

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 qualified

Applications

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

Model CSS2H-2512 Series Current Sense Resistor

Electrical Characteristics

Characteristic	Model CSS2H-2512 Series	
Resistance Range / Power Rating @ 70 °C ¹ / Power Rating @ 130 °C ¹	CSS2H-2512C-000 ³	< 0.1 mΩ / 100 A
	CSS2H-2512R-L300x	0.3 mΩ / 6 W / 3 W
	CSS2H-2512R-L500x	0.5 mΩ / 6 W / 3 W
	CSS2H-2512R-1L00x	1.0 mΩ / 5 W / 3 W
	CSS2H-2512K-1L80x	1.8 mΩ / 5 W / 3 W
	CSS2H-2512K-2L00x	2.0 mΩ / 5 W / 3 W
	CSS2H-2512K-2L30x	2.3 mΩ / 5 W / 3 W
	CSS2H-2512K-3L00x	3.0 mΩ / 4 W / 2 W
	CSS2H-2512K-3L50x	3.5 mΩ / 4 W / 2 W
	CSS2H-2512K-4L00x	4.0 mΩ / 3 W / 2 W
	CSS2H-2512K-5L00x	5.0 mΩ / 2.5 W / 1.5 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	±75 PPM/°C
	CSS2H-2512K-5L00x	±75 PPM/°C
Resistance Tolerance	±1 %, ±5 %	

¹ Terminal temperature

² For full TCR range, refer to TCR curve

³ Tinned copper

How to Order

CSS 2H - 2512 R - L500 J

Model

No. of Terminals
& Style

Size

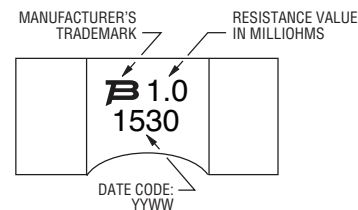
Material Type
(See Part Number Table)

Resistance Code (milliohms)
"L" represents decimal point
(examples: L500 = .500 milliohms;
1L00 = 1.00 milliohms)

Resistance Tolerance
F = ±1 %
J = ±5 %

Packaging size
Blank = Standard 13 " reel
E = Mini 7 " reel

Typical Part Marking



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 %

* RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

**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.

Specifications are subject to change without notice.

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Technical drawing showing two cross-sections of a component, labeled A-A and B-B.

Cross-section A-A:

- Top dimensions: $3.00 \pm 0.20 / -0.30$ (tolerance: $0.118 \pm 0.007 / -0.011$)
- Left side dimensions: $1.14 \pm 0.20 / -0.50$ (tolerance: $0.045 \pm 0.007 / -0.019$)
- Right side dimensions: 0.35 ± 0.20 (tolerance: 0.014 ± 0.007)
- Material specifications: RESISTIVE MATERIAL, BASE MATERIAL, COPPER ALLOY C10200
- Dimension line: Y

Cross-section B-B:

- Top dimensions: 3.05 ± 0.20 (tolerance: 0.120 ± 0.007)
- Bottom dimensions: 6.35 ± 0.15 (tolerance: 0.250 ± 0.005)
- Trimming Area: Indicated by a dashed line and the label "TRIMMING AREA".

Part Number	Dimension Y
CSS2H-2512C-000	$\frac{0.42 \pm 0.1}{(0.016 \pm 0.004)}$
CSS2H-2512R-L300x	$\frac{1.20 \pm 0.2}{(0.047 \pm 0.008)}$
CSS2H-2512R-L500x	$\frac{0.84 \pm 0.1}{(0.033 \pm 0.004)}$
CSS2H-2512R-1L00x	$\frac{0.42 \pm 0.1}{(0.016 \pm 0.004)}$
CSS2H-2512K-1L80x	
CSS2H-2512K-2L00x	
CSS2H-2512K-2L30x	
CSS2H-2512K-3L00x	
CSS2H-2512K-3L50x	
CSS2H-2512K-4L00x	
CSS2H-2512K-5L00x	

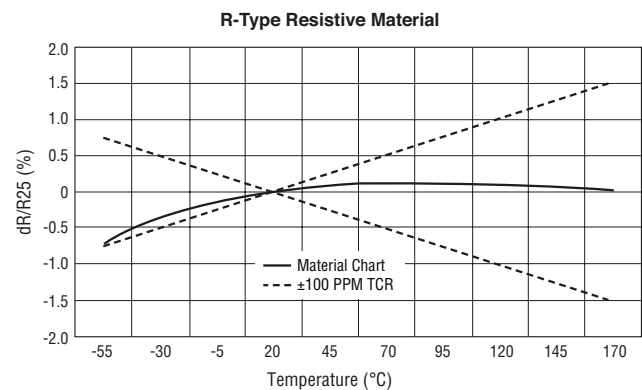
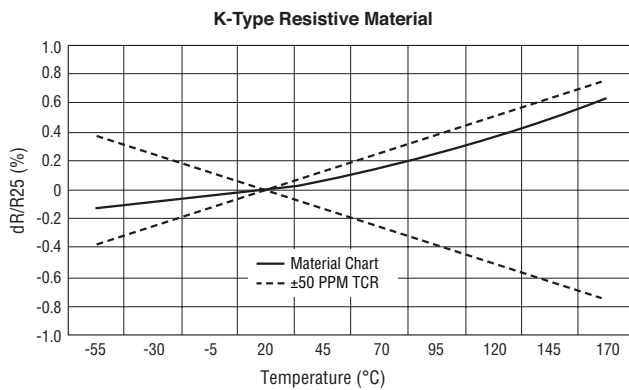
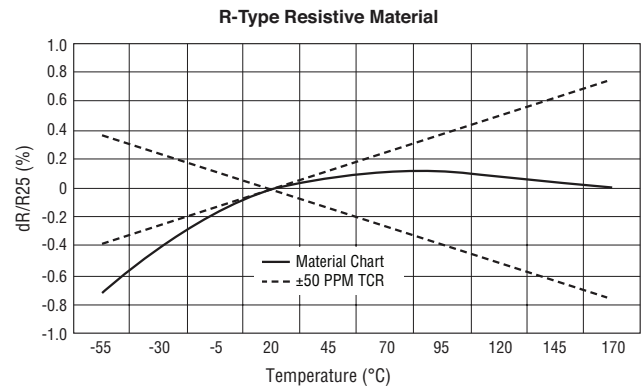
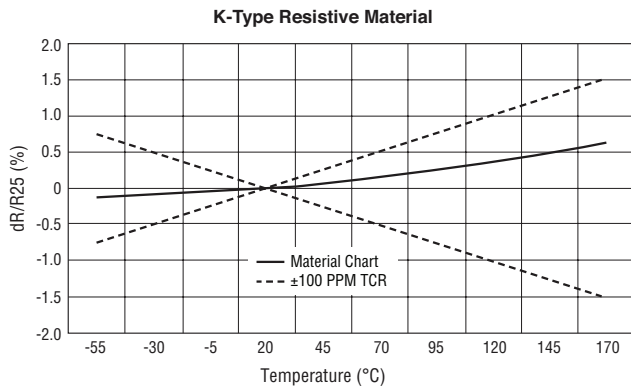
A cross-sectional view of a microelectronic assembly. A central vertical structure is shown, with two sense terminals at the top, labeled "SENSE TERMINALS". Below the sense terminals, the central structure is flanked by two solder pads, labeled "A" and "B", which are shaded with diagonal lines. The pads are connected to a common base. Dimensions are indicated: the height of the central structure is $\frac{3.40}{(0.13)}$; the width of the central structure is $\frac{3.40}{(0.134)}$; and the distance between the sense terminals is $\frac{1.80}{(0.07)}$. The solder pads are labeled "SOLDER PADS".

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Users should verify actual device performance in their specific applications.

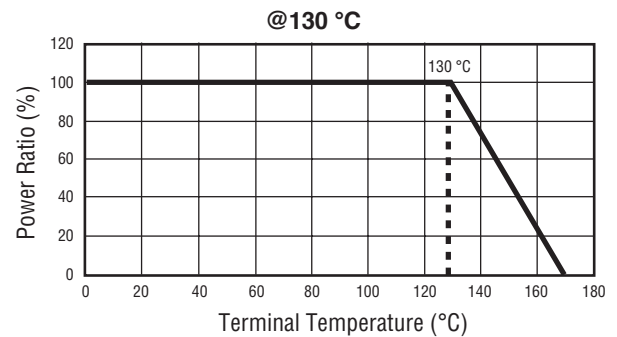
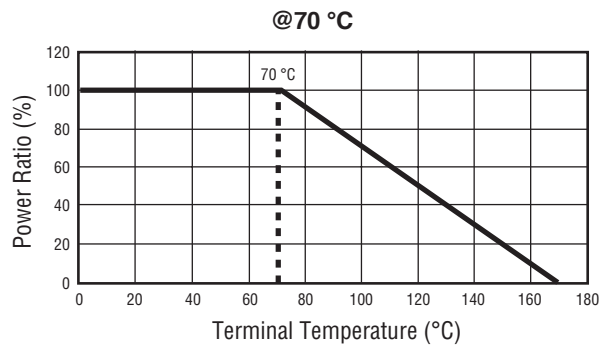
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TCR Curves



Power Derating Curves



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Packaging Specifications

Components packaged per EIA-481.

Standard Reel Size: 13 inches

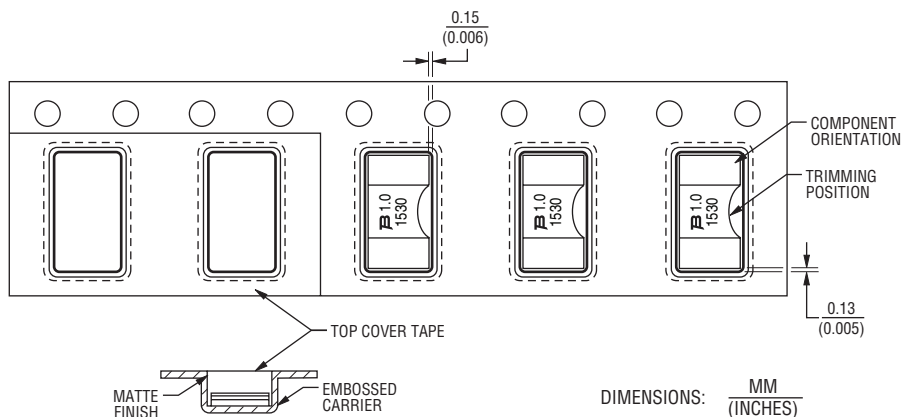
Tape Width: 12 mm

Quantity: 3,000 pcs. per reel

Mini-Reel Size: 7 inches

Tape Width: 12 mm

Quantity: 1000 pcs. per reel



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