

# S & SL Series

Surface Mount Wirewound Resistors



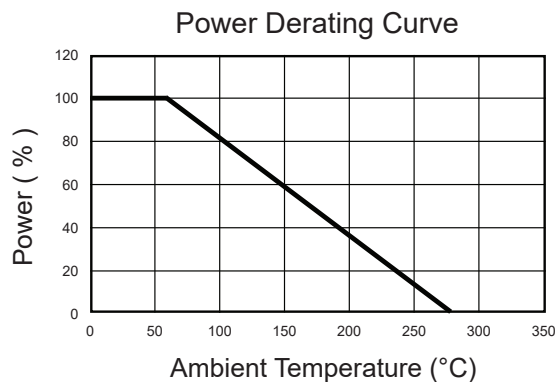
- Resistance: 0.005 to 50kOhms
- High Power: to 4 Watts
- Tolerance to  $\pm 0.05\%$
- High Temperature Rating up to 275°C
- Low Temperature Coefficient to  $\pm 20\text{ppm}/^\circ\text{C}$
- Superior Surge Handling Capability
- Non-Inductive Windings are Available (Type SN)
- Flame Resistant UL 94V-0

## SPECIFICATIONS

| Type | Power Rating<br>Watts @ 70°C | Resistance<br>Range ( $\Omega$ ) | Non-Inductive Winding<br>Resistance Range ( $\Omega$ ) <sup>1</sup> | Maximum<br>Working Voltage |
|------|------------------------------|----------------------------------|---------------------------------------------------------------------|----------------------------|
| S-1  | 0.5                          | 0.01 to 400                      | 0.1 to 200                                                          | $\sqrt{P * R}$             |
| S-2  | 1                            | 0.005 to 3k                      | 0.1 to 1.5K                                                         |                            |
| S-4  | 2                            | 0.01 to 15k                      | 0.1 to 7.5K                                                         |                            |
| S-3  | 3                            | 0.01 to 25k                      | 0.1 to 12.5K                                                        |                            |
| S-5  | 4                            | 0.01 to 50k                      | 0.1 to 25K                                                          |                            |
| SL-2 | 1                            | 0.005 to 0.01                    | N/A <sup>1</sup>                                                    |                            |
| SL-4 | 2                            | 0.005 to 0.07                    | N/A <sup>1</sup>                                                    |                            |

| Specification           | Value                                                                                                                                                                                                                                                 |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tolerances              | S: greater than 100 $\Omega$ , $\pm 0.05\%$ to $\pm 5\%$<br>S: from 1 $\Omega$ to 100 $\Omega$ , $\pm 0.1\%$ to $\pm 5\%$<br>S: below 1 $\Omega$ , $\pm 1\%$ to $\pm 5\%$<br>SL: $\pm 1\%$ to $\pm 5\%$                                               |
| Temperature Coefficient | S: greater than 10 $\Omega$ : $\pm 20\text{ppm}/^\circ\text{C}$<br>S: from 1 $\Omega$ to 10 $\Omega$ : $\pm 50\text{ppm}/^\circ\text{C}$<br>S: less than 1 $\Omega$ : Call Factory<br>SL: $\pm 200\text{ppm}/^\circ\text{C}$ , For Lower Call Factory |
| Temperature Range       | -55°C to +275°C                                                                                                                                                                                                                                       |
| Dielectric Strength     | S: 1000 VAC<br>SL: 500 VAC                                                                                                                                                                                                                            |
| Insulation Resistance   | >1000 MOhms / Dry                                                                                                                                                                                                                                     |
| Terminal Finish         | 100% Electroless Tin (matte) over Copper                                                                                                                                                                                                              |

| Environmental Performance<br>(MIL-STD 202) | $\Delta R$ MAX           |
|--------------------------------------------|--------------------------|
| Dielectric                                 | $\pm 0.5\% + 0.05\Omega$ |
| Load Life                                  | $\pm 1.0\% + 0.05\Omega$ |
| Storage                                    | $\pm 0.5\% + 0.05\Omega$ |
| Moisture Resistance                        | $\pm 1.0\% + 0.05\Omega$ |
| Thermal Shock                              | $\pm 0.5\% + 0.05\Omega$ |
| 5X Overload ( 5s )                         | $\pm 0.5\% + 0.05\Omega$ |
| Shock                                      | $\pm 0.5\% + 0.05\Omega$ |
| Solder Heat Resistance ( 260C, 10s )       | $\pm 0.5\% + 0.05\Omega$ |



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Surface Mount Wirewound Resistors



## SPECIFICATIONS

(continued)



Solder Pad Dimensions

| Type | Dimensions               |                          |                          |                          |                          |                                             | Stand-Off                |                                | Footprint                |                          |                          |
|------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------------------------|--------------------------|--------------------------------|--------------------------|--------------------------|--------------------------|
|      | A<br>±0.015"<br>[±0.4mm] | B<br>±0.015"<br>[±0.4mm] | C<br>±0.015"<br>[±0.4mm] | D<br>±0.015"<br>[±0.4mm] | F<br>±0.015"<br>[±0.4mm] | Lead Thick-<br>ness<br>±0.002"<br>[±0.05mm] | E<br>±0.015"<br>[±0.4mm] | Height<br>±0.005"<br>[±0.13mm] | W<br>±0.015"<br>[±0.4mm] | H<br>±0.015"<br>[±0.4mm] | L<br>±0.015"<br>[±0.4mm] |
| S-1  | 0.190 [4.8]              | 0.130 [3.3]              | 0.110 [2.8]              | 0.060 [1.5]              | 0.040 [1.0]              | 0.006 [0.15]                                | 0.100 [2.5]              | 0.005 [0.13]                   | 0.062 [1.6]              | 0.100 [2.5]              | 0.250 [6.4]              |
| S-2  | 0.260 [6.6]              | 0.155 [3.9]              | 0.125 [3.2]              | 0.070 [1.8]              | 0.070 [1.8]              | 0.006 [0.15]                                | 0.120 [3.0]              | 0.005 [0.13]                   | 0.096 [2.4]              | 0.150 [3.8]              | 0.337 [8.6]              |
| S-4  | 0.450 [11.4]             | 0.250 [6.4]              | 0.180 [4.6]              | 0.120 [3.0]              | 0.100 [2.5]              | 0.006 [0.15]                                | 0.190 [4.8]              | 0.005 [0.13]                   | 0.150 [3.8]              | 0.200 [5.1]              | 0.540 [13.7]             |
| S-3  | 0.625 [15.9]             | 0.270 [6.9]              | 0.250 [6.4]              | 0.120 [3.0]              | 0.135 [3.4]              | 0.006 [0.15]                                | 0.150 [3.8]              | 0.005 [0.13]                   | 0.200 [5.1]              | 0.220 [5.6]              | 0.700 [17.8]             |
| S-5  | 0.820 [20.8]             | 0.295 [7.5]              | 0.305 [7.7]              | 0.150 [3.8]              | 0.190 [4.8]              | 0.006 [0.15]                                | 0.245 [6.2]              | 0.005 [0.13]                   | 0.220 [5.6]              | 0.250 [6.4]              | 0.900 [22.9]             |
| SL-2 | 0.260 [6.6]              | 0.155 [3.9]              | 0.100 [2.5]              | 0.070 [1.8]              | 0.070 [1.8]              | 0.006 [0.15]                                | 0.120 [3.0]              | 0.005 [0.13]                   | 0.096 [2.4]              | 0.150 [3.8]              | 0.337 [8.6]              |
| SL-4 | 0.450 [11.4]             | 0.250 [6.4]              | 0.100 [2.5]              | 0.120 [3.0]              | 0.100 [2.5]              | 0.006 [0.15]                                | 0.190 [4.8]              | 0.005 [0.13]                   | 0.150 [3.8]              | 0.200 [5.1]              | 0.540 [13.7]             |

## Standard Package Quantities

|                                    | S-1   | S-2   | S-4   | S-3  | S-5  | SL-2  | SL-4  |
|------------------------------------|-------|-------|-------|------|------|-------|-------|
| Small Reel                         | 650   | 600   | 250   | 125  | 180  | 600   | 250   |
| Large Reel                         | 3000  | 2000  | 1000  | 500  | 500  | 2000  | 1000  |
| Reel/Tape Width                    | 12mm  | 16mm  | 24mm  | 24mm | 32mm | 16mm  | 24mm  |
| Approximate Unit Mass for shipping | 0.11g | 0.21g | 0.71g | 1.5g | 2.8g | 0.12g | 0.36g |

Surface Mount Humidity Packaging:

Per Riedon Customer Change Notice dated August 8, 2018 (CCN1832) all Riedon 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 Humidity Indicator Card and desiccant to ensure solderability. The MBB is marked with a Moisture-Sensitive Identification Label.

## Ordering Information

Part Description: Part Type Resistance Tolerance TCR (if not standard)

Example: S-4 100 OHM 1%

For non-inductive windings (Resistance > 0.1Ω) insert the letter "N" (i.e. SN-4)

<sup>1</sup> Below 0.1Ω the inductance of a single winding, or the metal element (SL) is negligible