

Axial Lead & Cartridge Fuses

5x20 mm > Time-Lag > 477 Series

477 Series, 5x20 mm, Time-Lag (Slo-Blo®) Fuse



Agency Approvals

Agency	Agency File Number	Ampere Range
	Cartridge Certificates: NBK040609-JP1021 A NBK040609-JP1021 C NBK100408-JP1021 A Leaded Certificates: NBK040609-JP1021 B NBK040609-JP1021 D NBK100408-JP1021 B	1A – 5A 6.3A – 12A 16A 1A – 5A 6.3A – 12A 16A
	Cartridge File: No. 1219190 Leaded File: No. 1219190	500mA – 8A 500mA – 8A
	Recognised File: E10480	500mA – 16A(500VAC) 500mA – 16A(400VDC)
	Certificate No.: 40025413	1A & 3.15A(500VAC) 1A & 3.15A(400VDC)
		500mA – 16A

Description

400Vdc/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 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
210%	8 – 16	30 minutes, Minimum
	.5 – .8	30 minutes, Maximum
	1 – 3.15	30 minutes, Maximum
275%	4 – 6.3	30 minutes, Maximum
	8 – 16	30 minutes, Maximum
	.5 – .8	.25 sec., Min.; 80 sec., Max.
400%	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.
1000%	.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.
1000%	8 – 16	.15 sec., Min.; 5 sec., Max.
	.5 – .8	.005 sec., Min.; .15 sec., Max.
	1 – 3.15	.01 sec., Min.; .15 sec., Max.
1000%	4 – 6.3	.01 sec., Min.; .15 sec., Max.
	8 – 16	.01 sec., Min.; .15 sec., Max.

Electrical Characteristics Specifications by Item

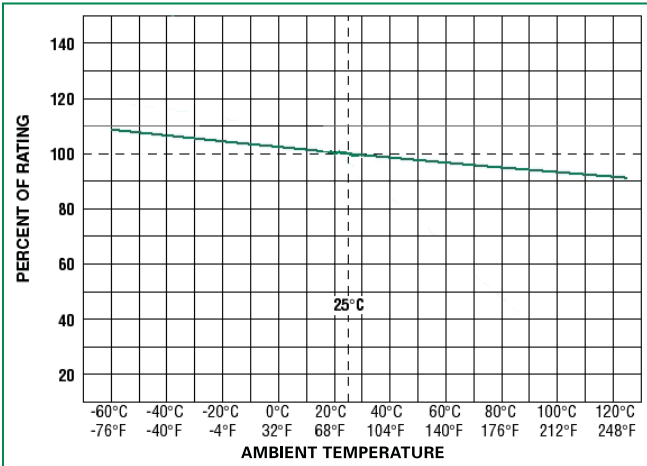
Amp Code	Amp Rating	Max Voltage Rating (V)		Interrupting Rating				Nominal Cold Resistance (Milli-Ohm)	Nominal Melting I ² T (A ² Sec.)	Agency Approvals			
				Voltage (V)		Current (A)				UL	CS	VDE	
		AC	DC	AC	DC	AC	DC						
.500*	0.5*	500	400	500	400	100	1500	1055.900	0.300		X	X**	
.800*	0.8*	500	400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

*100A@600Vac interrupting rating witnessed by UL available for 0.5A to 5A with 600Vac markings. Add suffix "MXE6P", Example: 0477004.MXE6P.

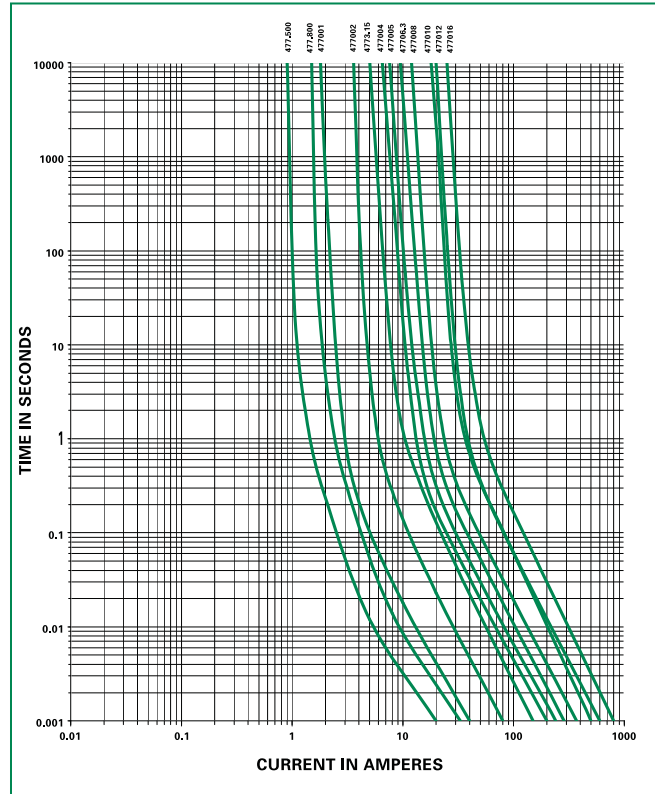
**Semko approval for 500Vac type only.

I²t test at 10x rated current.

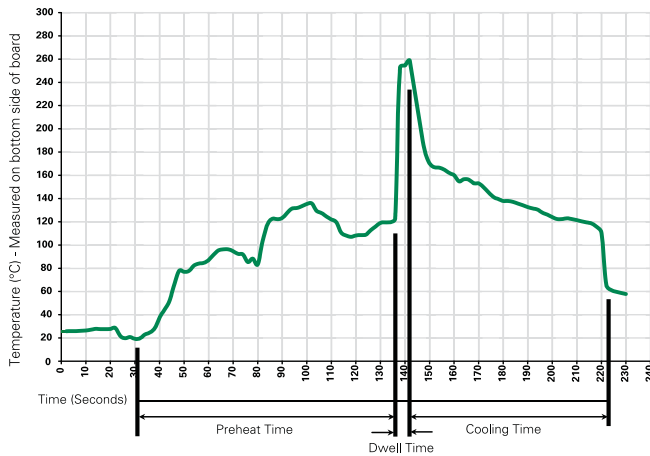
Temperature Derating Curve



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.

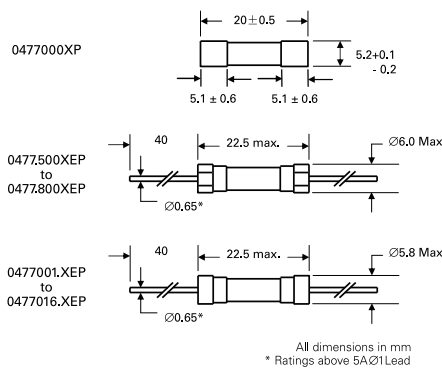
Note: These devices are not recommended for IR or Convection Reflow process.

Product Characteristics

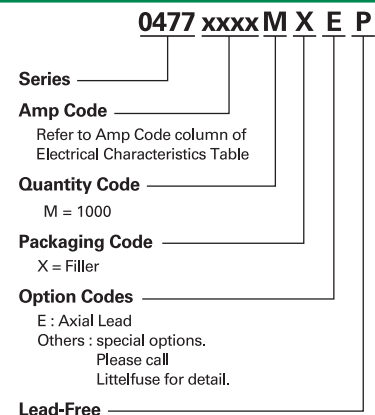
Material	Body: Ceramic Cap: Nickel-plated brass Leads: Tin-plated Copper
Terminal Strength	MIL-STD-202G, Method 211A, Test Condition A
Solderability	Reference IEC 60127 Second Edition 2003-01 Annex A
Product Marking	Cap 1: Brand logo, current and voltage rating Cap 2: Series and agency approval markings
Packaging	Available in Bulk (M=1000 pcs/pkg)

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

Dimensions



Part Numbering System



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")