

977 Series

5 x 20mm, Time-Lag (Slo-Blo®) Fuse



Description

The 977 Series is a 450Vdc/500Vac rated, 5x20mm, Time-Lag, surge withstand, ceramic body, cartridge fuse.

Features & Benefits

- Designed to International (IEC) Standards for use globally
- Follows the IEC 60127-2, Sheet 5 specification for Time-Lag Fuses
- Available in Cartridge and Axial lead Form
- ROHS-compliant and lead-free (Pb-free)

Applications

- Inverter in LCD backlight unit
- DC side of air-conditioners
- 3-phase power supplies
- Higher Energy and Power Efficient applications.

Additional Information



Resources



Accessories



Samples

Agency Approvals

| Agency | Agency File Number | Ampere Range |
|--------|---------------------------------|--------------|
| | Cartridge: NBK040609-JP1021A | 2A – 5A |
| | NBK040609-JP1021C | 6.3A – 12A |
| | NBK100408-JP1021A | 16A |
| | Leaded: NBK040609-JP1021B | 2A – 5A |
| | NBK040609-JP1021D | 6.3A – 12A |
| | NBK100408-JP1021B | 16A |
| | 1410854 | 0.5A – 8A |
| | N/A | 0.5A – 16A |
| | N/A | 0.5A – 16A |
| | E10480 | 0.5A – 16A |

Electrical Characteristics for Series

| % of Ampere Rating | Ampere Rating | Opening Time |
|--------------------|---------------|-----------------------------|
| 150% | 0.5A – 8A | 60 minutes, Minimum |
| | 2A – 3.15A | 60 minutes, Minimum |
| | 4A – 6.3A | 60 minutes, Minimum |
| | 8A – 16A | 30 minutes, Minimum |
| 210% | 0.5A – 8A | 30 minutes, Maximum |
| | 2A – 3.15A | 30 minutes, Maximum |
| | 4A – 6.3A | 30 minutes, Maximum |
| 275% | 0.5A – 8A | 250 ms. Min.; 80 secs. Max. |
| | 2A – 3.15A | 750 ms. Min.; 80 secs. Max. |
| | 4A – 6.3A | 750 ms. Min.; 80 secs. Max. |
| | 8A – 16A | 750 ms. Min.; 80 secs. Max. |
| 400% | 0.5A – 8A | 50 ms, Min.; 5 secs. Max. |
| | 2A – 3.15A | 95 ms, Min.; 5 secs. Max. |
| | 4A – 6.3A | 150 ms, Min.; 5 secs. Max. |
| | 8A – 16A | 150 ms, Min.; 5 secs. Max. |
| 1000% | 0.5A – 8A | 5 ms, Min.; .150 ms, Max. |
| | 2A – 3.15A | 10 ms, Min.; .150 ms, Max. |
| | 4A – 6.3A | 10 ms, Min.; .150 ms, Max. |
| | 8A – 16A | 10 ms, Min.; .150 ms, Max. |

977 Series

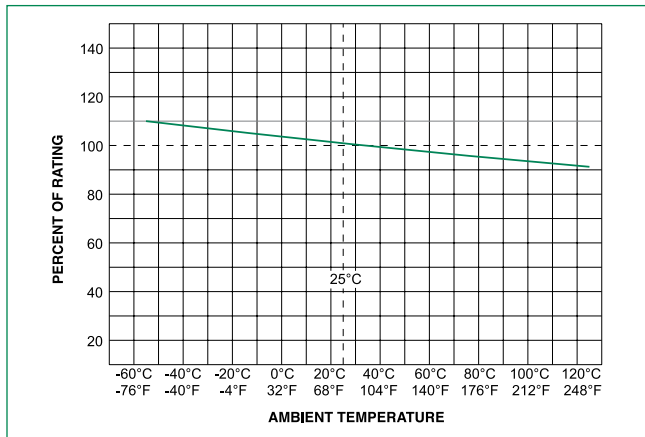
5 x 20mm, Time-Lag (Slo-Blo®) Fuse

Electrical Characteristic

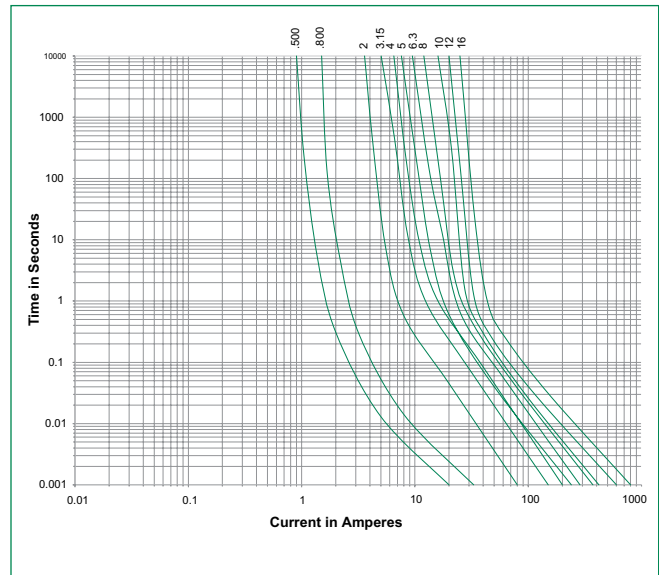
| Amp Code | Amp Rating | Voltage Rating | | Interrupting Rating | Nominal Cold Resistance (milli-ohms) | Nominal Melting I ² t (A ² sec.) | Agency Approvals | | | | |
|----------|------------|----------------|-----|--------------------------------|--------------------------------------|--|------------------|----|------|----|---|
| | | AC | DC | | | | cULus | CE | UKCA | PP | Ⓢ |
| .500 | 0.5 | 500 | 450 | 100A @ 500Vac 200A @ 450Vdc | 945.0 | 0.3 | x | x | x | - | x |
| .800 | 0.8 | 500 | 450 | | 417.0 | 0.8 | x | x | x | - | x |
| 002. | 2 | 500 | 450 | | 44.5 | 17 | x | x | x | x | x |
| 3.15 | 3.15 | 500 | 450 | | 27.5 | 58 | x | x | x | x | x |
| 004. | 4 | 500 | 450 | | 18.4 | 124 | x | x | x | x | x |
| 005. | 5 | 500 | 450 | | 11.9 | 91 | x | x | x | x | x |
| 06.3 | 6.3 | 500 | 450 | | 9.1 | 188 | x | x | x | x | x |
| 008. | 8 | 500 | 450 | | 8.0 | 233 | x | x | x | x | x |
| 010. | 10 | 500 | 450 | | 7.2 | 249 | x | x | x | x | - |
| 012. | 12 | 500 | 450 | | 5.8 | 388 | x | x | x | x | - |
| 016. | 16 | 500 | 450 | | 3.9 | 725 | x | x | x | x | - |

Note: I²t test at 10x rated current.

Temperature Re-rating Curve

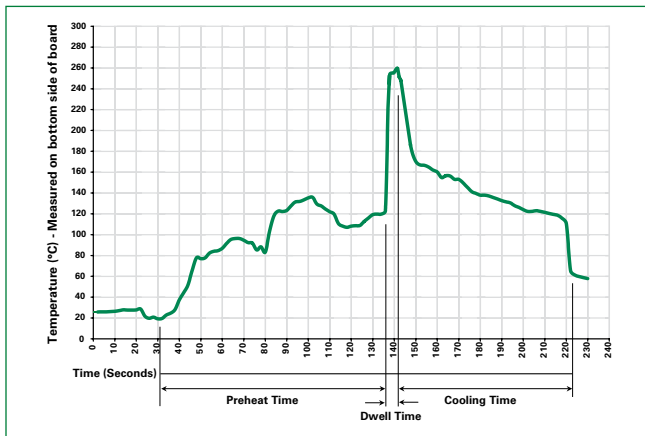


Average Time Current Curves



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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**

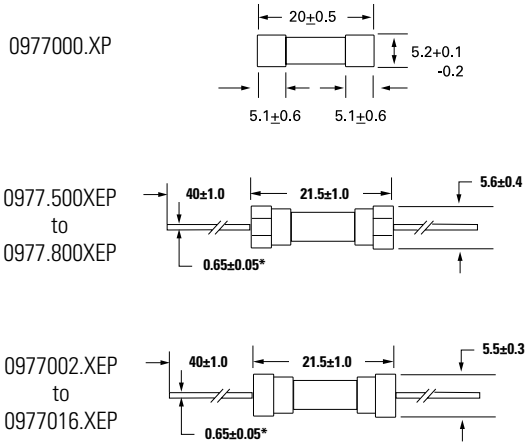
| | |
|--------------------------|--|
| Materials | Body: Ceramic Cap: Nickel-plated Brass Leads: Tin-plated Copper |
| Terminal Strength | MIL-STD-202, Method 211, Test Condition A |
| Solderability | MIL-STD-202 Method 208 |
| Product Marking | Cap 1: Brand logo, current and voltage ratings Cap 2: Series and agency approval markings |

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

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Dimensions



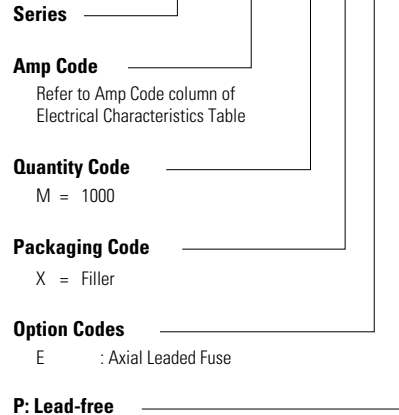
All dimensions in mm

Notes:

- * Ratings above 5A 1.0±0.05 diameter lead.
- * For 977 16A 1.2±0.05 diameter lead.

Part Numbering System

0977 xxxx M X E P



Others : Special options.
Please call Littelfuse for detail.

Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code | Reel Size |
|-------------------|-------------------------|----------|---------------------------|-----------|
| 977 Series | | | | |
| Bulk | N/A | 1000 | MX | N/A |
| Bulk | N/A | 1000 | MXE | N/A |

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