

Features

- Four terminal design
- Low inductance <5 nH
- Low thermal EMF <3 µV/°C
- Metal alloy strip
- RoHS compliant* and halogen free**
- AEC-Q200 compliant

Applications

- Current sense
- Precision circuits
- Medical equipment***
- Printers
- Automation equipment
- Navigation equipment

Model CST0612 Current Sense Resistor

Electrical Characteristics

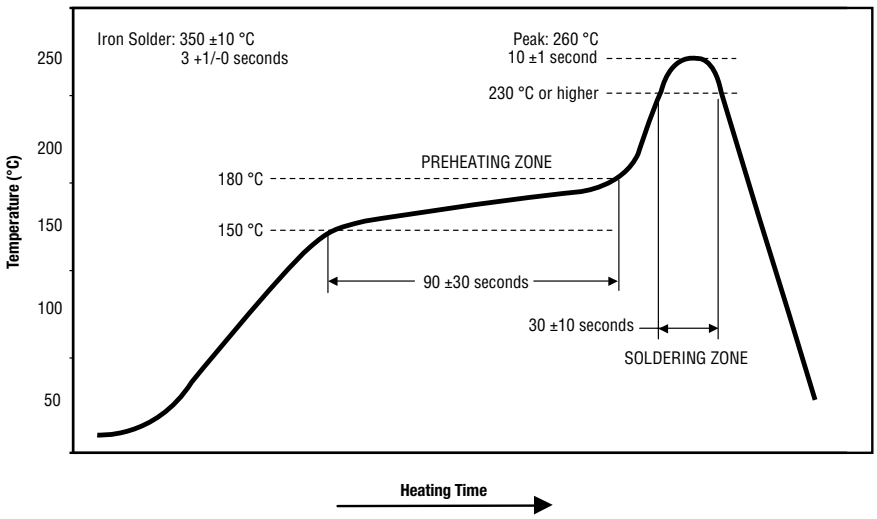
Characteristic	Model CST0612
Power Rating @ 70 °C	1 W *(NOTE 1)*
Resistance Range	0.5 - 5 milliohms
Operating Temperature Range	-55 °C to +170 °C
Temperature Coefficient of Resistance	±100 PPM/°C ±200 PPM/°C
Resistance Tolerance	±1 %
Insulation Resistance	> 100 megohms
Derated to Zero Load at	+170 °C
Maximum Working Voltage (V)	(P*R)^1/2

(Note 1) 1 watt with total solder pad and trace size of 300 mm^2.

Environmental Characteristics

Specification	Model CST0612
Shelf Life	Two years from manufacturing date
Storage Conditions: Temperature Humidity	 +5 °C ~ +35 °C 40 % ~ 75 %
Recommended Solder	Sn96.5 / Ag3 / Cu0.5
Material: Strip Overcoating Compound	 Alloy Molding UL 94V0 Grade

Soldering Profile



WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.
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Additional Information

Click these links for more information:

PRODUCT | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

Popular Resistance Table

Resistance Value (Milliohms)	Resistance Code
0.50	R0005
0.75	R00075
1.00	R001
1.50	R0015
2.00	R002
3.00	R003
5.00	R005

Rated Voltage

The rated voltage is calculated by the following formula:

$V = \sqrt{P \times R}$

V: Rated Voltage (V)
P: Rated Power (W)
R: Resistance Value (Ω)

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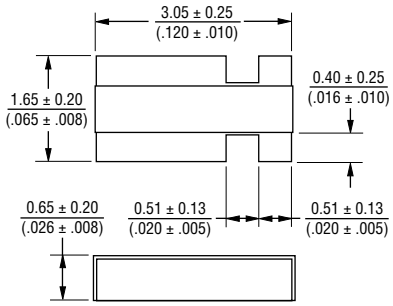
* RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.
** Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.
*** Bourns® products have not been specifically designed and tested for FDA Class III applications and equivalent applications covered by other regulatory authority such as the European Counsel, and their use in such applications is neither recommended nor supported.

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Reliability Tests

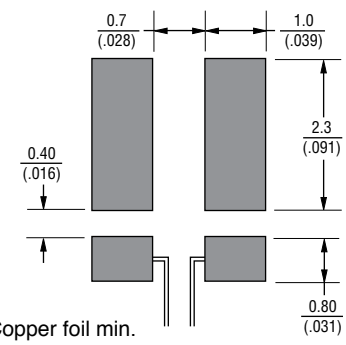
Test Item	Reference Standard	Test Conditions	Test Limits
Temperature Coefficient of Resistance	IEC 60115-1-4.8 JIS-C5201-4.8	+25 °C ~ +125 °C	Refer 4.0
Load Life	IEC 60115-1-4.25.1 JIS-C5201-4.25.1	1000 hours at rated power, 70 °C, 1.5 hours “ON”, 0.5 hours “OFF”	< ±2 %
Short Time Overload	IEC 60115-1-4.13 JIS-C5201-4.13	5 times rated power for 10 seconds	< ±0.5 %
Moisture No Load	IEC60115-1-4.24.2.1a JIS-C5201-4.24.2.1a	85 °C, 85 %RH, 1000 hours	< ±0.5 %
Temperature Cycle	IEC60115-1-4.19 JIS-C5201-4.19	-55 °C and +155 °C, 300 cycles, 15 minutes per extreme condition	< ±0.5 %
Resistance to Soldering Heat	IEC60115-1-4.18 JIS-C5201-4.18	260 ° ±5 °C for 10 ±1 seconds, 2 cycles	< ±0.5 %
Solderability	IEC60115-1-4.17 JIS-C5201-4.17	245 ±5 °C, 2 ±0.5 seconds	At least 95 % of surface area of electrode shall be covered with new solder
High Temperature Exposure	IEC60115-1-4.23.2 JIS-C5201-4.23.2	170 °C, 1000 hours	< ±2 %
Low Temperature Storage	IEC60115-1-4.23.4 JIS-C5201-4.23.4	-55 °C, 1000 hours	< ±0.5 %
Substrate Bending	IEC60115-1-4.33 JIS-C5201-4.33	2 mm bending width	< ±0.5 %
Insulation Resistance	IEC60115-1-4.6 JIS-C5201-4.6	100 V DC for 1 minute	> 100 megohms

Product Dimensions



DIMENSIONS: MM (INCHES)

Recommended Solder Pad Layout



Copper foil min.
thickness of PCB: 3 oz.

How to Order

CST 0612 - F C - R001 E

Model
(CST = Current Sense Terminal Type)

Size
0612

Resistance Tolerance
F = ±1 %

TCR (See Electrical Characteristics chart)
X = ±100 PPM/°C
C = ±200 PPM/°C

Resistance Code
See Popular Resistance Table

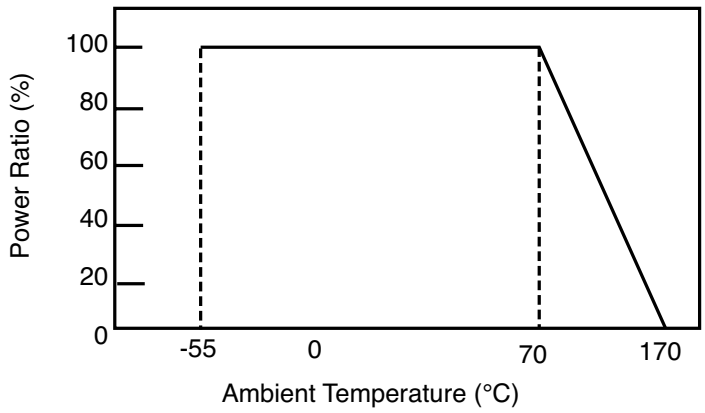
Packaging Code *(NOTE 2)*
E = Embossed Tape (4,000 pcs. per 7 ” reel)

(NOTE 2) Part Number CST0612-FC-R0005-E requires a hyphen before the Packaging Code.

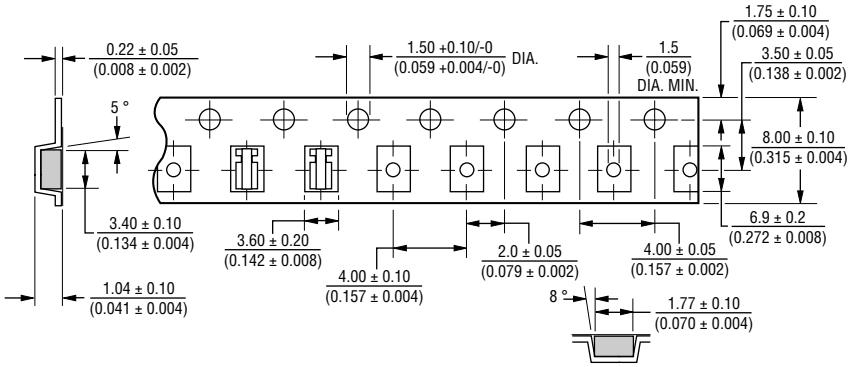
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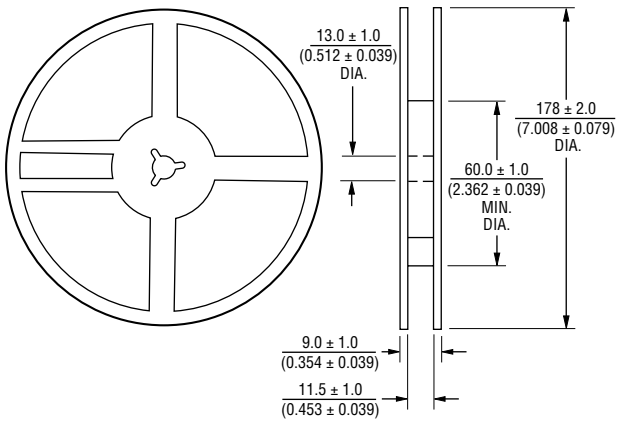
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Derating Curve



Packaging Specifications





REV. 06/25

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