RoHS Pb 1206L Series

Description

The 1206L Series device provides surface mount overcurrent protection for applications where space is at a premium and resettable protection is desired.

Features

- RoHS compliant and lead-free
- Fast response to fault currents
- Compact design saves board space
- Low resistance
- Low-profile
- Compatible with high temperature solders

Applications

- USB peripherals
- Disk drives
- CD-ROMs
- Plug and play protection for motherboards and peripherals
- Mobile phones - battery and port protection
- Disk drives
- PDAs / digital cameras
- Game console port protection

Agency Approvals

AGENCY	AGENCY FILE NUMBER
c UL us	E183209
TÜV	R50119118

Electrical Characteristics

Part Number*	Marking	I_{hold} (A)	I_{trip} (A)	V_{max} (Vdc)	I_{max} (A)	P_d max. (W)	Maximum Time To Trip		Resistance			Agency Approvals	
							Current (A)	Time (Sec.)	R_{min} (Ω)	R_{typ} (Ω)	R_{1max} (Ω)	c UL us	TÜV
1206L012	A	0.125	0.29	30	100	0.6	1.00	0.20	1.500	3.600	6.000	X	X
1206L016	B	0.16	0.37	30	100	0.6	1.00	0.30	1.200	2.800	4.500	X	X
1206L020–C	C	0.20	0.42	24	100	0.6	8.00	0.10	0.650	1.550	2.600	X	X
1206L025–C	D	0.25	0.50	16	100	0.6	8.00	0.08	0.550	1.400	2.300	X	X
1206L035–C	E	0.35	0.75	6	100	0.6	8.00	0.10	0.300	0.750	1.200	X	X
1206L035/16	J	0.35	0.75	16	100	0.6	8.00	0.10	0.300	0.750	1.200	X	X
1206L050–C	F	0.50	1.00	6	100	0.6	8.00	0.10	0.150	0.400	0.700	X	X
1206L050/15	M	0.50	1.00	15	100	0.6	8.00	0.10	0.150	0.400	0.750	X	X
1206L075–C	G	0.75	1.50	6	100	0.6	8.00	0.20	0.090	0.200	0.290	X	X
1206L100	N	1.00	1.80	6	100	0.8	8.00	0.30	0.055	0.110	0.210	X	X
1206L110–C	H	1.10	2.20	6	100	0.8	8.00	0.30	0.040	0.110	0.180	X	X
1206L150–C	K	1.50	3.00	6	100	0.8	8.00	1.00	0.040	0.080	0.120	X	X

I_{hold} = Hold current: maximum current device will pass without tripping in 20°C still air.
I_{trip} = Trip current: minimum current at which the device will trip in 20°C still air.
V_{max} = Maximum voltage device can withstand without damage at rated current (I max)
I_{max} = Maximum fault current device can withstand without damage at rated voltage (V_{max})
P_d = Power dissipated from device when in the tripped state at 20°C still air.
R_{min} = Minimum resistance of device in initial (un-soldered) state.
R_{typ} = Typical resistance of device in initial (un-soldered) state.
R_{1max} = Maximum resistance of device at 20°C measured one hour after tripping or reflow soldering of 260°C for 20 sec.

Caution: Operation beyond the specified rating may result in damage and possible arcing and flame.

***Note:** Some devices in this product series may have "**–C**" in the Part Number. The "**–C**" should be omitted when placing orders for the device.

Temperature Rerating

	Ambient Operation Temperature								
	-40°C	-20°C	0°C	23°C	40°C	50°C	60°C	70°C	85°C
Part Number*	Hold Current (A)								
1206L012	0.18	0.16	0.14	0.125	0.10	0.09	0.08	0.07	0.05
1206L016	0.22	0.20	0.18	0.16	0.14	0.12	0.10	0.09	0.08
1206L020–C	0.28	0.25	0.23	0.20	0.17	0.15	0.14	0.12	0.09
1206L025–C	0.37	0.33	0.29	0.25	0.22	0.20	0.17	0.15	0.12
1206L035–C	0.50	0.45	0.40	0.35	0.30	0.27	0.24	0.21	0.15
1206L035/16	0.50	0.45	0.40	0.35	0.30	0.27	0.24	0.21	0.15
1206L050–C	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
1206L050/15	0.71	0.64	0.57	0.50	0.42	0.39	0.35	0.31	0.25
1206L075–C	1.14	1.01	0.88	0.75	0.65	0.59	0.54	0.49	0.41
1206L100	1.45	1.31	1.15	1.00	0.84	0.77	0.69	0.61	0.48
1206L110–C	1.52	1.37	1.25	1.10	0.92	0.82	0.75	0.64	0.52
1206L150–C	2.18	1.94	1.72	1.50	1.28	1.17	1.06	0.96	0.77

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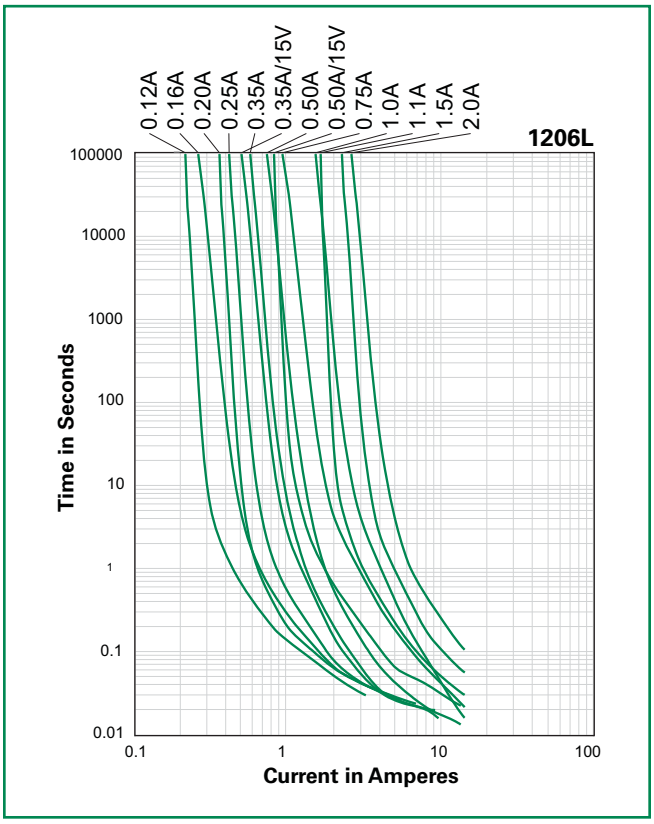
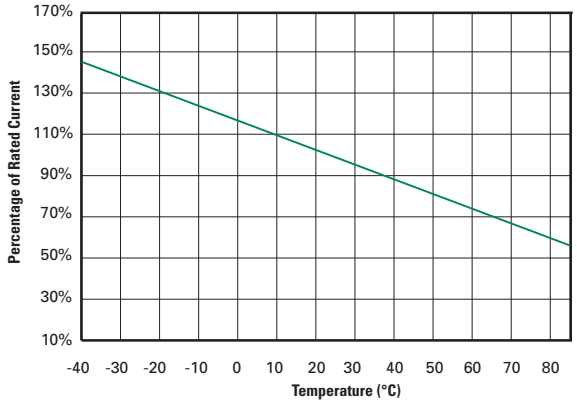
Average Time Current Curves



The average time current curves and Temperature Rerating curve performance is affected by a number or variables, and these curves provided as guidance only. Customer must verify the performance in their application.

Temperature Rerating Curve



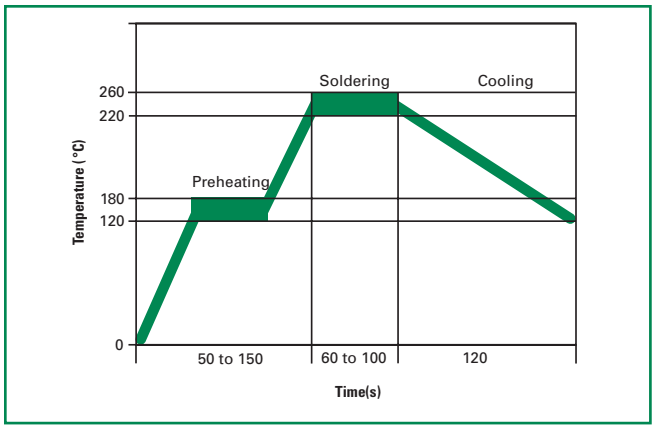
Revised: October 24, 2008

Soldering Parameters

Condition	Reflow
Peak Temp/ Duration Time	260°C / 10 Sec
Time above liquids (TAL) 220°C	60 Sec ~ 100 Sec
Preheat 120°C~ 180°C	50 Sec ~ 150 Sec
Storage Condition	0°C~35°C, 70% RH

- Recommended reflow methods: IR, vapor phase oven, hot air oven, N_2 environment for lead–free
- Recommended maximum paste thickness is 0.25mm (0.010 inch)
- Devices can be cleaned using standard industry methods and solvents.

Note: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.



Physical Specifications

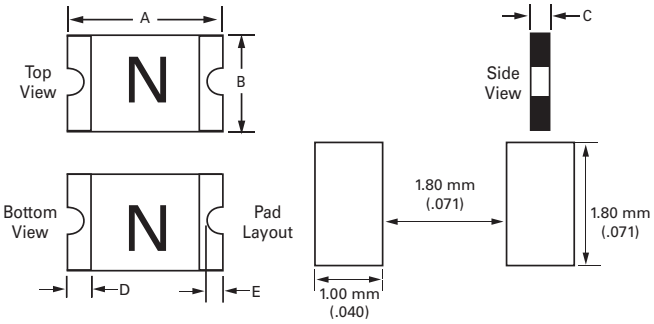
Terminal Material	Solder-Plated Copper (Solder Material: Matte Tin (Sn))
Lead Solderability	Meets EIA Specification RS186-9E, ANSI/J-STD-002 Category 3.

Environmental Specifications

Operating/Storage Temperature	-40°C to +85°C
Maximum Device Surface Temperature in Tripped State	125°C
Passive Aging	+85°C, 1000 hours -/+5% typical resistance change
Humidity Aging	+85°C, 85%, R.H.,1000 hours -/+5% typical resistance change
Thermal Shock	MIL–STD–202, Method 107G +85°C/-40°C 20 times -30% typical resistance change
Solvent Resistance	MIL–STD–202, Method 215 No change
Vibration	MIL–STD–883C, Method 2007.1, Condition A No change
Moisture Sensivity Level	Level 2, J–STD–020C

Dimensions

MARKING CODE VARIES
WITH AMPERAGE RATING
(SEE ELECTRICAL CHARACTERISTICS CHART)
SHOWN IS 1.0 AMP RATING



Part Ordering Number System*

1206 L 035 /16 W R

- **PACKAGING STYLE**
  R: Tape & Reel
- **QUANTITY CODE:** W=3000 Y=4000 P=2000
- **/XX: SPECIAL VOLTAGE RATING**
  (Not applicable to all parts. Refer to Electrical Characteristics Table)
- **I_{HOLD} HOLD CURRENT CODE**
  (Refer to Electrical Characteristics Table)
- **L: LITTELFUSE SURFACE MOUNT PPTC**
- **SIZE**
- **SERIES**

Part Number*	A				B				C				D		E			
	Inches		mm		Inches		mm		Inches		mm		Inches	mm	Inches		mm	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.	Min	Max.	Min.	Max.
1206L012	0.12	0.14	3	3.5	0.06	0.07	1.5	1.8	0.03	0.06	0.65	1.45	0.01	0.2	0.004	0.02	0.1	0.45
1206L016	0.12	0.14	3	3.5	0.06	0.07	1.5	1.8	0.03	0.06	0.65	1.45	0.01	0.2	0.004	0.02	0.1	0.45
1206L020–C	0.12	0.14	3	3.5	0.06	0.07	1.5	1.8	0.02	0.04	0.5	1	0.01	0.2	0.004	0.02	0.1	0.45
1206L025–C	0.12	0.14	3	3.5	0.06	0.07	1.5	1.8	0.02	0.04	0.5	1	0.01	0.2	0.004	0.02	0.1	0.45
1206L035–C	0.12	0.14	3	3.5	0.06	0.07	1.5	1.8	0.02	0.03	0.45	0.75	0.01	0.2	0.004	0.02	0.1	0.45
1206L035/16	0.12	0.14	3	3.5	0.06	0.07	1.5	1.8	0.02	0.03	0.45	0.75	0.01	0.2	0.004	0.02	0.1	0.45
1206L050–C	0.12	0.14	3	3.5	0.06	0.07	1.5	1.8	0.02	0.03	0.45	0.75	0.01	0.2	0.004	0.02	0.1	0.45
1206L050/15	0.12	0.14	3	3.5	0.06	0.07	1.5	1.8	0.02	0.03	0.45	0.75	0.01	0.2	0.004	0.02	0.1	0.45
1206L075–C	0.12	0.14	3	3.5	0.06	0.07	1.5	1.8	0.02	0.05	0.45	1.25	0.01	0.2	0.004	0.02	0.1	0.45
1206L100	0.12	0.13	3	3.4	0.06	0.07	1.5	1.8	0.03	0.04	0.75	1	0.01	0.2	0.004	0.02	0.1	0.45
1206L110–C	0.12	0.13	3	3.4	0.06	0.07	1.5	1.8	0.03	0.04	0.75	1	0.01	0.2	0.004	0.02	0.1	0.45
1206L150–C	0.12	0.13	3	3.4	0.06	0.07	1.5	1.8	0.03	0.06	0.85	1.4	0.01	0.2	0.004	0.02	0.1	0.45

Packaging

Part Number*	Ordering Number*	I_{hold} (A)	I_{hold} Code	Packaging Option	Quantity	Quantity & Packaging Codes
1206L012	1206L012WR	0.125	012	Tape and Reel	3000	WR
1206L016	1206L016WR	0.16	016	Tape and Reel	3000	WR
1206L020–C	1206L020YR	0.20	020	Tape and Reel	4000	YR
1206L025–C	1206L025YR	0.25	025	Tape and Reel	4000	YR
1206L035–C	1206L035YR	0.35	035	Tape and Reel	4000	YR
1206L035/16	1206L035/16YR	0.35	035	Tape and Reel	4000	YR
1206L050–C	1206L050YR	0.50	050	Tape and Reel	4000	YR
1206L050/15	1206L050/15YR	0.50	050	Tape and Reel	4000	YR
1206L075–C	1206L075WR	0.75	075	Tape and Reel	3000	WR
1206L100	1206L100WR	1.00	100	Tape and Reel	3000	WR
1206L110–C	1206L110WR	1.10	110	Tape and Reel	3000	WR
1206L150–C	1206L150PR	1.50	150	Tape and Reel	2000	PR

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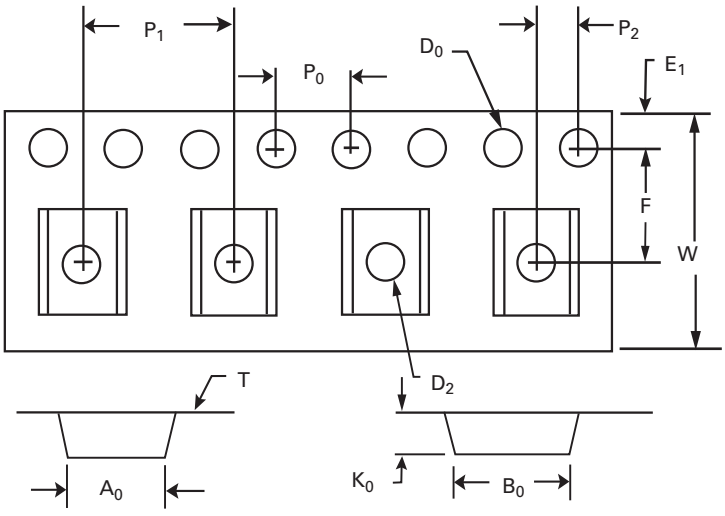
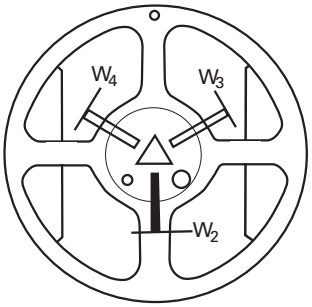
Tape and Reel Specifications

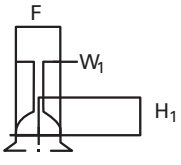
TAPE SPECIFICATIONS: EIA-481-1 (mm)			
	1206L020–C, 1206L025–C, 1206L035–C, 1206L035/16, 1206L050–C, 1206L050/15, 1206L075	1206L012, 1206L016, 1206L100, 1206L110–C	1206L150–C
W	8.15+0.15-0.30	8.00+/-0.30	8.15+0.15-0.30
F	3.50+/-0.05	3.50+/-0.05	3.50+/-0.05
E_1	1.75+/-0.10	1.75+/-0.10	1.75+/-0.10
D_0	1.55+/-0.05	1.55+/-0.05	1.55+/-0.05
D_1	1.00 (MIN)	1.00 (MIN)	1.00 (MIN)
P_0	4.00+/-0.10	4.00+/-0.10	4.00+/-0.10
P_1	4.00+/-0.10	4.00+/-0.10	4.00+/-0.10
P_2	2.00+/-0.05	2.00+/-0.05	2.00+/-0.05
A_0	1.95+/-0.10	1.95+/-0.10	1.95+/-0.10
B_0	3.65+/-0.10	3.65+/-0.10	3.65+/-0.10
T	0.25+/-0.10	0.25+/-0.10	0.25+/-0.10
K_0	0.87+/-0.10	1.30+/-0.10	1.70+/-0.10
Leader min.	390	390	390
Trailer min.	160	160	160

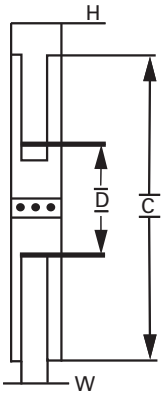
REEL DIMENSIONS: EIA-481-1 (mm)	
H	16.0+/-0.2
W	13.2+/-1.5
D	Ø 60.2+/–0.5
F	Ø 13.0+/-0.5
C	Ø 178+/-1.0
H_1	11+/-0.5
W_1	2.5+0.5
W_2	3.0+0.5
W_3	4.0+0.5
W_4	5.0+0.5

Tape and Reel Diagram









1206L Series

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Littelfuse:

1206L160 1206L012WR 1206L016WR 1206L020YR 1206L025YR 1206L035YR 1206L050/15YR 1206L050YR 1206L075WR 1206L100WR 1206L110WR 1206L150PR 1206L025-C 1206L020-C 1206L150-C 1206L075-C 1206L160PR 1206L035/16YR 1206L020 1206L050 1206L110 1206L025 1206L035/15YR 1206L050-C 1206L110-C 1206L035YRT 1206L025YRT 1206L150WRT 1206L160WRT 1206L050WRT 1206L035-C 1206L160WR 1206L150WR