

\*RoHS COMPLIANT



**BOURNS®**

**Features**

- Thick film technology
- Power rating of 0.25, 0.5 or 1 watt at 70 °C
- Strong pulse performance
- RoHS compliant\*

**Applications**

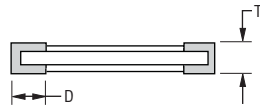
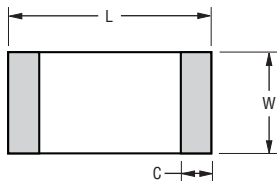
- Power supplies
- Stepper motor drives

**CRM0805/1206/2010 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 0.047 to 0.91 ohms 1.0 ohm to 1.0 megohm	477 mV 150 V	675 mV 200 V	954 mV 200 V
Insulation Resistance	>1000 megohms		
Resistance Range	0.047 - 1 megohm		
Resistance Tolerance	±1 %, ±5 %		
Temperature Coefficient 0.047 to 0.091 ohms 0.100 to 0.91 ohms 1.0 ohm to 1 megohm 10 ohms to 1 megohm	±150 PPM/°C ±100 PPM/°C ±200 PPM/°C (Tolerance 5 %, E24 Values) ±100 PPM/°C (Tolerance 1 %, E96 Values)		

**Product Dimensions**



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

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

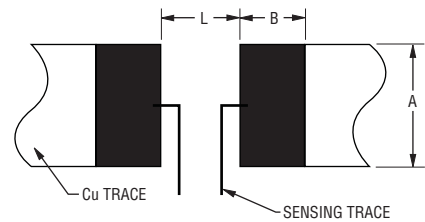
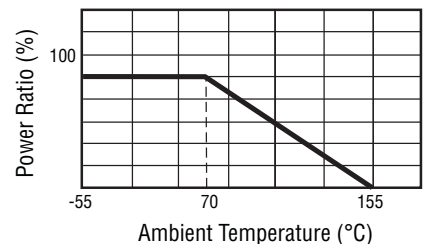
**General Information**

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, current limiting and high pulse resistance.

**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 %

**Derating Curve**



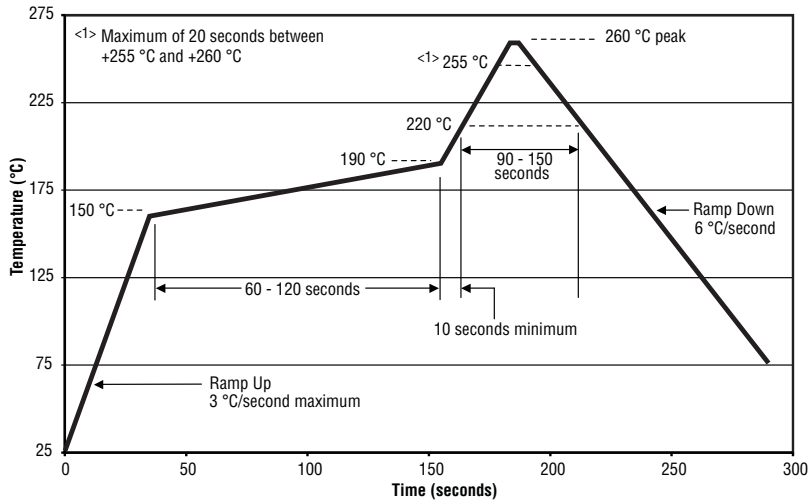
DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

\*RoHS Directive 2002/95/EC Jan 27, 2003 including Annex. Specifications are subject to change without notice. Customers should verify actual device performance in their specific applications.

# CRM0805/1206/2010 Chip Resistors



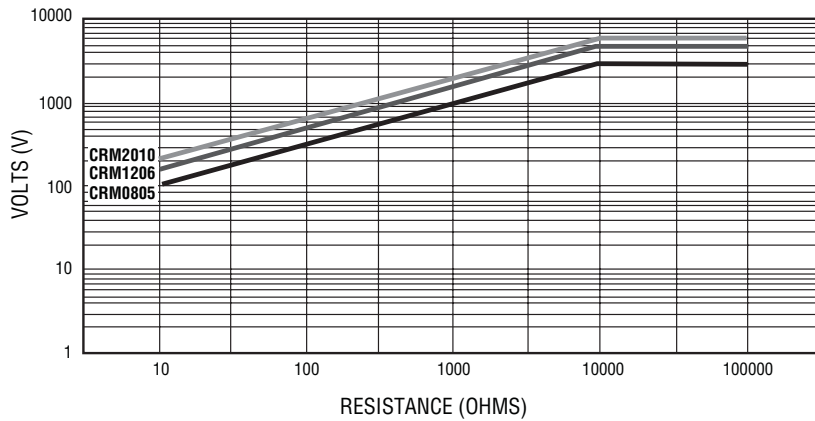
## Soldering Profile



## Resistance Value Table (0.047-0.91 Ω)

Code	R Value	Code	R Value
R047	0.047	R200	0.200
R050	0.050	R300	0.300
R060	0.060	R510	0.510
R075	0.075	R750	0.750
R082	0.082	R820	0.820
R090	0.090	R910	0.910
R100	0.100		

## Pulse Voltage Curve



Test Method: 1.2/50 μs Waveform with 12 Ohm Resistor, 5 Pulses at 12 Second Intervals

# CRM0805/1206/2010 Chip Resistors

**BOURNS®**

## 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 = ±1 %  
 • J = ±5 %

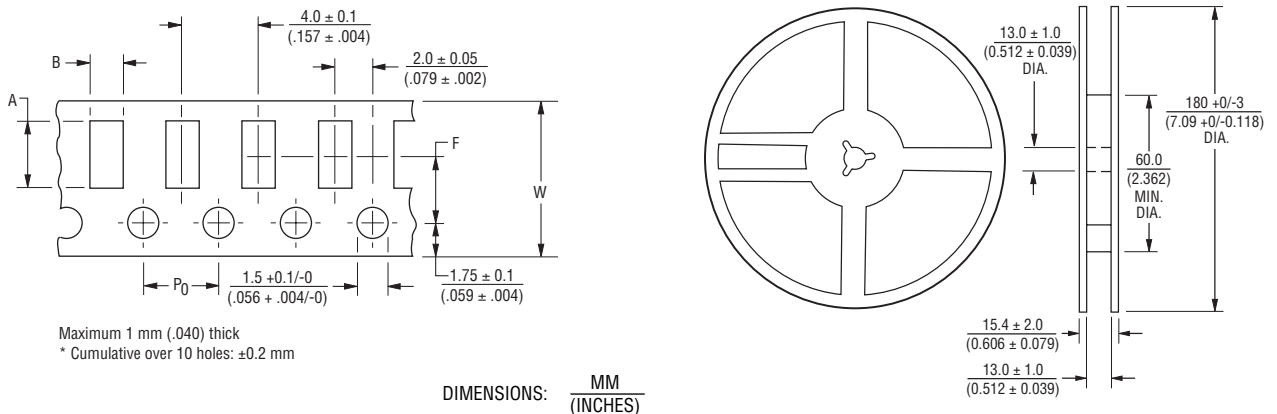
TCR (PPM/°C) \_\_\_\_\_  
 • W = ±200 PPM/°C  
 • Z = ±150 PPM/°C  
 • X = ±100 PPM/°C

Resistance Value \_\_\_\_\_  
 R < 1 ohm (1 % or 5 % Tolerance: "R" (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)  
 ≥ 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)  
 ≥ 10 ohms ..... First two digits are significant, third digit represents number of zeros to follow (example: 474 = 470K ohms)

Packaging \_\_\_\_\_  
 • E = 5000 pieces on 180 mm (7 inch) reel - CRM0805, CRM1206  
 4000 pieces on 180 mm (7 inch) reel - CRM2010

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

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



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