

# 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 <sup>(1)</sup>
- Compliant to RoHS Directive 2002/95/EC



## Note

<sup>(1)</sup> Flame retardance test may not be applicable to some resistor technologies.

## Notes

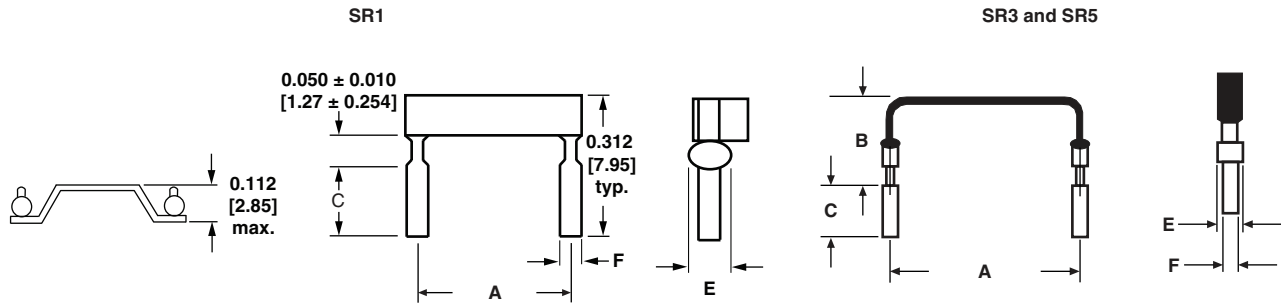
\* Pb containing terminations are not RoHS compliant, exemptions may apply

\*\* Please see document "Vishay Material Category Policy": [www.vishay.com/doc/299902](http://www.vishay.com/doc/299902)

STANDARD ELECTRICAL SPECIFICATIONS			
MODEL	POWER RATING $P_{70\text{ }^{\circ}\text{C}}$ W	RESISTANCE RANGE $\Omega$	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 $0.05 \Omega$ ; $\pm 175 = 0.0051 \Omega$ to $0.0099 \Omega$ ; $\pm 300 = 0.004 \Omega$ to $0.005 \Omega$
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 $\Omega$ (below 0.01 $\Omega$ ) R = Decimal 5L000 = 0.005 $\Omega$ R0100 = 0.01 $\Omega$			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]				

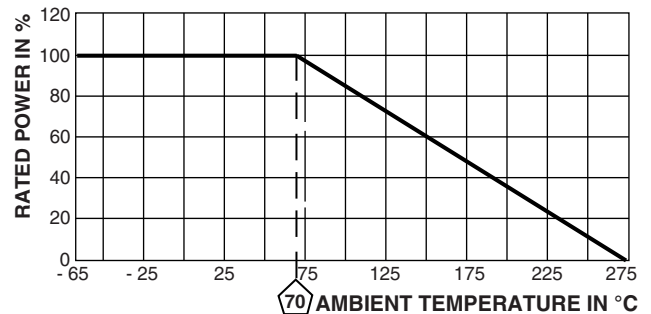
**MATERIAL SPECIFICATIONS**

**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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