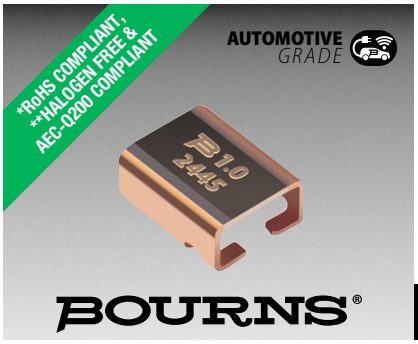


Features

- 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 | 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.

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)

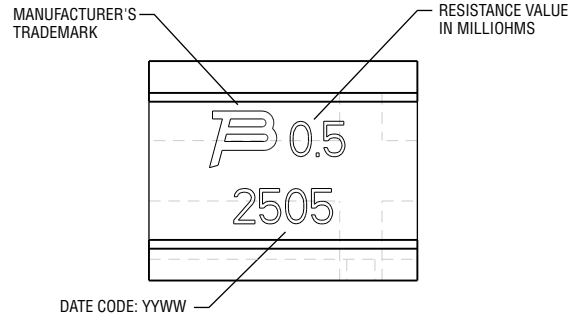
Material
T = Copper Manganese Tin Alloy
C = Copper Manganese Alloy

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

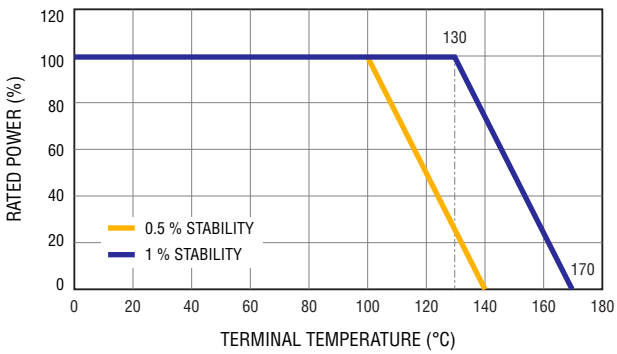
Resistance Tolerance
F = ±1 %
J = ±5 %

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

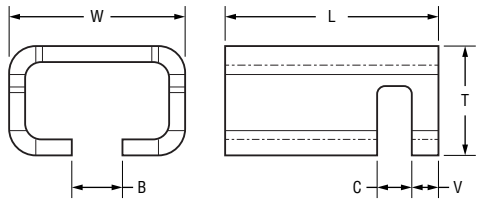
Typical Part Marking



Derating Curve



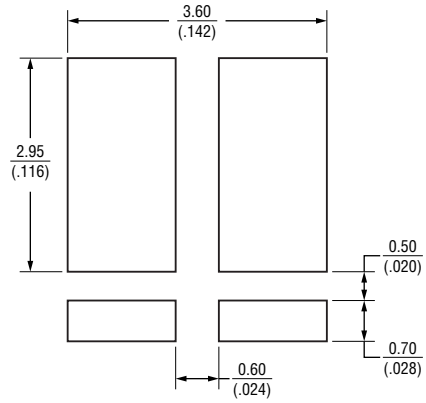
Product Dimensions



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)		

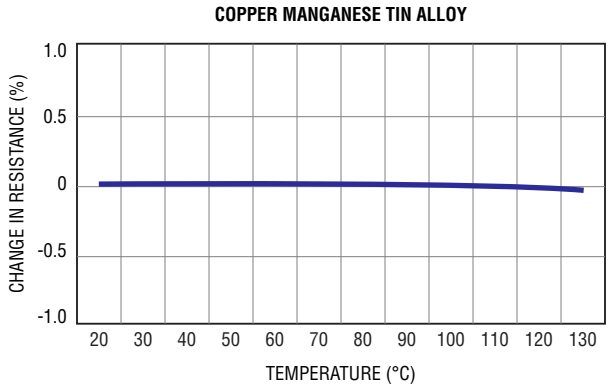
DIMENSIONS: MM (INCHES)

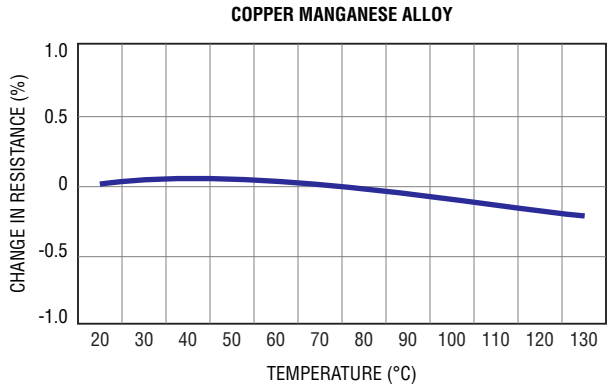
Recommended Layout



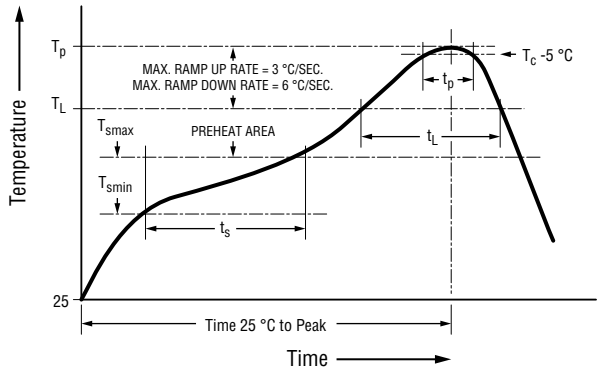
DIMENSIONS: MM (INCHES)

TCR Curve





Soldering Profile



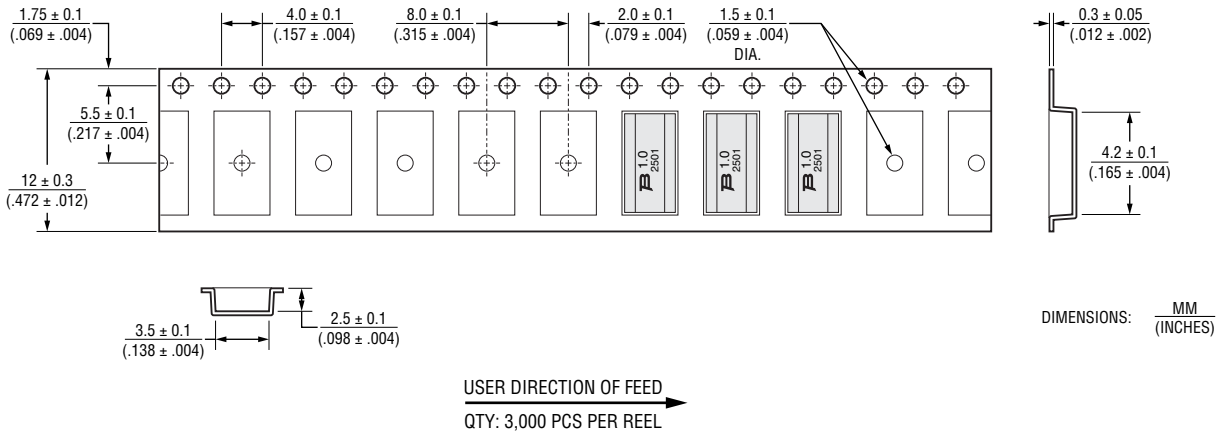
REFLOW TIMES: 3 TIMES MAX.

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

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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