

# 314/324 Series

## Lead-free 3AB, Fast-Acting Fuse



### Additional Information



Resources



Accessories



Samples

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

### Agency Approvals

| Agency | Agency File Number                                                                                                                                                                                               | Ampere Range                                                                                       |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
|        | E10480                                                                                                                                                                                                           | 0.375A - 15A                                                                                       |
|        | 29862                                                                                                                                                                                                            | 0.375A - 20A                                                                                       |
|        | E10480                                                                                                                                                                                                           | 20A - 40A                                                                                          |
|        | <b>314 Series:</b><br>NBK030805-E10480A<br>NBK030805-E10480C<br>NBK030805-E10480E<br>NBK260106-JP1021A<br><b>324 Series:</b><br>NBK030805-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 |
|        | SU05001-6003<br>SU05001-6001<br>SU05001-7006<br>SU05001-8002<br>SU05001-8003<br>SU05001-6002                                                                                                                     | 3A<br>4-6A<br>7-10A<br>12-15A<br>20A<br>25-30A                                                     |
|        | N/A                                                                                                                                                                                                              | 0.375A - 30A                                                                                       |
|        | J 50440217                                                                                                                                                                                                       | 15A/20A                                                                                            |

### 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
- UL Listed and Recognized to UL/CSA/NMX 248-1 and UL/CSA/NMX 248-14
- Conforms to DENAN's Appendix 3
- Conforms to EN 60127-1 and EN 60127-7 (15A, 20A only)

### 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 |

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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 <sup>2</sup> sec)*** | Agency Approvals |    |   |       |      |    |       |
|----------|-------------------|--------------------|---------------------------------------------------------------------------|--------------------------------|------------------------------------------------|------------------|----|---|-------|------|----|-------|
|          |                   |                    |                                                                           |                                |                                                | UL               | SP | K | UL US | PS E | 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  | x**** |
| 015.*    | 15                | 280                |                                                                           | 0.00505                        | 292                                            | -                | -  | - | x     | -    | x  | -     |
| 020.     | 20                | 250                |                                                                           | 0.00355                        | 631                                            | -                | x  | x | x     | x    | x  | x**** |
| 020.*    | 20                | 280                | 1000 A @ 250 VAC<br>200 A @ 300 VAC<br>10 kA @ 125 VAC<br>10 kA @ 125 VDC | 0.00355                        | 631                                            | -                | -  | - | x     | -    | x  | -     |
| 025.     | 25                | 250                | 100 A @ 250 VAC<br>1000 A @ 75 VDC                                        | 0.00235                        | 1450                                           | -                | -  | x | x     | x    | x  | -     |
| 025.**   | 25                | 280                |                                                                           | 0.00235                        | 1450                                           | -                | -  | - | x     | -    | x  | -     |
| 030.     | 30                | 250                | 400 A @ 125 VAC<br>400 A @ 125 VDC                                        | 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.

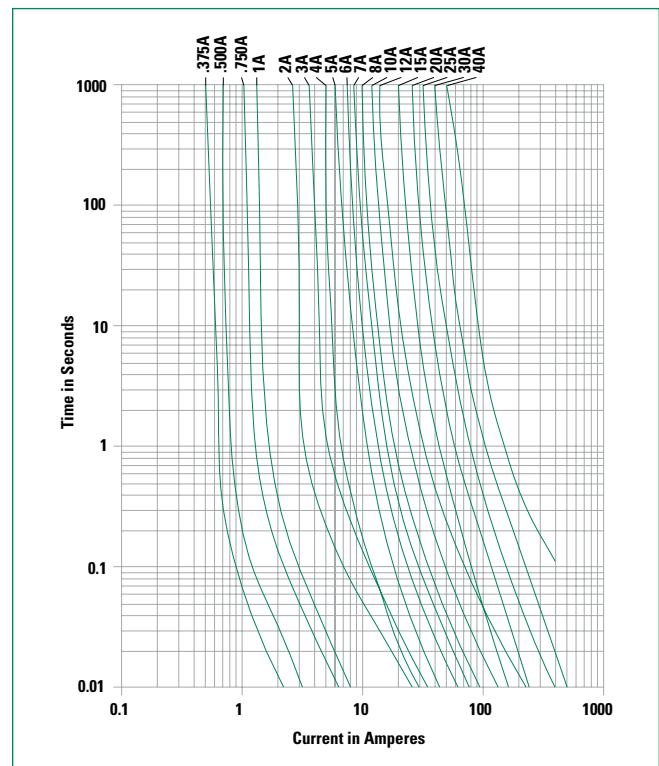
\*\* 50A@280VAC for 25A. Add suffix '280'. Example: 0324020.MX280P.

\*\*\*I<sup>2</sup>t test at 10x rated current

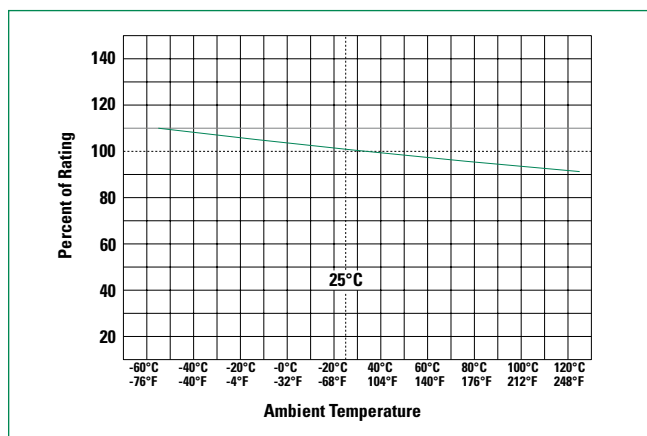
\*\*\*\*Interrupting rating is 750A@250Vac for 15A, 1000A@250Vac for 20A

+ - Interrupting Rating may differ based on Agency Approval. See Agency Approval certificate for more details.

### Average Time Current Curves



### Temperature Re-rating Curve



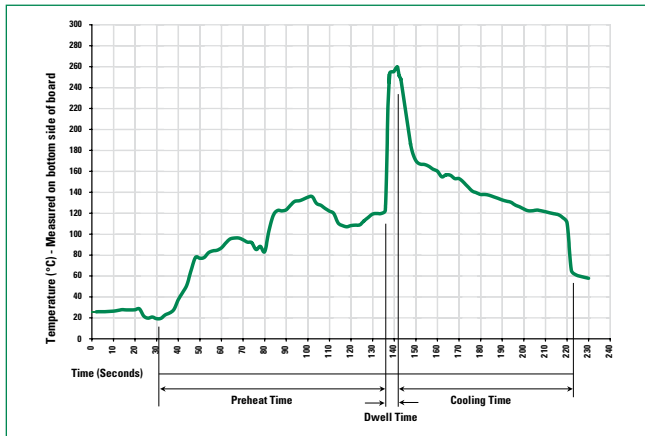
#### Note:

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

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### Soldering Parameters - Wave Soldering



### Recommended Process Parameters:

| Wave Parameter                                       | Lead-Free Recommendation          |
|------------------------------------------------------|-----------------------------------|
| Preheat:<br>(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:

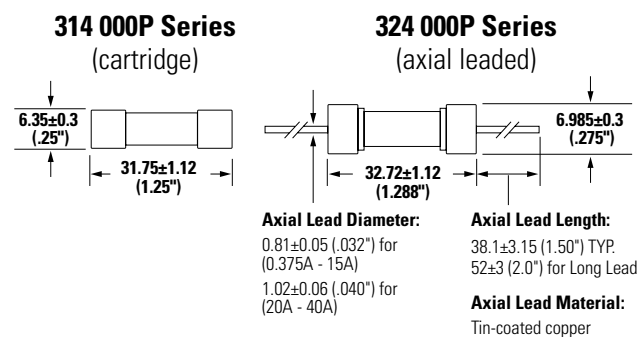
These devices are not recommended for IR or Convection Reflow process.

### Product Characteristics

|                          |                                                                                                       |
|--------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Materials</b>         | <b>Body:</b> Ceramic<br><b>Cap:</b> Nickel-plated Brass<br><b>Leads:</b> Tin-plated Copper            |
| <b>Terminal Strength</b> | MIL-STD-202, Method 211, Test Condition A                                                             |
| <b>Solderability</b>     | MIL-STD-202 Method 208                                                                                |
| <b>Product Marking</b>   | <b>Cap1:</b> Brand logo, current and voltage ratings<br><b>Cap2:</b> Series and agency approval marks |

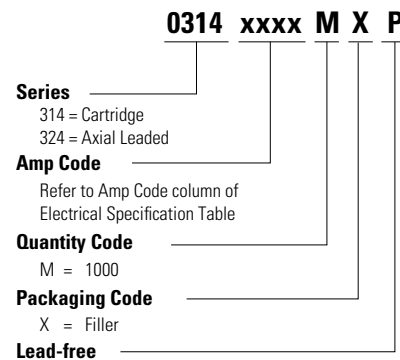
|                              |                                                                                                         |
|------------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Operating Temperature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

### Dimensions



Measurements displayed in millimeters (inches)

### Part Numbering System



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### Packaging

| Packaging Option  | Packaging Specification | Quantity | Quantity & Packaging Code | Taping Width |
|-------------------|-------------------------|----------|---------------------------|--------------|
| <b>314 Series</b> |                         |          |                           |              |
| 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          |
| <b>324 Series</b> |                         |          |                           |              |
| 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     | MX52L                     | N/A          |
| Bulk              | N/A                     | 1000     | MXF24                     | N/A          |

### Recommended Accessories

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