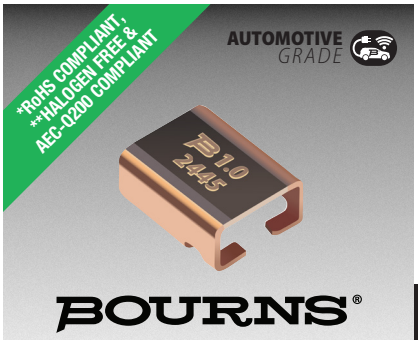


Features

- EB welded metal strip
- High power up to 5 W
- Excellent long term stability
- Four terminals for high accuracy
- RoHS compliant* and halogen free**
- AEC-Q200 compliant

Applications

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

Model CSS4C-1216 Current Sense Resistor

Specifications

Characteristic	Model CSS4C-		
	1216T-L300	1216T-L500	1216C-1L00
Power Rating @ 100 °C	5 W	5 W	3 W
Resistance Range	0.3 mΩ	0.5 mΩ	1 mΩ
TCR (20~60 °C)	±100 PPM/°C	±50 PPM/°C	±50 PPM/°C
Tolerance	±1 % / ±5 %		
Inductance	<2 nH		
Max. Working Voltage	V = √(P x R)		

Additional Information

Click these links for more information:

PRODUCT | TECHNICAL LIBRARY | INVENTORY | SAMPLES

FOLLOW | SHUNT PULSE CALCULATOR | CONTACT

Environmental Characteristics

Operating Temperature ..... -65 °C to +170 °C
Storage Conditions
Temperature ..... +5 °C to +35 °C
Humidity ..... 40 % to 75 %
Moisture Sensitivity Level 1

Performance Characteristics

Test	Conditions	Test Condition	
		Reference	Limit
Short Time Overload	5X rated power for 5 sec.	IEC 60115-1 4.13	ΔR < ±0.5 %
Low Temperature Storage	-65 °C for 24 hrs.	IEC 60115-1-4.23.4 JIS-C5201-4.23.4	ΔR < ±1 %
High Temperature Exposure	1000 hours @ +170 °C	AEC-Q200-REV E-Test 3 MIL-STD202 Method 108	ΔR < ±1 %
Temperature Cycling	1000 cycles (-55 °C to +150 °C)	AEC-Q200-REV E-Test 4 JESD22 Method JA-104	ΔR < ±0.5 %
Bias Humidity	+ 85 °C, 85 % RH, 10 % bias, 1000 hours	AEC-Q200-REV E-Test 7 MIL-STD-202 Method 103	ΔR < ±0.5 %
Mechanical Shock	100 g for 6 ms, half sine shock pulse	AEC-Q200-REV E-Test 13 MIL-STD-202 Method 213	ΔR < ±0.2 %
Vibration	5 g's for 20 min, 10-2 kHz 12 cycles	AEC-Q200-REV E-Test 14 MIL-STD-202 Method 204	ΔR < ±0.2 %
Operational Life	1000 hours at rated power at +125 °C	AEC-Q200-REV E-Test 8 MIL-STD-202 Method 108	ΔR < ±1 %
Resistance to Soldering Heat	+260 ±5 °C, 10 ±1 second dwell	AEC-Q200-REV E-Test 15 MIL-STD-202 Method 210	ΔR < ±0.5 %
Solderability	235 ±3 °C dipping time: 3 ±0.5 seconds	AEC-Q200-REV E-Test 18 J-STD-002	>95 % tin coverage

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.
Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.
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Model CSS4C-1216 Current Sense Resistor

BOURNS®

How To Order

CSS 4C - 1216 T - L500 F ___

Model
CSS = Current Sense Shunt

Number of Terminals and Style
4C = 4 terminals

Package Size
1216 = 1216 in. (3038 mm)

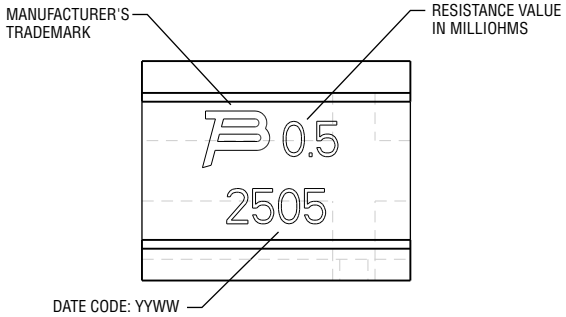
Material
T = Copper Manganese Tin Alloy
C = Copper Manganese Alloy

Resistance Value
"L" represents decimal point in mΩ
(example: L500 = 0.0005 Ω, 1L00 = 0.001Ω)

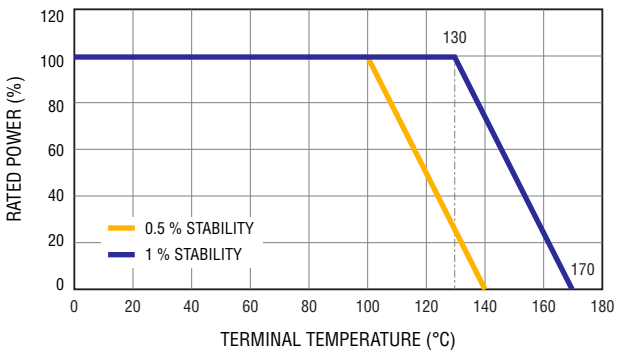
Resistance Tolerance
F = ±1 %
J = ±5 %

Packaging Type
(blank) = 3,000 pcs. / 13-inch reel

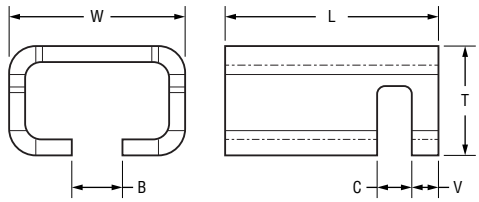
Typical Part Marking



Derating Curve



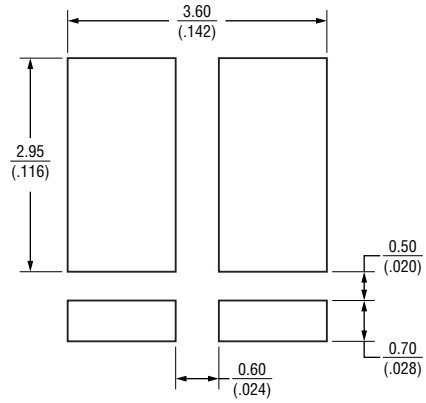
Product Dimensions



Dim.	Model CSS4C-		
	1216T-L300	1216T-L500	1216C-1L00
L	3.80 ± 0.20 (.150 ± .008)		
W	3.10 ± 0.20 (.122 ± .008)		
T	2.0 +0/-0.35 (.079 +0/-.014)	1.90 +0/-0.35 (.075 +0/-.014)	
B	0.85 ± 0.20 (.033 ± .008)		
V	0.50 ± 0.10 (.020 ± .004)		
C	0.60 ± 0.15 (.024 ± .006)		

DIMENSIONS: MM (INCHES)

Recommended Layout

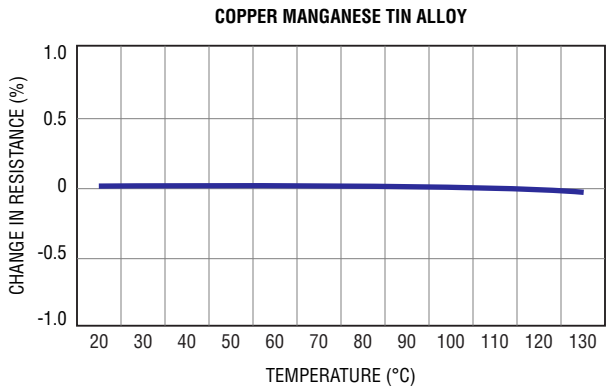


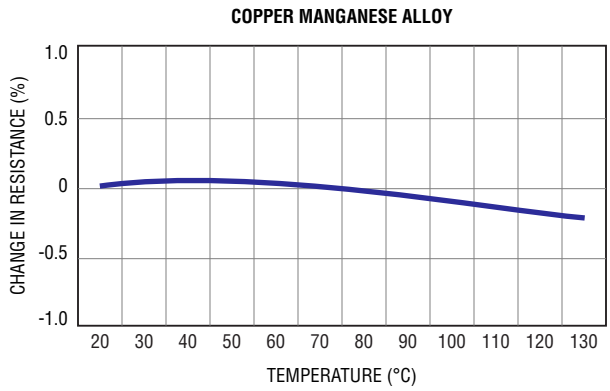
DIMENSIONS: MM (INCHES)

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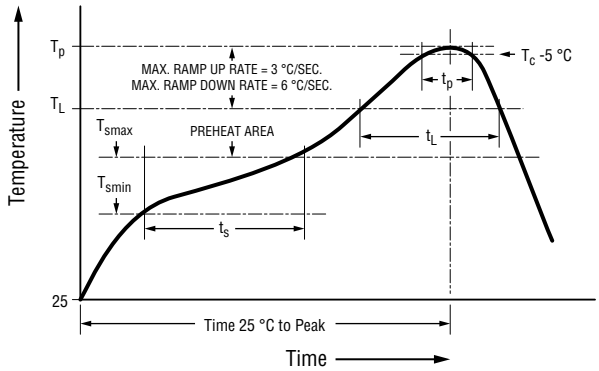
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TCR Curve





Soldering Profile



REFLOW TIMES: 3 TIMES MAX.

Profile Feature	Pb Free Assembly
Preheat - Temperature Min. (T_{smin}) - Temperature Max. (T_{smax}) - Time(t_s) from T_{smin} to T_{smax}	 150 °C 200 °C 60-120 seconds
Ramp-up Rate (T_L to T_p)	3 °C/second max.
Liquidous temperature (T_L) Time (t_L) maintained above T_L	217 °C 60-150 seconds
Peak package body temperature (T_p)	260 °C
Time (t_p) at T_c - 5 °C (T_p should be equal to or less than T_c)	30 seconds*
Ramp-Down Rate (T_p to T_L)	6 °C/second max.
Time 25 °C to Peak Temperature	8 minutes max.

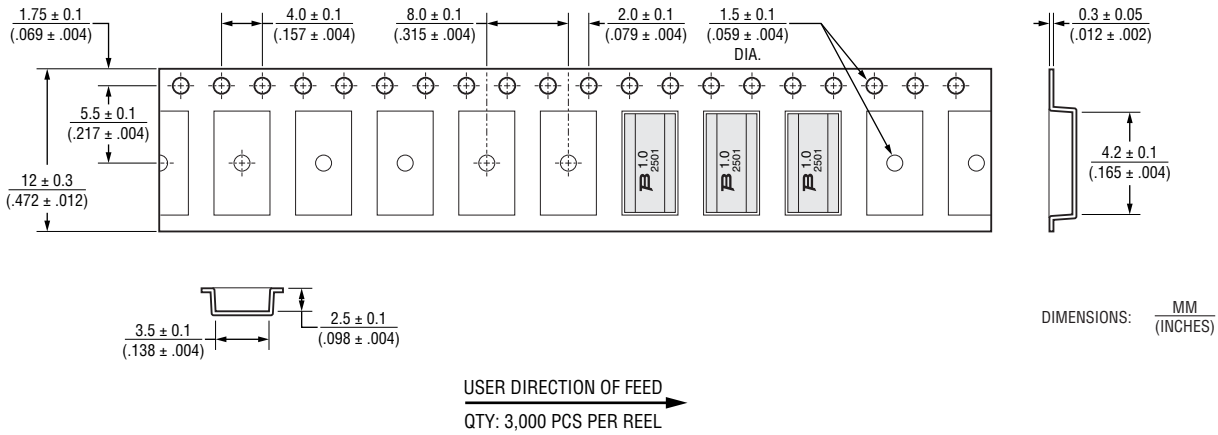
*Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum

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Packaging Specifications

Components packaged on plastic tape & reel per DIN EN 60286-3.
Standard Reel Size: 13 inches
Tape Width: 12 mm
Quantity: 3,000 pcs. per reel



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EMEA: Tel: +36 88 885 877 • Email: eurocus@bourns.com
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