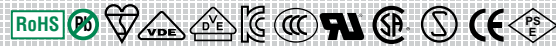












### 218 Series, 5x20 mm, Time-Lag Fuse



#### Agency Approvals

Agency	Agency File Number	Ampere Range
	Cartridge: NBK090205-E10480A NBK120802-E10480C	1A – 5A 6.3A – 15A
	Leaded: NBK090205-E10480B NBK120802-E10480D	1A – 5A 6.3A – 15A
	2005010207145715	0.032A – 6.3A
	SU05001-3005 SU05001-2008 SU05001-2009	0.032A – 0.040A 0.050A – 0.800A 1A – 10A
	E10480	0.032A – 16A
	29862	0.032A - 10A; 15A
	1620064	0.032A – 6.3A
	40013496	0.032A – 10A
	40016604	15A*
	KM41462	0.080A – 6.3A
	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

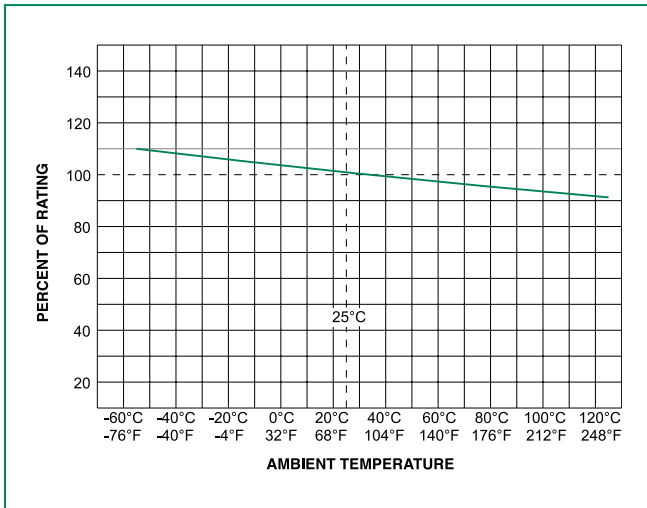
% of Ampere Rating	Ampere Rating	Opening Time
150%	0.032A - 0.100A	60 minutes, Minimum
	0.125A - 6.3A	60 minutes, Minimum
	8A - 16A	30 minutes, Minimum
210%	0.032A - 0.100A	120 sec., Maximum
	0.125A - 6.3A	120 sec., Maximum
	8A - 16A	120 sec., Maximum
275%	0.032A - 0.100A	200 ms., Min.; 10 sec. Max.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

### Electrical Characteristics

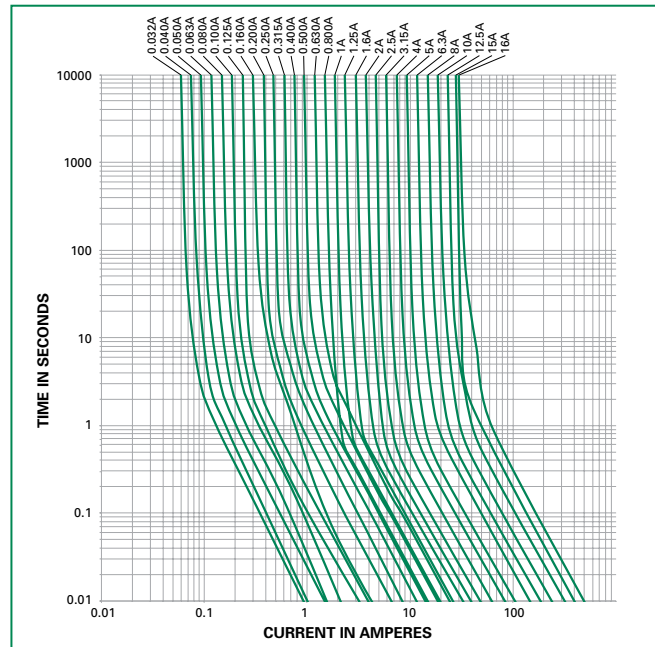
Amp Code	Amp Rating (A)	Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I <sup>2</sup> t (A <sup>2</sup> sec)	Maximum Voltage Drop at Rated Current (mV)	Maximum Power Dissipation At 1.5In(W)	Agency Approvals									
								UL	CCC	PS E	RU	SF	CS	CE	D'E		
.032	0.032	250	35 A @ 250 VAC	48.2580	0.01100	5000	1.6		x	x		x	x	x	x	x	
.040	0.04	250		31.8620	0.01100	4000	1.6		x	x		x	x	x	x	x	x
.050	0.05	250		21.2920	0.02700	3500	1.6		x	x		x	x	x	x	x	x
.063	0.063	250		14.2680	0.04600	3000	1.6		x	x		x	x	x	x	x	x
.080	0.08	250		9.0700	0.07500	2500	1.6	x	x	x		x	x	x	x	x	x
.100	0.1	250		6.0180	0.07900	2000	1.6	x	x	x		x	x	x	x	x	x
.125	0.125	250		4.2000	0.1465	1900	1.6	x	x	x		x	x	x	x	x	x
.160	0.16	250		3.7000	0.14400	1500	1.6	x	x	x		x	x	x	x	x	x
.200	0.2	250		1.6000	0.3410	1300	1.6	x	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	x
.315	0.315	250		0.8475	1.1100	1000	1.6	x	x	x	1.1100	x	x	x	x	x	x
.400	0.4	250		0.5350	1.3250	900	1.6	x	x	x		x	x	x	x	x	x
.500	0.5	250		0.3700	2.8250	300	1.6	x	x	x		x	x	x	x	x	x
.630	0.63	250		0.2750	4.6750	250	1.6	x	x	x		x	x	x	x	x	x
.800	0.8	250		0.0813	3.370	150	1.6	x	x	x		x	x	x	x	x	x
001.	1	250		0.0613	6.730	150	1.6	x	x	x	x	x	x	x	x	x	x
1.25	1.25	250		0.0446	12.650	150	1.6	x	x	x	x	x	x	x	x	x	x
01.6	1.6	250	0.0336	23.350	150	1.6	x	x	x	x	x	x	x	x	x	x	
002.	2	250	0.0293	14.450	150	1.6	x	x	x	x	x	x	x	x	x	x	
02.5	2.5	250	0.0219	23.250	120	1.6	x	x	x	x	x	x	x	x	x	x	
3.15	3.15	250	0.0173	38.150	100	1.6	x	x	x	x	x	x	x	x	x	x	
004.	4	250	40 A @ 250 VAC	0.0129	69.10	100	1.6	x	x	x	x	x	x	x	x	x	
005.	5	250	50 A @ 250 VAC	0.0104	111.00	100	1.6	x	x	x	x	x	x	x	x	x	
06.3	6.3	250	63 A @ 250 VAC	0.0076	198.50	100	1.6	x	x	x	x	x	x	x	x	x	
008.	8	250	80 A @ 250 VAC	0.0059	341.50	100	4		x		x	x	x		x	x	
010.	10	250	100 A @ 250 VAC	0.0045	568.00	100	4		x		x	x	x		x	x	
12.5	12.5	250	63 A @ 250 VAC	0.0034	889.00	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

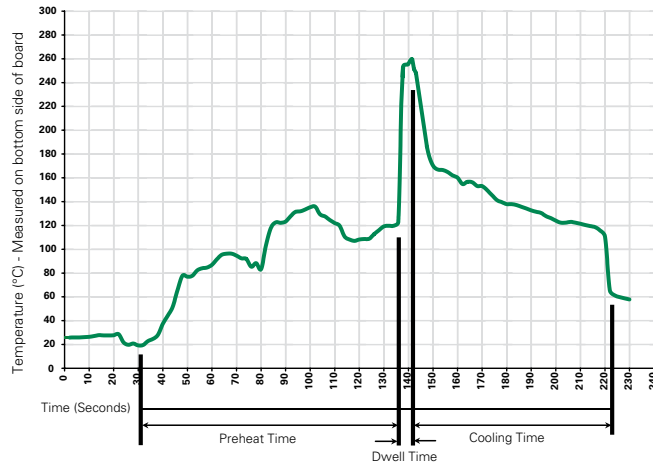
### Temperature Re-rating Curve



### Average Time Current Curves



### Soldering Parameters - Wave Soldering



### Recommended Process Parameters:

Wave Parameter	Lead-Free Recommendation
<b>Preheat:</b> (Depends on Flux Activation Temperature)	(Typical Industry Recommendation)
Temperature Minimum:	100°C
Temperature Maximum:	150°C
Preheat Time:	60-180 seconds
<b>Solder Pot Temperature:</b>	260°C Maximum
<b>Solder Dwell Time:</b>	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.**

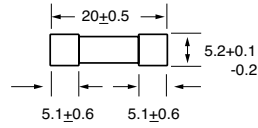
### Product Characteristics

<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)

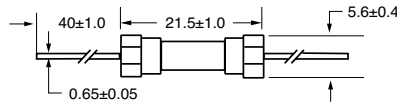
<b>Operating Temperature</b>	-55°C to +125°C
<b>Thermal Shock</b>	MIL-STD-202, Method 107, Test Condition B (5 cycles, -65°C to +125°C)
<b>Vibration</b>	MIL-STD-202, Method 201
<b>Humidity</b>	MIL-STD-202, Method 103, Test Condition A (High RH (95%) and elevated temperature (40°C) for 240 hours)
<b>Salt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

### Dimensions

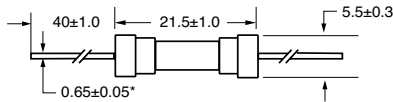
0218 000P



0218.032 XEP  
to  
0218.100XEP



0218.125 XEP  
to  
0218016. XEP

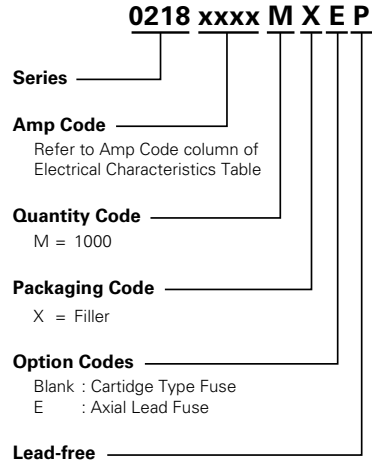


All dimensions in mm

Notes:

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

### Part Numbering System



### 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	10
	<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.

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### 218 Series, 5x20 mm, Time-Lag Fuse



#### Agency Approvals

Agency	Agency File Number	Ampere Range
	Cartridge: NBK090205-E10480A NBK120802-E10480C	1A – 5A 6.3A – 15A
	Leaded: NBK090205-E10480B NBK120802-E10480D	1A – 5A 6.3A – 15A
	2005010207145715	0.032A – 6.3A
	SU05001-3005 SU05001-2008 SU05001-2009	0.032A – 0.040A 0.050A – 0.800A 1A – 10A
	E10480	0.032A – 16A
	29862	0.032A - 10A; 15A
	1620064	0.032A – 6.3A
	40013496	0.032A – 10A
	40016604	15A*
	KM41462	0.080A – 6.3A
	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

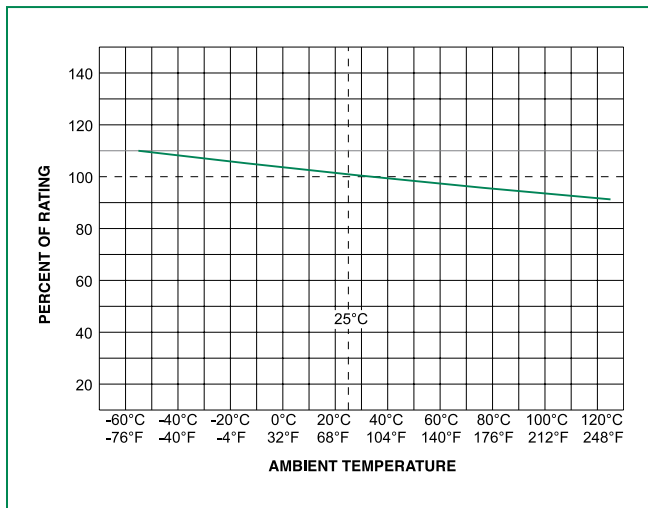
% of Ampere Rating	Ampere Rating	Opening Time
150%	0.032A - 0.100A	60 minutes, Minimum
	0.125A - 6.3A	60 minutes, Minimum
	8A - 16A	30 minutes, Minimum
210%	0.032A - 0.100A	120 sec., Maximum
	0.125A - 6.3A	120 sec., Maximum
	8A - 16A	120 sec., Maximum
275%	0.032A - 0.100A	200 ms., Min.; 10 sec. Max.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

### Electrical Characteristics

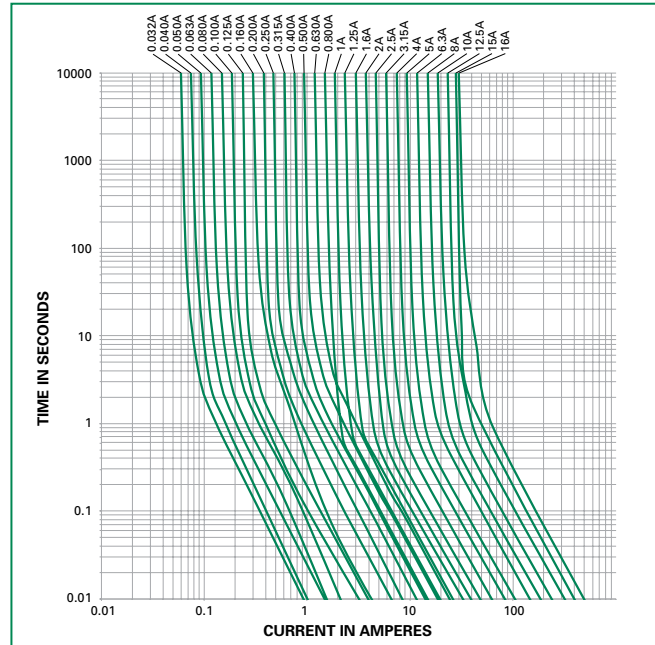
Amp Code	Amp Rating (A)	Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting $I^2t$ (A <sup>2</sup> sec)	Maximum Voltage Drop at Rated Current (mV)	Maximum Power Dissipation At 1.5In(W)	Agency Approvals									
								UL	CCC	PS E	RU	SF	CS	CE	D'E		
.032	0.032	250	35 A @ 250 VAC	48.2580	0.01100	5000	1.6		x	x		x	x	x	x	x	
.040	0.04	250		31.8620	0.01100	4000	1.6		x	x		x	x	x	x	x	x
.050	0.05	250		21.2920	0.02700	3500	1.6		x	x		x	x	x	x	x	x
.063	0.063	250		14.2680	0.04600	3000	1.6		x	x		x	x	x	x	x	x
.080	0.08	250		9.0700	0.07500	2500	1.6	x	x	x		x	x	x	x	x	x
.100	0.1	250		6.0180	0.07900	2000	1.6	x	x	x		x	x	x	x	x	x
.125	0.125	250		4.2000	0.1465	1900	1.6	x	x	x		x	x	x	x	x	x
.160	0.16	250		3.7000	0.14400	1500	1.6	x	x	x		x	x	x	x	x	x
.200	0.2	250		1.6000	0.3410	1300	1.6	x	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	x
.315	0.315	250		0.8475	1.1100	1000	1.6	x	x	x	1.1100	x	x	x	x	x	x
.400	0.4	250		0.5350	1.3250	900	1.6	x	x	x		x	x	x	x	x	x
.500	0.5	250		0.3700	2.8250	300	1.6	x	x	x		x	x	x	x	x	x
.630	0.63	250		0.2750	4.6750	250	1.6	x	x	x		x	x	x	x	x	x
.800	0.8	250		0.0813	3.370	150	1.6	x	x	x		x	x	x	x	x	x
001.	1	250		0.0613	6.730	150	1.6	x	x	x	x	x	x	x	x	x	x
1.25	1.25	250		0.0446	12.650	150	1.6	x	x	x	x	x	x	x	x	x	x
01.6	1.6	250	0.0336	23.350	150	1.6	x	x	x	x	x	x	x	x	x	x	
002.	2	250	0.0293	14.450	150	1.6	x	x	x	x	x	x	x	x	x	x	
02.5	2.5	250	0.0219	23.250	120	1.6	x	x	x	x	x	x	x	x	x	x	
3.15	3.15	250	0.0173	38.150	100	1.6	x	x	x	x	x	x	x	x	x	x	
004.	4	250	40 A @ 250 VAC	0.0129	69.10	100	1.6	x	x	x	x	x	x	x	x	x	
005.	5	250	50 A @ 250 VAC	0.0104	111.00	100	1.6	x	x	x	x	x	x	x	x	x	
06.3	6.3	250	63 A @ 250 VAC	0.0076	198.50	100	1.6	x	x	x	x	x	x	x	x	x	
008.	8	250	80 A @ 250 VAC	0.0059	341.50	100	4		x		x	x	x		x	x	
010.	10	250	100 A @ 250 VAC	0.0045	568.00	100	4		x		x	x	x		x	x	
12.5	12.5	250	63 A @ 250 VAC	0.0034	889.00	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

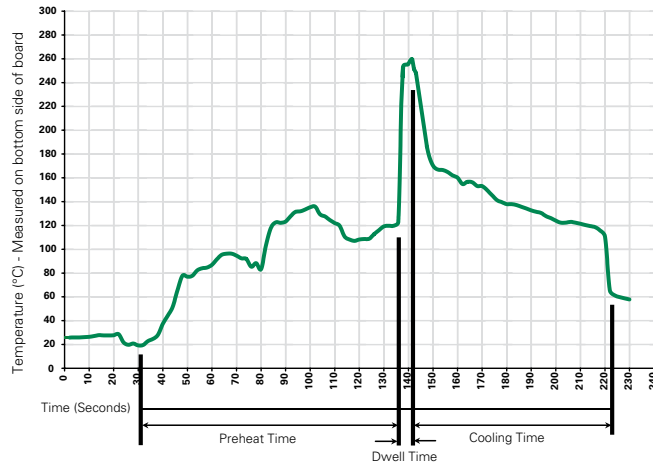
### Temperature Re-rating Curve



### Average Time Current Curves



### Soldering Parameters - Wave Soldering



### Recommended Process Parameters:

Wave Parameter	Lead-Free Recommendation
<b>Preheat:</b> (Depends on Flux Activation Temperature)	(Typical Industry Recommendation)
Temperature Minimum:	100°C
Temperature Maximum:	150°C
Preheat Time:	60-180 seconds
<b>Solder Pot Temperature:</b>	260°C Maximum
<b>Solder Dwell Time:</b>	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.**

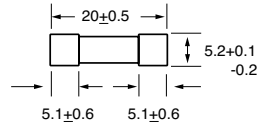
### Product Characteristics

<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)

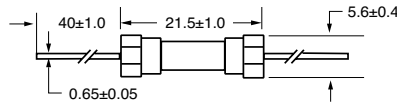
<b>Operating Temperature</b>	-55°C to +125°C
<b>Thermal Shock</b>	MIL-STD-202, Method 107, Test Condition B (5 cycles, -65°C to +125°C)
<b>Vibration</b>	MIL-STD-202, Method 201
<b>Humidity</b>	MIL-STD-202, Method 103, Test Condition A (High RH (95%) and elevated temperature (40°C) for 240 hours)
<b>Salt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

### Dimensions

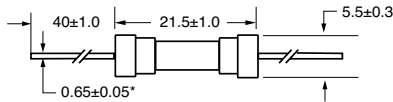
0218 000P



0218.032 XEP  
to  
0218.100XEP



0218.125 XEP  
to  
0218016. XEP

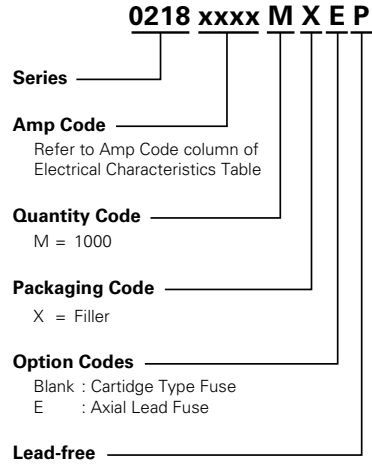


All dimensions in mm

Notes:

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

### Part Numbering System



### 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	10
	<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.

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