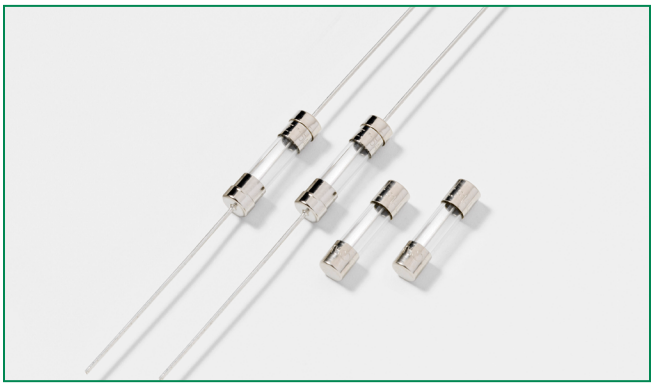
## 217 Series, 5 × 20 mm, Fast-acting Fuse



## Agency Approvals

| Agency | Agency File Number | Ampere Range |
|---|---|---|
| PS E | Cartridge Certificates:<br>NBK090205-E10480A<br>NBK120802-E10480C<br>Leaded Certificates:<br>NBK090205-E10480B<br>NBK120802-E10480D | 1A – 5A<br>6.3A – 15A<br><br>1A – 5A<br>6.3A – 15A |
| CCC | Certificates:<br>2002010207007600 | 32mA – 6.3A |
| KC | Certificates:<br>SU05001-3004<br>SU05001-2005<br>SU05001-2006<br>SU05001-2007 | 32mA – 40mA<br>50mA – 315mA<br>400mA – 6.3A<br>8A & 10A |
| UL | E10480<br>JDYX2 | 32mA – 10A |
| CSA | File:<br>029862<br>Acc. Class:<br>LR1422-30 | 32mA – 6.3A |
| SEMKO | File:<br>1402480 | 32mA – 6.3A |
| VDE | License:<br>40014645 | 32mA – 6.3A,<br>8A*, 10A* |
| VDE | License:<br>40016647 | 15A* |
| FIMKO | License:<br>KM41462 | 400mA – 6.3A |
| CE | | 32mA – 15A |

*Approval for cartridge versions only

## Description

5×20mm fast-acting glass body cartridge fuse designed to IEC specification.

## Features

- Designed to International (IEC ) Standards for use globally
- Meets the IEC 60127-2, Sheet 2 specification for fast-acting 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.

## Electrical Characteristics for Series

| % of Ampere Rating | Ampere Rating | Opening Time |
|---|---|---|
| 150% | 32mA–100mA | 60 minutes, Minimum |
| | 125mA-6.3A | 60 minutes, Minimum |
| | 8A-15A | 30 minutes, Minimum |
| 210% | 32mA-100mA | 30 minutes, Maximum |
| | 125mA-6.3A | 30 minutes, Maximum |
| | 8A-15A | 30 minutes, Maximum |
| 275% | 32mA-100mA | 0.01 sec., Min.; .5 sec. Max. |
| | 125mA-6.3A | 0.05 sec., Min.; 2 sec. Max. |
| | 8A-15A | 0.05 sec., Min.; 2 sec. Max. |
| 400% | 32mA-100mA | .003 sec., Min.; 0.1 sec.. Max. |
| | 125mA-6.3A | .01 sec., Min.; 0.3 sec. Max. |
| | 8A-15A | .01 sec., Min.; 0.4 sec. Max. |
| 1000% | 32mA-100mA | .02 second, Maximum |
| | 125mA-6.3A | .02 second, Maximum |
| | 8A-15A | .04 second, Maximum |

## Additional Information

**Datasheet** | **Resources** | **Samples**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Revised: 02/23/15

# Axial Lead & Cartridge Fuses

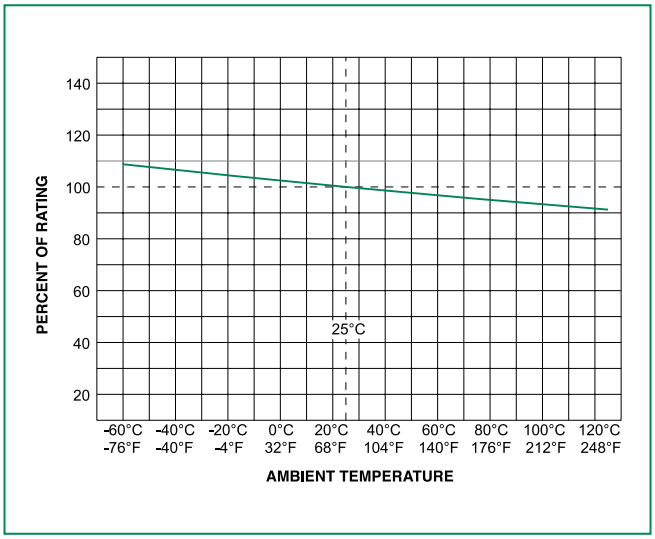
## 5×20 mm > Fast-Acting > 217 Series

## Electrical Characteristic Specifications by Item

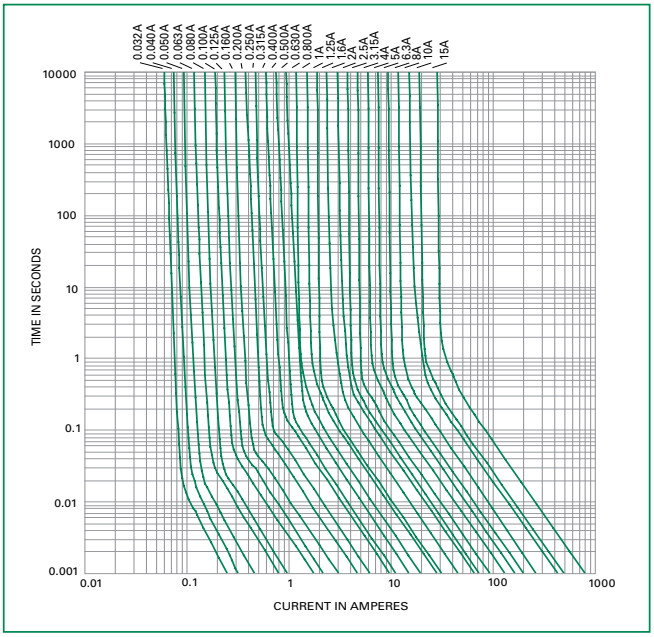
| Amp Code | Amp Rating (A) | Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting $I^2t$ ($A^2$ sec) | Maximum Voltage Drop at Rated Current (mV) | Maximum Power Dissipation At 1.5In(W) | Agency Approvals | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | |
| .032 | 0.032 | 250 | | 262.2000 | 0.00006 | 10000 | 1.6 | | x | x | | x | x | x | x | x |
| .040 | 0.04 | 250 | | 183.1500 | 0.00008 | 8000 | 1.6 | | x | x | | x | x | x | x | x |
| .050 | 0.05 | 250 | | 15.2000 | 0.00019 | 7000 | 1.6 | | x | x | | x | x | x | x | x |
| .063 | 0.063 | 250 | | 10.4500 | 0.00056 | 5000 | 1.6 | | x | x | | x | x | x | x | x |
| .080 | 0.08 | 250 | | 7.8900 | 0.00083 | 4000 | 1.6 | | x | x | | x | x | x | x | x |
| .100 | 0.1 | 250 | | 5.6965 | 0.00450 | 3500 | 1.6 | | x | x | | x | x | x | x | x |
| .125 | 0.125 | 250 | | 3.8200 | 0.00478 | 2000 | 1.6 | | x | x | | x | x | x | x | x |
| .160 | 0.16 | 250 | | 2.5250 | 0.01000 | 2000 | 1.6 | | x | x | | x | x | x | x | x |
| .200 | 0.2 | 250 | | 1.7000 | 0.02000 | 1700 | 1.6 | | x | x | | x | x | x | x | x |
| .250 | 0.25 | 250 | | 1.2325 | 0.04000 | 1400 | 1.6 | | x | x | | x | x | x | x | x |
| .315 | 0.315 | 250 | 35A@250Vac | 0.8800 | 0.11000 | 1300 | 1.6 | | x | x | | x | x | x | x | x |
| .400 | 0.4 | 250 | | 0.2770 | 0.12500 | 1200 | 1.6 | x | x | x | | x | x | x | x | x |
| .500 | 0.5 | 250 | | 0.2065 | 0.21500 | 1000 | 1.6 | x | x | x | | x | x | x | x | x |
| .630 | 0.63 | 250 | | 0.1900 | 0.41000 | 650 | 1.6 | x | x | x | | x | x | x | x | x |
| .800 | 0.8 | 250 | | 0.1203 | 0.85000 | 240 | 1.6 | x | x | x | | x | x | x | x | x |
| 001. | 1 | 250 | | 0.0964 | 1.04500 | 200 | 1.6 | x | x | x | x | x | x | x | x | x |
| 1.25 | 1.25 | 250 | | 0.0701 | 2.23000 | 200 | 1.6 | x | x | x | x | x | x | x | x | x |
| 01.6 | 1.6 | 250 | | 0.0528 | 4.61500 | 190 | 1.6 | x | x | x | x | x | x | x | x | x |
| 002. | 2 | 250 | | 0.0416 | 5.73000 | 170 | 1.6 | x | x | x | x | x | x | x | x | x |
| 02.5 | 2.5 | 250 | | 0.0334 | 9.46000 | 170 | 1.6 | x | x | x | x | x | x | x | x | x |
| 3.15 | 3.15 | 250 | | 0.0224 | 17.72000 | 150 | 2.5 | x | x | x | x | x | x | x | x | x |
| 004. | 4 | 250 | 40A@250Vac | 0.0165 | 29.16500 | 130 | 2.5 | x | x | x | x | x | x | x | x | x |
| 005. | 5 | 250 | 50A@250Vac | 0.0137 | 42.79500 | 130 | 2.5 | x | x | x | x | x | x | x | x | x |
| 06.3 | 6.3 | 250 | 63A@250Vac | 0.0095 | 62.46500 | 130 | 2.5 | x | x | x | x | x | x | x | x | x |
| 008. | 8 | 250 | 80A@250Vac | 0.0068 | 198.16000 | 130 | 4 | | x | | x | x | | | x | x* |
| 010. | 10 | 250 | 100A@250Vac | 0.0063 | 217.63500 | 130 | 4 | | x | | x | x | | | x | x* |
| 015. | 15 | 250 | 150A@250Vac | 0.0040 | 607.13500 | 130 | 4 | | | | x | | | | x | x* |

* Approval for cartidge versions only.

## Temperature Re-rating Curve




## Average Time Current Curves

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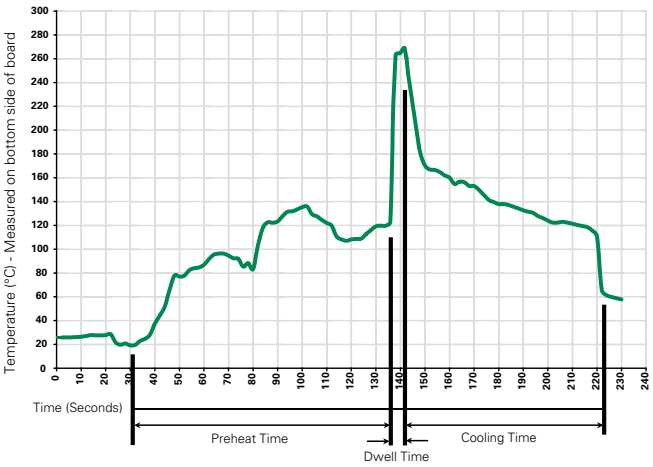
## Soldering Parameters - Wave Soldering




**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<br>Cap: Nickel–plated brass<br>Leads: Tin–plated Copper |
| **Terminal Strength** | MIL-STD-202G, Method 211A, Test Condition A |
| **Solderability** | Reference IEC 60127 Second Edition 2003-01 Annex A |
| **Product Marking** | Cap1: Brand logo, current and voltage ratings<br>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-202G, Method 107G, Test Condition B: (5 cycles –65°C to +125°C) |
| **Vibration** | MIL-STD-202G, Method 201A |
| **Humidity** | MIL-STD-202G, Method 103B, Test Condition A. high RH (95%) and elevated temperature (40°C) for 240 hours. |
| **Salt Spray** | MIL-STD-202G, Method 101D, Test Condition B |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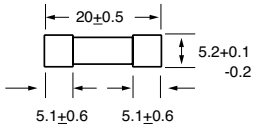
# Axial Lead & Cartridge Fuses

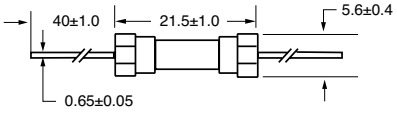
## 5×20 mm > Fast-Acting > 217 Series

## Dimensions

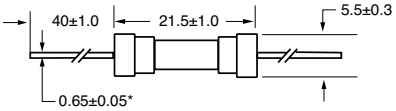
**0217** 000P




**0217.**032 **XEP**
to
**0217.**315 **XEP**




**0217.**400 **XEP**
to
0217015 **XEP**




All dimensions in mm

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

## Part Numbering System

**0217 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 = Cartridge Type Fuse
E = Axial Leaded Fuse

**Lead-free**

## Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code | Taping Width |
|---|---|---|---|---|
| **217 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 |

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# Mouser Electronics

Authorized Distributor

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Littelfuse:

021702.5MRET1P 0217.050MXEP 0217.630MXEP 0217.100HXP 0217.500MXP 0217.100MXEP 0217.125MXP 0217.250HXP 0217.063HXP 0217.800MXP 0217.250MXEP 0217002.MXEP 0217.400MXP 0217004.MXEP 021701.6MXP 0217.200HXP 0217.032MXP 0217.315MXP 0217.160HXP 021701.6MXEP 0217.400HXP 0217.500HXP 021706.3MXP 0217.125HXP 0217.630HXP 0217004.HXP 021702.5HXP 0217.080MXEP 0217.125MXEP 02173.15MXEP 0217.315HXP 0217.315MXEP 0217.630MXP 0217002.MXP 0217.200MXEP 021702.5MXEP 0217005.MXEP 02171.25MXP 0217.050HXP 0217.100MXP 0217.500MXEP 0217.100MRET1P 0217.080MXP 0217.800HXP 0217.063MXP 0217004.MXP 02173.15HXP 0217.800MXEP 02171.25HXP 0217001.MXP 0217.160MXP 0217.032HXP 0217005.MXP 0217005.HXP 021702.5MXP 021701.6HXP 0217.050MXP 021706.3MXEP 02173.15MXP 0217002.HXP 0217001.HXP 0217001.MXEP 021706.3HXP 0217.250MXP 0217.063MXEP 0217.160MXEP 02171.25MXEP 0217.400MXEP 0217.080HXP 0217.200MXP 0217.032MXEP 0217.630MRET1P 0217002.MRET1P 0217004.MRET1P 0217.500MRET1P 0217.315MRET1P 02171.25MRET1P 02173.15MRET1P 0217.050MRET1P 0217.080MRET1P 0217.160MRET1P 0217.400MRET1P 0217.800MRET1P 0217.125MRET1P 0217.200MRET1P 0217.250MRET1P 021706.3MRET1P 0217005.MRET1P 021701.6MXBP 021701.6MRET1P 0217.063MRET1P 0217.032MRET1P 0217001.MRET1P 0217.500TXP 0217.200TXP 021706.3TXP 0217.250TXP 0217002.XBP 0217.080MXBP 0217002.TXP