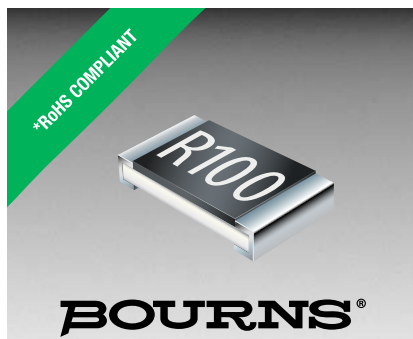




# THE DATASHEET OF CRM2512-FX-R500ELF





## 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.

## Additional Information

Click these links for more information:



## 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	3017 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	< 1 %
5 % Tolerance	< 3 %
Short Term Overload	
1 % Tolerance	< 1 %
5 % Tolerance	< 2 %
Thermal Shock	
1 % Tolerance	< 0.5 %
5 % Tolerance	< 1 %



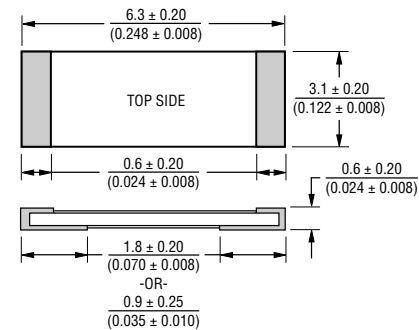
**WARNING**  
Cancer and Reproductive Harm  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\*RoHS Directive 2015/863, Mar 31, 2015 and Annex.  
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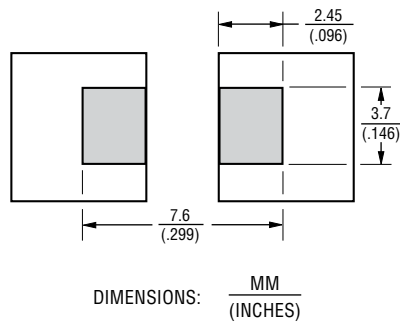
## CRM2512 - High Power Current Sense Chip Resistors

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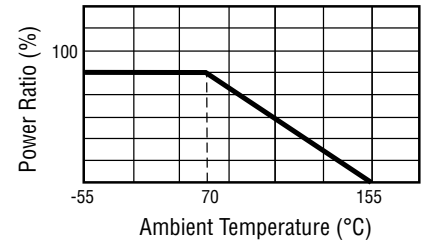
### Product Dimensions



### 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 %

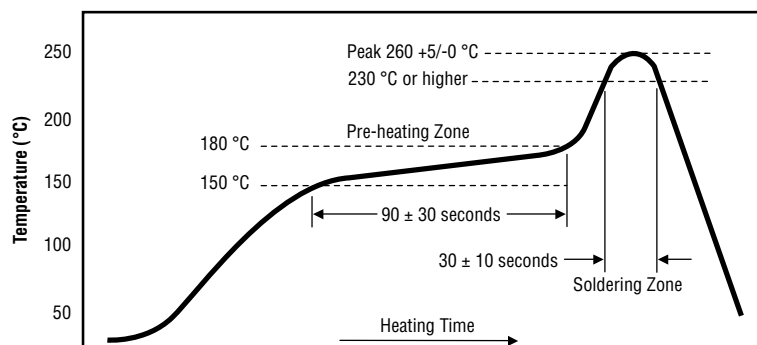
TCR (PPM/°C - See Electrical Characteristics chart) \_\_\_\_\_  
• W = ±200 PPM/°C  
• X = ±100 PPM/°C  
• / = Jumper

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)

### Soldering Profile



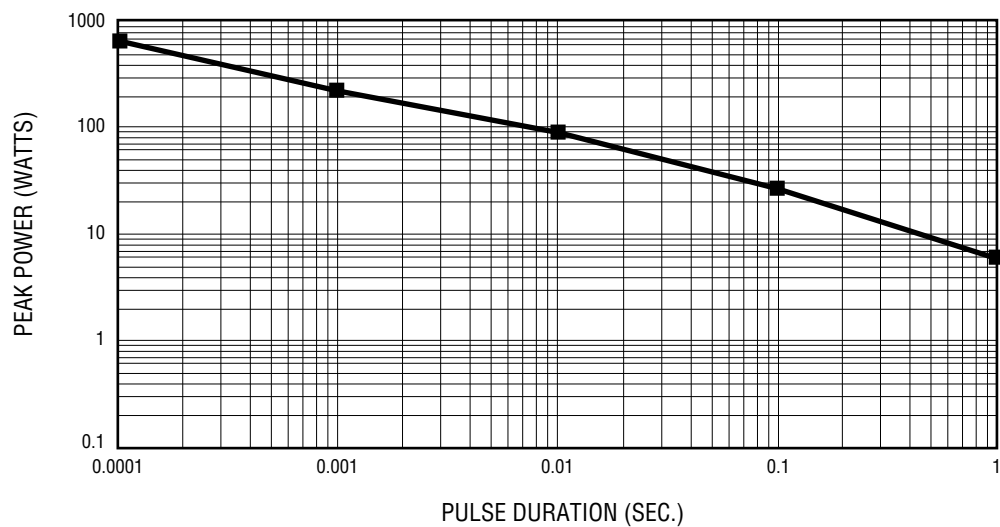
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## CRM2512 - High Power Current Sense Chip Resistors

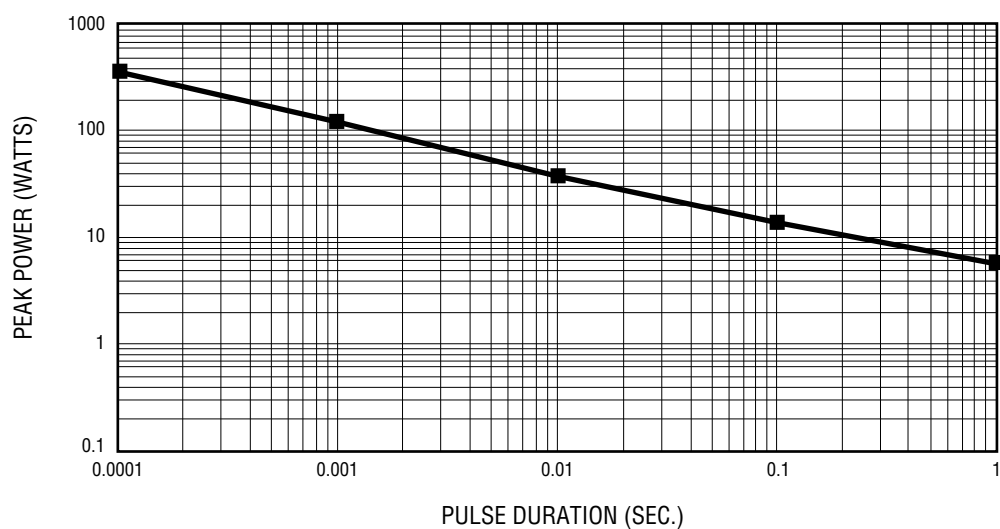
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### Pulse Load Characteristics

#### Resistance Values $\geq 1$ Ohm



#### Resistance Values $< 1$ Ohm



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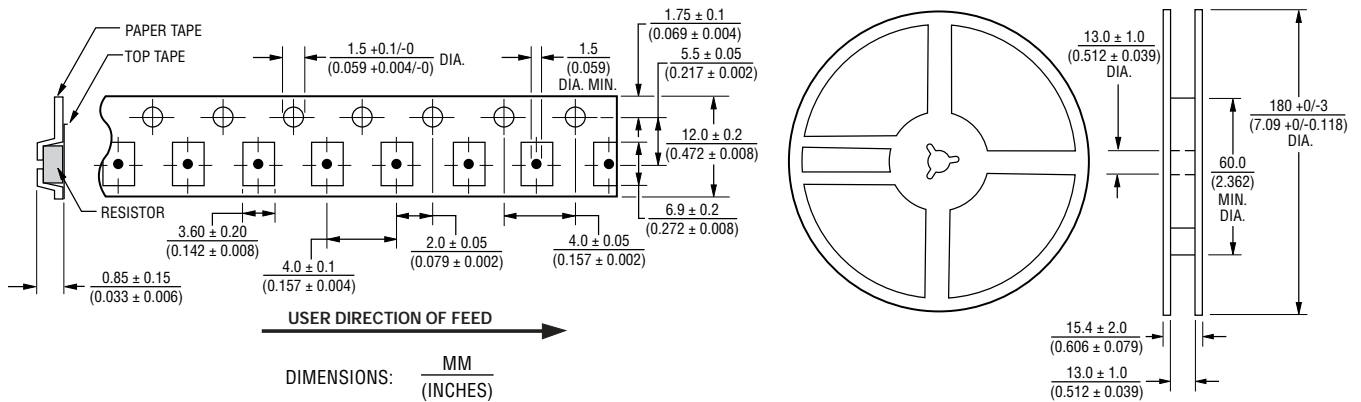
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## CRM2512 - High Power Current Sense Chip Resistors

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



**BOURNS®**

Asia-Pacific: Tel: +886-2 2562-4117 • Email: asiacus@bourns.com

EMEA: Tel: +36 88 885 877 • Email: eurocus@bourns.com

The Americas: Tel: +1-951 781-5500 • Email: americus@bourns.com

[www.bourns.com](http://www.bourns.com)

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