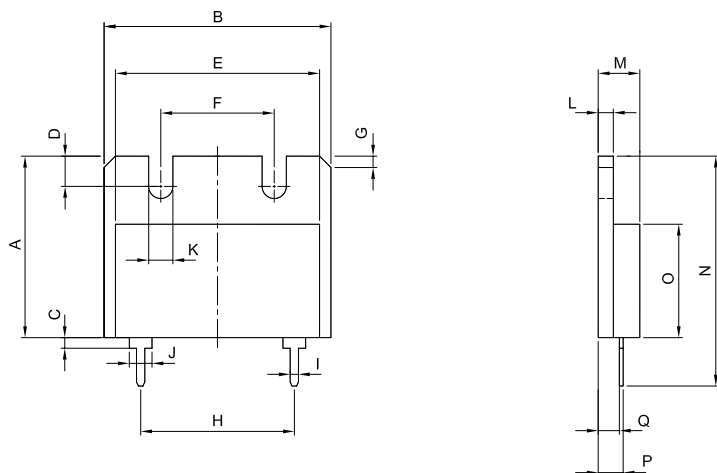
FHR 4-4618



Dimension	mm	tol. (±mm)	inches	tol. (±inches)
A	17.00	0.1	0.67	0.004
B	46.00	0.3	1.81	0.012
C	1.40	0.4	0.06	0.016
D	8.50	0.2	0.33	0.008
E	40.00	0.3	1.57	0.012
F	34.00	0.3	1.34	0.012
G	1.5x45°	0.1	0.06x45°	0.004
H	17.50	0.2	0.69	0.008
I	27.50	0.2	1.08	0.008
J (A-Contact)	1.50	0.1	0.06	0.004
J (K-Contact)	1.10	0.1	0.04	0.004
K	3.00	0.1	0.12	0.004
L	3.20	0.1	0.13	0.004
M	2.00	0.1	0.08	0.004
N	max.5.5	0.2	max.0.22	0.008
O	23.40	0.4	0.92	0.016
P	15.00	0.2	0.59	0.008
Q (A-Contact)	3.60	0.1	0.14	0.004
Q (K-Contact)	3.30	0.1	0.13	0.004
R	2.80	0.2	0.11	0.008

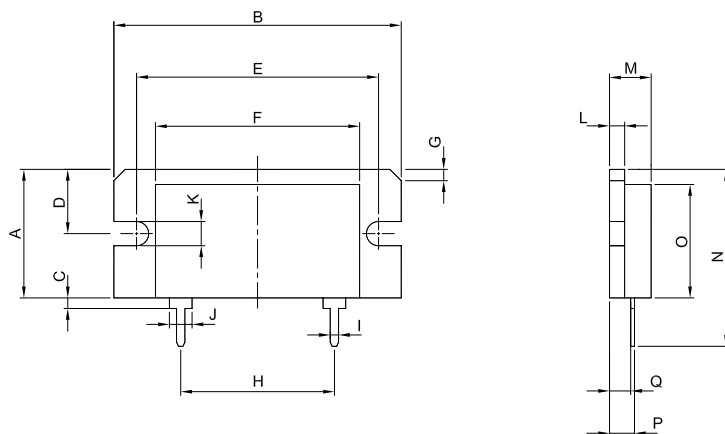
SPECIFICATIONS (continued)

FHR 2-3025



Dimension	mm	tol. (±mm)	inches	tol. (±inches)
A	24.00	0.2	0.94	0.008
B	30.00	0.2	1.18	0.008
C	1.40	0.4	0.06	0.016
D	4.00	0.1	0.16	0.004
E	27.00	0.2	1.06	0.008
F	15.00	0.2	0.59	0.008
G	1.5x45°	0.1	0.06x45°	0.004
H	20.32	0.2	0.80	0.008
I (A-Contact)	1.50	0.1	0.06	0.004
I (K-Contact)	1.10	0.1	0.04	0.004
J	1.10	0.1	0.04	0.004
K	3.20	0.1	0.13	0.004
L	2.00	0.1	0.08	0.004
M	max.5.5	0.2	max.0.22	0.008
N	30.40	0.4	1.20	0.016
O	15.00	0.2	0.59	0.008
P (A-Contact)	3.60	0.1	0.14	0.004
P (K-Contact)	3.30	0.1	0.13	0.004
Q	2.80	0.2	0.11	0.008

FHR 2-3818



Dimension	mm	tol. (±mm)	inches	tol. (±inches)
A	17.00	0.2	0.67	0.008
B	38.00	0.3	1.50	0.012
C	1.40	0.4	0.06	0.016
D	8.50	0.2	0.33	0.008
E	32.00	0.3	1.26	0.012
F	27.00	0.2	1.06	0.008
G	1.5x45°	0.1	0.06x45°	0.004
H	20.32	0.2	0.80	0.008
I (A-Contact)	1.50	0.1	0.06	0.004
I (K-Contact)	1.10	0.1	0.04	0.004
J	1.10	0.1	0.04	0.004
K	3.20	0.1	0.13	0.004
L	2.00	0.1	0.08	0.004
M	max.5.5	0.2	max.0.22	0.008
N	23.40	0.4	0.92	0.016
O	15.00	0.2	0.59	0.008
P (A-Contact)	3.60	0.1	0.14	0.004
P (K-Contact)	3.30	0.1	0.13	0.004
Q	2.80	0.2	0.11	0.008