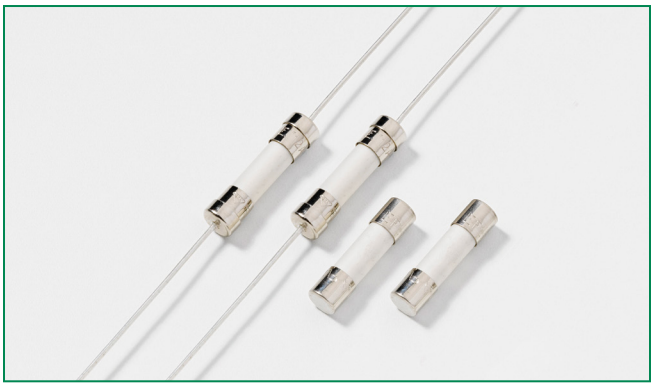
977 Series, 5×20mm, Time-Lag Fuse



Agency Approvals

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

Additional Information

Datasheet | Resources | Samples

Description

450Vdc/500Vac rated, 5×20mm, 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 Pb-free

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
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
	8A – 16A	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.

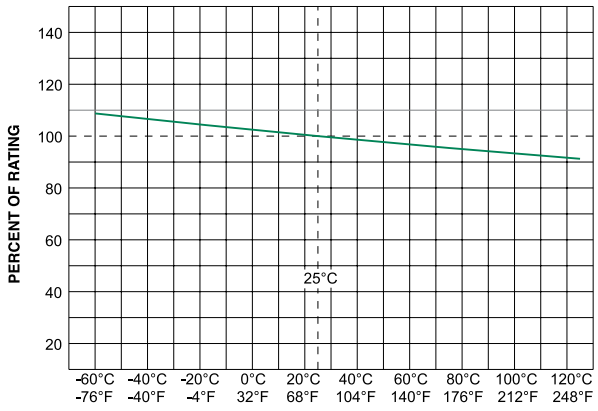
Revised: 05/08/17

Electrical Characteristic

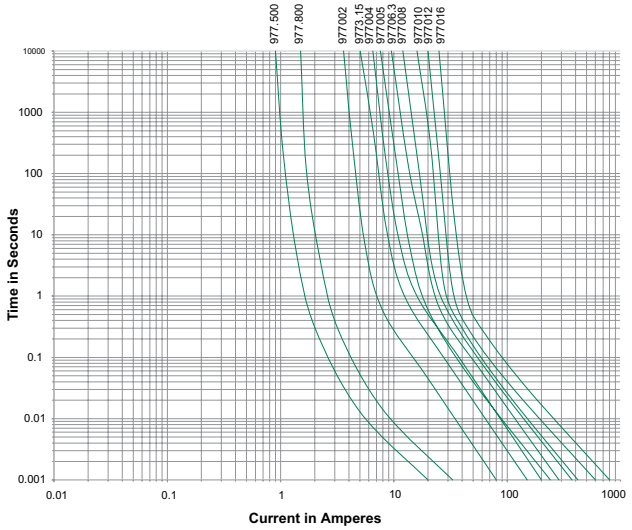
Amp Code	Amp Rating	Voltage Rating		Interrupting Rating	Nominal Cold Resistance (milli-ohms)	Nominal Melting I^2t (A^2 sec.)	Agency Approvals	
		AC	DC				PS E	
.500	0.5	500	450	100A @ 500Vac 200A @ 450Vdc	945.0	0.3		x
.800	0.8	500	450		417.0	0.8		x
002.	2	500	450		44.5	17	x	x
3.15	3.15	500	450		27.5	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	x	

I^2t test at 10x rated current.

Temperature Re-rating Curve



Average Time Current Curves

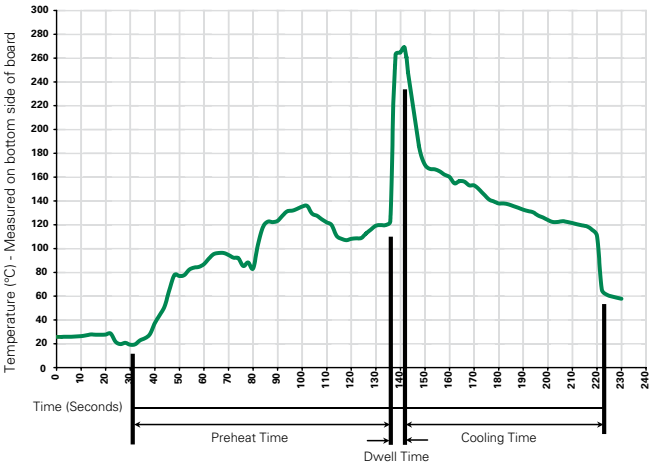


Revised: 05/08/17

Axial Lead & Cartridge Fuses

5×20mm > Time-Lag > 977 Series

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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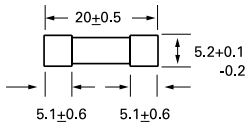
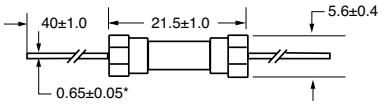
Dimensions

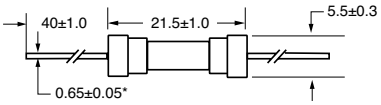
0977000.XP



0977.500XEP
to
0977.800XEP



0977002.XEP
to
0977016.XEP



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

Series

Amp Code
Refer to Amp Code column of Electrical Characteristics Table

Quantity Code
M = 1000

Packaging Code
X = Filler

Option Codes
E : Axial Leaded Fuse

P: Lead-free
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