# S & SL Series

Surface Mount Wirewound Resistors

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

RoHS compliant

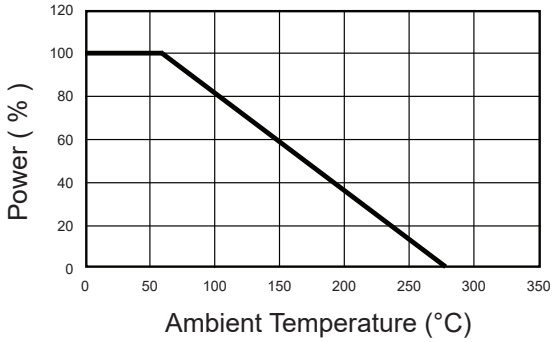
## SPECIFICATIONS

| Type | Power Rating Watts @ 70°C | Resistance Range ( Ω ) | Non-Inductive Winding Resistance Range ( Ω )[1] | Maximum 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 [1] | |
| SL-4 | 2 | 0.005 to 0.07 | N/A [1] | |

| Specification | Value |
|---|---|
| Tolerances | S: greater than 100Ω, ±0.05% to ±5%<br>S: from 1Ω to 100Ω, ±0.1% to ±5%<br>S: below 1Ω, ±1% to ±5%<br>SL: ±1% to ±5% |
| Temperature Coefficient | S: greater than 10Ω : ±20ppm/°C<br>S: from 1Ω to 10Ω : ±50ppm/°C<br>S: less than 1Ω : Call Factory<br>SL: ±200ppm/°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 (MIL-STD 202) | Δ R MAX |
|---|---|
| Dielectric | ±0.5% + 0.05Ω |
| Load Life | ±1.0% + 0.05Ω |
| Storage | ±0.5% + 0.05Ω |
| Moisture Resistance | ±1.0% + 0.05Ω |
| Thermal Shock | ±0.5% + 0.05Ω |
| 5X Overload ( 5s ) | ±0.5% + 0.05Ω |
| Shock | ±0.5% + 0.05Ω |
| Solder Heat Resistance ( 260C, 10s ) | ±0.5% + 0.05Ω |

Power Derating Curve

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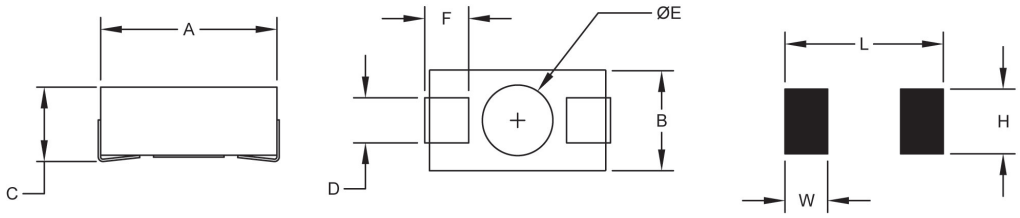
## SPECIFICATIONS
**(continued)**




Solder Pad Dimensions

| Type | Dimensions | | | | | | Stand-Off | | Footprint | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | A ±0.015" [±0.4mm] | B ±0.015" [±0.4mm] | C ±0.015" [±0.4mm] | D ±0.015" [±0.4mm] | F ±0.015" [±0.4mm] | Lead Thick-ness ±0.002" [±0.05mm] | E ±0.015" [±0.4mm] | Height ±0.005" [±0.13mm] | W ±0.015" [±0.4mm] | H ±0.015" [±0.4mm] | L ±0.015" [±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)

[1] Below 0.1Ω the inductance of a single winding, or the metal element (SL) is negligible



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