



## Features

- 0.1 % tolerance from 100 ohms to 360K ohms
- RoHS compliant\*
- Three layer contacting process with nickel barrier helps prevent leaching and provides excellent solderability
- Suitable for most types of soldering processes
- Paper tape on reel for automatic placement

## CRP Series - Precision Chip Resistors

### Electrical Characteristics

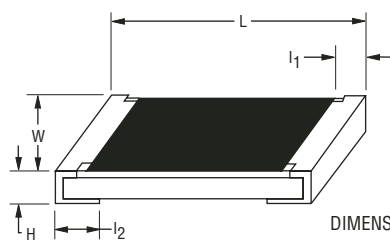
| Characteristic                                       | Model CRP0603                                   | Model CRP0805                                   | Model CRP1206                                   |
|------------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| Power Rating @ 70 °C                                 | 1/10 W                                          | 1/8 W                                           | 1/4W                                            |
| Operating Temperature Range                          | -55 °C to +125 °C                               |                                                 |                                                 |
| Derated to Zero Load at                              | +125 °C                                         |                                                 |                                                 |
| Maximum Working Voltage                              | 50 V                                            | 150 V                                           | 200 V                                           |
| Maximum Overload Voltage                             | 100 V                                           | 300 V                                           | 400 V                                           |
| Resistance Range: (E-96 + E-24 Values)               | 100 ohms to 360K ohms                           |                                                 |                                                 |
| Temperature Coefficient<br>±50 PPM/°C<br>±100 PPM/°C | 100 ohms to 35.7K ohms<br>36K ohms to 100K ohms | 100 ohms to 100K ohms<br>102K ohms to 360K ohms | 100 ohms to 100K ohms<br>102K ohms to 360K ohms |

### Characteristic Data

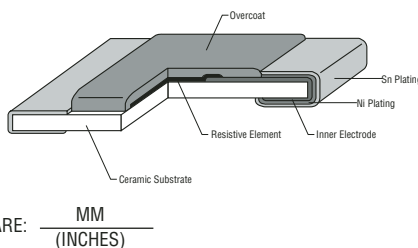
| Tests per IEC115-1              | ΔR Max.              |
|---------------------------------|----------------------|
| Load Life (1000 Hours)          | ±(0.5 % + 0.05 ohms) |
| Load Life Humidity (1000 Hours) | ±(0.5 % + 0.05 ohms) |
| Short Time Overload             | ±(0.5 % + 0.05 ohms) |

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

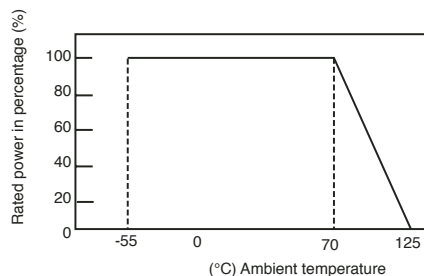
### Dimensional Drawing



### Construction



### Derating Curve



### Chip Dimensions

| Dimension      | Model CRP0603                            | Model CRP0805                            | Model CRP1206                            |
|----------------|------------------------------------------|------------------------------------------|------------------------------------------|
| L              | $\frac{1.60 \pm 0.10}{(0.063 \pm .004)}$ | $\frac{2.00 \pm 0.15}{(0.079 \pm .006)}$ | $\frac{3.10 \pm 0.15}{(0.122 \pm .006)}$ |
| W              | $\frac{0.80 \pm 0.10}{(0.031 \pm .004)}$ | $\frac{1.20 \pm 0.15}{(0.047 \pm .006)}$ | $\frac{1.60 \pm 0.15}{(0.063 \pm .006)}$ |
| H              | $\frac{0.45 \pm 0.15}{(0.018 \pm .006)}$ | $\frac{0.50 \pm 0.10}{(0.020 \pm .004)}$ | $\frac{0.50 \pm 0.15}{(0.020 \pm .006)}$ |
| l <sub>1</sub> | $\frac{0.35 \pm 0.25}{(0.014 \pm .010)}$ | $\frac{0.40 \pm 0.20}{(0.016 \pm .008)}$ | $\frac{0.50 \pm 0.30}{(0.020 \pm .012)}$ |
| l <sub>2</sub> | $\frac{0.40 \pm 0.20}{(0.016 \pm .008)}$ | $\frac{0.40 \pm 0.20}{(0.016 \pm .008)}$ | $\frac{0.50 \pm 0.25}{(0.020 \pm .010)}$ |



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\*RoHS Directive 2002/95/EC Jan 27 2003 including Annex

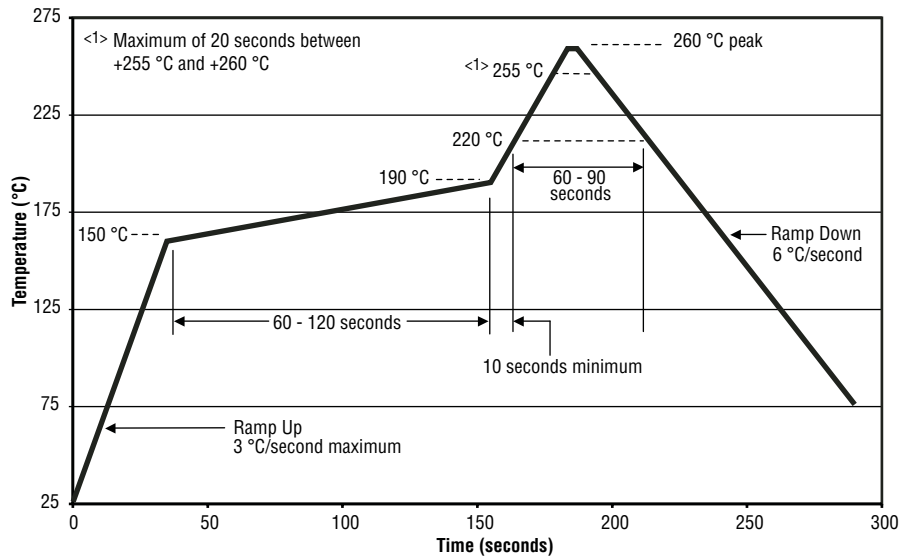
Specifications are subject to change without notice.

Customers should verify actual device performance in their specific applications.

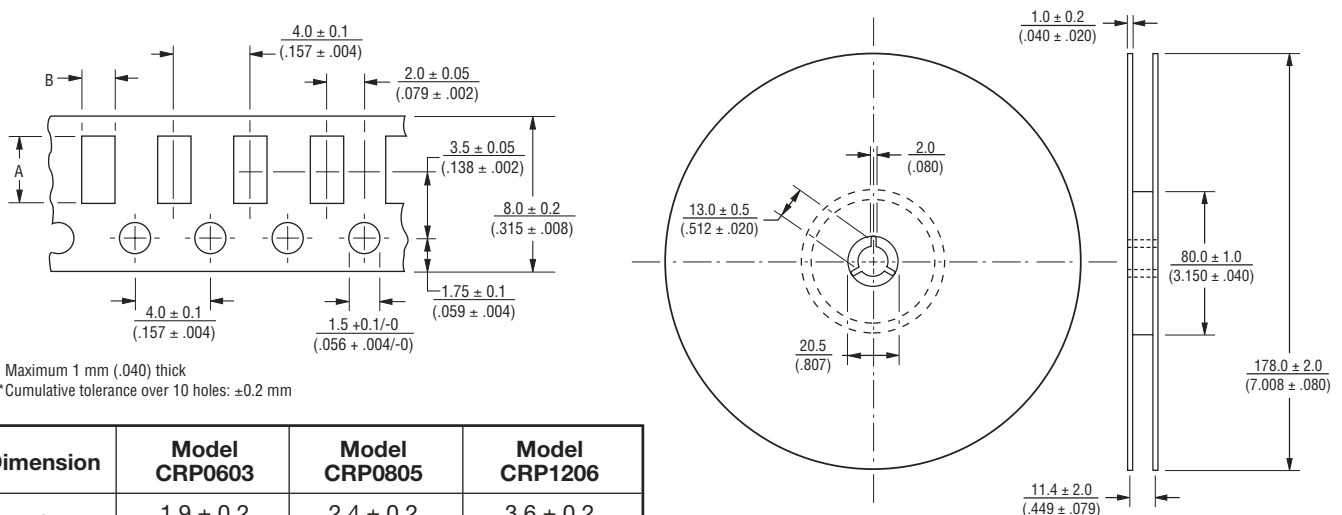
# CRP Series - Precision Chip Resistors

**BOURNS®**

## Soldering Profile for RoHS Compliant Chip Resistors and Arrays



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



| Dimension | Model CRP0603                         | Model CRP0805                          | Model CRP1206                         |
|-----------|---------------------------------------|----------------------------------------|---------------------------------------|
| A         | $\frac{1.9 \pm 0.2}{(.075 \pm .008)}$ | $\frac{2.4 \pm 0.2}{(.094 \pm .008)}$  | $\frac{3.6 \pm 0.2}{(.142 \pm .008)}$ |
| B         | $\frac{1.1 \pm 0.2}{(.043 \pm .008)}$ | $\frac{1.65 \pm 0.2}{(.065 \pm .008)}$ | $\frac{2.0 \pm 0.2}{(.079 \pm .008)}$ |

Marking on reel: Part number, quantity, resistance value and tolerance, date code.

# CRP Series - Precision Chip Resistors

**BOURNS®**

## Resistor Markings

CRP0603  
EIA-96 Marking



0.1 % marking  
Value = 12.4K ohms

## Marking Explanation

E-24:

- 3 digits; first two digits are significant, third digit is number of zeroes to follow.

E-96:

- 0603 size, EIA-96 marked per table below.
- 0805 and 1206 size, marked with 4 digits. First three digits are significant, fourth digit is number of zeroes to follow.

## EIA-96 Marking for CRP0603, 0.1 %

| Code | R Value | Code | R Value | Code | R Value | Code | R Value | Code | R Value | Code | R Value | Code | R Value | Code | R Value |
|------|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|---------|
| 01   | 100     | 13   | 133     | 25   | 178     | 37   | 237     | 49   | 316     | 61   | 422     | 73   | 562     | 85   | 750     |
| 02   | 102     | 14   | 137     | 26   | 182     | 38   | 243     | 50   | 324     | 62   | 432     | 74   | 576     | 86   | 768     |
| 03   | 105     | 15   | 140     | 27   | 187     | 39   | 249     | 51   | 332     | 63   | 442     | 75   | 590     | 87   | 787     |
| 04   | 107     | 16   | 143     | 28   | 191     | 40   | 255     | 52   | 340     | 64   | 453     | 76   | 604     | 88   | 806     |
| 05   | 110     | 17   | 147     | 29   | 196     | 41   | 261     | 53   | 348     | 65   | 464     | 77   | 619     | 89   | 825     |
| 06   | 113     | 18   | 150     | 30   | 200     | 42   | 267     | 54   | 357     | 66   | 475     | 78   | 634     | 90   | 845     |
| 07   | 115     | 19   | 154     | 31   | 205     | 43   | 274     | 55   | 365     | 67   | 487     | 79   | 649     | 91   | 866     |
| 08   | 118     | 20   | 158     | 32   | 210     | 44   | 280     | 56   | 374     | 68   | 499     | 80   | 665     | 92   | 887     |
| 09   | 121     | 21   | 162     | 33   | 215     | 45   | 287     | 57   | 383     | 69   | 511     | 81   | 681     | 93   | 909     |
| 10   | 124     | 22   | 165     | 34   | 221     | 46   | 294     | 58   | 392     | 70   | 523     | 82   | 698     | 94   | 931     |
| 11   | 127     | 23   | 169     | 35   | 226     | 47   | 301     | 59   | 402     | 71   | 536     | 83   | 715     | 95   | 953     |
| 12   | 130     | 24   | 174     | 36   | 232     | 48   | 309     | 60   | 412     | 72   | 549     | 84   | 732     | 96   | 976     |

This table shows the first two digits for the three-digit EIA-96 part marking scheme. The third character is a letter multiplier:  
Y=10<sup>-2</sup> X=10<sup>-1</sup> A=10<sup>0</sup> B=10<sup>1</sup> C=10<sup>2</sup> D=10<sup>3</sup> E=10<sup>4</sup> F=10<sup>5</sup>

## How To Order

**CRP 0603 - B Z - 7871 E LF**

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

Size \_\_\_\_\_  
0603 = 0603 Size  
0805 = 0805 Size  
1206 = 1206 Size

Resistance Tolerance \_\_\_\_\_  
B = ±0.1 %

TCR (PPM/°C) \_\_\_\_\_  
Z = ±50 PPM/°C, 100 ohms through 35.7K ohms (0603 size); 100 ohms through 100K ohms (0805 and 1206 size)  
X = ±100 PPM/°C, 36K ohms through 360K ohms (0603 size); 102K ohms through 360K ohms (0805 and 1206 size)

Resistance Value \_\_\_\_\_  
First three digits are significant, fourth digit represents number of zeroes to follow (example: 7871 = 7.87K ohms)

Packaging \_\_\_\_\_  
E = 5,000 pieces on 180 mm (7 inch) reel

Termination \_\_\_\_\_  
LF = Tin-plated (RoHS compliant)

REV. 02/08

Specifications are subject to change without notice.

Customers should verify actual device performance in their specific applications.

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