

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



Description

The 3AG Fast-Acting Fuse solves 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 | 0.062A - 25A |
|  | 29862 | 312 Series: 0.062A - 30A 318 Series: 0.062A - 10A |
|  | (312 Series) NBK040205-E10480B NBK040205-E10480F (318 Series) NBK040205-E10480D NBK040205-E10480H | 1A - 5A 6A - 10A 1A - 5A 6A - 10A |
|  | E10480 | 318 Series: 12A - 30A |
|  | SU05001-6008 SU05001-5005 SU05001-5006 | 1A - 2A 3A - 6A 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 |
| 200% | 0.062A – 10A | 5 sec., Maximum |
| | 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.

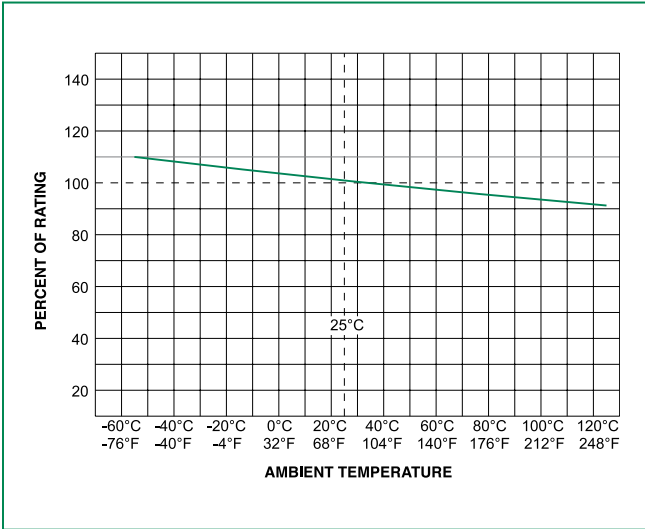
Electrical Characteristic Specifications by Item

| Amp Code | Ampere Rating (A) | Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting I ² t (A ² sec) | Agency Approvals | | | | | | |
|----------|-------------------|--------------------|----------------------------|--------------------------------|---|------------------|------------------|-----|-----|----|----|---|
| | | | | | | UL | cRU _s | K | PSE | SF | CE | |
| .062 | 0.062 | 250 | 35A@250Vac 10KA@125Vac | 24.7000 | 0.000249 | x | | | | x | x | |
| .100 | 0.1 | 250 | | 11.2800 | 0.00171 | x | | | | | x | x |
| .125 | 0.125 | 250 | | 7.1450 | 0.00289 | x | | | | | x | x |
| .150 | 0.15 | 250 | | 5.1300 | 0.00550 | x | | | | | x | x |
| .175 | 0.175 | 250 | | 3.8750 | 0.00960 | x | | | | | x | x |
| .187 | 0.187 | 250 | | 3.4200 | 0.0128 | x | | | | | x | x |
| .200 | 0.2 | 250 | | 3.0200 | 0.0165 | x | | | | | x | x |
| .250 | 0.25 | 250 | | 2.0100 | 0.0355 | x | | | | | x | x |
| .300 | 0.3 | 250 | | 1.4050 | 0.0689 | x | | | | | x | x |
| .375 | 0.375 | 250 | | 0.8250 | 0.185 | x | | | | | x | x |
| .500 | 0.5 | 250 | | 0.4980 | 0.483 | x | | | | | x | x |
| .600 | .6 | 250 | | 0.3620 | 0.880 | x | | | | | x | x |
| .750 | 0.75 | 250 | | 0.2445 | 1.84 | x | | | | | x | x |
| 001. | 1 | 250 | | 0.1900 | 0.760 | x | | | x | x | x | x |
| 1.25 | 1.25 | 250 | 100A@250Vac 10KA@125Vac | 0.1385 | 1.45 | x | | x | x | x | x | |
| 01.5 | 1.5 | 250 | | 0.1036 | 2.35 | x | | | x | x | x | x |
| 01.6 | 1.6 | 250 | | 0.0934 | 2.80 | x | | x | x | x | x | x |
| 1.75 | 1.75 | 250 | | 0.0856 | 3.60 | x | | | x | x | x | x |
| 01.8 | 1.8 | 250 | | 0.0825 | 3.85 | x | | | x | x | x | x |
| 002. | 2 | 250 | | 0.0704 | 5.20 | x | | | x | x | x | x |
| 2.25 | 2.25 | 250 | | 0.0594 | 7.20 | 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 | | 200A@250Vac 10KA@125Vac | 0.0293 | 28.5 | x | | x | x | x | x |
| 005. | 5 | 250 | 0.0224 | | 50.0 | x | | x | x | x | x | x |
| 006. | 6 | 250 | 0.0178 | | 118.0 | x | | x | x | x | x | x |
| 007. | 7 | 250 | 0.0146 | | 81.0 | x | | x | x | x | x | x |
| 008. | 8 | 250 | 0.0122 | | 166.0 | x | | x | x | x | x | x |
| 010. | 10 | 250 | 0.0093 | | 298.0 | x | | x | x | x | x | x |
| 012. | 12 | 32 | 300A@32 Vac | 0.0072 | 234.6 | x | | x** | | | x | |
| 015. | 15 | 32 | | 0.0052 | 490.5 | x | | x** | | | x | |
| 020. | 20 | 32 | | 0.0035 | 1414 | x | | x** | | | x | |
| 025. | 25 | 32 | | 0.0024 | 2041 | x | | x** | | | x | |
| 030. | 30 | 32 | | 0.0019 | 3717 | | | x** | | | x | |
| 035. | 35 | 32 | | 0.0013 | 7531 | | | | | | | |

NOTES:

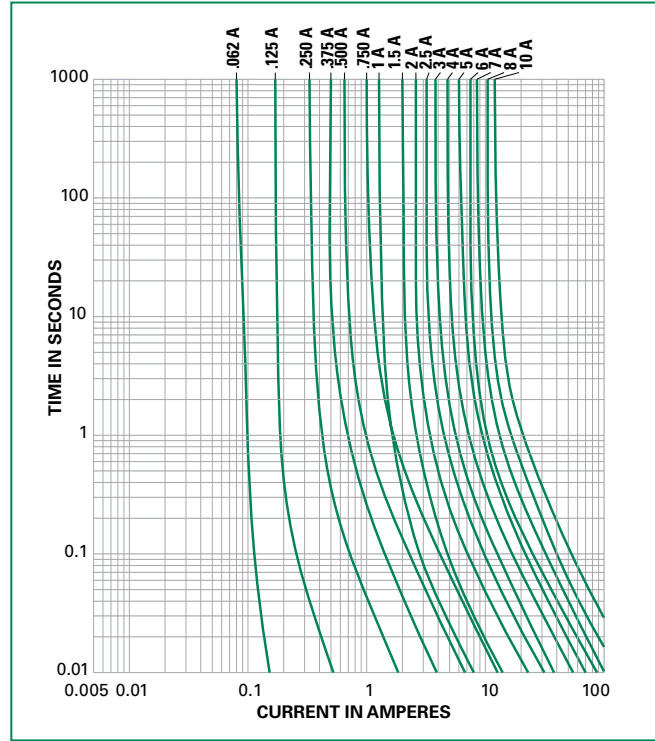
** For 318 Series 12A to 30A, the agency approval is only cURus.

Temperature Re-rating Curve



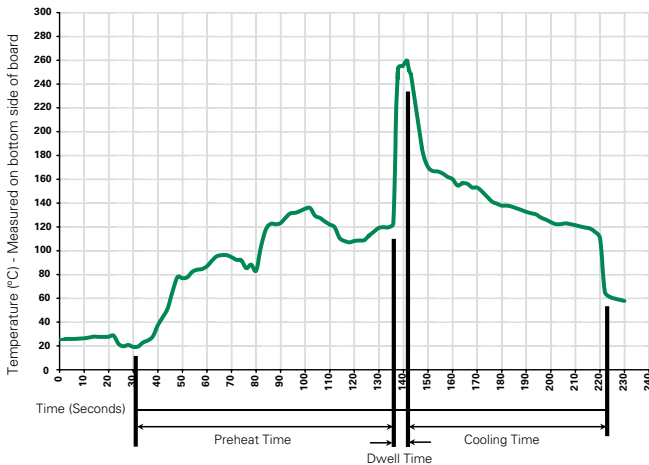
Note:
Rerating depicted in this curve is in addition to the industry practice derating of 25% for continuous operation.

Average Time Current Curves



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

Soldering Parameters - Wave Soldering



Recommended Process Parameters:

| Wave Parameter | Lead-Free Recommendation |
|---|-----------------------------------|
| Preheat: (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.

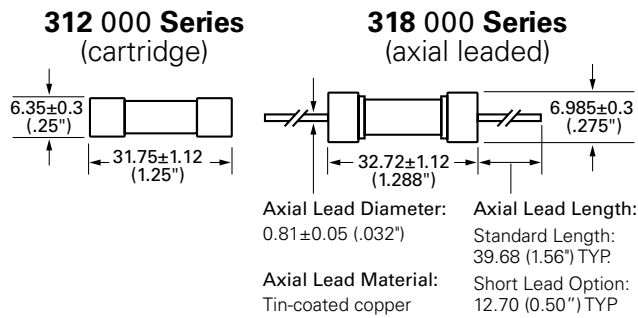
Product Characteristics

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

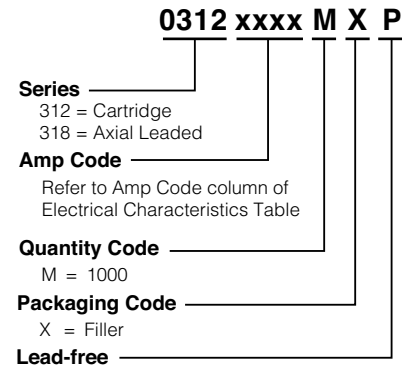
| | |
|------------------------------|---|
| Operating Temperature | -55°C to +125°C |
| Thermal Shock | MIL-STD-202, Method 107, Test Condition B: (5 cycles -65°C to +125°C) |
| Vibration | MIL-STD-202, Method 201 |
| Humidity | MIL-STD-202, Method 103, Test Condition A: High RH (95%), and Elevated temperature (40°C) for 240 hours |
| Salt Spray | MIL-STD-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 |
|-------------------|-------------------------|----------|---------------------------|--------------|
| 312 Series | | | | |
| Bulk | N/A | 1000 | MX | N/A |
| Bulk | N/A | 100 | HX | N/A |
| 318 Series | | | | |
| 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 | 155100 | Twist-Lock In-Line Fuseholder | 32 | 20 |
| | 342 | Traditional Panel Mount Fuseholder | 250 | 20 |
| | 346 | Panel Mount Flip-Top Shock-Safe Fuseholder | 250 | 15 |
| | 345 | Shock-Safe Fuseholder with PC Mount, Solder Mount and Panel Mount options | 250 | 20 |
| Block | 354 | Low Profile OMNI-BLOK® Fuse Block | 600 | 30 |
| | 359 | High Current Screw Terminal Fuse Block | | 30 |
| Clip | 122 | High Current Traditional PC Board Fuse Clip | 1000 | 30 |
| | 101 | 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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312/318 Series Lead-Free 3AG, Fast-Acting Fuse



Description

The 3AG Fast-Acting Fuse solves 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.

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 |

Agency Approvals

| Agency | Agency File Number | Ampere Range |
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|  | E10480 | 318 Series: 12A - 30A |
|  | SU05001-6008 SU05001-5005 SU05001-5006 | 1A - 2A 3A - 6A 7A - 10A |
|  | N/A | 0.062A - 10A |

Additional Information



**Datasheet
312 Series**



**Resources
312 Series**



**Samples
312 Series**



**Accessories
312 & 318 Series**



**Datasheet
318 Series**



**Resources
318 Series**



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

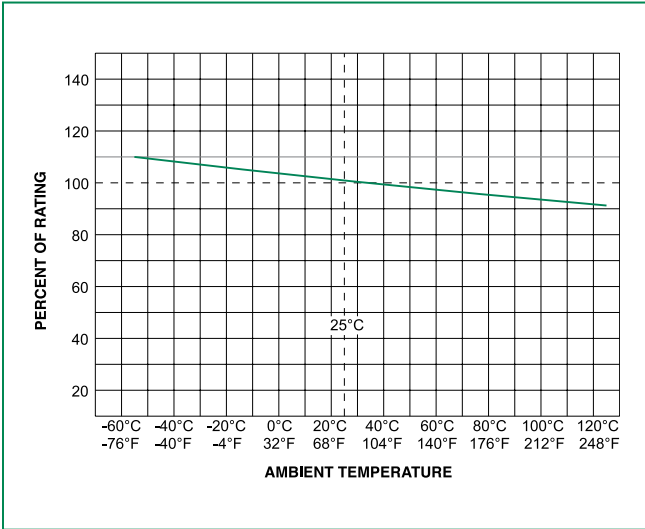
Electrical Characteristic Specifications by Item

| Amp Code | Ampere Rating (A) | Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting I ² t (A ² sec) | Agency Approvals | | | | | |
|----------|-------------------|--------------------|----------------------------|--------------------------------|---|------------------|------------------|-----|-----|----|----|
| | | | | | | UL | cRU _s | K | PSE | SF | CE |
| .062 | 0.062 | 250 | 35A@250Vac 10KA@125Vac | 24.7000 | 0.000249 | x | | | | x | x |
| .100 | 0.1 | 250 | | 11.2800 | 0.00171 | x | | | | x | x |
| .125 | 0.125 | 250 | | 7.1450 | 0.00289 | x | | | | x | x |
| .150 | 0.15 | 250 | | 5.1300 | 0.00550 | x | | | | x | x |
| .175 | 0.175 | 250 | | 3.8750 | 0.00960 | x | | | | x | x |
| .187 | 0.187 | 250 | | 3.4200 | 0.0128 | x | | | | x | x |
| .200 | 0.2 | 250 | | 3.0200 | 0.0165 | x | | | | x | x |
| .250 | 0.25 | 250 | | 2.0100 | 0.0355 | x | | | | x | x |
| .300 | 0.3 | 250 | | 1.4050 | 0.0689 | x | | | | x | x |
| .375 | 0.375 | 250 | | 0.8250 | 0.185 | x | | | | x | x |
| .500 | 0.5 | 250 | | 0.4980 | 0.483 | x | | | | x | x |
| .600 | .6 | 250 | | 0.3620 | 0.880 | x | | | | x | x |
| .750 | 0.75 | 250 | | 0.2445 | 1.84 | x | | | | x | x |
| 001. | 1 | 250 | | 0.1900 | 0.760 | x | | | x | x | x |
| 1.25 | 1.25 | 250 | 100A@250Vac 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 | 2.80 | x | | x | x | x | x |
| 1.75 | 1.75 | 250 | | 0.0856 | 3.60 | x | | | x | x | x |
| 01.8 | 1.8 | 250 | | 0.0825 | 3.85 | x | | | x | x | x |
| 002. | 2 | 250 | | 0.0704 | 5.20 | x | | | x | x | x |
| 2.25 | 2.25 | 250 | | 0.0594 | 7.20 | x | | | x | x | x |
| 02.5 | 2.5 | 250 | | 0.0513 | 9.54 | x | | | x | x | x |
| 003. | 3 | 250 | | 0.0427 | 14.0 | x | | | x | x | x |
| 004. | 4 | 250 | | 200A@250Vac 10KA@125Vac | 0.0293 | 28.5 | 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 | 300A@32 Vac | 0.0072 | 234.6 | x | | x** | | x | |
| 015. | 15 | 32 | | 0.0052 | 490.5 | x | | x** | | x | |
| 020. | 20 | 32 | | 0.0035 | 1414 | x | | x** | | x | |
| 025. | 25 | 32 | | 0.0024 | 2041 | x | | x** | | x | |
| 030. | 30 | 32 | | 0.0019 | 3717 | | | x** | | x | |
| 035. | 35 | 32 | | 0.0013 | 7531 | | | | | | |

NOTES:

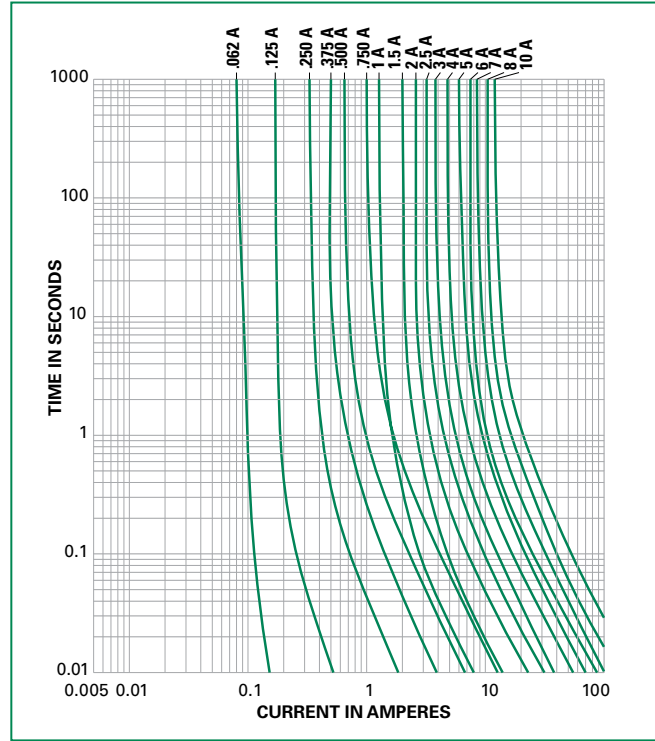
** For 318 Series 12A to 30A, the agency approval is only cURus.

Temperature Re-rating Curve



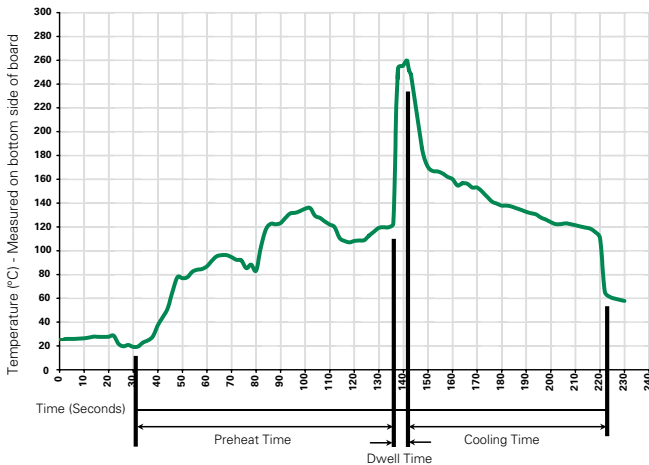
Note:
Rerating depicted in this curve is in addition to the industry practice derating of 25% for continuous operation.

Average Time Current Curves



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

Soldering Parameters - Wave Soldering



Recommended Process Parameters:

| Wave Parameter | Lead-Free Recommendation |
|---|-----------------------------------|
| Preheat: (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.

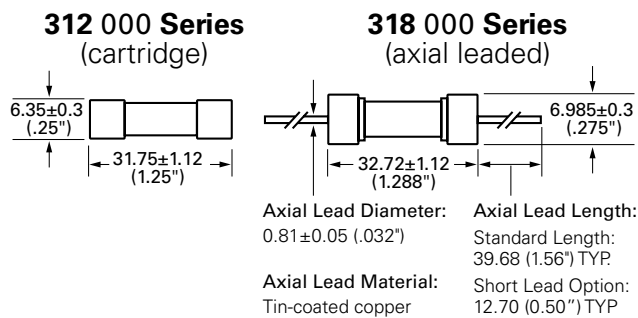
Product Characteristics

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

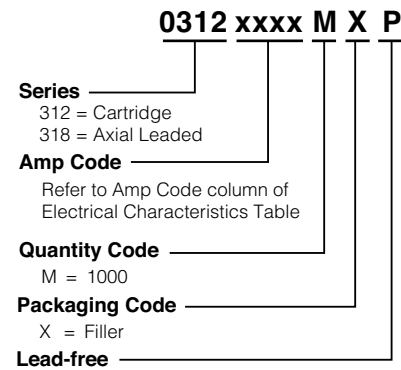
| | |
|------------------------------|---|
| Operating Temperature | -55°C to +125°C |
| Thermal Shock | MIL-STD-202, Method 107, Test Condition B: (5 cycles -65°C to +125°C) |
| Vibration | MIL-STD-202, Method 201 |
| Humidity | MIL-STD-202, Method 103, Test Condition A: High RH (95%), and Elevated temperature (40°C) for 240 hours |
| Salt Spray | MIL-STD-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 |
|-------------------|-------------------------|----------|---------------------------|--------------|
| 312 Series | | | | |
| Bulk | N/A | 1000 | MX | N/A |
| Bulk | N/A | 100 | HX | N/A |
| 318 Series | | | | |
| 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 | 155100 | Twist-Lock In-Line Fuseholder | 32 | 20 |
| | 342 | Traditional Panel Mount Fuseholder | 250 | 20 |
| | 346 | Panel Mount Flip-Top Shock-Safe Fuseholder | 250 | 15 |
| | 345 | Shock-Safe Fuseholder with PC Mount, Solder Mount and Panel Mount options | 250 | 20 |
| Block | 354 | Low Profile OMNI-BLOK® Fuse Block | 600 | 30 |
| | 359 | High Current Screw Terminal Fuse Block | | 30 |
| Clip | 122 | High Current Traditional PC Board Fuse Clip | 1000 | 30 |
| | 101 | 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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