

*RoHS COMPLIANT



BOURNS®

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 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 1 megohm (±1 %, E96 & E24 Series) | ±100 ppm (1) | ±100 ppm | ±100 ppm |
| 1 ohm to 1 megohm (±5 %, E24 Series) | ±200 ppm | ±200 ppm | ±200 ppm |
| Zero Ohm Jumper <0.02 ohm (2) 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.

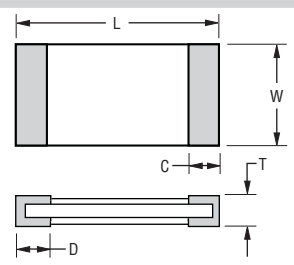
Characteristic Data

| Test | ΔR Max. |
|-----------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Load Life (1000 hours) 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](#).

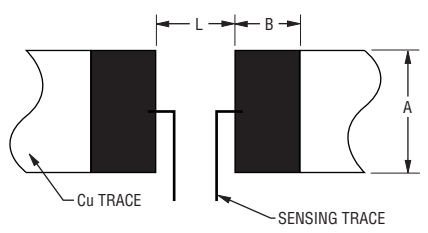
Product Dimensions

| 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

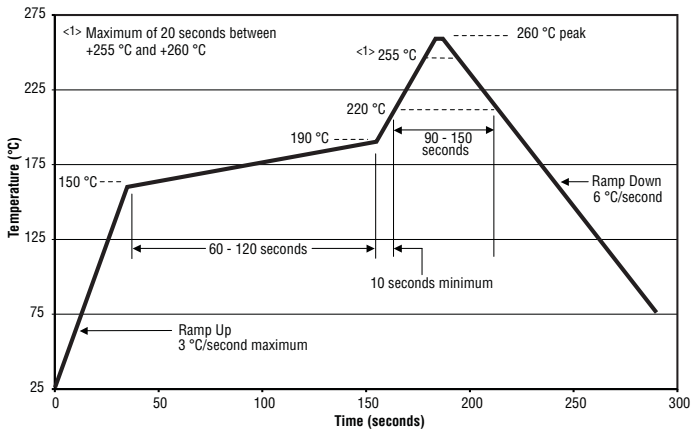
| Model | A | B | L |
|---------|-----------------------|------------------------|-----------------------|
| CRM0805 | $\frac{1.3}{(0.051)}$ | $\frac{1.15}{(0.045)}$ | $\frac{1.2}{(0.047)}$ |
| CRM1206 | $\frac{1.8}{(0.071)}$ | $\frac{1.3}{(0.051)}$ | $\frac{2.1}{(0.083)}$ |
| CRM2010 | $\frac{3.0}{(0.118)}$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



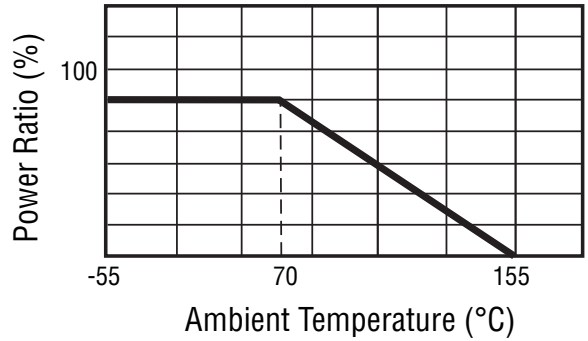
DIMENSIONS: $\frac{MM}{(INCHES)}$

*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.

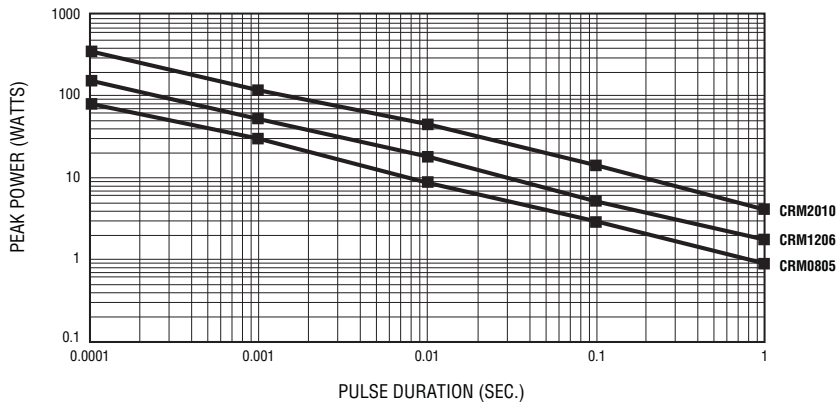
Soldering Profile



Derating Curve



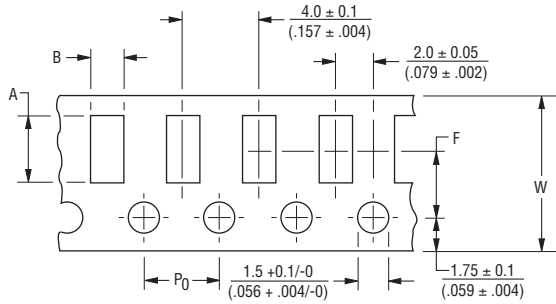
Pulse Load Characteristics



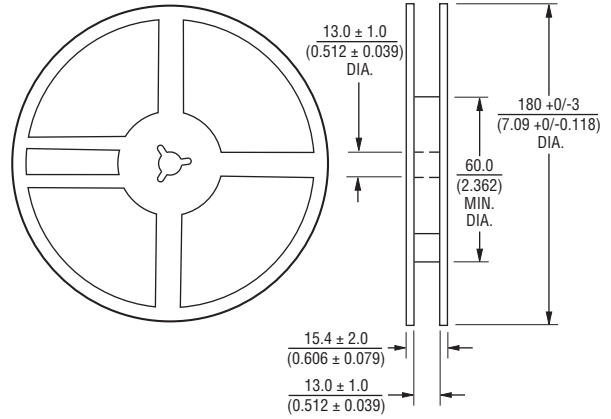
CRM0805/1206/2010 High Power Current Sense Chip Resistors



Packaging Dimensions (Conforms to EIA RS-481A)



Maximum 1 mm (.040) thick
 * Cumulative over 10 holes: ±0.2 mm



| 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 | $\frac{5.50 \pm 0.20}{(0.217 \pm 0.008)}$ | $\frac{2.80 \pm 0.20}{(0.110 \pm 0.008)}$ | $\frac{5.50 \pm 0.05}{(0.217 \pm 0.002)}$ | $\frac{12.00 \pm 0.30}{(0.472 \pm 0.012)}$ |

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

How to Order

CRM 2010 - F X - R100 E LF

| | |
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| <p>Model _____ (CRM = Precision Chip Resistor)</p> <p>Size _____ 0805 = 0805 Size 1206 = 1206 Size 2010 = 2010 Size</p> <p>Resistance Tolerance _____ • F = ±1 %.....Use with "X" TCR code <u>Exceptions:</u> (CR0805) Use with "Z" TCR code for values from 1 ohm to 9.76 ohms • J = ±5 %.....Use with "W" TCR code for values from 1 ohm through 1 megohm Use with "X" TCR code for values under 1 ohm <u>Exceptions:</u> Use with "/" TCR code for 0 ohm (Jumper)</p> <p>TCR (PPM/°C - See Electrical Characteristics chart) _____ • W = ±200 PPM/°C • Z = ±150 PPM/°C • X = ±100 PPM/°C • / = Jumper</p> <p>Resistance Value _____ • <u>1 % or 5 % Tolerance:</u> R <1 ohm....."R" represents decimal point followed by three significant digits (<i>example: R100 = 0.100 ohm</i>) • <u>1% Tolerance:</u> <100 ohms "R" represents decimal point (<i>example: 24R3 = 24.3 ohms</i>) ≥100 ohmsFirst three digits are significant, fourth digit represents number of zeros to follow (<i>example: 8252 = 82.5K ohms</i>) • <u>5% Tolerance:</u> <10 ohms "R" represents decimal point (<i>example: 4R7 = 4.7 ohms</i>) ≥10 ohmsFirst two digits are significant, third digit represents number of zeros to follow (<i>example: 474 = 470K ohms</i>) 0 ohm Jumper "000"</p> <p>Packaging _____ • E = 5,000 pieces on 180 mm (7 inch) reel - CRM0805, CRM1206 4,000 pieces on 180 mm (7 inch) reel - CRM2010</p> <p>Termination _____ • LF = Tin-plated (RoHS Compliant)</p> | <div style="border: 1px solid black; height: 300px; margin-bottom: 10px;"></div> <div style="border: 1px solid black; height: 300px;"></div> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|



Стандарт Электрон Связь

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

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С нами вы становитесь еще успешнее!

Наши контакты:

Телефон: +7 812 627 14 35

Электронная почта: sales@st-electron.ru

Адрес: 198099, Санкт-Петербург,
Промышленная ул, дом № 19, литера Н,
помещение 100-Н Офис 331