

### RoHS PO

# 977 Series, 5 x 20mm, Time-Lag (Slo-Blo®) Fuse





#### **Agency Approvals**

Agency	Agency File Number	Ampere Range	
PS E	Cartridge Certificates: NBK040609-JP1021A NBK040609-JP1021C NBK100408-JP1021A Leaded Certificates: NBK040609-JP1021B NBK040609-JP1021D NBK100408-JP1021B	2A - 5A 6.3A - 12A 16A 2A - 5A 6.3A - 12A 16A	
$\bigcirc$	Cartridge Certificates: 1010769 Leaded Certificates: 1010769	500mA – 8A 500mA – 8A	
Œ		500mA – 16A	

#### **Description**

450Vdc/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 Pbfree

#### **Applications**

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

#### **Electrical Characteristics for Series**

% of Ampere Rating	Ampere Rating	Opening Time		
	500mA – 800mA	60 minutes, Minimum		
150%	2A – 3.15A	60 minutes, Minimum		
150 %	4A – 6.3A	60 minutes, Minimum		
	8A – 16A	30 minutes, Minimum		
	500mA – 800mA	30 minutes, Maximum		
210%	2A – 3.15A	30 minutes, Maximum		
210%	4A – 6.3A	30 minutes, Maximum		
	8A – 16A	30 minutes, Maximum		
	500mA – 800mA	250 ms. Min.; 80 secs. Max.		
275%	2A – 3.15A	750 ms. Min.; 80 secs. Max.		
27370	4A – 6.3A	750 ms. Min.; 80 secs. Max.		
	8A – 16A	750 ms. Min.; 80 secs. Max.		
	500mA – 800mA	50 ms, Min.; 5 secs. Max.		
400%	2A – 3.15A	95 ms, Min.; 5 secs. Max.		
400 %	4A – 6.3A	150 ms, Min.; 5 secs. Max.		
	8A – 16A	150 ms, Min.; 5 secs. Max.		
	500mA – 800mA	5 ms, Min.; .150 ms, Max.		
1000%	2A – 3.15A	10 ms, Min.; .150 ms, Max.		
1000%	4A – 6.3A	10 ms, Min.; .150 ms, Max.		
	8A – 16A	10 ms, Min.; .150 ms, Max.		

# Axial Lead and Cartridge Fuses 5x20mm > Time-Lag > 977 Series

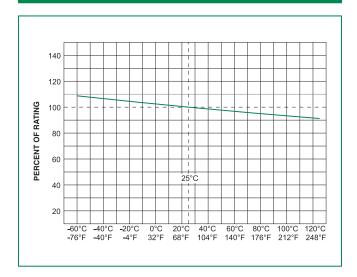


#### **Electrical Characteristic**

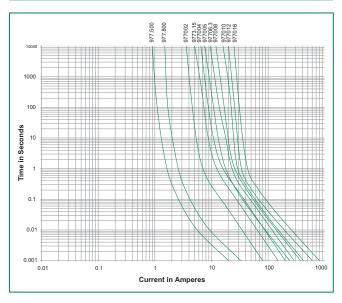
Amp Code	Amp Rating	Voltage Rating		Interrupting	Nominal Cold Resistance	Nominal Melting	Agency Approvals	
		AC	DC	Rating	(milli-ohms)	I <sup>2</sup> t (A <sup>2</sup> sec.)	PS E	$\bigcirc$
.500	0.5	500	450	100A @ 500Vac 200A @ 450Vdc	945.0	0.3		×
.800	0.8	500	450		417.0	0.8		×
002.	2	500	450		44.5	17	Х	×
3.15	3.15	500	450		27.5	58	X	X
004.	4	500	450		18.4	124	X	X
005.	5	500	450		11.9	91	X	X
06.3	6.3	500	450		9.1	188	X	X
008.	8	500	450		8.0	233	X	X
010.	10	500	450		7.2	249	X	
012.	12	500	450		5.8	388	X	
016.	16	500	450		3.9	725	Х	

I<sup>2</sup>t test at 10x rated current.

#### **Temperature Rerating Curve**

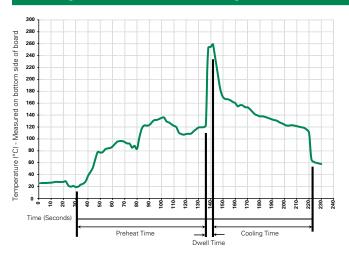


#### **Average Time Current Curves**





#### **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 DwellTime:	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-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 ratings Cap 2: Series and agency approval markings	

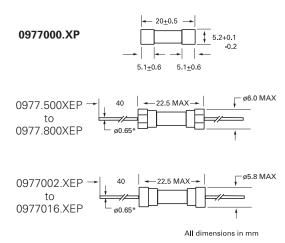
Operating Temperature	−55°C to +125°C	
Thermal Shock	MIL-STD-202G, Method 107G, Test Condition B (5 cycles, –65°C to +125°C)	
Vibration	MIL-STD-202G, Method 201A	
Humidity	MILSTD-202G, Method 103B, Test Condition A (High RH (95%) and elevated temp (40°C) for 240 hours)	
Salt Spray	MIL-STD-202G, Method 101D, Test Condition B	

Please refer to www.littelfuse.com/series/977.html for current information.

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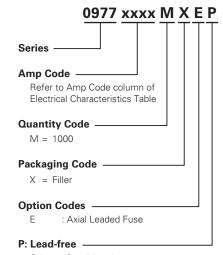


#### **Dimensions**



<sup>\*</sup> Ratings above 5A ø1 Lead. \* For 977 16A ø1.2 Lead.

#### **Part Numbering System**



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		