

Wirewound Resistors, Open Air, Current Sense, Low Value



FEATURES

- Open air design
- Low resistance values for all types of current sensing, voltage division and pulse applications including switching and linear supplies, instrumentation and power amplifiers
- All welded construction
- Solid metal nickel-chrome or copper-nickel alloy resistive element
- Solderable terminations
- Very low inductance
- AEC-Q200 qualified available ⁽¹⁾
- Compliant to RoHS Directive 2002/95/EC



Note

⁽¹⁾ Flame retardance test may not be applicable to some resistor technologies.

Notes

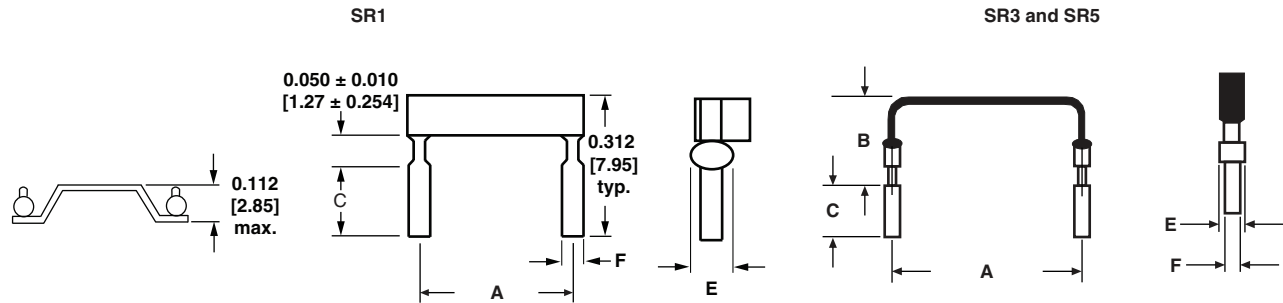
* Pb containing terminations are not RoHS compliant, exemptions may apply

** Please see document "Vishay Material Category Policy": www.vishay.com/doc/299902

| STANDARD ELECTRICAL SPECIFICATIONS | | | |
|------------------------------------|---|------------------------------|-----------------------|
| MODEL | POWER RATING $P_{70\text{ }^{\circ}\text{C}}$ W | RESISTANCE RANGE Ω | TOLERANCE $\pm \%$ |
| SR1 | 1.0 | 0.005 to 0.03 | 1, 5 |
| SR3 | 3.0 | 0.005 to 0.05 | 1, 5 |
| SR5 | 5.0 | 0.004 to 0.05 | 1, 5 |

| TECHNICAL SPECIFICATIONS | | |
|-----------------------------|-------------------------|--|
| PARAMETER | UNIT | SR RESISTOR CHARACTERISTICS |
| Temperature Coefficient | ppm/ $^{\circ}\text{C}$ | $\pm 100 = 0.01 \Omega$ to 0.05Ω ; $\pm 175 = 0.0051 \Omega$ to 0.0099Ω ; $\pm 300 = 0.004 \Omega$ to 0.005Ω |
| Operating Temperature Range | $^{\circ}\text{C}$ | - 65 to + 275 |
| Maximum Continuous Current | A | $(P/R)^{1/2}$ |

| GLOBAL PART NUMBER INFORMATION | | | | | | | | | | | | | | |
|---|---|--|---|---|---|--|---|---|---|---|---|--|--|--|
| Global Part Numbering example: SR55L000JE14 | | | | | | | | | | | | | | |
| S | R | 5 | 5 | L | 0 | 0 | 0 | J | E | 1 | 4 | | | |
| GLOBAL MODEL | | VALUE | | TOLERANCE | | PACKAGING | | SPECIAL | | | | | | |
| SR1 SR3 SR5 | | L = m Ω (below 0.01 Ω) R = Decimal 5L000 = 0.005 Ω R0100 = 0.01 Ω | | F = $\pm 1.0 \%$ J = $\pm 5.0 \%$ K = $\pm 10 \%$ | | E14 = Lead (Pb)-free bulk B14 = Tin/lead bulk | | (Dash Number) (up to 3 digits) From 1 to 999 as applicable | | | | | | |

DIMENSIONS in inches [millimeters]


| MODEL | DIMENSIONS in inches [millimeters] | | | | |
|-------|--|-------------------------------|---------------------------------|---|---------------------------------|
| | A | B | C | E | F |
| SR1 | 0.450 + 0.020 [11.43 + 0.508] | - | 0.125 ± 0.030 [3.18 ± 0.762] | 0.070 [1.78] | 0.040 ± 0.002 [1.02 ± 0.051] |
| SR3 | 0.600 + 0.040/- 0.020 [15.24 + 1.020/- 0.508] | 1.0 maximum [25.4 maximum] | | 0.065 + 0.010/- 0.005 [1.65 + 0.254/- 0.127] | |
| SR5 | 0.800 + 0.040/- 0.020 [20.32 + 1.020/- 0.508] | | | | |

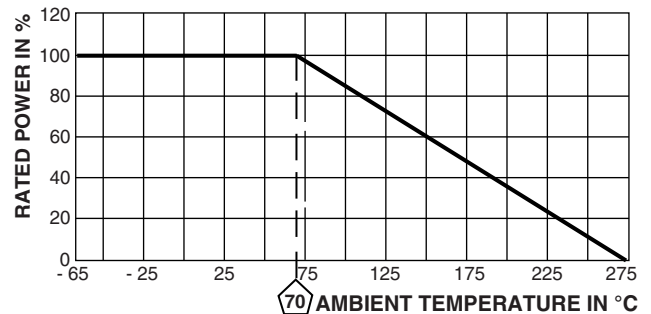
MATERIAL SPECIFICATIONS

Element: Nickel-chrome or copper-nickel alloy depending on resistance value

Terminals: Tinned copper

Encapsulation: None

Marking: None

DERATING


| PERFORMANCE | | |
|---------------------------|--|-------------------------|
| TEST | CONDITIONS OF TEST | TEST LIMITS |
| Temperature Cycling | - 55 °C to + 125 °C, 1000 cycles, 15 min at each extreme | ± (1.0 % + 0.0005 Ω) ΔR |
| Low Temperature Storage | - 65 °C for 24 h | ± (0.5 % + 0.0005 Ω) ΔR |
| High Temperature Exposure | 1000 h at + 275 °C | ± (2.0 % + 0.0005 Ω) ΔR |
| Bias Humidity | + 85 °C, 85 % RH, 10 % bias, 1000 h | ± (1.0 % + 0.0005 Ω) ΔR |
| Mechanical Shock | 100 g's for 11 ms, 5 pulses | ± (0.2 % + 0.0005 Ω) ΔR |
| Vibration | Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h | ± (0.2 % + 0.0005 Ω) ΔR |
| Load Life | 1000 h at rated power, + 70 °C, 1.5 h "ON", 0.5 h "OFF" | ± (2.0 % + 0.0005 Ω) ΔR |
| Resistance to Solder Heat | + 260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence | ± (0.5 % + 0.0005 Ω) ΔR |
| Moisture Resistance | MIL-STD-202 method 106, 0 % power, 7a and 7b not required | ± (0.5 % + 0.0005 Ω) ΔR |



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