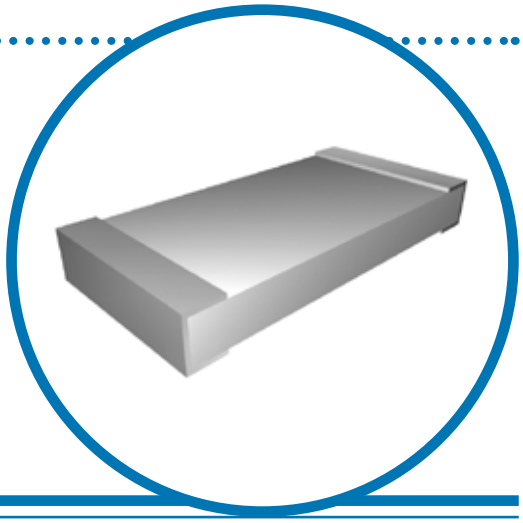
Low Value Current Sense Flat Chip Resistor

LR Series

- **Resistance range from 0.002Ω up to 1Ω**
- **Standard Sn/Pb and Pb lead-free terminations available**
- **High power dissipation at 70°C**
- **Tolerances to ±1%**

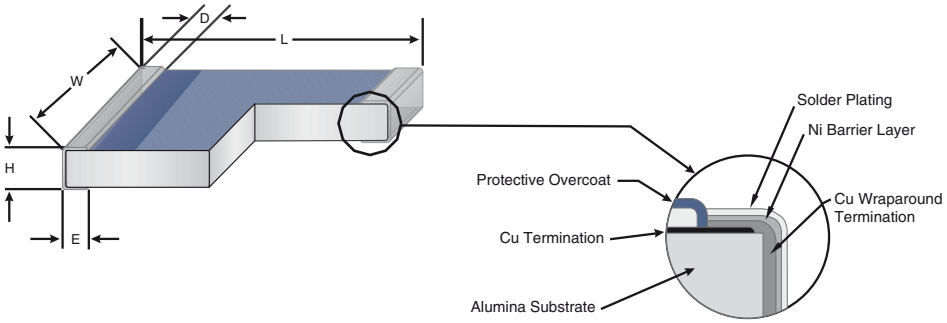


Electrical Data

Size	Resistance Range[1]			TCR[2] (ppm/°C)	Power Rating at 70°C (Watts)	Dielectric Withstanding Voltage (V)	Maximum Current (Amps)	Operating Temperature	Pad and Trace Area for Max Power Rating @ 70°C
	Tolerance F, G, J, K	Tolerance J, K	Tolerance K						
1206	0.010 to 1Ω	0.003 to 1Ω	0.003 to 1Ω	±100	0.5	200	16	-55°C to +150°C	30mm²
2010			0.002 to 1Ω		1.0		22		100mm²
2512			0.002 to 1Ω		2.0		32		300mm²

[1] Non-standard resistance values available
[2] Contact factory for TCR information on values under 0.05ohms

Outline Dimensions



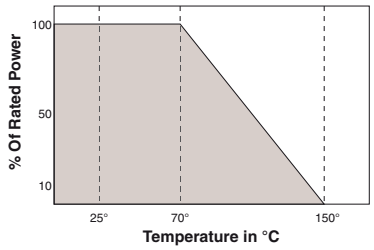
	1206		2010		2512	
	in.	mm	in.	mm	in.	mm.
L	0.126 ± 0.012	3.20 ± 0.305	0.206 ± 0.015	5.23 ± 0.38	0.256 ± 0.015	6.50 ± 0.38
W	0.064 ± 0.008	1.63 ± 0.203	0.104 ± 0.010	2.64 ± 0.25	0.128 ± .010	3.25 ± 0.25
H	0.024 ± 0.004	0.61 ± 0.102	0.029 ± 0.004	0.74 ± 0.1	0.029 ± 0.004	0.74 ± 0.1
D	0.019 ± 0.010	0.48 ± 0.25	0.019 ± 0.010	0.48 ± 0.25	0.019 ± 0.010	0.48 ± 0.25
E	0.019 ± 0.010	0.48 ± 0.25	0.019 ± 0.010	0.48 ± 0.25	0.019 ± 0.010	0.48 ± 0.25

Environmental Performance

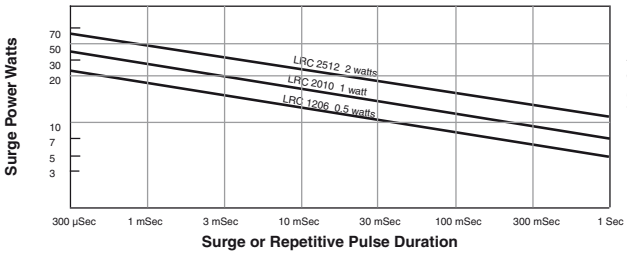
Environmental Test	Test Method	Typical Performance
Thermal Shock	MIL-STD-202 Method 107G Condition B, -55°C +150°C, 100 cycles	±0.5% + 1.0mΩ
Short Time Overload	6.25X Rated Power for 5 seconds (1206, 2010 Size) 5X Rated Power for 5 seconds (2512 Size)	±0.5% + 0.5mΩ
High Temperature Exposure	100 hours @150°C	±0.5% + 0.5mΩ
Dielectric Withstanding Voltage	MIL-STD-202, Method 301 2.5X Rated Voltage, 1 minute	±0.25% + 0.5mΩ
Moisture Resistance	MIL-STD-202 Method 106	±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

Power Derating and Pulse/Surge Capability

Power Derating Curve



Pulse and Surge Capability



Average power dissipationnot to exceed normal 70°C rating

Ordering Procedure

Prefix LRC - LRF 1206LF - 01 - R020 - F

Model

LR for values > 0.025Ω
LRF for values ≤ 0.025Ω

Size

1206; 1206LF; 2010; 2010LF; 2512; 2512LF
(LF=Lead Free Terminations)

TCR Code

01 = ±100ppm/°C

Resistance Code

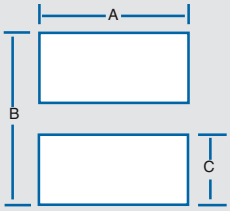
4-Digit resistance code. Ex: R050 = 0.050Ω; 1R00 = 1Ω

Tolerance Code

F = ±1%, G = ±2%, J = ±5%, K = ±10%

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

Recommended Solder Pad Layout



DIM.		LR1206	LR2010	LR2512
A	in.	0.080	0.120	0.145
	mm	(2.0)	(3.05)	(3.7)
B	in.	0.160	0.255	0.305
	mm	(4.0)	(6.5)	(7.75)
C	in.	0.050	0.060	0.060
	mm	(1.25)	(1.5)	(1.5)

General Note

TT electronics reserves the right to make changes in product specification without notice or liability.
All information is subject to TT electronics' own data and is considered accurate at time of going to print.