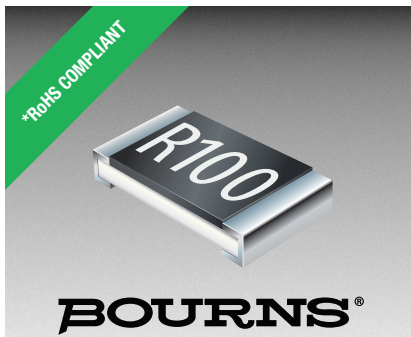




THE DATASHEET OF CRM2010-JW-7R5ELF



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

CRM0805/1206/2010 High Power Current Sense Chip Resistors

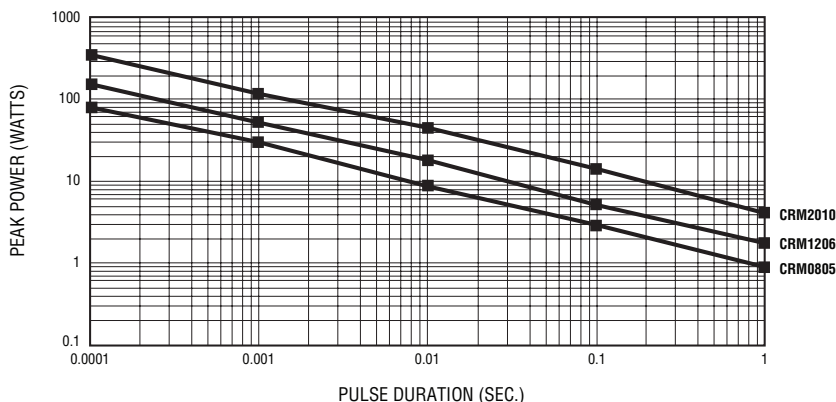
Electrical Characteristics

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 mohms to 910 mohms (±1 % and ±5 %, E24 Series) 1 ohm to 9.76 ohms (±1 %, E96 & E24 Series) 10 ohms to 1 megohm (±1 %, E96 & E24 Series) 1 ohm to 1 megohm (±5 %, E24 Series)	±100 ppm ±100 ppm ±150 ppm/ ±200 ppm ±100 ppm ±200 ppm	±100 ppm ±100 ppm ±100 ppm/ ±200 ppm ±100 ppm ±200 ppm	±100 ppm ±100 ppm ±100 ppm/ ±200 ppm ±100 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.

Pulse Load Characteristics



WARNING
Cancer and Reproductive Harm
www.P65Warnings.ca.gov

*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.

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Additional Information

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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 %

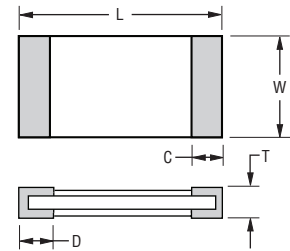
For Standard Values Used in Capacitors, Inductors and Resistors, [click here](#).

CRM0805/1206/2010 High Power Current Sense Chip Resistors

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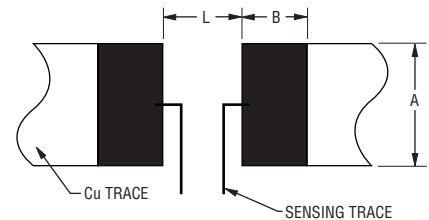
Product Dimensions

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	$\frac{5.00 \pm 0.20}{(0.197 \pm 0.008)}$	$\frac{2.50 \pm 0.20}{(0.098 \pm 0.008)}$	$\frac{0.60 \pm 0.25}{(0.024 \pm 0.010)}$	$\frac{0.60 \pm 0.25}{(0.024 \pm 0.010)}$	$\frac{0.60 \pm 0.10}{(0.024 \pm 0.004)}$



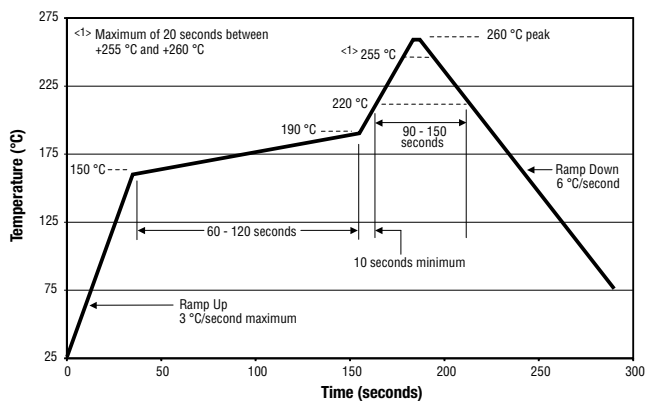
Recommended Solder Pad Layout

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	$\frac{3.0}{(0.118)}$	$\frac{1.5}{(0.059)}$	$\frac{3.8}{(0.149)}$

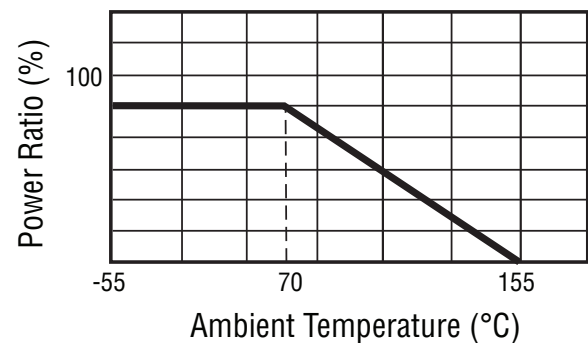


DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

Soldering Profile



Derating Curve



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CRM0805/1206/2010 High Power Current Sense Chip Resistors

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How to Order

CRM 2010 - F X - R100 E LF

Model _____ (CRM = Precision Chip Resistor)	CRM	2010	-	F	X	-	R100	E	LF
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 = ± 200 PPM/ $^{\circ}$ C • Z = ± 150 PPM/ $^{\circ}$ C • X = ± 100 PPM/ $^{\circ}$ C • / = Jumper									
Resistance Value _____ • 1% or 5% Tolerance: R < 1 ohm "R" represents decimal point followed by three significant digits (<i>example: R100 = 0.100 ohm</i>) • 1% Tolerance: < 100 ohms "R" represents decimal point (<i>example: 24R3 = 24.3 ohms</i>) ≥ 100 ohms First three digits are significant, fourth digit represents number of zeros to follow (<i>example: 8252 = 82.5K ohms</i>) • 5% Tolerance: < 10 ohms "R" represents decimal point (<i>example: 4R7 = 4.7 ohms</i>) ≥ 10 ohms First two digits are significant, third digit represents number of zeros to follow (<i>example: 474 = 470K ohms</i>) 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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Figure 1 shows a technical drawing of a mechanical part with dimensions and tolerances. The part is a long, thin rectangular block with a wavy left edge and a wavy right edge. It has four rectangular holes along its length. Dimensions are given in millimeters with tolerances in parentheses. The top edge has a total width of 4.0 ± 0.1 ($0.157 \pm .004$) and a segment of 2.0 ± 0.05 ($0.079 \pm .002$). The bottom edge has a total width of $1.5 +0.1/-0$ ($0.056 + .004/-0$) and a segment of 1.75 ± 0.1 ($0.059 \pm .004$). The left edge has a height of A . The right edge has a height of W . The distance between the first and second holes is P_0 . The distance between the third and fourth holes is F .

Technical drawing of a circular part with a central hole and four radial spokes. The drawing includes a top view and a side view.

Top View Dimensions:

- Outer Diameter: 130.0 ± 1.0 (0.512 \pm 0.039) DIA.
- Central Hole Diameter: 60.0 (2.362) MIN. DIA.

Side View Dimensions:

- Total Height: $180 +0/-3$ (7.09 +0/-0.118) DIA.
- Central Hole Diameter: 15.4 ± 2.0 (0.606 \pm 0.079)
- Thickness: 13.0 ± 1.0 (0.512 \pm 0.039)

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

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