

437 Series – 1206 Fast-Acting Fuse



Description

This 100% Lead-free, RoHS compliant and Halogen-free fuse series has been designed specifically to provide over current protection to circuits might encounter high working ambient temperatures (up to 150°C).



The general design ensures excellent temperature stability and performance reliability.

In addition to this, the high I²t values typical of the Littelfuse Ceramic Fuse family ensure high inrush current withstand capability.

Features

- Operating Temperature from -55°C to +150°C
- 100% Lead-free, Halogen-Free and RoHS compliant
- Suitable for both leaded and lead-free reflow / wave soldering
- UL Recognized to UL/CSA/NMX 248-1 and UL/CSA/NMX 248-14

Agency Approvals

Agency	Agency File Number	Ampere Range
	E10480	0.250A - 8A
	29862	0.250A - 8A

Electrical Characteristics for Series

% of Ampere Rating	Ampere Rating	Opening Time at 25°C
100%	250mA - 8A	4 hours, Minimum
250%	750mA - 8A	5 seconds, Maximum
350%	250mA -500mA	5 seconds, Maximum
350%	750mA - 8A	1 second, Maximum

Applications

- LCD Displays
- Servers
- Printers
- Scanners
- Data Modems

Additional Information



Datasheet



Resources



Samples

Electrical Specifications by Item

Ampere Rating (A)	Amp Code	Max. Voltage Rating (V)	Interrupting Rating ¹	Nominal Resistance (Ohms) ²	Nominal Melting I ² t (A ² Sec.) ³	Nominal Voltage Drop At Rated Current (V) ⁴	Nominal Power Dissipation At Rated Current (W)	Agency Approvals	
									
0.25	0.25	125	50 A @ 125 V AC/DC	2.29	0.003	0.78	0.195	x	x
0.375	0.375	125		1.33	0.01	0.6	0.225	x	x
0.5	0.5	63		0.908	0.018	0.52	0.26	x	x
0.75	0.75	63		0.665	0.064	0.45	0.338	x	x
1.0	1.0	63	50 A @ 63 V AC/DC	0.42	0.1	0.41	0.41	x	x
1.25	1.25	63		0.318	0.256	0.4	0.5	x	x
1.5	1.5	63		0.209	0.324	0.39	0.585	x	x
1.75	1.75	63		0.071	0.075	0.27	0.473	x	x
2.0	2.0	63		0.058	0.225	0.2	0.4	x	x
2.5	2.5	32		0.043	0.441	0.15	0.375	x	x
3.0	3.0	32	50 A @ 32 V AC/35 V DC	0.033	0.506	0.14	0.42	x	x
3.5	3.5	32		0.027	0.777	0.13	0.455	x	x
4.0	4.0	32		0.022	1.024	0.13	0.52	x	x
5.0	5.0	32		0.0159	2.3	0.13	0.65	x	x
7.0	7.0	32		0.01	5.02	0.13	0.91	x	x
8.0	8.0	32		0.008	7.23	0.13	1.04	x	x

Notes:

1. AC Interrupting Rating tested at rated voltage with unity power factor. DC Interrupting Rating tested at rated voltage with time constant < 0.8 msec.

2. Nominal Resistance measured with < 10% rated current.

3. Contact Littelfuse if application transient surges are less than 1 ms.

4. Nominal Voltage Drop measured at rated current after temperature has stabilized.

Devices designed to carry rated current for 4 hours minimum. It is recommended that devices be operated continuously at no more than 80% rated current. See "Temperature Re-rating Curve" for additional re-rating information.

Devices designed to be mounted with marking code facing up.

Temperature Re-rating Curve



Note:
1. Re-rating depicted in this curve is in addition to the standard re-rating of 20% for continuous operation.

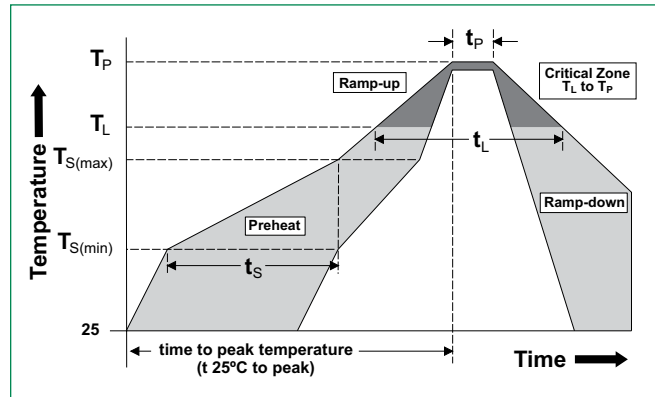
Example:
For continuous operation at 75 degrees celsius, the fuse should be rerated as follows:
 $I = (0.80)(0.85)_{\text{RAT}} = (0.68)_{\text{RAT}}$

Average Time Current Curves



Soldering Parameters

Reflow Condition		Pb – free assembly
Pre Heat	- Temperature Min ($T_{s(\text{min})}$)	150°C
	- Temperature Max ($T_{s(\text{max})}$)	200°C
	- Time (Min to Max) (t_s)	60 – 180 seconds
Average Ramp-up Rate (Liquidus Temp (T_L) to peak)		3°C/second max.
$T_{s(\text{max})}$ to T_L - Ramp-up Rate		5°C/second max.
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Temperature (t_t)	60 – 150 seconds
Peak Temperature (T_p)		260 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		10 – 30 seconds
Ramp-down Rate		6°C/second max.
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C
Wave Soldering		260°C, 10 seconds max.

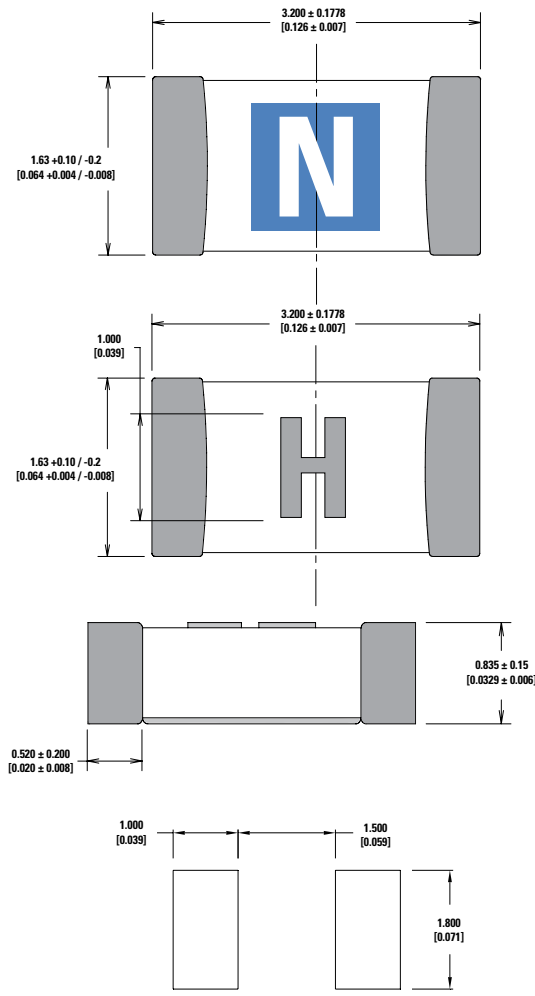


Product Characteristics

Materials	Body: Advanced Ceramic Terminations: Ag / Ni / Sn (100% Lead-free) Element Cover Coating: Ceramic/Lead-free Glass
Moisture Sensitivity Level	IPC/JEDEC J-STD-020, Level 1
Solderability	IPC/EIC/JEDEC J-STD-002, Condition B
Humidity Test	MIL-STD-202, Method 103, Condition D
Resistance to Solder Heat	MIL-STD-202, Method 210, Condition B
Moisture Resistance	MIL-STD-202, Method 106

Thermal Shock	MIL-STD-202, Method 107, Condition B
Mechanical Shock	MIL-STD-202, Method 213, Condition A
Vibration	MIL-STD-202, Method 201
Vibration, High Frequency	MIL-STD-202, Method 204, Condition D
Dissolution of Metallization	IPC/EIC/JEDEC J-STD-002, Condition D
Terminal Strength	IEC 60127-4

Dimensions



Part Marking System

Amp Code	Marking Code	Amp Code	Marking Code
0.25	D	2.0	N
0.375	E	2.5	O
0.5	F	3.0	P
0.75	G	3.5	R
1.0	H	4.0	S
1.25	J	5.0	T
1.5	K	7.0	W
1.75	L	8.0	X

Part Numbering System



Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code
8mm Tape & Reel	EIA-481, IEC 60286-3	3000	WR

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