

Features

- EB welded metal strip
- Very high power
- Excellent long term stability
- Low resistance, low TCR
- Low thermal EMF
- RoHS compliant* and halogen free**
- AEC-Q200 compliant

Applications

- Current sensing
- Voltage division
- Battery management systems
- Power modules
- Frequency converters
- Industrial

BOURNS®

CSS2H-2512 Series Current Sense Resistor

Electrical Characteristics

Characteristic	Model CSS2H-2512 Series	
Resistance Range / Power Rating @70 °C [1] /	CSS2H-2512C-000 [3]	< 0.1 mΩ / 100 A
	CSS2H-2512R-L300x	0.3 mΩ / 6 W
	CSS2H-2512R-L500x	0.5 mΩ / 6 W
	CSS2H-2512R-1L00x	1.0 mΩ / 5 W
	CSS2H-2512K-1L80x	1.8 mΩ / 5 W
	CSS2H-2512K-2L00x	2.0 mΩ / 5 W
	CSS2H-2512K-2L30x	2.3 mΩ / 5 W
	CSS2H-2512K-3L00x	3.0 mΩ / 4 W
	CSS2H-2512K-3L50x	3.5 mΩ / 4 W
	CSS2H-2512K-4L00x [4]	4.0 mΩ / 3 W
	CSS2H-2512K-5L00x [4]	5.0 mΩ / 2.5 W
Operating Temperature Range	-55 to +170 °C	
TCR - Resistive Alloy [2]	±50 PPM/°C (20~60 °C)	
Temperature Coefficient including Copper Terminals	CSS2H-2512R-L300x	±150 PPM/°C
	CSS2H-2512R-L500x	±100 PPM/°C
	CSS2H-2512R-1L00x	±75 PPM/°C
	CSS2H-2512K-1L80x	±75 PPM/°C
	CSS2H-2512K-2L00x	±75 PPM/°C
	CSS2H-2512K-2L30x	±75 PPM/°C
	CSS2H-2512K-3L00x	±75 PPM/°C
	CSS2H-2512K-3L50x	±75 PPM/°C
	CSS2H-2512K-4L00x [4]	±75 PPM/°C
	CSS2H-2512K-5L00x [4]	±75 PPM/°C
Inductance	Material type R: < 2 nH Material type K: < 5 nH	
Resistance Tolerance	±1 %, ±5 %	

[1] Terminal temperature [2] For full TCR range, refer to TCR curve
[3] Tinned copper [4] CSS2H-2512K-4L00F and -5L00F are available upon request - contact factory

Environmental Characteristics

Characteristic	Test Condition	ΔR Max.
Thermal Shock	-55 to +150 °C / 2000 Cycles	0.50 %
Short Time Overload	5 Times Rated Power for 5 Second Duration	0.50 %
Resistance to Soldering Heat	+260 °C / 10 Seconds	0.50 %
High Temperature Exposure	+170 °C / 2000 Hours	1.00 %
Low Temperature Storage	-65 °C / 24 Hours	0.10 %
Biased Humidity Test	+85 °C, 85 %R.H., 1000 Hours	0.50 %
Moisture Resistance	10 Days with Cold Shock, No Load	0.20 %
Mechanical Shock	100 g, 6 ms half sine	0.20 %
Vibration, High Frequency	20 g, 10-2000 Hz	0.20 %
Load Life	2000 Hours, Max. Load, Terminal Temperature 130 °C	1.00 %
Solderability	J-STD-002	95 % Coverage Min.
ESD	AEC-Q200-002, 25 kV	0.25 %
Board Flex	60 Sec. Min. Holding Time	0.25 %
Moisture Sensitivity Level		Level 1

Additional Information

Click these links for more information:

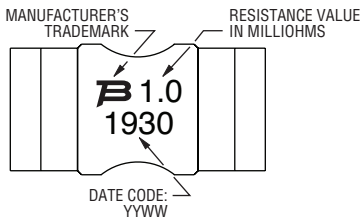
PRODUCT | TECHNICAL LIBRARY | INVENTORY | SAMPLES
FOLLOW | SHUNT PULSE CALCULATOR | CONTACT

How to Order

CSS 2H - 2512 R - L500 J

- Model: CSS
- No. of Terminals & Style: 2H
- Size: 2512
- Material Type (See Part Number Table): R
- Resistance Code (milliohms): "L" represents decimal point *(examples: L500 = .500 milliohms; 1L00 = 1.00 milliohms)*: L500
- Resistance Tolerance: F = ±1 %, J = ±5 %: J
- Packaging size: Blank = Standard 13 ″ reel, E = Mini 7 ″ reel

Typical Part Marking

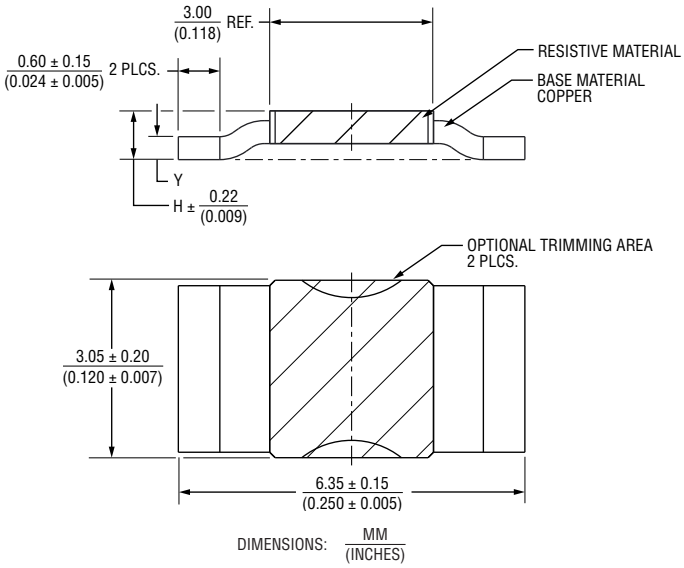


CALIFORNIA WARNING: Can expose you to lead, a carcinogen and reproductive toxicant.See www.P65Warnings.ca.gov

* RoHS Directive 2015/863, Mar 31, 2015 and Annex.
** Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

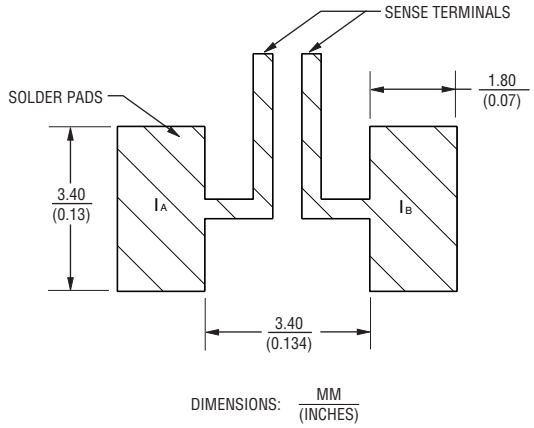
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Product Dimensions

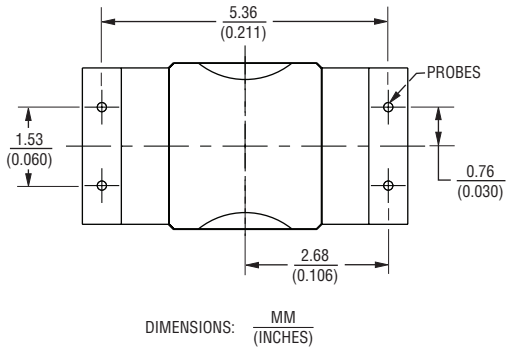


Part Number	Dimension H max.	Dimension Y max.	Alloy
CSS2H-2512C-000	0.78 (0.031)	0.43 (0.017)	Cu/Tin
CSS2H-2512R-L300x	1.65 (0.065)	1.20 (0.047)	Cu-Mn
CSS2H-2512R-L500x	1.21 (0.048)	0.86 (0.034)	Cu-Mn
CSS2H-2512R-1L00x	0.78 (0.031)	0.43 (0.017)	Cu-Mn
CSS2H-2512K-1L80x	1.21 (0.048)	0.73 (0.029)	Fe-Cr
CSS2H-2512K-2L00x CSS2H-2512K-2L30x	1.09 (0.043)	0.73 (0.029)	Fe-Cr
CSS2H-2512K-3L00x CSS2H-2512K-3L50x	0.81 (0.032)	0.45 (0.018)	Fe-Cr
CSS2H-2512K-4L00x	0.73 (0.029)	0.43 (0.017)	Fe-Cr
CSS2H-2512K-5L00x	0.65 (0.026)	0.43 (0.017)	Fe-Cr

Recommended Pad Layout



Recommended Measurements



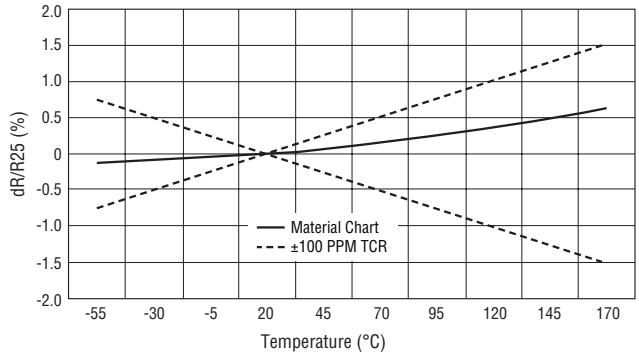
Electrical Schematic



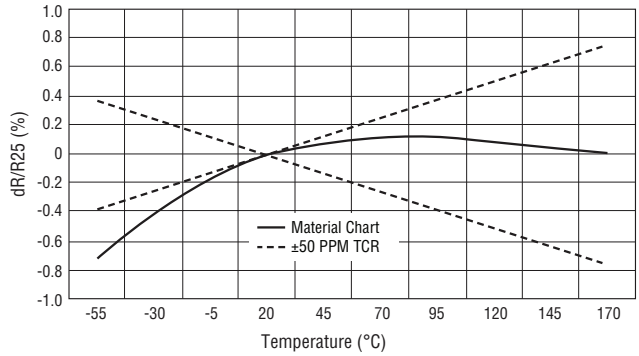
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TCR Curves

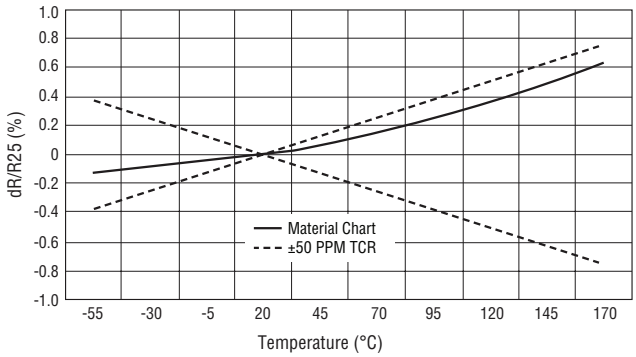
K-Type Resistive Material



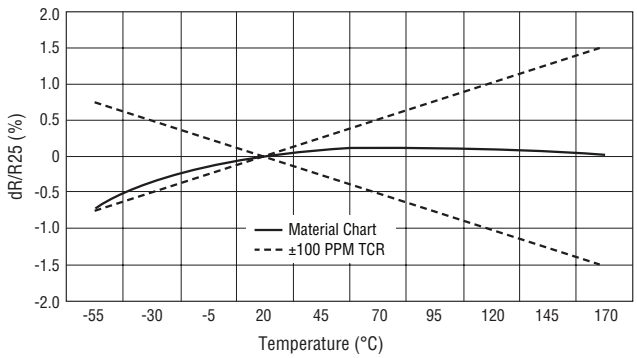
R-Type Resistive Material



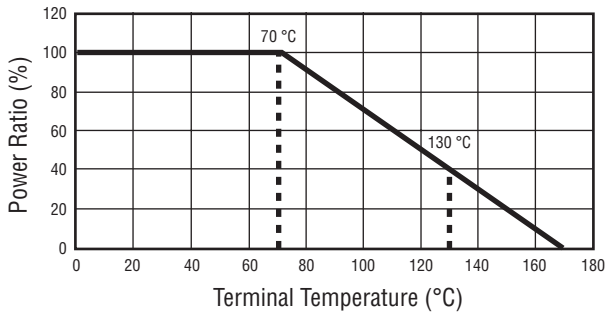
K-Type Resistive Material



R-Type Resistive Material

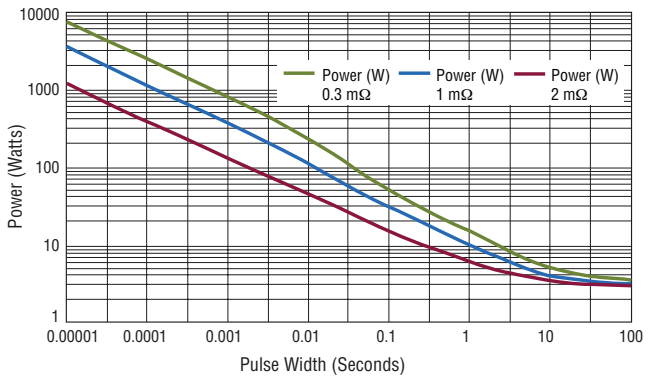


Terminal Temperature Derating Curve

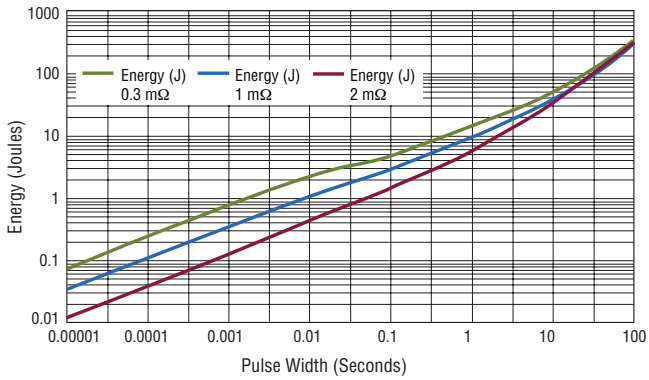


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Maximum Pulse Power



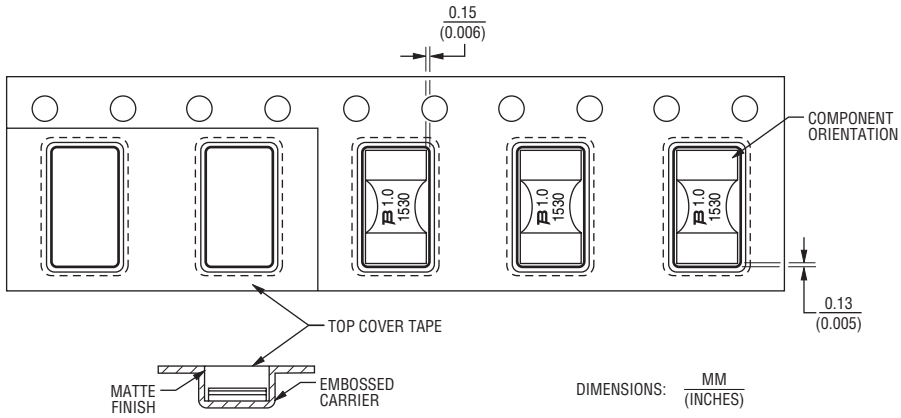
Maximum Pulse Energy



Packaging Specifications

Components packaged per EIA-481.

Standard Reel Size:	13 inches
Tape Width:	12 mm
Quantity:	3,000 pcs. per reel
Mini-Reel Size:	7 inches
Tape Width:	12 mm
Quantity:	1000 pcs. per reel



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