

477 Series, 5x20 mm, Time-Lag (Slo-Blo®) Fuse



Description

400Vdc/500Vac rated, 5x20mm, time-lag, surge withstand ceramic body cartridge fuse.

Features

- Designed to International (IEC) Standards for use globally
- Follow the IEC 60127-2, Sheet 5 specification for time-lag fuses
- Available in cartridge and axial lead form
- RoHS compliant and lead-free

Applications

High energy and power efficient applications.

Agency Approvals

| Agency | Agency File Number | Ampere Range |
|--------|---|--|
| | Cartridge Certificates: NBK040609-JP1021 A NBK040609-JP1021 C NBK100408-JP1021 A Leaded Certificates: NBK040609-JP1021 B NBK040609-JP1021 D NBK100408-JP1021 B | 1A – 5A 6.3A – 12A 16A 1A – 5A 6.3A – 12A 16A |
| | Cartridge File: No. 1219190 Leaded File: No. 1219190 | 500mA – 8A 500mA – 8A |
| | Recognised File: E10480 | 500mA – 16A(500VAC) 500mA – 16A(400VDC) |
| | Certificate No.: 40025413 | 1A & 3.15A(500VAC) 1A & 3.15A(400VDC) |
| | | 500mA – 16A |

Electrical Characteristics for Series

| % of Ampere Rating | Ampere Rating | Opening Time |
|--------------------|---------------|---------------------------------|
| 150% | .5 – .8 | 60 minutes, Minimum |
| | 1 – 3.15 | 60 minutes, Minimum |
| | 4 – 6.3 | 60 minutes, Minimum |
| 210% | 8 – 16 | 30 minutes, Minimum |
| | .5 – .8 | 30 minutes, Maximum |
| | 1 – 3.15 | 30 minutes, Maximum |
| 275% | 4 – 6.3 | 30 minutes, Maximum |
| | 8 – 16 | 30 minutes, Maximum |
| | .5 – .8 | .25 sec., Min.; 80 sec., Max. |
| 400% | 1 – 3.15 | .75 sec., Min.; 80 sec., Max. |
| | 4 – 6.3 | .75 sec., Min.; 80 sec., Max. |
| | 8 – 16 | .75 sec., Min.; 80 sec., Max. |
| 1000% | .5 – .8 | .05 sec., Min.; 5 sec., Max. |
| | 1 – 3.15 | .095 sec., Min.; 5 sec., Max. |
| | 4 – 6.3 | .15 sec., Min.; 5 sec., Max. |
| | 8 – 16 | .15 sec., Min.; 5 sec., Max. |
| | .5 – .8 | .005 sec., Min.; .15 sec., Max. |
| | 1 – 3.15 | .01 sec., Min.; .15 sec., Max. |
| | 4 – 6.3 | .01 sec., Min.; .15 sec., Max. |
| | 8 – 16 | .01 sec., Min.; .15 sec., Max. |

Additional Information



Datasheet



Resources



Samples

Axial Lead & Cartridge Fuses

5x20 mm > Time-Lag > 477 Series

Electrical Characteristics Specifications by Item

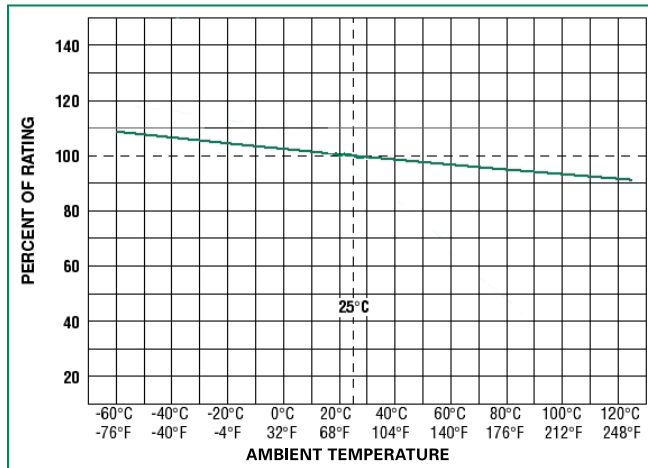
| Amp Code | Amp Rating | Max Voltage Rating (V) | | Interrupting Rating | | | | Nominal Cold Resistance (Milli-Ohm) | Nominal Melting I ² T (A ² Sec.) | Agency Approvals | | | |
|----------|------------|------------------------|-----|---------------------|-----|-------------|------|-------------------------------------|--|------------------|--------|-----|-----|
| | | | | Voltage (V) | | Current (A) | | | | P | cRU US | S | VDE |
| | | AC | DC | AC | DC | AC | DC | | | | | | |
| .500* | 0.5* | 500 | 400 | 500 | 400 | 100 | 1500 | 1055.900 | 0.300 | | X | X** | |
| .800* | 0.8* | 500 | 400 | 500 | 400 | 100 | 1500 | 430.000 | 0.909 | | X | X** | |
| 001.* | 1* | 500 | 400 | 500 | 400 | 100 | 1500 | 139.400 | 1.800 | X | X | X** | X |
| 002.* | 2* | 500 | 400 | 500 | 400 | 100 | 1500 | 55.200 | 9.120 | X | X | X** | |
| 3.15* | 3.15* | 500 | 400 | 500 | 400 | 100 | 1500 | 27.700 | 50.109 | X | X | X** | X |
| 004.* | 4* | 500 | 400 | 500 | 400 | 100 | 500 | 17.200 | 52.480 | X | X | X** | |
| 005.* | 5* | 500 | 400 | 500 | 400 | 100 | 500 | 13.700 | 76.500 | X | X | X** | |
| 06.3 | 6.3 | 500 | 400 | 500 | 400 | 100 | 500 | 10.970 | 121.451 | X | X | X | |
| 008. | 8 | 500 | 400 | 500 | 400 | 100 | 500 | 8.305 | 203.520 | X | X | X | |
| 010. | 10 | 500 | 400 | 500 | 400 | 100 | 500 | 4.950 | 509.000 | X | X | | |
| 012. | 12 | 500 | 400 | 500 | 400 | 100 | 500 | 4.730 | 576.000 | X | X | | |
| 016. | 16 | 500 | 400 | 500 | 400 | 100 | 400 | 3.100 | 1331.200 | X | X | | |

*100A@600Vac interrupting rating witnessed by UL available for 0.5A to 5A with 600Vac markings. Add suffix "MXE6P", Example: 0477004.MXE6P.

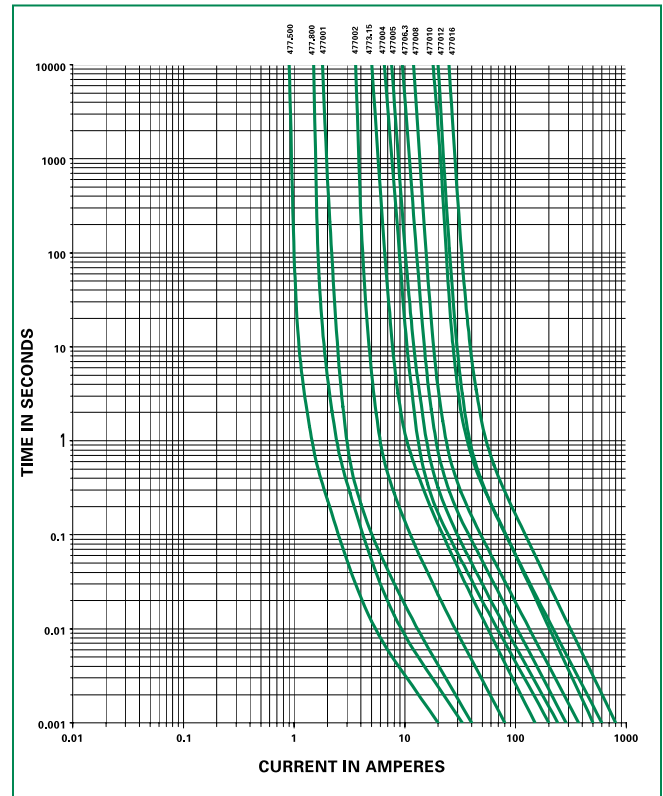
**Semko approval for 500Vac type only.

I²t test at 10x rated current.

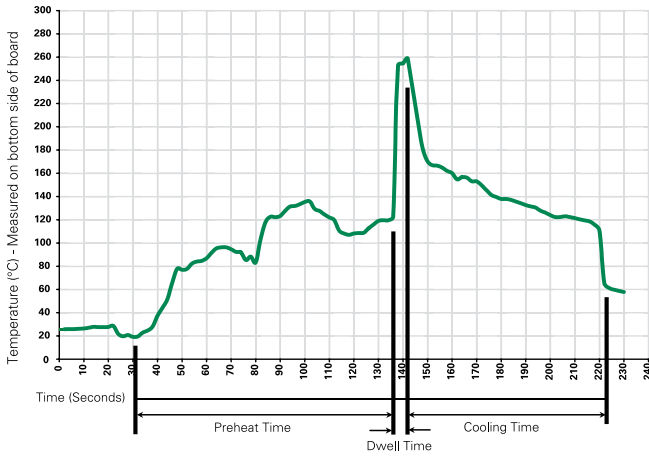
Temperature Derating Curve



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.

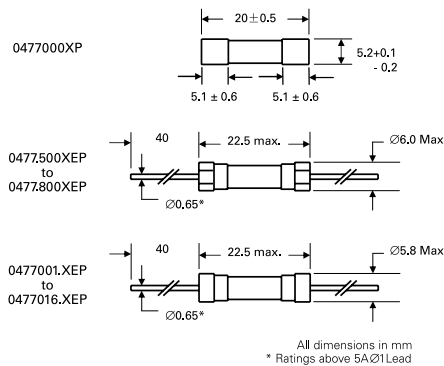
Note: These devices are not recommended for IR or Convection Reflow process.

Product Characteristics

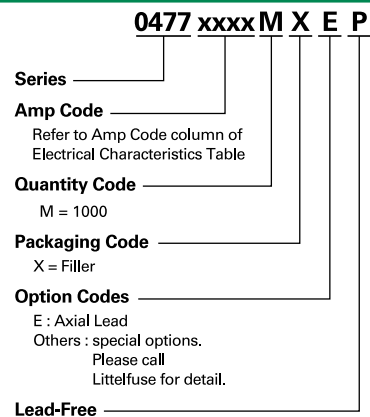
| | |
|--------------------------|---|
| Material | Body: Ceramic Cap: Nickel-plated brass Leads: Tin-plated Copper |
| Terminal Strength | MIL-STD-202G, Method 211A, Test Condition A |
| Solderability | Reference IEC 60127 Second Edition 2003-01 Annex A |
| Product Marking | Cap 1: Brand logo, current and voltage rating Cap 2: Series and agency approval markings |
| Packaging | Available in Bulk (M=1000 pcs/pkg) |

| | |
|------------------------------|--|
| 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 |

Dimensions



Part Numbering System



Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code | Reel Size |
|-------------------|-------------------------|----------|---------------------------|------------------|
| 477 Series | | | | |
| Bulk | N/A | 1000 | MX | N/A |
| Bulk | N/A | 1000 | MXE | N/A |
| Reel and Tape | N/A | 1000 | MRET1 | T1=53mm (2.087") |