235 Series, 5×20 mm, Fast-Acting Fuse



Agency Approvals

Agency	Agency File Number	Ampere Range		
Â ^g u	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		
K.	SU05001 – 3007 SU05001 – 2002 SU05001 – 2003	0.100A – 0.400A 0.500A – 3A 4A – 6A		
ų.	E10480	0.100A - 7A		
<u>ج</u>	29862	0.100A - 7A		
(€	N/A	0.100A – 7A		

Description

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

Features

- Designed to UL/CSA/ ANCE 248 Standard
- RoHS compliant and lead-free

RoHS 🕫 🧲 🖲 🏵 😤 🎉

• Available in cartridge and axial lead format

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	OpeningTime		
100%		4 hours, Minimum		
135%	0.100A – 7A	1 hour, Maximum		
200%		5 seconds, Maximum		

Additional Information



.Ľ





Accessories

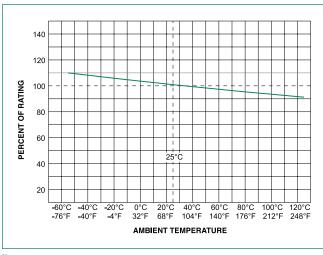
For recommended fuse accessories for this product series, see 'Recommended Accessories' section.



Axial Lead & Cartridge Fuses 5×20 mm > Time-Lag > 235 Series

Amp Rating Voltage		N	Nominal Cold	Newinel Melting	Agency Approvals					
Amp Code (A)	Rating (V)	Interrupting Rating	Resistance (Ohms)	Nominal Melting I²t (A² sec)	Œ		()		ß	
.100	0.1	250		8.4000	0.00127	х	х	х	-	х
.125	0.125	250		5.7500	0.00273	х	x	х	-	х
.200	0.2	250	-	3.1500	0.00867	х	x	х	-	х
.250	0.25	250		2.2500	0.01660	х	x	x	-	х
.300	0.3	250	35A @ 250VAC	1.6000	0.03215	х	x	х	-	х
.400	0.4	250	10kA @ 125VAC	1.075	0.05845	х	x	х	-	х
.500	0.5	250	-	0.4265	0.06915	х	x	x	-	х
.600	0.6	250	-	0.3195	0.11200	х	x	х	-	х
.700	0.7	250	-	0.2625	0.15600	х	x	х	-	х
.800	0.8	250		0.1920	0.25300	х	x	х	-	х
001.	1	250		0.1530	0.46750	х	x	х	x	х
1.25	1.25	250	-	0.1055	1.08500	х	x	х	x	х
01.6	1.6	250		0.0758	2.02500	х	x	х	X	х
002.	2	250	100A @ 250VAC 10kA @ 125VAC	0.0603	2.64500	х	x	x	x	х
02.5	2.5	250		0.0437	5.44500	х	x	х	x	х
003.	3	250	-	0.0347	8.39500	х	x	х	x	х
03.5	3.5	250		0.0331	17.14000	х	x	-	x	-
004.	4	125		0.0246	17.14000	х	x	х	x	х
005.	5	125	1014 @ 1051/40	0.0184	27.41000	х	x	х	x	х
006.	6	125	10kA @ 125VAC	0.0148	47.32500	х	x	х	x	х
007.	7	125	1	0.0157	64.81500	х	x	-	х	-

Temperature Re-rating Curve

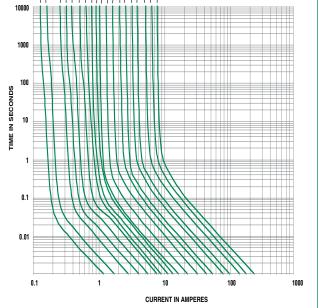


Note:

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



Average Time Current Curves



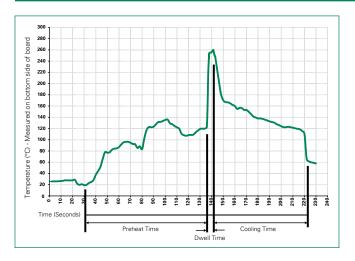
Please contact Littelfuse for details on T-C curve for 7A rating



Axial Lead & Cartridge Fuses

5×20 mm > Time-Lag > 235 Series

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 Dwell Time:	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

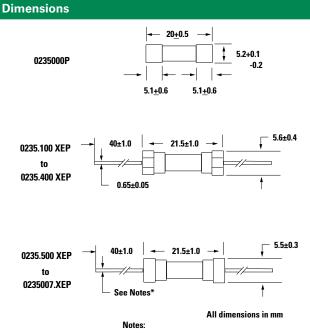
Materials	Body: Glass Cap: Nickel-plated brass Leads: Tin-plated Copper		
Terminal Strength	MIL-STD-202, Method 211. Test Condition A		
Solderability	MIL-STD-202 Method 208		
Product Marking	Cap 1: Brand logo, current and voltage rating Cap 2: Series and agency approval markings		
Packaging	Available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

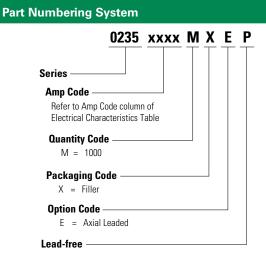
Operating Temperature	-55°C to +125°C
Thermal Shock	MIL-STD-202, Method 107, Test Condition B: (5 cycles $-65^{\circ}C + 125^{\circ}C$)
Vibration	MIL-STD-202, Method 201
Humidity	MILSTD-202, Method 103, Test Condition A high RH (95%) and elevated temperature (40° C) for 240 hours
Salt Spray	MIL-STD-202,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



Axial Lead & Cartridge Fuses

5×20 mm > Time-Lag > 235 Series





Notes: * 0.1A-6A have 0.65±0.05 diameter lead. 7A have 0.8±0.05 diameter lead.

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

Disclaimer Notice - 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. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at: www.littelfuse.com/disclaimer-electronics.