

## 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 mm<sup>2</sup>.

(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 mm<sup>2</sup> pad. Temperature coefficient is not applicable.

For Standard Values Used in Capacitors, Inductors, and Resistors, [click here](#).

## Environmental Characteristics

Moisture Sensitivity Level..... 1  
ESD Classification (HBM)..... N/A

## Characteristic Data

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



**WARNING Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)**

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

Specifications are subject to change without notice.

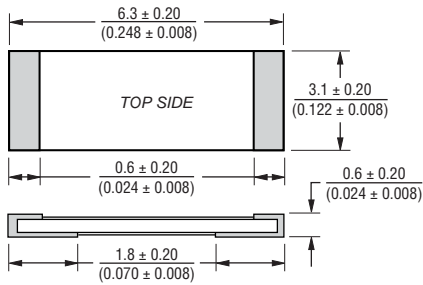
Users should verify actual device performance in their specific applications.

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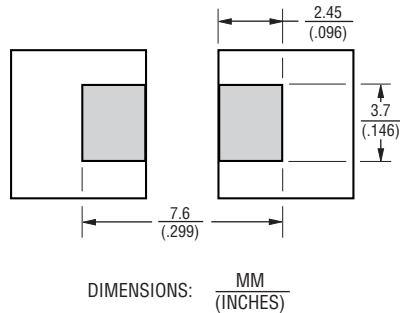
# CRM2512 - High Power Current Sense Chip Resistors

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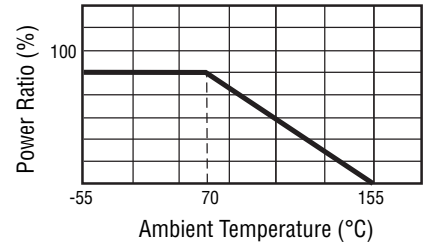
## Product Dimensions



## 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"

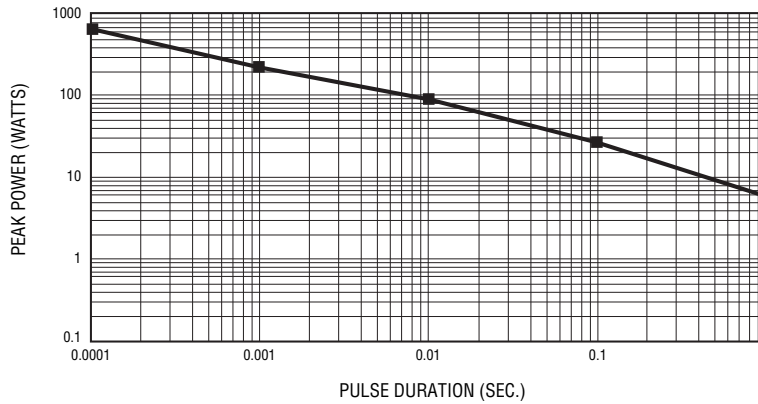
Packaging \_\_\_\_\_  
• E = 4000 pieces per 180 mm (7 inch) reel

Termination \_\_\_\_\_  
• LF = Tin-plated (RoHS Compliant)

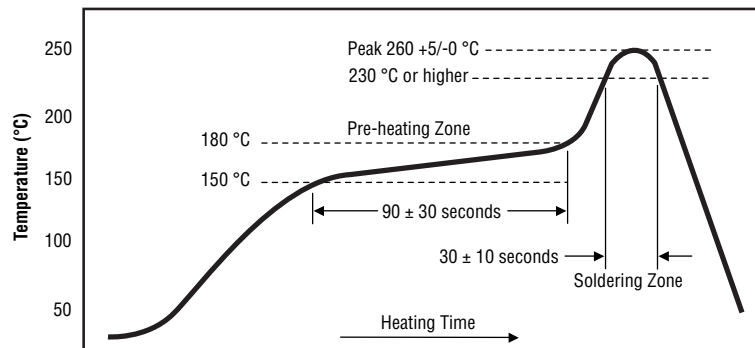
# CRM2512 - High Power Current Sense Chip Resistors

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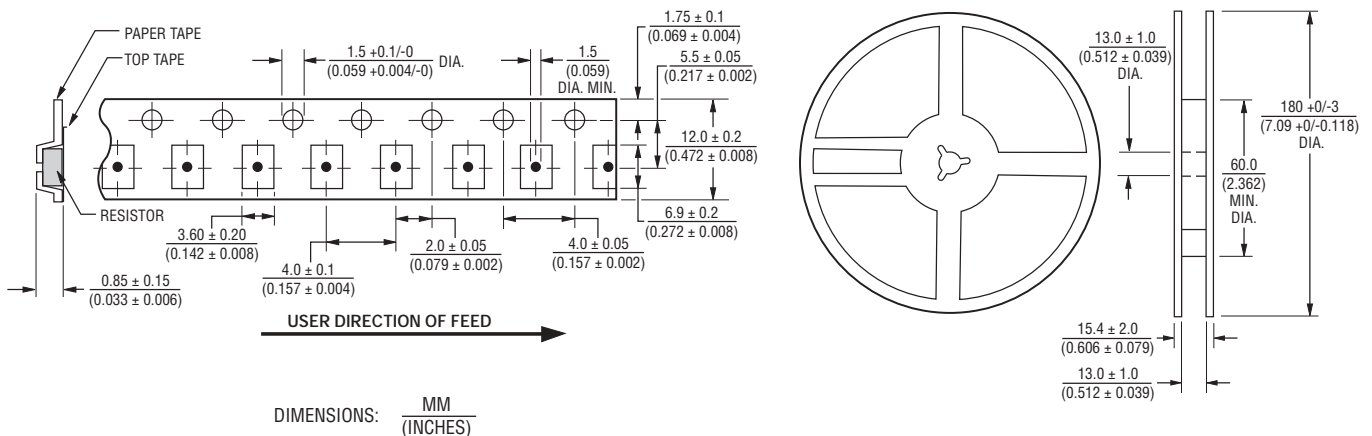
## Pulse Load Characteristics



## Soldering Profile



## Packaging Dimensions (Conforms to EIA RS-481A)



REV. 09/19

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Users should verify actual device performance in their specific applications.

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