

RoHS  **313/315 Series** Lead-Free 3AG, Slo-Blo® Fuse



### Description

The 3AG Slo-Blo® fuse solves a broad range of application requirements while offering reliable performance and cost-effective circuit protection.

The fuse catalog number with the suffix “ID” instantly identifies itself upon opening by showing a discoloration of its glass body. Guesswork and time consuming circuit testing are eliminated. This unique design offers the same quality performance characteristics as the standard 3AG Slo-Blo® Fuse design.

### Agency Approvals

| Agency                                                                              | Agency File Number              | Ampere Range       |
|-------------------------------------------------------------------------------------|---------------------------------|--------------------|
|    | E10480                          | 10mA - 10A**       |
|    | LR 29862                        | 10mA - 10A**/15A** |
|    | E10480                          | 10A - 30A          |
|   | NBK 040205-<br>E10480B/D/F/G/H  | 1A - 10A**/ 15A**  |
|  | SU05001-<br>5007/5008/5009/6004 | 2.25A - 8A         |
|  |                                 | 10mA - 10A**/15A** |

### Features

- In accordance with UL Standard 248-14
- RoHS compliant and Lead-free
- 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 by Series

| % of Ampere Rating | Ampere Rating | Opening Time                  |
|--------------------|---------------|-------------------------------|
| 100%               | 10mA – 30A    | 4 hours, Minimum              |
| 135%               | 10mA – 30A    | 1 hour, Maximum               |
| 200%               | 10mA – 15A    | 5 sec., Min.,<br>30 sec., Max |
|                    | 20A – 30A     | 5 sec., Min.,<br>60 sec Max   |

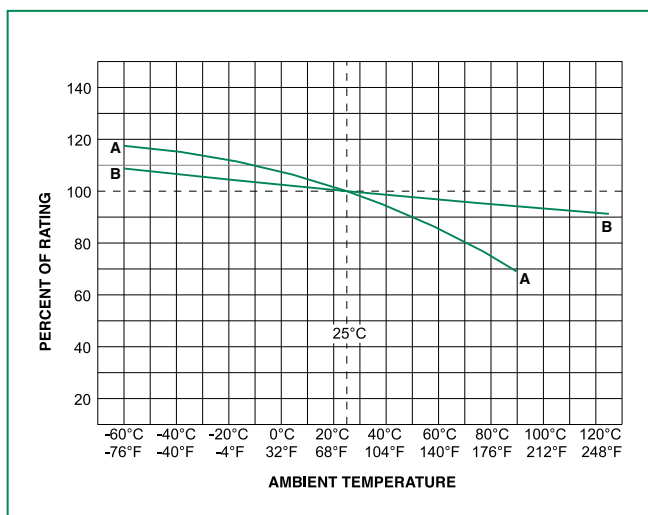
### Electrical Characteristic Specifications by Item

| Amp Code | Ampere Rating (A) | Voltage Rating (V) | Interrupting Rating        | Nominal Cold Resistance (Ohms) | Nominal Melting I <sup>2</sup> t (A <sup>2</sup> sec) | Agency Approvals |    |    |    |      |    |
|----------|-------------------|--------------------|----------------------------|--------------------------------|-------------------------------------------------------|------------------|----|----|----|------|----|
|          |                   |                    |                            |                                |                                                       | UL               | SP | KC | RU | PS E | CE |
| .010     | 0.01              | 250                | 35A@250Vac<br>10KA@125Vac  | 4300.0000                      | 0.000121                                              | x                | x  |    |    |      | x  |
| .031     | 0.031             | 250                |                            | 430.0000                       | 0.00303                                               | x                | x  |    |    |      | x  |
| .040     | 0.04              | 250                |                            | 300.0000                       | 0.00630                                               | x                | x  |    |    |      | x  |
| .062     | 0.062             | 250                |                            | 120.0000                       | 0.0210                                                | x                | x  |    |    |      | x  |
| .100     | 0.1               | 250                |                            | 43.0000                        | 0.0850                                                | x                | x  |    |    |      | x  |
| .125     | 0.125             | 250                |                            | 30.0000                        | 0.152                                                 | x                | x  |    |    |      | x  |
| .150     | 0.15              | 250                |                            | 20.0000                        | 0.270                                                 | x                | x  |    |    |      | x  |
| .175     | 0.175             | 250                |                            | 8.6700                         | 0.177                                                 | x                | x  |    |    |      | x  |
| .187     | 0.187             | 250                |                            | 8.0100                         | 0.230                                                 | x                | x  |    |    |      | x  |
| .200     | 0.2               | 250                |                            | 6.5900                         | 0.270                                                 | x                | x  |    |    |      | x  |
| .250     | 0.25              | 250                |                            | 4.2700                         | 0.385                                                 | x                | x  |    |    |      | x  |
| .300     | 0.3               | 250                |                            | 3.1350                         | 0.730                                                 | x                | x  |    |    |      | x  |
| .375     | 0.375             | 250                |                            | 2.0950                         | 1.23                                                  | x                | x  |    |    |      | x  |
| .400     | 0.4               | 250                |                            | 1.8750                         | 1.35                                                  | x                | x  |    |    |      | x  |
| .500*    | 0.5               | 250                |                            | 1.2600                         | 2.55                                                  | x                | x  |    |    |      | x  |
| .600     | 0.6               | 250                |                            | 0.9120                         | 4.00                                                  | x                | x  |    |    |      | x  |
| .700     | 0.7               | 250                |                            | 0.7000                         | 5.90                                                  | x                | x  |    |    |      | x  |
| .750     | 0.75              | 250                |                            | 0.6215                         | 7.16                                                  | x                | x  |    |    |      | x  |
| .800     | 0.8               | 250                |                            | 0.5540                         | 8.00                                                  | x                | x  |    |    |      | x  |
| 001.*    | 1                 | 250                |                            | 0.3750                         | 14.0                                                  | x                | x  |    |    | x    | x  |
| 01.2     | 1.2               | 250                | 100A@250Vac<br>10KA@125Vac | 0.2780                         | 21.5                                                  | x                | x  |    |    | x    | x  |
| 1.25     | 1.25              | 250                |                            | 0.2600                         | 24.0                                                  | x                | x  |    |    | x    | x  |
| 01.5*    | 1.5               | 250                |                            | 0.1910                         | 38.0                                                  | x                | x  |    |    | x    | x  |
| 01.6     | 1.6               | 250                |                            | 0.1710                         | 49.6                                                  | x                | x  |    |    | x    | x  |
| 01.8     | 1.8               | 250                |                            | 0.1410                         | 58.0                                                  | x                | x  |    |    | x    | x  |
| 002.*    | 2                 | 250                |                            | 0.1169                         | 77.0                                                  | x                | x  |    |    | x    | x  |
| 2.25     | 2.25              | 250                |                            | 0.0968                         | 121                                                   | x                | x  | x  |    | x    | x  |
| 02.5     | 2.5               | 250                |                            | 0.0811                         | 130                                                   | x                | x  | x  |    | x    | x  |
| 02.8     | 2.8               | 250                |                            | 0.0675                         | 170                                                   | x                | x  | x  |    | x    | x  |
| 003.*    | 3                 | 250                |                            | 0.0593                         | 200                                                   | x                | x  | x  |    | x    | x  |
| 03.2     | 3.2               | 250                |                            | 0.0529                         | 209                                                   | x                | x  | x  |    | x    | x  |
| 004.*    | 4                 | 250                | 200A@250Vac<br>10KA@125Vac | 0.0311                         | 76.1                                                  | x                | x  | x  |    | x    | x  |
| 005.*    | 5                 | 250                |                            | 0.0214                         | 140                                                   | x                | x  | x  |    | x    | x  |
| 6.25*    | 6.25              | 250                |                            | 0.0154                         | 242                                                   | x                | x  | x  |    | x    | x  |
| 06.3     | 6.3               | 250                |                            | 0.0154                         | 242                                                   | x                | x  | x  |    | x    | x  |
| 007.*    | 7                 | 250                |                            | 0.0128                         | 347                                                   | x                | x  | x  |    | x    | x  |
| 008.*    | 8                 | 250                | 300A@32Vac                 | 0.0111                         | 445                                                   | x                | x  | x  |    | x    | x  |
| 010.**   | 10                | 250                |                            | 0.0083                         | 760                                                   | x                | x  |    |    | x    | x  |
| 010.*    | 10                | 32                 |                            | 0.0083                         | 760                                                   |                  |    |    | x  |      |    |
| 012.     | 12                | 32                 |                            | 0.0065                         | 1200                                                  |                  |    |    | x  |      |    |
| 015.**   | 15                | 125                |                            | 0.0050                         | 1870                                                  |                  | x  |    | x  | x    | x  |
| 015.     | 15                | 32                 |                            | 0.0050                         | 1870                                                  |                  |    |    | x  |      |    |
| 020.     | 20                | 32                 |                            | 0.0022                         | 9560                                                  |                  |    |    | x  |      |    |
| 025.     | 25                | 32                 |                            | 0.0017                         | 16500                                                 |                  |    |    | x  |      |    |
| 030.     | 30                | 32                 |                            | 0.0012                         | 26900                                                 |                  |    |    | x  |      |    |

\* For 313series, these ratings available with an indicating option. Add the "ID" designation to the series number. i.e. 313.500ID.

\*\* These 2 ratings are designed for special voltage requirement. For 10A, it is available as 250Vac rated and the part number is 0313010. MX250P; for 15A, it is available as 125Vac rated and the part number is 0315015.MX125P.

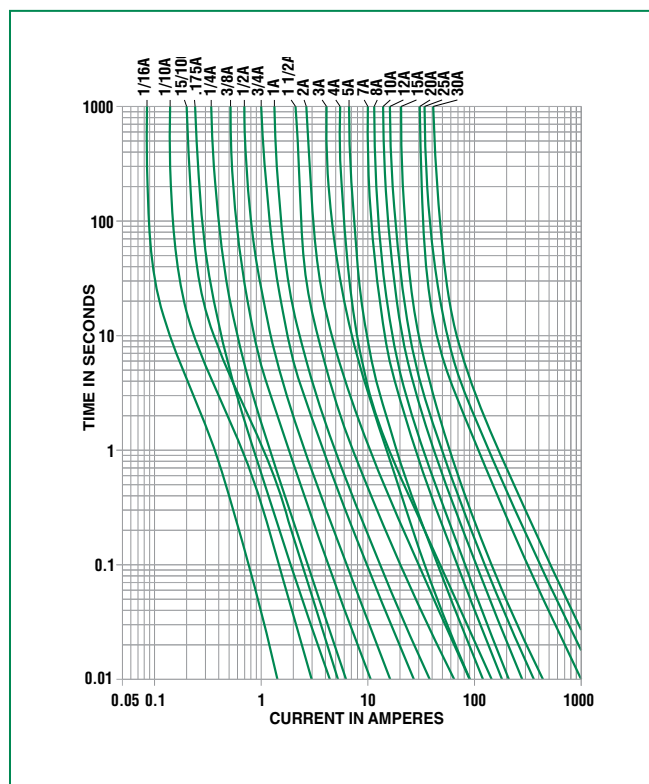
## Temperature Derating Curve



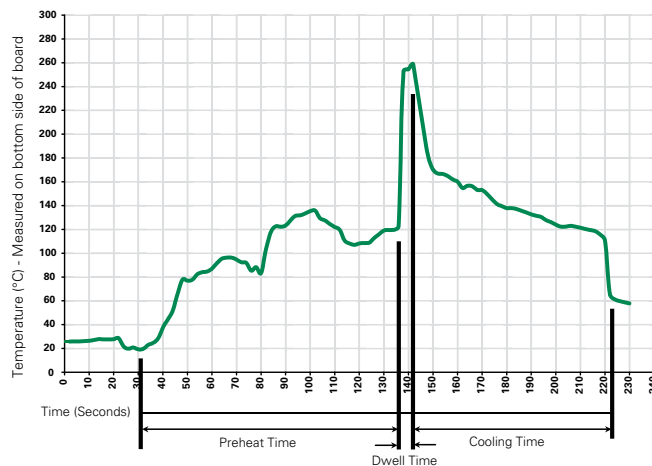
**A** - For 313/315 Series, from 10mA to 150mA

**B** - For all other ampere ratings of 313/315 series

## Average Time Current Curves



## Soldering Parameters - Wave Soldering



### Recommended Process Parameters:

| Wave Parameter                           | Lead-Free Recommendation          |
|------------------------------------------|-----------------------------------|
| <b>Preheat:</b>                          |                                   |
| (Depends on Flux Activation Temperature) | (Typical Industry Recommendation) |
| Temperature Minimum:                     | 100° C                            |
| Temperature Maximum:                     | 150° C                            |
| Preheat Time:                            | 60-180 seconds                    |
| <b>Solder Pot Temperature:</b>           | 260° C Maximum                    |
| <b>Solder Dwell Time:</b>                | 2-5 seconds                       |

### Recommended Hand-Solder Parameters:

Solder Iron Temperature: 350° C +/- 5°C  
Heating Time: 5 seconds max.

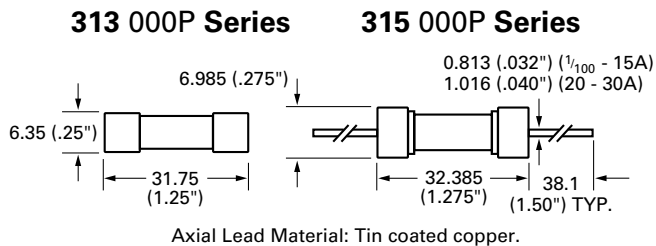
**Note:** These devices are not recommended for IR or Convection Reflow process.

### Product Characteristics

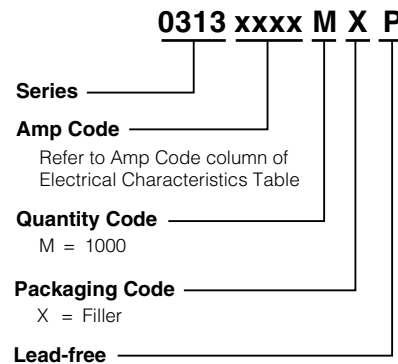
|                          |                                                                                         |
|--------------------------|-----------------------------------------------------------------------------------------|
| <b>Materials</b>         | Body: Glass<br>Cap: Nickel-plated brass<br>Leads: Tin-plated Copper                     |
| <b>Terminal Strength</b> | MIL-STD-202G, Method 211A, Test Condition A                                             |
| <b>Solderability</b>     | Reference IEC 60127 Second Edition 2003-01 Annex A                                      |
| <b>Product Marking</b>   | Cap1: Brand logo, current and voltage ratings<br>Cap2: Series and agency approval marks |

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

### Dimensions



### Part Numbering System



### Packaging

| Packaging Option  | Packaging Specification | Quantity | Quantity & Packaging Code | Taping Width |
|-------------------|-------------------------|----------|---------------------------|--------------|
| <b>313 Series</b> |                         |          |                           |              |
| Bulk              | N/A                     | 1000     | MX                        | N/A          |
| Bulk              | N/A                     | 100      | HX                        | N/A          |
| <b>315 Series</b> |                         |          |                           |              |
| Bulk              | N/A                     | 1000     | MX                        | N/A          |
| Bulk              | N/A                     | 100      | HX                        | N/A          |
| Bulk              | N/A                     | 1000     | MXB                       | N/A          |