



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 (except 10mA and 31mA rated items)

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 AU1410 | 312 Series 10mA - 10A 318 Series 31mA - 10A 312 Series 12A - 30A |
| | LR 29862 | 312 Series 10mA - 30A 318 Series 31mA - 10A |
| | NBK040205- E10480B/F | 312/318 Series 1A - 10A |
| | E10480 | 318 Series 12A - 30A |
| | SU05001- 5005/5006/6005/6008 | 312/318 Series 1A/ 1.25A / 1.6A/ 2A - 10A |
| | | 312 Series 10mA - 10A 318 Series 31mA - 35A |

Electrical Characteristics for Series

| % of Ampere Rating | Ampere Rating | Opening Time |
|--------------------|---------------|------------------|
| 100% | .01 – 35 | 4 hours, Minimum |
| 135% | .01 – 35 | 1 hour, Maximum |
| 200% | .01 – 10 | 5 sec., Maximum |
| | 12 – 30 | 10 sec., Maximum |
| | 35 | 20 sec., Maximum |

Electrical Characteristic Specifications by Item

| Amp Code | Ampere Rating (A) | Max Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting I ² t (A ² sec) | Agency Approvals | | | | | |
|----------|-------------------|------------------------|----------------------------------------|--------------------------------|-------------------------------------------------------|------------------|--------|---|------|-----|-----|
| | | | | | | UL | CSA US | K | PS E | SF | CE |
| .10* | 0.01 | 250 | 10mA ~ 1A 35A@250Vac 10KA@125Vac | 177.4000 | NA | x** | | | | x** | x** |
| .031* | 0.031 | 250 | | 23.6500 | 0.0000300 | x | | | | x | x |
| .062 | 0.062 | 250 | | 24.7000 | 0.000249 | x | | | | x | x |
| .100 | 0.1 | 250 | | 11.2800 | 0.00102 | 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 | | 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 | 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 | 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 | 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 | 0.0072 | 234.6 | x** | x*** | | | x** | | |
| 015 | 15 | 32 | 0.0052 | 490.5 | x** | x*** | | | x** | | |
| 020 | 20 | 32 | 0.0035 | 1029 | x** | x*** | | | x** | | |
| 025 | 25 | 32 | 0.0024 | 2041 | x** | x*** | | | x** | | |
| 030 | 30 | 32 | 0.0019 | 3717 | x** | x*** | | | x** | | |
| 035 | 35 | 32 | 0.0013 | 7531 | | | | | | | |

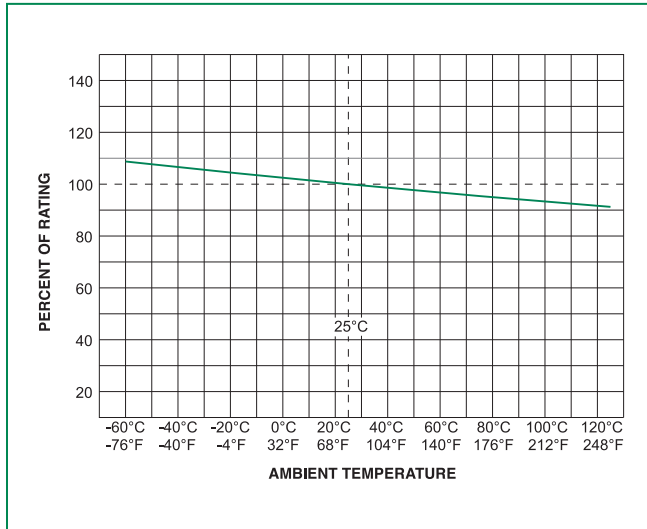
NOTES:

* 10mA and 31mA are not RoHS complaint as the glass bead contains Pb.

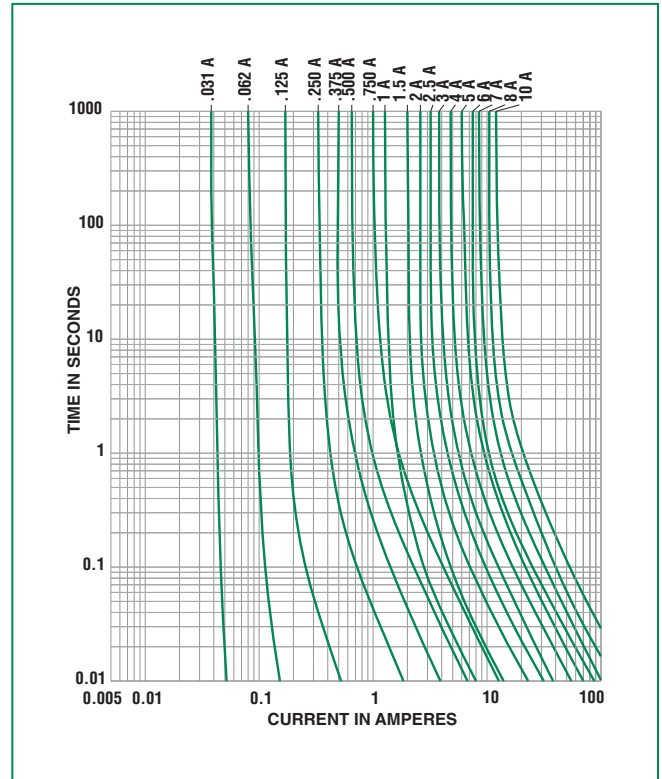
** 312 Series only. Refer to Agency Approvals section of this document.

*** 318 Series only. Refer to Agency Approvals section of this document.

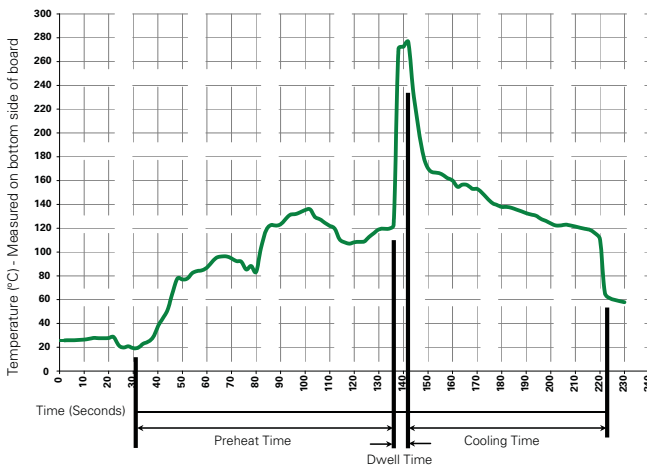
Temperature Derating Curve



Average Time Current Curves



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: | 280° 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-202G, Method 211A, Test Condition A |
| Solderability | Reference IEC 60127 Second Edition 2003-01 Annex A |
| 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-202G, Method 107G, Test Condition B: (5 cycles -65°C to +125°C) |
| Vibration | MIL-STD-202G, Method 201 A |
| Humidity | MIL-STD-202G, Method 103B, Test Condition A: High RH (95%), and Elevated temperature (40°C) for 240 hours |
| Salt Spray | MIL-STD-202G, Method 101D, Test Condition B |

Part Numbering System

0312 xxxx M X CC

Series

312 = Cartridge
318 = Axial Leaded

Current Rating Code

Refer to Amp Code column of Electrical Characteristics Table

Quantity Code

M = 1000
H = 100
V = 5

Packaging Code

X = Loose Pack

Option Codes

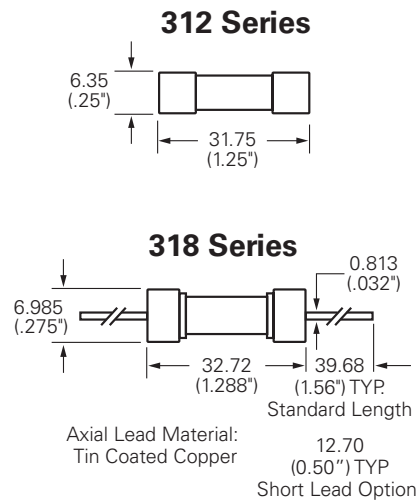
Blank = Standard Item
CC = Color Coded
SL = Short Lead Option (12.70 +/- 1.575 mm)
P = RoHS Compliant and Lead Free Indicator *

For additional information or information about other available options, please contact Littelfuse.

*Note: All 312 / 318 series fuses are now sold as RoHS compliant and Lead Free by default, with or without the "P" indicator.

Dimensions

Measurements displayed in millimeters (inches)



Packaging

| Packaging Option | Quantity | Quantity & Packaging Code |
|------------------------------------|----------|---------------------------|
| 312 Series (Cartridge Type) | | |
| Bulk | 5 | VX |
| Bulk | 100 | HX |
| Bulk | 1000 | MX |
| Bulk | 1000 | MXCC |
| Bulk | 100 | HXCC |
| 318 Series (Axial Leaded) | | |
| Bulk | 5 | VX |
| Bulk | 100 | HX |
| Bulk | 1000 | MX |
| Bulk | 1000 | MXSL |