

Features

- RoHS compliant*
- Power rating at 70 °C: CR0603 - 0.10 W, CR0805 - 0.125 W, CR1206 - 0.25 W
- Tight tolerances of bottom electrode width
- Suitable for all types of soldering processes
- Three layer contacting process with nickel barrier prevents leaching and provides excellent solderability
- Paper tape on reel for automatic placement

CR0603/CR0805/CR1206 - Chip Resistors

Electrical Characteristics

Characteristic	Model CR0603	Model CR0805	Model CR1206
Power Rating @ 70 °C	1/10 W	1/8 W	1/4 W
Operating Temperature Range	-55 °C to +155 °C		
Derated to 0 Load at	+155 °C		
Maximum Working Voltage	75 V	150 V	200 V
Maximum Overload Voltage	150 V	300 V	400 V
Resistance Range: 1 % E-96 + E-24	10 ohms ≤ R ≤ 1M ohms ±100 PPM/°C		
Resistance Range: 5 % E-24	1M ohms < R ≤ 10M ohms ±200 PPM/°C		
Zero Ohm Jumper <0.05 ohm Rated / Maximum Current	1 A / 2.5 A	2 A / 5 A	2 A / 5 A

AEC-Q200: Contact Bourns to confirm availability.

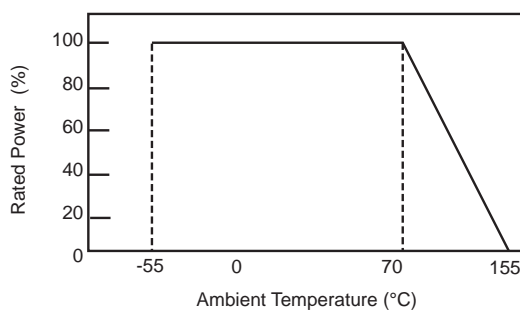
For Standard Values Used in Capacitors, Inductors, and Resistors, [click here](#).

Chip Dimensions

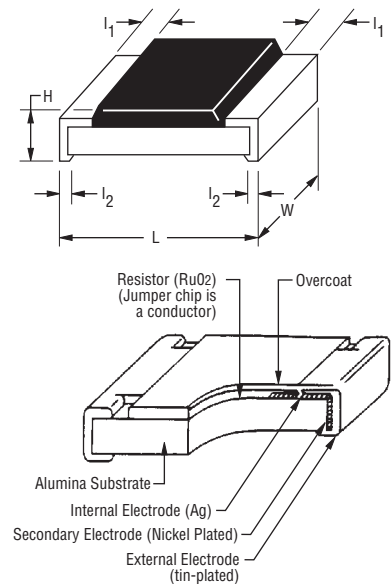
Dimension	Model CR0603	Model CR0805	Model CR1206
L	$\frac{1.60 \pm 0.10}{(0.063 \pm 0.004)}$	$\frac{2.00 \pm 0.15}{(0.079 \pm 0.006)}$	$\frac{3.20 \pm 0.25}{(0.126 \pm 0.010)}$
W	$\frac{0.80 \pm 0.10}{(0.031 \pm 0.004)}$	$\frac{1.25 \pm 0.15}{(0.049 \pm 0.006)}$	$\frac{1.60 \pm 0.15}{(0.063 \pm 0.006)}$
H	$\frac{0.45 \pm 0.10}{(0.018 \pm 0.004)}$	$\frac{0.50 \pm 0.10}{(0.020 \pm 0.004)}$	$\frac{0.60 \pm 0.15}{(0.024 \pm 0.006)}$
l1	$\frac{0.30 \pm 0.20}{(0.012 \pm 0.008)}$	$\frac{0.40 \pm 0.20}{(0.016 \pm 0.008)}$	$\frac{0.50 \pm 0.25}{(0.020 \pm 0.010)}$
l2	$\frac{0.30 \pm 0.20}{(0.012 \pm 0.008)}$	$\frac{0.40 \pm 0.20}{(0.016 \pm 0.008)}$	$\frac{0.50 \pm 0.20}{(0.020 \pm 0.010)}$

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

Derating Curve



Characteristic Data



WARNING
Cancer and Reproductive Harm

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. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf

CR0603/CR0805/CR1206 - Chip Resistors

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Performance Characteristics

Test	Procedure	Method	Specification	Test Limits ΔR	
				1 %	5 %
DC Resistance	--	MIL-STD-202 303 EIA RS-396 4.4	MIL-R-55342D 4.7.2	$\leq \pm 1 \%$	$\leq \pm 5.0 \%$
Low Temperature Operation	-55 °C, 1 hour "OFF"; 45 minutes "ON"	MIL-R-55342D 4.7.4 EIA RS-396 4.6	MIL-R-55342D 4.7.4	$\leq \pm(0.5 \% + 0.05 \Omega)$	$\leq \pm(1.0 \% + 0.05 \Omega)$
Short time Overload	Rated Voltage x 2.5, 5 seconds: CR0603: 100 V max. CR0805: 300 V max. CR1206: 400 V max.	MIL-R-55342D 4.7.5 EIA RS-396 4.7	MIL-R-55342D 4.7.5	$\leq \pm(1 \% + 0.05 \Omega)$	$\leq \pm(2 \% + 0.05 \Omega)$
High Temperature Exposure	+125 °C, 1000 hours	MIL-R-55342D 4.7.6 EIA RS-396 4.8	MIL-R-55342D 4.7.6	$\leq \pm(1.0 \% + 0.05 \Omega)$	$\leq \pm(2.0 \% + 0.1 \Omega)$
Resistance to Solder Heat	260 °C, 10 seconds	MIL-R-55342D 4.7.7	MIL-R-55342D 4.7.7	$\leq \pm(0.5 \% + 0.05 \Omega)$	$\leq \pm(1.0 \% + 0.05 \Omega)$
Moisture Resistance	90-98 % RH, 10 cycles	MIL-STD-202 106D EIA RS-396 4.9	MIL-R-55342D 4.7.8	$\leq \pm(0.5 \% + 0.05 \Omega)$	$\leq \pm(2.0 \% + 0.05 \Omega)$
Load Life	+70 °C; 1.5 hours "ON", 0.5 hours "OFF"; 1000 hours	MIL-STD-202 108 Condition D EIA RS-396 4.12	MIL-R-55342D 4.7.10	$\leq \pm(1.0 \% + 0.05 \Omega)$	$\leq \pm(3.0 \% + 0.1 \Omega)$
Solderability	+235 °C; 3 seconds	MIL-STD-202 208 EIA RS-396 4.11	MIL-R-55342D 4.7.11	$\geq 95 \%$ of area covered	
Terminal Strength	Pull Test	MIL-R-55342D 4.7.12	MIL-R-55342D 4.7.12	≥ 500 g	
Current Noise	Quan-Tech Model 315B	MIL-STD-202 308	MIL-R-55342D 6.6	R \leq 1 kW; 1 mV/V max. R \leq 10 kW; 3 mV/V max. R \leq 100 kW; 6 mV/V max. R \leq 1 MW; 10 mV/V max.	
Humidity, Steady State	+40 °C; 90-95 % RH, 1344 hours	MIL-STD-202 103B Condition D	--	$\leq \pm(2.5 \% + 0.05 \Omega)$	$\leq \pm(2.5 \% + 0.05 \Omega)$
Salt Spray	96 hours	MIL-STD-202 101D Condition A	--	$\leq \pm(1.0 \% + 0.2 \Omega)$	$\leq \pm(1.0 \% + 0.1 \Omega)$
Vibration	10-2000 Hz, 6 hours	MIL-STD-202 201A	--	$\leq \pm(0.5 \% + 0.1 \Omega)$	$\leq \pm(1.0 \% + 0.1 \Omega)$
Voltage Coefficient	--	MIL-STD-202 309	--	≤ 100 ppm/V	
Insulation Resistance	Test potential: 500V CR0603: 100 V	MIL-STD-202 302 Condition B	--	≥ 1 G Ω	
Dielectric Withstanding Voltage	--	MIL-STD-202 301	--	CR0805, CR1206: ≥ 500 V CR0603: ≥ 300 V	
Drop Test	1 m	MIL-STD-202 203B	--	$\leq \pm(0.5 \% + 0.1 \Omega)$	$\leq \pm(1 \% + 0.1 \Omega)$
Bending Test	5 mm/90 mm, 10 seconds	--	--	$\leq \pm(1 \% + 0.05 \Omega)$	$\leq \pm(1 \% + 0.05 \Omega)$
Thermal Shock	-55 °C for 30 minutes, +155 °C for 30 minutes, 5 cycles	IEC 60115-1-4.19	--	$\leq \pm(0.5 \% + 0.05 \Omega)$	$\leq \pm(1 \% + 0.05 \Omega)$
Resistance to Dry Heat	125 \pm 5 °C for 96 \pm 4 hours	IEC 60115-1-4.23.2	--	$\leq \pm(1 \% + 0.05 \Omega)$	$\leq \pm(2 \% + 0.1 \Omega)$

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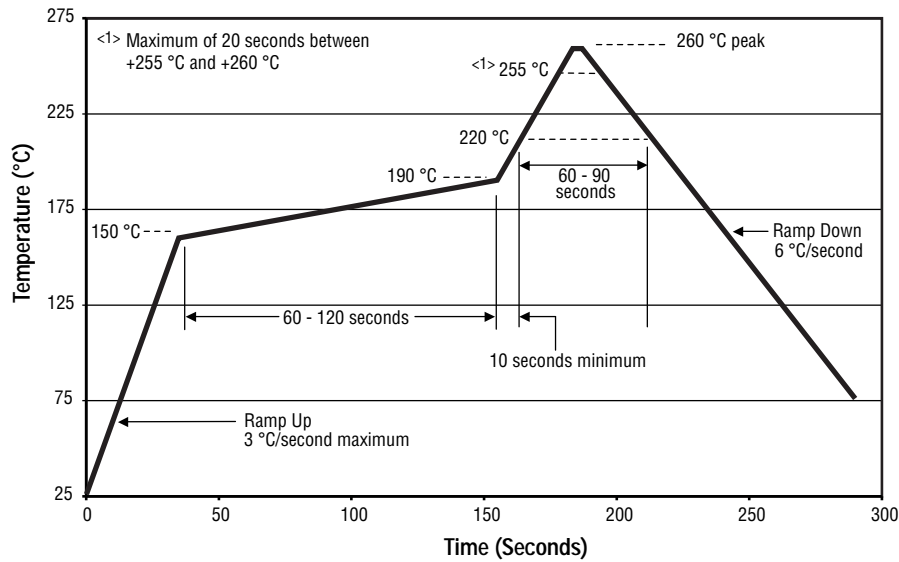
Users should verify actual device performance in their specific applications.

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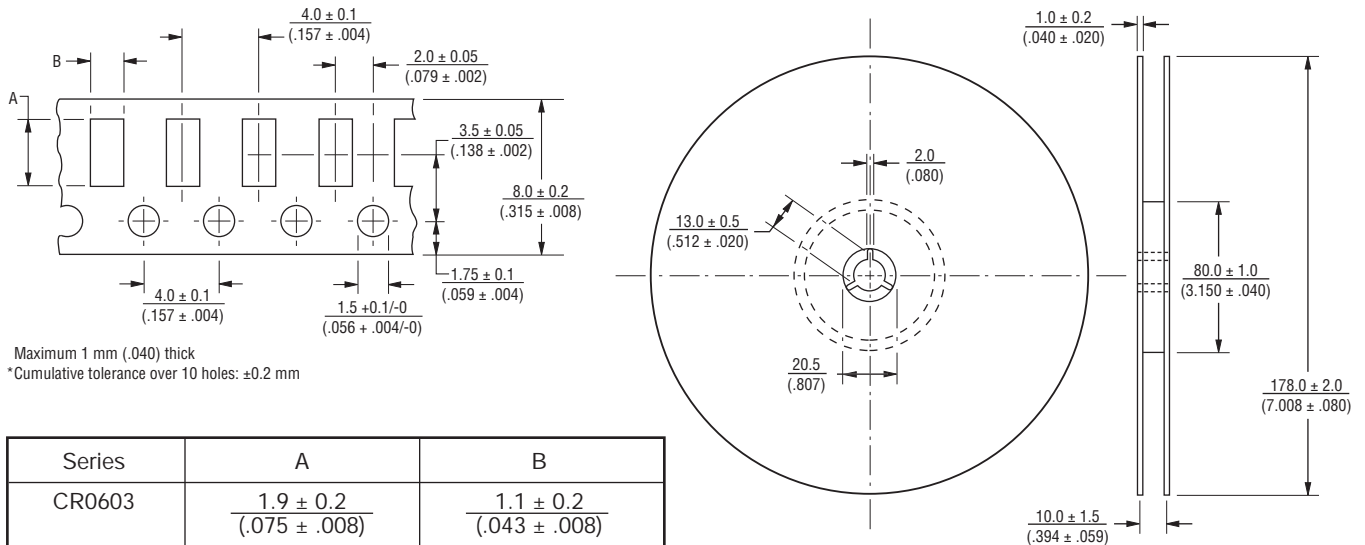
CR0603/CR0805/CR1206 - Chip Resistors



Soldering Profile for RoHS Compliant Chip Resistors and Arrays



Packaging Dimensions (Conforms to EIA RS-481A)



Series	A	B
CR0603	$\frac{1.9 \pm 0.2}{(.075 \pm .008)}$	$\frac{1.1 \pm 0.2}{(.043 \pm .008)}$
CR0805	$\frac{2.4 \pm 0.2}{(.094 \pm .008)}$	$\frac{1.65 \pm 0.2}{(.065 \pm .008)}$
CR1206	$\frac{3.57 \pm 0.2}{(.161 \pm .008)}$	$\frac{2.00 \pm 0.2}{(.079 \pm .008)}$

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

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

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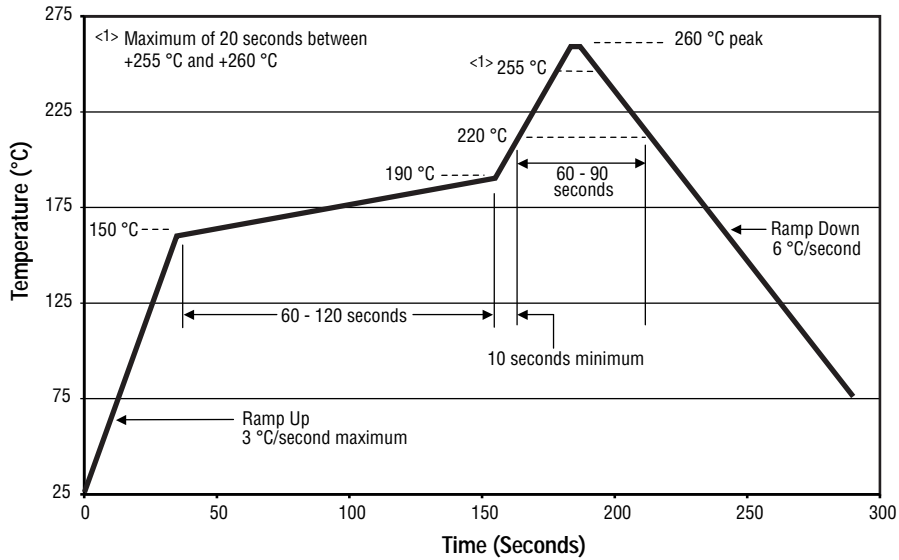
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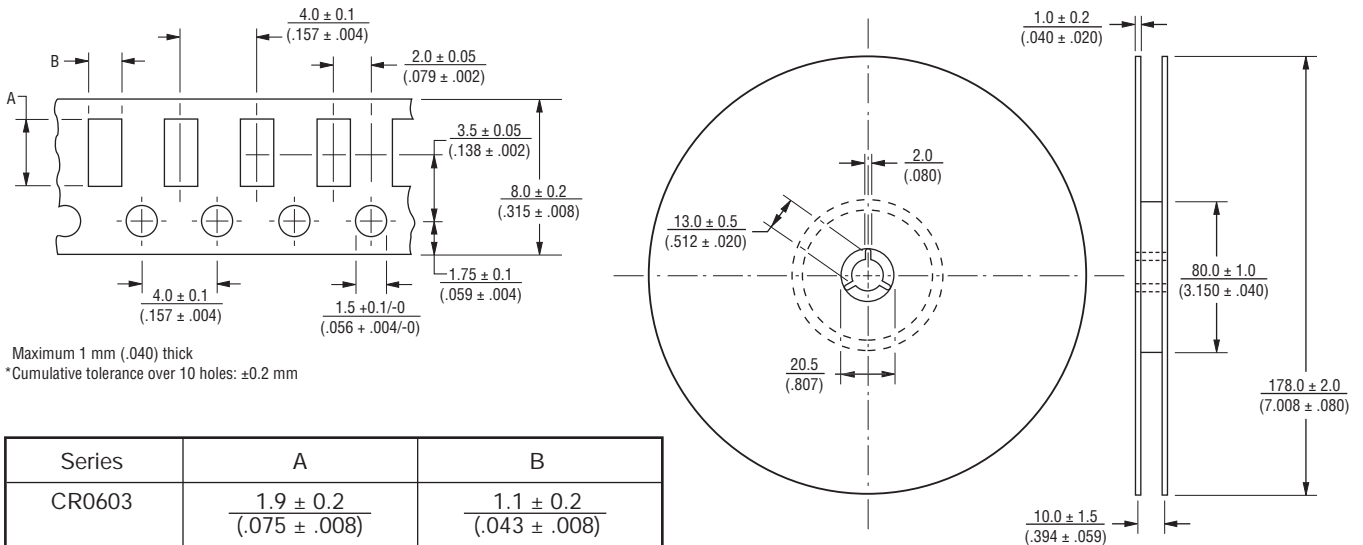
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CR0603/CR0805/CR1206 - Chip Resistors

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How To Order

CR 1206 - F X - 8252 E LF

Model _____
(CR = Chip Resistor)

Size _____
0603
0805
1206

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

TCR (ppm/°C) _____
X = ±100
W = ±200
Z = ±400
= Used with "J" Resistance Tolerance code for zero ohm (jumper) and values from 1 ohm through 9.1 ohms.

Resistance Value _____

For 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).

For 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; 000 = Jumper).

Packaging _____
E = Paper Tape (5,000 pcs.) on 7" Plastic Reel

Termination _____
LF = Tin-plated (RoHS Compliant)

BOURNS®

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