

Type R1206LR

Resettable Fuse (PTC's)

Surface Mount – Lo-Rho



www.optifuse.com (619) 593-5050

Application:

Ultra Low Resistance
 Portable Electronics: SMART PHONE, Tablet PC and Power Bank, etc.
 USB 3.0

Product Features:

Lo-Rho internal resistance
 Small surface mount, Solid State
 Faster time to trip than standard SMD devices
 Lower resistance than standard SMD devices

Operation Current: 500mA ~ 5.0A

Maximum Voltage: 6 VDC

Temperature Range: -40°C to 85°C

Agency Standards and Listings:



Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Rated Voltage	Max Current	Typical Power	Max Time to Trip		Resistance Tolerance	
	I_H , A	I_T , A				Current	Time	R_{MIN}	$R1_{MAX}$
	I_H , A	I_T , A	V_{MAX} , Vdc	I_{MAX} , A	Pd, W	Amp	Sec	Ω	Ω
R1206LR-050-R	0.50	1.50	6	100	0.8	8.0	0.20	0.025	0.200
R1206LR-075-R	0.75	1.80	6	100	0.8	8.0	0.30	0.018	0.180
R1206LR-110-R	1.10	2.20	6	100	0.8	8.0	0.30	0.015	0.100
R1206LR-150-R	1.50	3.00	6	100	0.8	8.0	0.30	0.010	0.065
R1206LR-175-R	1.75	3.50	6	100	0.8	8.0	0.40	0.005	0.030
R1206LR-200-R	2.00	4.00	6	100	0.8	8.0	0.50	0.005	0.025
R1206LR-260-R	2.60	5.20	6	100	0.8	8.0	4.00	0.003	0.026
R1206LR-300-R	3.00	6.00	6	100	0.8	8.0	4.00	0.003	0.020
R1206LR-350-R	3.50	7.00	6	100	0.8	8.0	5.00	0.003	0.018
R1206LR-380-R	3.80	8.00	6	100	0.8	8.0	5.00	0.002	0.014
R1206LR-450-R	4.50	9.00	6	100	0.8	22.5	2.00	0.001	0.014
R1206LR-500-R	5.00	10.00	6	100	0.8	25.0	5.00	0.002	0.010

I_H = Hold Current – Maximum current at which the device will not trip at 23°C still air.

I_T = Trip Current – Minimum current at which the device will always trip at 23°C still air.

V_{MAX} = Maximum voltage device can withstand without damage at it's rated current.

I_{MAX} = Maximum fault current device can withstand without damage at rated voltage (V max).

Pd = Typical power dissipated from device when in the tripped state in 23°C still air environment.

R_{MIN} = Minimum device resistance at 23°C.

$R1_{MAX}$ = Maximum device resistance at 23°C, 1 hour after tripping.

Note: All specifications subject to change without notice.

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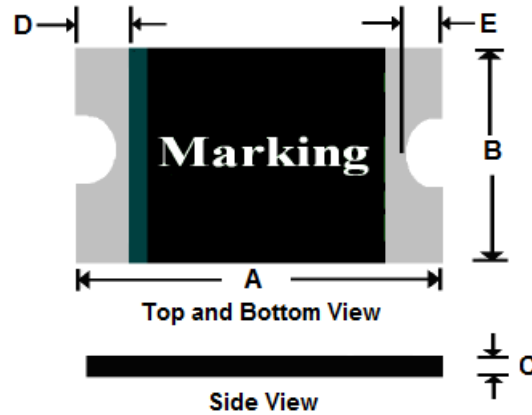
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Physical Specifications:

Termination Pad Characteristics: Pure Tin

R1206LR: Product Dimensions (millimeters)



Part Number	A		B		C		D		E	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
R1206LR-050-R	3.00	3.50	1.50	1.80	0.40	0.75	0.25	0.75	0.10	0.45
R1206LR-075-R	3.00	3.50	1.50	1.80	0.40	0.75	0.25	0.75	0.10	0.45
R1206LR-110-R	3.00	3.50	1.50	1.80	0.40	0.75	0.25	0.75	0.10	0.45
R1206LR-150-R	3.00	3.50	1.50	1.80	0.40	0.75	0.25	0.75	0.10	0.45
R1206LR-175-R	3.00	3.50	1.50	1.80	0.40	0.75	0.25	0.75	0.10	0.45
R1206LR-200-R	3.00	3.50	1.50	1.80	0.40	0.75	0.25	0.75	0.10	0.45
R1206LR-260-R	3.00	3.50	1.50	1.80	0.60	1.00	0.25	0.75	0.10	0.45
R1206LR-300-R	3.00	3.50	1.50	1.80	0.60	1.00	0.25	0.75	0.10	0.45
R1206LR-350-R	3.00	3.50	1.50	1.80	0.60	1.00	0.25	0.75	0.10	0.45
R1206LR-380-R	3.00	3.50	1.50	1.80	0.60	1.00	0.25	0.75	0.10	0.45
R1206LR-450-R	3.00	3.50	1.50	1.80	0.60	1.00	0.25	0.75	0.10	0.45
R1206LR-500-R	3.00	3.50	1.50	1.80	0.80	1.40	0.25	0.75	0.10	0.45

Standard Package

Part Number	Reel/Tape	Part Number	Reel/Tape
R1206LR-050-R	4K	R1206LR-260-R	3K
R1206LR-075-R	4K	R1206LR-300-R	3K
R1206LR-110-R	4K	R1206LR-350-R	3K
R1206LR-150-R	4K	R1206LR-380-R	3K
R1206LR-175-R	4K	R1206LR-450-R	3K
R1206LR-200-R	4K	R1206LR-500-R	2K

Note: All specifications subject to change without notice.

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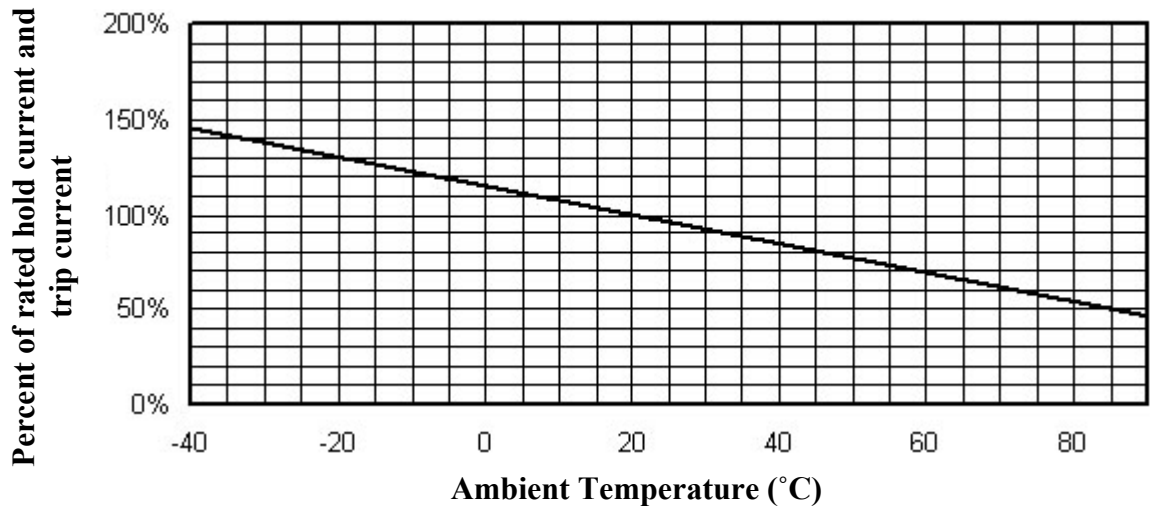
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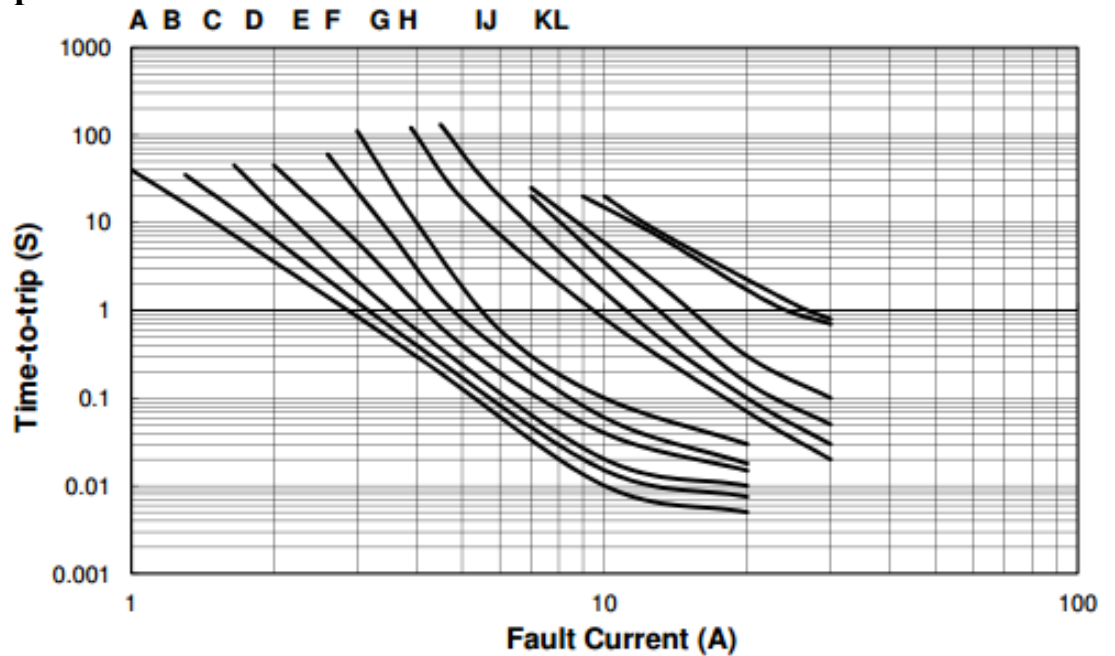
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Thermal Derating Curve – Type R1206LR



Typical Time-To-Trip at 23°C

- A = R1206LR-050-R
- B = R1206LR-075-R
- C = R1206LR-110-R
- D = R1206LR-150-R
- E = R1206LR-175-R
- F = R1206LR-200-R
- G = R1206LR-260-R
- H = R1206LR-300-R
- I = R1206LR-350-R
- J = R1206LR-380-R
- K = R1206LR-400-R
- L = R1206LR-500-R



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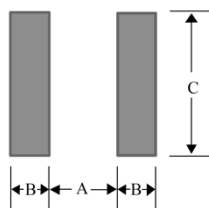
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Pad Layouts – Solder Reflow and Rework Recommendations

The dimensions in the table below provide the recommended pad layout for each R1206LR device.



Pad Dimensions

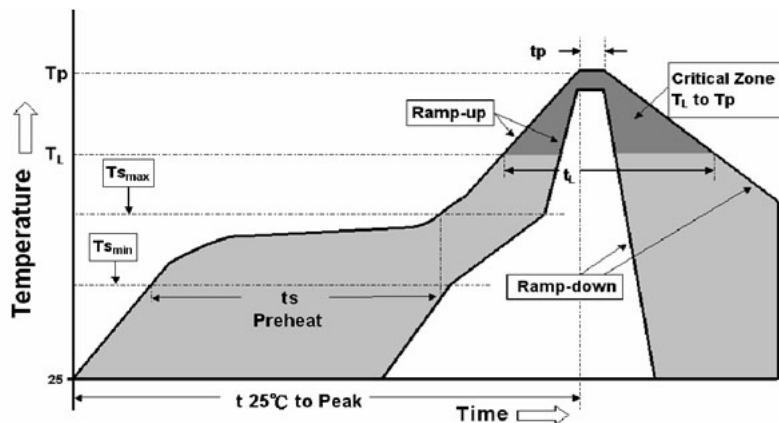
- A – Nominal – 2.00 mm
- B – Nominal – 1.00 mm
- C – Nominal – 1.90 mm

Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (T_{smax} to T_p)	3 °C/second max.
Preheat:	
Temperature Min (T _{smin})	150 °C
Temperature Max (T _{smax})	200 °C
Time (t _{smin} to t _{smax})	60-180 seconds
Time maintained above:	
Temperature (T _L)	217 °C
Time (t _L)	60-150 seconds
Peak/Classification Temperature (T_p):	260 °C
Time within 5 °C of actual Peak:	
Temperature (t _p)	20-40 seconds
Ramp-Down Rate:	6 °C/second max.
Time 25 °C to Peak Temperature	8 minute max.

Solder reflow

* Due to “Lead Free” nature, Temperature and Dwelling time for the soldering zone is higher than those for Regular. This may cause damage to other components.

1. Recommended maximum paste thickness is 0.25mm.
2. Devices can be cleaned using standard industry methods and solvents.
3. Rework use standard industry practices.
4. Storage Environment: < 30°C / 60%RH



Caution:

If reflow temperatures exceed the recommended Profile, devices may not meet the performance requirements.

Devices are not designed to be wave soldered to the bottom side of the board.

Warning:



- Operation beyond the specified maximum ratings or improper use may result in damage and possible electrical arcing and/or flame.
- PPTC device are intended for occasional overcurrent protection. Application for repeated overcurrent condition and/or prolonged trip are not anticipated.
- Avoid contact of PPTC device with chemical solvent. Prolonged contact may damage the device performance.

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