CSNL Series

Metal Foil Current Sensing Chip Resistor

Stackpole Electronics, Inc.
Resistive Product Solutions

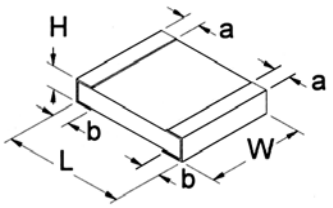
Features:

- High power current sense resistor
- TCR of ±50 ppm/°C
- Resistances down to 0.0005 (1/2 mΩ)
- Current handling up to 63 amps
- Non-standard resistance values available
- RoHS compliant / lead-free

Electrical Specifications					
Type / Code	Old Pkg Code	Power Rating (Watts) @ 70ºC	Dielectric Withstanding Voltage	Resistance Temperature Coefficient	Ohmic Range (Ω) and Tolerance
					1%, 5%
CSNL1206	1/2	1W	200V	±50 ppm/ºC	0.001 - 0.05
CSNL2010	1	1.5W	200V	±50 ppm/ºC	0.0005 - 0.1
CSNL2512	2	2W	200V	±50 ppm/ºC	0.0005 - 0.01

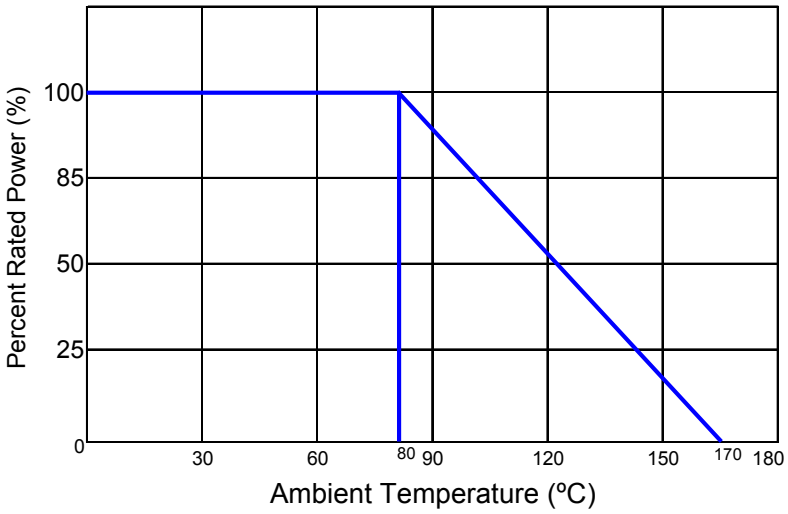
Performance Characteristics			
Test	Test Method	Test Specification	Typical
Load Life	MIL-STD-502F-Method 108A RCWV at 70°C; 1.5hrs ON; 0.5hrs OFF Total 1024 ± 24hrs	± 0.5%	≤ 0.5%
Resistance to Soldering Heat	MIL-STD-202F-Method 210E 260 ± 5°C for 10 ± 1sec	± 0.5%	≤ 0.25%
Solderability	MIL-STD-202F-Method 208H 245 ± 5°C for 2 ± 0.5sec	minimum 95% coverage	> 95%
Thermal Shock	MIL-STD-202F-Method 107G -55°C to 150°C, 100 cycles	± 0.5%	≤ 0.5%
Short Time Overload	JIS-C-5202-5.5 5x rated power for 5 sec	± 0.5%	≤ 0.5%
Temperature Cycling	JIS-C-5202-7.4 -55°C: 30 min. 25°C: 2 to 3 min. 155°C: 30min. 25°C: 2 to 3 min.	± 0.5%	≤ 0.5%
Moisture Resistance	MIL- STD-202F-Method 106G	± 0.5%	≤ 0.5%
Insulation Resistance	MIL-STD-202F-Method 302 Apply 100Vdc for 1 minute	1MΩ minimum	≥ 1MΩ
Leach Resistance	-	90 seconds minimum	≥ 90 seconds

Operating Temperature Range: -55°C to +170°C



Mechanical Specifications						
Type / Code	L Body Length	W Body Width	H Body Height	a Top Termination	b Bottom Termination	Unit
CSNL1206	0.1260 ± 0.010 3.200 ± 0.254	0.0630 ± 0.010 1.600 ± 0.254	0.0254 ± 0.010 0.645 ± 0.254	0.0200 ± 0.010 0.508 ± 0.254	0.0200 ± 0.010 0.508 ± 0.254	inches mm
CSNL2010 (≤3mΩ)	0.2000 ± 0.010 5.080 ± 0.254	0.1000 ± 0.010 2.540 ± 0.254	0.0310 ± 0.010 0.787 ± 0.254	0.0510 ± 0.010 1.295 ± 0.254	0.0510 ± 0.010 1.295 ± 0.254	inches mm
CSNL2010 (≥3.1mΩ)	0.2000 ± 0.010 5.080 ± 0.254	0.1000 ± 0.010 2.540 ± 0.254	0.0254 ± 0.010 0.645 ± 0.254	0.0310 ± 0.010 0.787 ± 0.254	0.0310 ± 0.010 0.787 ± 0.254	inches mm
CSNL2512 (0.5mΩ)	0.2500 ± 0.010 6.350 ± 0.254	0.1252 ± 0.010 3.180 ± 0.254	0.0492 ± 0.008 1.250 ± 0.2	0.0512 ± 0.015 1.300 ± 0.38	0.0512 ± 0.015 1.300 ± 0.38	inches mm
CSNL2512 (0.75mΩ)	0.2500 ± 0.010 6.350 ± 0.254	0.1252 ± 0.010 3.180 ± 0.254	0.0295 ± 0.008 0.750 ± 0.2	0.0512 ± 0.015 1.300 ± 0.38	0.0512 ± 0.015 1.300 ± 0.38	inches mm
CSNL2512 (1.0mΩ)	0.2500 ± 0.010 6.350 ± 0.254	0.1252 ± 0.010 3.180 ± 0.254	0.0256 ± 0.008 0.650 ± 0.2	0.0512 ± 0.015 1.300 ± 0.38	0.0512 ± 0.015 1.300 ± 0.38	inches mm
CSNL2512 (1.5mΩ)	0.2500 ± 0.010 6.350 ± 0.254	0.1252 ± 0.010 3.180 ± 0.254	0.0177 ± 0.008 0.450 ± 0.2	0.0512 ± 0.015 1.300 ± 0.38	0.0512 ± 0.015 1.300 ± 0.38	inches mm
CSNL2512 (2.0mΩ)	0.2500 ± 0.010 6.350 ± 0.254	0.1252 ± 0.010 3.180 ± 0.254	0.0138 ± 0.008 0.350 ± 0.2	0.0512 ± 0.015 1.300 ± 0.38	0.0512 ± 0.015 1.300 ± 0.38	inches mm
CSNL2512 (2.5mΩ)	0.2500 ± 0.010 6.350 ± 0.254	0.1252 ± 0.010 3.180 ± 0.254	0.0256 ± 0.008 0.650 ± 0.2	0.0512 ± 0.015 1.300 ± 0.38	0.0512 ± 0.015 1.300 ± 0.38	inches mm
CSNL2512 (3mΩ)	0.2500 ± 0.010 6.350 ± 0.254	0.1252 ± 0.010 3.180 ± 0.254	0.0217 ± 0.008 0.550 ± 0.2	0.0512 ± 0.015 1.300 ± 0.38	0.0512 ± 0.015 1.300 ± 0.38	inches mm
CSNL2512 (4mΩ)	0.2500 ± 0.010 6.350 ± 0.254	0.1252 ± 0.010 3.180 ± 0.254	0.0177 ± 0.008 0.450 ± 0.2	0.0512 ± 0.015 1.300 ± 0.38	0.0512 ± 0.015 1.300 ± 0.38	inches mm
CSNL2512 (5mΩ)	0.2500 ± 0.010 6.350 ± 0.254	0.1252 ± 0.010 3.180 ± 0.254	0.0138 ± 0.008 0.350 ± 0.2	0.0512 ± 0.015 1.300 ± 0.38	0.0512 ± 0.015 1.300 ± 0.38	inches mm
CSNL2512 (6mΩ)	0.2500 ± 0.010 6.350 ± 0.254	0.1252 ± 0.010 3.180 ± 0.254	0.0126 ± 0.008 0.320 ± 0.2	0.0512 ± 0.015 1.300 ± 0.38	0.0512 ± 0.015 1.300 ± 0.38	inches mm
CSNL2512 (6.5mΩ)	0.2500 ± 0.010 6.350 ± 0.254	0.1252 ± 0.010 3.180 ± 0.254	0.0118 ± 0.008 0.300 ± 0.2	0.0512 ± 0.015 1.300 ± 0.38	0.0512 ± 0.015 1.300 ± 0.38	inches mm
CSNL2512 (7mΩ)	0.2500 ± 0.010 6.350 ± 0.254	0.1252 ± 0.010 3.180 ± 0.254	0.0106 ± 0.008 0.270 ± 0.2	0.0512 ± 0.015 1.300 ± 0.38	0.0512 ± 0.015 1.300 ± 0.38	inches mm
CSNL2512 (10mΩ)	0.2500 ± 0.010 6.350 ± 0.254	0.1252 ± 0.010 3.180 ± 0.254	0.0098 ± 0.008 0.250 ± 0.2	0.0512 ± 0.015 1.300 ± 0.38	0.0512 ± 0.015 1.300 ± 0.38	inches mm

Power Derating Curve:



How to Order

1	2	3	4	5	6	7	8	9	10	11	12	13	14
C	S	N	L	1	2	0	6	F	T	1	0	L	0

Product Series	
CSNL	Metal Foil

Size	Power
1206	1W
2010	1.5W
2512	2W

Tolerance	
Code	Tol
F	1%
J	5%

Packaging			
Code	Description	Size	Quantity
T	7" Reel - Plastic Tape	1206	4,000
		2010, 2512	2,000

Resistance Value
Four characters with the multiplier used as the decimal holder. "L" used as multiplier of 10^{-3} for any value under 0.1 ohm.
0.0005 Ohm = L500 0.001 Ohm = 1L00 0.01 Ohm = 10L0 0.1 Ohm = R100

Legacy Part Number (before January 3, 2011):

SEI Type	Code	Nominal Resistance	Tolerance	Packaging
CSNL	1/2	0.01	1%	R

Type	Description
CSNL	Metal Foil

Code	Wattage	Size
1/2	1W	1206
1	1.5W	2010
2	2W	2512

Tolerance
1%
5%

SEI Types	Pkg Qty	Description	Code
1206	4,000	7" reel - plastic tape	R
2010, 2512	2,000		