

# 312/318 Series

## Lead-Free 3AG, Fast-Acting Fuse



### Web Resources



Download ECAD models, order samples, and find technical resources at [www.littelfuse.com/312](http://www.littelfuse.com/312)



Download ECAD models, order samples, and find technical resources at [www.littelfuse.com/318](http://www.littelfuse.com/318)

### 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                                         |

### 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
- 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 for Series

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

# 312/318 Series

## Lead-Free 3AG, Fast-Acting Fuse

### 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               | cULus           | KC | PS E | SF             | 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                | 100A@250Vac<br>10KA@125Vac | 0.1385                         | 1.45                                                  | x                | -               | x  | x    | x              | x  |
| 01.5     | 1.5               | 250                |                            | 0.1036                         | 2.35                                                  | x                | -               | -  | x    | x              | x  |
| 01.6     | 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  |
| 01.8     | 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                | 200A@250Vac<br>10KA@125Vac | 0.0224                         | 50.0                                                  | x                | -               | x  | x    | x              | x  |
| 006.     | 6                 | 250                |                            | 0.0178                         | 81.0                                                  | x                | -               | x  | x    | x              | x  |
| 007.     | 7                 | 250                |                            | 0.0146                         | 118.0                                                 | 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                 | 300A@32 Vac                | 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)

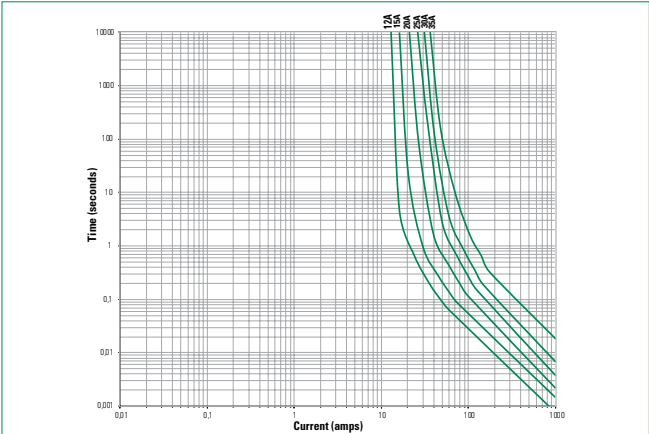
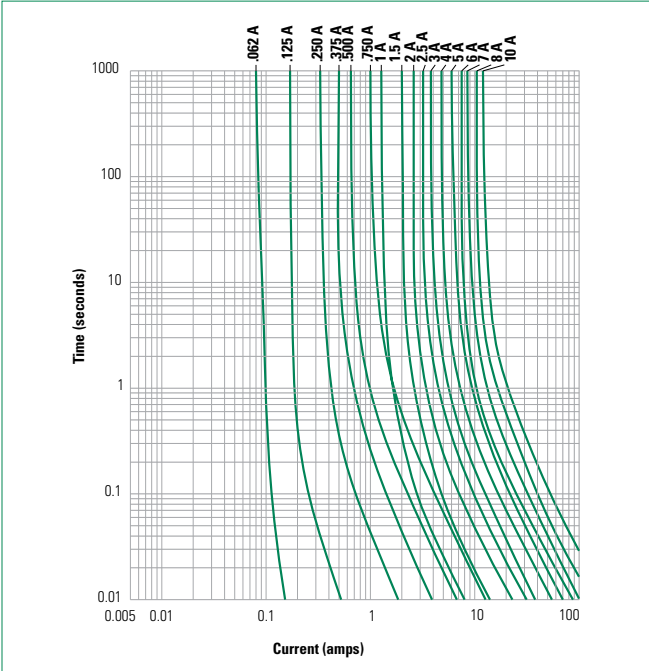
\*\* - For 318 Series (12A-25A) and 312 Series (30A only): Recognized for the US and Canada (cURus).

† - For 312 series only.

# 312/318 Series

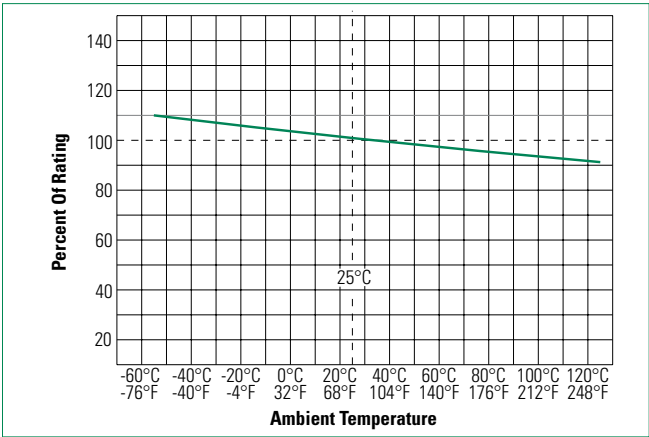
## Lead-Free 3AG, Fast-Acting Fuse

### Average Time Current Curves



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

### Temperature Re-rating Curve

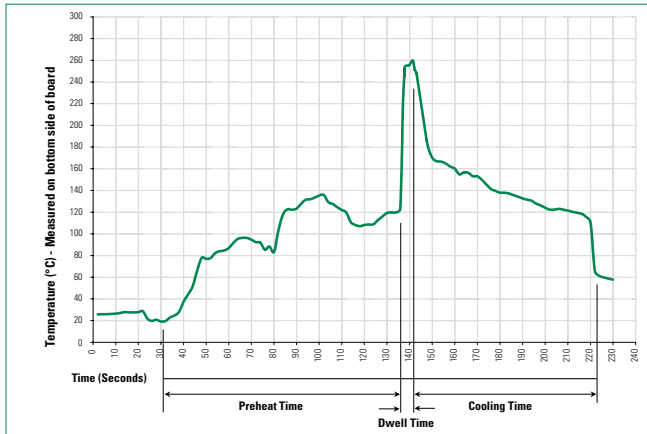


**Note:**  
Derating depicted in this curve is in addition to the industry practice derating of 25% for continuous operation.

# 312/318 Series

## Lead-Free 3AG, Fast-Acting Fuse

### 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.

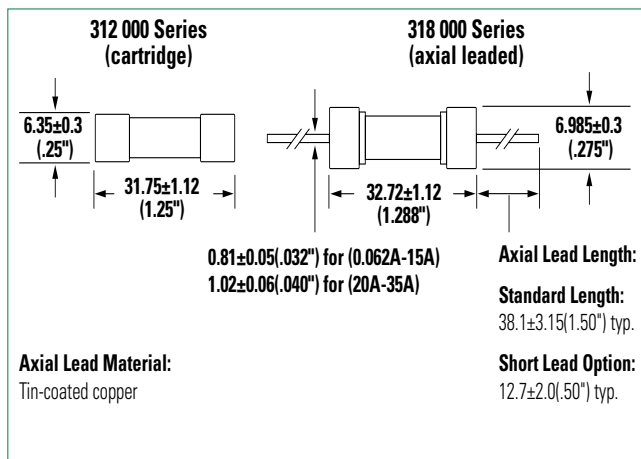
### Product Characteristics

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

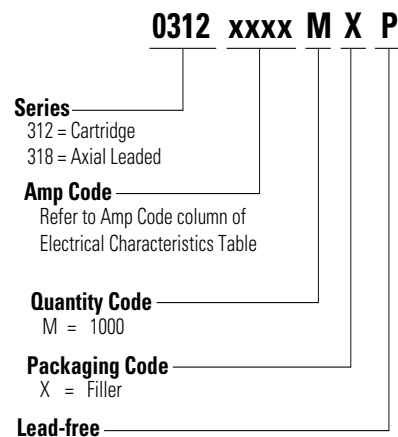
|                              |                                                                                                         |
|------------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Operating Temperature</b> | -55°C to +125°C                                                                                         |
| <b>Thermal Shock</b>         | 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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## Lead-Free 3AG, Fast-Acting Fuse

### 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® Fuse Block                                         | 600                     | 30                       |
|                | <a href="#">359</a>    | High Current Screw Terminal Fuse Block                                    | 600                     | 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.

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