

235 Series, 5×20 mm, Fast-Acting Fuse





Agency Approvals

Agency	Agency File Number	Ampere Range		
PS	Cartridge: NBK030609-JP1021A NBK190609-JP1021A NBK030609-JP1021B Leaded: NBK030609-JP1021C NBK190609-JP1021B NBK030609-JP1021D	1A - 3.5A 4A -5A 6A -7A 1A - 3.5A 4A -5A 6A -7A		
	SU05001 - 3007 SU05001 - 2002 SU05001 - 2003	0.100A - 0.400A 0.500A - 3A 4A - 6A		
(h)	E10480	0.100A - 7A		
(29862	0.100A - 7A		
Œ	N/A	0.100A – 7A		

Description

 5×20 mm fast-acting glass body cartridge fuse designed to UL specification.

Features

- Designed to UL/CSA/ ANCE 248 Standard
- Available in cartridge and axial lead format
- RoHS compliant and lead-free

Applications

Used as supplementary protection in appliance or utilization equipment to provide individual protection for components or internal circuits.

Electrical Characteristics for Series

% of Ampere Rating	Ampere Rating	Opening Time
100%		4 hours, Minimum
135%	0.100A – 7A	1 hour, Maximum
200%		5 seconds, Maximum

Additional Information









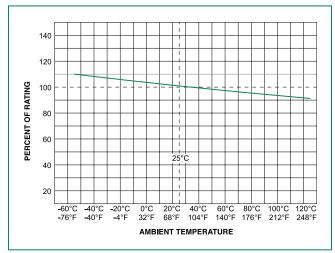
For recommended fuse accessories for this product series, see 'Recommended Accessories' section.



Electrical Characteristic Specifications by Item

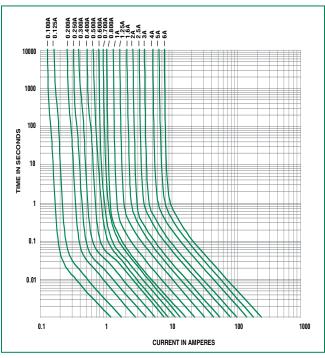
	Amp Boting Voltage		Nominal Cold	Nominal	Agency Approvals					
Amp Code	Amp Rating (A)	Rating (V)	Interrupting Rating	Interrupting Resistance	Melting I ² t (A ² sec)	Œ	(Î)	(PSE	
.100	0.1	250		8.4000	0.00127	Х	Х	Х		Х
.125	0.125	250		5.7500	0.00273	Х	Х	х		Х
.200	0.2	250		3.1500	0.00867	Х	Х	Х		Х
.250	0.25	250		2.2500	0.01660	Х	Х	Х		Х
.300	0.3	250	35A @ 250VAC	1.6000	0.03215	Х	Х	Х		Х
.400	0.4	250	10kA @ 125VAC	1.075	0.05845	Х	Х	Х		Х
.500	0.5	250		0.4265	0.06915	Х	Х	Х		Х
.600	0.6	250		0.3195	0.11200	Х	Х	х		Х
.700	0.7	250		0.2625	0.15600	Х	Х	Х		Х
.800	0.8	250		0.1920	0.25300	Х	Х	х		Х
001.	1	250		0.1530	0.46750	Х	Х	х	Х	Х
1.25	1.25	250		0.1055	1.08500	Х	Х	х	Х	Х
01.6	1.6	250	1004 @ 050\/40	0.0758	2.02500	Х	Х	х	Х	Х
002.	2	250	100A @ 250VAC 10kA @ 125VAC	0.0603	2.64500	Х	Х	х	Х	Х
02.5	2.5	250	10.01010	0.0437	5.44500	Х	Х	Х	Х	Х
003.	3	250		0.0347	8.39500	Х	Х	Х	Х	Х
03.5	3.5	250		0.0331	17.14000	Х	Х		Х	
004.	4	125		0.0246	17.14000	Х	Х	Х	Х	Х
005.	5	125	10kA @ 125VAC	0.0184	27.41000	Х	Х	Х	Х	Х
006.	6	125	TUKA W 125VAC	0.0148	47.32500	х	х	х	х	Х
007.	7	125		0.0157	64.81500	Х	Х		Х	

Temperature Re-rating Curve



Note: Rerating depicted in this curve is in addition to the standard derating of 25% for $\,$

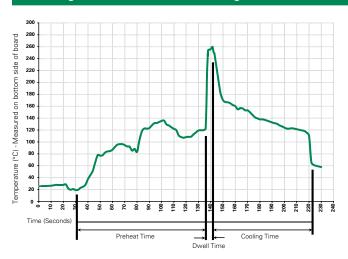
Average Time Current Curves



Please contact Littelfuse for details on T-C curve for 7A rating



Soldering Parameters - Wave Soldering



Recommended Process Parameters:

Wave Parameter	Lead-Free Recommendation			
Preheat:				
(Depends on Flux Activation Temperature)	(Typical Industry Recommendation)			
Temperature Minimum:	100°C			
Temperature Maximum:	150°C			
Preheat Time:	60-180 seconds			
Solder Pot Temperature:	260°C Maximum			
Solder DwellTime:	2-5 seconds			

Recommended Hand-Solder Parameters:

Solder Iron Temperature: 350°C +/- 5°C

Heating Time: 5 seconds max.

Note: These devices are not recommended for IR or Convection Reflow process.

Product Characteristics

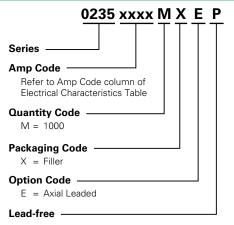
Materials	Body: Glass Cap: Nickel-plated brass Leads: Tin-plated Copper
Terminal Strength	MIL-STD-202, Method 211 . Test Condition A
Solderability	MIL-STD-202 Method 208
Product Marking	Cap 1: Brand logo, current and voltage rating Cap 2: Series and agency approval markings
Packaging	Available in Bulk (M=1000 pcs/pkg) or on Tape/Reel (MRET1=1000 pcs/reel)

Operating Temperature	−55°C to +125°C
Thermal Shock	MIL-STD-202, Method 107, Test Condition B: (5 cycles –65°C + 125°C)
Vibration	MIL-STD-202, Method 201
Humidity	MIL-STD-202, Method 103, Test Condition A high RH (95%) and elevated temperature (40° C) for 240 hours
Salt Spray	MIL-STD-202, Method 101, Test Condition B



Dimensions - 20<u>+</u>0.5 → 0235000P 5.1±0.6 5.1±0.6 0235.100 XEP 40±1.0 — 21.5±1.0 → 0235.400 XEP 0.65±0.05 5.5±0.3 40±1.0 ← 21.5±1.0 → 0235.500 XEP to 0235006.XEP 0.65±0.05* All dimensions in mm

Part Numbering System



Notes:

Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Taping Width	
235 Series					
Bulk	N/A	1000	MX	N/A	
Bulk	N/A	1000	MXE	N/A	
Reel and Tape	EIA 296-E	1000	MRET1	T1=53mm (2.087")	

Recommended Accessories

Accessory Type	Series	Description		Max Application Amperage
	345_ISF	Panel Mount Shock-Safe Fuseholder		10
Holder	<u>345</u>	Shock-Safe Fuseholder with PC Mount, Solder Mount and Panel Mount options		20
	<u>830</u>	PC Mount Shock-Safe Miniature Fuseholder		16
	<u>520</u>	Metric OMNI-BLOK® Fuse Block		10
Block	<u>646</u>	PC Mount Miniature Fuse Block	250	6.3
	<u>658</u>	Surface Mount Miniature Fuse Block		10
	<u>520_W</u>	PC Mount Miniature Fuse Clip		6.3
Clip	<u>111</u>	PC Board Mount Fuse Clip		10
	<u>445</u>	PC Board Mount Fuse Clip		10

- Notes:
 1. Do not use in applications above rating.
- 2. Please refer to fuseholder data sheet for specific re-rating information.
- 3. Please contact factory for applications greater than the max voltage and amperage shown.

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^{*} Ratings above 6.3A have 0.8±0.05 diameter lead.