



**THE DATASHEET OF
0477004.MXEP**



477 Series, 5x20 mm, Time-Lag Fuse



Description

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







Features

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

Applications

High energy and power efficient applications.

Agency Approvals

| Agency | Agency File Number | Ampere Range |
|---|---|------------------------------|
|  | Cartridge: NBK040609-JP1021A NBK040609-JP1021C NBK100408-JP1021A | 1A – 5A 6.3A – 12A 16A |
| | Leaded: NBK040609-JP1021B NBK040609-JP1021D NBK100408-JP1021B | 1A – 5A 6.3A – 12A 16A |
|  | 1620077 | 0.500A – 8A |
|  | E10480 | 0.500A - 16A |
|  | 40025413 | 1A, 3.15A |
|  | J50248089 | 10A, 12A, 16A |
|  | N/A | 0.500A – 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 |
| | 8 - 16 | 30 minutes, Minimum |
| 210% | .5 - .8 | 30 minutes, Maximum |
| | 1 - 3.15 | 30 minutes, Maximum |
| | 4 - 6.3 | 30 minutes, Maximum |
| | 8 - 16 | 30 minutes, Maximum |
| 275% | .5 - .8 | .25 sec., Min.; 80 sec. Max. |
| | 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. |
| 400% | .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. |
| 1000% | .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 Characteristic

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

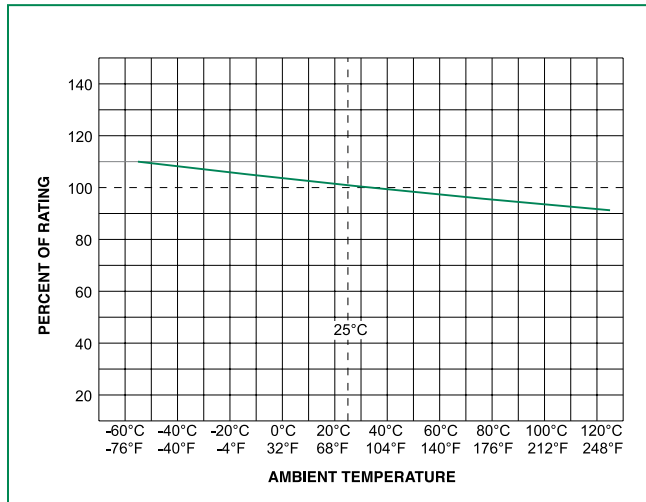
*100A @ 600Vac also available. Add suffix "MXE6P". Example: 0477004.MXE6P.

**Semko approval for 100A@500Vac and 200A@400Vdc.

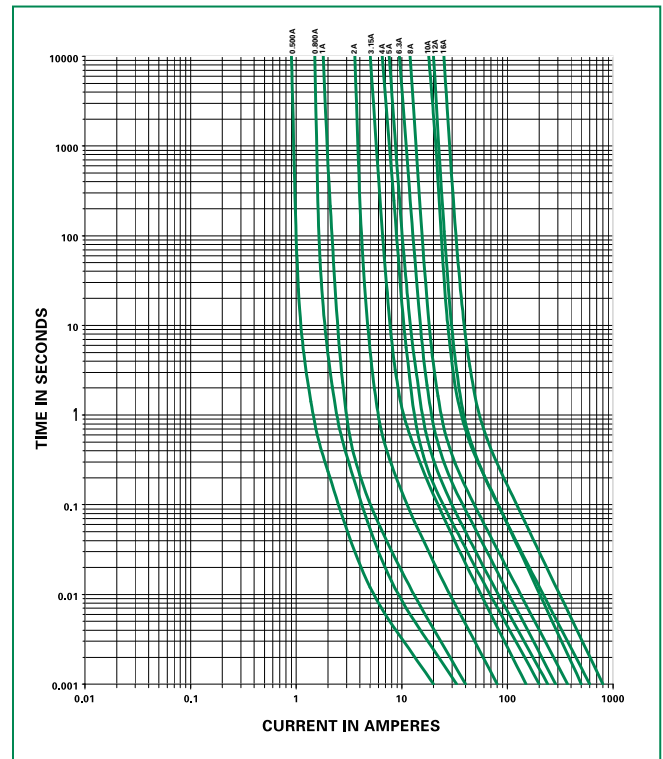
***100A@ 500Vac and 300A@400Vdc for 16A

†I²t test at 10x rated current.

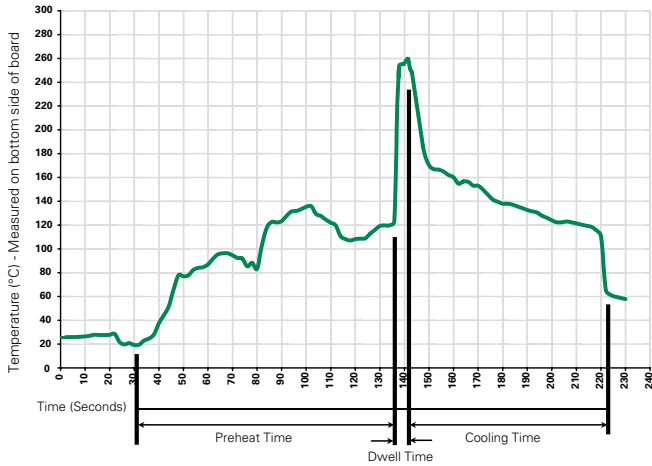
Temperature Re-rating Curve



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.

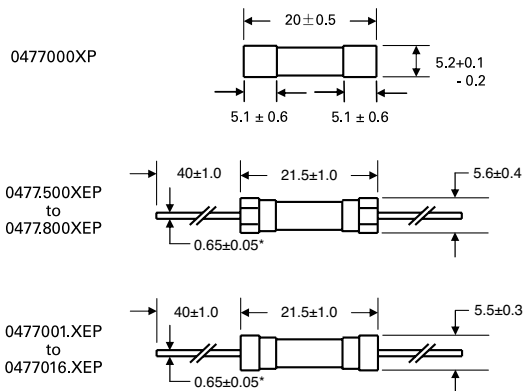
Note: These devices are not recommended for IR or Convection Reflow process.

Product Characteristics

| | |
|--------------------------|--|
| Materials | Body: Ceramic 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 | Cap 1: Brand logo, current and voltage ratings 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-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 temp (40°C) for 240 hours) |
| Salt Spray | MIL-STD-202, Method 101, Test Condition B |

Dimensions



Notes:
* Ratings above 5A 1.0±0.05 diameter lead.

Part Numbering System

0477 xxxx M X E P

| | |
|--|------|
| Series | 0477 |
| Amp Code | xxxx |
| Refer to Amp Code column of Electrical Characteristics Table | |
| Quantity Code | M |
| M = 1000 | |
| Packaging Code | X |
| X = Filler | |
| Option Codes | E |
| E : Axial Lead | |
| Others : special options. | |
| Please call Littelfuse for detail. | |
| Lead-Free | P |

Axial Lead & Cartridge Fuses

5x20 mm > Time-Lag > 477 Series

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") |

Disclaimer Notice - Littelfuse products are not designed for, and shall not be used for, any purpose (including, without limitation, automotive, military, aerospace, medical, life-saving, life-sustaining or nuclear facility applications, devices intended for surgical implant into the body, or any other application in which the failure or lack of desired operation of the product may result in personal injury, death, or property damage) other than those expressly set forth in applicable Littelfuse product documentation. Warranties granted by Littelfuse shall be deemed void for products used for any purpose not expressly set forth in applicable Littelfuse documentation. Littelfuse shall not be liable for any claims or damages arising out of products used in applications not expressly intended by Littelfuse as set forth in applicable Littelfuse documentation. The sale and use of Littelfuse products is subject to Littelfuse Terms and Conditions of Sale, unless otherwise agreed by Littelfuse. 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 www.littelfuse.com/disclaimer-electronics.

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

 [View 0477004.MXEP](#) on WIN SOURCE

 [Littelfuse Inc.](#) Information

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management