

# 325/326 Series Lead-Free 3AB, Slo-Blo® Fuse



#### **Agency Approvals**

| Agency      | Agency File Number  | Ampere Range   |
|-------------|---|--|
| (JL)        | E10480  | 0.250A - 10A   |
| <b>9</b> 1  | E10480  | 12A - 30A  |
| (Sft)       | 29862   | 0.250A - 30A   |
|             | Cartridge:<br>NBK 030805-E10480A<br>NBK 030805-E10480C<br>NBK 030805-E10480C<br>NBK 260106-JP1021A<br>Leaded:<br>NBK 030805-E10480B<br>NBK 030805-E10480D<br>NBK 030805-E10480F<br>NBK 260106-JP1021B | 1A-3.2A<br>4A-5A<br>6.25A-15A<br>20A-30A<br>1A-3.2A<br>4A-5A<br>6.25A-15A<br>20A-30A |
| M           | SU05001-5010<br>SU05001-5011<br>SU05001-5012<br>SU05001-6006<br>SU05001-6007  | 7-10A<br>12A, 15A<br>20A<br>2.8A-3.2A<br>2.5A  |
| $\triangle$ | T 50239752 01   | *12A/*15A/*20A   |
| (€          | N/A   | 0.010A - 30A   |

\* Approved for cartridge version only

#### Description

The 3AB Slo-Blo® 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
- RoHS compliant and Lead-free

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• Available in cartridge and axial lead format and with various forming dimensions

#### 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<br>Rating | Ampere Rating | Opening Time                |
|-----------------------|---------------|-----------------------------|
| 100%                  | 0.010A – 30A  | 4 hours, Minimum            |
| 135%                  | 0.010A – 30A  | 1 hour, Maximum             |
| 200%                  | 0.010A – 3.2A | 5 sec., Min., 30 sec., Max. |
| 200%                  | 4A – 30A      | 5 sec., Min., 60 sec., Max. |

#### Additional Information



325 Series

**↓** 

326 Series

Resources 325 Series







Samples



Accessories

325 Series

For recommended fuse accessories for this product series, see 'Recommended Accessories' section.



# Axial Lead & Cartridge Fuses

3AB > Slo-Blo<sup>®</sup> Fuse > 325/326 Series

#### **Electrical Characteristic Specifications by Item**

| Ampere Voltage                    |                        |                      | ige                                       | Nominal Cold Nomin | Nominal | Agency Approvals |      |    |             |   |      |   |
|-----------------------------------|------------------------|----------------------|---|--------------------|---------|------------------|------|----|-------------|---|------|---|
| Amp Code Rating Rating<br>(A) (V) | Interrupting<br>Rating | Resistance<br>(Ohms) | Melting<br>I²t (A² sec)                   | PSE                | 77      | <b>()</b>        | (UL) | (€ | $\triangle$ | K |      |   |
| .010                              | 0.01                   | 250                  |   | 3324.8000          | 0.00013 |                  |      |    |             | х |      |   |
| .031                              | 0.031                  | 250                  |   | 332.5000           | 0.0110  |                  |      |    |             | х |      |   |
| .062                              | 0.062                  | 250                  |   | 91.7000            | 0.0276  |                  |      |    |             | х |      |   |
| .100                              | 0.1                    | 250                  |   | 33.5500            | 0.0870  |                  |      |    |             | х |      |   |
| .125                              | 0.125                  | 250                  | 100A@250Vac                               | 22.4500            | 0.100   |                  |      |    |             | х |      |   |
| .150                              | 0.15                   | 250                  |   | 15.4500            | 0.143   |                  |      |    |             | х |      |   |
| .175                              | 0.175                  | 250                  |   | 8.9200             | 0.350   |                  |      |    |             | х |      |   |
| .187                              | 0.187                  | 250                  |   | 7.7250             | 0.330   |                  |      |    |             | х |      |   |
| .200                              | 0.2                    | 250                  |   | 6.7700             | 0.316   |                  |      |    |             | х |      |   |
| .250                              | 0.25                   | 250                  |   | 4.4300             | 0.804   |                  |      | х  | х           | х |      |   |
| .300                              | 0.3                    | 250                  |   | 3.2200             | 1.230   |                  |      | х  | х           | х |      |   |
| .375                              | 0.375                  | 250                  |   | 2,1550             | 1.20    |                  |      | х  | X           | х |      |   |
| .400                              | 0.4                    | 250                  |   | 1.9350             | 1.33    |                  |      | х  | х           | х |      |   |
| .500                              | 0.5                    | 250                  |   | 1.3000             | 4.80    |                  |      | х  | х           | х |      |   |
| .600                              | 0.6                    | 250                  |   | 0.9495             | 3.90    |                  |      | x  | X           | x |      |   |
| .700                              | 0.7                    | 250                  |   | 0.7215             | 6.42    |                  |      | x  | x           | x |      |   |
| .750                              | 0.75                   | 250                  |   | 0.6410             | 13.00   |                  |      | x  | x           | x |      |   |
| .800                              | 0.8                    | 250                  | 100A@250Vac                               | 0.5725             | 8.20    |                  |      | x  | x           | x |      | - |
| 001.                              | 1                      | 250                  | 10KA@125Vac                               | 0.3890             | 16.3    | x                |      | x  | x           | x |      |   |
| 01.2                              | 1.2                    | 250                  | 10KA@125Vdc                               | 0.2860             | 22.0    | x                |      | x  | x           | x |      |   |
| 1.25                              | 1.25                   | 250                  |   | 0.2680             | 40.0    | x                |      | x  | x           | x |      |   |
| 01.5                              | 1.25                   | 250                  |   | 0.1975             | 59.7    | X                |      | x  | X           | x |      | - |
| 01.6                              | 1.6                    | 250                  |   | 0.1760             | 66.0    | x                |      | X  | x           | X |      |   |
| 01.0                              | 2                      | 250                  |   | 0.1210             | 118.0   | X                |      | x  | X           | x |      |   |
| 002.                              | 2.5                    | 250                  |   | 0.0835             | 185.0   |                  |      |    |             |   |      | ~ |
| 02.5                              | 2.5                    | 250                  |   | 0.0695             | 232.0   | X                |      | x  | X           | x |      | X |
| 02.8                              | 2.8                    | 250                  |   |                    | 232.0   | X                |      | X  | X           | x |      | X |
| 003.                              | 3                      | 250                  | 400400501/                                | 0.0605             | 200.0   | X                |      | X  | X           | х |      | X |
| 03.2                              | 3.2                    | 250                  | 100A@250Vac<br>10KA@125Vac                | 0.0539             | 214.0   | x                |      | x  | x           | х |      | x |
| 004.                              | 4                      | 250                  |   | 0.0761             | 9.71    | х                |      | х  | x           | х |      |   |
| 005.                              | 5                      | 250                  | 4004 @0501/                               | 0.0522             | 25.0    | х                |      | х  | х           | х |      |   |
| 6.25                              | 6.25                   | 250                  | 400A@250Vac<br>10KA@125Vac                | 0.0346             | 60.4    | х                |      | х  | х           | х |      |   |
| 007.                              | 7                      | 250                  | 10KA@125Vac<br>10KA@125Vdc                | 0.0227             | 47.3    | х                |      | х  | х           | х |      | х |
| 008.                              | 8                      | 250                  | 1010A@12010C                              | 0.0193             | 67.1    | х                |      | х  | Х           | х |      | X |
| 010.                              | 10                     | 250                  |   | 0.0132             | 137     | X                |      | х  | х           | х |      | x |
| 012.                              | 12                     | 250                  | 400A@250Vac<br>10KA@125Vac<br>600A@125Vdc | 0.0067             | 129     | x                | x    | x  |             | x | x*** | x |
| 012.*                             | 12                     | 250                  | 1500A@250Vac                              | 0.0011             | 618     |                  | х    | х  |             | х |      |   |
| 015.                              | 15                     | 250                  | 400A@250Vac<br>10KA@125Vac<br>600A@125Vdc | 0.0050             | 245     | x                | x    | x  |             | х | x*** | x |
| 015.*                             | 15                     | 250                  | 1500A@250Vac                              | 0.0083             | 760     |                  | х    | х  |             | х |      |   |
| 020.                              | 20                     | 250                  | 400A@250Vac<br>10KA@125Vac<br>600A@125Vdc | 0.0034             | 575     | x                | х    | x  |             | х | x*** | x |
| 020.*                             | 20                     | 250                  | 1500A@250Vac                              | 0.0042             | 2500    |                  | х    | х  |             | х |      |   |
| 025.**                            | 25                     | 250                  | 1500A@250Vac                              | 0.0032             | 4682    |                  | х    |    |             | х |      |   |
| 025.                              | 25                     | 250                  | 400A@250Vac                               | 0.0024             | 1030    | x                | х    | х  |             | х |      |   |
|                                   |                        |                      | 10KA@60Vdc                                |                    |         |                  |      |    |             |   |      | 1 |

\*Higher i²t version available. Please add suffix "D" to part numbers. For instance, 0325020.MXDP, 0326020.MXDP <sup>1</sup><sup>2</sup><sup>1</sup><sup>2</sup><sup>1</sup><sup>4</sup> test at 10× rated current. \*\*Higher I<sup>2</sup>t version available. Please add suffix "W" to part numbers. For instance, 0325025.MXWP \*\*\*Approved for cartridge versions only, and interrupting rating is 400A@125Vac and 400A@250Vac



# **Axial Lead & Cartridge Fuses**

3AB > Slo-Blo<sup>®</sup> Fuse > 325/326 Series

#### **Temperature Re-rating Curve** 140 120 PERCENT OF RATING 100 80 60 I 25°0 40 20 1 -60°C -40°C -76°F -40°F 20°C 40°C 60°C 80°C 100°C 120°C 68°F 104°F 140°F 176°F 212°F 248°F -20°C 0°C -4°F 32°F AMBIENT TEMPERATURE Note: Rerating 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:<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.** 



# **Axial Lead & Cartridge Fuses** 3AB > Slo-Blo<sup>®</sup> Fuse > 325/326 Series

#### **Product Characteristics**

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

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

#### Part Numbering System



### Dimensions

Measurements displayed in millimeters (inches)



Axial Lead Material: Tin-coated copper

#### Packaging

| Packaging Option | Packaging Specification | Quantity   | Quantity &<br>Packaging Code | Taping Width |
|------------------|-------------------------|------------|------------------------------|--------------|
|                  | _ · ·                   | 325 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       | MX52 (long lead)             | N/A          |
| Bulk             | N/A                     | 1000       | MX52L (long lead)            | N/A          |
| Bulk             | N/A                     | 1000       | MXD                          | N/A          |
| Bulk             | N/A                     | 1000       | MXF31                        | N/A          |
| Bulk             | N/A                     | 1000       | MXW                          | N/A          |
|                  |                         | 326 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       | MXCC                         | N/A          |
| Bulk             | N/A                     | 1000       | MXD                          | N/A          |



# **Axial Lead & Cartridge Fuses** 3AB > Slo-Blo<sup>®</sup> Fuse > 325/326 Series

#### **Recommended Accessories**

| Accessory<br>Type Series |                                       | Description   | Max<br>Application | Max<br>Application |  |
|--------------------------|---------------------------------------|---|--------------------|--------------------|--|
|                          |                                       | Description   |                    | Amperage           |  |
|                          | <u>155100</u>                         | Twist-Lock In-Line Fuseholder   | 32                 | 20                 |  |
| Holder 342               | Traditional Panel Mount Fuseholder    |   | 20                 |                    |  |
|                          | <u>346</u>                            | Panel Mount Flip-Top Shock-Safe Fuseholder                                | 250                | 15                 |  |
| 345                      |                                       | Shock-Safe Fuseholder with PC Mount, Solder Mount and Panel Mount options | 250                | 20                 |  |
| Dlask                    | 354 Low Profile OMNI-BLOK® Fuse Block |   | 600                | 30                 |  |
| Block <u>359</u>         |                                       | High Current Screw Terminal Fuse Block                                    | 600                | 30                 |  |
| Clin                     | <u>122</u>                            | High Current Traditional PC Board Fuse Clip                               | 1000               | 30                 |  |
| Clip <u>101</u>          |                                       | 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 Littelfuse for applications greater than the max voltage and amperage shown.