



## Features

- RoHS compliant\*
- Tight tolerance of bottom electrode width
- 1 % and 5 % tolerance options
- Three layer termination process with nickel barrier helps prevent leaching and provides excellent solderability
- Tape and reel packaging

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## CR Series - Thick Film Chip Resistors

### Electrical Characteristics

| Characteristic                                        | Model No.                   |                                |                                                             |                                                             |                                                             |                                                             |                                                             |                                                             |
|-------------------------------------------------------|-----------------------------|--------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
|                                                       | CR01005                     | CR0201                         | CR0402                                                      | CR0603                                                      | CR0805                                                      | CR1206                                                      | CR2010                                                      | CR2512                                                      |
| Power Rating @ 70 °C                                  | 1/32 W                      | 1/20 W                         | 1/16 W                                                      | 1/10 W                                                      | 1/8 W                                                       | 1/4 W                                                       | 1/2 W                                                       | 1 W                                                         |
| Operating Temp. Range                                 | -55 °C to +125 °C           |                                | -55 °C to +155 °C                                           |                                                             |                                                             |                                                             |                                                             |                                                             |
| Derated to Zero Load @                                | +125 °C                     |                                | +155 °C                                                     |                                                             |                                                             |                                                             |                                                             |                                                             |
| Max. Working Voltage                                  | 15 V                        | 30 V                           | 50 V                                                        | 75 V                                                        | 150 V                                                       | 200 V                                                       | 200 V                                                       | 200 V                                                       |
| Max. Overload Voltage                                 | 30 V                        | 50 V                           | 100 V                                                       | 150 V                                                       | 300 V                                                       | 400 V                                                       | 400 V                                                       | 400 V                                                       |
| Resistance Tolerance                                  | ±1 %, ±5 %                  |                                |                                                             |                                                             |                                                             |                                                             |                                                             |                                                             |
| Temperature Coefficient<br>±1 %<br>(E24 & E96 Series) | 10 Ω≤R<100 Ω<br>±300 ppm/°C | 1 Ω≤R<10 Ω<br>-200~+600 ppm/°C | 1 Ω≤R<10 Ω<br>-200~+500 ppm/°C                              | 1 Ω≤R<10 Ω<br>±200 ppm/°C                                   | 1 Ω≤R<10 Ω<br>±200 ppm/°C                                   | 1 Ω≤R<10 Ω<br>±200 ppm/°C                                   | 1 Ω≤R<10 Ω<br>±200 ppm/°C                                   | 1 Ω≤R<10 Ω<br>±200 ppm/°C                                   |
|                                                       | 100 Ω≤R<1 MΩ<br>±200 ppm/°C | 10 Ω≤R≤3 MΩ<br>±200 ppm/°C     | 10 Ω≤R≤1 MΩ<br>±100 ppm/°C<br>1 MΩ<R≤10 MΩ<br>±200 ppm/°C   | 10 Ω≤R≤1 MΩ<br>±100 ppm/°C<br>1 MΩ<R≤10 MΩ<br>±200 ppm/°C   | 10 Ω≤R≤1 MΩ<br>±100 ppm/°C<br>1 MΩ<R≤10 MΩ<br>±200 ppm/°C   | 10 Ω≤R≤1 MΩ<br>±100 ppm/°C<br>1 MΩ<R≤10 MΩ<br>±200 ppm/°C   | 10 Ω≤R≤1 MΩ<br>±100 ppm/°C<br>1 MΩ<R≤10 MΩ<br>±200 ppm/°C   | 10 Ω≤R≤1 MΩ<br>±100 ppm/°C<br>1 MΩ<R≤10 MΩ<br>±200 ppm/°C   |
| Temperature Coefficient<br>±5 %<br>(E24 Series)       | 10 Ω≤R<100 Ω<br>±300 ppm/°C | 1 Ω≤R<10 Ω<br>-200~+600 ppm/°C | 1 Ω≤R<10 Ω<br>-200~+500 ppm/°C                              | 1 Ω≤R<10 Ω<br>±400 ppm/°C                                   | 1 Ω≤R<10 Ω<br>±400 ppm/°C                                   | 1 Ω≤R<10 Ω<br>±400 ppm/°C                                   | 1 Ω≤R<10 Ω<br>±400 ppm/°C                                   | 1 Ω≤R<10 Ω<br>±400 ppm/°C                                   |
|                                                       | 100 Ω≤R≤1 MΩ<br>±200 ppm/°C | 10 Ω≤R≤10 MΩ<br>±200 ppm/°C    | 10 Ω≤R≤10 MΩ<br>±200 ppm/°C<br>10 MΩ<R≤20 MΩ<br>±400 ppm/°C | 10 Ω≤R≤10 MΩ<br>±200 ppm/°C<br>10 MΩ<R≤20 MΩ<br>±400 ppm/°C | 10 Ω≤R≤10 MΩ<br>±200 ppm/°C<br>10 MΩ<R≤20 MΩ<br>±400 ppm/°C | 10 Ω≤R≤10 MΩ<br>±200 ppm/°C<br>10 MΩ<R≤20 MΩ<br>±400 ppm/°C | 10 Ω≤R≤10 MΩ<br>±200 ppm/°C<br>10 MΩ<R≤20 MΩ<br>±400 ppm/°C | 10 Ω≤R≤10 MΩ<br>±200 ppm/°C<br>10 MΩ<R≤20 MΩ<br>±400 ppm/°C |
| Zero Ohm Jumper                                       | 50 milliohms max.           |                                |                                                             |                                                             |                                                             |                                                             |                                                             |                                                             |
| Rated Current                                         | 0.5 A                       |                                | 1 A                                                         |                                                             | 2 A                                                         |                                                             |                                                             |                                                             |
| Max. Overload Current                                 | 1 A                         |                                | 2.5 A                                                       |                                                             | 5 A                                                         |                                                             |                                                             |                                                             |

### Environmental Characteristics

Moisture Sensitivity Level.....1



**WARNING**  
**Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

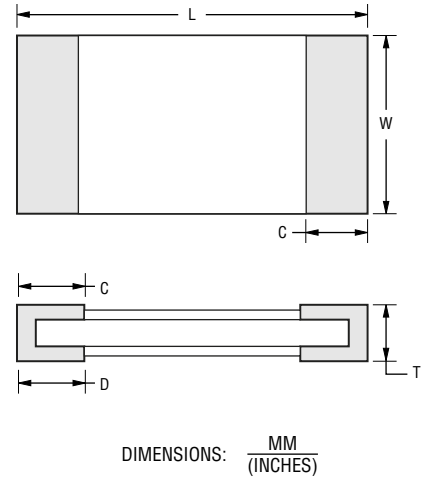
\*RoHS Directive 2015/863, Mar 31, 2015 and Annex.  
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## CR Series - Thick Film Chip Resistors

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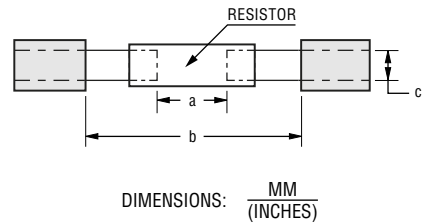
### Product Dimensions

| Model   | L                                        | W                                       | C                                       | D                                       | T                                        |
|---------|------------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|------------------------------------------|
| CR01005 | $\frac{0.40 \pm 0.02}{(.016 \pm .0008)}$ | $\frac{0.20 \pm 0.03}{(.008 \pm .001)}$ | $\frac{0.10 \pm 0.03}{(.004 \pm .001)}$ | $\frac{0.10 \pm 0.03}{(.004 \pm .001)}$ | $\frac{0.13 \pm 0.02}{(.009 \pm .0008)}$ |
| CR0201  | $\frac{0.60 \pm 0.03}{(.024 \pm .001)}$  | $\frac{0.30 \pm 0.03}{(.012 \pm .001)}$ | $\frac{0.10 \pm 0.05}{(.004 \pm .002)}$ | $\frac{0.15 \pm 0.05}{(.006 \pm .002)}$ | $\frac{0.23 \pm 0.03}{(.009 \pm .001)}$  |
| CR0402  | $\frac{1.00 \pm 0.05}{(.039 \pm .002)}$  | $\frac{0.50 \pm 0.05}{(.020 \pm .002)}$ | $\frac{0.20 \pm 0.10}{(.008 \pm .004)}$ | $\frac{0.25 \pm 0.10}{(.010 \pm .004)}$ | $\frac{0.32 \pm 0.05}{(.013 \pm .002)}$  |
| CR0603  | $\frac{1.60 \pm 0.10}{(.063 \pm .004)}$  | $\frac{0.80 \pm 0.10}{(.031 \pm .004)}$ | $\frac{0.30 \pm 0.20}{(.012 \pm .008)}$ | $\frac{0.30 \pm 0.20}{(.012 \pm .008)}$ | $\frac{0.45 \pm 0.10}{(.018 \pm .004)}$  |
| CR0805  | $\frac{2.00 \pm 0.10}{(.079 \pm .004)}$  | $\frac{1.25 \pm 0.10}{(.049 \pm .004)}$ | $\frac{0.40 \pm 0.20}{(.016 \pm .008)}$ | $\frac{0.40 \pm 0.20}{(.016 \pm .008)}$ | $\frac{0.50 \pm 0.10}{(.020 \pm .004)}$  |
| CR1206  | $\frac{3.10 \pm 0.10}{(.122 \pm .004)}$  | $\frac{1.55 \pm 0.10}{(.061 \pm .004)}$ | $\frac{0.50 \pm 0.30}{(.020 \pm .012)}$ | $\frac{0.40 \pm 0.20}{(.016 \pm .008)}$ | $\frac{0.55 \pm 0.10}{(.022 \pm .004)}$  |
| CR2010  | $\frac{5.00 \pm 0.15}{(.197 \pm .006)}$  | $\frac{2.50 \pm 0.15}{(.098 \pm .006)}$ | $\frac{0.60 \pm 0.30}{(.024 \pm .012)}$ | $\frac{0.50 \pm 0.25}{(.020 \pm .010)}$ | $\frac{0.60 \pm 0.10}{(.024 \pm .004)}$  |
| CR2512  | $\frac{6.30 \pm 0.20}{(.248 \pm .008)}$  | $\frac{3.20 \pm 0.20}{(.126 \pm .008)}$ | $\frac{0.60 \pm 0.30}{(.024 \pm .012)}$ | $\frac{0.50 \pm 0.25}{(.020 \pm .010)}$ | $\frac{0.60 \pm 0.10}{(.024 \pm .004)}$  |



### Recommended Pad Layout

| Model   | a                                         | b                                         | c                                         |
|---------|-------------------------------------------|-------------------------------------------|-------------------------------------------|
| CR01005 | $\frac{0.15 \sim 0.20}{(.006 \sim .008)}$ | $\frac{0.50 \sim 0.70}{(.020 \sim .028)}$ | $\frac{0.20 \sim 0.25}{(.008 \sim .010)}$ |
| CR0201  | $\frac{0.25 \sim 0.30}{(.010 \sim .012)}$ | $\frac{0.70 \sim 0.90}{(.028 \sim .035)}$ | $\frac{0.30 \sim 0.40}{(.012 \sim .016)}$ |
| CR0402  | $\frac{0.50 \sim 0.60}{(.020 \sim .024)}$ | $\frac{1.40 \sim 1.60}{(.055 \sim .063)}$ | $\frac{0.40 \sim 0.60}{(.012 \sim .024)}$ |
| CR0603  | $\frac{0.70 \sim 0.90}{(.028 \sim .035)}$ | $\frac{2.00 \sim 2.20}{(.079 \sim .087)}$ | $\frac{0.80 \sim 1.00}{(.031 \sim .039)}$ |
| CR0805  | $\frac{1.00 \sim 1.40}{(.039 \sim .055)}$ | $\frac{3.20 \sim 3.80}{(.126 \sim .150)}$ | $\frac{0.90 \sim 1.40}{(.035 \sim .055)}$ |
| CR1206  | $\frac{2.00 \sim 2.40}{(.079 \sim .094)}$ | $\frac{4.40 \sim 5.00}{(.173 \sim .197)}$ | $\frac{1.20 \sim 1.80}{(.047 \sim .071)}$ |
| CR2010  | $\frac{3.30 \sim 3.70}{(.130 \sim .146)}$ | $\frac{5.70 \sim 6.50}{(.224 \sim .256)}$ | $\frac{2.30 \sim 3.50}{(.091 \sim .138)}$ |
| CR2512  | $\frac{3.60 \sim 4.00}{(.142 \sim .157)}$ | $\frac{7.60 \sim 8.60}{(.299 \sim .339)}$ | $\frac{2.30 \sim 3.50}{(.091 \sim .138)}$ |



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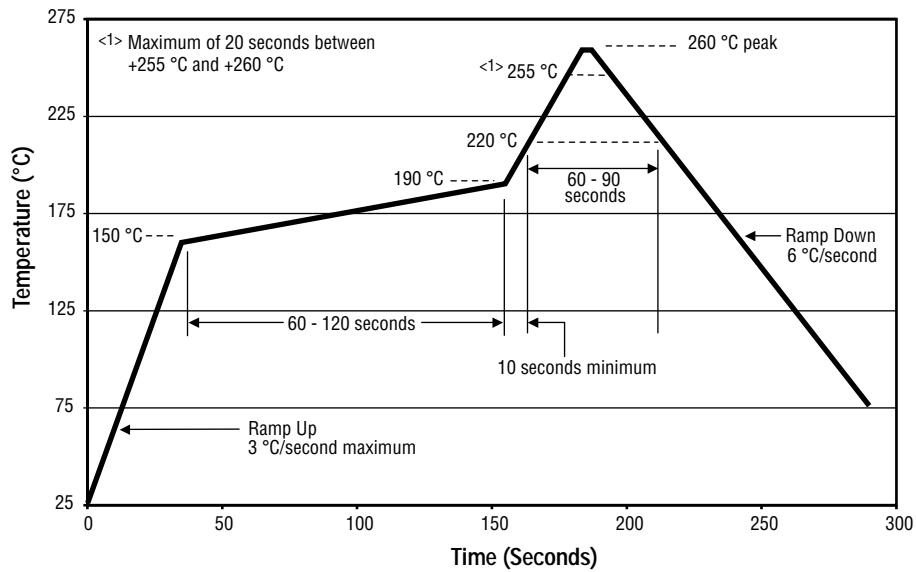
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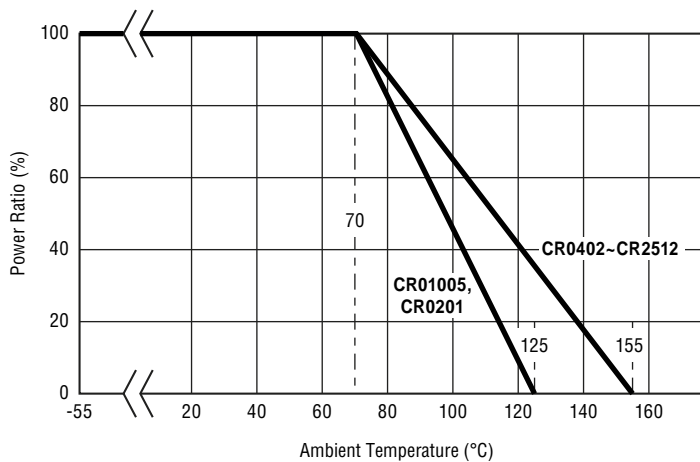
## CR Series - Thick Film Chip Resistors

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### Soldering Profile



### Derating Curve



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# CR Series - Thick Film Chip Resistors

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## Performance Characteristics

| Test                            | Procedure (IEC 60115-1)                                                                                                                                                                                         | Test Limits $\Delta R$                                                                                                                                                                                                                        |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Short Time Overload             | 2.5 x rated voltage for 5 seconds                                                                                                                                                                               | $\leq \pm (1 \% + 0.05 \Omega)$<br><i>Remarks:</i><br>CR01005, CR0201 ..... $\pm (3 \% + 0.1 \Omega)$<br>CR0402 ..... $\pm (2 \% + 0.1 \Omega)$<br>0 $\Omega$ Jumper..... 50 m $\Omega$ or less                                               |
| Intermittent Overload           | 3.0 x rated voltage or max. overloading voltage,<br>1 sec. "ON", 25 sec. "OFF", 10,000 cycles<br><i>Remarks:</i><br>CR01005, CR0201 ..... not applicable<br>CR0402 ..... 2.5 x rated continuous working voltage | 1 %: $\leq \pm (1 \% + 0.05 \Omega)$<br>5 %: $\leq \pm (3 \% + 0.1 \Omega)$<br><i>Remarks:</i><br>CR01005, CR0201 ..... $\pm (5 \% + 0.1 \Omega)$<br>CR0402 ..... $\pm (3 \% + 0.1 \Omega)$<br>0 $\Omega$ Jumper..... 100 m $\Omega$ or less  |
| Load Life                       | 1000 hours at rated voltage, 70 °C ,<br>1.5 hours "ON ", 0.5 hour "OFF"                                                                                                                                         | 1 %: $\leq \pm (1 \% + 0.05 \Omega)$<br>5 %: $\leq \pm (3 \% + 0.1 \Omega)$<br><i>Remarks:</i><br>CR01005, CR0201 ..... $\pm (5 \% + 0.1 \Omega)$<br>CR0402 ..... $\pm (3 \% + 0.1 \Omega)$<br>0 $\Omega$ Jumper..... 100 m $\Omega$ or less  |
| Load Life Humidity              | 1000 hours at rated voltage , 40 $\pm$ 2 °C,<br>90~95 % RH 1.5 hours "ON ", 0.5 hour "OFF"                                                                                                                      | 1 %: $\leq \pm (1 \% + 0.05 \Omega)$<br>5 %: $\leq \pm (3 \% + 0.1 \Omega)$<br><i>Remarks:</i><br>CR01005, CR0201 ..... $\pm (5 \% + 0.1 \Omega)$<br>CR0402 ..... $\pm (3 \% + 0.1 \Omega)$<br>0 $\Omega$ Jumper..... 100 m $\Omega$ or less  |
| Rapid Change of Temperature     | -55 °C (30 min.) / +155 °C (30 min.) 5 cycles                                                                                                                                                                   | 1 %: $\leq \pm (0.5 \% + 0.05 \Omega)$<br>5 %: $\leq \pm (1 \% + 0.05 \Omega)$<br><i>Remarks:</i><br>CR01005, CR0201 ..... $\pm (3 \% + 0.1 \Omega)$<br>0 $\Omega$ Jumper..... 50 m $\Omega$ or less                                          |
| Resistance to Solder Heat       | 270 $\pm$ 5 °C, 10 $\pm$ 1 sec.                                                                                                                                                                                 | 1 %: $\leq \pm (0.5 \% + 0.05 \Omega)$<br>5 %: $\leq \pm (1 \% + 0.05 \Omega)$<br><i>Remarks:</i><br>CR01005 ..... $\pm (3 \% + 0.05 \Omega)$<br>CR0201 ..... $\pm (3 \% + 0.1 \Omega)$<br>0 $\Omega$ Jumper..... 50 m $\Omega$ or less       |
| Solderability                   | 245 $\pm$ 5 °C solder, 2 $\pm$ 0.5 seconds dwell<br>Solder: Sn96.5 / Ag3.0 / Cu0.5                                                                                                                              | Over 95 % of termination must be covered with solder                                                                                                                                                                                          |
| Resistance to Dry Heat          | 155 $\pm$ 5 °C for 96 $\pm$ 4 hours<br><i>Remarks:</i><br>CR0201 ..... 125 $\pm$ 5 °C                                                                                                                           | 1 %: $\leq \pm (1 \% + 0.05 \Omega)$<br>5 %: $\leq \pm (1 \% + 0.05 \Omega)$<br><i>Remarks:</i><br>CR01005, CR0201 ..... $\pm (1 \% + 0.1 \Omega)$<br>0 $\Omega$ Jumper..... 50 m $\Omega$ or less                                            |
| Bending                         | 3 mm deflection<br><i>Remarks:</i><br>CR2010, CR2512 ..... 2 mm deflection                                                                                                                                      | 1 %: $\leq \pm (0.5 \% + 0.05 \Omega)$<br>5 %: $\leq \pm (2 \% + 0.1 \Omega)$<br><i>Remarks:</i><br>CR01005, CR0201 ..... $\pm (3 \% + 0.1 \Omega)$<br>CR0402 ..... $\pm (2 \% + 0.1 \Omega)$<br>0 $\Omega$ Jumper..... 50 m $\Omega$ or less |
| Dielectric Withstanding Voltage | 500 V, 1 minute<br><i>Remarks:</i><br>CR01005, CR0201 ..... 50 V<br>CR0402 ..... 300 V                                                                                                                          | No abnormalities such as flashover, burning or dielectric breakdown shall appear                                                                                                                                                              |
| Insulation Resistance           | 100 V, 1 minute<br><i>Remarks:</i><br>CR0201 ..... 50 V                                                                                                                                                         | $\geq 1 \text{ G}\Omega$<br><i>Remarks:</i><br>CR01005 ..... $\geq 100 \text{ M}\Omega$                                                                                                                                                       |

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## CR Series - Thick Film Chip Resistors

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### How to Order

CR 1206 - F X - 1003 E LF

#### Model

(CR = Chip Resistor)

#### Size

01005 = 01005 size  
0201 = 0201 size  
0402 = 0402 size  
0603 = 0603 size  
0805 = 0805 size  
1206 = 1206 size  
2010 = 2010 size  
2512 = 2512 size

#### Resistance Tolerance

F =  $\pm 1\%$   
J =  $\pm 5\%$

#### TCR (ppm/°C) – See Electrical Characteristics Chart

X =  $\pm 100$   
W =  $\pm 200$   
V =  $\pm 300$   
Z =  $\pm 400$   
/ = Used for zero  $\Omega$  (jumper) and values from 1  $\Omega$  through 9.76  $\Omega$ .

#### Resistance Value

##### For 1 % Tolerance:

<100  $\Omega$  ..... "R" represents decimal point (example: 24R3 = 24.3  $\Omega$ ).

$\geq 100 \Omega$  ..... First three digits are significant, fourth digit represents number of zeros to follow (example: 8252 = 82.5K  $\Omega$ ).

##### For 5 % Tolerance:

<10  $\Omega$  ..... "R" represents decimal point (example: 4R7 = 4.7  $\Omega$ ).

$\geq 10 \Omega$  ..... First two digits are significant, third digit represents number of zeros to follow (example: 474 = 470K  $\Omega$ ; 000 = Jumper).

#### Packaging

G = Paper Tape (10,000 pcs.) on 7-inch Plastic Reel – CR01005, CR0201, CR0402  
E = Paper Tape (5,000 pcs.) on 7-inch Plastic Reel – CR0603, CR0805, CR1206 or  
Embossed Tape (4,000 pcs) on 7-inch Plastic Reel – CR2010, CR2512

#### Termination

LF = Tin-plated (RoHS Compliant)

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## CR Series - Thick Film Chip Resistors

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### EIA-96 Marking for CR0603, 1 %

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

### Multipliers

| Code       | A               | B               | C               | D               | E               | F               | G               | H               | X                | Y                | Z                |
|------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|
| Multiplier | 10 <sup>0</sup> | 10 <sup>1</sup> | 10 <sup>2</sup> | 10 <sup>3</sup> | 10 <sup>4</sup> | 10 <sup>5</sup> | 10 <sup>6</sup> | 10 <sup>7</sup> | 10 <sup>-1</sup> | 10 <sup>-2</sup> | 10 <sup>-3</sup> |

### Marking Explanation

0Ω JUMPER:



CR01005, CR0201,  
CR0402:

No marking.



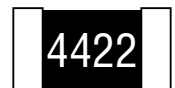
CR0603, CR0805, CR1206,  
CR2010, CR2512:

- E-24: 3 digits; first two digits are significant, third digit is number of zeros to follow.  
Letter R is decimal point.



(Value = 10K Ω)

- E-96: 4 digits; first three digits are significant, fourth digit is number of zeros to follow.  
Letter R is decimal point.



(Value = 44.2K Ω)

- CR0603 E-96: EIA-96 marking (see table).



(Value = 12.4K Ω)

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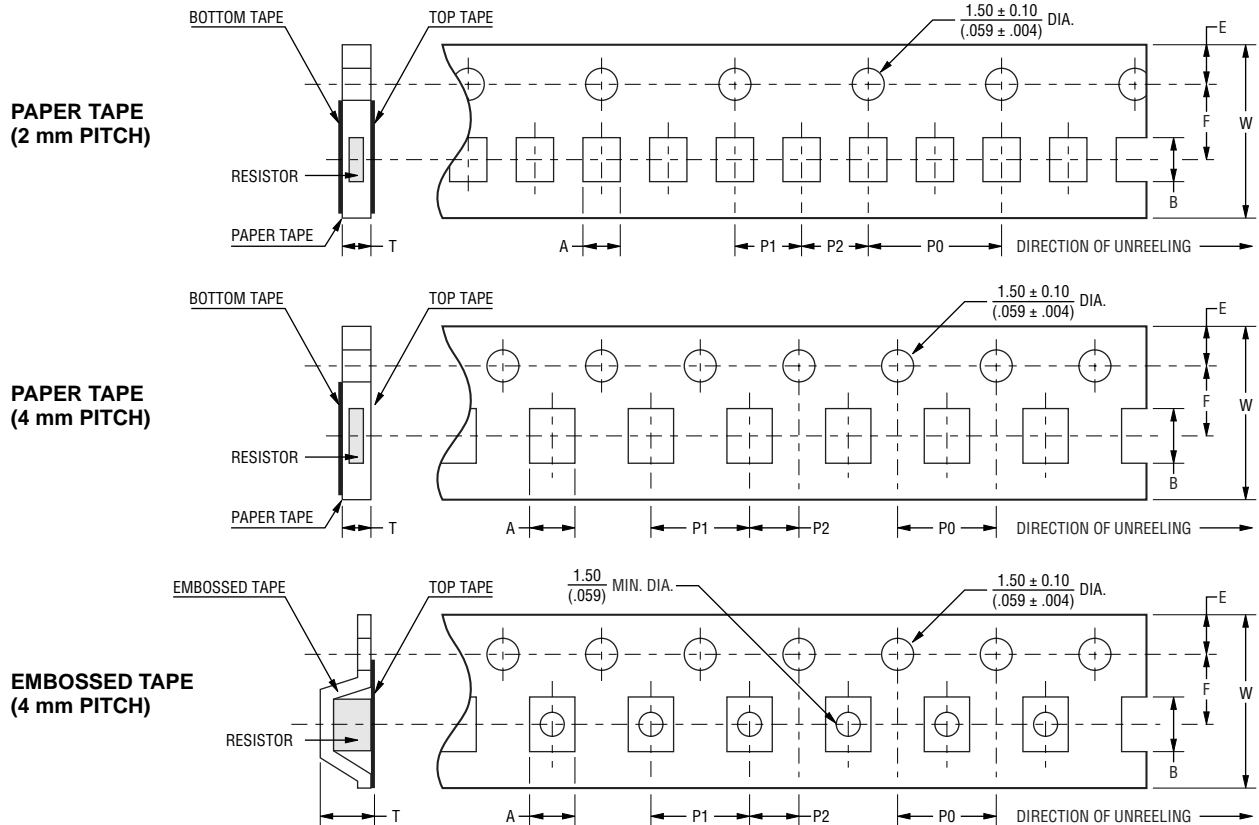
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## Packaging Dimensions (Conforms to EIA RS-481A)



| Model   | Tape Type                  | A                                       | B                                       | W                                        | F                                       | E                                       | P1                                      | P2                                      | P0                                      | T                                       |
|---------|----------------------------|-----------------------------------------|-----------------------------------------|------------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|
| CR01005 | Paper Tape (2 mm pitch)    | $\frac{0.24 \pm 0.05}{(.010 \pm .002)}$ | $\frac{0.45 \pm 0.10}{(.018 \pm .004)}$ | $\frac{8.00 \pm 0.20}{(.315 \pm .008)}$  | $\frac{3.50 \pm 0.05}{(.138 \pm .002)}$ | $\frac{1.75 \pm 0.10}{(.069 \pm .004)}$ | $\frac{2.00 \pm 0.10}{(.079 \pm .004)}$ | $\frac{2.00 \pm 0.05}{(.079 \pm .002)}$ | $\frac{4.00 \pm 0.10}{(.157 \pm .004)}$ | $\frac{0.15 \pm 0.10}{(.006 \pm .004)}$ |
| CR0201  | Paper Tape (2 mm pitch)    | $\frac{0.37 \pm 0.05}{(.014 \pm .002)}$ | $\frac{0.67 \pm 0.10}{(.026 \pm .004)}$ |                                          |                                         |                                         |                                         |                                         |                                         | $\frac{0.37 \pm 0.10}{(.015 \pm .004)}$ |
| CR0402  |                            | $\frac{0.70 \pm 0.05}{(.028 \pm .002)}$ | $\frac{1.20 \pm 0.05}{(.047 \pm .002)}$ |                                          |                                         |                                         |                                         |                                         |                                         | $\frac{0.45 \pm 0.10}{(.018 \pm .004)}$ |
| CR0603  | Paper Tape (4 mm pitch)    | $\frac{1.10 \pm 0.10}{(.043 \pm .004)}$ | $\frac{1.90 \pm 0.10}{(.075 \pm .004)}$ |                                          |                                         |                                         | $\frac{0.64 \pm 0.10}{(.025 \pm .004)}$ |                                         |                                         |                                         |
| CR0805  |                            | $\frac{1.60 \pm 0.15}{(.063 \pm .006)}$ | $\frac{2.40 \pm 0.20}{(.094 \pm .008)}$ |                                          |                                         |                                         | $\frac{0.84 \pm 0.10}{(.033 \pm .004)}$ |                                         |                                         |                                         |
| CR1206  |                            | $\frac{2.00 \pm 0.15}{(.079 \pm .006)}$ | $\frac{3.60 \pm 0.20}{(.142 \pm .008)}$ |                                          |                                         |                                         | $\frac{0.84 \pm 0.10}{(.033 \pm .004)}$ |                                         |                                         |                                         |
| CR2010  | Embossed Tape (4 mm pitch) | $\frac{2.80 \pm 0.20}{(.110 \pm .008)}$ | $\frac{5.30 \pm 0.20}{(.209 \pm .008)}$ | $\frac{12.00 \pm 0.20}{(.472 \pm .008)}$ | $\frac{5.50 \pm 0.05}{(.217 \pm .002)}$ |                                         |                                         |                                         |                                         | $\frac{0.85 \pm 0.15}{(.033 \pm .006)}$ |
| CR2512  |                            | $\frac{3.60 \pm 0.20}{(.142 \pm .008)}$ | $\frac{6.90 \pm 0.20}{(.272 \pm .008)}$ |                                          |                                         |                                         |                                         |                                         |                                         | $\frac{0.85 \pm 0.15}{(.033 \pm .006)}$ |

Specifications are subject to change without notice.

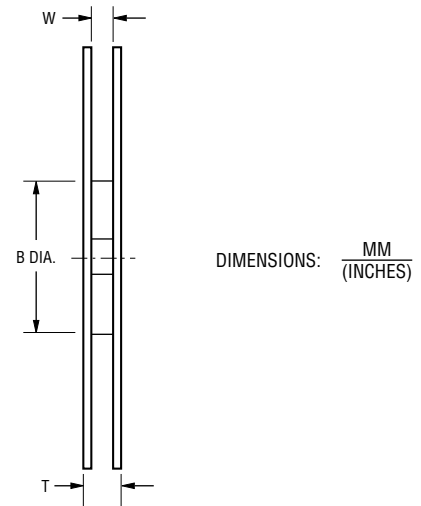
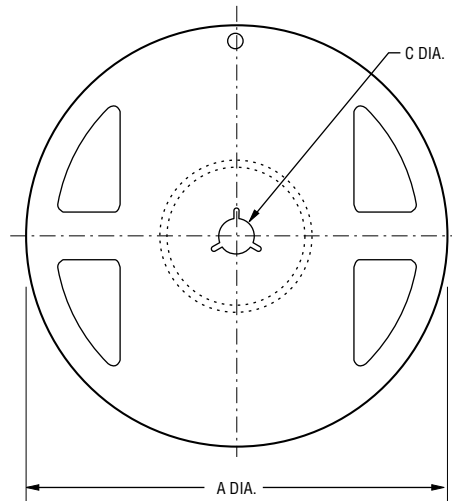
Users should verify actual device performance in their specific applications.

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## CR Series - Thick Film Chip Resistors

**BOURNS®**

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



| Model   | Packaging Quantity | A                                      | B                                     | C                                      | W                                      | T                                      |                                        |                                        |                                        |                                        |                                        |                                        |
|---------|--------------------|----------------------------------------|---------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|
| CR01005 | 10K pcs./reel      | $\frac{178 \pm 2.0}{(7.008 \pm .079)}$ | $\frac{60 \pm 1.0}{(2.362 \pm .039)}$ | $\frac{13.0 \pm 1.0}{(.512 \pm .039)}$ | $\frac{9.0 \pm 1.0}{(.354 \pm .039)}$  | $\frac{11.5 \pm 1.0}{(.453 \pm .039)}$ |                                        |                                        |                                        |                                        |                                        |                                        |
| CR0201  |                    |                                        |                                       |                                        |                                        |                                        |                                        |                                        |                                        |                                        |                                        |                                        |
| CR0402  |                    |                                        |                                       |                                        |                                        |                                        |                                        |                                        |                                        |                                        |                                        |                                        |
| CR0603  | 5K pcs./reel       |                                        |                                       |                                        | $\frac{178 \pm 2.0}{(7.008 \pm .079)}$ | $\frac{60 \pm 1.0}{(2.362 \pm .039)}$  | $\frac{13.0 \pm 1.0}{(.512 \pm .039)}$ | $\frac{9.0 \pm 1.0}{(.354 \pm .039)}$  | $\frac{11.5 \pm 1.0}{(.453 \pm .039)}$ |                                        |                                        |                                        |
| CR0805  |                    |                                        |                                       |                                        |                                        |                                        |                                        |                                        |                                        |                                        |                                        |                                        |
| CR1206  |                    |                                        |                                       |                                        |                                        |                                        |                                        |                                        |                                        |                                        |                                        |                                        |
| CR2010  | 4K pcs./reel       |                                        |                                       |                                        |                                        |                                        |                                        | $\frac{178 \pm 2.0}{(7.008 \pm .079)}$ | $\frac{60 \pm 1.0}{(2.362 \pm .039)}$  | $\frac{13.0 \pm 1.0}{(.512 \pm .039)}$ | $\frac{13.0 \pm 1.0}{(.512 \pm .039)}$ | $\frac{15.5 \pm 1.0}{(.610 \pm .039)}$ |
| CR2512  |                    |                                        |                                       |                                        |                                        |                                        |                                        |                                        |                                        |                                        |                                        |                                        |

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