

477 Series, 5×20 mm, Time-Lag Fuse



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
	1219190	0.500A – 8A
	E10480	0.5A – 5A(600VAC) 0.5A – 16A(400VDC) 6.3A – 16A(500VAC)
	40025413	1A, 3.15A (500VAC) 1A, 3.15A (400VDC)
	J50248089	10A/12A/16A
	N/A	0.500A – 16A

Additional Information



Datasheet



Resources



Samples

Description

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

Features

- Designed to International (IEC) Standard 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.

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.

Axial Lead & Cartridge Fuses

5×20 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^2t (A ² sec.)	Agency Approvals				
		AC	DC								
.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***	

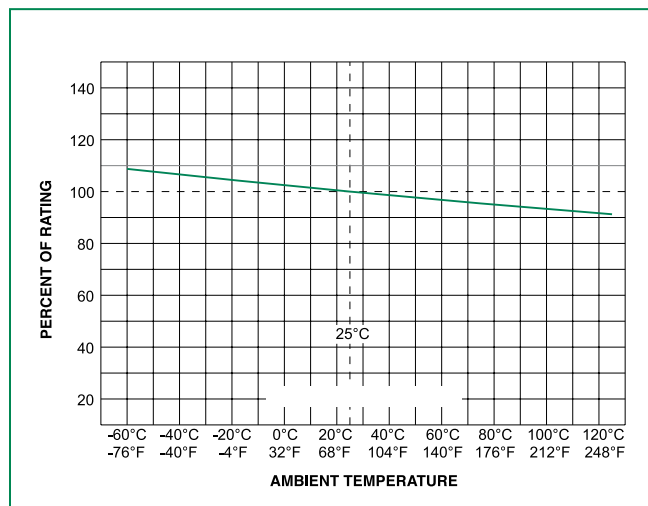
*100A @ 600Vac also available. Add suffix "MXE6P". Example: 0477004.MXE6P.

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

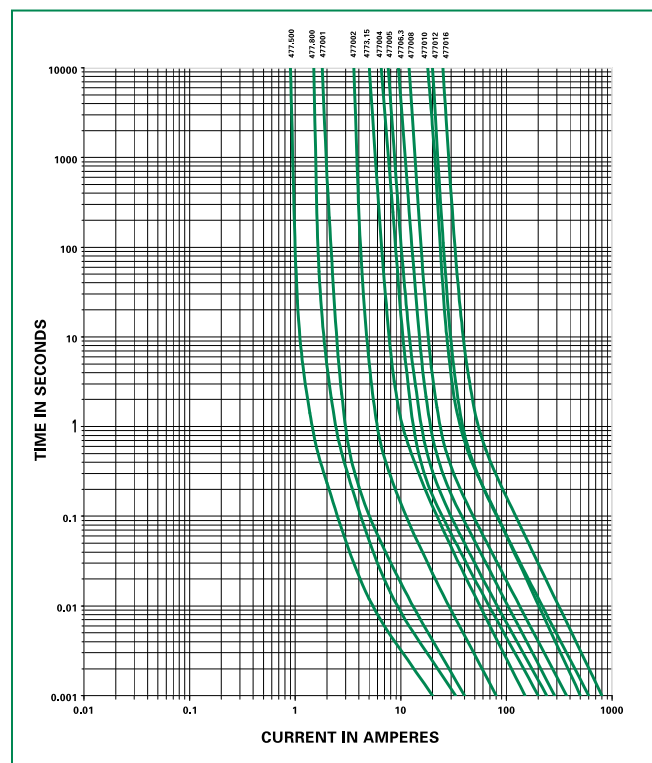
I^2t test at 10x rated current.

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

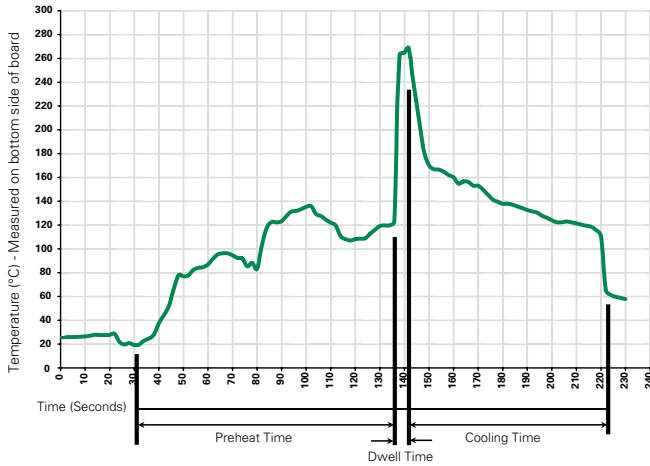
Temperature Re-rating Curve



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.

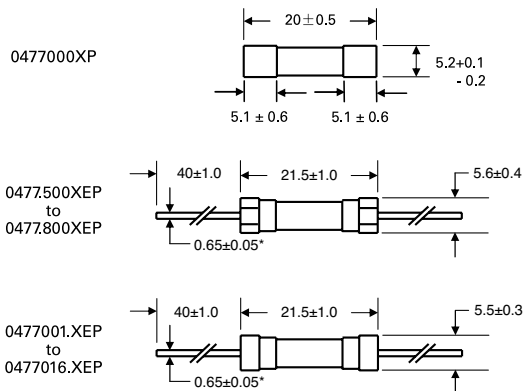
Note: These devices are not recommended for IR or Convection Reflow process.

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.

All dimensions in mm

Part Numbering System

0477 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 Lead
Others : special options.
Please call Littelfuse for detail.

Lead-Free ————

Axial Lead & Cartridge Fuses

5×20 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 - 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.