

Features

- Formerly a Riedon™ product
- Resistances from 0.005 to 50 kΩ
- Resistance tolerances as low as ±0.05 %
- Power rating: 0.5 to 4 watts
- High temperature rating (+275 °C)
- TCR as low as ±20 PPM/°C

- Superior surge handling capability
- Non-inductive windings are available (Type SN)
- Flame resistant per UL 94V-0
- RoHS compliant*

S & SL Series – Riedon™ Surface Mount Wirewound Resistors by Bourns

Specifications

Bourns Part Number	Power Rating @ 70 °C (W)	Resistance Range (Ω) ¹	Non-Inductive Winding Resistance Range (Ω) ²	Maximum Working Voltage
S1	0.5	0.01 to 400	0.1 to 200	$\sqrt{P} \cdot R$
S2	1	0.005 to 3k	0.1 to 1.5K	
S4	2	0.01 to 15k	0.1 to 7.5K	
S3	3	0.01 to 25k	0.1 to 12.5K	
S5	4	0.01 to 50k	0.1 to 25K	
SL2	1	0.005 to 0.01	N/A ¹	
SL4	2	0.005 to 0.07	N/A ¹	

¹ Other resistance values may be available. Please [contact Bourns](#).

² Below 0.1 Ω the inductance of a single winding, or the metal element (SL), is negligible.

Specifications	Value
Tolerances	S: greater than 100 Ω, ±0.05 % to ±5 % S: from 1 Ω to 100 Ω, ±0.1 % to ±5 % S: below 1 Ω, ±1 % to ±5 % SL: ±1 % to ±5 %
Temperature Coefficient	S: greater than 10 Ω : ±20 PPM/°C ³ S: from 1 Ω to 10 Ω : ±50 PPM/°C ³ S: less than 1 Ω : Contact Bourns SL: ±200 PPM/°C ³
Temperature Range	-55 °C to +275 °C
Dielectric Strength	S: 1000 VAC SL: 500 VAC
Insulation Resistance	>1000 MOhms / Dry
Termination Finish	100% Electroless Tin (matte) over Copper

³ Other TCR values available upon request.

Environmental Performance

Specification (MIL-STD 202)	Value
Dielectric	±0.5 % + 0.05 Ω
Load Life	±1.0 % + 0.05 Ω
Storage	±0.5 % + 0.05 Ω
Moisture Resistance	±1.0 % + 0.05 Ω
Thermal Shock	±0.5 % + 0.05 Ω
5X Overload (5 s)	±0.5 % + 0.05 Ω
Shock	±0.5 % + 0.05 Ω
Solder Heat Resistance (260 °C, 10 s)	±0.5 % + 0.05 Ω

*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.

"Bourns" is a registered trademark of Bourns, Inc. in the United States and other countries.

In April 2023, BE Services Company, Inc., a subsidiary of Bourns, Inc., purchased certain assets of Riedon, Inc., including its logo and trademarks and the right to continue to manufacture former Riedon™ products.

"Riedon Logo" is a registered trademark of BE Services Company, Inc., in the United States.

"Riedon" is a trademark of BE Services Company, Inc.

Additional Information

Click these links for more information:



[PRODUCT](#)



[TECHNICAL LIBRARY](#)



[INVENTORY](#)



[SAMPLES](#)



[CONTACT](#)



WARNING Cancer and Reproductive Harm
www.P65Warnings.ca.gov

BOURNS®

Americas: Tel: +1 951-781-5500

Email: americus@bourns.com

Mexico: Tel: +52-614-478-0400

Email: mexicus@bourns.com

Asia: Tel: +886-2-2562-4117

Email: asiacus@bourns.com

EMEA: Tel: +36 88 885 877

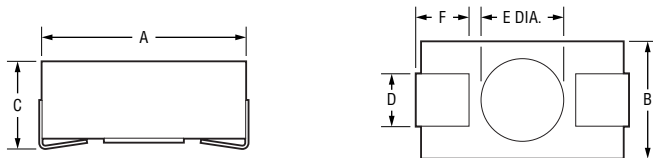
Email: eurocus@bourns.com

www.bourns.com

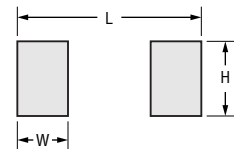
S & SL Series – Riedon™ Surface Mount Wirewound Resistors by Bourns

BOURNS®

Product Dimensions



Recommended Layout



Bourns Model Number	Dimensions						Stand-Off	
	A	B	C	D	F	Lead Thickness	E	Height
S1	$\frac{4.8 \pm 0.4}{(.190 \pm .015)}$	$\frac{3.3 \pm 0.4}{(.130 \pm .015)}$	$\frac{2.8 \pm 0.4}{(.110 \pm .015)}$	$\frac{1.5 \pm 0.4}{(.060 \pm .015)}$	$\frac{1.0 \pm 0.4}{(.040 \pm .015)}$	$\frac{0.15 \pm 0.05}{(.006 \pm .002)}$	$\frac{2.5 \pm 0.4}{(.100 \pm .015)}$	$\frac{0.13 \pm 0.13}{(.005 \pm .005)}$
S2	$\frac{6.6 \pm 0.4}{(.260 \pm .015)}$	$\frac{3.9 \pm 0.4}{(.155 \pm .015)}$	$\frac{3.2 \pm 0.4}{(.125 \pm .015)}$	$\frac{1.8 \pm 0.4}{(.070 \pm .015)}$	$\frac{1.8 \pm 0.4}{(.070 \pm .015)}$		$\frac{3.0 \pm 0.4}{(.120 \pm .015)}$	
S4	$\frac{11.4 \pm 0.4}{(.450 \pm .015)}$	$\frac{6.4 \pm 0.4}{(.250 \pm .015)}$	$\frac{4.6 \pm 0.4}{(.180 \pm .015)}$	$\frac{3.0 \pm 0.4}{(.120 \pm .015)}$	$\frac{2.5 \pm 0.4}{(.100 \pm .015)}$		$\frac{4.8 \pm 0.4}{(.190 \pm .015)}$	
S3	$\frac{15.9 \pm 0.4}{(.625 \pm .015)}$	$\frac{6.9 \pm 0.4}{(.270 \pm .015)}$	$\frac{6.4 \pm 0.4}{(.250 \pm .015)}$	$\frac{3.0 \pm 0.4}{(.120 \pm .015)}$	$\frac{3.4 \pm 0.4}{(.135 \pm .015)}$		$\frac{3.8 \pm 0.4}{(.150 \pm .015)}$	
S5	$\frac{20.8 \pm 0.4}{(.820 \pm .015)}$	$\frac{7.5 \pm 0.4}{(.295 \pm .015)}$	$\frac{7.7 \pm 0.4}{(.305 \pm .015)}$	$\frac{3.8 \pm 0.4}{(.150 \pm .015)}$	$\frac{4.8 \pm 0.4}{(.190 \pm .015)}$		$\frac{6.2 \pm 0.4}{(.245 \pm .015)}$	
SL2	$\frac{6.6 \pm 0.4}{(.260 \pm .015)}$	$\frac{3.9 \pm 0.4}{(.155 \pm .015)}$	$\frac{2.5 \pm 0.4}{(.100 \pm .015)}$	$\frac{1.8 \pm 0.4}{(.070 \pm .015)}$	$\frac{1.8 \pm 0.4}{(.070 \pm .015)}$		$\frac{3.0 \pm 0.4}{(.120 \pm .015)}$	
SL4	$\frac{11.4 \pm 0.4}{(.450 \pm .015)}$	$\frac{6.4 \pm 0.4}{(.250 \pm .015)}$	$\frac{2.5 \pm 0.4}{(.100 \pm .015)}$	$\frac{3.0 \pm 0.4}{(.120 \pm .015)}$	$\frac{2.5 \pm 0.4}{(.100 \pm .015)}$		$\frac{4.8 \pm 0.4}{(.190 \pm .015)}$	

Bourns Model Number	Footprint		
	W	H	L
S1	$\frac{1.6 \pm 0.4}{(.062 \pm .015)}$	$\frac{2.5 \pm 0.4}{(.100 \pm .015)}$	$\frac{6.4 \pm 0.4}{(.250 \pm .015)}$
S2	$\frac{2.4 \pm 0.4}{(.096 \pm .015)}$	$\frac{3.8 \pm 0.4}{(.150 \pm .015)}$	$\frac{8.6 \pm 0.4}{(.337 \pm .015)}$
S4	$\frac{3.8 \pm 0.4}{(.150 \pm .015)}$	$\frac{5.1 \pm 0.4}{(.200 \pm .015)}$	$\frac{13.7 \pm 0.4}{(.540 \pm .015)}$
S3	$\frac{5.1 \pm 0.4}{(.200 \pm .015)}$	$\frac{5.6 \pm 0.4}{(.220 \pm .015)}$	$\frac{17.8 \pm 0.4}{(.700 \pm .015)}$
S5	$\frac{5.6 \pm 0.4}{(.220 \pm .015)}$	$\frac{6.4 \pm 0.4}{(.250 \pm .015)}$	$\frac{22.9 \pm 0.4}{(.900 \pm .015)}$
SL2	$\frac{2.4 \pm 0.4}{(.096 \pm .015)}$	$\frac{3.8 \pm 0.4}{(.150 \pm .015)}$	$\frac{8.6 \pm 0.4}{(.337 \pm .015)}$
SL4	$\frac{3.8 \pm 0.4}{(.150 \pm .015)}$	$\frac{5.1 \pm 0.4}{(.200 \pm .015)}$	$\frac{13.7 \pm 0.4}{(.540 \pm .015)}$

DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

Standard Packaging Quantities

Bourns Model Number	7-Inch Reel	13-Inch Reel	Reel / Tape Width (mm)	Approx. Unit Weight for Shipping (g)
S1	650	3000	12	0.11
S2	600	2000	16	0.21
S4	250	1000	24	0.71
S3	125	500	24	1.5
S5	180	500	32	2.8
SL2	600	2000	16	0.12
SL4	250	1000	24	0.36

Specifications are subject to change without notice.

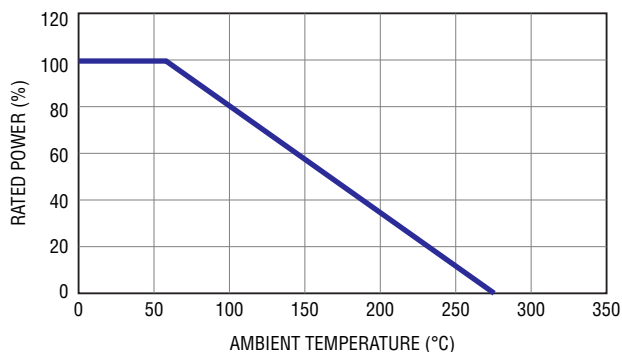
Users should verify actual device performance in their specific applications.

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.

S & SL Series – Riedon™ Surface Mount Wirewound Resistors by Bourns

BOURNS®

Power Derating Curve



Surface Mount Humidity Packaging

Per Customer Change Notice dated August 8, 2018, (CCN1832) all Surface Mount wirewound resistors now have a Moisture Sensitivity Level (MSL) rating of 1. Surface Mount parts are packaged in a Moisture Barrier Bag (MBB) with a desiccant to ensure solderability. The MBB is marked with a Moisture-Sensitive Identification Label.

How To Order

S 4 - 100R F 1

Model _____
 S, SL = Standard Model
 SN, SLN = Non-inductive Model

Power Code _____
 (See Specifications table)

Resistance Code _____
 For values <1K Ω , "R" represents decimal point
 (Example: 0R1 = 0.1 Ω)
 For values 1K-10K Ω , "K" represents decimal point
 (Example 1K = 1K Ω , 1K5 = 1.5K Ω)

Tolerance _____
 (please see Specification table for selected resistance)

U** = ± 0.05 %	F = ± 1 %
B = ± 0.1 %	G = ± 2 %
T = ± 0.2 %	H = ± 3 %
C = ± 0.25 %	J = ± 5 %
D = ± 0.5 %	

Internal Use _____
 (Specific TCR value available upon request.)

**[Contact Bourns](#) for tolerances < ± 0.01 %.

BOURNS®

Americas: Tel: +1 951-781-5500 • Email: americus@bourns.com

Mexico: Tel: +52-614-478-0400 • Email: mexicus@bourns.com

Asia: Tel: +886-2-2562-4117 • Email: asiacus@bourns.com

EMEA: Tel: +36 88 885 877 • Email: eurocus@bourns.com

www.bourns.com

REV. 10/24

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.

This legal disclaimer applies to purchasers and users of Bourns® products manufactured by or on behalf of Bourns, Inc. and its affiliates (collectively, "Bourns").

Unless otherwise expressly indicated in writing, Bourns® products and data sheets relating thereto are subject to change without notice. Users should check for and obtain the latest relevant information and verify that such information is current and complete before placing orders for Bourns® products.

The characteristics and parameters of a Bourns® product set forth in its data sheet are based on laboratory conditions, and statements regarding the suitability of products for certain types of applications are based on Bourns' knowledge of typical requirements in generic applications. The characteristics and parameters of a Bourns® product in a user application may vary from the data sheet characteristics and parameters due to (i) the combination of the Bourns® product with other components in the user's application, or (ii) the environment of the user application itself. The characteristics and parameters of a Bourns® product also can and do vary in different applications and actual performance may vary over time. Users should always verify the actual performance of the Bourns® product in their specific devices and applications, and make their own independent judgments regarding the amount of additional test margin to design into their device or application to compensate for differences between laboratory and real world conditions.

Unless Bourns has explicitly designated an individual Bourns® product as meeting the requirements of a particular industry standard (e.g., IATF 16949) or a particular qualification (e.g., UL listed or recognized), Bourns is not responsible for any failure of an individual Bourns® product to meet the requirements of such industry standard or particular qualification. Users of Bourns® products are responsible for ensuring compliance with safety-related requirements and standards applicable to their devices or applications.

Bourns® products are not recommended, authorized or intended for use in nuclear, lifesaving, life-critical or life-sustaining applications, nor in any other applications where failure or malfunction may result in personal injury, death, or severe property or environmental damage. Unless expressly and specifically approved in writing by two authorized Bourns representatives on a case-by-case basis, use of any Bourns® products in such unauthorized applications might not be safe and thus is at the user's sole risk. Life-critical applications include devices identified by the U.S. Food and Drug Administration as Class III devices and generally equivalent classifications outside of the United States.

Bourns expressly identifies those Bourns® standard products that are suitable for use in automotive applications on such products' data sheets in the section entitled "Applications." Unless expressly and specifically approved in writing by two authorized Bourns representatives on a case-by-case basis, use of any other Bourns® standard products in an automotive application might not be safe and thus is not recommended, authorized or intended and is at the user's sole risk. If Bourns expressly identifies a sub-category of automotive application in the data sheet for its standard products (such as infotainment or lighting), such identification means that Bourns has reviewed its standard product and has determined that if such Bourns® standard product is considered for potential use in automotive applications, it should only be used in such sub-category of automotive applications. Any reference to Bourns® standard product in the data sheet as compliant with the AEC-Q standard or "automotive grade" does not by itself mean that Bourns has approved such product for use in an automotive application.

Bourns® standard products are not tested to comply with United States Federal Aviation Administration standards generally or any other generally equivalent governmental organization standard applicable to products designed or manufactured for use in aircraft or space applications. Bourns expressly identifies Bourns® standard products that are suitable for use in aircraft or space applications on such products' data sheets in the section entitled "Applications." Unless expressly and specifically approved in writing by two authorized Bourns representatives on a case-by-case basis, use of any other Bourns® standard product in an aircraft or space application might not be safe and thus is not recommended, authorized or intended and is at the user's sole risk.

The use and level of testing applicable to Bourns® custom products shall be negotiated on a case-by-case basis by Bourns and the user for which such Bourns® custom products are specially designed. Absent a written agreement between Bourns and the user regarding the use and level of such testing, the above provisions applicable to Bourns® standard products shall also apply to such Bourns® custom products.

Users shall not sell, transfer, export or re-export any Bourns® products or technology for use in activities which involve the design, development, production, use or stockpiling of nuclear, chemical or biological weapons or missiles, nor shall they use Bourns® products or technology in any facility which engages in activities relating to such devices. The foregoing restrictions apply to all uses and applications that violate national or international prohibitions, including embargos or international regulations. Further, Bourns® products and Bourns technology and technical data may not under any circumstance be exported or re-exported to countries subject to international sanctions or embargoes. Bourns® products may not, without prior authorization from Bourns and/or the U.S. Government, be resold, transferred, or re-exported to any party not eligible to receive U.S. commodities, software, and technical data.

To the maximum extent permitted by applicable law, Bourns disclaims (i) any and all liability for special, punitive, consequential, incidental or indirect damages or lost revenues or lost profits, and (ii) any and all implied warranties, including implied warranties of fitness for particular purpose, non-infringement and merchantability.

For your convenience, copies of this Legal Disclaimer Notice with German, Spanish, Japanese, Traditional Chinese and Simplified Chinese bilingual versions are available at:

Web Page: <http://www.bourns.com/legal/disclaimers-terms-and-policies>

PDF: <http://www.bourns.com/docs/Legal/disclaimer.pdf>

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Bourns:](#)

[S1-0R47J8](#) [S2-0R2F2](#) [S2-1KF2](#) [S3-0R02F2](#) [S3-432RF1](#) [S4-0R15F1](#) [S4-0R5F2](#) [S4-150RF1](#) [S4-1RB1](#) [S5-0R15F1](#) [SN2-10RB1](#) [S1-0R15F1](#) [S2-0R5F1](#) [S2-47RF2](#) [S2-680RF1](#) [S3-0R01F1](#) [S3-680RJ2](#) [S4-0R3F1](#) [S4-68RF1](#) [S4-750RB1](#) [SN2-100RB1](#) [S1-0R036F1](#) [S1-220RF1](#) [S2-0R1F1](#) [S2-150RF1](#) [S2-3R3F1](#) [S3-0R2F1](#) [S4-220RF1](#) [S1-0R075F1](#) [S1-47RF1](#) [S2-249RB2](#) [S3-68RF1](#) [S4-4K7F1](#) [S4-6K8F1](#) [S1-22RF1](#) [S2-10RJ1](#) [S2-1R6F2](#) [S4-0R2F2](#) [S1-0R05F1](#) [S2-0R075F1](#) [S3-4K7F1](#) [S3-680RF1](#) [S4-100RB1](#) [S4-10KF1](#) [S4-2K2F1](#) [S5-0R0067F1](#) [S5-0R01F3](#) [S5-499RF1](#) [SN3-3KF1](#) [S2-0R3F2](#) [S3-0R075F1](#) [S4-0R015F1](#) [S4-10RF1](#) [S4-47RF1](#) [S4-680RF1](#) [S2-0R015F2](#) [S2-0R75F1](#) [S3-0R015F1](#) [S3-1K5F1](#) [S3-220RF1](#) [S4-0R05F1](#) [S4-0R075F2](#) [S4-15RF1](#) [S1-0R2F1](#) [S2-10R2D1](#) [S2-1RB1](#) [S2-1RF1](#) [S4-1KF1](#) [S4-5R6F1](#) [S5-22RF1](#) [SN1-0R1J1](#) [S1-0R01F2](#) [S2-250RB1](#) [S3-10KF1](#) [S4-1RF1](#) [S5-0R05F1](#) [S5-470RF1](#) [S2-120RF1](#) [S2-143RF1](#) [S3-6K8F1](#) [S4-470RF1](#) [S4-47RJ1](#) [SL2-0R015F1](#) [S1-0R218D1](#) [S2-0R68F1](#) [S2-91RF1](#) [S4-0R02F1](#) [S4-1K5F1](#) [S5-10KF1](#) [S5-10RF1](#) [S1-0R03F1](#) [S2-1K5F1](#) [S2-3KF1](#) [S2-3R92C1](#) [S3-0R3F1](#) [S3-5R1J1](#) [S4-22RF1](#) [S5-0R02F1](#) [S5-4K7F1](#) [SN2-90R1B1](#)