

**235 Series, 5×20 mm, Fast-Acting Fuse**



**Description**

5×20mm 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.

**Agency Approvals**

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

**Electrical Characteristics for Series**

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

**Additional Information**



**Datasheet**



**Resources**



**Samples**



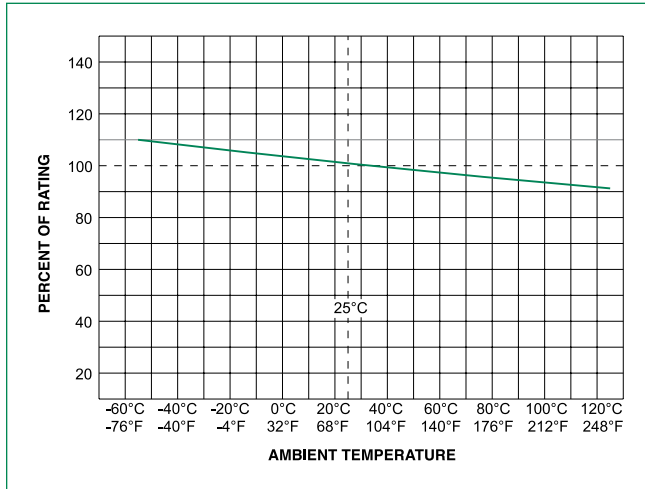
**Accessories**

For recommended fuse accessories for this product series, see '[Recommended Accessories](#)' section.

**Electrical Characteristic Specifications by Item**

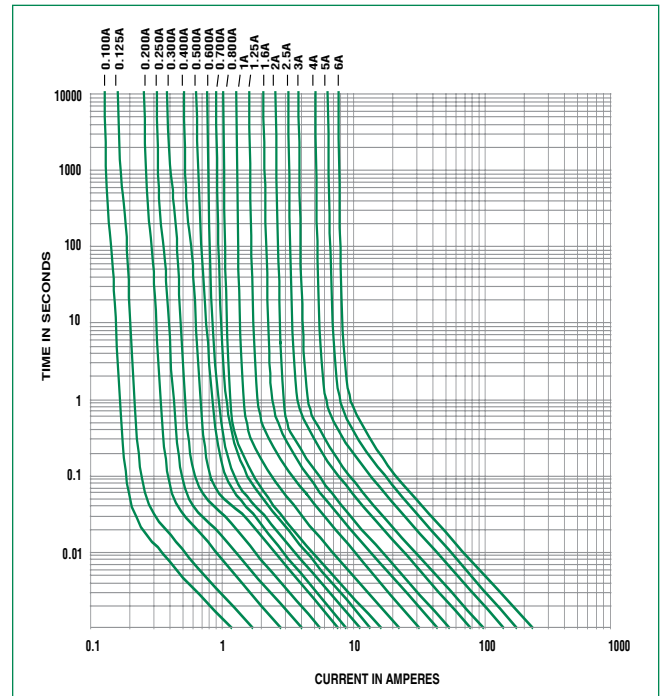
Amp Code	Amp Rating (A)	Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I <sup>2</sup> t (A <sup>2</sup> sec)	Agency Approvals				
						CE	UL	SFA	PS E	KC
.100	0.1	250	35A @ 250VAC 10kA @ 125VAC	8.4000	0.00127	x	x	x	-	x
.125	0.125	250		5.7500	0.00273	x	x	x	-	x
.200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

**Temperature Re-rating Curve**



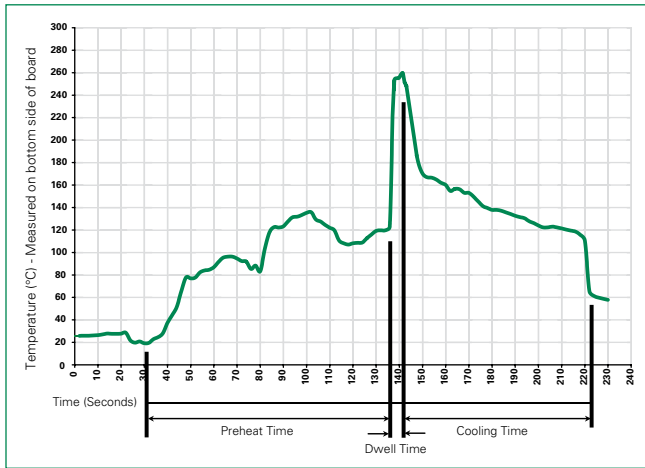
**Note:**  
Rerating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

**Average Time Current Curves**



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

**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.

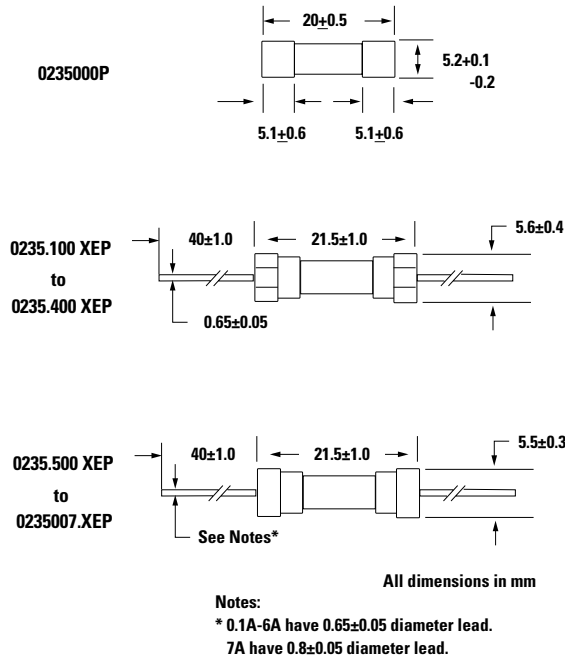
**Note:** These devices are not recommended for IR or Convection Reflow process.

**Product Characteristics**

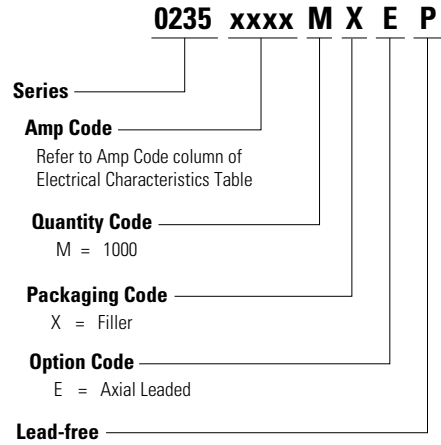
<b>Materials</b>	Body: Glass Cap: Nickel-plated brass Leads: Tin-plated Copper
<b>Terminal Strength</b>	MIL-STD-202, Method 211, Test Condition A
<b>Solderability</b>	MIL-STD-202 Method 208
<b>Product Marking</b>	Cap 1: Brand logo, current and voltage rating Cap 2: Series and agency approval markings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

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

## Dimensions



## Part Numbering System



## Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Taping Width
<b>235 Series</b>				
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
Holder	<a href="#">345_ISF</a>	Panel Mount Shock-Safe Fuseholder	250	20
	<a href="#">345</a>	Shock-Safe Fuseholder with PC Mount, Solder Mount and Panel Mount options		20
	<a href="#">830</a>	PC Mount Shock-Safe Miniature Fuseholder		16
Block	<a href="#">520</a>	Metric OMNI-BLOK® Fuse Block		10
	<a href="#">646</a>	PC Mount Miniature Fuse Block		6.3
	<a href="#">658</a>	Surface Mount Miniature Fuse Block		10
Clip	<a href="#">520_W</a>	PC Mount Miniature Fuse Clip		6.3
	<a href="#">111</a>	PC Board Mount Fuse Clip		10
	<a href="#">445</a>	PC Board Mount Fuse Clip		10

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