



## Features

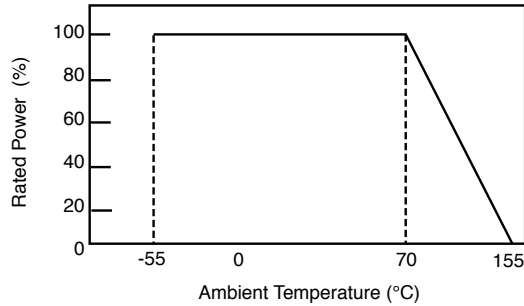
- Small package dimensions
- RoHS compliant\*
- Power rating at 70 °C = 1/16 W
- Tight dimensional tolerances
- Three layer termination process with nickel barrier prevents leaching and provides excellent solderability
- Suitable for most types of soldering processes
- Standard packaging on paper tape and reel

## CR0402 - Chip Resistor

### Electrical Characteristics

Power Rating @ 70 °C .....1/16 W  
 Operating Temperature Range  
 .....-55 °C to +155 °C  
 Derated to 0 Load at.....+155 °C  
 Maximum Working Voltage.....50 V  
 Maximum Overload Voltage .....100 V  
 Resistance Range  
 1 %, E-96  
 and E-24..... 10 ohms to 10 megohms  
 5 %, E-24 ..... 1 ohm to 20 megohms  
 Zero Ohm Jumper.....<0.05 ohms  
 Temperature Coefficient  
 1 % ..... 10 Ω ≤ R ≤ 1 MΩ ±100 ppm/°C  
 1 MΩ < R ≤ 10 MΩ ±200 ppm/°C  
 5 % ..... 10 Ω ≤ R ≤ 10 MΩ ±200 ppm/°C  
 10 MΩ < R ≤ 20 MΩ ±400 ppm/°C  
 1 Ω ≤ R < 10 Ω -200 to +500 ppm/°C  
 AEC-Q200 ..... Contact Bourns  
 to confirm availability

### Derating Curve



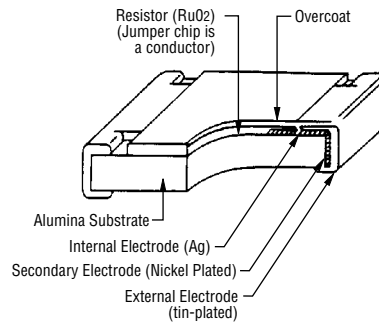
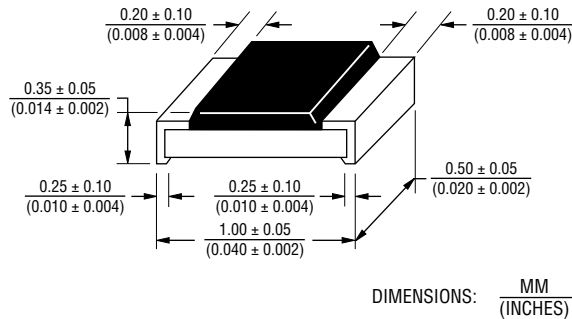
### Standard Values

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

### Part Marking System

No Marking on the CR0402 Chip Resistors.

### Dimensional Drawings



### Performance Characteristics

Test	Procedure	Method	Test Limits ΔR	
			1 %	5 %
Thermal Shock	-55 °C for 30 minutes, +155 °C for 30 minutes, 5 cycles	IEC60115-1-4.19	≤±(0.5 % + 0.05 Ω)	≤±(1 % + 0.05 Ω)
Short Time Overload	2.5 X rated voltage for 5 seconds	IEC60115-1-4.13	≤±(2 % + 0.1 Ω)	
Resistance to Solder Heat	270 ±5 °C for 10 ±1 seconds	IEC60115-1-4.18	≤±(0.5 % + 0.05 Ω)	≤±(1 % + 0.05 Ω)
Resistance to Dry Heat	125 ±5 °C for 96 ±4 hours	IEC60115-1-4.23.2	≤±(1 % + 0.05 Ω)	≤±(2 % + 0.1 Ω)
Load Life	Rated voltage for 1000 hours, 70 °C, 1.5 hours "ON", 0.5 hours "OFF"	IEC60115-1-4.25.1	≤±(3 % + 0.1 Ω)	
Load Life with Humidity	Rated voltage for 1000 hours, 40 ±2 °C, 90~95 % RH, 1.5 hours "ON", 0.5 hours "OFF"	IEC60115-1-4.24	≤±(3 % + 0.1 Ω)	
Solderability	245 ±5 °C, 2 ±0.5 seconds	IEC60115-1-4.17	≥95 % of area covered	
Bending	3 mm	IEC60115-1-4.33	≤±(0.5 % + 0.05 Ω)	≤±(1 % + 0.05 Ω)
Dielectric Withstanding Voltage	--	IEC60115-1-4.7	>100 V	
Insulation Resistance	100 V	IEC60115-1-4.6	≥1 GΩ	



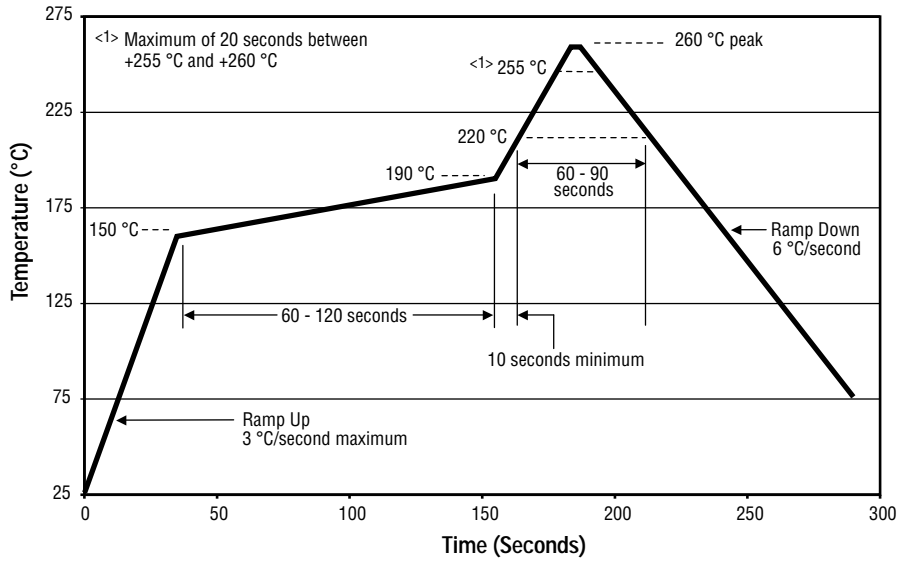
**WARNING**  
**Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\*RoHS Directive 2015/863, Mar 31, 2015 and Annex.  
 Specifications are subject to change without notice.  
 Users should verify actual device performance in their specific applications.  
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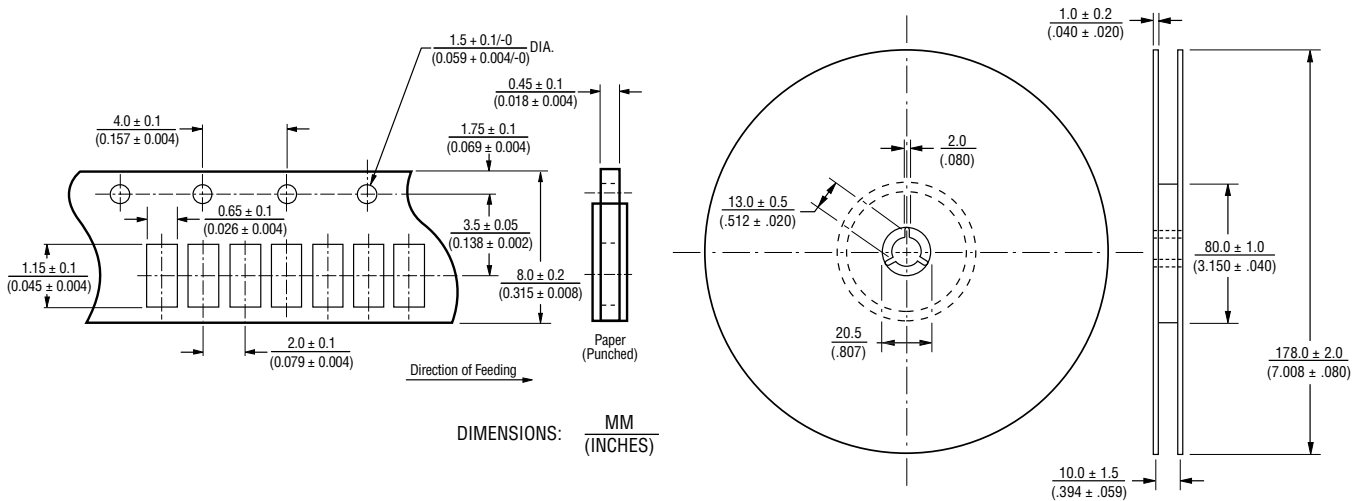
# CR0402 - Chip Resistor

**BOURNS®**

## Soldering Profile for RoHS Compliant Chip Resistor and Arrays



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



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# CR0402 - Chip Resistor

**BOURNS®**

## How to Order

CR 0402 - F X - 8252 G LF

Model \_\_\_\_\_  
(CR = Chip Resistor)

Size \_\_\_\_\_  
• 0402

Resistance Tolerance \_\_\_\_\_  
F =  $\pm 1\%$  .....Used with "X" TCR code only for values from 10 ohms through 1 megohm; and  
Used with "W" TCR code only for values above 1 megohm. through 10 megohms.  
J =  $\pm 5\%$  ..... Used with "W" TCR code for values from 10 ohms through 10 megohms;  
Used with "Z" TCR code for values above 10 megohms through 20 megohms;  
Used with "/" TCR code for zero ohm (jumper); and for values from 1 ohm through 9.1 ohms.

TCR (ppm/ $^{\circ}$ C) \_\_\_\_\_  
X =  $\pm 100$   
W =  $\pm 200$   
Z =  $\pm 400$   
/ = -200 to +500

Resistance Value \_\_\_\_\_  
For 1 % Tolerance:  
<100 ohms ..... "R" designates decimal point (example: 24R3 = 24.3 ohms)  
 $\geq 100$  ohms.....First three digits are significant, fourth digit represents number of zeros to follow (example: 8252 = 82.5k ohms).  
For 5 % Tolerance:  
<10 ohms ..... "R" designates decimal point (example: 4R7 = 4.7 ohms)  
 $\geq 10$  ohms.....First two digits are significant, third digit represents number of zeros to follow (example: 474 = 470k ohms; 000 = Jumper).

Packaging \_\_\_\_\_  
G = Paper Tape (10,000 pcs.) on 7" Plastic Reel

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

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