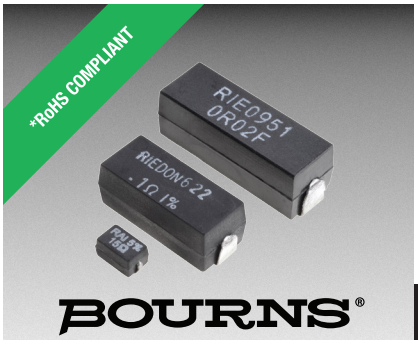


## Features

- 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 | √P * 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 %<br>S: from 1 Ω to 100 Ω, ±0.1 % to ±5 %<br>S: below 1 Ω, ±1 % to ±5 %<br>SL: ±1 % to ±5 % |
| Temperature Coefficient | S: greater than 10 Ω : ±20 PPM/°C[3]<br>S: from 1 Ω to 10 Ω : ±50 PPM/°C[3]<br>S: less than 1 Ω : Contact Bourns<br>SL: ±200 PPM/°C[3] |
| Temperature Range | -55 °C to +275 °C |
| Dielectric Strength | S: 1000 VAC<br>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.
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"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

**CALIFORNIA WARNING:** Can expose you to lead, a carcinogen and reproductive toxicant.
See www.P65Warnings.ca.gov

BOURNS®

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Email: americus@bourns.com

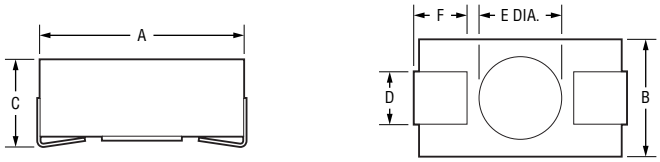
**Mexico:** Tel: +52-614-478-0400
Email: mexicus@bourns.com

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

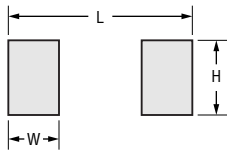
**EMEA:** Tel: +36 88 885 877
Email: eurocus@bourns.com

**www.bourns.com**

## Product Dimensions




## Recommended Layout




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

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

DIMENSIONS: MM (INCHES)

## Standard Packaging Quantities

| Bourns Model Number | 13-Inch Reel | Approx. Unit Weight for Shipping (g) |
|---|---|---|
| S1 | 3000 | 0.11 |
| S2 | 2000 | 0.21 |
| S4 | 1000 | 0.71 |
| S3 | 500 | 1.5 |
| S5 | 500 | 2.8 |
| SL2 | 2000 | 0.12 |
| SL4 | 1000 | 0.36 |

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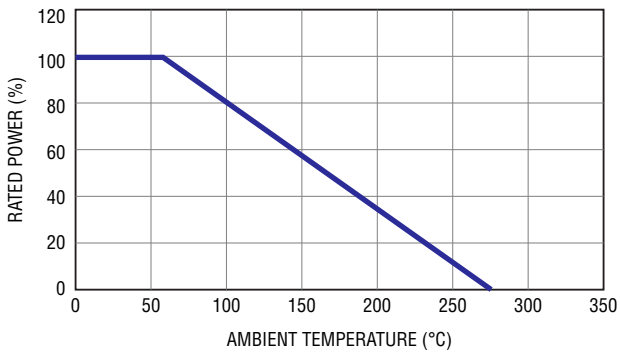
## Power Derating Curve




## 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 % | |

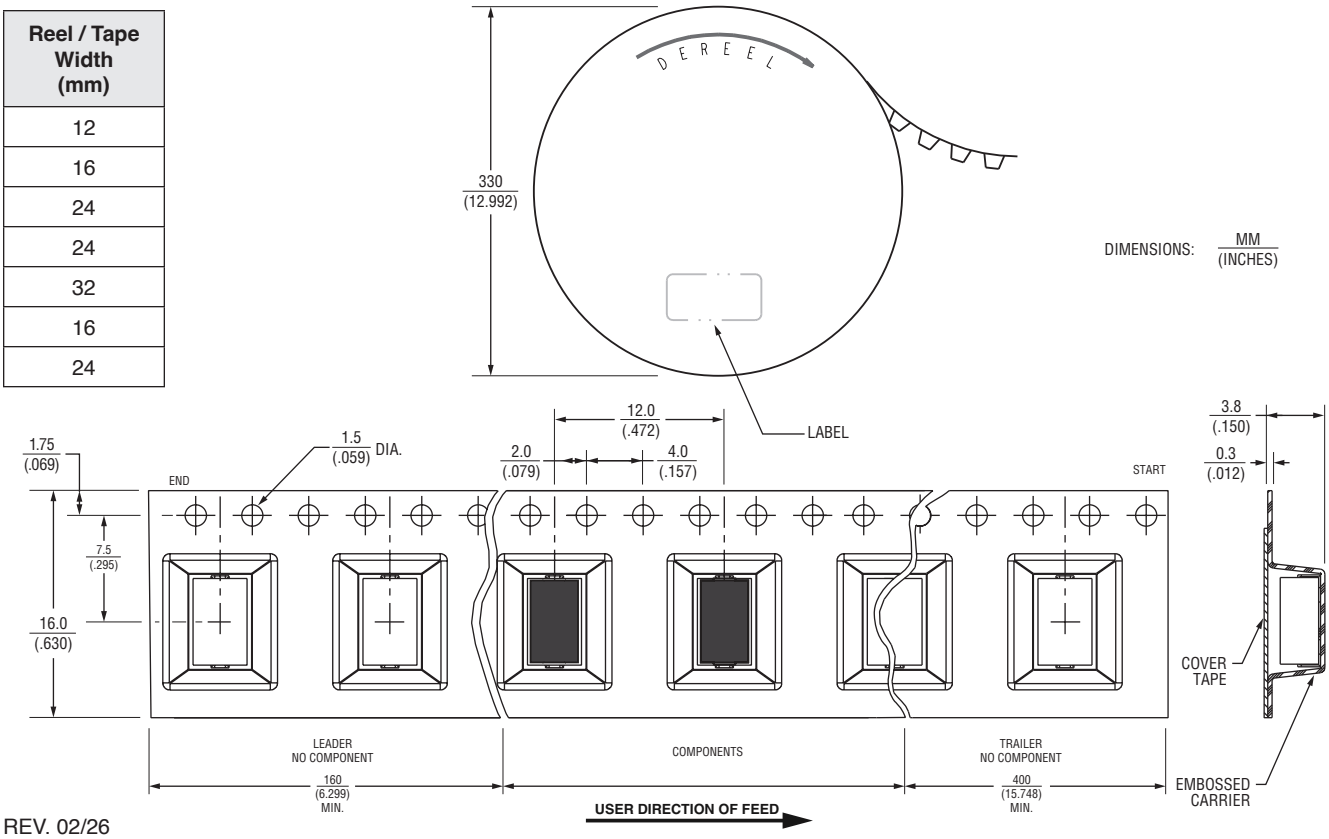
Internal Use

(Specific TCR value available upon request.)

**Contact Bourns for tolerances <±0.01 %.

## Packaging Specifications

| Reel / Tape Width (mm) |
|---|
| 12 |
| 16 |
| 24 |
| 24 |
| 32 |
| 16 |
| 24 |




REV. 02/26

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