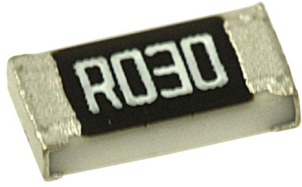


Current Sense Low Value Resistors (LCR Series)



Features:

- RoHS Compliant and Halogen Free
- TCR as low as $\pm 100\text{ppm}$
- Low resistance for current sense resistors
- Resistance Range: $10\text{m}\Omega$ to $900\text{m}\Omega$

Part Number Structure

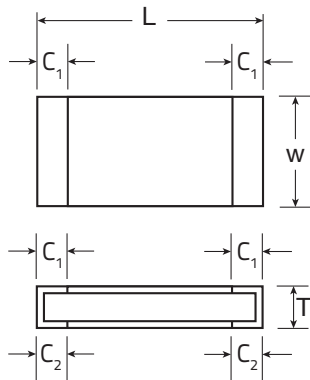
LCR	0805		-	R022	J	T			
Series	Size	Power Rating		Resistance	Tolerance	Packaging	Optional Reel Identifier		
	0402 0603 0805 1206 1210 2010 2512	Leave blank for stanard power rating. Insert "-1W" for 2512 1W.		<table border="1"><tr><td>LCR, 4 DIGIT</td><td>R022=22mΩ R033=33mΩ R120=120mΩ</td></tr></table>	LCR, 4 DIGIT	R022=22mΩ R033=33mΩ R120=120mΩ	F = ± 1% G = ± 2% J = ±5%	T = Tape & Reel	Leave blank if standard Reel size. Add "-13" if 13" Reel is required
LCR, 4 DIGIT	R022=22mΩ R033=33mΩ R120=120mΩ								

Example P/N: LCR0805-R022JT

Standard termination finish is 100% matte Tin (Sn) over Nickel.

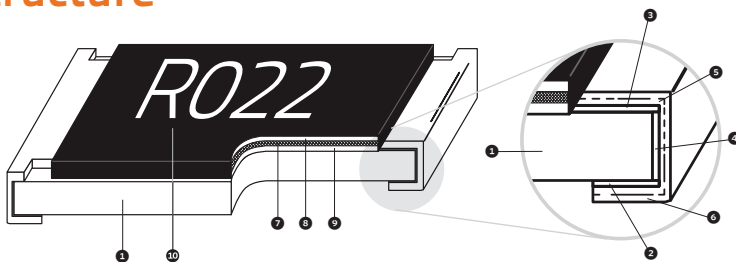
Dimensions

Unit: inches (mm)



Size	L	W	T	C ₁	C ₂
0402	0.040 $\pm$ 0.002 (1.0 $\pm$ 0.05)	0.020 $\pm$ 0.001 (0.5 $\pm$ 0.02)	0.014 $\pm$ 0.002 (0.35 $\pm$.05)	0.010 $\pm$ 0.004 (0.25 $\pm$ 0.1)	0.008 $\pm$ 0.004 (0.20 $\pm$ 0.1)
0603	0.063 $\pm$ 0.004 (1.6 $\pm$ 0.1)	0.031 $\pm$ 0.004 (0.8 $\pm$ 0.1)	0.018 $\pm$ 0.004 (0.45 $\pm$ 0.1)	0.012 $\pm$ 0.008 (0.30 $\pm$ 0.20)	0.012 $\pm$ 0.008 (0.30 $\pm$ 0.20)
0805	0.079 $\pm$ 0.006 (2.0 $\pm$ 0.15)	0.050 $\pm$ 0.006 (1.25 $\pm$ 0.15)	0.018 $\pm$ 0.006 (0.45 $\pm$ 0.15)	0.012 $\pm$ 0.008 (0.30 $\pm$ 0.20)	0.016 $\pm$ 0.01 (0.40 $\pm$ 0.25)
1206	0.126 $\pm$ 0.006 (3.2 $\pm$ 0.15)	0.063 $\pm$ 0.006 (1.6 $\pm$ 0.15)	0.022 $\pm$ 0.006 (0.56 $\pm$ 0.15)	0.020 $\pm$ 0.012 (0.50 $\pm$ 0.30)	0.016 $\pm$ 0.01 (0.40 $\pm$ 0.25)
1210	0.126 $\pm$ 0.006 (3.2 $\pm$ 0.15)	0.098 $\pm$ 0.006 (2.50 $\pm$ 0.15)	0.022 $\pm$ 0.006 (0.56 $\pm$ 0.15)	0.020 $\pm$ 0.012 (0.50 $\pm$ 0.30)	0.020 $\pm$ 0.012 (0.50 $\pm$ 0.30)
2010	0.197 $\pm$ 0.006 (5.0 $\pm$ 0.15)	0.098 $\pm$ 0.006 (2.50 $\pm$ 0.15)	0.022 $\pm$ 0.006 (0.56 $\pm$ 0.15)	0.020 $\pm$ 0.014 (0.60 $\pm$ 0.35)	0.020 $\pm$ 0.012 (0.50 $\pm$ 0.30)
2512 (10-100m Ω)	0.248 $\pm$ 0.006 (6.3 $\pm$ 0.15)	0.126 $\pm$ 0.006 (3.2 $\pm$ 0.15)	0.029 $\pm$ 0.004 (0.74 $\pm$ 0.10)	0.024 $\pm$ 0.014 (0.60 $\pm$ 0.35)	0.0217 $\pm$ 0.01 (0.55 $\pm$ 0.25)
2512 (110-900m Ω)	0.248 $\pm$ 0.006 (6.3 $\pm$ 0.15)	0.126 $\pm$ 0.006 (3.2 $\pm$ 0.15)	0.029 $\pm$ 0.004 (0.74 $\pm$ 0.10)	0.024 $\pm$ 0.014 (0.60 $\pm$ 0.35)	0.106 $\pm$ 0.004 (2.10 $\pm$ 0.10)

Structure



1	Alumina Substrate	6	Tin Plating
2	Backside Electrode	7	Primary Coating
3	Topside Electrode	8	Secondary Layer
4	Edge Electrode	9	Resistive layer
5	Nickel Plating	10	Marking

Current Sense Low Value Resistors (LCR Series)

Electrical Specifications and Range

Size	0402	0603	0805	1206	1210	2010	2512	2512
Power Rating at 70°C (W)	0.125W (1/8W)	0.125W (1/8W)	0.25W (1/4W)	0.50W (1/2W)	0.75W (3/4W)	1W	1W	2W
Max. Working Voltage	$\sqrt{PR}$ or 50V whichever is less	$\sqrt{PR}$ or 50V whichever is less	$\sqrt{PR}$ or 150V whichever is less	$\sqrt{PR}$ or 200V whichever is less	$\sqrt{PR}$ or 200V whichever is less	$\sqrt{PR}$ or 200V whichever is less	$\sqrt{PR}$ or 200V whichever is less	$\sqrt{PR}$ or 200V whichever is less
Dielectric Withstanding Voltage	100V	100V	500V	500V	500V	500V	500V	500V
Rated Current Range (A)	0.360A - 1.58A	0.360A - 2.50A	0.50A - 3.53A	0.71A - 7.07A	0.91A - 8.66A	0.87A - 8.66A	1.05A - 10A	1.49A - 14.14A
Operating Temp. Range	-55°C to +155°C	-55°C to +155°C	-55°C to +155°C	-55°C to +155°C	-55°C to +155°C	-55°C to +155°C	-55°C to +155°C	-55°C to +155°C
Tolerance	TCR	Resistance Range	Resistance Range	Resistance Range	Resistance Range	Resistance Range	Resistance Range	Resistance Range
±1% (F)	±100ppm	511 - 900mΩ	511 - 900mΩ	511 - 900mΩ	511 - 900mΩ	500 - 900mΩ	511 - 900mΩ	511 - 900mΩ
	±200ppm	102 - 500mΩ	102 - 500mΩ	102 - 500mΩ	51 - 500mΩ	50 - 470mΩ	51 - 500mΩ	51 - 500mΩ
	±300ppm	51 - 100mΩ	51 - 100mΩ	51 - 100mΩ	21 - 50mΩ	21 - 50mΩ	21 - 50mΩ	21 - 50mΩ
	±450ppm	-	20 - 50mΩ	20 - 50mΩ	10 - 20mΩ	10 - 20mΩ	10 - 20mΩ	10 - 20mΩ
±2% (G)	±100ppm	511 - 900mΩ	511 - 900mΩ	511 - 900mΩ	511 - 900mΩ	500 - 900mΩ	511 - 900mΩ	511 - 900mΩ
	±200ppm	102 - 500mΩ	102 - 500mΩ	102 - 500mΩ	51 - 500mΩ	50 - 470mΩ	51 - 500mΩ	51 - 500mΩ
	±300ppm	51 - 100mΩ	51 - 100mΩ	51 - 100mΩ	21 - 50mΩ	21 - 50mΩ	21 - 50mΩ	21 - 50mΩ
	±450ppm	-	20 - 50mΩ	20 - 50mΩ	10 - 20mΩ	10 - 20mΩ	10 - 20mΩ	10 - 20mΩ
±5% (J)	±100ppm	511 - 900mΩ	511 - 900mΩ	511 - 900mΩ	511 - 900mΩ	500 - 900mΩ	511 - 900mΩ	511 - 900mΩ
	±200ppm	102 - 500mΩ	102 - 500mΩ	102 - 500mΩ	51 - 500mΩ	50 - 470mΩ	51 - 500mΩ	51 - 500mΩ
	±300ppm	51 - 100mΩ	51 - 100mΩ	51 - 100mΩ	21 - 50mΩ	21 - 50mΩ	21 - 50mΩ	21 - 50mΩ
	±450ppm	-	20 - 50mΩ	20 - 50mΩ	10 - 20mΩ	10 - 20mΩ	10 - 20mΩ	10 - 20mΩ

Standard Resistance Values and Corresponding Codes

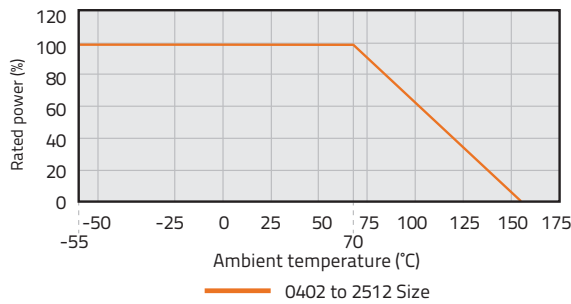


Note: 0603 size will have a 3 digit marking (ex. R01 = 10mΩ).
0402 size cannot be marked.

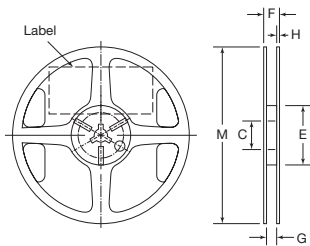
Resistance	P/N (Marking) Code	Resistance	P/N (Marking) Code	Resistance	P/N (Marking) Code	Resistance	P/N (Marking) Code	Resistance	P/N (Marking) Code	Resistance	P/N (Marking) Code	Resistance	P/N (Marking) Code
10m ohm	R010	27m ohm	R027	50m ohm	R050	80m ohm	R080	160m ohm	R160	330m ohm	R330	600m ohm	R600
12m ohm	R012	30m ohm	R030	56m ohm	R056	90m ohm	R090	180m ohm	R180	360m ohm	R360	650m ohm	R650
15m ohm	R015	33m ohm	R033	60m ohm	R060	100m ohm	R100	200m ohm	R200	400m ohm	R400	680m ohm	R680
18m ohm	R018	35m ohm	R035	65m ohm	R065	110m ohm	R110	220m ohm	R220	430m ohm	R430	700m ohm	R700
20m ohm	R020	40m ohm	R040	68m ohm	R068	120m ohm	R120	250m ohm	R250	470m ohm	R470	750m ohm	R750
22m ohm	R022	43m ohm	R043	70m ohm	R070	130m ohm	R130	270m ohm	R270	500m ohm	R500	800m ohm	R800
25m ohm	R025	47m ohm	R047	75m ohm	R075	150m ohm	R150	300m ohm	R300	560m ohm	R560	900m ohm	R900

Current Sense Low Value Resistors (LCR Series)

Derating Curve



Reel Specifications

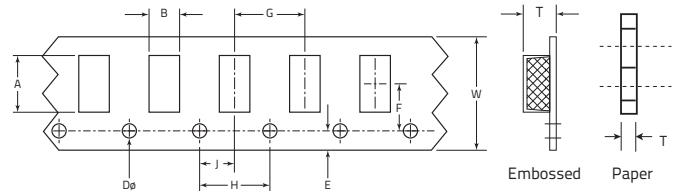


Unit: mm (inch)

C	E	F	G	H	M
13.0 ± 0.2 (0.51 ± .008)	60.0 ± 1.0 (2.36 ± 0.03)	11.4 ± 1.0 (0.45 ± 0.04)	9.0 ± .3 (0.35 ± 0.012)	1.5 ± .3 (0.06 ± 0.012)	180 ± 2.0 (7.09 ± 0.08)

Minimum of 30 empty pockets at the beginning of reel, 65 minimum empty pockets at the end.

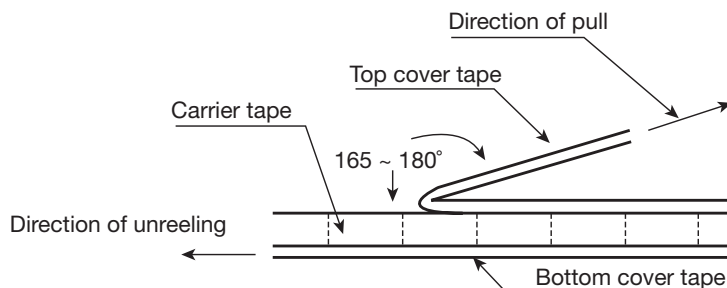
Tape Specifications



Units: mm.

Tape	Size (inches)	A	B	W	E	F	T	G	H	J	Dφ
Paper	0402	1.15 ± 0.1	0.65 ± 0.1	8.0 ± 0.2	1.75 ± 0.1	3.5 ± 0.05	0.45 ± 0.1	2.0 ± 0.05	4.0 ± 0.1	2.0 ± 0.05	1.5 + 0.1-0
	0603	1.9 ± 0.1	1.1 ± 0.1	8.0 ± 0.2	1.75 ± 0.1	3.5 ± 0.05	0.70 ± 0.1	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	1.5 + 0.1-0
	0805	2.4 ± 0.1	1.65 ± 0.1	8.0 ± 0.2	1.75 ± 0.1	3.5 ± 0.05	0.85 ± 0.1	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	1.5 + 0.1-0
	1206	3.5 ± 0.1	1.9 ± 0.1	8.0 ± 0.2	1.75 ± 0.1	3.5 ± 0.05	0.85 ± 0.1	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	1.5 + 0.1-0
	1210	3.5 ± 0.1	2.8 ± 0.1	8.0 ± 0.2	1.75 ± 0.1	3.5 ± 0.05	0.85 ± 0.1	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	1.5 + 0.1-0
Embossed	2010	5.4 ± 0.2	2.9 ± 0.2	12.0 ± 0.1	1.75 ± 0.1	5.5 ± 0.5	1.00 ± 0.2	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	1.5 + 0.1-0
	2512	6.9 ± 0.2	3.6 ± 0.2	12.0 ± 0.1	1.75 ± 0.1	5.5 ± 0.5	1.00 ± 0.2	8.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	1.5 + 0.1-0

Peel Back Force and Direction Diagram



Peel back force and direction of peel back angle should follow EIA481-1-A. Peel back force should be between 0.1N – 1.3N and peel back angle of 165° – 180°.