



### 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 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

#### 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](http://www.P65Warnings.ca.gov)**

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

Specifications are subject to change without notice.

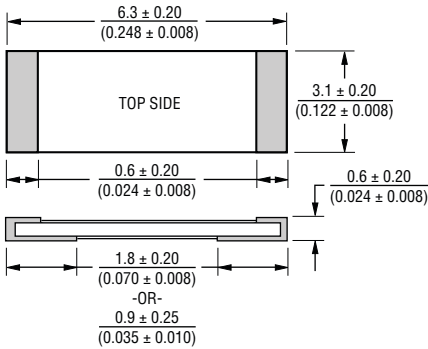
Users should verify actual device performance in their specific applications.

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# CRM2512 - High Power Current Sense Chip Resistors

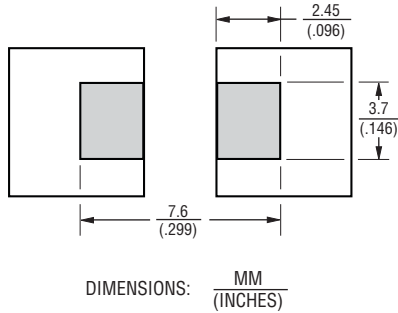


## Product Dimensions

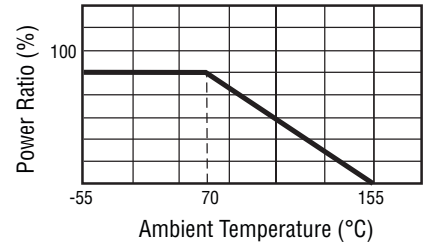


FOR RESISTANCE VALUES LOWER THAN 1 OHM

## 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 =  $\pm 1\%$   
 • J =  $\pm 5\%$

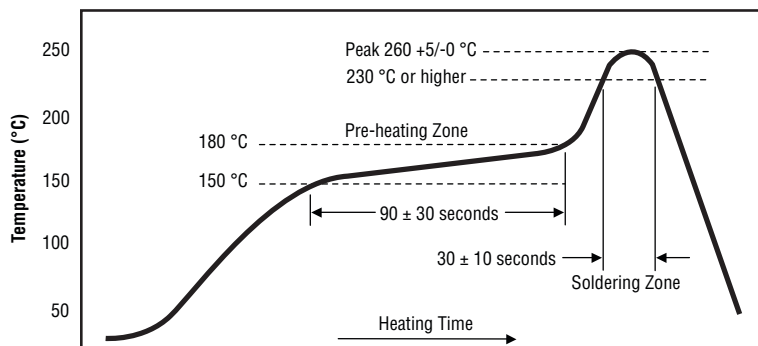
TCR (PPM/°C - See Electrical Characteristics chart) \_\_\_\_\_  
 • W =  $\pm 200$  PPM/°C  
 • X =  $\pm 100$  PPM/°C  
 • / = Jumper

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)  
 $\geq 100$  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)  
 $\geq 10$  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)

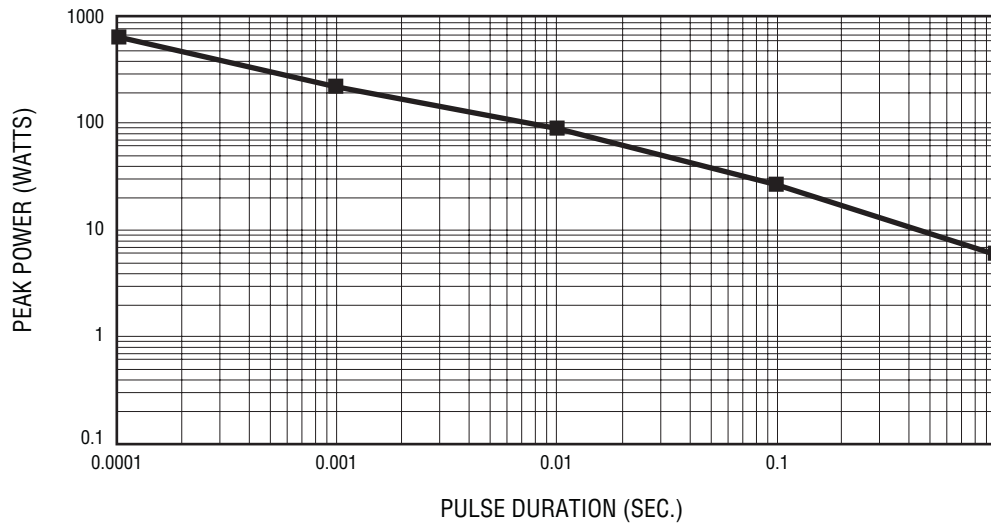
## Soldering Profile



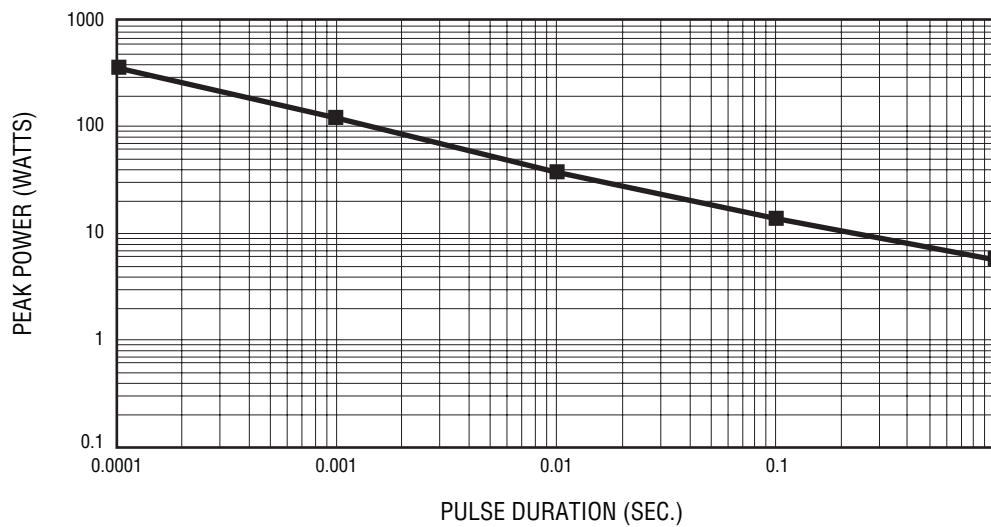
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Pulse Load Characteristics

Resistance Values  $\geq 1$  Ohm



Resistance Values  $< 1$  Ohm





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