

312/318 Series Lead-Free 3AG, Fast-Acting Fuse



**Description**

The 312 and 318 Series are 3AG Fast-Acting fuses that solve a broad range of application requirements while offering reliable performance and cost-effective circuit protection.

**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.

**Agency Approvals**

| Agency | Agency File Number                                     | Ampere Range   |
|--------|--|--|
|        | E10480   | 0.062 - 10A  |
|        |  | 12A-25A  |
|        | 29862  | 312 Series: 0.062A - 30A<br>318 Series: 0.062A - 10A |
|        | (312 Series)<br>NBK060618-E10480A<br>NBK060618-E10480C | 1A - 5A<br>6A - 10A                                  |
|        | (318 Series)<br>NBK060618-E10480B<br>NBK060618-E10480D | 1A - 5A<br>6A - 10A                                  |
|        | E10480   | 318 Series: 12A - 30A                                |
|        | SU05001-6008   | 1A - 2A  |
|        | SU05001-5005   | 3A - 6A  |
|        | SU05001-5006   | 7A - 10A   |
|        | N/A  | 0.062A - 10A   |

**Electrical Characteristics for Series**

| % of Ampere Rating | Ampere Rating | Opening Time     |
|--------------------|---------------|------------------|
| 100%               | 0.062A – 35A  | 4 hours, Minimum |
| 135%               | 0.062A – 35A  | 1 hour, Maximum  |
|                    | 0.062A – 10A  | 5 sec., Maximum  |
| 200%               | 12A – 30A     | 10 sec., Maximum |
|                    | 35A           | 20 sec., Maximum |

**Additional Information**



**Datasheet  
312 Series**



**Resources  
312 Series**



**Samples  
312 Series**



**Accessories  
312 & 318 Series**



**Datasheet  
318 Series**



**Resources  
318 Series**



**Samples  
318 Series**

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

### 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               | cRU <sup>US</sup> | CCC | PS E           | SIPA | CE |
| .062     | 0.062             | 250                | 35A@250Vac<br>10KA@125Vac | 24.7                           | 0.000249  | x                | -                 | -   | -              | x    | x  |
| .100     | 0.1               | 250                |                           | 11.28                          | 0.00171   | x                | -                 | -   | -              | x    | x  |
| .125     | 0.125             | 250                |                           | 7.145                          | 0.00289   | x                | -                 | -   | -              | x    | x  |
| .150     | 0.15              | 250                |                           | 5.13                           | 0.00550   | x                | -                 | -   | -              | x    | x  |
| .175     | 0.175             | 250                |                           | 3.875                          | 0.00960   | x                | -                 | -   | -              | x    | x  |
| .187     | 0.187             | 250                |                           | 3.42                           | 0.0128  | x                | -                 | -   | -              | x    | x  |
| .200     | 0.2               | 250                |                           | 3.02                           | 0.0165  | x                | -                 | -   | -              | x    | x  |
| .250     | 0.25              | 250                |                           | 2.01                           | 0.0355  | x                | -                 | -   | -              | x    | x  |
| .300     | 0.3               | 250                |                           | 1.405                          | 0.0689  | x                | -                 | -   | -              | x    | x  |
| .375     | 0.375             | 250                |                           | 0.825                          | 0.185   | x                | -                 | -   | -              | x    | x  |
| .500     | 0.5               | 250                |                           | 0.498                          | 0.483   | x                | -                 | -   | -              | x    | x  |
| .600     | 0.6               | 250                |                           | 0.362                          | 0.88  | x                | -                 | -   | -              | x    | x  |
| .750     | 0.75              | 250                |                           | 0.2445                         | 1.84  | x                | -                 | -   | -              | x    | x  |
| 001.     | 1                 | 250                |                           | 0.19                           | 0.76  | x                | -                 | x   | x              | x    | x  |
| 1.25     | 1.25              | 250                |                           | 0.1385                         | 1.45  | x                | -                 | x   | x              | x    | x  |
| 015.     | 1.5               | 250                |                           | 0.1036                         | 2.35  | x                | -                 | -   | x              | x    | x  |
| 016.     | 1.6               | 250                |                           | 0.0934                         | 2.8   | x                | -                 | x   | x              | x    | x  |
| 1.75     | 1.75              | 250                | 0.0856                    | 3.6                            | x   | -                | -                 | x   | x              | x    |    |
| 018.     | 1.8               | 250                | 0.0825                    | 3.85                           | x   | -                | -                 | x   | x              | x    |    |
| 002.     | 2                 | 250                | 0.0704                    | 5.2                            | x   | -                | x                 | x   | x              | x    |    |
| 2.25     | 2.25              | 250                | 0.0594                    | 7.2                            | x   | -                | x                 | x   | x              | x    |    |
| 02.5     | 2.5               | 250                | 0.0513                    | 9.54                           | x   | -                | x                 | x   | x              | x    |    |
| 003.     | 3                 | 250                | 0.0427                    | 14.0                           | x   | -                | x                 | x   | x              | x    |    |
| 004.     | 4                 | 250                | 0.0293                    | 28.5                           | x   | -                | x                 | x   | x              | x    |    |
| 005.     | 5                 | 250                | 0.0224                    | 50.0                           | x   | -                | x                 | x   | x              | x    |    |
| 006.     | 6                 | 250                | 0.0178                    | 118.0                          | x   | -                | x                 | x   | x              | x    |    |
| 007.     | 7                 | 250                | 0.0146                    | 81.0                           | x   | -                | x                 | x   | x              | x    |    |
| 008.     | 8                 | 250                | 0.0122                    | 166.0                          | x   | -                | x                 | x   | x              | x    |    |
| 010.     | 10                | 250                | 0.0093                    | 298.0                          | x   | -                | x                 | x   | x              | x    |    |
| 012.     | 12                | 32                 | 0.0072                    | 234.6                          | x <sup>†</sup>  | x <sup>**</sup>  | -                 | -   | x <sup>†</sup> | -    |    |
| 015.     | 15                | 32                 | 0.0052                    | 490.5                          | x <sup>†</sup>  | x <sup>**</sup>  | -                 | -   | x <sup>†</sup> | -    |    |
| 020.     | 20                | 32                 | 0.0035                    | 1414                           | x <sup>†</sup>  | x <sup>**</sup>  | -                 | -   | x <sup>†</sup> | -    |    |
| 025.     | 25                | 32                 | 0.0024                    | 2041                           | x <sup>†</sup>  | x <sup>**</sup>  | -                 | -   | x <sup>†</sup> | -    |    |
| 030.     | 30                | 32                 | 0.0019                    | 3717                           | -   | x <sup>**</sup>  | -                 | -   | x <sup>†</sup> | -    |    |
| 035.     | 35                | 32                 | 0.0013                    | 7531                           | -   | -                | -                 | -   | -              | -    |    |

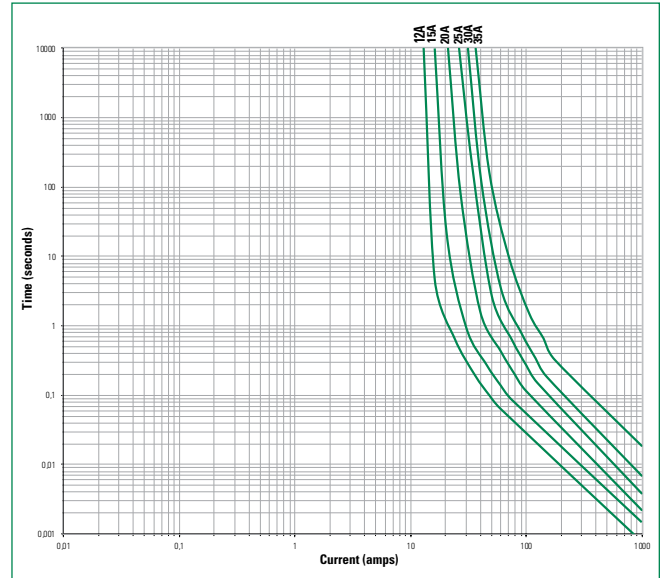
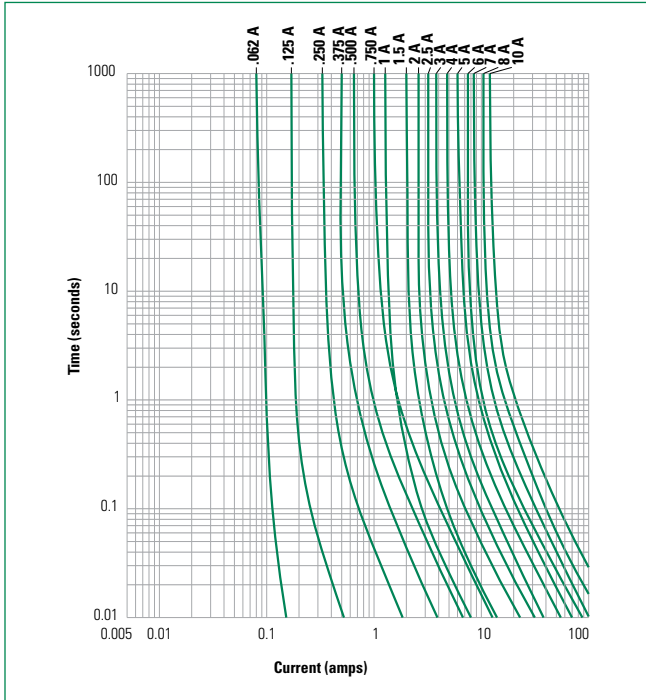
**Notes:**

\* - For 312 and 318 Series: Listed for the US and Canada (cULus)

\*\* - For 318 Series (12A-25A) and 312 Series (30A only): Recognized for the US and Canada (cURus).

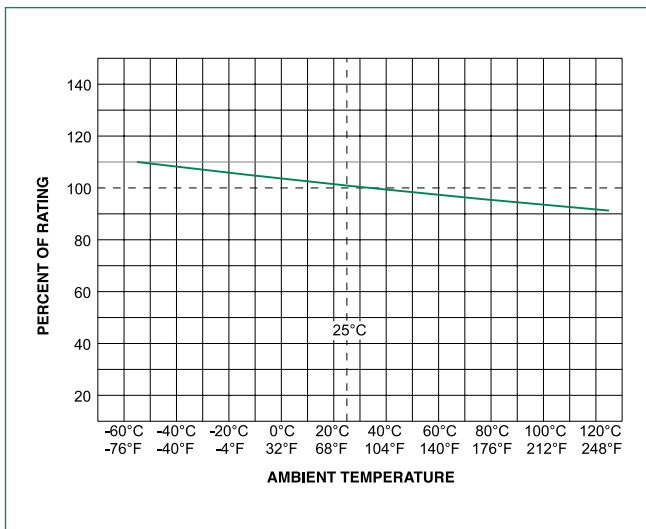
† - For 312 series only.

**Average Time Current Curves**



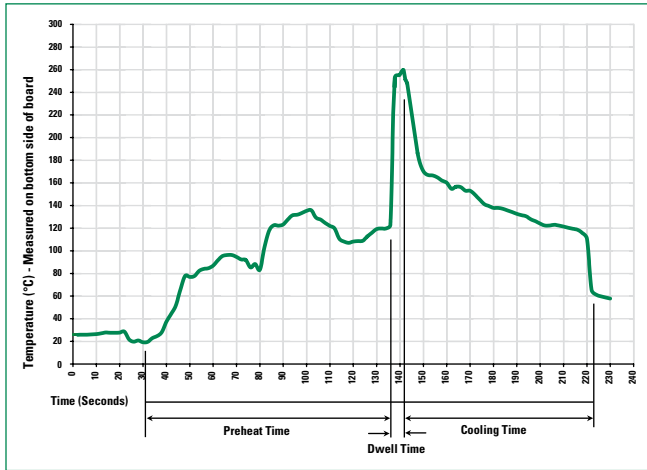
\*Please contact Littelfuse for more details on those T-C Curves of other ampere ratings which are not published.

**Temperature Re-rating Curve**



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

**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.

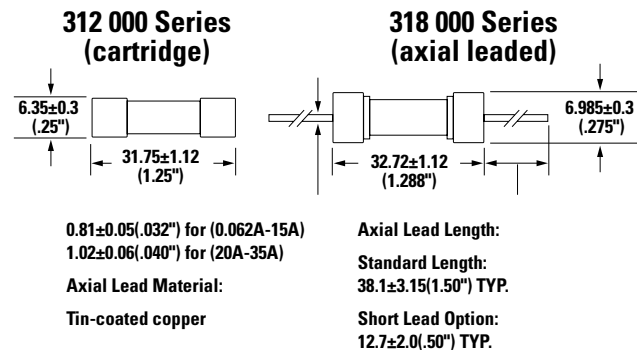
**Product Characteristics**

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

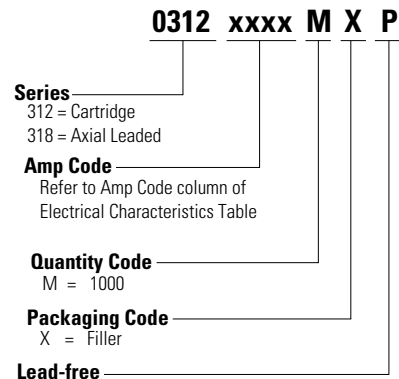
|                              |  |
|------------------------------|--|
| <b>Operating Temperature</b> | -55°C to +125°C  |
| <b>Thermal Shock</b>         | MILSTD-202, Method 107, Test Condition B: (5 cycles -65°C to +125°C)                                   |
| <b>Vibration</b>             | MILSTD-202,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

**Dimensions**

Measurements displayed in millimeters (inches)



**Part Numbering System**



### Packaging

| Packaging Option  | Packaging Specification | Quantity | Quantity & Packaging Code | Taping Width |
|-------------------|-------------------------|----------|---------------------------|--------------|
| <b>312 Series</b> |                         |          |                           |              |
| Bulk              | N/A                     | 1000     | MX                        | N/A          |
| Bulk              | N/A                     | 100      | HX                        | N/A          |
| <b>318 Series</b> |                         |          |                           |              |
| Bulk              | N/A                     | 1000     | MX                        | N/A          |
| Bulk              | N/A                     | 100      | HX                        | N/A          |
| Bulk              | N/A                     | 1000     | MXB                       | 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 <sup>®</sup> 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.