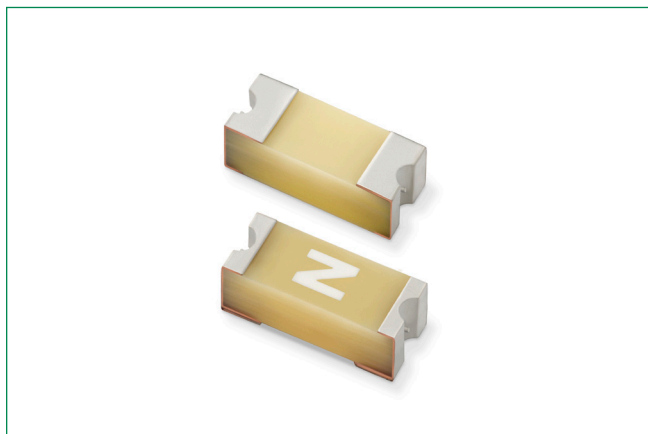


Surface Mount Fuses

Thin Film Fuse > 422A > 2410 Fast Acting



Agency Approvals

Agency	Agency File Number	Ampere Range
	E10480	0.75 A to 5 A
	J50501694	0.75 A to 5 A
	JD60156347	0.75 A to 5 A

Electrical Characteristics

% of Ampere Rating	Ampere Rating	Opening Time at 25°C
100%	0.75 A to 5 A	4 Hours, Minimum
200%	0.75 A to 5 A	5 Seconds, Maximum

Electrical Specifications

Ampere Rating (A)	Amp Code	Max Voltage Rating (V)	Interrupting Rating (AC/DC) ¹	Nominal Resistance (Ohms) ²	Nominal Melting I ² t (A ² sec) ³	Agency Approvals		
0.750	.750	250	300A@32VDC	0.137	0.282	x	x	x
1.00	001.	250	100A@125VDC	0.0994	0.611	x	x	x
1.25	1.25	250	50A@250VAC	0.0734	1.09	x	x	x
1.50	01.5	250	50A@250VDC	0.0589	1.62	x	x	x
2.00	002.	250	10,000A@86VDC	0.0453	2.85	x	x	x
2.50	02.5	125		0.0278	1.29	x	x	x
3.00	003.	125	300A@32VDC	0.0223	2.09	x	x	x
3.15	3.15	125	100A@125VDC	0.0213	2.40	x	x	x
3.50	03.5	125		0.0192	2.82	x	--	x
4.00	004.	125	50A@125VAC	0.0168	3.60	x	x	x
5.00	005.	125		0.0137	5.90	x	x	x

Notes

1. AC Interrupting Rating tested at rated voltage with unity power factor. DC Interrupting Rating tested with time constant <0.8 ms for 32 VDC, <2.2 ms for 86 VDC, <0.22 ms for 125 VDC, and <0.1 ms for 250 VDC.

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

3. Nominal Melting I²t measured at 1 msec. opening time.

Description

The 422A is a 250V rated Wire-in-Air Surface Mount AECQ-Compliant fuse are specifically tested to cater to secondary circuit protection needs of compact auto electronics applications. The wire-in-air design of the 422A Series results in a relatively high I²t in a 2410 size.

The general design ensures excellent temperature stability and performance reliability.

Features

- Operating Temperature from -55°C to 125° C
- 100% Lead-free, Halogen-Free and RoHS compliant
- Fast Acting
- Meets Littelfuse's automotive qualification*
- Recognized to UL/CSA/NMX 248-1 and UL/CSA/NMX 248-14
- Conforms to EN 60127-1 and EN 60127-7
- Conforms to J60127-1 and J60127-7

* - Largely based on Littelfuse internal AEC-Q200 test plan for DC application .

Benefits

- Avoids nuisance opening due to high inrush and surge current inherent in the system
- Meets automotive industry requirement
- Suitable for harsh automotive environments

Applications

- Li-Ion Battery
- LED Lighting Automotive Navigation System
- Battery Management System (BMS)
- Cluster

Additional Information



Resources



Accessories

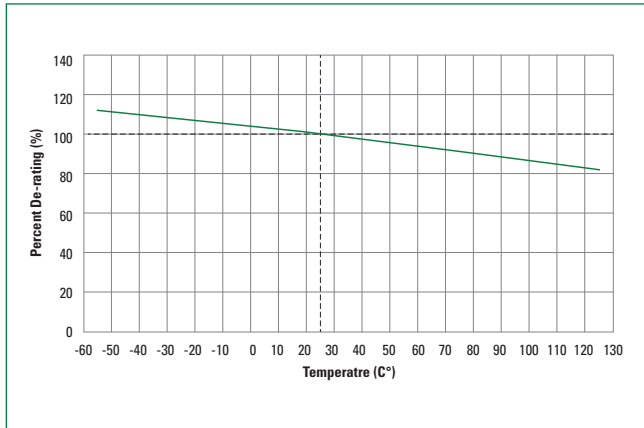


Samples

Surface Mount Fuses

Thin Film Fuse > 422A > 2410 Fast Acting

Temperature Re-rating Curve



Notes
 1. Re-rating depicted in this curve is in addition to the standard re-rating of 25% for continuous operation.

Example:
 For continuous operation at 85°C, the fuse should be rerated as follows:
 $I = (0.75)(0.90)_{N_1} = (0.675)_{N_1}$

Pulse Cycle Withstand Capability

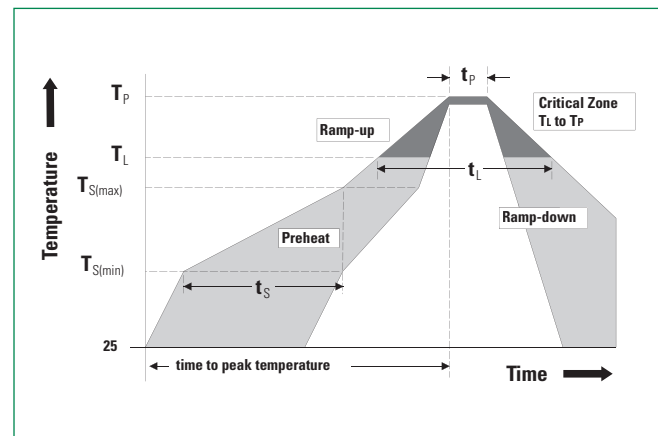
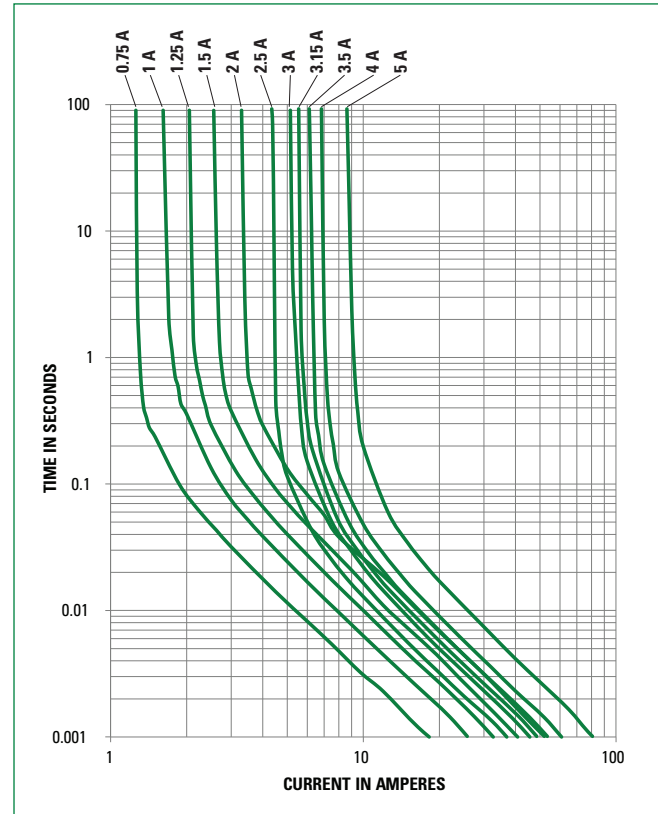
No. of Pulses to withstand	Ratio of Pulse I ² t to Nominal I ² t
100,000	Pulse I ² t = 18% of Nominal Melting I ² t
10,000	Pulse I ² t = 29% of Nominal Melting I ² t
1,000	Pulse I ² t = 38% of Nominal Melting I ² t
100	Pulse I ² t = 48% of Nominal Melting I ² t

Note
 * Being tested

Soldering Parameters

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_t)	60–150 secs
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 Parameters	260°C Peak Temperature, 10 seconds max.	

Average Time Current Curves



Surface Mount Fuses

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Product Characteristics

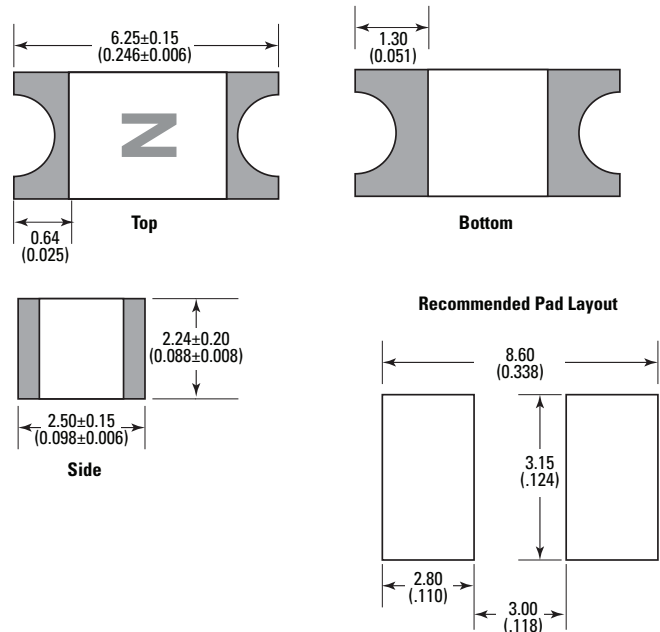
Materials	Body: Epoxy Resin Terminations: Cu/Ni/Sn (100% Pb-free)
Product Marking	Body: Current Rating
Operating Temperature	-55°C to +125°C
Insulation Resistance	IEC 60127-4 (0.1 MOhm Min.)
High Temperature Storage	MIL-STD-202, Method 108
Thermal Shock Test	JESD22 Method A104C
Biased Humidity	MIL-STD-202, Method 103, 85 °C/85% RH with 10% operating power for 1000 hrs
Operational Life	MIL-STD-202, Method 108, Test Condition D
Resistance to Solvents	MIL-STD-202, Method 215
Mechanical Shock	MIL-STD-202, Method 213, Test Condition C
High Frequency Vibration	MIL-STD-202, Method 204
Resistance to Soldering Heat	MIL-STD-202, Method 210 (Test K modified)
Solderability	JESD22-B102E Method 1
Moisture Resistance	MIL-STD-202 Method 106
Moisture Sensitivity Level 1	IPC/JEDEC J-STD-020D Level 1
Terminal Strength	AEC Q200 -006
Board Bend/Flex	AEC Q200-005
Electrical Characterization	3 Temperature Electrical Characterization

Packaging

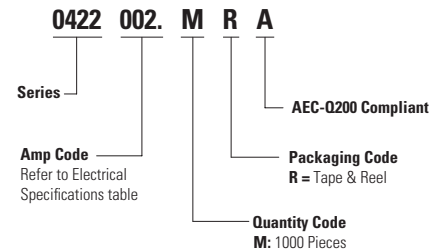
Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code
Tape and Reel	EIA-481	1000	MR

Dimensions (in mm)

All dimensions in mm (in)



Part Numbering System



Part Marking System

Amp Code	Marking Code
.750	G
001.	H
1.25	J
01.5	K
002.	N
02.5	O
003.	P
3.15	B
03.5	C
004.	S
005.	T

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