

## Features

- Thick film technology
- Power rating of 0.25, 0.5 or 1 watt at 70 °C
- Low resistance value available
- RoHS compliant\*

## Applications

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

**BOURNS®**

## CRM0805/1206/2010 High Power Current Sense Chip Resistors

### Electrical Characteristics

Characteristic	Model CRM0805	Model CRM1206	Model CRM2010
Power Rating @ 70 °C	0.25 W	0.5 W	1 W
Operating Temperature Range	-55 °C to +155 °C		
Derated to Zero Load at	+155 °C		
Maximum Working Voltage 47 mohms to 910 mohms 1 ohm to 1 megohm	551 mV 150 V	675 mV 200 V	954 mV 200 V
Insulation Resistance	>1000 megohms		
Resistance Range	47 mohms to 910 mohms (±1 % and ±5 %, E24 Series) 1 ohm to 1 megohm (±1 %, E96 & E24 Series) 0 ohm, 1 ohm to 1 megohm (±5 %, E24 Series)		
Resistance Tolerance	±1 %, ±5 %		
Temperature Coefficient 47 mohms to 91 mohms (±1 % and ±5 %, E24 Series)	±100 ppm	±100 ppm	±100 ppm
100 mohms to 910 mohms (±1 % and ±5 %, E24 Series)	±100 ppm	±100 ppm	±100 ppm
1 ohm to 9.76 ohms (±1 %, E96 & E24 Series)	±150 ppm/ ±200 ppm	±100 ppm/ ±200 ppm	±100 ppm/ ±200 ppm
10 ohms to 1 megohm (±1 %, E96 & E24 Series)	±100 ppm	±100 ppm	±100 ppm
1 ohm to 1 megohm (±5 %, E24 Series)	±200 ppm	±200 ppm	±200 ppm
Zero Ohm Jumper <0.02 ohm (1) Maximum Rated Current	4 A	4 A	6 A

Exceptions:

(1) Jumper (0 ohms): Temperature coefficient is not applicable.

### General Information

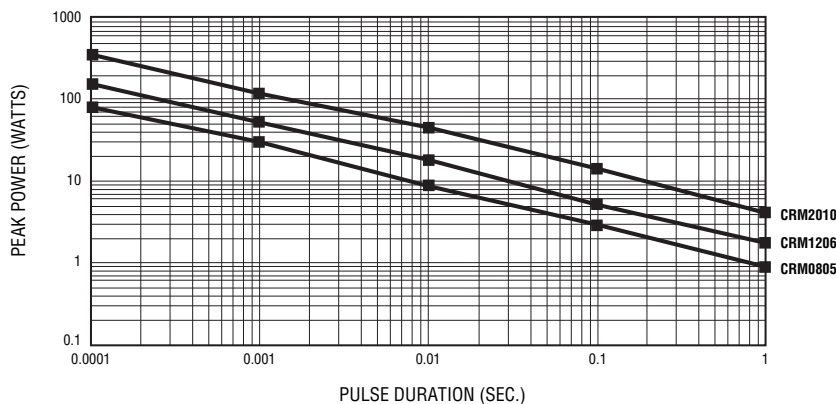
Bourns® CRM Series are thick film chip resistors with high power ratings making them suitable for different applications in power supply circuits including current sensing and current limiting.

### Characteristic Data

Test	ΔR Max.
Load Life (1000 hours) Rated Voltage @ 70 °C (1.5 hrs. on, 0.5 hrs. off) 1 % Tolerance 5 % Tolerance	< 1 % < 3 %
Short Term Overload (5 X Rated Power for 5 sec.) 1 % Tolerance 5 % Tolerance	< 1 % < 2 %
Thermal Shock (5 Cycles: -55 °C/30 min.; +25 °C/2-3 min.; +155 °C/ 30 min.; +25 °C/2-3 min.) 1 % Tolerance 5 % Tolerance	< 0.5 % < 1 %

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

### Pulse Load Characteristics



**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.

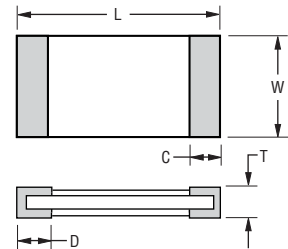
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# CRM0805/1206/2010 High Power Current Sense Chip Resistors



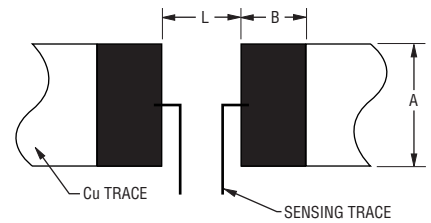
## Product Dimensions

Model	L	W	C	D	T
CRM0805	$\frac{2.00 \pm 0.15}{(0.079 \pm 0.006)}$	$\frac{1.20 \pm 0.15}{(0.047 \pm 0.006)}$	$\frac{0.40 \pm 0.20}{(0.016 \pm 0.008)}$	$\frac{0.40 \pm 0.20}{(0.016 \pm 0.008)}$	$\frac{0.50 \pm 0.10}{(0.020 \pm 0.004)}$
CRM1206	$\frac{3.10 \pm 0.15}{(0.122 \pm 0.006)}$	$\frac{1.60 \pm 0.15}{(0.063 \pm 0.006)}$	$\frac{0.50 \pm 0.25}{(0.020 \pm 0.010)}$	$\frac{0.50 \pm 0.25}{(0.020 \pm 0.010)}$	$\frac{0.55 \pm 0.10}{(0.022 \pm 0.004)}$
CRM2010	$\frac{5.00 \pm 0.20}{(0.197 \pm 0.008)}$	$\frac{2.50 \pm 0.20}{(0.098 \pm 0.008)}$	$\frac{0.60 \pm 0.25}{(0.024 \pm 0.010)}$	$\frac{0.60 \pm 0.25}{(0.024 \pm 0.010)}$	$\frac{0.60 \pm 0.10}{(0.024 \pm 0.004)}$



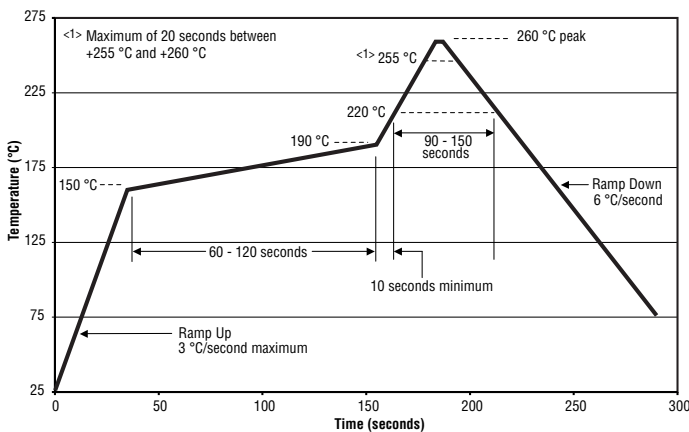
## Recommended Solder Pad Layout

Model	A	B	L
CRM0805	$\frac{1.3}{(0.051)}$	$\frac{1.15}{(0.045)}$	$\frac{1.2}{(0.047)}$
CRM1206	$\frac{1.8}{(0.071)}$	$\frac{1.3}{(0.051)}$	$\frac{2.1}{(0.083)}$
CRM2010	$\frac{3.0}{(0.118)}$	$\frac{1.5}{(0.059)}$	$\frac{3.8}{(0.149)}$

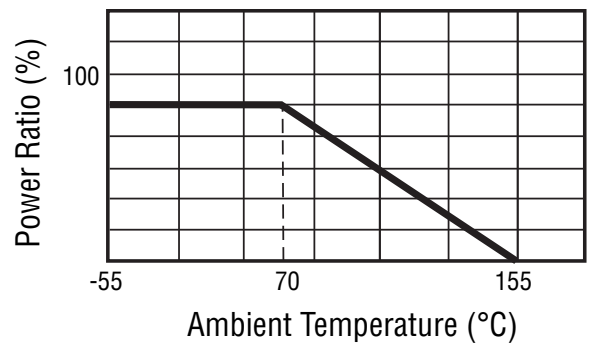


DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$

## Soldering Profile



## Derating Curve



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Users should verify actual device performance in their specific applications.

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# CRM0805/1206/2010 High Power Current Sense Chip Resistors



## How to Order

CRM 2010 - F X - R100 E LF

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

Size \_\_\_\_\_  
0805 = 0805 Size  
1206 = 1206 Size  
2010 = 2010 Size

Resistance Tolerance \_\_\_\_\_  
• F =  $\pm 1\%$   
• J =  $\pm 5\%$

TCR (PPM/ $^{\circ}$ C - See Electrical Characteristics chart) \_\_\_\_\_  
• W =  $\pm 200$  PPM/ $^{\circ}$ C  
• Z =  $\pm 150$  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 = 5,000 pieces on 180 mm (7 inch) reel - CRM0805, CRM1206  
4,000 pieces on 180 mm (7 inch) reel - CRM2010

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

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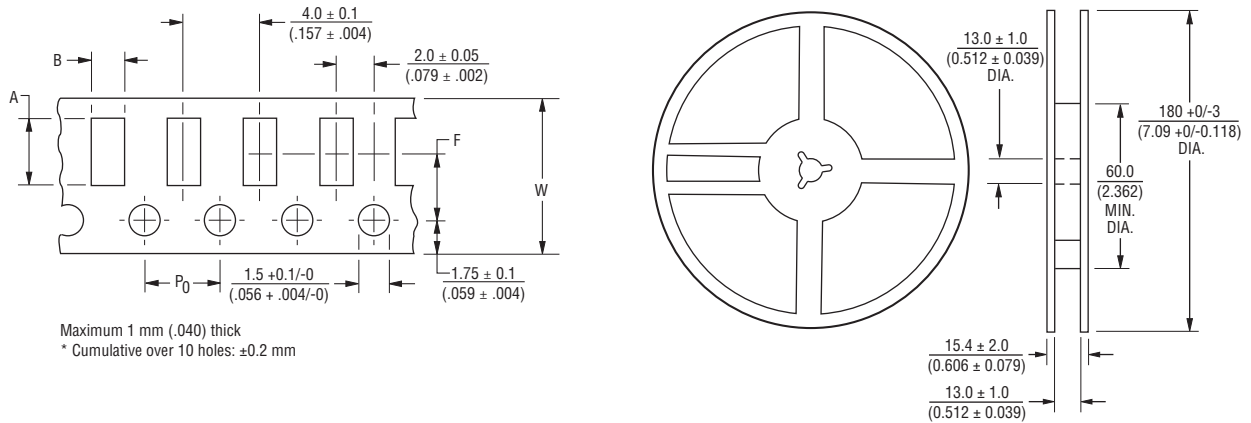
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# CRM0805/1206/2010 High Power Current Sense Chip Resistors



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



Model	A	B	F	W
CRM0805	$2.40 \pm 0.20$ ( $0.094 \pm 0.008$ )	$1.65 \pm 0.20$ ( $0.065 \pm 0.008$ )	$3.50 \pm 0.05$ ( $0.138 \pm 0.002$ )	$8.00 \pm 0.30$ ( $0.315 \pm 0.012$ )
CRM1206	$3.57 \pm 0.20$ ( $0.141 \pm 0.008$ )	$2.00 \pm 0.20$ ( $0.079 \pm 0.008$ )	$3.50 \pm 0.05$ ( $0.138 \pm 0.002$ )	$8.00 \pm 0.30$ ( $0.315 \pm 0.012$ )
CRM2010	$5.50 \pm 0.20$ ( $0.217 \pm 0.008$ )	$2.80 \pm 0.20$ ( $0.110 \pm 0.008$ )	$5.50 \pm 0.05$ ( $0.217 \pm 0.002$ )	$12.00 \pm 0.30$ ( $0.472 \pm 0.012$ )

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



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