



**THE DATASHEET OF  
S3-680RF1**



# 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 Watts @ 70°C	Resistance Range ( $\Omega$ ) <sup>1</sup>	Non-Inductive Winding Resistance Range ( $\Omega$ ) <sup>2</sup>	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 <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 $\pm 5\%$ S: from 1 $\Omega$ to 100 $\Omega$ , $\pm 0.1\%$ to $\pm 5\%$ S: below 1 $\Omega$ , $\pm 1\%$ to $\pm 5\%$ SL: $\pm 1\%$ to $\pm 5\%$
Temperature Coefficient	S: greater than 10 $\Omega$ : $\pm 20\text{ppm}/^\circ\text{C}$ S: from 1 $\Omega$ to 10 $\Omega$ : $\pm 50\text{ppm}/^\circ\text{C}$ S: less than 1 $\Omega$ : Call Factory SL: $\pm 200\text{ppm}/^\circ\text{C}$ , For Lower Call Factory
Temperature Range	-55°C to +275°C
Dielectric Strength	S: 1000 VAC SL: 500 VAC
Insulation Resistance	>1000 MOhms / Dry
Terminal Finish	100% Electroless Tin (matte) over Copper

Environmental Performance (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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## 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 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> Other values may be available, contact factory | <sup>2</sup> Below 0.1Ω the inductance of a single winding, or the metal element (SL) is negligible

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