Type SR Precision Current Sense Resistors

Non-inductive Design - Compact Footprint Minimizes Circuit Board Space Kelvin Terminals (Four Wire) - Resistance Values 0.005Ω to 1.00Ω

Type SR Current Sense Resistors utilize Caddock's Micronox® resistance films to achieve a low cost resistor with Non-inductive Performance. This compact construction makes this sense resistor ideal for many current monitoring or control applications.

The special performance features of these Type SR Current Sense Resistors include:

- Available in Standard Resistances down to 5 milliohm.
- Non-Inductive Design.
- · Terminals are constructed for Kelvin connections to the circuit board.
- · Compact footprint.

Model No.	Resistance		Power Rating at	Voltage Bating	Terminal Material
	Min.	Max.	70°C*	Vollage Halling	reminar material
SR10	0.008 Ω	1.00 Ω	1.0 Watt	Power Limited	Solderable
SR20	0.005 Ω	1.00 Ω	2.0 Watts	Power Limited	Solderable



CIRCUIT BOARD LAYOUT NOTES



Measurement note: For purposes of these specifications, resistance measurement shall be made using Kelvin connections (four wire) with appropriate current and sense connections to the device terminals.

C = Current connection S = Sense connection

Circuit Board Layout: The circuit board traces connecting to the current terminals must be sized appropriately for the current flowing through the trace. For example; 0.005Ω operated at 2.0 Watts would have 20 amps flowing through the circuit board traces into the current terminals.





SR10 Standard Resistance Values: 0.008 Ω 0.020 Ω 0.040 Ω 0.15 Ω 0.40 Ω

0.025 Ω 0.030 Ω 0.033 Ω	0.050 Ω 0.075 Ω 0.10 Ω	0.20 Ω 0.25 Ω 0.30 Ω	0.50 Ω 0.75 Ω 1.00 Ω
Standard	Resist	ance Va	alues:
0.020 Ω	0.040 Ω	0.15 Ω	0.40 Ω
0.025 Ω	0.050 Ω	0.20 Ω	0.50 Ω
0.030 Ω	0.075 Ω	0.25 Ω	0.75 Ω
0.033 Ω	0.10 Ω	0.30 Ω	1.00 Ω
	0.025 Ω 0.030 Ω 0.033 Ω Standard 0.020 Ω 0.025 Ω 0.030 Ω 0.033 Ω	0.025 Ω 0.050 Ω 0.030 Ω 0.075 Ω 0.033 Ω 0.10 Ω Standard Resist 0.020 Ω 0.040 Ω 0.025 Ω 0.050 Ω 0.020 Ω 0.040 Ω 0.025 Ω 0.050 Ω 0.033 Ω 0.075 Ω 0.033 Ω 0.075 Ω	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Custom resistance values can be manufactured for high quantity applications. Please contact Caddock Applications Engineering.

Specifications:

Resistance Tolerance: ±1.0%

Temperature Coefficient: TC referenced to $+25^{\circ}$ C, Δ R taken at -15° C and $+105^{\circ}$ C.

0.081 to 1.00 ohm	-50 to +100 ppm/°C
0.025 to 0.080 ohm	0 to +150 ppm/°C
0.008 to 0.024 ohm	0 to +200 ppm/°C
0.005 to 0.007 ohm	0 to +300 ppm/°C
Load Life: 1000 hours	at rated power at +70

Load Life: 1000 hours at rated power at +70°C, $\Delta R \pm (0.2 \text{ percent} + 0.00001 \text{ ohm}) \text{ max.}$

Thermal Shock: Mil-Std-202, Method 107, Cond. A, $\Delta R \pm (0.2 \text{ percent} + 0.00001 \text{ ohm}) \text{ max}.$

Moisture Resistance: Mil-Std-202, Method 106,

 $\Delta R \pm (0.2 \text{ percent} + 0.00001 \text{ ohm}) \text{ max.}$

Encapsulation: Polymer over resistance element.

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Power Derating Curve:





temperature. The derating curve is based on still air with natural convection around the resistor.

Ordering Information:

SR10 - 0.050 - 1% Model Number: _______

> Sales and Applications Engineering 17271 North Umpqua Hwy. Roseburg, Oregon 97470-9422 Phone: (541) 496-0700 Fax: (541) 496-0408

Tolerance

X-ON Electronics

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CPSL07R1000JB145
SR10-0.015-1%
SR20-0.008-1%
HPCR0402F12K0K9
HPCR0402F130RK9
HPCR0402F130RK9

HPCR0402F17K4K9
HPCR0402F180KK9
HPCR0402F180RK9
HPCR0402F1K10K9
HPCR0402F220KK9
HPCR0402F220RK9

HPCR0402F24K0K9
HPCR0402F27K0K9
HPCR0402F2K0K9
HPCR0402F33K0K9
HPCR0402F430KK9
HPCR0402F4K30K9

HPCR0402F4K70K9
HPCR0402F680KK9
HPCR0402F680RK9
HPCR0402F390KK9
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HPCR0402F560RK9
HPCR0402F2K70K9
HPCR0402F360KK9
HPCR0402F36K0K9
HPCR0402F3K00K9
HPCR0402F3K00K9
HPCR0402F3K00K9

HPCR0402F430RK9
HPCR0402F43K0K9
HPCR0402F5K60K9
HPCR0402F51K0K9
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