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### **Littelfuse** Expertise Applied | Answers Delivered

5×20 mm > Slo-Blo® Fuse > 239 Series

### 239 Series, 5×20 mm, Slo-Blo® Fuse



### Agency Approvals

Agency	Agency File Number	Ampere Range
Â <sup>9</sup> m	Cartridge: NBK030609-JP1021A NBK190609-JP1021A NBK030609-JP1021B Leaded: NBK030609-JP1021C NBK190609-JP1021B NBK030609-JP1021D	1A – 3.5A 4A – 5A 7A 1A – 3.5A 4A – 5A 7A
<u>S</u>	SU05001 – 2004A SU05001 – 2014A	0.200A – 3.15A 4A – 7A
(Ų)	E10480	0.080A – 7A
SP.	29862	0.200A – 3.15A 4A – 7A
(€	N/A	0.080A – 7A

#### Description

 $5{\times}20\text{mm}$  Slo-Blo® glass body cartridge fuse designed to UL specification.

#### Features

- Designed to UL/CSA/ ANCE 248-1 and 248-14 Standards
- 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 Ratings	OpeningTime
100%		4 hours, Minimum
135%	All Ratings	1 hour, Maximum
200%		2 minutes, Maximum

#### **Additional Information**







For recommended fuse accessories for this product series, see '<u>Recommended Accessories</u>' section.

### Axial Lead & Cartridge Fuses

5×20 mm > Slo-Blo<sup>®</sup> Fuse > 239 Series



Electrical Characteristic S	necification by	/ Item
	pecification b	/ item

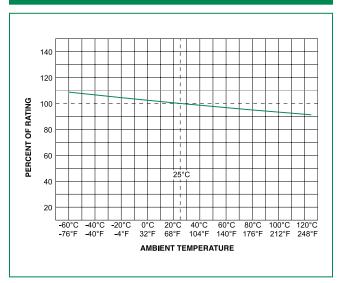
		Voltage		Nominal Cold	Nominal	Agency Approvals				
Amp Code	Amp Rating (A)	p Rating Interrupting		Resistance (Ohms)	Resistance Melting		SP.	PS E	<u>S</u>	Œ
.080.	0.08	250		28.1750	0.02500	x				x
.100	0.1	250		17.3425	0.05500	X				X
.125	0.125	250		11.6000	0.08500	x				X
.150	0.15	250		8.1000	0.13000	X				X
.200	0.2	250		3.8725	0.16500	X	х		х	X
.250	0.25	250		3.0700	0.34000	X	х		х	X
.300	0.3	250	35A @ 250 VAC	2.3000	0.61500	X	х		х	X
.400	0.4	250	10kA @ 125 VAC	1.4750	2.02000	X	х		х	X
.500	0.5	250		0.9090	1.98500	X	х		х	X
.600	0.6	250		0.6990	2.41500	X	х		х	X
.700	0.7	250		0.5375	4.12000	X	х		х	X
.750	0.75	250		0.4710	5.42500	x	x		х	X
.800	0.8	250		0.4155	7.56500	X	х		х	X
001.	1	250		0.2965	11.29500	X	X	X	х	X
1.25	1.25	250		0.1980	19.52500	X	х	X	х	X
01.6	1.6	250		0.1205	30.43000	X	X	X	х	X
002.	2	250		0.0943	50.58500	X	X	X	х	X
02.5	2.5	250	10kA @ 125 VAC	0.0583	79.70500	X	х	X	х	X
003.	3	250	100A @ 250 VAC	0.04877	129.51000	X	х	X	х	X
3.15	3.15	250		0.0414	128.05000	X	X	X	х	X
03.2	3.2	250		0.0385	128.05000	X		X		X
03.5	3.5	250		0.0370	128.05000	X		X		X
004.	4	125		0.0312	270.703	X	X	X	х	X
005.	5	125	10kA @ 125 VAC	0.0199	302.836	x	X	X	х	x
007.	7	125		0.0114	305.758	X	х	X	х	X



### **Axial Lead & Cartridge Fuses**

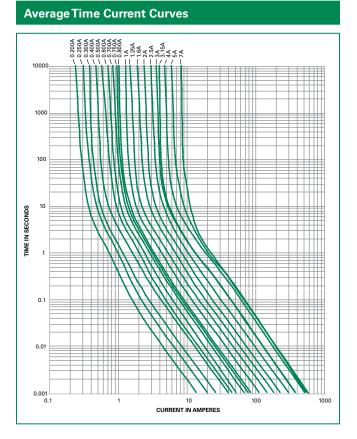
5×20 mm > Slo-Blo® Fuse > 239 Series

#### **Temperature Re-rating Curve**

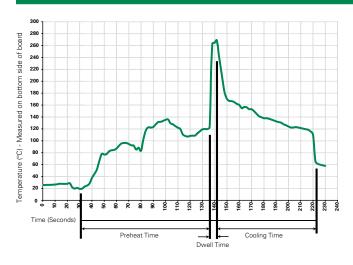


Note:

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



#### **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.

### **Axial Lead & Cartridge Fuses**

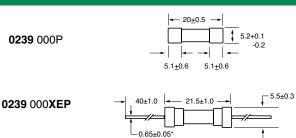
5×20 mm > Slo-Blo® Fuse > 239 Series



#### **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

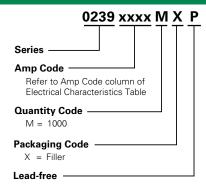
<b>.</b>					
DI	m	e	ns	0	ns



All dimensions in mm

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

#### Part Numbering System



Notes:

\* Ratings above 6.3A have 0.8±0.05 diameter lead.

#### Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Taping Width
239 Series				
Bulk	N/A	1000	MX	N/A
Bulk	N/A	1000	MXE	N/A
Reel and Tape	EIA 296-E	1000	MRET1	T1=52mm (2.062")
Bulk	N/A	1000	MXB	N/A
Bulk	N/A	100	HX	N/A
Bulk	N/A	100	HXE	N/A

#### **Recommended Accessories**

Accessory Type	Series	Description		Max Application Amperage
	<u>345_ISF</u>	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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