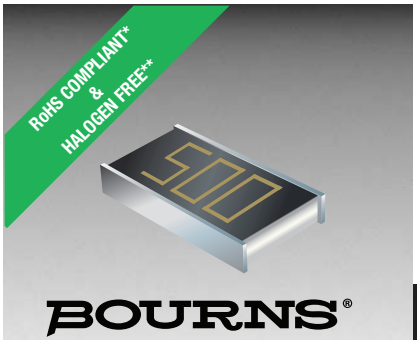


Features

- Wide terminal type
- Excellent heat dissipation
- High reliability
- Metal foil
- RoHS compliant* and halogen free**

Applications

- Current sensing
- Power supplies
- Stepper motor drives
- Input amplifiers

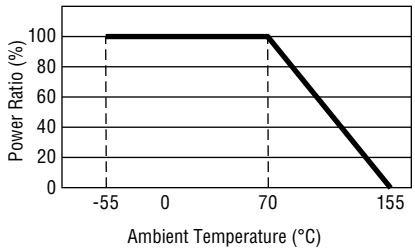
CFG Series Metal Foil, Wide Terminal Current Sense Resistor

Electrical Characteristics

Characteristic	CFG0612
Power Rating @ 70 °C	1 W
Resistance Value	5 mΩ, 10 mΩ
Operation Temperature Range	-55 °C ~ +155 °C
Temperature Coefficient of Resistance	±100 ppm/°C
Tolerance	±1 %
Insulation Resistance	Over 100 MΩ
Maximum Working Voltage (V)	$(P*R)^{1/2}$

Note: 1 watt with total solder pad and trace size of 300 mm²

Derating Curve



Reliability Tests

Test Items	Reference Standard	Condition of Test	Test Limits
Temperature Coefficient of Resistance	IEC60115-1-4.8 JIS-C5201-4.8	+25 °C ~ +125 °C	—
Load Life	IEC60115-1-4.25.1 JIS-C5201-4.25.1	1000 hours at rated power, 70 °C, 1.5 hours “ON”, 0.5 hour “OFF”	< ±2 %
Short Time Overload	IEC60115-1-4.13 JIS-C5201-4.13	5 X rated power for 5 s	< ±1 %
Moisture no Load	IEC60115-1- 4.24.2.1a) JIS-C5201- 4.24.2.1a)	85 °C, 85 %RH, 1000 hrs	< ±2 %
Temperature Cycle	IEC60115-1-4.19 JIS-C5201-4.19	-55 °C & +125 °C, 100 cycle, 15 min per extreme condition	< ±1 %
Resistance to Soldering Heat	IEC60115-1-4.18 JIS-C5201-4.18	260 ±5 °C for 10 ±1 sec	< ±1 %
Solderability	IEC60115-1-4.17 JIS-C5201-4.17	245 ±5 °C, 2 ±0.5 sec	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	155 °C, 1000 hrs	< ±2 %
Low Temperature Storage	EC60115-1- 4.23.4 JIS-C5201-4.23.4	-55 °C, 1000 hrs	< ±2 %
Substrate Bending	IEC60115-1-4.33 JIS-C5201-4.33	Bending width 2 mm	< ±1 %
Insulation Resistance	IEC60115-1-4.6 JIS-C5201-4.6	100 V DC for 1 minute	>100 MΩ

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

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

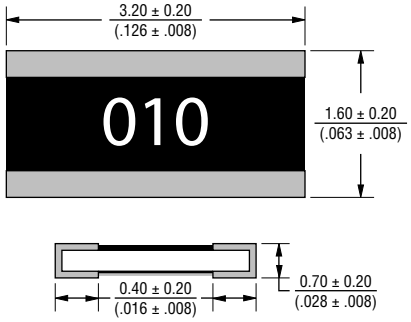
** Bourns considers a product to be “halogen free” if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.
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CFG Series Metal Foil, Wide Terminal Current Sense Resistor

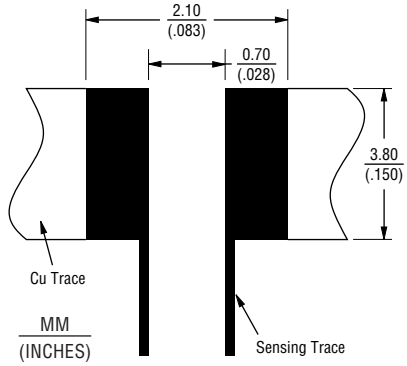
BOURNS®

Product Dimensions



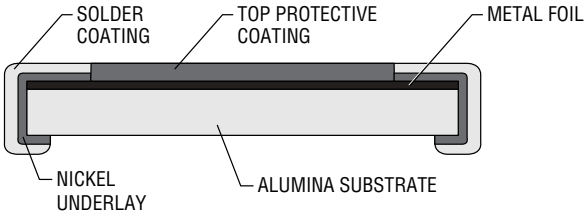
DIMENSIONS: MM / (INCHES)

Recommended Solder Pad Dimensions



DIMENSIONS: MM / (INCHES)

Construction



Rated Voltage

The rated voltage is calculated by the following formula:

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

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

Environmental Characteristics

Storage Conditions
Temperature .....+5 °C ~ +35 °C
Humidity .....40 % ~ 75 %
Shelf Life.....2 years from manufacturing date
Solder Recommendations..... Reflow profile
(Solder: Sn96.5 / Ag3 / Cu0.5)
Moisture Sensitivity Level..... 1

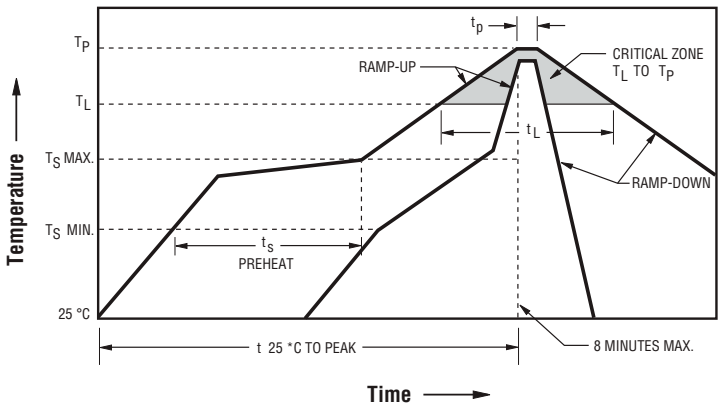
Popular Resistance Values*

Code	Resistance Value (milliohms
R005	5
R010	10

*Please consult factory for other resistance values

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Solder Reflow Recommendations



Solder Profile	Lead Free Assembly
Average ramp-up rate (T_{smax} to T_p)	3 °C / second max.
Preheat: - Temperature Min. (T_{smin}) - Temperature Max. (T_{smax}) - Time (T_{smin} to T_{smax}) (t_s)	 150 °C 200 °C 60~150 seconds
Time maintained above: - Temperature (T_L) - Time (T_L)	 217 °C 60~120 seconds
Peak Temperature (T_p)	260 °C
Time within +0/-5 °C of actual Peak Temperature (T_p)[2]	10 seconds
Ramp-down rate	6 °C / second max.
Time 25 °C to Peak Temperature	8 minutes max.

How to Order

CFG 0612 - F X - R005 E LF

Model
CFG = Metal Foil, Wide Terminal Current Sense Resistor

Size
0612 = 0612 Size

Resistance Tolerance
F = ±1 %

TCR
X = ±100 PPM/°C

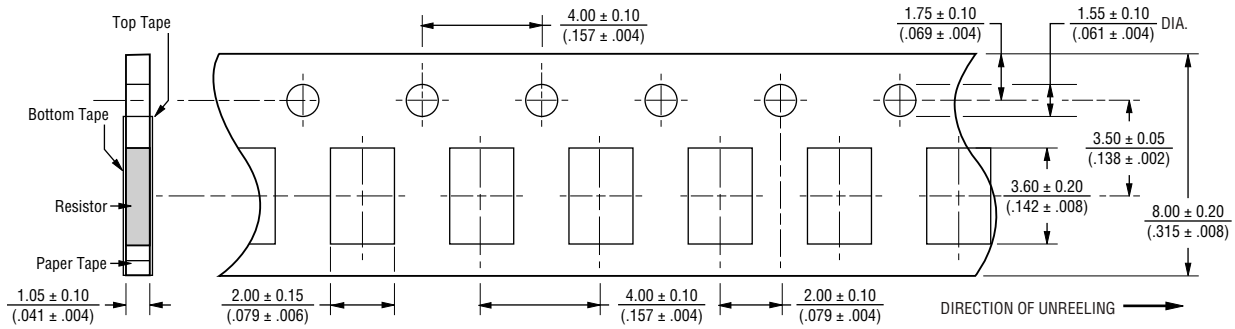
Resistance Code – (See Popular Resistance Table)
"R" (decimal point) followed by three significant digits *(example: R005 = 0.005 ohms)*

Packaging
E = Tape and Reel
5,000 pcs. / 7-inch reel, paper tape

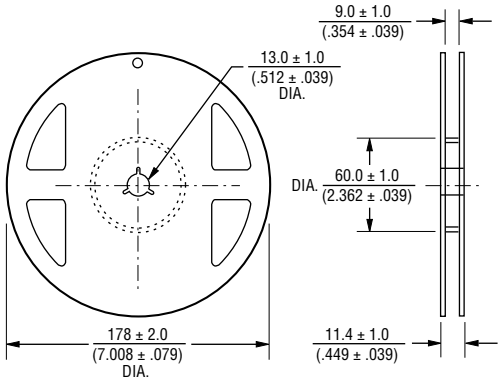
Termination
LF = Tin-plated (RoHS Compliant)

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Packaging Dimensions (Conforms to EIA RS-481A)



DIMENSIONS: MM / (INCHES)



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