

# 218 Series

## 5x20 mm, Time-Lag Fuse



### Description

The 218 series fuse is a 5x20mm time-lag glass body cartridge fuse designed to IEC specification.

### Features & Benefits

- Designed to International IEC Standards for use globally
- Meets the IEC 60127-2, Sheet 3 specification for Time-Lag fuses
- Available in cartridge and axial lead form
- RoHS compliant and lead-free

### Web Resources



Download ECAD models, order samples, and find technical resources at [www.littelfuse.com](http://www.littelfuse.com)

### 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
PS E	Cartridge: NBK090205-E10480A NBK120802-E10480C	1A – 5A 6.3A – 15A
	Leaded: NBK090205-E10480B NBK120802-E10480D	1A – 5A 6.3A – 15A
CCC	2020970207000065	0.032A – 6.3A
UL	SU05001-3005	0.032A – 0.040A
	SU05001-2008	0.050A – 0.800A
	SU05001-2009	1A – 10A
UL	E10480	0.032A – 16A
SP	29862	0.032A - 10A; 15A
S	2300869	0.032A – 6.3A
D'E	40013496	0.032A – 10A
VDE	40016604	15A*
VDE	KM41462	0.080A – 6.3A
CE	N/A	0.032A – 16A

\* - Approval for Cartridge versions only

### Electrical Characteristics

% of Ampere Rating	Ampere Rating	Opening Time
150%	0.032A - 0.100A	60 minutes, Minimum
	0.125A - 6.3A	60 minutes, Minimum
	8A - 16A	30 minutes, Minimum
210%	0.032A - 0.100A	120 sec., Maximum
	0.125A - 6.3A	120 sec., Maximum
	8A - 16A	120 sec., Maximum
275%	0.032A - 0.100A	200 ms., Min.; 10 sec. Max.
	0.125A - 6.3A	600 ms., Min.; 10 sec. Max.
	8A - 16A	600 ms., Min.; 10 sec. Max.
400%	0.032A - 0.100A	40 ms., Min.; 3 sec. Max.
	0.125A - 6.3A	150 ms., Min.; 3 sec. Max.
	8A - 16A	150 ms., Min.; 3 sec. Max.
1000%	0.032A - 0.100A	10 ms., Min.; 300 ms. Max.
	0.125A - 6.3A	20 ms., Min.; 300 ms. Max.
	8A - 16A	20 ms., Min.; 300 ms. Max.

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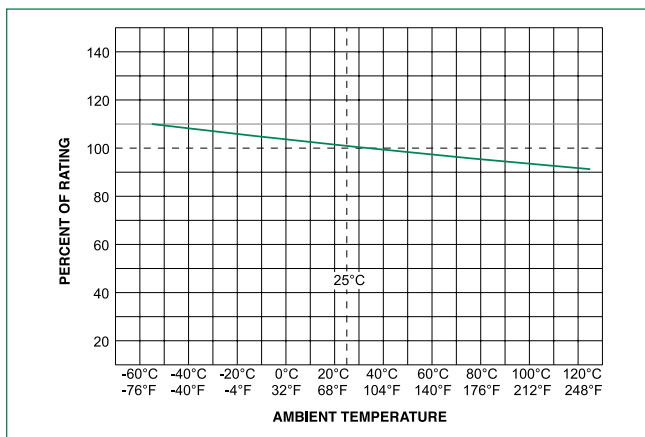
## 5x20 mm, Time-Lag Fuse

### Electrical Characteristics

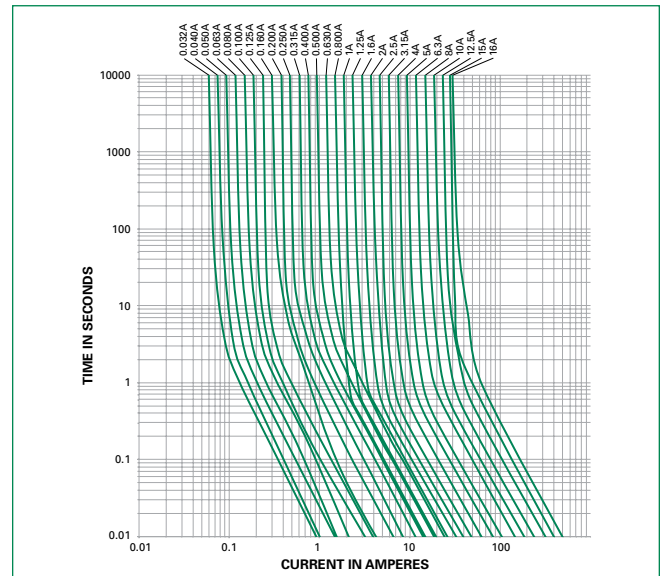
Amp Code	Amp Rating (A)	Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I <sup>2</sup> t (A <sup>2</sup> sec)	Maximum Voltage Drop at Rated Current (mV)	Maximum Power Dissipation At 1.5In(W)	Agency Approvals								
.032	0.032	250	35 A @ 250 VAC	48.258	0.011	5000	1.6	-	x	x	-	x	x	x	x	x
.040	0.04	250		31.862	0.011	4000	1.6	-	x	x	-	x	x	x	x	x
.050	0.05	250		21.292	0.027	3500	1.6	-	x	x	-	x	x	x	x	x
.063	0.063	250		14.268	0.046	3000	1.6	-	x	x	-	x	x	x	x	x
.080	0.08	250		9.07	0.075	2500	1.6	x	x	x	-	x	x	x	x	x
.100	0.1	250		6.018	0.079	2000	1.6	x	x	x	-	x	x	x	x	x
.125	0.125	250		4.2	0.1465	1900	1.6	x	x	x	-	x	x	x	x	x
.160	0.16	250		3.7	0.144	1500	1.6	x	x	x	-	x	x	x	x	x
.200	0.2	250		1.6	0.341	1300	1.6	x	x	x	-	x	x	x	x	x
.250	0.25	250		1.0495	0.5405	1100	1.6	x	x	x	-	x	x	x	x	x
.315	0.315	250		0.8475	1.11	1000	1.6	x	x	x	-	x	x	x	x	x
.400	0.4	250		0.535	1.325	900	1.6	x	x	x	-	x	x	x	x	x
.500	0.5	250		0.37	2.825	300	1.6	x	x	x	-	x	x	x	x	x
.630	0.63	250		0.275	4.675	250	1.6	x	x	x	-	x	x	x	x	x
.800	0.8	250		0.0813	3.37	150	1.6	x	x	x	-	x	x	x	x	x
001.	1	250		0.0613	6.73	150	1.6	x	x	x	x	x	x	x	x	x
1.25	1.25	250		0.0446	12.65	150	1.6	x	x	x	x	x	x	x	x	x
01.6	1.6	250		0.0336	23.35	150	1.6	x	x	x	x	x	x	x	x	x
002.	2	250		0.0293	14.45	150	1.6	x	x	x	x	x	x	x	x	x
02.5	2.5	250		0.0219	23.25	120	1.6	x	x	x	x	x	x	x	x	x
3.15	3.15	250	0.0173	38.15	100	1.6	x	x	x	x	x	x	x	x	x	
004.	4	250	40 A @ 250 VAC	0.0129	69.1	100	1.6	x	x	x	x	x	x	x	x	
005.	5	250	50 A @ 250 VAC	0.0104	111.0	100	1.6	x	x	x	x	x	x	x	x	
06.3	6.3	250	63 A @ 250 VAC	0.0076	198.5	100	1.6	x	x	x	x	x	x	x	x	
008.	8	250	80 A @ 250 VAC	0.0059	341.5	100	4	-	x	-	x	x	x	-	x	x
010.	10	250	100 A @ 250 VAC	0.0045	568.0	100	4	-	x	-	x	x	x	-	x	x
12.5	12.5	250	63 A @ 250 VAC	0.0034	889.0	100	4	-	-	-	x	x	-	-	x	-
015.	15	250	100 A @ 250 VAC	0.0028	1405.00	100	4	-	-	-	x	x	x	-	x	x*
016.	16	250	63 A @ 250 VAC	0.0021	1955.00	100	4	-	-	-	-	x	-	-	x	-

\* - Approval for cartridge versions only

Temperature Re-rating Curve



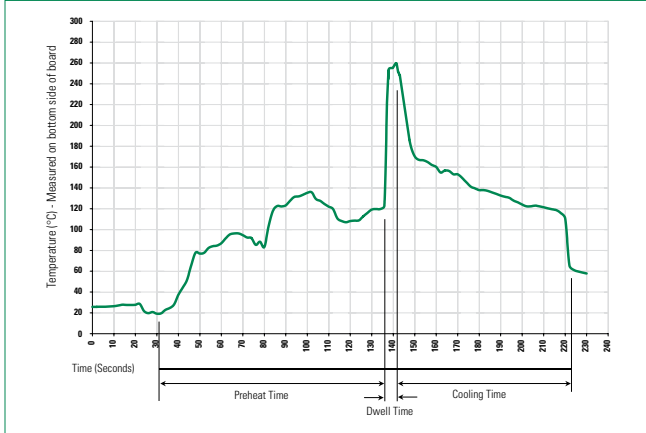
Average Time Current Curves



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### 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.

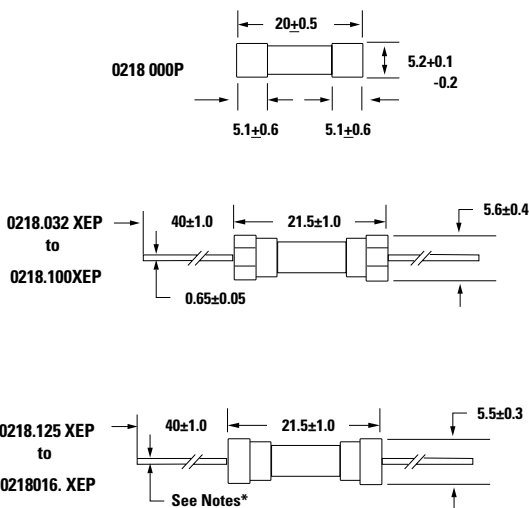
**Note:** These devices are not recommended for IR or Convection Reflow process.

### Product Characteristics

<b>Material</b>	<b>Body:</b> Glass <b>Cap:</b> Nickel-plated Brass <b>Leads:</b> 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>	<b>Cap1:</b> Brand logo, current and voltage ratings <b>Cap2:</b> Agency approval marks
<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 to +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

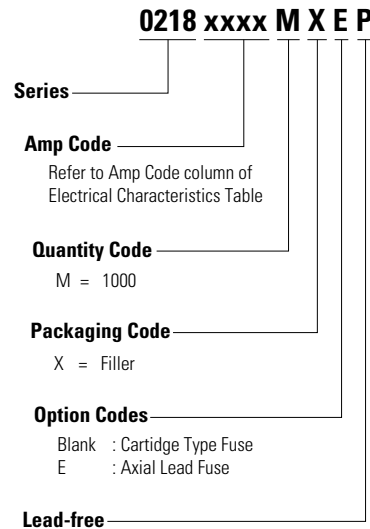
### Dimensions



**Notes:**  
\* 0.032A-6.3A have 0.65±0.05 diameter lead.  
8A-16A have 0.8±0.05 diameter lead.

All dimensions in mm

### Part Numbering System



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### Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Taping Width
<b>218 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")
Bulk	N/A	1000	MXG	N/A
Bulk	N/A	1000	MXB	N/A
Bulk	N/A	100	HX	N/A

### 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.

**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](http://www.littelfuse.com/disclaimer-electronics).