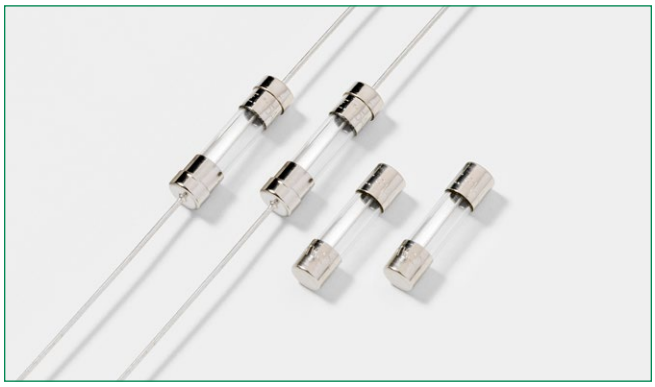
218 Series, 5×20 mm, Time-Lag Fuse



Agency Approvals

Agency	Agency File Number	Ampere Range
PSE	Cartridge: NBK090205-E10480A NBK120802-E10480C Leaded: NBK090205-E10480B NBK120802-E10480D	1A – 5A 6.3A – 15A 1A – 5A 6.3A – 15A
CCC	2020970207000065	0.032A – 6.3A
KC	SU05001-3005 SU05001-2008 SU05001-2009	0.032A – 0.040A 0.050A – 0.800A 1A – 10A
UL	E10480	0.032A – 16A
CSA	29862	0.032A - 10A; 15A
SEMKO	1620064	0.032A – 6.3A
VDE	40013496	0.032A – 10A
VDE	40016604	15A*
KEMA	KM41462	0.080A – 6.3A
CE	N/A	0.032A – 16A

* - Approval for Cartridge versions only

Description

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

Features

- 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

Applications

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

Additional Information

Datasheet | **Resources** | **Samples** | **Accessories**

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

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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Axial Lead & Cartridge Fuses

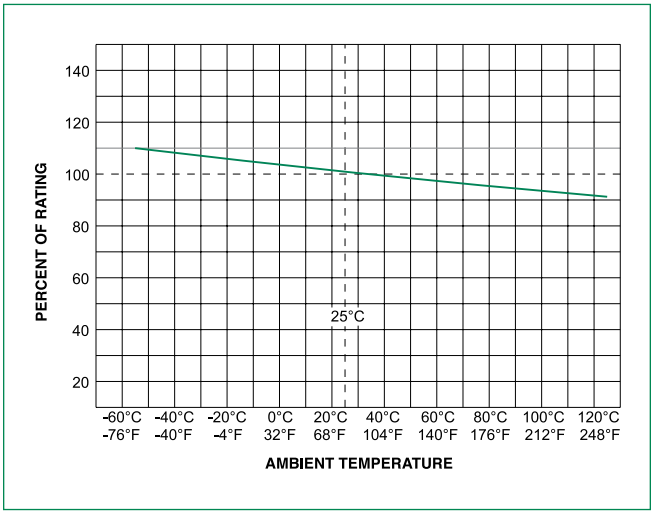
5×20 mm > Time-Lag > 218 Series

Electrical Characteristics

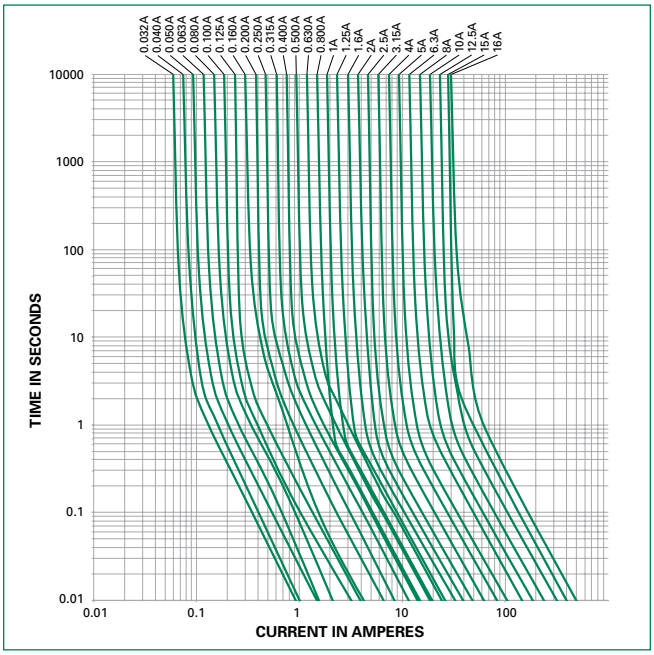
Amp Code	Amp Rating (A)	Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I^2t (A^2 sec)	Maximum Voltage Drop at Rated Current (mV)	Maximum Power Dissipation At 1.5In(W)	Agency Approvals								
.032	0.032	250	35 A @ 250 VAC	48.258	0.011	5000	1.6	-	x	x	-	x	x	x	x	x
.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	x
005.	5	250	50 A @ 250 VAC	0.0104	111.0	100	1.6	x	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	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 cartidge versions only

Temperature Re-rating Curve



Average Time Current Curves



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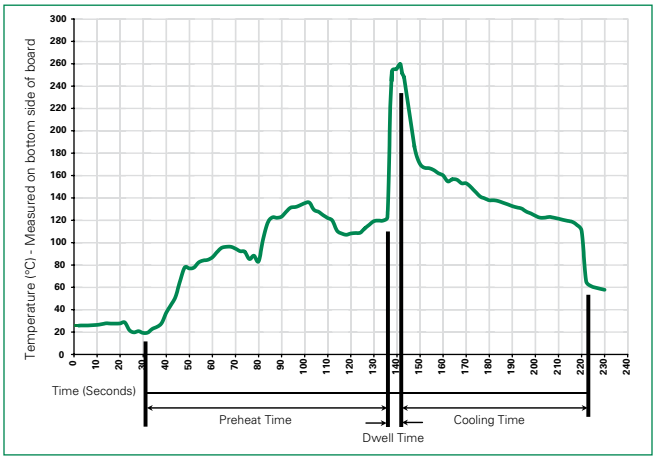
Soldering Parameters - Wave Soldering



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

Material	**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	**Cap1:** Brand logo, current and voltage ratings **Cap2:** Agency approval marks
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 to +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

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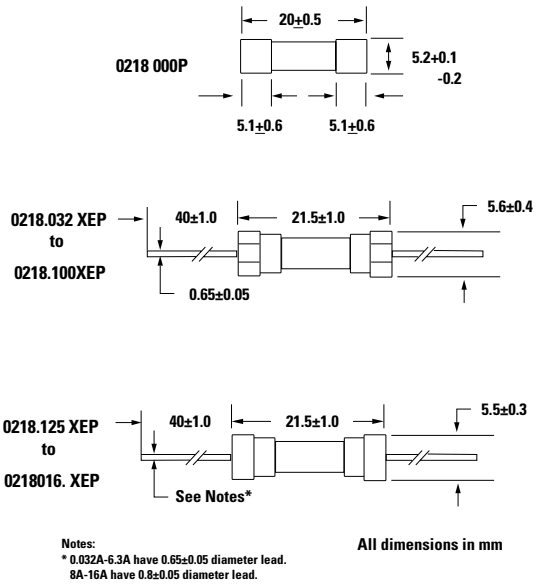
Axial Lead & Cartridge Fuses

5×20 mm > Time-Lag > 218 Series

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

0218 xxxx M X E P

Series

Amp Code
Refer to Amp Code column of Electrical Characteristics Table

Quantity Code
M = 1000

Packaging Code
X = Filler

Option Codes
Blank : Cartidge Type Fuse
E : Axial Lead Fuse

Lead-free

Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Taping Width
		218 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")
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	345_ISF	Panel Mount Shock-Safe Fuseholder	250	20
	345	Shock-Safe Fuseholder with PC Mount, Solder Mount and Panel Mount options		20
	830	PC Mount Shock-Safe Miniature Fuseholder		16
Block	520	Metric OMNI-BLOK® Fuse Block		10
	646	PC Mount Miniature Fuse Block		6.3
	658	Surface Mount Miniature Fuse Block		10
Clip	520_W	PC Mount Miniature Fuse Clip		6.3
	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.

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