

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
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



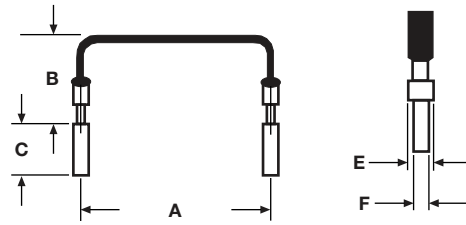
Note

* This datasheet provides information about parts that are RoHS-compliant and/or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

| STANDARD ELECTRICAL SPECIFICATIONS | | | |
|------------------------------------|-----------------------------------------------|------------------------------|-----------------------|
| MODEL | POWER RATING $P_{70^{\circ}\text{C}}$ W | RESISTANCE RANGE Ω | TOLERANCE $\pm \%$ |
| SR3 | 3.0 | 0.0025 to 0.10 | 1, 2, 3, 5, 10 |
| SR5 | 5.0 | 0.0025 to 0.05 | 1, 2, 3, 5, 10 |

| TECHNICAL SPECIFICATIONS | | |
|-------------------------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PARAMETER | UNIT | SR RESISTOR CHARACTERISTICS |
| Temperature Coefficient +25°C / -55°C; +25°C / +125°C | ppm/°C | $\pm 400 = 0.0025 \Omega$ to 0.0199Ω ; $\pm 300 = 0.02 \Omega$ to 0.049Ω ; $\pm 250 = 0.05 \Omega$ to 0.99Ω ; $\pm 200 = 0.1 \Omega$ and above |
| Operating Temperature Range | °C | -65 to +275 |
| Maximum Continuous Current | A | $(P/R)^{1/2}$ |

| GLOBAL PART NUMBER INFORMATION | | | | | | | | | | | | | | |
|---------------------------------------------|---|------------------------------------------------------------------------------------------------------------|---|---|-------------------------------------------------------------------------------------------------|---|---|---------------------------|---|------------------------------------------------------------------|---|--|--|--|
| Global Part Numbering example: SR55L000JE66 | | | | | | | | | | | | | | |
| S | R | 5 | 5 | L | 0 | 0 | 0 | J | E | 6 | 6 | | | |
| GLOBAL MODEL | | VALUE | | | TOLERANCE | | | PACKAGING | | SPECIAL | | | | |
| SR3 SR5 | | L = m Ω (below 0.01 Ω) R = decimal 5L000 = 0.005 Ω R0100 = 0.01 Ω | | | F = $\pm 1.0 \%$ G = $\pm 2.0 \%$ H = $\pm 3.0 \%$ J = $\pm 5.0 \%$ K = $\pm 10 \%$ | | | E66 = lead (Pb)-free 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 |
| SR3 | 0.600 + 0.040/- 0.020 [15.24 + 1.020/- 0.508] | 1.0 maximum [25.4 maximum] | 0.125 ± 0.030 [3.18 ± 0.762] | 0.065 + 0.010/- 0.005 [1.65 + 0.254/- 0.127] | 0.040 ± 0.002 [1.02 ± 0.051] |
| SR5 | 0.800 + 0.040/- 0.020 [20.32 + 1.020/- 0.508] | | | | |

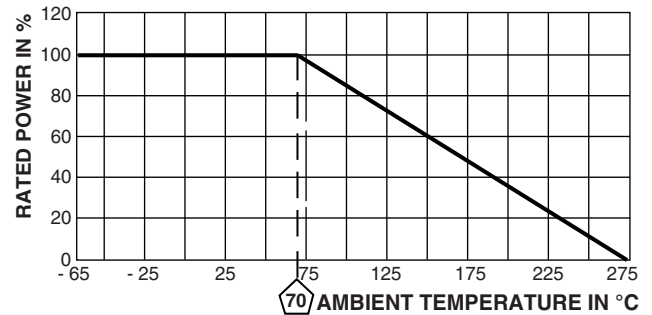
MATERIAL SPECIFICATIONS

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, 5 cycles, 15 min at each extreme | ± (2.0 % + 0.0005 Ω) ΔR |
| Low Temperature Storage | -65 °C for 24 h | ± (0.5 % + 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" | ± (2.75 % + 0.0005 Ω) ΔR |
| Resistance to Solder Heat | +260 °C solder, 10 s to 12 s dwell | ± (0.2 % + 0.0005 Ω) ΔR |
| Short Time Overload | 5x rated power for 5 s | ± (1.25 % + 0.0005 Ω) ΔR |
| Damp Heat | 103B of MIL 202F and test condition "D", humidity chamber per 1300 h | ± (0.5 % + 0.0005 Ω) ΔR no mechanical damage |



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.