

456SD Series

NANO2® > Fast Acting Fuse



Web Resources



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Description

The High Current NANO2® Fuse is a small square surface mount fuse that is designed to support higher current requirements of various applications.

Features & Benefits

- Available in ratings of 40 to 50A
- High interrupting rating - 600A@75VDC
- Very low cold resistance, temperature rise, and voltage drop
- High inrush/surge current withstand capability
- Surface mountable high current fuse
- UL 248-1 and UL 248-14 recognized
- Single fuse solution for high current application
- Suitable for a wide variety of voltage requirement and application
- Enhances power efficiency
- Avoids nuisance opening due to high inrush and surge current inherent in the system
- Compatible with high volume assembly requirements

Applications

- Voltage regulator module for PC server
- Cooling fan system for PC server
- Storage system power
- Basestation power supply
- Power tools

Electrical Characteristics

% of Ampere Rating	Opening Time
100%	4 hours, Minimum
200%	60 seconds, Maximum

Agency Approvals

Agency	Agency File/Certificate Number	Ampere Rating
US	E10480	40A – 50A
	J 50568426	40A - 50A

Electrical Specifications

Ampere Rating (A)	Amp Code	Max Voltage Rating (V)	Interrupting Rating ¹	Nominal Cold Resistance (Ohms)	Nominal Melting I ² t (A ² Sec.)	Nom Voltage Drop (mV)	Agency Approvals	
							US	
40	040.	125	100A @ 125VAC 600A @ 75VDC	0.00130	1700	110	X	X
50	050.	125	100A @ 125VAC 600A @ 75VDC	0.00105	2700	115	X	X

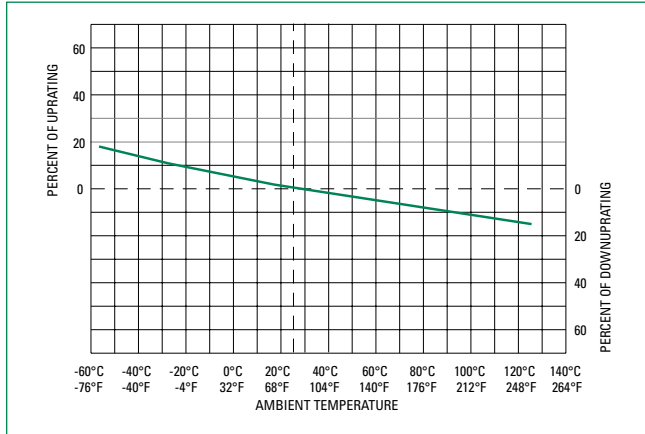
Notes:

1. Cold resistance measured at less than 10% of rated current at 23°C.
2. Agency Approval Table Key: X = Approved or Certified, P = Pending.
3. I²t values stated for 1 msec opening time.

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NAN02® > Fast Acting Fuse

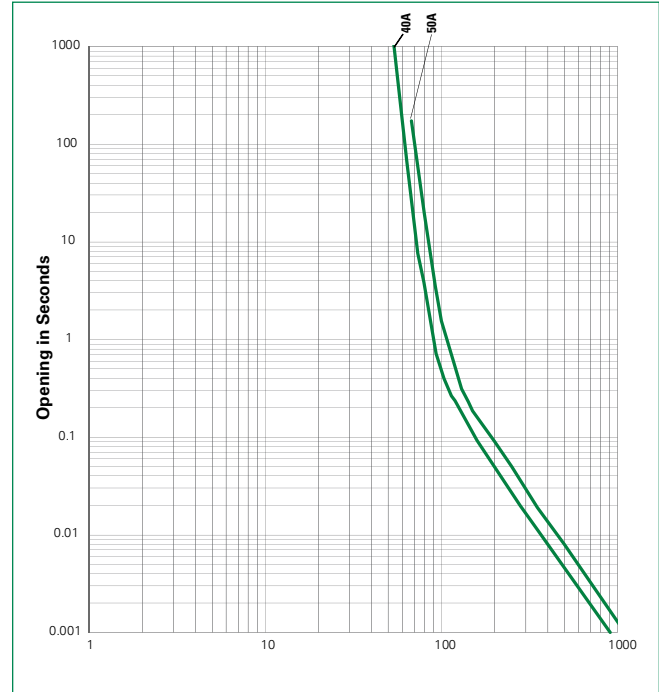
Temperature Re-rating Curve



Note:

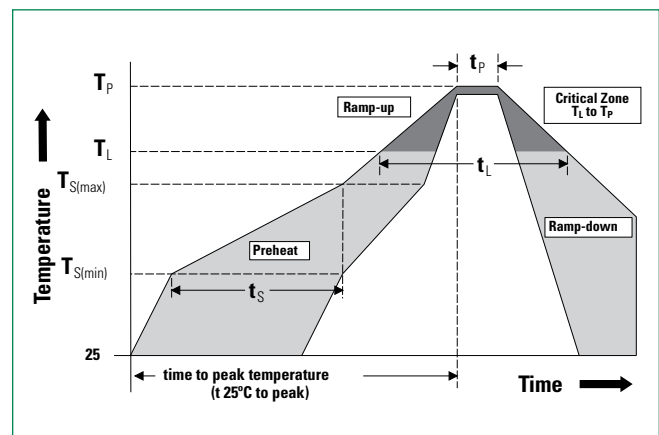
1. Derating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

Average Time Current Curves



Soldering Parameters – Reflow 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)		260 $^{+0/-5}$ °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



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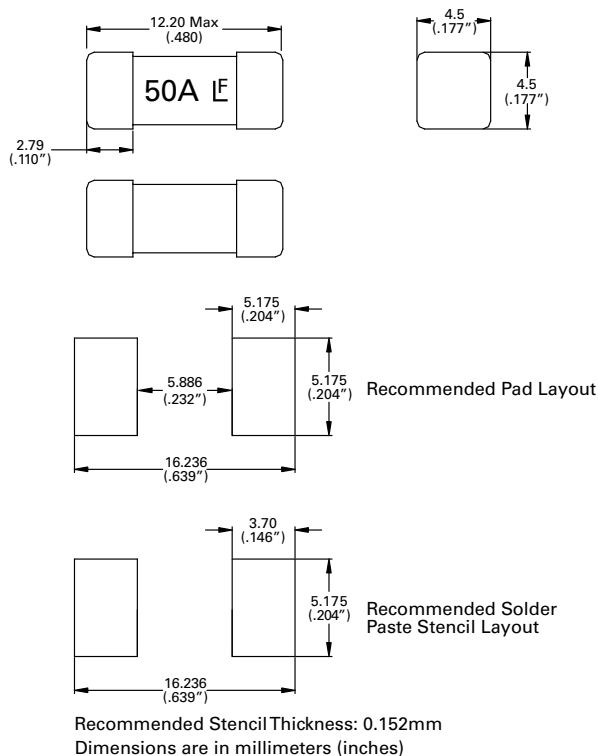
NAN02® > Fast Acting Fuse

Product Characteristics

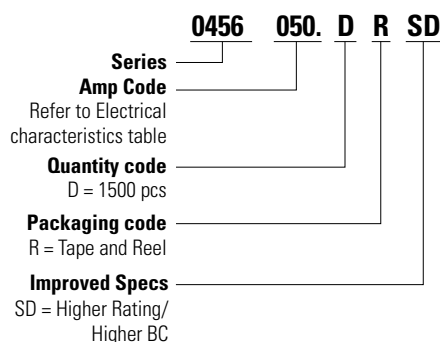
Materials	Body: Ceramic Cap: Silver Plated Brass
Product Marking	Body: Current Rating, Brand Logo
Insulation Resistance	MIL-STD-202, method 302, Test Condition A (10,000ohms, Minimum)
Solderability	MIL-STD-202, Method 208
Resistance to Soldering Heat	MIL-STD-202, Method 210, Test Condition B (10 sec at 260°C)
PCB Recommendation for Thermal Management	Minimum copper trace width = 15mm (40A) / 25mm (50A) Recommended copper trace weight = 3oz (40A) / 6oz (50A) For PSE requirements: Minimum Copper trace width = 35mm Recommended Copper trace weight = 6oz Alternate methods of thermal management may be used. In such cases, under normal operations, the maximum temperature of the fuse body should not exceed 90°C in a 25°C environment.

Operating Temperature	-55°C to 125°C with proper derating
Thermal Shock	MIL-STD-202, Method 107, Test Condition B (5 cycles -65°C to 125°C)
Vibration	MIL-STD-202, Method 201 (10-55 Hz)
Moisture Sensitivity Level	J-STD-020, Level 1
Moisture Resistance	MIL-STD-202 Method 106, High Humidity (90-98%RH), Heat (65°C)
Salt Spray	MIL-STD-202, Method 101, Test Condition B
Mechanical Shock	MIL-STD-202, Method 213, Test Condition I (100 G's peak for 6 milliseconds)

Dimensions



Part Numbering System



Packaging

Rating	Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code
40 A 50 A	24 mm Tape and Reel	EIA RS-481-2 (IEC 286, Part 3)	1500	DR

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