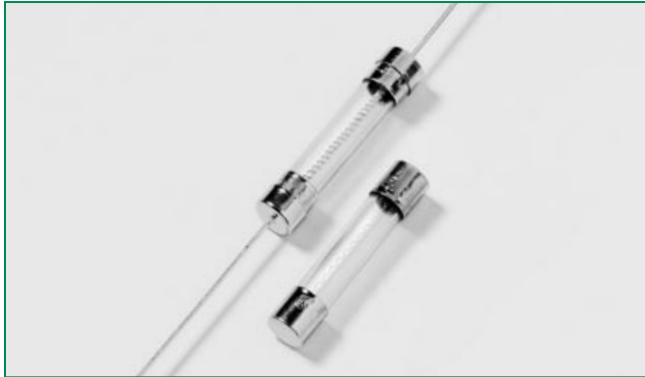








**RoHS** **PD** **313/315 Series Lead-Free 3AG, Slo-Blo® Fuse**


### 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
- 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 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   |

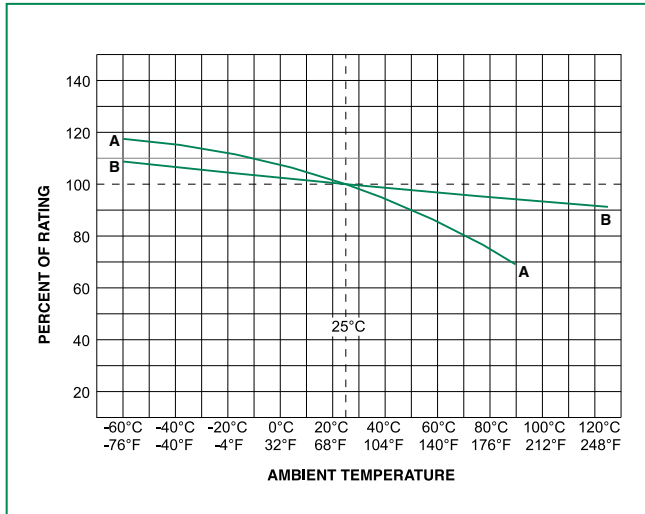
### Electrical Characteristic Specifications by Item

| 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 | CCC | 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                | 200@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                | 0.0111                     | 445                            | x   | x                | x  | x   | x  |      |    |
| 010.*+   | 10                | 250                | 300A@32Vac                 | 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    |    |
| 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.

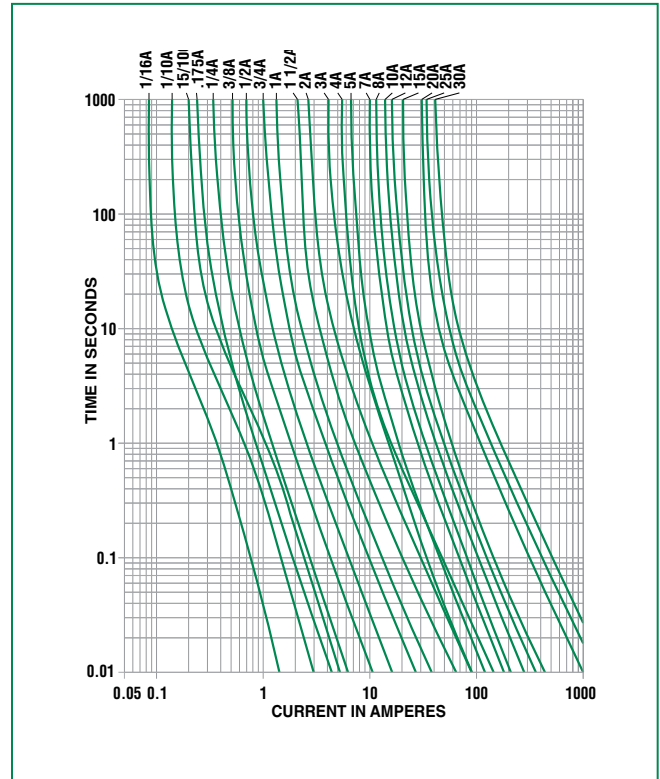
\*\* These 2 ratings are designed for special voltage requirement. For 10A, it is available as 250Vac rated and the part number is 0313010.MX250P; for 15A, it is available as 125Vac rated and the part number is 0315015.MX125P.

### Temperature Derating Curve

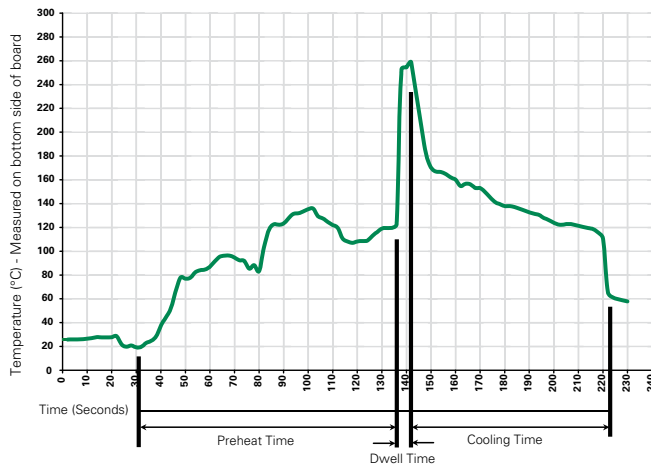


- A - For 313/315 Series, from 10mA to 150mA**
- B - For all other ampere ratings of 313/315 series**

### Average Time Current Curves



### Soldering Parameters - Wave Soldering



#### Recommended Process Parameters:

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

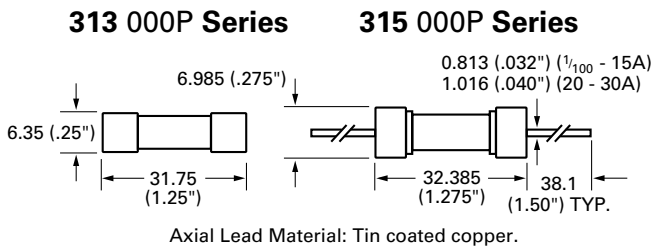
**Note: These devices are not recommended for IR or Convection Reflow process.**

### Product Characteristics

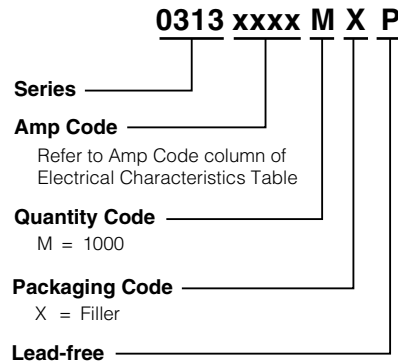
|                          |   |
|--------------------------|---|
| <b>Materials</b>         | Body: Glass<br>Cap: Nickel-plated brass<br>Leads: Tin-plated Copper                     |
| <b>Terminal Strength</b> | MIL-STD-202G, Method 211A, Test Condition A   |
| <b>Solderability</b>     | Reference 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 | Reel Size |
|-------------------|-------------------------|----------|---------------------------|-----------|
| <b>313 Series</b> |                         |          |                           |           |
| Bulk              | N/A                     | 5        | VX                        | N/A       |
| Bulk              | N/A                     | 100      | HX                        | N/A       |
| Bulk              | N/A                     | 100      | HXID                      | N/A       |
| Bulk              | N/A                     | 1000     | MX                        | N/A       |
| Bulk              | N/A                     | 1000     | MX250                     | N/A       |
| Bulk              | N/A                     | 100      | HXCCD                     | N/A       |
| Bulk              | N/A                     | 100      | VXID                      | N/A       |
| <b>315 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     | MX125                     | N/A       |
| Bulk              | N/A                     | 1000     | MXB                       | N/A       |
| Bulk              | N/A                     | 100      | HXB                       | N/A       |
| Bulk              | N/A                     | 1000     | MXBB                      | N/A       |
| Bulk              | N/A                     | 1000     | MXSL                      | N/A       |
| Bulk              | N/A                     | 1000     | MXB                       | N/A       |
| Bulk              | N/A                     | 1000     | MXSL                      | N/A       |