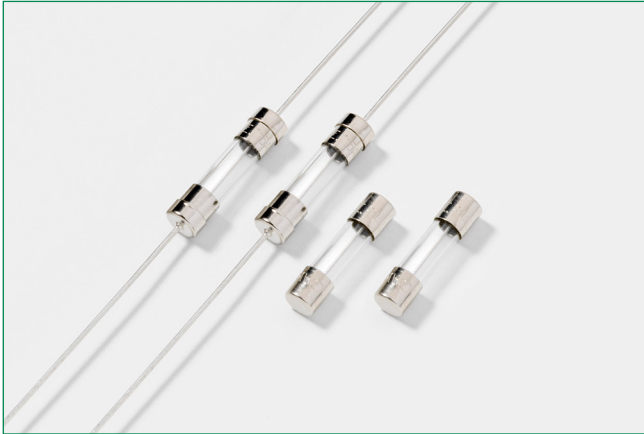


# 217 Series

## 5 × 20 mm, Fast-acting Fuse



### 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

### Additional Information



Resources



Accessories



Samples

### Applications

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

### Agency Approvals

| Agency | Agency File/Certificate Number                       | Ampere Range                |
|--------|--|-----------------------------|
| PS E   | Cartridge:<br>NBK090205-E10480A<br>NBK120802-E10480C | 1A – 5A<br>6.3A – 15A       |
|        | Leaded:<br>NBK090205-E10480B<br>NBK120802-E10480D    | 1A – 5A<br>6.3A – 15A       |
| CCC    | 2020970207000064                                     | 0.032A – 6.3A               |
| K      | SU05001-3004   | 0.032A-0.040A               |
|        | SU05001-2005   | 0.050A-0.315A               |
|        | SU05001-2006   | 0.400A-6.3A                 |
|        | SU05001-2007   | 8A-10A                      |
| cULus  | E10480   | 0.032A – 10A                |
|        | 29862  | 0.032A – 6.3A               |
| S      | SE-S-2100014   | 0.032A – 6.3A               |
| DfE    | 40014645   | 0.032A – 6.3A,<br>8A*, 10A* |
|        | 40016647   | 15A*                        |
| VDE    | KM41462  | 0.040A – 6.3A               |
| CE     | N/A  | 0.032A – 15A                |

\*Approval for cartridge versions only










### Electrical Characteristics for Series

| % of Ampere Rating | Ampere Rating | Opening Time                   |
|--------------------|---------------|--------------------------------|
| 150%               | 0.032A-0.100A | 60 minutes, Minimum            |
|                    | 0.125A-6.3A   | 60 minutes, Minimum            |
|                    | 8A-15A        | 30 minutes, Minimum            |
| 210%               | 0.032A-0.100A | 30 minutes, Maximum            |
|                    | 0.125A-6.3A   | 30 minutes, Maximum            |
|                    | 8A-15A        | 30 minutes, Maximum            |
| 275%               | 0.032A-0.100A | 0.01 sec., Min.; .5 sec. Max.  |
|                    | 0.125A-6.3A   | 0.05 sec., Min.; 2 sec. Max.   |
|                    | 8A-15A        | 0.05 sec., Min.; 2 sec. Max.   |
| 400%               | 0.032A-0.100A | .003 sec., Min.; 0.1 sec. Max. |
|                    | 0.125A-6.3A   | .01 sec., Min.; 0.3 sec. Max.  |
|                    | 8A-15A        | .01 sec., Min.; 0.4 sec. Max.  |
| 1000%              | 0.032A-0.100A | .02 second, Maximum            |
|                    | 0.125A-6.3A   | .02 second, Maximum            |
|                    | 8A-15A        | .04 second, Maximum            |

# 217 Series

## 5 × 20 mm, Fast-acting Fuse

### Electrical Characteristic Specifications by Item

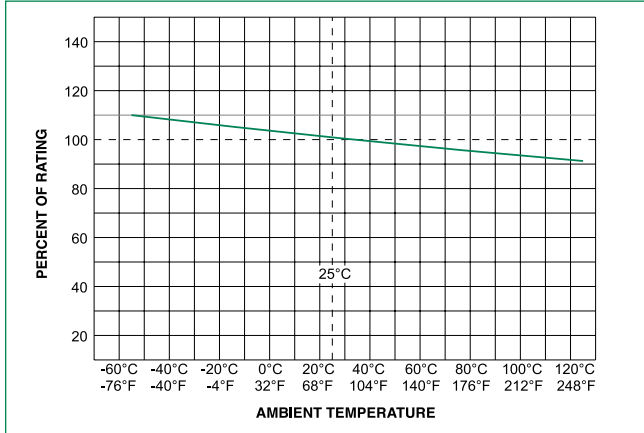
| Amp Code | Amp Rating (A) | Voltage Rating (V) | Interrupting Rating     | Nominal Cold Resistance (Ohms) | Nominal Melting I <sup>2</sup> t (A <sup>2</sup> sec) | Maximum Voltage Drop at Rated Current (mV) | Maximum Power Dissipation At 1.5I <sub>n</sub> (W) | Agency Approvals  |   |   |   |   |   |   |   |   |  |
|----------|----------------|--------------------|-------------------------|--------------------------------|---|--|--|---|---|---|---|---|---|---|---|---|--|
|          |                |                    |                         |                                |   |  |  |  |  |  |  |  |  |  |  |  |  |
| .032     | 0.032          | 250                | 35A @ 250VAC            | 262.2000                       | 0.00015   | 10000                                      | 1.6  | -   | x   | x   | -   | x   | x   | x   | x   | x   |  |
| .04      | 0.04           | 250                |                         | 183.1500                       | 0.00008   | 8000                                       | 1.6  | -   | x   | x   | -   | x   | x   | x   | x   | x   |  |
| .05      | 0.05           | 250                |                         | 15.2000                        | 0.00049   | 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   |  |
| .08      | 0.08           | 250                |                         | 7.8900                         | 0.00132   | 4000                                       | 1.6  | -   | x   | x   | -   | x   | x   | x   | x   | x   |  |
| .1       | 0.1            | 250                |                         | 5.6965                         | 0.0026  | 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   |  |
| .16      | 0.16           | 250                |                         | 2.5250                         | 0.01  | 2000                                       | 1.6  | -   | x   | x   | -   | x   | x   | x   | x   | x   |  |
| .2       | 0.2            | 250                |                         | 1.7000                         | 0.02  | 1700                                       | 1.6  | -   | x   | x   | -   | x   | x   | x   | x   | x   |  |
| .25      | 0.25           | 250                |                         | 1.2325                         | 0.04  | 1400                                       | 1.6  | -   | x   | x   | -   | x   | x   | x   | x   | x   |  |
| .315     | 0.315          | 250                |                         | 0.8800                         | 0.11  | 1300                                       | 1.6  | -   | x   | x   | -   | x   | x   | x   | x   | x   |  |
| .4       | 0.4            | 250                |                         | 0.2770                         | 0.125   | 1200                                       | 1.6  | x   | x   | x   | -   | x   | x   | x   | x   | x   |  |
| .5       | 0.5            | 250                |                         | 0.2065                         | 0.215   | 1000                                       | 1.6  | x   | x   | x   | -   | x   | x   | x   | x   | x   |  |
| .63      | 0.63           | 250                |                         | 0.1900                         | 0.41  | 650  | 1.6  | x   | x   | x   | -   | x   | x   | x   | x   | x   |  |
| .8       | 0.8            | 250                |                         | 0.1203                         | 0.85  | 240  | 1.6  | x   | x   | x   | -   | x   | x   | x   | x   | x   |  |
| 1.       | 1              | 250                |                         | 0.0964                         | 1.045   | 200  | 1.6  | x   | x   | x   | x   | x   | x   | x   | x   | x   |  |
| 1.25     | 1.25           | 250                |                         | 0.0701                         | 2.23  | 200  | 1.6  | x   | x   | x   | x   | x   | x   | x   | x   | x   |  |
| 1.6      | 1.6            | 250                |                         | 0.0528                         | 4.615   | 190  | 1.6  | x   | x   | x   | x   | x   | x   | x   | x   | x   |  |
| 2.       | 2              | 250                |                         | 0.0416                         | 5.73  | 170  | 1.6  | x   | x   | x   | x   | x   | x   | x   | x   | x   |  |
| 2.5      | 2.5            | 250                |                         | 0.0334                         | 9.46  | 170  | 1.6  | x   | x   | x   | x   | x   | x   | x   | x   | x   |  |
| 3.15     | 3.15           | 250                | 0.0224                  | 17.72                          | 150   | 2.5  | x  | x   | x   | x   | x   | x   | x   | x   | x   |   |  |
| 4.       | 4              | 250                | 40A@250VAC<br>70A@60VDC | 0.0165                         | 29.165  | 130  | 2.5  | x   | x   | x   | x   | x   | x   | x   | x   |   |  |
| 5.       | 5              | 250                | 50A@250VAC<br>70A@60VDC | 0.0137                         | 42.795  | 130  | 2.5  | x   | x   | x   | x   | x   | x   | x   | x   |   |  |
| 6.3      | 6.3            | 250                | 63A@250VAC<br>70A@60VDC | 0.0095                         | 62.465  | 130  | 2.5  | x   | x   | x   | x   | x   | x   | x   | x   |   |  |
| 8.       | 8              | 250                | 80A @ 250VAC            | 0.0068                         | 198.16  | 130  | 4  | -   | x   | -   | x   | x   | -   | -   | x   | x*  |  |
| 10.      | 10             | 250                | 100A @ 250VAC           | 0.0063                         | 217.635   | 130  | 4  | -   | x   | -   | x   | x   | -   | -   | x   | x*  |  |
| 15.      | 15             | 250                | 150A @ 250VAC           | 0.0040                         | 607.135   | 130  | 4  | -   | -   | -   | x   | -   | -   | -   | x   | x*  |  |

\* Approval for cartridge versions only.

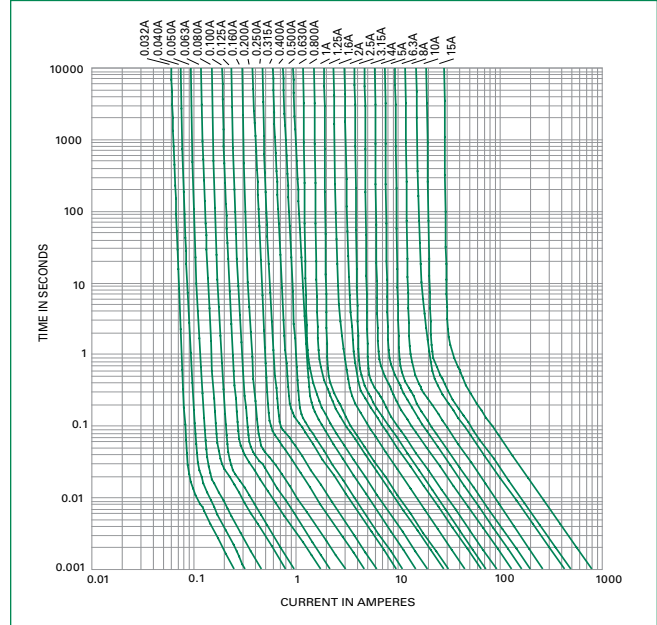
# 217 Series

## 5 × 20 mm, Fast-acting Fuse

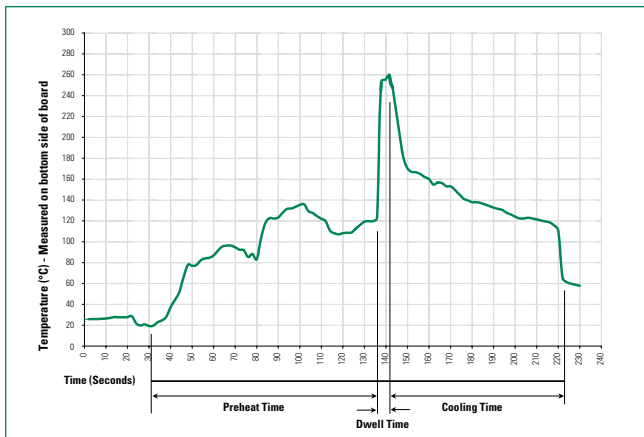
Temperature Re-rating Curve



Average Time Current Curves



### Soldering Parameters - Wave Soldering



### Recommended Process Parameters:

| Wave Parameter                                       | Lead-Free Recommendation          |
|--|-----------------------------------|
| Preheat:<br>(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>          | Body: Glass<br>Cap: Nickel-plated brass<br>Leads: 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>   | Cap1: Brand logo, current and voltage ratings<br>Cap2: Agency approval marks |
| <b>Packaging</b>         | Available in Bulk (M=1000 pcs/pkg) or on Tape/Reel (MRET1=1000 pcs/reel)     |

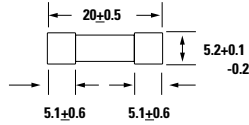
|                              |   |
|------------------------------|---|
| <b>Operating Temperature</b> | -55°C to +125°C   |
| <b>Thermal Shock</b>         | MIL-STD-202, Method 107, Test Condition B: (5 cycles -65°C to +125°C)                                   |
| <b>Vibration</b>             | MIL-STD-202, 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   |

# 217 Series

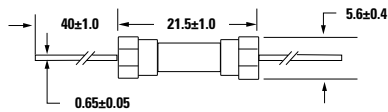
## 5 × 20 mm, Fast-acting Fuse

### Dimensions

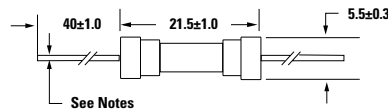
0217 000P



0217.032 XEP  
to  
0217.315 XEP



0217.400 XEP  
to  
0217015 XEP

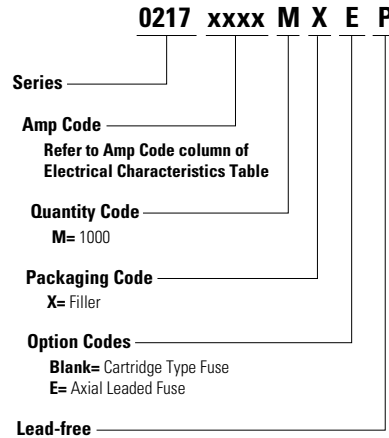


All dimensions in mm

**Notes:**

- \* 0.032A-6.3A have 0.65±0.05 diameter lead
- \* 8A-15A have 0.8±0.05 diameter lead

### Part Numbering System



### Packaging

| Packaging Option               | Packaging Specification | Quantity | Quantity & Packaging Code | Taping Width     |
|--------------------------------|-------------------------|----------|---------------------------|------------------|
| <b>217 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") |
| PGT With Color Code Bulk       | N/A                     | 1000     | MXG                       | N/A              |
| Cartridge With Color Code 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.

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