



## 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

## 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<br>(E24 Values) | 0 Ω,<br>1.0 - 1 MΩ<br>(E24 Values) | 1 Ω - 1 MΩ<br>(E96 + E24<br>Values) |
| Resistance Tolerance                          | ±1 % & ±5 %                    | ±5 %                               | ±1 %                                |
| Temperature Coefficient                       | ±100 PPM/°C                    | ±200 PPM/°C                        | ±100 PPM/°C                         |
| Zero Ohm Jumper<br><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>.

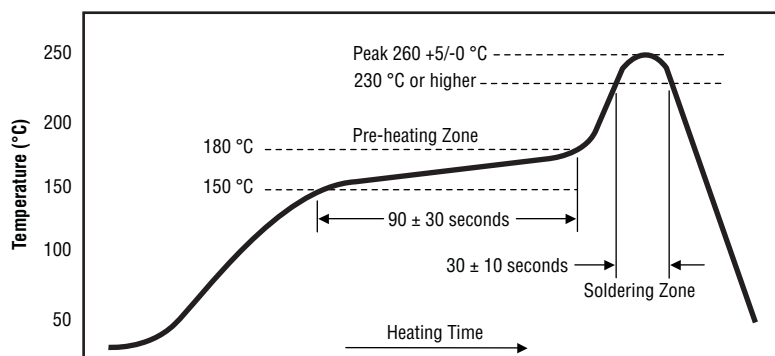
(2)  $E = (P \times R)^{1/2}$

E: Working Voltage (V); P: Rated Power (W); R: Resistance Value ( $\Omega$ )

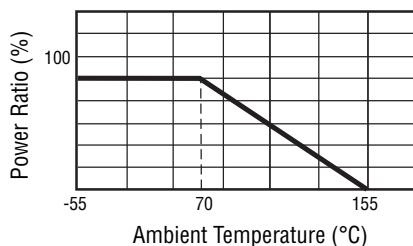
(3) Jumper (0  $\Omega$ ): Rated current 6 A maximum with 300 mm<sup>2</sup> pad. Temperature coefficient is not applicable.

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

## Soldering Profile



## Derating Curve



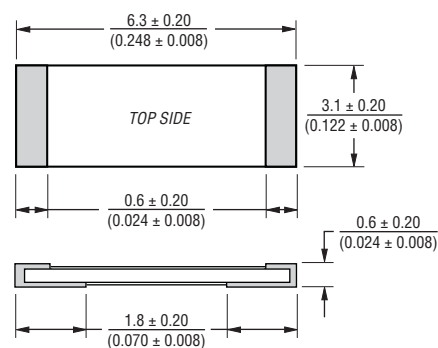
## General Information

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.

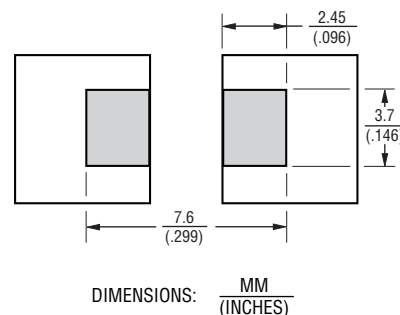
## Characteristic Data

| Test                   | $\Delta R$ 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 %           |

## Product Dimensions



## Recommended Solder Pad Layout



DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

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

Specifications are subject to change without notice.

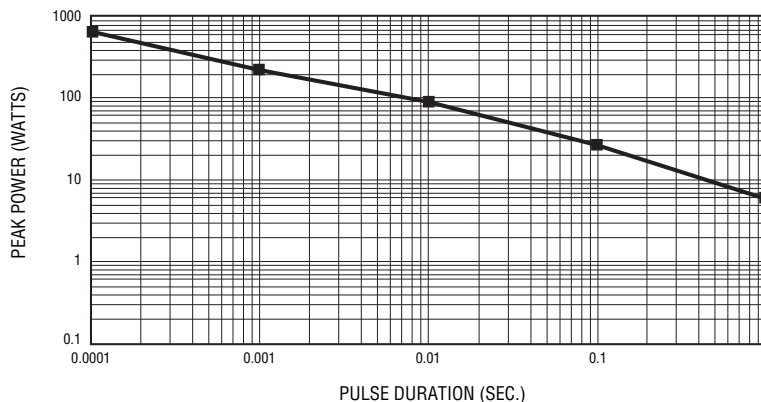
Users should verify actual device performance in their specific applications.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

# CRM2512 - High Power Current Sense Chip Resistors

**BOURNS®**

## Pulse Load Characteristics



## How to Order

**CRM 2512 - F X - R100 E LF**

Model \_\_\_\_\_  
(CRM = Precision Chip Resistor)

Size \_\_\_\_\_  
2512 = 2512 Size

Resistance Tolerance \_\_\_\_\_  
 • F =  $\pm 1\%$  ..... Use with "X" TCR code  
 • J =  $\pm 5\%$  ..... Use with "W" TCR code for values from 1 ohm through 1 megohm  
                                     Use with "X" TCR code for values from 0.047 ohm through 0.91 ohm  
                                     Use with "J" TCR code for 0 ohm (Jumper)

TCR (PPM/ $^{\circ}$ C - See Electrical Characteristics chart) \_\_\_\_\_  
 • W =  $\pm 200$  PPM/ $^{\circ}$ C  
 • X =  $\pm 100$  PPM/ $^{\circ}$ 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"

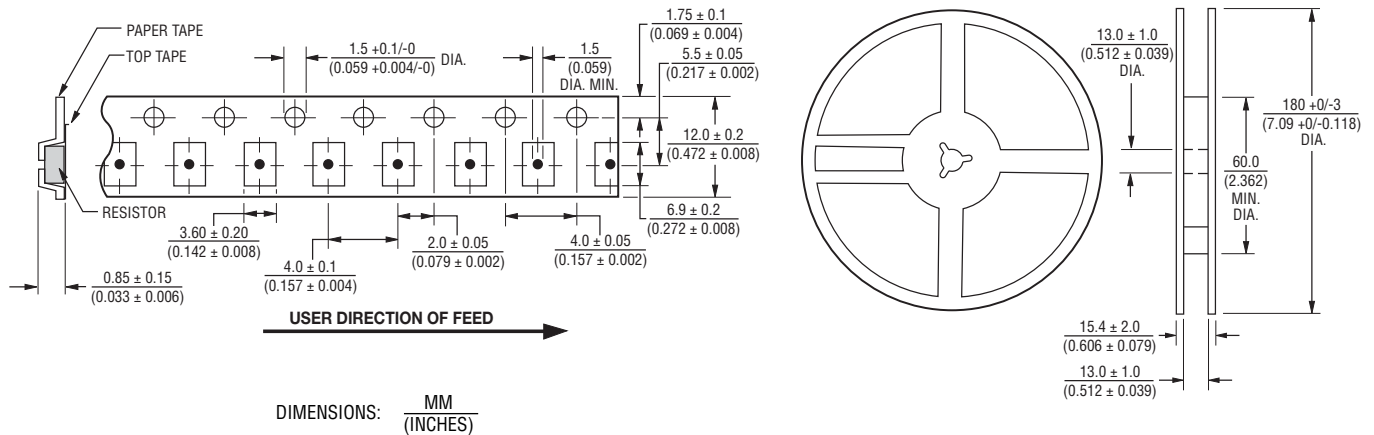
Packaging \_\_\_\_\_  
 • E = 4000 pieces per 180 mm (7 inch) reel

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

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



REV. 05/15

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