



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

Agency Approvals

AGENCY AGENCY FILE NUMBER



E183209



R50082521

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

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)		
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.

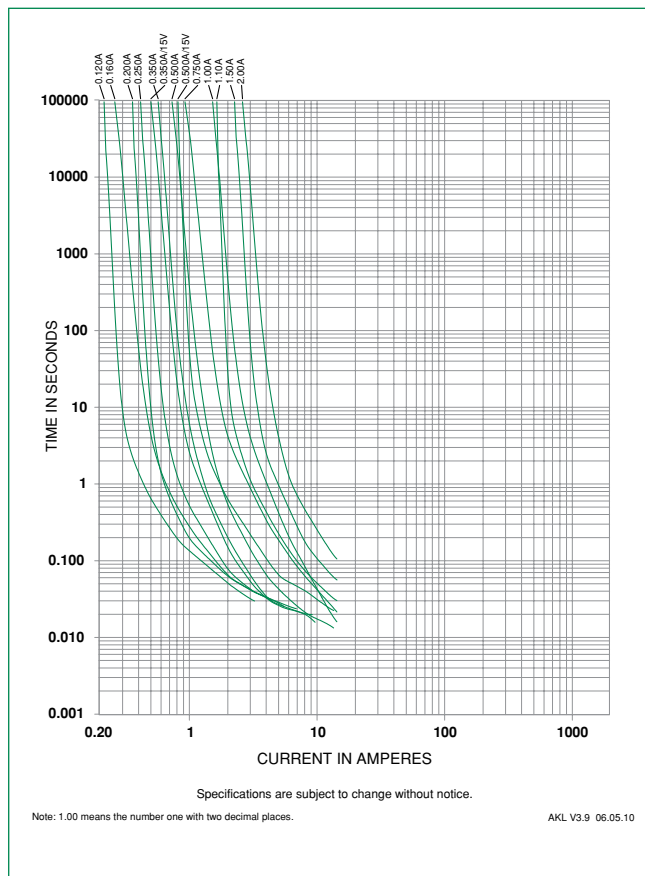
R_{1max} = Maximum resistance of device at 20°C measured one hour after tripping or reflow soldering of 260°C for 20 sec.

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

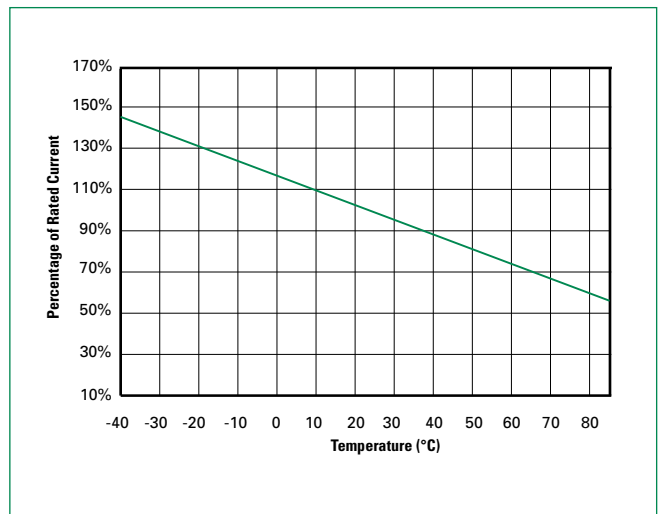
Temperature Derating

Part Number	Ambient Operation Temperature								
	-40°C	-20°C	0°C	23°C	40°C	50°C	60°C	70°C	85°C
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	1.1	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

Average Time Current Curves



Temperature Derating Curve



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

Soldering Parameters

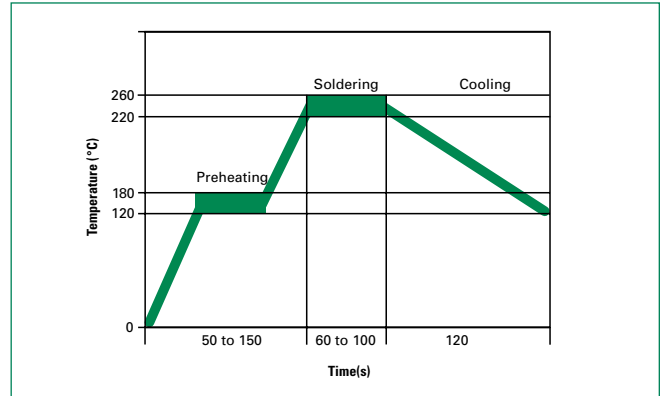
Condition	Reflow
Peak Temp/ Duration Time	260°C / 10 Sec
Time above liquids (TAL) 220°C	60 Sec ~ 100 Sec
Preheat 120°C~ 180°C	50 Sec ~ 150 Sec
Storage Condition	0°C~35°C, 70%RH

- Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free
- Devices are not designed to be wave soldered to the bottom side of the board.
- 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

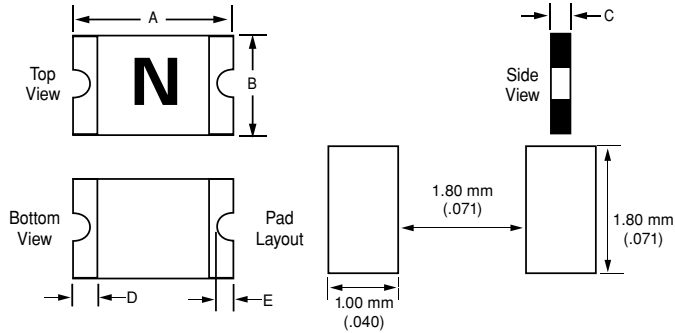
Terminal Material	Solder-Plated Copper (Solder Material: Matte Tin (Sn))
Lead Solderability	Meets EIA Specification RS186-9E, ANSI/J-STD-002 Category 3.


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

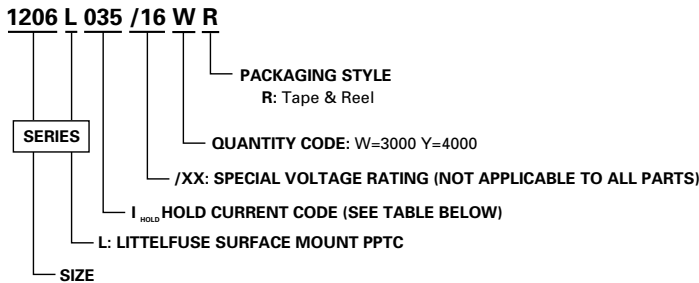
Dimensions

MARKING CODE VARIES
WITH AMPERAGE RATING
(SEE CHART)
SHOWN IS 1.6AMP RATING



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

Part Numbering System



Packaging

I_{hold} (A)	I_{hold} Code	Packaging Option	Quantity	Quantity & Packaging Codes
0.125	012	Tape and Reel	3000	WR
0.16	016	Tape and Reel	3000	WR
0.20	020	Tape and Reel	4000	YR
0.25	025	Tape and Reel	4000	YR
0.35	035	Tape and Reel	4000	YR
0.50	050	Tape and Reel	4000	YR
0.75	075	Tape and Reel	3000	WR
1.00	100	Tape and Reel	3000	WR
1.10	110	Tape and Reel	3000	WR
1.50	150	Tape and Reel	2000	PR