

217 Series

5 × 20 mm, Fast-acting Fuse



Description

5x20mm fast-acting glass body cartridge fuse designed to IEC specification.

Features & Benefits

- 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.

Additional Information



Resources



Accessories



Samples

Agency Approvals

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

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Electrical Characteristic Specifications by Item

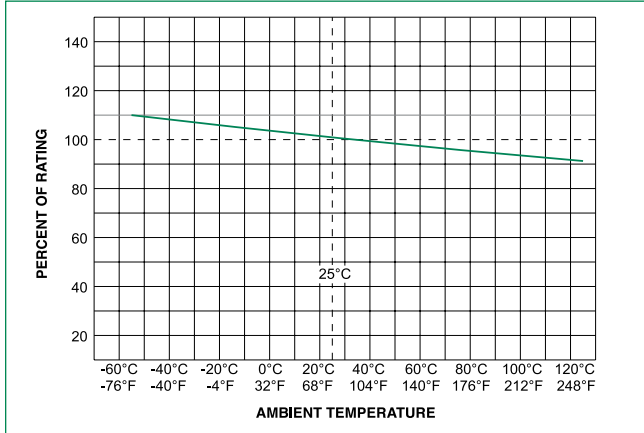
| Amp Code | Amp Rating (A) | Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting I ² t (A ² sec) | Maximum Voltage Drop at Rated Current (mV) | Maximum Power Dissipation At 1.5I _n (W) | Agency Approvals | | | | | | | | | |
|----------|----------------|--------------------|-------------------------|--------------------------------|---|--|--|------------------|----|-----|------|----|----|---|----|----|----|
| | | | | | | | | UK CA | UL | CCC | PS E | RU | SF | S | CE | DE | |
| .032 | 0.032 | 250 | 35A @ 250VAC | 262.2000 | 0.00015 | 10000 | 1.6 | x | - | 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 | x |
| .050 | 0.05 | 250 | | 15.2000 | 0.00049 | 7000 | 1.6 | x | - | 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 | x |
| .080 | 0.08 | 250 | | 7.8900 | 0.00132 | 4000 | 1.6 | x | - | x | x | - | x | x | x | x | x |
| .100 | 0.1 | 250 | | 5.6965 | 0.0026 | 3500 | 1.6 | x | - | 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 | x |
| .160 | 0.16 | 250 | | 2.5250 | 0.01 | 2000 | 1.6 | x | - | x | x | - | x | x | x | x | x |
| .200 | 0.2 | 250 | | 1.7000 | 0.02 | 1700 | 1.6 | x | - | x | x | - | x | x | x | x | x |
| .250 | 0.25 | 250 | | 1.2325 | 0.04 | 1400 | 1.6 | x | - | 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 | x |
| .400 | 0.4 | 250 | | 0.2770 | 0.125 | 1200 | 1.6 | x | x | x | x | - | x | x | x | x | x |
| .500 | 0.5 | 250 | | 0.2065 | 0.215 | 1000 | 1.6 | x | x | x | x | - | x | x | x | x | x |
| .630 | 0.63 | 250 | | 0.1900 | 0.41 | 650 | 1.6 | x | x | x | x | - | x | x | x | x | x |
| .800 | 0.8 | 250 | | 0.1203 | 0.85 | 240 | 1.6 | x | x | x | x | - | x | x | x | x | x |
| 1.00 | 1 | 250 | | 0.0964 | 1.045 | 200 | 1.6 | x | 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 | x |
| 1.60 | 1.6 | 250 | | 0.0528 | 4.615 | 190 | 1.6 | x | x | x | x | x | x | x | x | x | x |
| 2.00 | 2 | 250 | | 0.0416 | 5.73 | 170 | 1.6 | x | x | x | x | x | x | x | x | x | x |
| 2.50 | 2.5 | 250 | | 0.0334 | 9.46 | 170 | 1.6 | x | 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 | x | |
| 4.00 | 4 | 250 | 40A@250VAC 70A@60VDC | 0.0165 | 29.165 | 130 | 2.5 | x | x | x | x | x | x | x | x | x | |
| 5.00 | 5 | 250 | 50A@250VAC 70A@60VDC | 0.0137 | 42.795 | 130 | 2.5 | x | x | x | x | x | x | x | x | x | |
| 6.30 | 6.3 | 250 | 63A@250VAC 70A@60VDC | 0.0095 | 62.465 | 130 | 2.5 | x | x | x | x | x | x | x | x | x | |
| 8.00 | 8 | 250 | 80A @ 250VAC | 0.0068 | 198.16 | 130 | 4 | x | - | x | - | x | x | - | - | x | x* |
| 10.0 | 10 | 250 | 100A @ 250VAC | 0.0063 | 217.635 | 130 | 4 | x | - | x | - | x | x | - | - | x | x* |
| 15.0 | 15 | 250 | 150A @ 250VAC | 0.0040 | 607.135 | 130 | 4 | x | - | - | - | x | - | - | - | x | x* |

* Approval for cartridge versions only.

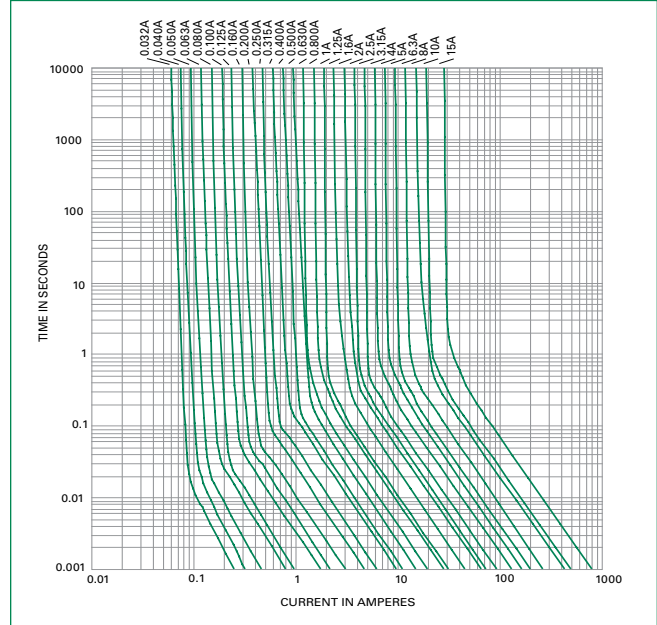
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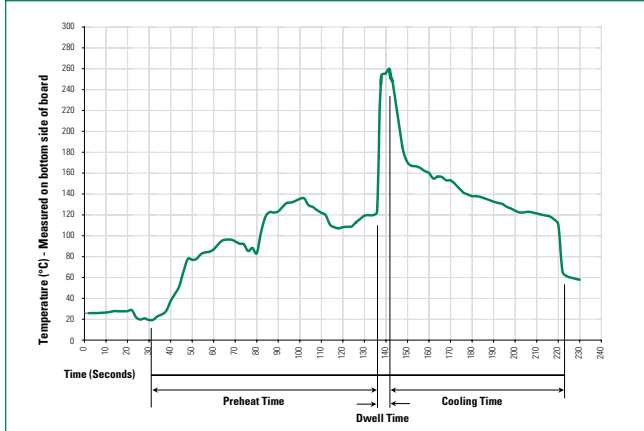
Temperature Re-rating Curve



Average Time Current Curves



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) |

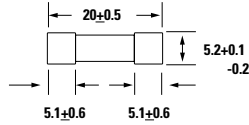
| | |
|------------------------------|---|
| Operating Temperature | -55°C to +125°C |
| Thermal Shock | MIL-STD-202, Method 107, Test Condition B: (5 cycles -65°C to +125°C) |
| Vibration | MIL-STD-202, Method 201 |
| Humidity | MIL-STD-202, Method 103, Test Condition A. high RH (95%) and elevated temperature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

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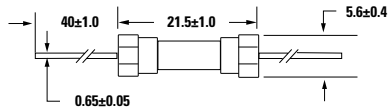
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Dimensions

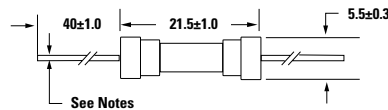
0217 000P



0217.032 XEP
to
0217.315 XEP



0217.400 XEP
to
0217015 XEP

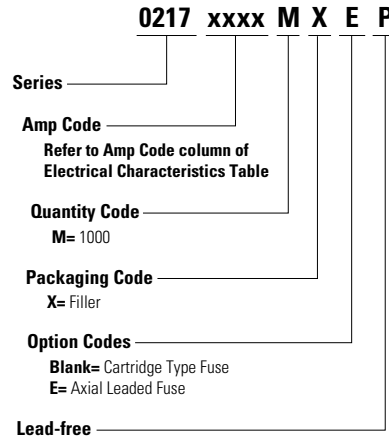


All dimensions in mm

Notes:

- * 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 |
|--------------------------------|-------------------------|----------|---------------------------|------------------|
| 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") |
| 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 | 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.

Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at <https://www.littelfuse.com/legal/disclaimers/product-disclaimer.aspx>.