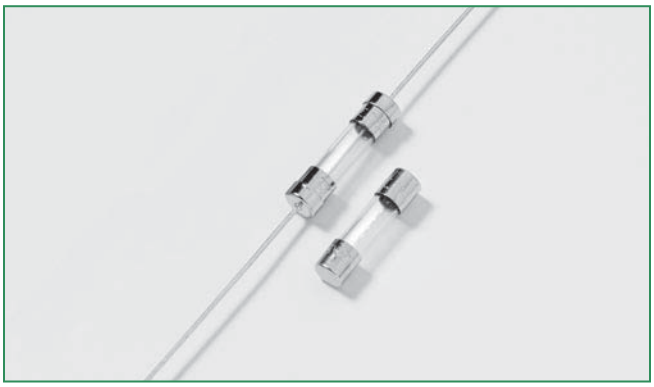
# 217 Series, 5 x 20 mm, Fast-acting Fuse



## Agency Approvals

| Agency | Agency File Number | Ampere Range |
|---|---|---|
| | Cartridge Certificates:<br>NBK120802-E10480 A&C<br>Leaded Certificates:<br>NBK120802-E10480 B&D | 1A – 5A<br>6.3A – 15A<br>1A – 5A<br>6.3A – 15A |
| | Certificates:<br>2002010207007600<br>2002010207007599 | 32mA – 800mA<br>1A – 6.3A |
| | 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 |
| | E10480<br>JDYX2 | 32mA – 6.3A |
| | File:<br>029862<br>Acc. Class:<br>LR1422-30 | |
| | License:<br>KM41462 | 400mA – 6.3A |
| | File:<br>948103, 915516,<br>304518 & 304555 | 32mA – 6.3A |
| | License:<br>40014645 | 32mA – 6.3A,<br>8A*, 10A* |
| | License:<br>40016647 | 15A* |
| | | 32mA – 15A |

*Approval for cartridge versions only

## Description

5x20mm 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 |



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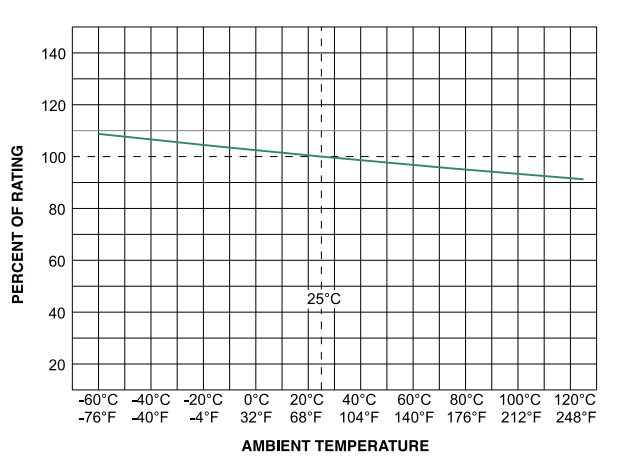
## Electrical Characteristic Specifications by Item

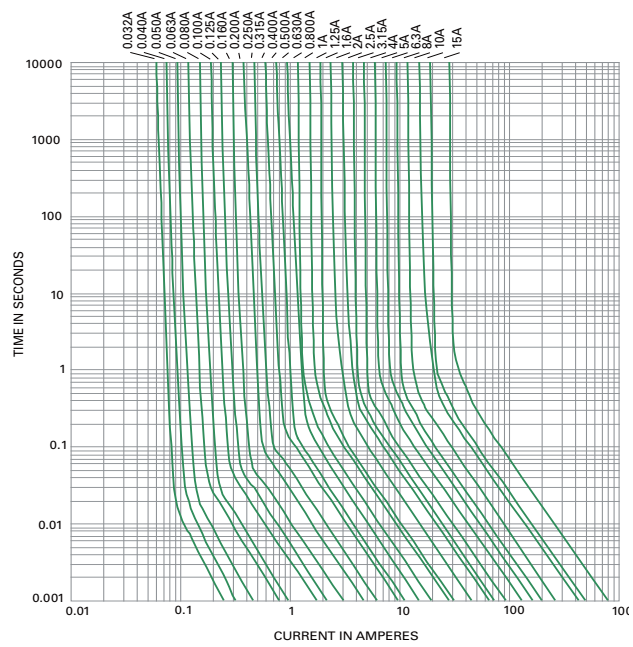
| Amp Code | Amp Rating (A) | Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting $I^2t$ ($A^2$ sec) | Nominal Voltage Drop at Rated Current (mV) | Nominal Power Dissipation At Rated Current (W) | Agency Approvals | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .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* | |
| 010. | 10 | 250 | 100A@250Vac | 0.0063 | 217.63500 | 130 | 4 | x | | x | | | | x | x* | |
| 015. | 15 | 250 | 150A@250Vac | 0.0040 | 607.13500 | 130 | 4 | | | x | | | | x | x* | |

* Approval for cartidge versions only.

## Temperature Rerating Curve




## Average Time Current Curves





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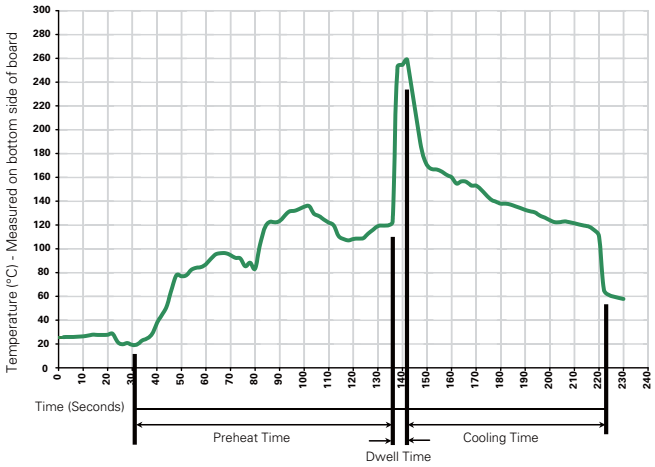
## Soldering Parameters - Wave Soldering




### 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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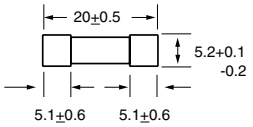
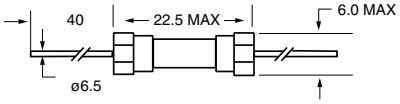
## Dimensions

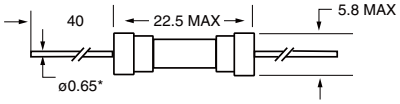
**0217** 000P




**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 mm dia 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 |
|---|---|---|---|---|
| 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") |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