

ROHS HF CALUS CE SE

456 Series Fuse



Agency A	gency Approvals					
AGENCY	AGENCY FILE NUMBER	AMPERE RATING				
c FN us	E10480	20A - 40A				
\triangle	T50291892	20A - 30A				
PS E	NBK030308-JP1021	20A - 30A				
SP:	29862	20A - 40A				

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

Description

The High Current NANO^{2®} Fuse is a small square surface mount fuse that is designed to support higher current requirements of various applications.

Features

- Surface mount high current fuse
- Fully compatible with lead-free solder alloys and higher temperature profiles associated with lead-free assembly
- RoHS compliant and Halogen Free
- Available in ratings of 20 to 40 Amperes

Applications

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

Additional Information







Datasheet





Samples

Ampere	Ampere Rating (A) Code	Max Voltage Interrupting Rating Rating (V)		Nominal Cold Resistance (Ohms)	Nominal Melting I²t (A² Sec.)	Nom Voltage Drop (mV)	Agency Approvals			
Rating							c 🔁 us	\triangle	PS	SP.
20	020.	125	100A @125VAC 300A @ 65VAC 300A @ 100VDC 1000A @ 32VDC 500A @ 72VDC	0.00230	18	64.7	х	x	x	x
25	025.	125	100A @ 125VAC 300A @ 65VAC 500A @ 72VDC 1000A @ 32VDC	0.00192	45	68.38	х	x	x	x
30	030.	125	100A @ 125VAC 300A @ 65VAC 1000A @ 32VDC 500A @ 72VDC	0.00132	81	69.9	x	x	x	x
40	040.	72	180A @ 72VDC 600A @ 60VDC	0.00105	191	55	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.

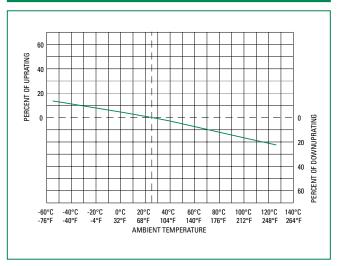
3. I²t values stated for 1 msec opening time.

Electrical Specifications



Surface Mount Fuses NANO^{2®} > Very Fast Acting Fuse > 456 Series

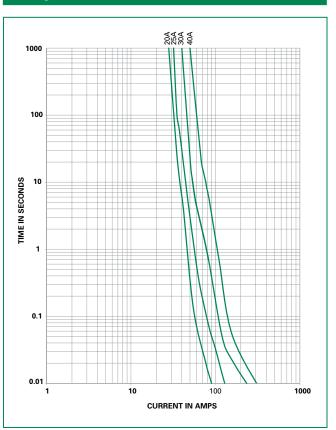
Temperature Re-rating Curve



Note:

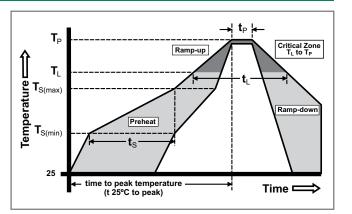
1. Rerating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

Average Time Current Curves



Soldering Parameters – Reflow Soldering

Reflow Co	ndition	Pb – Free assembly	
	-Temperature Min (T _{s(min)})	150°C	
Pre Heat	-Temperature Max (T _{s(max)})	200°C	
	-Time (Min to Max) (t _s)	60 – 180 secs	
Average ra (T _L) to pea	amp up rate (LiquidusTemp k	5°C/second max.	
$T_{S(max)}$ to T_{I}	- Ramp-up Rate	5°C/second max.	
Reflow	-Temperature (T _L) (Liquidus)	217°C	
Reliow	-Temperature (t _L)	60 – 150 seconds	
PeakTemp	erature (T _P)	260+0/-5 °C	
Time with Temperatu	in 5°C of actual peak ıre (t _p)	20 – 40 seconds	
Ramp-dov	vn Rate	5°C/second max.	
Time 25°C	to peakTemperature (T _P)	8 minutes max.	
Do not exc	ceed	260°C	

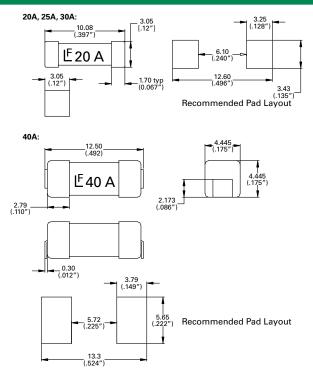




Product Characteristics

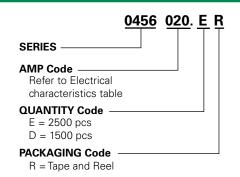
	Dartha Carrania		
Materials	Body: Ceramic Cap: Silver Plated Brass		
Product Marking	Body: Brand Logo, Current Rating		
Insulation Resistance	MIL-STD-202, method 302, Test Condition A (10,000 ohms, Minimum)		
Solderability	MIL-STD-202, Method 208		
Resistance to Soldering Heat	MIL-STD-202, Method 210, Test Condition B (10 sec at 260°C)		
	Min. copper layer thickness = 100µm Min. copper trace width =20A, 30 10mm (20A, 30A) / 15mm (40A)		
PCB Recommendation for Thermal Management	Alternate methods of thermal man- agement may be used. In such cases, under normal operations, the maxi- mum temperature of the fuse body should not exceed 90°C in a 25°C environment.		

D .			-		
DЛ	m	۹n	SI	n	าร
-				<u> </u>	



-		
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 (65ºC)	
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)	

Part Numbering System



Packagir	Packaging						
Rating	Packaging Option	Packaging Specification Quantity		Quantity & Packaging Code			
20A, 25A, 30A	24 mm Tape and Reel	EIA RS-481-2	2500	ER			
40A	24 mm Tape and Reel	EIA RS-481- 2 (IEC 286, part 3)	1500	DR			

Disclaimer Notice - Littelfuse products are not designed for, and shall not be used for, any purpose (including, without limitation, automotive, military, aerospace, medical, life-sustaining or nuclear facility applications, devices intended for surgical implant into the body, or any other application in which the failure or lack of desired operation of the product may result in personal injury, death, or property damage) other than those expressly set forth in applicable Littelfuse product documentation. Warranties granted by Littelfuse shall be deemed void for products used for any purpose not expressly set forth in applicable Littelfuse documentation. Littelfuse shall not be liable for any claims or damages arising out of products used in applications not expressly intended by Littelfuse as set forth in applicable Littelfuse products is subject to Littelfuse Terms and Conditions of Sale, unless otherwise agreed by Littelfuse. Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuses are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at <u>www.littelfuse.com/disclaimer-electronics</u>.