Features:

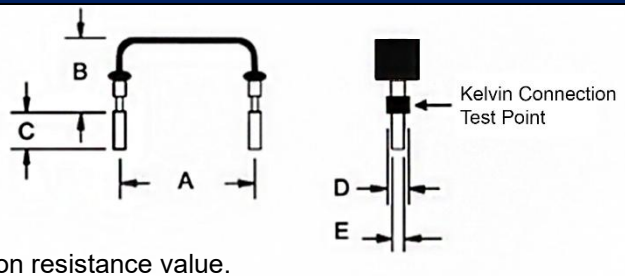
- 1, 3, and 5 watts
- ± 1%, ± 2%, or ± 5% tolerance
- ± 20 ppm/ºC element wire
- ± 200 ppm/ºC at lead stops
- All welded construction
- Flameproof
- Non-inductive (10 ηH max)
- High current handling to 31 amps
- RoHS compliant, REACH compliant, lead free, and halogen free

Electrical Specifications

Type/Code	Power Rating (W) at 85ºC	Ohmic Range (Ω) and Tolerance(1) 1%, 2%, 5%
BR1	1	0.005 - 0.1
BR3	3	0.005 - 0.1
BR5	5	0.005 - 0.05

(1) Contact Stackpole for resistance values below 0.005Ω.
Product photo shown above is typical. Actual components may vary depending on element wire size and amount of trim adjusting required to meet desired resistance value.

Mechanical Specifications



Element width varies depending on resistance value.

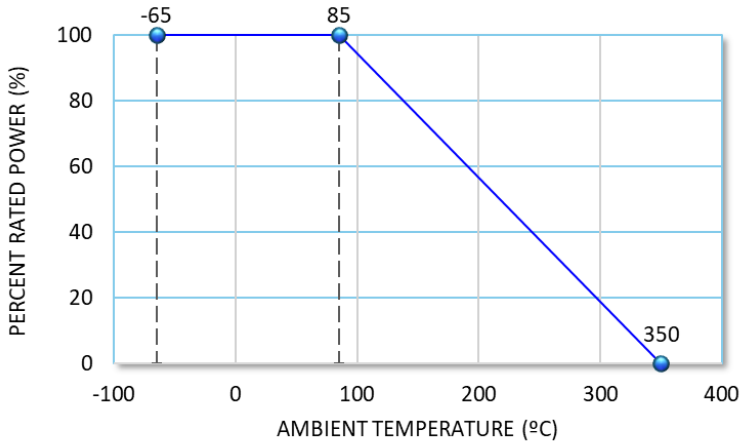
Type/Code	A	B	C	D	E	Unit
BR1	0.450 ± 0.040 11.43 ± 1.02	0.200 ± 0.100 5.08 ± 2.54	0.125 ± 0.030 3.18 ± 0.76	0.065 ± 0.010 1.65 ± 0.25	0.04 ± 0.002 1.02 ± 0.05	inches mm
BR3	0.602 ± 0.040 15.30 ± 1.02	0.800 ± 0.200 20.32 ± 5.08	0.125 ± 0.030 3.18 ± 0.76	0.065 ± 0.010 1.65 ± 0.25	0.04 ± 0.002 1.02 ± 0.05	inches mm
BR5	0.800 ± 0.040 20.32 ± 1.02	0.800 ± 0.200 20.32 ± 5.08	0.125 ± 0.030 3.18 ± 0.76	0.065 ± 0.010 1.65 ± 0.25	0.04 ± 0.002 1.02 ± 0.05	inches mm

This specification may be changed at any time without prior notice.
Please confirm technical specifications before use.

Performance Characteristics	
Test	Test Specification
Moisture Resistance	± 1%
Load Life @ 25ºC - 1000 hours	± 2%, + 0.0005Ω
Temperature Cycle @ -40ºC & +125ºC (1000 cycles)	± 1%

Operating temperature range is -65 to +350ºC

Power Derating Curve:



Note: Maximum recommended solder joint/lead stop temperature is +105ºC

Recommended Solder Profile

This information is intended as a reference for solder profiles for Stackpole resistive components. These profiles should be compatible with most soldering processes. These are only recommendations. Actual numbers will depend on board density, geometry, packages used, etc., especially those cells labeled with "*".

100% Matte Tin / RoHS Compliant Terminations

Soldering iron recommended temperatures is 330 to 350°C with minimum duration.
Maximum number of reflow cycles is 3.

Wave Soldering			
Description	Maximum	Recommended	Minimum
Preheat Time	80 seconds	70 seconds	60 seconds
Temperature Diff.	140°C	120°C	100°C
Solder Temp.	260°C	250°C	240°C
Dwell Time at Max.	10 seconds	5 seconds	*
Ramp DN (°C/sec)	N/A	N/A	N/A

Temperature Diff. = Difference between final preheat stage and soldering stage.

Convection IR Reflow			
Description	Maximum	Recommended	Minimum
Ramp Up (°C/seconds)	3°C/seconds	2°C/seconds	*
Dwell Time > 217°C	150 seconds	90 seconds	60 seconds
Solder Temp.	260°C	245°C	*
Dwell Time at Max.	30 seconds	15 seconds	10 seconds
Ramp DN (°C/seconds)	6°C/seconds	3°C/seconds	*

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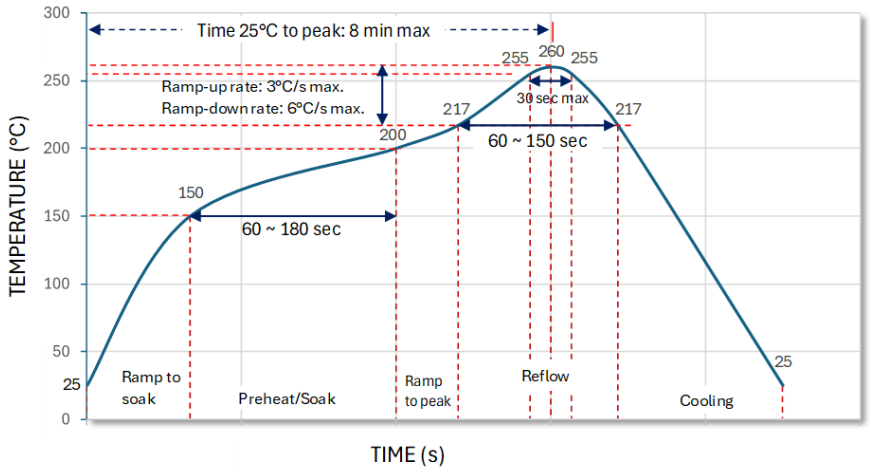
Please confirm technical specifications before use.

Recommended Resistor Reflow Profile



RoHS Compliance

Stackpole Electronics has joined the worldwide effort to reduce the amount of lead in electronic components and to meet the various regulatory requirements now prevalent, such as the European Union's directive regarding "Restrictions on Hazardous Substances" (RoHS 3). As part of this ongoing program, we periodically update this document with the status regarding the availability of our compliant components. All our standard part numbers are compliant to EU Directive 2011/65/EU of the European Parliament as amended by Directive (EU) 2015/863/EU as regards the list of restricted substances.

RoHS Compliance Status

Standard Product Series	Description	Package / Termination Type	Standard Series RoHS Compliant	Lead-Free Termination Composition	Lead-Free Mfg. Effective Date (Std Product Series)	Lead-Free Effective Date Code (YY/WW)
BR	Open Air Bare Element Current Sense Resistor	Special	YES	100% Matte Sn	Jan-06	06/01

"Conflict Metals" Commitment

We at Stackpole Electronics, Inc. are joined with our industry in opposing the use of metals mined in the "conflict region" of the eastern Democratic Republic of the Congo (DRC) in our products. Recognizing that the supply chain for metals used in the electronics industry is very complex, we work closely with our own suppliers to verify to the extent possible that the materials and products we supply do not contain metals sourced from this conflict region. As such, we are in compliance with the requirements of Dodd-Frank Act regarding Conflict Minerals.

Compliance to "REACH"

We certify that all passive components supplied by Stackpole Electronics, Inc. are SVHC (Substances of Very High Concern) free and compliant with the requirements of EU Directive 1907/2006/EC, "The Registration, Evaluation, Authorization and Restriction of Chemicals", otherwise referred to as REACH. Contact us for complete list of REACH Substance Candidate List.

This specification may be changed at any time without prior notice.
Please confirm technical specifications before use.

Environmental Policy

It is the policy of Stackpole Electronics, Inc. (SEI) to protect the environment in all localities in which we operate. We continually strive to improve our effect on the environment. We observe all applicable laws and regulations regarding the protection of our environment and all requests related to the environment to which we have agreed. We are committed to the prevention of all forms of pollution.

How to Order

B	R	1	F	B	1	0	L	0

Product Series
BR

Size
1
3
5

Tolerance	
Code	Tol
F	1%
G	2%
J	5%

Packaging			
Code	Description	Size	Quantity
B	Bulk	All Sizes	1000

Resistance Value
Four characters with the multiplier used as the decimal holder. "L" used as multiplier of 10^{-3} for any value under 0.1 ohm.
0.005 ohm = 5L00 0.05 ohm = 50L0 0.1 ohm = R100

This specification may be changed at any time without prior notice.
Please confirm technical specifications before use.