

218 Series, 5x20 mm, Time-Lag Fuse



Description

The 218 series fuse is a 5x20mm time-lag glass body cartridge fuse designed to IEC specification.

Features

- Designed to International IEC Standards for use globally
- Meets the IEC 60127-2, Sheet 3 specification for Time-Lag 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.

Agency Approvals

| Agency | Agency File Number | Ampere Range |
|--------|--|--|
| | Cartridge: NBK090205-E10480A NBK120802-E10480C | 1A – 5A 6.3A – 15A |
| | Leaded: NBK090205-E10480B NBK120802-E10480D | 1A – 5A 6.3A – 15A |
| | 2020970207000065 | 0.032A – 6.3A |
| | SU05001-3005 SU05001-2008 SU05001-2009 | 0.032A – 0.040A 0.050A – 0.800A 1A – 10A |
| | E10480 | 0.032A – 16A |
| | 29862 | 0.032A - 10A; 15A |
| | 1620064 | 0.032A – 6.3A |
| | 40013496 | 0.032A – 10A |
| | 40016604 | 15A* |
| | KM41462 | 0.080A – 6.3A |
| | N/A | 0.032A – 16A |

* - Approval for Cartridge versions only

Additional Information



Datasheet



Resources



Samples



Accessories

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

Electrical Characteristics

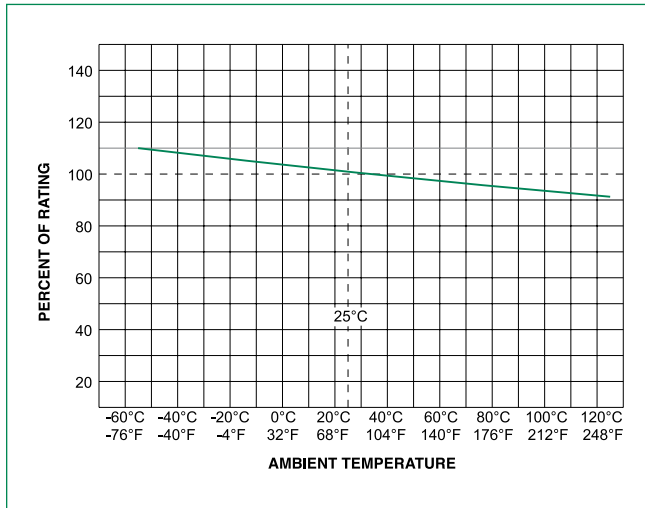
| % of Ampere Rating | Ampere Rating | Opening Time |
|--------------------|-----------------|-----------------------------|
| 150% | 0.032A - 0.100A | 60 minutes, Minimum |
| | 0.125A - 6.3A | 60 minutes, Minimum |
| | 8A - 16A | 30 minutes, Minimum |
| 210% | 0.032A - 0.100A | 120 sec., Maximum |
| | 0.125A - 6.3A | 120 sec., Maximum |
| | 8A - 16A | 120 sec., Maximum |
| 275% | 0.032A - 0.100A | 200 ms., Min.; 10 sec. Max. |
| | 0.125A - 6.3A | 600 ms., Min.; 10 sec. Max. |
| | 8A - 16A | 600 ms., Min.; 10 sec. Max. |
| 400% | 0.032A - 0.100A | 40 ms., Min.; 3 sec. Max. |
| | 0.125A - 6.3A | 150 ms., Min.; 3 sec. Max. |
| | 8A - 16A | 150 ms., Min.; 3 sec. Max. |
| 1000% | 0.032A - 0.100A | 10 ms., Min.; 300 ms. Max. |
| | 0.125A - 6.3A | 20 ms., Min.; 300 ms. Max. |
| | 8A - 16A | 20 ms., Min.; 300 ms. Max. |

Electrical Characteristics

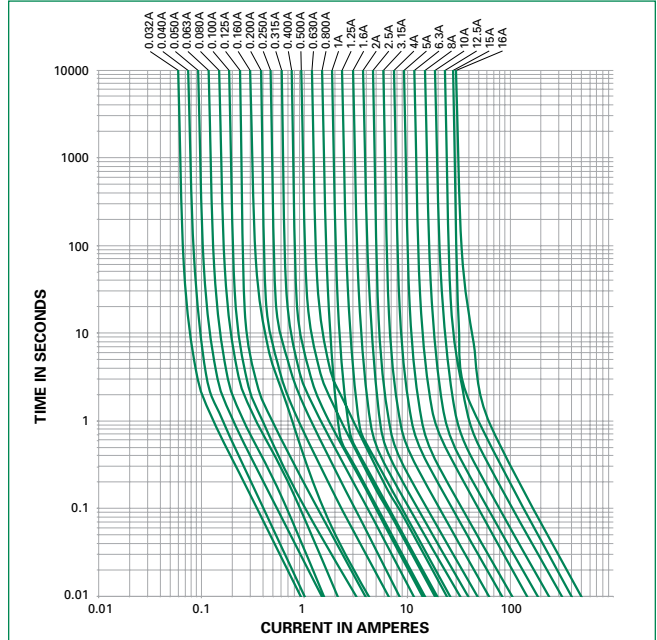
| Amp Code | Amp Rating (A) | Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting I ² t (A ² sec) | Maximum Voltage Drop at Rated Current (mV) | Maximum Power Dissipation At 1.5In(W) | Agency Approvals | | | | | | | | | |
|----------|----------------|--------------------|---------------------|--------------------------------|---|--|---------------------------------------|------------------|-----|-----|------|----|----|---|----|-----|---|
| | | | | | | | | UL | IEC | CCC | PS E | RU | SF | S | CE | DVE | |
| .032 | 0.032 | 250 | 35 A @ 250 VAC | 48.258 | 0.011 | 5000 | 1.6 | - | x | x | - | x | x | x | x | x | x |
| .040 | 0.04 | 250 | | 31.862 | 0.011 | 4000 | 1.6 | - | x | x | - | x | x | x | x | x | x |
| .050 | 0.05 | 250 | | 21.292 | 0.027 | 3500 | 1.6 | - | x | x | - | x | x | x | x | x | x |
| .063 | 0.063 | 250 | | 14.268 | 0.046 | 3000 | 1.6 | - | x | x | - | x | x | x | x | x | x |
| .080 | 0.08 | 250 | | 9.07 | 0.075 | 2500 | 1.6 | x | x | x | - | x | x | x | x | x | x |
| .100 | 0.1 | 250 | | 6.018 | 0.079 | 2000 | 1.6 | x | x | x | - | x | x | x | x | x | x |
| .125 | 0.125 | 250 | | 4.2 | 0.1465 | 1900 | 1.6 | x | x | x | - | x | x | x | x | x | x |
| .160 | 0.16 | 250 | | 3.7 | 0.144 | 1500 | 1.6 | x | x | x | - | x | x | x | x | x | x |
| .200 | 0.2 | 250 | | 1.6 | 0.341 | 1300 | 1.6 | x | x | x | - | x | x | x | x | x | x |
| .250 | 0.25 | 250 | | 1.0495 | 0.5405 | 1100 | 1.6 | x | x | x | - | x | x | x | x | x | x |
| .315 | 0.315 | 250 | | 0.8475 | 1.11 | 1000 | 1.6 | x | x | x | - | x | x | x | x | x | x |
| .400 | 0.4 | 250 | | 0.535 | 1.325 | 900 | 1.6 | x | x | x | - | x | x | x | x | x | x |
| .500 | 0.5 | 250 | | 0.37 | 2.825 | 300 | 1.6 | x | x | x | - | x | x | x | x | x | x |
| .630 | 0.63 | 250 | | 0.275 | 4.675 | 250 | 1.6 | x | x | x | - | x | x | x | x | x | x |
| .800 | 0.8 | 250 | | 0.0813 | 3.37 | 150 | 1.6 | x | x | x | - | x | x | x | x | x | x |
| 001. | 1 | 250 | | 0.0613 | 6.73 | 150 | 1.6 | x | x | x | x | x | x | x | x | x | x |
| 1.25 | 1.25 | 250 | | 0.0446 | 12.65 | 150 | 1.6 | x | x | x | x | x | x | x | x | x | x |
| 01.6 | 1.6 | 250 | | 0.0336 | 23.35 | 150 | 1.6 | x | x | x | x | x | x | x | x | x | x |
| 002. | 2 | 250 | | 0.0293 | 14.45 | 150 | 1.6 | x | x | x | x | x | x | x | x | x | x |
| 02.5 | 2.5 | 250 | | 0.0219 | 23.25 | 120 | 1.6 | x | x | x | x | x | x | x | x | x | x |
| 3.15 | 3.15 | 250 | 0.0173 | 38.15 | 100 | 1.6 | x | x | x | x | x | x | x | x | x | x | |
| 004. | 4 | 250 | 40 A @ 250 VAC | 0.0129 | 69.1 | 100 | 1.6 | x | x | x | x | x | x | x | x | x | |
| 005. | 5 | 250 | 50 A @ 250 VAC | 0.0104 | 111.0 | 100 | 1.6 | x | x | x | x | x | x | x | x | x | |
| 06.3 | 6.3 | 250 | 63 A @ 250 VAC | 0.0076 | 198.5 | 100 | 1.6 | x | x | x | x | x | x | x | x | x | |
| 008. | 8 | 250 | 80 A @ 250 VAC | 0.0059 | 341.5 | 100 | 4 | - | x | - | x | x | x | - | x | x | |
| 010. | 10 | 250 | 100 A @ 250 VAC | 0.0045 | 568.0 | 100 | 4 | - | x | - | x | x | x | - | x | x | |
| 12.5 | 12.5 | 250 | 63 A @ 250 VAC | 0.0034 | 889.0 | 100 | 4 | - | - | - | x | x | - | - | x | - | |
| 015. | 15 | 250 | 100 A @ 250 VAC | 0.0028 | 1405.00 | 100 | 4 | - | - | - | x | x | x | - | x | x* | |
| 016. | 16 | 250 | 63 A @ 250 VAC | 0.0021 | 1955.00 | 100 | 4 | - | - | - | - | x | - | - | x | - | |

* - Approval for cartridge versions only

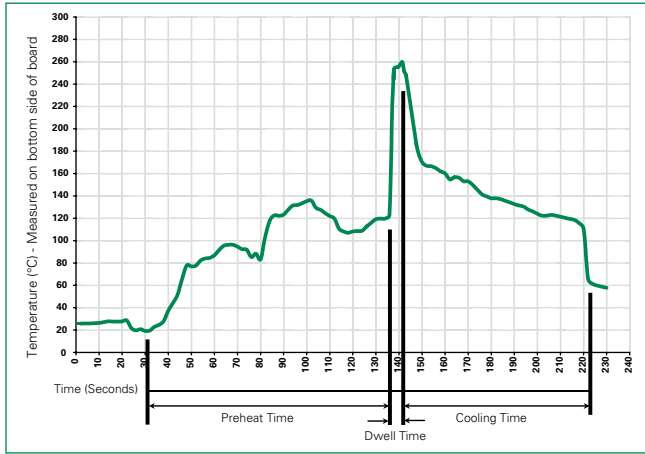
Temperature Re-rating Curve



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.

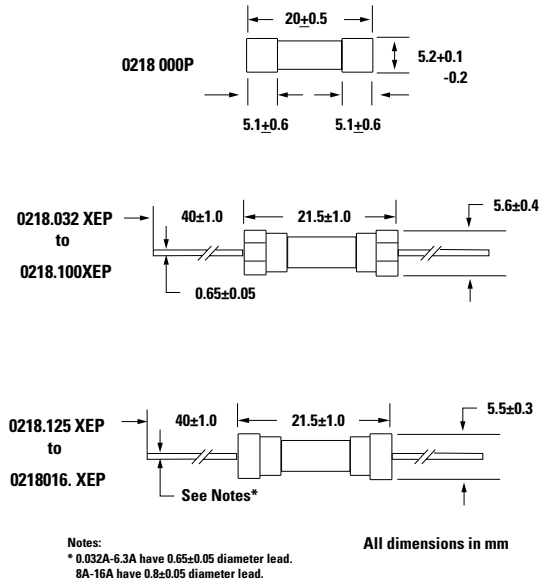
Note: These devices are not recommended for IR or Convection Reflow process.

Product Characteristics

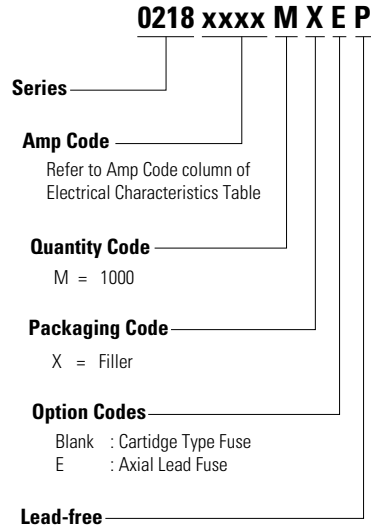
| | |
|--------------------------|--|
| Material | Body: Glass Cap: Nickel-plated Brass Leads: Tin-plated Copper |
| Terminal Strength | MIL-STD-202, Method 211, Test Condition A |
| Solderability | MIL-STD-202, Method 208 |
| Product Marking | Cap1: Brand logo, current and voltage ratings Cap2: Agency 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 |

Dimensions



Part Numbering System



Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code | Taping Width |
|-------------------|-------------------------|----------|---------------------------|------------------|
| 218 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 | 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:**
- 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.