

Features

- Thick film technology
- Power rating of 2 watts at 70 °C
- Low resistance value available
- RoHS compliant*

Applications

- Current sensing
- Power supplies
- Stepper motor drives
- Snubber resistor for flyback power supplies

CRM2512 - High Power Current Sense Chip Resistors

General Information

The Bourns® CRM2512 Series is a thick film power resistor with a rating of 2 watts in a standard 2512 chip format. This product has a very wide resistance range, making it suitable for different applications in power supply circuits including current sensing and current limiting.

Electrical Characteristics

| Characteristic | Model CRM2512 | | | |
|-----------------------------------------------|--------------------------------|------------------------------------|-----------------------------------|---------------------------------|
| | (0.047 to 0.91 Ω) | (0 Ω, 1 Ω to 1 M Ω) | | |
| Power Rating @ 70 °C | 2 W | | | |
| Operating Temp. Range | -55 °C to +155 °C | | | |
| Derated to Zero Load at | +155 °C | | | |
| Maximum Working Voltage | 1349 mV | 300 V | | |
| Maximum Overload Voltage | 2698 mV | 600 V | | |
| Insulation Resistance | > 1000 MΩ | | | |
| Resistance Range | 0.047 - 0.91 Ω (E24 Values) | 1 Ω - 9.76 Ω (E96 + E24 Values) | 10 Ω - 1 MΩ (E96 + E24 Values) | 0 Ω, 1.0 - 1 MΩ (E24 Values) |
| Resistance Tolerance | ±1 % & ±5 % | ±1 % | ±1 % | ±5 % |
| Temperature Coefficient | ±100 PPM/°C | ±100 PPM/°C, ±200 PPM/°C | ±100 PPM/°C | ±200 PPM/°C |
| Zero Ohm Jumper <0.02 Ω Max. Rated Current | 6A | | | |

Notes:

- (1) CRM2512 2 W loading with total solder pad and trace size of 300 mm².
 (2) $E = (P \times R)^{1/2}$
 E: Working Voltage (V); P: Rated Power (W); R: Resistance Value (Ω)

- (3) Jumper (0 Ω): Rated current 6 A maximum with 300 mm² pad.
 Temperature coefficient is not applicable.
 For Standard Values Used in Capacitors, Inductors, and Resistors, [click here](#).

Environmental Characteristics

Moisture Sensitivity Level..... 1

Characteristic Data

| Test | ΔR Max. |
|----------------------------------------------------------|------------------|
| Load Life (1000 hours) 1 % Tolerance 5 % Tolerance | < 1 % < 3 % |
| Short Term Overload 1 % Tolerance 5 % Tolerance | < 1 % < 2 % |
| Thermal Shock 1 % Tolerance 5 % Tolerance | < 0.5 % < 1 % |



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

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Specifications are subject to change without notice.

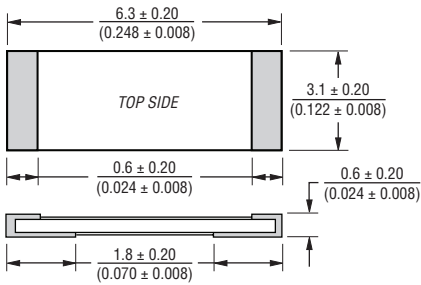
Users should verify actual device performance in their specific applications.

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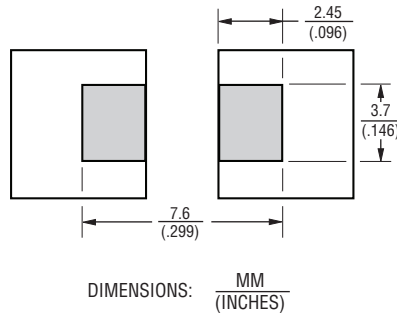
CRM2512 - High Power Current Sense Chip Resistors

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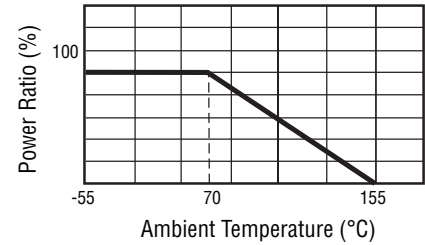
Product Dimensions



Recommended Solder Pad Layout



Derating Curve



How to Order

CRM 2512 - F X - R100 E LF

Model _____
(CRM = Precision Chip Resistor)

Size _____
2512 = 2512 Size

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

TCR (PPM/°C - See Electrical Characteristics chart) _____
• W = ±200 PPM/°C
• X = ±100 PPM/°C
• / = Jumper

Resistance Value _____
• **1% or 5% Tolerance:**
R < 1 ohm "R" represents decimal point followed by three significant digits (example: R100 = 0.100 ohm)
• **1% Tolerance:**
< 100 ohms "R" represents decimal point (example: 24R3 = 24.3 ohms)
≥ 100 ohms First three digits are significant, fourth digit represents number of zeros to follow (example: 8252 = 82.5K ohms)
• **5% Tolerance:**
< 10 ohms "R" represents decimal point (example: 4R7 = 4.7 ohms)
≥ 10 ohms First two digits are significant, third digit represents number of zeros to follow (example: 474 = 470K ohms)
0 ohm Jumper "000"

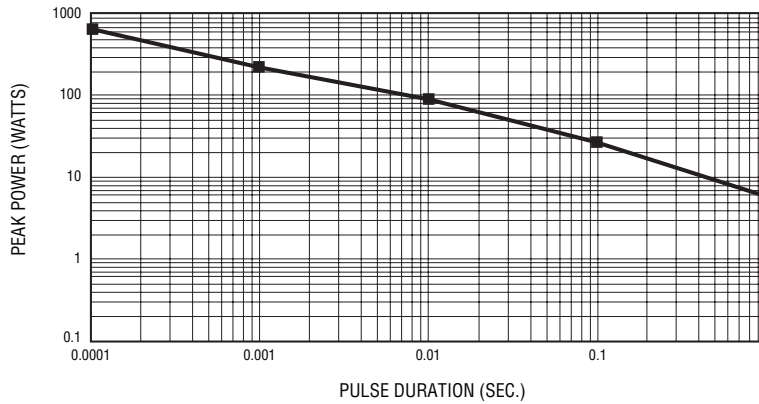
Packaging _____
• E = 4000 pieces per 180 mm (7 inch) reel

Termination _____
• LF = Tin-plated (RoHS Compliant)

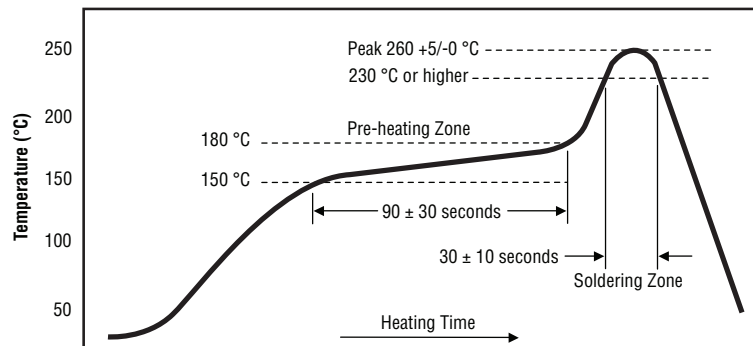
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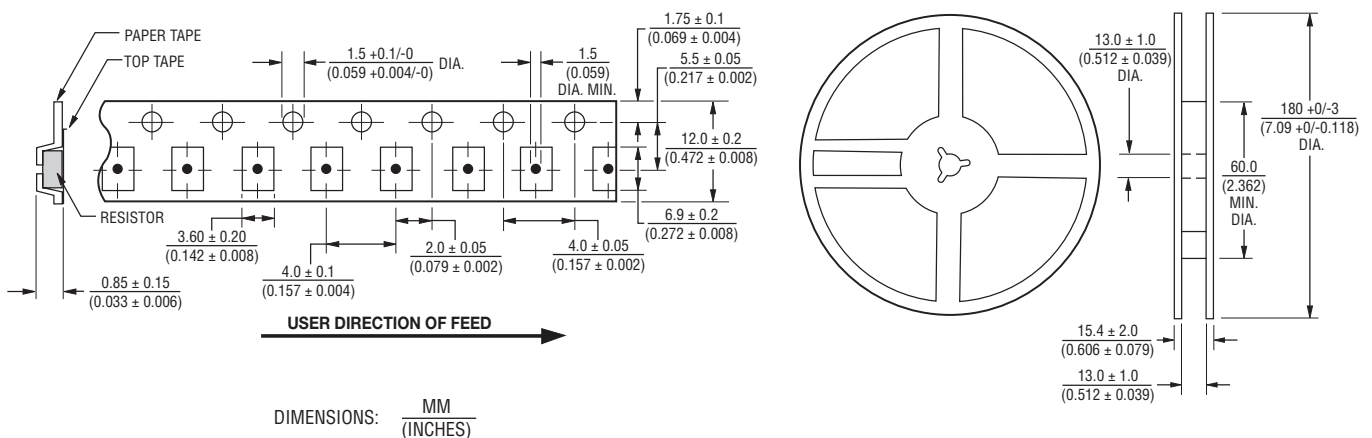
Pulse Load Characteristics



Soldering Profile



Packaging Dimensions (Conforms to EIA RS-481A)



REV. 05/29/20

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