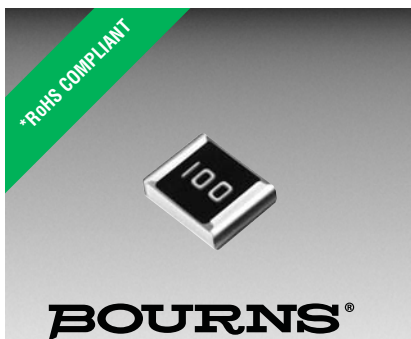




## Features

- Thick film technology
- Power rating of 0.25, 0.5 or 1 watt at 70 °C
- Low resistance values 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<br>47 mohms to 910 mohms<br>1 ohm to 1 megohm          | 551 mV<br>150 V                                                                                                                                | 675 mV<br>200 V | 954 mV<br>200 V |
| Insulation Resistance                                                          | >1000 megohms                                                                                                                                  |                 |                 |
| Resistance Range                                                               | 47 mohms to 910 mohms (±1 % and ±5 %, E24 Series)<br>1 ohm to 1 megohm (±1 %, E96 & E24 Series)<br>0 ohm, 1 ohm to 1 megohm (±5 %, E24 Series) |                 |                 |
| Resistance Tolerance                                                           | ±1 %, ±5 %                                                                                                                                     |                 |                 |
| Temperature Coefficient<br>47 mohms to 91 mohms<br>(±1 % and ±5 %, E24 Series) | ±100 ppm                                                                                                                                       | ±100 ppm        | ±100 ppm        |
| 100 mohms to 910 mohms<br>(±1 % and ±5 %, E24 Series)                          | ±100 ppm                                                                                                                                       | ±100 ppm        | ±100 ppm        |
| 1 ohm to 1 megohm<br>(±1 %, E96 & E24 Series)                                  | ±100 ppm <sup>(1)</sup>                                                                                                                        | ±100 ppm        | ±100 ppm        |
| 1 ohm to 1 megohm<br>(±5 %, E24 Series)                                        | ±200 ppm                                                                                                                                       | ±200 ppm        | ±200 ppm        |
| Zero Ohm Jumper <0.02 ohm <sup>(2)</sup>                                       | 4 A                                                                                                                                            | 4 A             | 6 A             |
| Maximum Rated Current                                                          | 4 A                                                                                                                                            | 4 A             | 6 A             |

Exceptions:

(1) ±1 %, 1 ohm to 9.76 ohms: ±150 ppm (CRM0805)

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

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

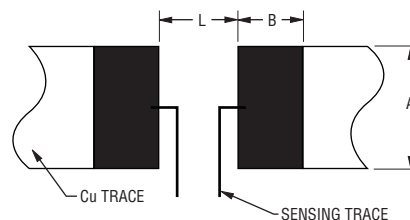
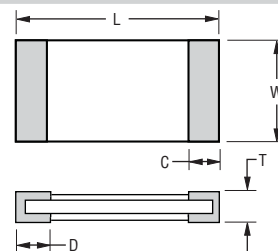
### Product Dimensions

| Model   | L                                         | W                                         | C                                         | D                                         | T                                         |
|---------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|
| CRM0805 | $\frac{2.00 \pm 0.15}{(0.079 \pm 0.006)}$ | $\frac{1.20 \pm 0.15}{(0.047 \pm 0.006)}$ | $\frac{0.40 \pm 0.20}{(0.016 \pm 0.008)}$ | $\frac{0.40 \pm 0.20}{(0.016 \pm 0.008)}$ | $\frac{0.50 \pm 0.10}{(0.020 \pm 0.04)}$  |
| 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 | $\frac{3.0}{(0.118)}$ | $\frac{1.5}{(0.059)}$  | $\frac{3.8}{(0.149)}$ |

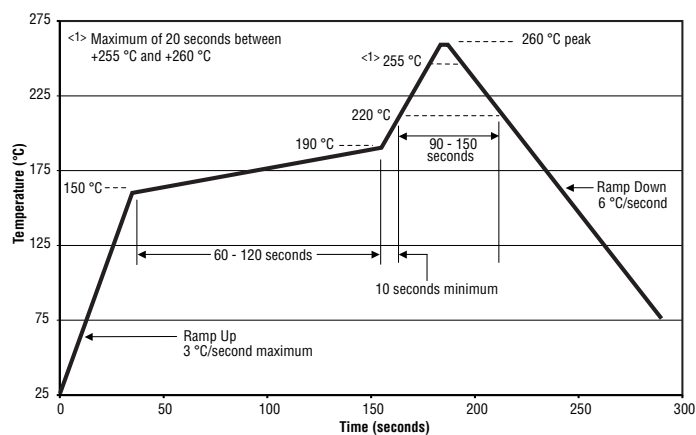
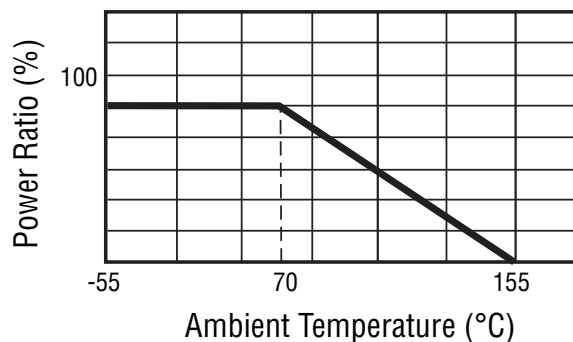
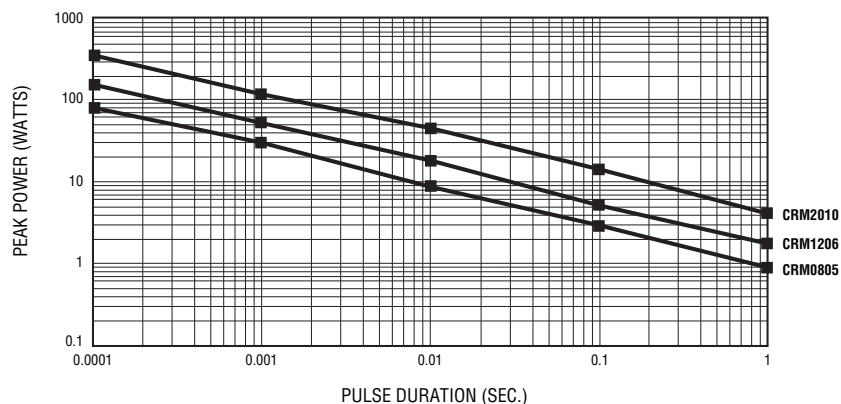
DIMENSIONS:  $\frac{\text{MM}}{(\text{INCHES})}$



\*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.

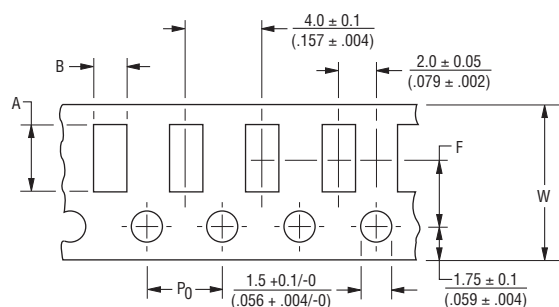
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

**Soldering Profile****Derating Curve****Pulse Load Characteristics**

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

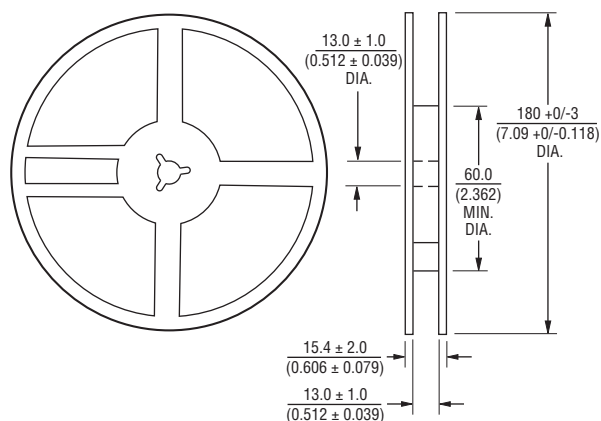
**BOURNS®**

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



Maximum 1 mm (.040) thick

\* Cumulative over 10 holes:  $\pm 0.2$  mm



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

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

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

**BOURNS®**

## How to Order

CRM 2010 - F X - R100 E LF

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
| Model _____<br>(CRM = Precision Chip Resistor)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |  |  |  |
| Size _____<br>0805 = 0805 Size<br>1206 = 1206 Size<br>2010 = 2010 Size                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  |  |  |  |
| Resistance Tolerance _____<br>• F = $\pm 1\%$ ..... Use with "X" TCR code<br><u>Exceptions:</u><br>(CR0805) Use with "Z" TCR code for values from 1 ohm to 9.76 ohms<br>• J = $\pm 5\%$ ..... Use with "W" TCR code for values from 1 ohm through 1 megohm<br>Use with "X" TCR code for values under 1 ohm<br><u>Exceptions:</u><br>Use with "/" TCR code for 0 ohm (Jumper)                                                                                                                                                                                                                                                                                                                                                                  |  |  |  |  |  |
| TCR (PPM/ $^{\circ}$ C - See Electrical Characteristics chart) _____<br>• W = $\pm 200$ PPM/ $^{\circ}$ C<br>• Z = $\pm 150$ PPM/ $^{\circ}$ C<br>• X = $\pm 100$ PPM/ $^{\circ}$ C<br>• / = Jumper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |  |  |  |  |
| Resistance Value _____<br>• <u>1% or 5% Tolerance:</u><br>R < 1 ohm ..... "R" represents decimal point followed by three significant digits ( <i>example: R100 = 0.100 ohm</i> )<br>• <u>1% Tolerance:</u><br>< 100 ohms ..... "R" represents decimal point ( <i>example: 24R3 = 24.3 ohms</i> )<br>$\geq 100$ ohms ..... First three digits are significant, fourth digit represents number of zeros to follow ( <i>example: 8252 = 82.5K ohms</i> )<br>• <u>5% Tolerance:</u><br>< 10 ohms ..... "R" represents decimal point ( <i>example: 4R7 = 4.7 ohms</i> )<br>$\geq 10$ ohms ..... First two digits are significant, third digit represents number of zeros to follow ( <i>example: 474 = 470K ohms</i> )<br>0 ohm Jumper ..... "000" |  |  |  |  |  |
| Packaging _____<br>• E = 5,000 pieces on 180 mm (7 inch) reel - CRM0805, CRM1206<br>4,000 pieces on 180 mm (7 inch) reel - CRM2010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |  |  |  |
| Termination _____<br>• LF = Tin-plated (RoHS Compliant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  |  |  |  |

REV. 05/15

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Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
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- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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