







314/324 Series Lead-free 3AB, Fast-Acting Fuse



Agency Approvals

Agency	Agency File Number	Ampere Range
	E10480	0.375A - 15A
	29862	0.375A - 20A
	E10480	20A - 40A
	314 Series: NBK030805-E10480A NBK030805-E10480C NBK030805-E10480E NBK260106-JP1021A 324 Series: NBK030805-E10480B NBK030805-E10480D NBK030805-E10480F NBK260106-JP1021B	1A - 3.5A 4A - 5A 6A - 15A 20A - 30A 1A - 3.5A 4A - 5A 6A - 15A 20A - 30A
	SU05001-6003 SU05001-6001 SU05001-7006 SU05001-8002 SU05001-8003 SU05001-6002	3A 4-6A 7-10A 12-15A 20A 25-30A
	N/A	0.375A - 30A

Description

The 3AB Fast-Acting Fuse with ceramic body construction permits higher interrupting ratings and voltage ratings. Ideal for applications where high current loads are expected.

Features

- In accordance with UL Standard 248-14
- Available in cartridge and axial lead format and with various forming dimensions
- RoHS compliant and Lead-free

Applications

Used as supplementary protection in appliance or utilization equipment to provide individual protection for components or internal circuits.

Electrical Characteristics for Series

% of Ampere Rating	Ampere Rating	Opening Time
100%	0.375 - 40	4 hours, Minimum
135%	0.375 - 30	1 hour, Maximum
200%	0.375 - 12	15 secs., Maximum
	15 - 30	30 secs., Maximum
250%	40	30 secs., Maximum

Additional Information



Datasheet
314 Series



Resources
314 Series



Samples
314 Series



Accessories
314 & 324 Series



Datasheet
324 Series



Resources
324 Series



Samples
324 Series

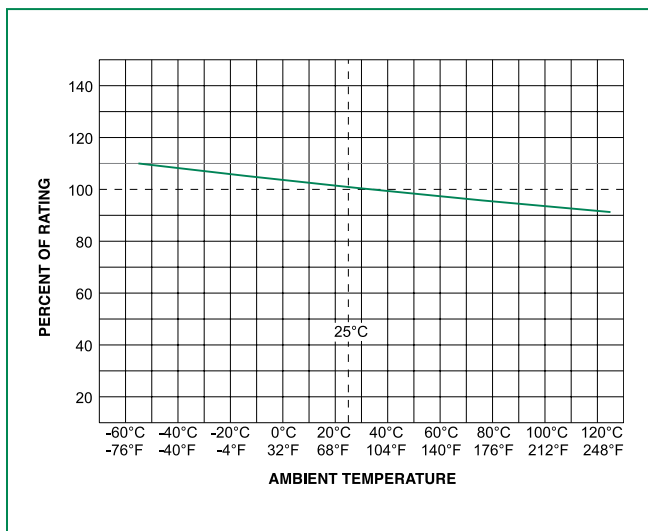
For recommended fuse accessories for this product series, see '[Recommended Accessories](#)' section.

Electrical Specification by Item

Amp Code	Ampere Rating (A)	Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I ² t (A ² sec)***	Agency Approvals						
						UL	SP	CCC	CULUS	PS E	CE	
.375	0.375	250	35 A @ 250 VAC 10 kA @ 125 VAC 10 kA @ 125 VDC	0.820	0.210	x	x				x	
.500	0.5	250		0.500	0.639	x	x				x	
.750	0.75	250		0.250	2.061	x	x				x	
001.	1	250	100 A @ 250 VAC 10 kA @ 125 VAC 10 kA @ 125 VDC	0.189	0.690	x	x				x	x
002.	2	250		0.0700	5.700	x	x				x	x
003.	3	250		0.0432	14.6	x	x	x			x	x
004.	4	250		0.0470	10.4	x	x	x			x	x
005.	5	250		0.0300	26.0	x	x	x			x	x
006.	6	250		0.0240	45.0	x	x	x			x	x
007.	7	250		0.0187	71.0	x	x	x			x	x
008.	8	250		0.0153	105	x	x	x			x	x
010.	10	250		0.0105	206	x	x	x			x	x
010.*	10	280		0.0105	206				x			x
012.	12	250		0.00760	570	x	x	x			x	x
015.	15	250		0.00505	292	x	x	x			x	x
015.*	15	280		0.00505	292				x			x
020.	20	250		1000 A @ 250 VAC 200 A @ 300 VAC 10 kA @ 125 VAC 10 kA @ 125 VDC	0.00355	631		x	x	x	x	x
020.*	20	280			0.00355	631				x		
025.	25	250	100 A @ 250 VAC 1000 A @ 75 VDC 400 A @ 125 VAC 400 A @ 125 VDC	0.00235	1450			x	x	x	x	
025.**	25	280		0.00235	1450				x			x
030.	30	250		0.00182	2490			x	x	x	x	
040.	40	250	1000 A @ 250 VAC 400 A @ 150 VDC	0.0014	22925				x		x	

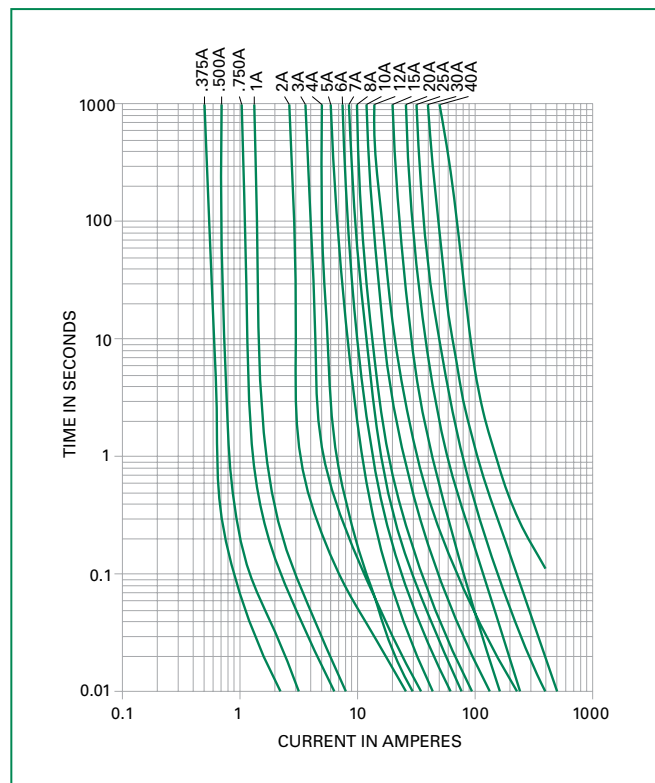
* 350A@280VAC interrupting rating available for 10A, 15A and 20A.
 ** 50A@280VAC for 25A. Add suffix '280'. Example: 0324020.MX280P.
 *** I²t test at 10x rated current

Temperature Re-rating Curve

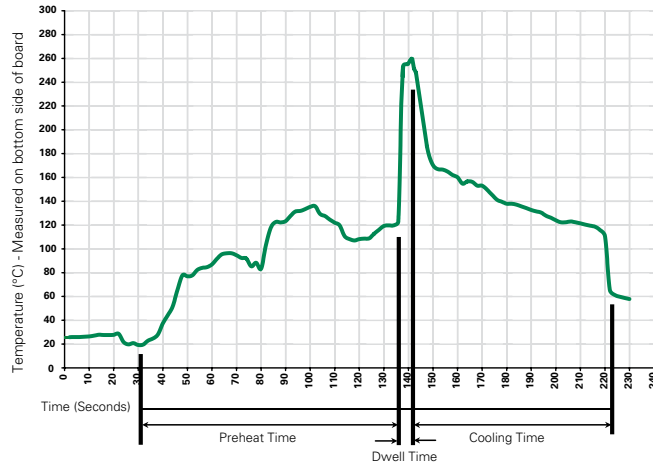


Note:
 Re-rating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

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.

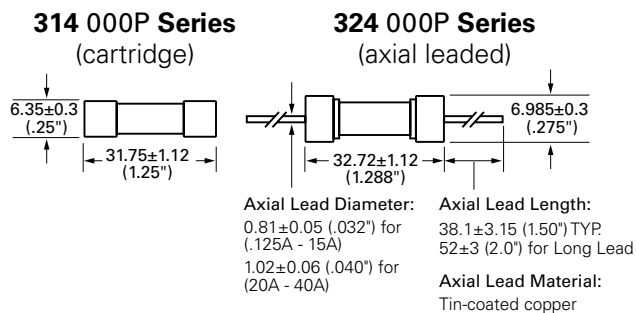
Product Characteristics

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	Cap1: Brand logo, current and voltage ratings Cap2: Series and agency approval marks

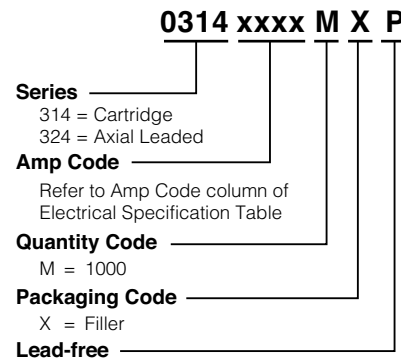
Operating Temperature	-55°C to +125°C
Thermal Shock	MIL-STD-202, Method 107, Test Condition B (5 cycles, -65°C to +125°C)
Vibration	MIL-STD-202, Method 201
Humidity	MIL-STD-202, Method 103, Test Condition A (High RH (95%) and Elevated temperature (40°C) for 240 hours)
Salt Spray	MIL-STD-202, Method 101,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

Dimensions

Measurements displayed in millimeters (inches)



Part Numbering System



Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Taping Width
314 Series				
Bulk	N/A	5	VX	N/A
Bulk	N/A	100	HX	N/A
Bulk	N/A	1000	MX	N/A
Bulk	N/A	1000	MX52L (long lead)	N/A
Bulk	N/A	1000	MXCC	N/A
Bulk	N/A	1000	MX52LE (long lead)	N/A
324 Series				
Bulk	N/A	5	VX	N/A
Bulk	N/A	100	HX	N/A
Bulk	N/A	1000	MX	N/A
Bulk	N/A	1000	MX280	N/A
Bulk	N/A	1000	MX52 (long lead)	N/A
Bulk	N/A	1000	MXF24	N/A

Recommended Accessories

Accessory Type	Series	Description	Max Application Voltage	Max Application Amperage
Holder	155100	Twist-Lock In-Line Fuseholder	32	20
	342	Traditional Panel Mount Fuseholder	250	20
	346	Panel Mount Flip-Top Shock-Safe Fuseholder	250	15
	345	Shock-Safe Fuseholder with PC Mount, Solder Mount and Panel Mount options	250	20
Block	354	Low Profile OMNI-BLOK® Fuse Block	600	30
	359	High Current Screw Terminal Fuse Block		30
Clip	122	High Current Traditional PC Board Fuse Clip	1000	30
	101	Rivet/Eyelet Type Fuse Clip	1000	15







- Notes:
- Do not use in applications above rating.
 - Please refer to fuseholder data sheet for specific re-rating information.
 - Please contact factory for applications greater than the max voltage and amperage shown.

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.

314/324 Series Lead-free 3AB, Fast-Acting Fuse



Agency Approvals

Agency	Agency File Number	Ampere Range
	E10480	0.375A - 15A
	29862	0.375A - 20A
	E10480	20A - 40A
	314 Series: NBK030805-E10480A NBK030805-E10480C NBK030805-E10480E NBK260106-JP1021A 324 Series: NBK030805-E10480B NBK030805-E10480D NBK030805-E10480F NBK260106-JP1021B	1A - 3.5A 4A - 5A 6A - 15A 20A - 30A 1A - 3.5A 4A - 5A 6A - 15A 20A - 30A
	SU05001-6003 SU05001-6001 SU05001-7006 SU05001-8002 SU05001-8003 SU05001-6002	3A 4-6A 7-10A 12-15A 20A 25-30A
	N/A	0.375A - 30A

Description

The 3AB Fast-Acting Fuse with ceramic body construction permits higher interrupting ratings and voltage ratings. Ideal for applications where high current loads are expected.

Features

- In accordance with UL Standard 248-14
- Available in cartridge and axial lead format and with various forming dimensions
- RoHS compliant and Lead-free

Applications

Used as supplementary protection in appliance or utilization equipment to provide individual protection for components or internal circuits.

Electrical Characteristics for Series

% of Ampere Rating	Ampere Rating	Opening Time
100%	0.375 - 40	4 hours, Minimum
135%	0.375 - 30	1 hour, Maximum
200%	0.375 - 12	15 secs., Maximum
	15 - 30	30 secs., Maximum
250%	40	30 secs., Maximum

Additional Information



Datasheet
314 Series



Resources
314 Series



Samples
314 Series



Accessories
314 & 324 Series



Datasheet
324 Series



Resources
324 Series



Samples
324 Series

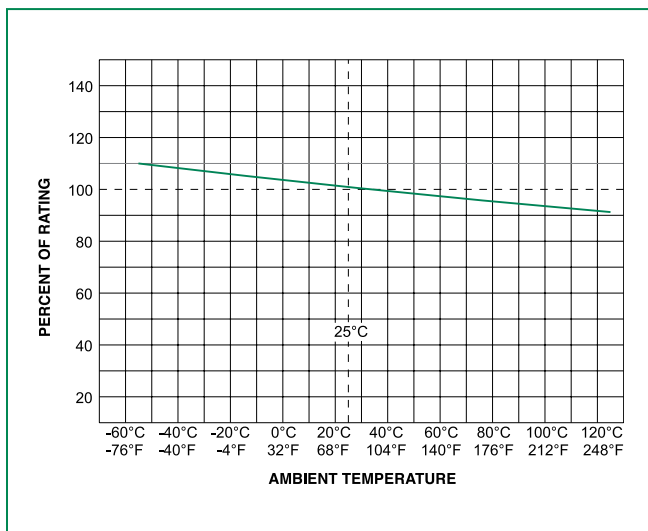
For recommended fuse accessories for this product series, see '[Recommended Accessories](#)' section.

Electrical Specification by Item

Amp Code	Ampere Rating (A)	Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I ² t (A ² sec)***	Agency Approvals						
						UL	SP	CCC	CULUS	PS E	CE	
.375	0.375	250	35 A @ 250 VAC 10 kA @ 125 VAC 10 kA @ 125 VDC	0.820	0.210	x	x				x	
.500	0.5	250		0.500	0.639	x	x				x	
.750	0.75	250		0.250	2.061	x	x				x	
001.	1	250	100 A @ 250 VAC 10 kA @ 125 VAC 10 kA @ 125 VDC	0.189	0.690	x	x				x	x
002.	2	250		0.0700	5.700	x	x				x	x
003.	3	250		0.0432	14.6	x	x	x			x	x
004.	4	250		0.0470	10.4	x	x	x			x	x
005.	5	250		0.0300	26.0	x	x	x			x	x
006.	6	250		0.0240	45.0	x	x	x			x	x
007.	7	250		0.0187	71.0	x	x	x			x	x
008.	8	250		0.0153	105	x	x	x			x	x
010.	10	250		0.0105	206	x	x	x			x	x
010.*	10	280		0.0105	206				x			x
012.	12	250		0.00760	570	x	x	x			x	x
015.	15	250		0.00505	292	x	x	x			x	x
015.*	15	280		0.00505	292				x			x
020.	20	250		1000 A @ 250 VAC 200 A @ 300 VAC 10 kA @ 125 VAC 10 kA @ 125 VDC	0.00355	631		x	x	x	x	x
020.*	20	280			0.00355	631				x		
025.	25	250	100 A @ 250 VAC 1000 A @ 75 VDC 400 A @ 125 VAC 400 A @ 125 VDC	0.00235	1450			x	x	x	x	
025.**	25	280		0.00235	1450				x			x
030.	30	250		0.00182	2490			x	x	x	x	
040.	40	250	1000 A @ 250 VAC 400 A @ 150 VDC	0.0014	22925				x		x	

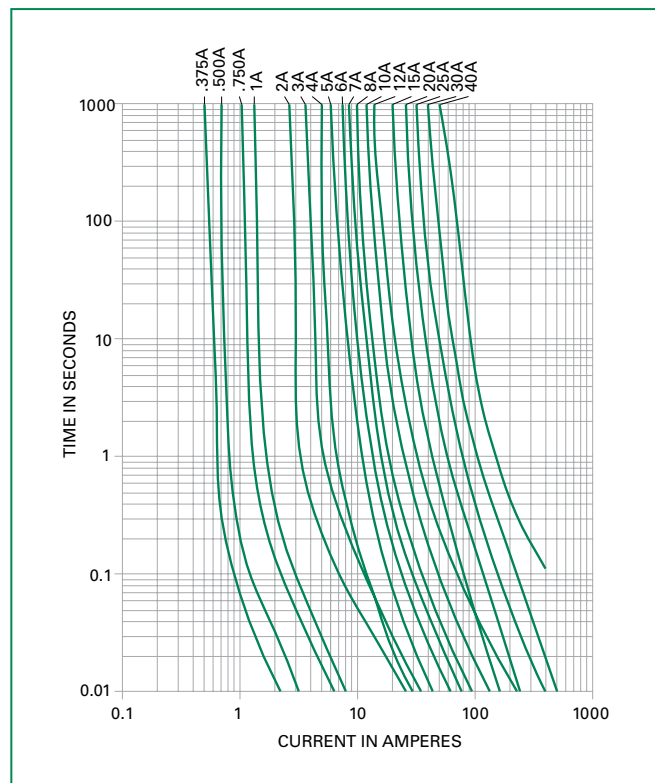
* 350A@280VAC interrupting rating available for 10A, 15A and 20A.
 ** 50A@280VAC for 25A. Add suffix '280'. Example: 0324020.MX280P.
 *** I²t test at 10x rated current

Temperature Re-rating Curve

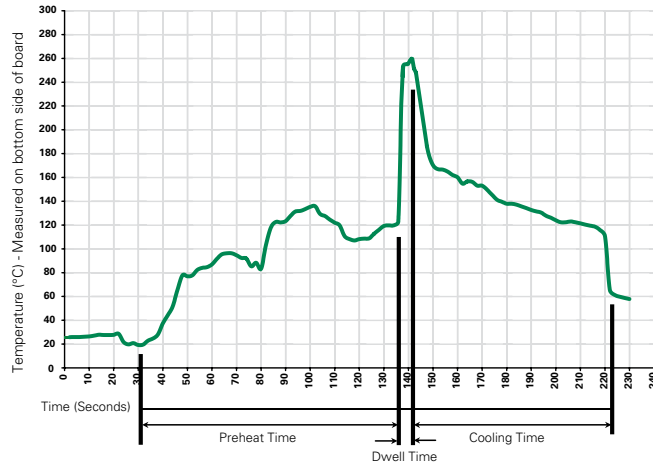


Note:
 Re-rating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

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.

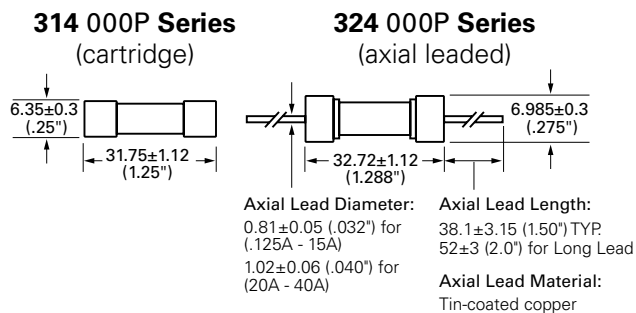
Product Characteristics

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	Cap1: Brand logo, current and voltage ratings Cap2: Series and agency approval marks

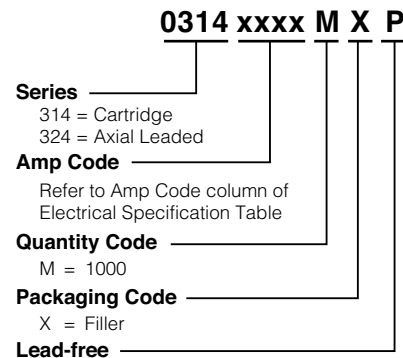
Operating Temperature	-55°C to +125°C
Thermal Shock	MIL-STD-202, Method 107, Test Condition B (5 cycles, -65°C to +125°C)
Vibration	MIL-STD-202, Method 201
Humidity	MIL-STD-202, Method 103, Test Condition A (High RH (95%) and Elevated temperature (40°C) for 240 hours)
Salt Spray	MIL-STD-202, Method 101,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

Dimensions

Measurements displayed in millimeters (inches)



Part Numbering System



Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Taping Width
314 Series				
Bulk	N/A	5	VX	N/A
Bulk	N/A	100	HX	N/A
Bulk	N/A	1000	MX	N/A
Bulk	N/A	1000	MX52L (long lead)	N/A
Bulk	N/A	1000	MXCC	N/A
Bulk	N/A	1000	MX52LE (long lead)	N/A
324 Series				
Bulk	N/A	5	VX	N/A
Bulk	N/A	100	HX	N/A
Bulk	N/A	1000	MX	N/A
Bulk	N/A	1000	MX280	N/A
Bulk	N/A	1000	MX52 (long lead)	N/A
Bulk	N/A	1000	MXF24	N/A

Recommended Accessories

Accessory Type	Series	Description	Max Application Voltage	Max Application Amperage
Holder	155100	Twist-Lock In-Line Fuseholder	32	20
	342	Traditional Panel Mount Fuseholder	250	20
	346	Panel Mount Flip-Top Shock-Safe Fuseholder	250	15
	345	Shock-Safe Fuseholder with PC Mount, Solder Mount and Panel Mount options	250	20
Block	354	Low Profile OMNI-BLOK® Fuse Block	600	30
	359	High Current Screw Terminal Fuse Block		30
Clip	122	High Current Traditional PC Board Fuse Clip	1000	30
	101	Rivet/Eyelet Type Fuse Clip	1000	15

- Notes:
- Do not use in applications above rating.
 - Please refer to fuseholder data sheet for specific re-rating information.
 - Please contact factory for applications greater than the max voltage and amperage shown.