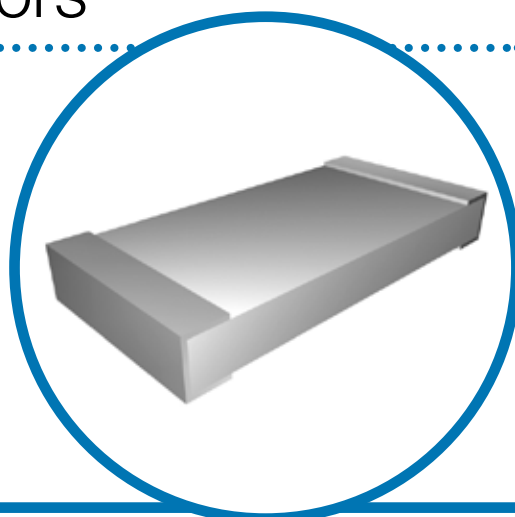


Miniature Current Sense Surface Mount Chip Resistors

LVC Series

- RoHS compliant
- Tolerances to $\pm 1\%$
- Resistance range from 0.01Ω up to 1Ω
- Available in 0402, 0603, 0805, 1206, 2010 and 2512 chip sizes



IRC's new LVC miniature surface mount chip resistors combine small size with precision tolerances for accurate current sense applications. Excellent power handling capability, low TCR, low inductance and resistance tolerances to $\pm 1\%$ make the LVC series an ideal choice for disk drive, computer power supply, and battery pack applications.

Electrical Data

Size	Power Rating at 70°C	Tolerance	Resistance Range*	Absolute TCR	Operating Temperature
0402	62.5mW	1%, 2%, 5%	50m Ω - 100m Ω	± 400	-55°C to +155°C
			101 Ω - 500m Ω	± 300	
			501m Ω - 1000m Ω	± 300	
0603	100mW	1%, 2%, 5%	20m Ω - 50m Ω	± 600	
			51m Ω - 100m Ω	± 400	
			101m Ω - 500m Ω	± 300	
			501m Ω - 1000m Ω	± 200	
0805	125mW	1%, 2%, 5%	20m Ω - 50m Ω	± 600	
			51m Ω - 100m Ω	± 400	
			101m Ω - 500m Ω	± 300	
			501m Ω - 1000m Ω	± 200	
1206	250mW	1%, 2%, 5%	10m Ω - 20m Ω	± 600	
			21m Ω - 50m Ω	± 400	
			51m Ω - 500m Ω	± 300	
			501m Ω - 1000m Ω	± 200	
2010	750mW	1%, 2%, 5%	10m Ω - 20m Ω	± 600	
			21m Ω - 50m Ω	± 400	
			51m Ω - 500m Ω	± 300	
			501m Ω - 1000m Ω	± 200	
2512	1000mW	1%, 2%, 5%	10m Ω - 20m Ω	± 600	
			21m Ω - 50m Ω	± 400	
			51m Ω - 500m Ω	± 300	
			501m Ω - 1000m Ω	± 200	

*Standard Values E24 Preferred

General Note

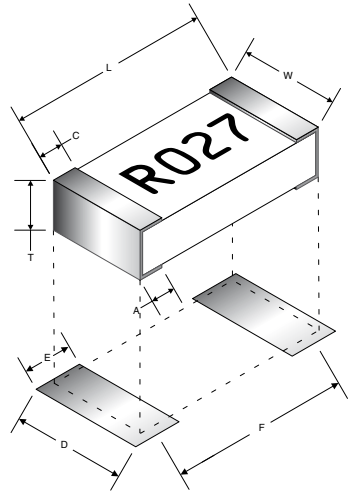
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Environmental Performance Data

Environmental Test	Test Method	Typical Performance
Thermal Shock	MIL-STD-202 Method 107G Condition B, -55°C +150°C, 100 cycles	±0.5% + 1.0mΩ
Short Time Overload	6.25X Rated Power for 5 seconds	±0.5% + 0.5mΩ
High Temperature Exposure	100 hours @ 150°C	±0.5% + 0.5mΩ
Dielectric Withstanding Voltage	MIL-STD-202, Method 301 2.5X Rated Voltage, 1 minute	±0.25% + 0.5mΩ
Humidity (steady state)	MIL-STD-202 Method 103B 40°C, 90-95% RH, 1000 hours	±0.5% + 0.5mΩ
Load Life	1000 hours, Rated Power, 70°C 1.5 hours on, 30 minutes off	±1.0% + 0.5mΩ
Low Temperature Operation	1 hour -65°C followed by rated power for 45 min	±0.5% + 0.5mΩ
Resistance to Solder Heat	MIL-STD-202 Method 210 260°C, 10 seconds	±0.5% + 1.0mΩ
Insulation Resistance	MIL-STD-202 Method 302 100VDC, 1 minute	>1000 megohms
Solderability	MIL-STD-202 Method 208 245°C, 5 seconds	95% min Coverage

Physical Data (mm)

	Chip Dimensions					IPC Recommended Landing Pad Dimensions		
	L	W	T	C	A	D	E	F
0402	1.00 ±0.05	0.50 ±0.05	0.32 ±0.10	0.25 ±0.10	0.20 ±0.10	0.65	0.65	0.90
0603	1.60 ±0.10	0.80 ±0.10	0.45 ±0.10	0.30 ±0.20	0.30 ±0.20	1.00	0.90	1.60
0805	2.00 ±0.15	1.25 ±0.15	0.55 ±0.10	0.30 ±0.20	0.40 ±0.25	1.40	0.95	2.00
1206	3.05 ±0.15	1.55 ±0.15	0.55 ±0.10	0.50 ±0.30	0.40 ±0.25	1.75	1.00	3.00
2010	5.00 ±0.20	2.45 ±0.15	0.60 ±0.15	0.60 ±0.30	0.50 ±0.25	2.70	1.20	4.70
2512	6.35 ±0.20	3.15 ±0.15	0.60 ±0.10	0.60 ±0.30	0.55 ±0.25	3.40	1.10	6.10



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Tape & Reel Packaging Data (mm)

	A	B	E	F	W	T	P ₀	P ₁	P ₂	ØD ₀	Qty/ Reel
0402	0.70±0.05	1.16±0.05	1.75 ±0.05	3.5 ±0.05	8.00 ±1.0	0.40 ±0.03	4.00 ±0.10	2.00±0.5	2.00±0.05	1.55±0.05	10k
0603	1.10 ±0.05	1.90 ±0.05	1.75 ±0.05	3.5 ±0.05	8.00 ±1.0	0.60 ±0.03	4.00 ±0.10	4.00±0.5	2.00±0.05	1.55±0.05	5k
0805	1.60 ±0.05	2.37 ±0.05	1.75 ±0.05	3.5 ±0.05	8.00 ±1.0	0.75 ±0.05	4.00 ±0.10	4.00±0.5	2.00±0.05	1.55±0.05	5k
1206	2.00±0.05	3.55±0.05	1.75±0.05	3.5±0.05	8.0±1.0	0.75±0.05	4.00 ±0.10	4.00±0.5	2.00±0.05	1.55±0.05	5k

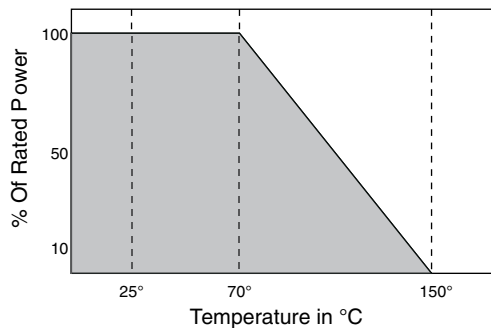
Emboss Plastic Tape Packaging Data (mm)

	A	B	E	F	W	T	P ₀	P ₁	P ₂	ØD ₀	Qty/ Reel
2010	2.85±0.10	5.45±0.10	1.75±0.10	5.5±0.05	12.0±0.10	1.00±0.20	4.00±0.05	4.00±0.10	2.00±0.05	1.50±0.10	4k
2512	3.40±0.10	6.65±0.10	1.75±0.10	5.5±0.05	12.0±0.10	1.00±0.20	4.00±0.05	4.00±0.10	2.00±0.05	1.50±0.10	4k

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Power Derating Data



Ordering Data

Prefix	LVC	-	LVC0805LF	-	R020	-	F
Model	LVC0402LF; LVC0603LF; LVC0805LF LVC1206LF; LVC2010LF; LVC2512LF						
Resistance Code	4-Digit resistance code. Ex: R050 = 0.050Ω; 1R00 = 1Ω						
Tolerance Code	F = ±1%; G = ±2%; J = ±5%						

For additional information or to discuss your specific requirements,
please contact our Applications Team using the contact details below.

Marking Information

0402 chips will be marked with 3-digit resistance code. Ex: 1R0 = 1Ω, R10 = 0.1Ω, R01 = 0.01Ω
All other sizes will have 4-digit marking

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