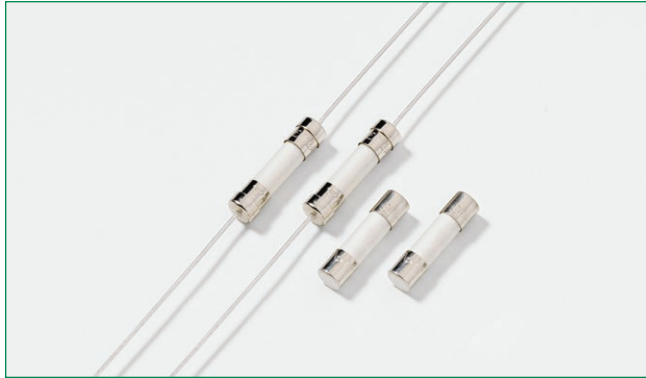


216 Series, 5x20 mm, Fast-Acting Fuse



Description

The 216 Series is a 5x20mm, Fast-Acting, ceramic body, cartridge fuse designed to IEC specifications

Features

- Recognized to UL/CSA/NMX 248-1 and UL/CSA/NMX 248-14
- Meets Standard Sheet 1 of IEC 60127-2 as a Fast-Acting fuse
- Available in cartridge and axial lead form
- RoHS compliant and lead-free
- Conforms to GB 9364.1 and GB 9364.2
- CE Mark indicates compliance with Low-Voltage and RoHS Directives.

Agency Approvals

| Agency | Agency File Number | Ampere Range |
|--------|---|-----------------------------------|
| | Cartridge 216 Series NBK 080205-E10480A NBK 250702-E10480E NBK 240108-JP1021C NBK 240108-JP1021E | 1A-5A 6.3A-10A 12.5A 16A |
| | Leaded 216E Series NBK 080205-E10480B NBK 250702-E10480F NBK 240108-JP1021D NBK 240108-JP1021F | 1A-5A 6.3A-10A 12.5A 16A |
| | 2020970207000066 | 0.05A-10A |
| | SU05001-2013 | 1A – 10A |
| | E10480 | 0.05A – 16A |
| | 29862 | |
| | 1706869 | 0.05A - 10A, 16A |
| | 40013834 | 0.05A – 6.3A *8A, *10A |
| | 40016442 | *12.5A |
| | KM41462 | 1A – 6.3A |
| | J50248090 | 8A – 16A |
| | N/A | 0.05A – 16A |

*Approval for Cartridge versions only

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% | 0.05A – 4A | 60 minutes, Minimum |
| | 5A – 6.3A | 60 minutes, Minimum |
| | 8A – 16A | 30 minutes, Minimum |
| 210% | 0.05A – 4A | 30 minutes, Maximum |
| | 5A – 6.3A | 30 minutes, Maximum |
| | 8A – 16A | 30 minutes, Maximum |
| 275% | 0.05A – 4A | 0.01 sec., Min.; 2 sec. Max. |
| | 5A – 6.3A | 0.01 sec., Min.; 3 sec. Max. |
| | 8A – 16A | 0.04 sec., Min.; 20 sec. Max. |
| 400% | 0.05A – 4A | 0.003 sec., Min.; 0.3 sec. Max. |
| | 5A – 6.3A | 0.003 sec., Min.; 0.3 sec. Max. |
| | 8A – 16A | 0.01 sec., Min.; 1.0 sec. Max. |
| 1000% | 0.05A – 4A | 0.02 seconds, Maximum |
| | 5A – 6.3A | 0.02 seconds, Maximum |
| | 8A – 16A | 0.03 seconds, Maximum |

Additional Information



Datasheet



Resources



Samples



Accessories

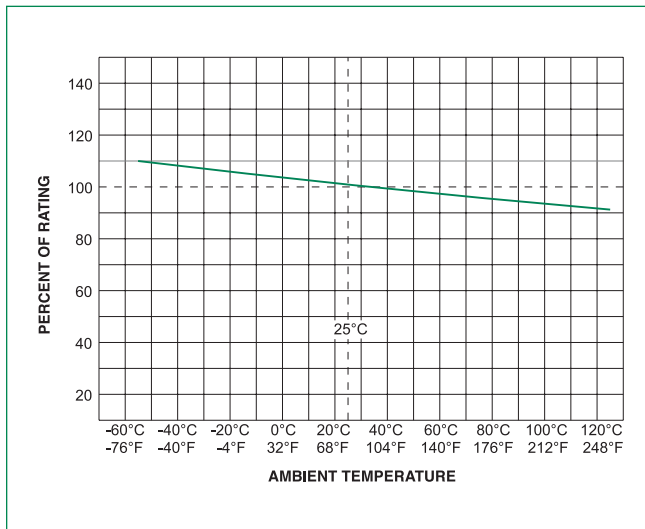
For recommended fuse accessories for this product series, see '[Recommended Accessories](#)' section.

Electrical Characteristics Specifications by Item

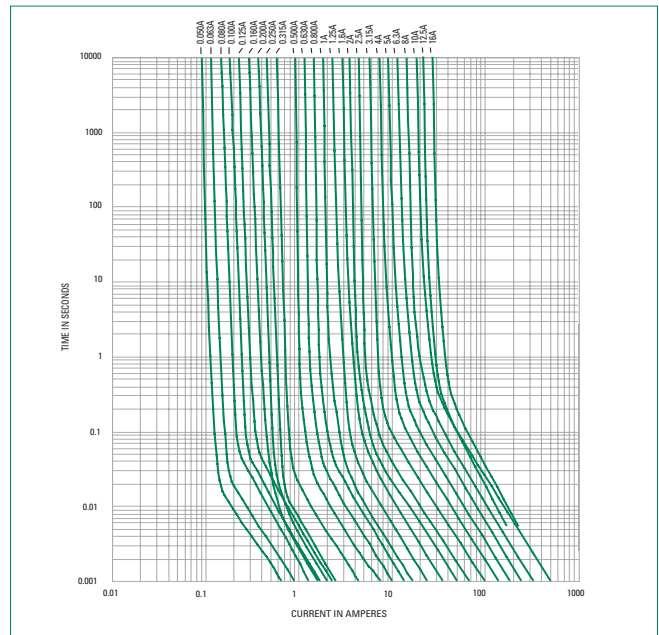
| Amp Code | Amp Rating (A) | Voltage Rating (V) | Interrupting Rating* | Nominal Cold Resistance (Ohms) | Nominal Melting I ² t (A ² sec) | Maximum Voltage Drop at Rated Current (mV) | Maximum Power Dissipation at 1.5In (W) | Agency Approvals | | | | | | | | | | | |
|----------|----------------|--------------------|----------------------|--------------------------------|---|--|--|------------------|-----|-------|----|---|----|-----|-----|------|------|---|--|
| | | | | | | | | UL | CSA | UL US | SP | S | CE | D E | VDE | UL | PS E | | |
| 0.050 | 0.05 | 250 | 1500A@250Vac | 15.9000 | 0.00019 | 10000 | 1.6 | - | - | X | X | X | X | X | X | - | - | - | |
| 0.063 | 0.063 | 250 | | 10.4500 | 0.00079 | 8800 | 1.6 | - | - | X | X | X | X | X | X | - | - | - | |
| 0.080 | 0.08 | 250 | | 7.8850 | 0.00084 | 7600 | 1.6 | - | - | X | X | X | X | X | X | - | - | - | |
| 0.100 | 0.1 | 250 | | 5.7925 | 0.00450 | 7000 | 1.6 | - | - | X | X | X | X | X | X | - | - | - | |
| 0.125 | 0.125 | 250 | | 3.6750 | 0.00546 | 5000 | 1.6 | - | - | X | X | X | X | X | X | - | - | - | |
| 0.160 | 0.16 | 250 | | 5.3490 | 0.00326 | 4300 | 1.6 | - | - | X | X | X | X | X | X | - | - | - | |
| 0.200 | 0.2 | 250 | | 3.3500 | 0.00439 | 3500 | 1.6 | - | - | X | X | X | X | X | X | - | - | - | |
| 0.250 | 0.25 | 250 | | 2.3500 | 0.01350 | 2800 | 2.5 | - | - | X | X | X | X | X | X | - | - | - | |
| 0.315 | 0.315 | 250 | | 1.8500 | 0.02320 | 2500 | 2.5 | - | - | X | X | X | X | X | X | - | - | - | |
| 0.500 | 0.5 | 250 | | 0.8660 | 0.16500 | 1800 | 2.5 | - | - | X | X | X | X | X | X | - | - | - | |
| 0.630 | 0.63 | 250 | | 0.4650 | 0.05940 | 1500 | 2.5 | - | - | X | X | X | X | X | X | - | - | - | |
| 0.800 | 0.8 | 250 | | 0.2950 | 0.14600 | 1200 | 2.5 | - | - | X | X | X | X | X | X | - | - | - | |
| 001.0 | 1 | 250 | | 0.2370 | 0.18000 | 1000 | 2.5 | X | X | X | X | X | X | X | X | - | - | X | |
| 1.25 | 1.25 | 250 | | 0.1530 | 0.48000 | 800 | 4 | X | X | X | X | X | X | X | X | - | - | X | |
| 01.6 | 1.6 | 250 | | 0.1112 | 1.00500 | 600 | 4 | X | X | X | X | X | X | X | X | - | - | X | |
| 002.0 | 2 | 250 | | 0.0764 | 1.87000 | 500 | 4 | X | X | X | X | X | X | X | X | - | - | X | |
| 02.5 | 2.5 | 250 | | 0.0584 | 3.67200 | 400 | 4 | X | X | X | X | X | X | X | X | - | - | X | |
| 3.15 | 3.15 | 250 | | 0.0368 | 6.70000 | 350 | 4 | X | X | X | X | X | X | X | X | - | - | X | |
| 004.0 | 4 | 250 | | 0.0247 | 14.99500 | 300 | 4 | X | X | X | X | X | X | X | X | - | - | X | |
| 005.0 | 5 | 250 | | 0.0183 | 27.46000 | 250 | 4 | X | X | X | X | X | X | X | X | - | - | X | |
| 06.3 | 6.3 | 250 | 0.0137 | 56.43000 | 200 | 4 | X | X | X | X | X | X | X | X | - | - | X | | |
| 008.0 | 8 | 250 | 0.0123 | 64.31500 | 200 | 4 | - | X | X | X | X | X | X | X* | - | X | X | | |
| 010.0 | 10 | 250 | 0.0079 | 154.34000 | 200 | 4 | - | X | X | X | X | X | X | X* | - | X | X | | |
| 12.5 | 12.5 | 250 | 0.0057 | 175.00000 | 200 | N/A** | - | - | X | X | - | X | - | X* | X | X | X | | |
| 016. | 16 | 250 | 0.0040 | 462.50000 | 200 | N/A** | - | - | - | X*** | X | X | X | - | - | X*** | X | | |

* - Approval for cartridge versions only.
 ** - Please contact Littelfuse for details on these parameters
 I²t test at 10x rated current
 *** - 1500A@250Vac for 16A
 *Interrupting Rating may differ based on Agency Approval. See Agency Approval certificate for more details.

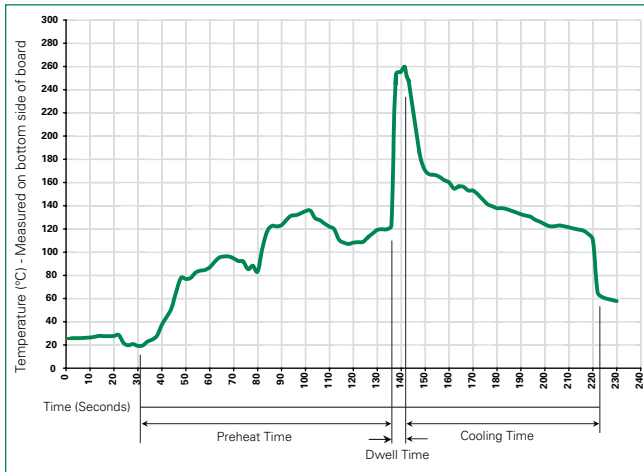
Temperature Re-rating Curve



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.

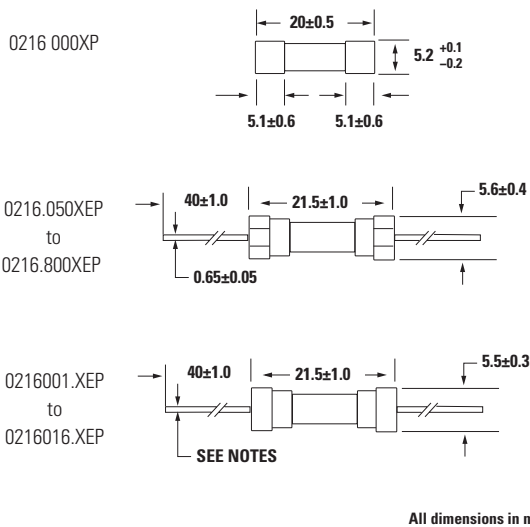
Note: These devices are not recommended for IR or Convection Reflow process.

Product Characteristics

| | |
|--------------------------|---|
| Material | Body: Ceramic Cap: Nickel-plated brass Leads: Tin-plated Copper Filler (160mA-16A): Sand |
| Terminal Strength | MIL-STD-202, Method 211, Test Condition A |
| Solderability | MIL-STD-202 Method 208 |
| Product Marking | Cap 1: Brand logo, current and voltage rating Cap 2: Agency approval markings |
| Packaging | Available in Bulk (M=1000 pcs/pkg) or on Tape/Reel (MRET1=1000 pcs/reel) |

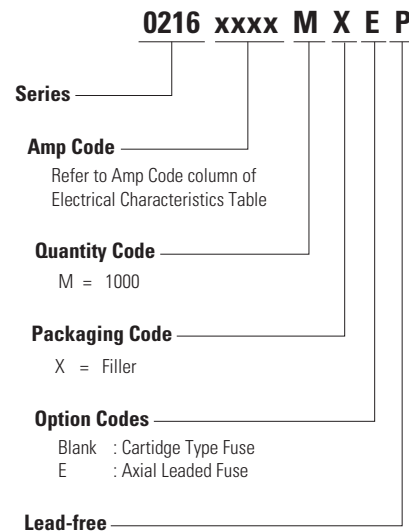
| | |
|------------------------------|---|
| Operating Temperature | -55°C to +125°C |
| Thermal Shock | MIL-STD-202, Method 107, Test Condition B: (5 cycles -65°C to +125°C) |
| Vibration | MIL-STD-202, Method 201 |
| Humidity | MIL-STD-202, Method 103, Test Condition A. high RH (95%) and elevated temperature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

Dimensions



- Notes:**
- 0.05A-6.3A have 0.65±0.05 diameter lead.
 - 8A-16A have 0.8±0.05 diameter lead.

Part Numbering System



Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code | Taping Width |
|-------------------|-------------------------|----------|---------------------------|------------------|
| 216 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 |

Recommended Accessories

| Accessory Type | Series | Description | Max Application Voltage | Max Application Amperage |
|----------------|-------------------------|---|-------------------------|--------------------------|
| Holder | 345_ISF | Panel Mount Shock-Safe Fuseholder | 250 | 10 |
| | 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 Littelfuse for applications greater than the max voltage and amperage shown.