

433 Series Fuse



Description



The 433 series fast-acting surface mount fuse series is a small (1206 size) thin-film device designed for secondary protection of circuits used in space constrained applications such as hand-held portable electronic devices.

For RoHS compliant and lead-free design, please refer to the Littelfuse 466 series thin film fuse. For new designs of 7 amp please refer to Littelfuse 429 series thin film fuse.

Features

- The SlimLine 1206 fuse is an extremely small, low profile design (1206 chip size) utilizing thin-film technology to achieve precise control of electrical characteristics.
- The lower height profile produces a flat surface for improved performance in pick-and-place operations and an alternate solution for height critical application.
- Mounting pad and electrical specification are identical to the popular 429 Series specifications.

Agency Approvals

Agency	Agency File Number	Ampere Range
	E10480	125mA - 5A
	LR29862	125mA - 5A

Electrical Characteristics for Series



% of Ampere Rating	Opening Time at 25°C
100%	4 hours, Minimum
200%	5 sec., Maximum
300%	0.2 sec., Maximum

Applications

Secondary protection for space constrained applications such as:

- Cell phones
- Battery packs
- Digital cameras
- DVD players
- Hard disk drives.

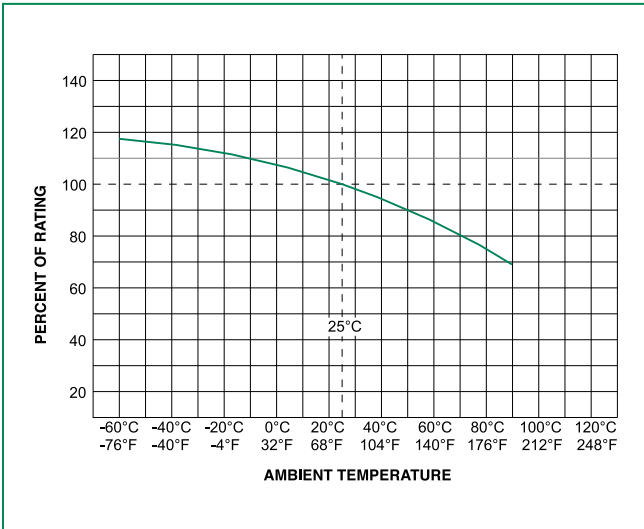
Electrical Specifications by Item

Ampere Rating (A)	Amp Code	Max Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I ² t (A ² sec)	Agency Approvals	
							
0.125	.125	125	50A @125 V AC/DC	3.45000	0.00040	x	x
0.200	.200	125		0.93800	0.00055	x	x
0.250	.250	125		0.62500	0.00100	x	x
0.375	.375	125		0.37500	0.00280	x	x
0.50	.500	63	50A @63 V AC/DC	0.24050	0.00600	x	x
0.60	.600	63		0.21000	0.01310	x	x
0.75	.750	63		0.13700	0.01700	x	x
0.80	.800	63		0.12250	0.03050	x	x
1.00	001.	63		0.09950	0.03500	x	x
1.25	1.25	63		0.07475	0.06500	x	x
1.50	01.5	63		0.06250	0.12500	x	x
1.75	1.75	63		0.05000	0.15000	x	x
2.00	02.0	63	0.03975	0.23000	x	x	
2.50	02.5	32	50A @32 V AC/DC	0.03065	0.50000	x	x
3.00	03.0	32		0.02625	0.70000	x	x
4.00	04.0	24	50A @24 V AC/DC	0.01400	1.0240	x	x
5.00	05.0	24		0.01100	1.6000	x	x

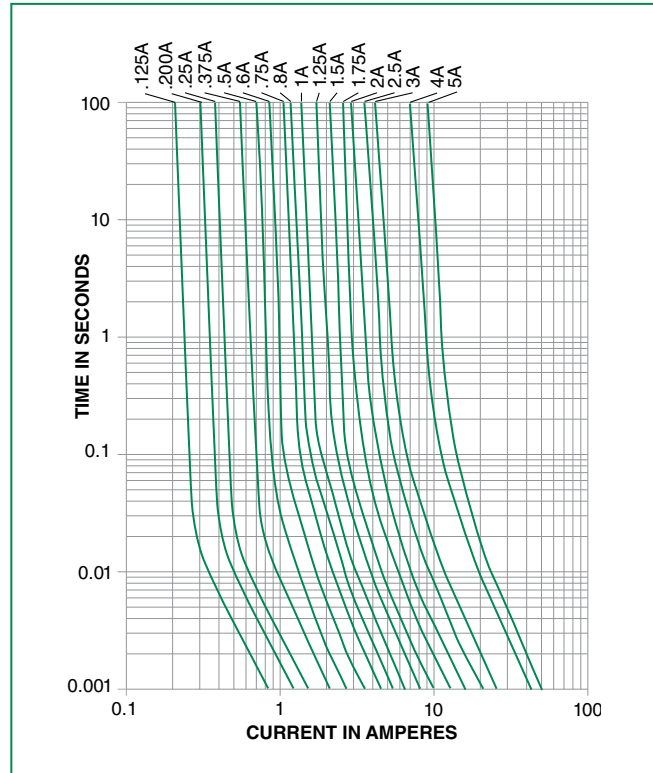
1. Measured at 10% of rated current, 25°C.

2. Measured at rated voltage.

Temperature Derating Curve

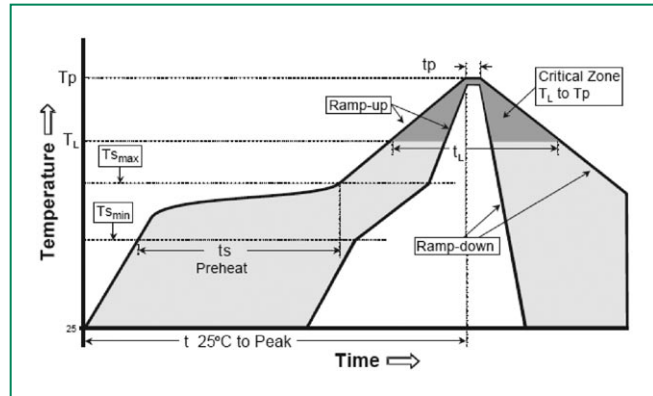


Average Time Current Curves



Soldering Parameters - Wave Soldering

Reflow Condition	Pb – Free assembly	
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (Min to Max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)	5°C/second max	
$T_{s(max)}$ to T_L - Ramp-up Rate	5°C/second max	
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Temperature (t_l)	60 – 150 seconds
Peak Temperature (T_p)	250 ^{+0/-5} °C	
Time within 5°C of actual peak Temperature (t_p)	20 – 40 seconds	
Ramp-down Rate	5°C/second max	
Time 25°C to peak Temperature (T_p)	8 minutes Max.	
Do not exceed	260°C	

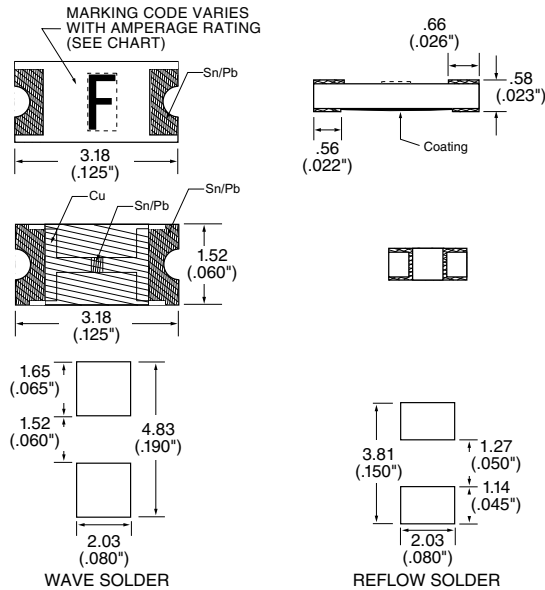


Product Characteristics

Materials	Body: Epoxy Substrate Terminations: 95% Tin / 5% Lead over Nickel over Copper Element Cover Coat: Conformal Coating
Operating Temperature	- 55°C to 90°C. Consult temperature derating curve chart.
Thermal Shock	Withstands 5 cycles of - 55°C to 125°C

Humidity	MIL-STD-202F Method 103B Condition D
Vibration	Per MIL-STD-202F, Method 201A
Insulation Resistance (After Opening)	Greater than 10,000 ohms.
Resistance to Soldering Heat	Withstands 60 seconds above 200°C and up to 260°C, maximum

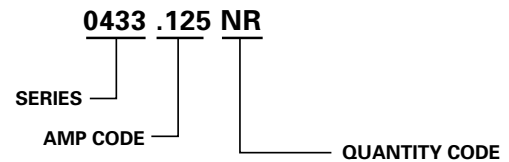
Dimensions



Part Marking System

Amp Code	Marking Code
.125	B
.200	C
.250	D
.375	E
.500	F
.600	.6
.750	G
.800	.8
001.	H
1.25	J
01.5	K
1.75	L
002.	N
02.5	O
003.	P
03.5	R
004.	S
005.	T

Part Numbering System



Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code
Tape & Reel - 8mm tape	EIA RS-481-1 (IEC 286, part 3)	5000	NR