# Axial Lead & Cartridge Fuses

3AB > Fast-Acting > 314/324 Series

Littelfuse
Expertise Applied | Answers Delivered

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



## Agency Approvals

| Agency | Agency File Number | Ampere Range |
|---|---|---|
| UL | E10480 | 0.375A - 15A |
| CSA | 29862 | 0.375A - 20A |
| cULus | E10480 | 15A* - 40A |
| PSE | 314 Series:<br>NBK030805-E10480A<br>NBK030805-E10480C<br>NBK030805-E10480E<br>NBK260106-JP1021A<br>324 Series:<br>BNK030805-E10480B<br>NBK030805-E10480D<br>NBK030805-E10480F<br>NBK260106-JP1021B | 1A - 3.5A<br>4A - 5A<br>6A - 15A<br>20A - 30A<br><br>1A - 3.5A<br>4A - 5A<br>6A - 15A<br>20A - 30A |
| KC | SU05001-6003<br>SU05001-6001<br>SU05001-6006<br>SU05001-8002<br>SU05001-8003<br>SU05001-6002 | 3A<br>4-6A<br>7-10A<br>12-15A<br>20A<br>25-30A |
| CE | 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.

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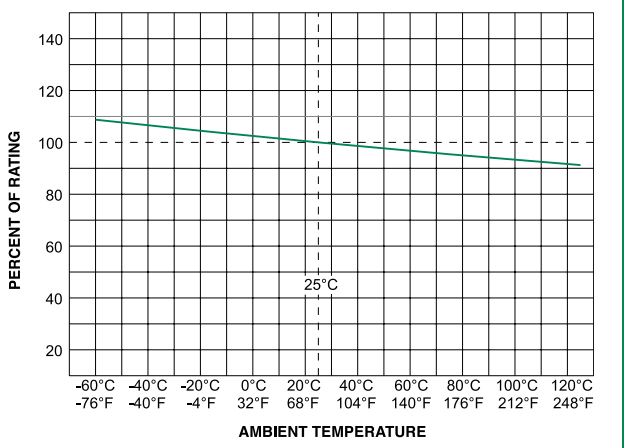
## Electrical Specification by Item

| Amp Code | Ampere Rating (A) | Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting $I^2t$ ($A^2$ sec) | Agency Approvals | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | UL | CSA | KC | cULus | PSE | CE |
| .375 | 0.375 | 250 | 35 A @ 250 VAC<br>10 kA @ 125 VAC<br>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<br>10 kA @ 125 VAC<br>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 | 750 A @ 250 VAC<br>10 kA @ 125 VAC<br>10 kA @ 125 VDC | 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<br>200 A @ 300 VAC<br>10 kA @ 125 VAC<br>10 kA @ 125 VDC | 0.00355 | 631 | | x | x | x | x | x |
| 020.* | 20 | 280 | | 0.00355 | 631 | | | | x | | x |
| 025. | 25 | 250 | 100 A @ 250 VAC<br>1000 A @ 75 VDC<br>400 A @ 125 VAC<br>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<br>400 A @ 150 VDC | 0.0014 | 22925 | | | | x | | x |

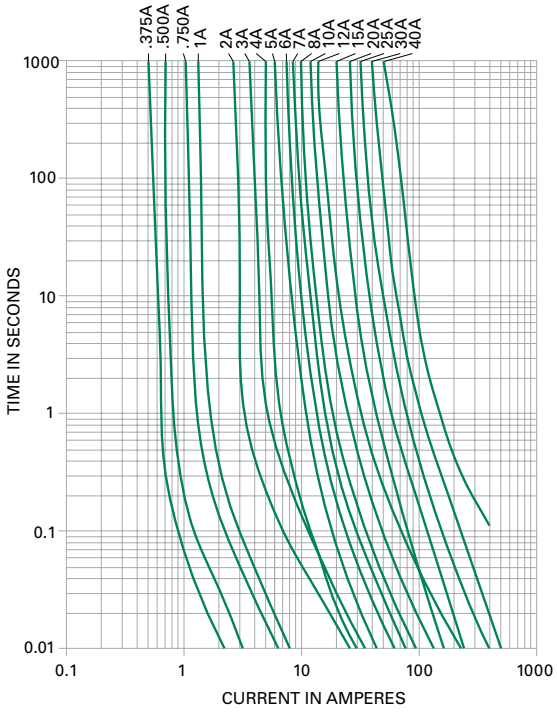
* 350A@280VAC interrupting rating available for 10A, 15A and 20A. ** 50A@280VAC for 25A. Add suffix '280'. Example: 0324020.MX280P.
$I^2t$ test at 10x rated current

## Temperature Re-rating Curve




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

## Average Time Current Curves

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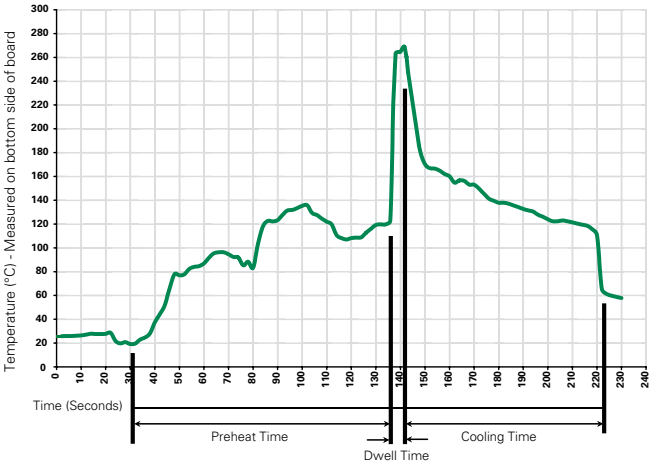
## Soldering Parameters - Wave Soldering




**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

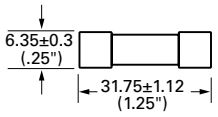
| | |
|---|---|
| **Materials** | **Body:** Ceramic<br>**Cap:** Nickel–plated Brass<br>**Leads:** Tin–plated Copper |
| **Terminal Strength** | MIL-STD-202, Method 211, Test Condition A |
| **Solderability** | MIL-STD-202 Method 208 |
| **Product Marking** | **Cap1:** Brand logo, current and voltage ratings<br>**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 |

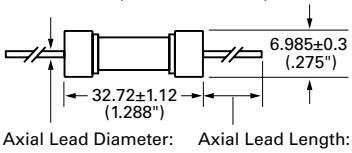
## Dimensions

Measurements displayed in millimeters (inches)

**314** 000P **Series**
(cartridge)




**324** 000P **Series**
(axial leaded)




**Axial Lead Diameter:**
0.81±0.05 (.032") for (.125A - 15A)
1.02±0.06 (.040") for (20A - 40A)

**Axial Lead Length:**
38.1±3.15 (1.50") TYP.
52±3 (2.0") for Long Lead

**Axial Lead Material:**
Tin-coated copper

## Part Numbering System

**0314 xxxx M X P**

**Series**

**Amp Code**
Refer to Amp Code column of Electrical Specification Table

**Quantity Code**
M = 1000

**Packaging Code**
X = Filler

**Lead-free**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## 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:
1. Do not use in applications above rating.
2. Please refer to fuseholder data sheet for specific re-rating information.
3. Please contact factory for applications greater than the max voltage and amperage shown.

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