

Features

- Formerly a Riedon™ product
- Resistances from 0.001 to 500 Ω
- Power rating to 2500 W
- TCR to ±15 PPM/°C
- Load stability to 0.1 %
- Very low inductance (<50 nH)
- RoHS compliant*

Applications

- Current sensing
- Power management
- Industrial power control
- Energy storage

BRF Series – High Precision Power Foil Resistor

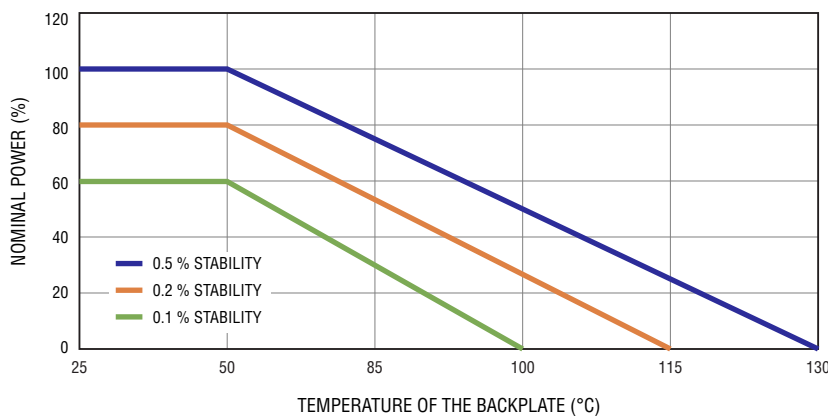
Electrical Characteristics

Bourns Model	Power Rating		Resistance Range	Tolerance (%)	TCR @ +20 °C to +60 °C	Thermal Resistance (K/W)
	Free Air (W)	Heat Sink (W)				
BRF8065	24	350	1 mΩ to 400 Ω	4 Terminals: <10 mΩ: 0.5, 1, 2, 5 ≥10 mΩ: 0.25, 0.5, 1, 2, 5 ≥20 mΩ: 0.1, 0.25, 0.5, 1, 2, 5	4 Terminals >20 mΩ ±15 PPM ≤ 20 mΩ ±20 PPM ≤ 10 mΩ ±30 PPM	0.16
BRF8110	32	600	1 mΩ to 500 Ω			0.09
BRF8216	60	1200	1 mΩ to 500 Ω			0.04
BRF8320	80	2000	1 mΩ to 500 Ω			0.026
BRF8370	90	2500	1 mΩ to 500 Ω			2 Terminals: 0.5, 1, 2, 5

Environmental Characteristics

Specification	Value
Operating Temperature	-40 °C to +130 °C
Max. Working Voltage	$\sqrt{P \cdot R}$ with a maximum of 1500 V
Max. Current	60 A
Thermal EMF	<0.1 μV/K
Storage Conditions Temperature Humidity	+5 °C to +35 °C 40 % to 75 %
Moisture Sensitivity Level	1

Current Rating Thermal Derating Curve



The resistors must be attached to a suitable heat sink. The maximum internal resistor temperature is 155 °C.

*RoHS Directive 2015/863, Mar 31, 2015 and Annex. Specifications are subject to change without notice. Users should verify actual device performance in their specific applications. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

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Additional Information

Click these links for more information:



Packaging Information

BRF8065, BRF8110 2 pcs./box
BRF8216, BRF8320, BRF8370 1 pc./box

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CALIFORNIA WARNING:

Can expose you to lead, a carcinogen and reproductive toxicant.

See www.P65Warnings.ca.gov

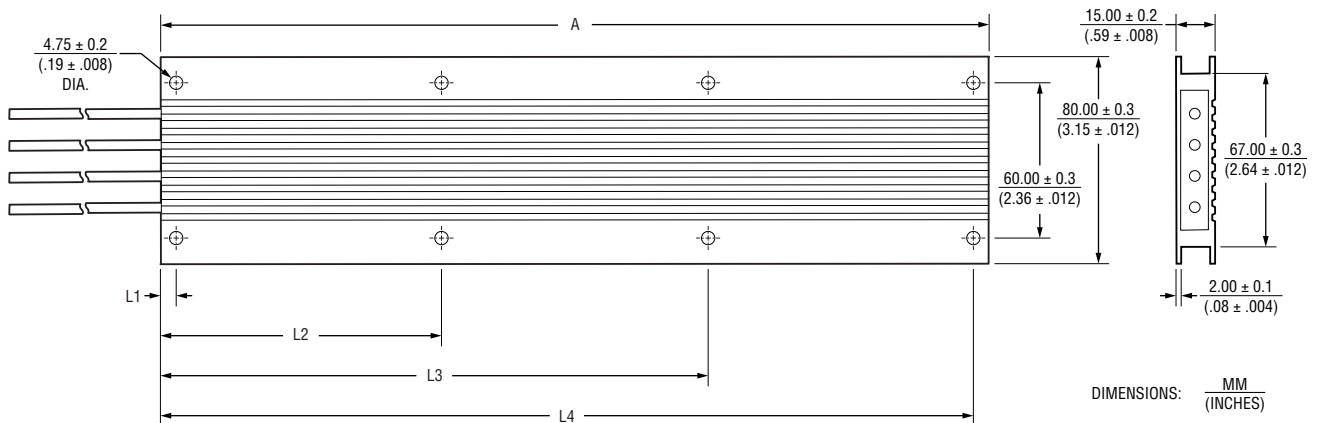
BRF Series – High Precision Power Foil Resistor



Performance Characteristics

Test	Conditions	Test Method	
		Reference	Limit
Load Life	1000 hours, on/off with rated power at +25 °C	MIL-STD-202 Method 108	$\Delta R < \pm 0.5 \%$
High Temperature Exposure	+155 °C for 1000 hours	MIL-STD-202 Method 303	$\Delta R < \pm 0.5 \%$
Low Temperature Storage	-40 °C for 24 hours	MIL-STD-202 Method 303	$\Delta R < \pm 0.1 \%$
Thermal Shock	-40 °C to +130 °C, 5 cycles	MIL-STD-202 Method 107	$\Delta R < \pm 0.1 \%$
Humidity Resistance	+40 °C / 90 % for 240 hours	MIL-STD-202 Method 103	$\Delta R < \pm 0.1 \%$
Resistance to Solder Heat	Solder dipping at 260 °C for 10 sec.	MIL-STD-202 Method 210	$\Delta R < \pm 0.1 \%$
Short Time Overload	2.5x rated power for 5 sec.	MIL-STD-202 Method 303	$\Delta R < \pm 0.1 \%$

Product Dimensions



	BRF8065	BRF8110	BRF8216	BRF8320	BRF8370
A	65.00 ± 0.3 ($2.56 \pm .012$)	110.00 ± 0.3 ($4.33 \pm .012$)	216.00 ± 0.3 ($8.50 \pm .012$)	320.00 ± 0.3 ($12.60 \pm .012$)	370.00 ± 0.3 ($14.57 \pm .012$)
L1	6.00 ± 0.3 ($.24 \pm .012$)	6.00 ± 0.3 ($.24 \pm .012$)	6.00 ± 0.3 ($.24 \pm .012$)	6.00 ± 0.3 ($.24 \pm .012$)	6.00 ± 0.3 ($.24 \pm .012$)
L2	59.00 ± 0.3 ($2.32 \pm .012$)	104.00 ± 0.3 ($4.09 \pm .012$)	108.00 ± 0.3 ($4.25 \pm .012$)	108.50 ± 0.3 ($4.27 \pm .012$)	125.50 ± 0.3 ($4.94 \pm .012$)
L3	—	—	210.00 ± 0.3 ($8.27 \pm .012$)	211.50 ± 0.3 ($8.33 \pm .012$)	244.50 ± 0.3 ($9.63 \pm .012$)
L4	—	—	—	314.00 ± 0.3 ($12.36 \pm .012$)	364.00 ± 0.3 ($14.33 \pm .012$)

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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BRF Series – High Precision Power Foil Resistor



Termination Options

Type	Max. Current	Description
TD	60 A	Insulated round cable (Cu-tinned)
T1	70 A	Insulated Cu-flat cable
T2	85 A	
T3	100 A	
T4	120 A	
T5	150 A	

How To Order

BRF 8065 - F Z - R005 TD 4

Model _____

Size _____
 8065 = 80 x 65 mm
 8110 = 80 x 110 mm
 8216 = 80 x 216 mm
 8320 = 80 x 320 mm
 8370 = 80 x 370 mm

Resistance Tolerance (%) _____
 B = ±0.1 F = ±1
 C = ±0.25 G = ±2
 D = ±0.5 J = ±5

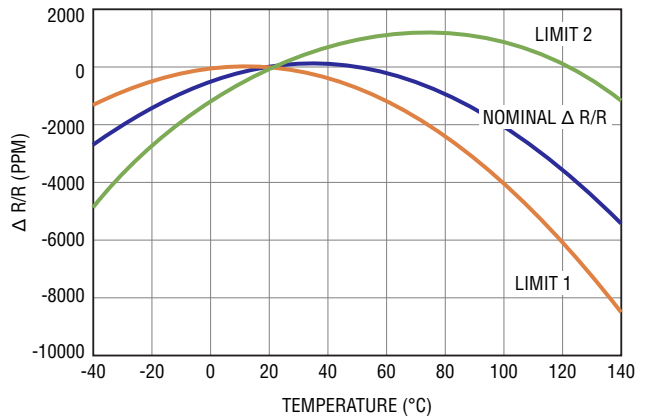
TCR (PPM/°C) _____
 Z = ±50

Resistance Value Code _____
 "R" represents decimal point
 (example: R005 = 5 mΩ, 5R00 = 5.00 Ω, 100R = 100 Ω)

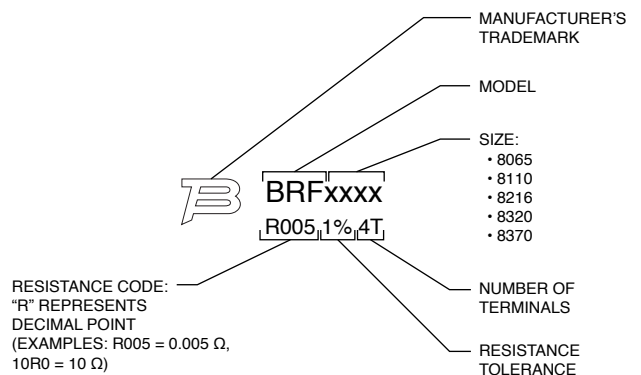
Terminal Options _____
 TD = 60 A (standard) T3 = 100 A
 T1 = 70 A T4 = 120 A
 T2 = 85 A T5 = 150 A

Terminals _____
 2 = 2 terminals
 4 = 4 terminals

TCR Curve



Typical Part Marking



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