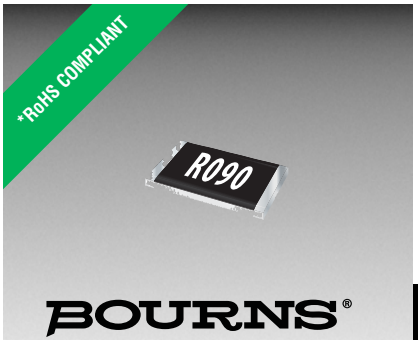


Features

- RoHS compliant*
- Values from 0.02 to 9.10 ohms
- Tolerance of 1 % or 5 %
- Five package sizes available
- Tape and reel packaging

Select models are currently available, but not recommended for new designs. See Product Obsolescence Memo for details.

CRL Series - Low Value Chip Resistors

Electrical Characteristics

Characteristic	Model CRL0603	Model CRL0805	Model CRL1206	Model CRL2010	Model CRL2512
Power Rating @ 70 °C	0.100 watt	0.125 watt	0.250 watt	0.50 watt	1.00 watt
Operating Temperature Range	-55 to +125 °C				
Derated to Zero Load at	+125 °C				
Maximum Working Voltage	$(PR)^{1/2}$	$(PR)^{1/2}$	$(PR)^{1/2}$	$(PR)^{1/2}$	$(PR)^{1/2}$
Resistance Range E24 Values: See Value Table:	 0.10 to 9.10 Ω N/A	 0.10 to 9.10 Ω 0.05 to 0.09 Ω	 0.10 to 9.10 Ω 0.02 to 0.09 Ω	 0.10 to 9.10 Ω 0.02 to 0.09 Ω	 0.10 to 9.10 Ω 0.02 to 0.09 Ω
Temperature Coefficient 0.05 Ω to 9.10 Ω 0.03 Ω to 0.04 Ω 0.02 Ω	 ±200 PPM/°C ±400 PPM/°C ±600 PPM/°C				

Value Table

Value (Ω)	CRL0603 1 %	CRL0603 5 %	CRL0805 1 %	CRL0805 5 %	CRL1206 1 %	CRL1206 5 %	CRL2010 1 %	CRL2010 5 %	CRL2512 1 %	CRL2512 5 %
0.02	Not Available	Not Available	Not Available	Not Available	A	A	P	P	P	P
0.03	Not Available	Not Available	Not Available	Not Available	A	A	P	P	P	P
0.04	Not Available	Not Available	Not Available	Not Available	A	A	P	P	P	P
0.05	Not Available	Not Available	A	A	A	A	P	P	P	P
0.06	Not Available	Not Available	A	A	A	A	A	A	A	A
0.07	Not Available	Not Available	A	A	A	A	A	A	A	A
0.08	Not Available	Not Available	A	A	A	A	A	A	A	A
0.09	Not Available	Not Available	A	A	A	A	A	A	A	A

P = Popular Value
A = Available Value (may have greater minimum order quantity)

Environmental Characteristics

Description	Method	Limit
Short Time Overload	2.5 x $(PR)^{1/2}$ for 5 seconds. (IEC 115-1 4.13)	1 % Tolerance: ΔR ≤ ±(1 % + 0.001 Ω) 5 % Tolerance: ΔR ≤ ±(2 % + 0.001 Ω)
Load Life	$(PR)^{1/2}$ for 1000 hours; 1.5 hours on; 0.5 hours off. (IEC 115-1 4.25.1)	1 % Tolerance: ΔR ≤ ±(1 % + 0.001 Ω) 5 % Tolerance: ΔR ≤ ±(2 % + 0.001 Ω)
Resistance to Soldering Heat	260 °C for 10 seconds. (IEC 115-1 4.18)	1 % Tolerance: ΔR ≤ ±(0.5 % + 0.001 Ω) 5 % Tolerance: ΔR ≤ ±(1 % + 0.001 Ω)
Thermal Shock	5 cycles from -55 °C to +125 °C, 30 minutes at temperature. (IEC 115-1 4.19)	1 % Tolerance: ΔR ≤ ±(0.5 % + 0.001 Ω) 5 % Tolerance: ΔR ≤ ±(1 % + 0.001 Ω)

*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.
Specifications are subject to change without notice.
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.
Users should verify actual device performance in their specific applications.

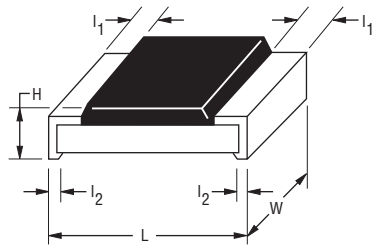
CRL Series - Low Value Chip Resistors

BOURNS®

Chip Dimensions

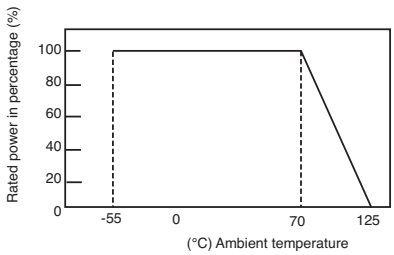
Dimension	Model CRL0603	Model CRL0805	Model CRL1206	Model CRL2010	Model CRL2512
L	1.60 ± 0.10 (0.063 ± 0.004)	2.00 ± 0.15 (0.079 ± 0.006)	3.20 ± 0.15 (0.126 ± 0.006)	5.00 ± 0.20 (0.197 ± 0.008)	6.30 ± 0.20 (0.248 ± 0.008)
W	0.80 ± 0.10 (0.031 ± 0.004)	1.25 ± 0.10 (0.049 ± 0.004)	1.60 ± 0.15 (0.063 ± 0.006)	2.50 ± 0.20 (0.098 ± 0.008)	3.10 ± 0.20 (0.122 ± 0.008)
H	0.45 ± 0.10 (0.018 ± 0.004)	0.50 ± 0.10 (0.020 ± 0.004)	0.60 ± 0.10 (0.024 ± 0.004)	0.60 ± 0.10 (0.024 ± 0.004)	0.60 ± 0.10 (0.024 ± 0.004)
I_1	0.30 ± 0.20 (0.012 ± 0.008)	0.40 ± 0.20 (0.016 ± 0.008)	0.50 ± 0.25 (0.020 ± 0.010)	0.60 ± 0.25 (0.024 ± 0.010)	0.60 ± 0.25 (0.024 ± 0.010)
I_2	0.30 ± 0.20 (0.012 ± 0.008)	0.40 ± 0.20 (0.016 ± 0.008)	0.50 ± 0.25 (0.020 ± 0.010)	0.60 ± 0.25 (0.024 ± 0.010)	0.60 ± 0.20 (0.024 ± 0.008)

Dimensional Drawing



DIMENSIONS: MM / (INCHES)

Derating Curve



How to Order

CRL 0603 - F W - R090 E LF

Model
(CRL = Chip Resistor Low Value)

Size
- 0603
- 0805
- 1206
- 2010
- 2512

Resistance Tolerance
F = ±1 %
J = ±5 %

TCR (PPM/°C)
W = ±200 (0.05 to 9.10 Ω)
V = ±400 (0.03 to 0.04 Ω)
U = ±600 (0.02 Ω)

Resistance Value (1 % or 5 %)
- R stands for decimal point. Three significant digits: (R090 = 0.09 Ω; 9R10 = 9.10 Ω)

Packaging
- CRL0603, CRL0805, CRL1206: E = Paper Tape, Plastic Reel, 5,000 pcs.
- CRL2010, CRL2512: E = Embossed Plastic Tape, Plastic Reel, 4,000 pcs.

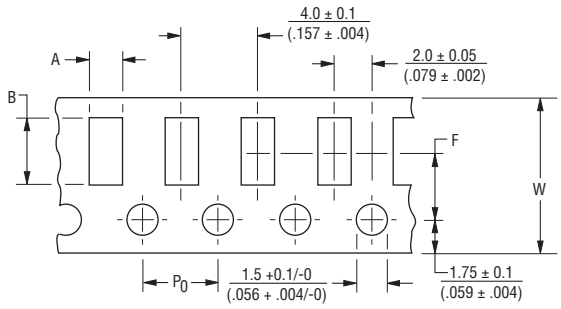
Termination
LF = Tin-plated (RoHS compliant)

Packaging Dimensions - Tape

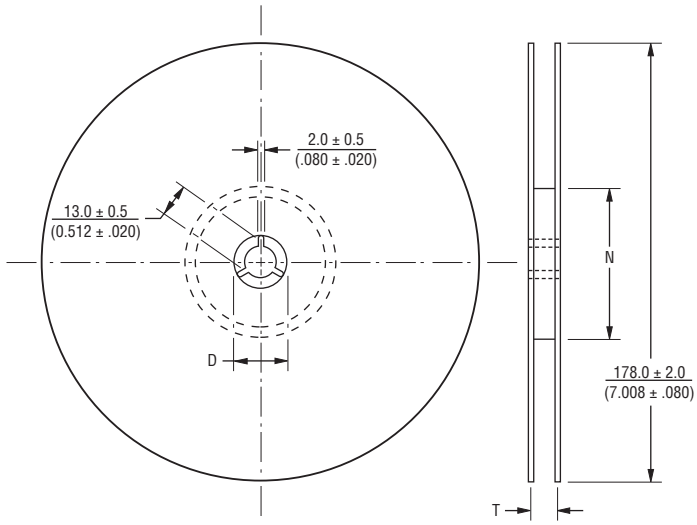
Dimension	Model CRL0603	Model CRL0805	Model CRL1206	Model CRL2010	Model CRL2512
A	1.10 ± 0.10 (0.043 ± 0.004)	1.65 +0.20 / -0.10 (0.065 +0.008 / -.004)	1.95 +0.10 / -0.05 (0.077 +0.004 / -.002)	2.80 ± 0.20 (0.110 ± 0.008)	3.50 ± 0.20 (0.138 ± 0.008)
B	1.90 ± 0.10 (0.075 ± 0.004)	2.40 +0.20 / -0.10 (0.094 +0.008 / -.004)	3.50 ± 0.10 (0.138 ± 0.004)	5.50 ± 0.20 (0.217 ± 0.008)	6.70 ± 0.20 (0.264 ± 0.008)
W	8.00 ± 0.20 (0.315 ± 0.008)	8.00 ± 0.20 (0.315 ± 0.008)	8.00 ± 0.20 (0.315 ± 0.008)	12.0 ± 0.30 (0.472 ± 0.012)	12.00 ± 0.30 (0.472 ± 0.012)
F	3.50 ± 0.05 (0.138 ± 0.002)	3.50 ± 0.05 (0.138 ± 0.002)	3.50 ± 0.05 (0.138 ± 0.002)	5.50 ± 0.05 (0.217 ± 0.002)	5.50 ± 0.05 (0.217 ± 0.002)
P_0	4.00 ± 0.10 (0.157 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)

Packaging Dimensions - Reel

Dimension	Model CRL0603	Model CRL0805	Model CRL1206	Model CRL2010	Model CRL2512
N	80.00 ± 1.00 (3.150 ± 0.040)	80.00 ± 1.00 (3.150 ± 0.040)	80.00 ± 1.00 (3.150 ± 0.040)	80.00 ± 0.20 (3.150 ± 0.008)	80.00 ± 0.20 (3.150 ± 0.008)
D	20.50 (0.807)	20.50 (0.807)	20.50 (0.807)	20.00 (0.787) MIN.	20.00 (0.787) MIN.
T	10.00 ± 1.50 (0.394 ± 0.059)	10.00 ± 1.50 (0.394 ± 0.059)	10.00 ± 1.50 (0.394 ± 0.059)	16.70 (0.657) MAX.	16.70 (0.657) MAX.



DIMENSIONS: MM / (INCHES)



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