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

Web Resources

Download ECAD models, order samples, and find technical recources at www.littelfuse.com/312

Download ECAD models, order samples, and find technical recources at www.littelfuse.com/318

Agency Approvals

Agency	Agency File Number	Ampere Range
UL	E10480	0.062 - 10A
cULus		12A-25A
CSA	29862	312 Series: 0.062A - 30A 318 Series: 0.062A - 10A
PSE	(312 Series) NBK060618-E10480A NBK060618-E10480C	1A - 5A 6A - 10A
	(318 Series) NBK060618-E10480B NBK060618-E10480D	1A - 5A 6A - 10A
cULus	E10480	318 Series: 12A - 30A
KC	SU05001-6008 SU05001-5005 SU05001-5006	1A - 2A 3A - 6A 7A - 10A
CE	N/A	0.062A - 10A

Description

The 312 and 318 Series are 3AG Fast-Acting fuses that solve 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

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Electrical Characteristic Specifications by Item

Amp Code	Ampere Rating (A)	Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I^2t (A^2 sec)	Agency Approvals					
						UL	cULus	KC	PSE	CSA	CE
.062	0.062	250	35A@250Vac 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 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	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
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†	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 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.

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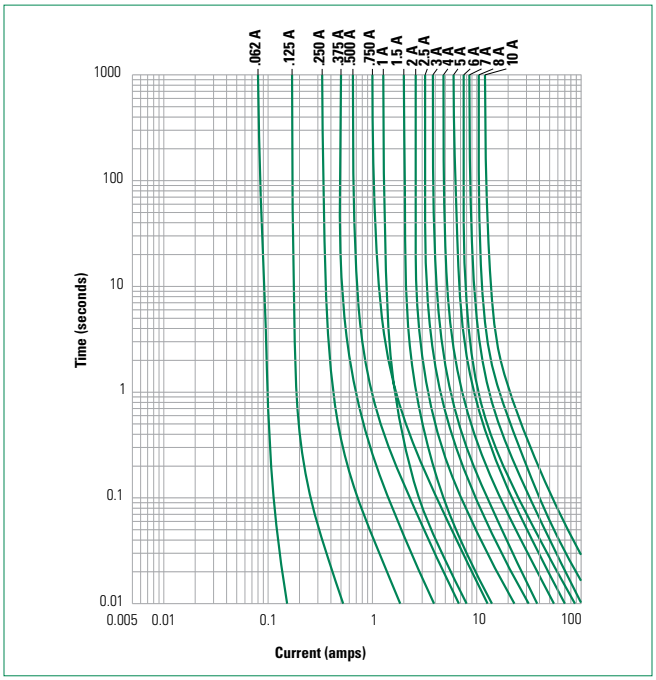
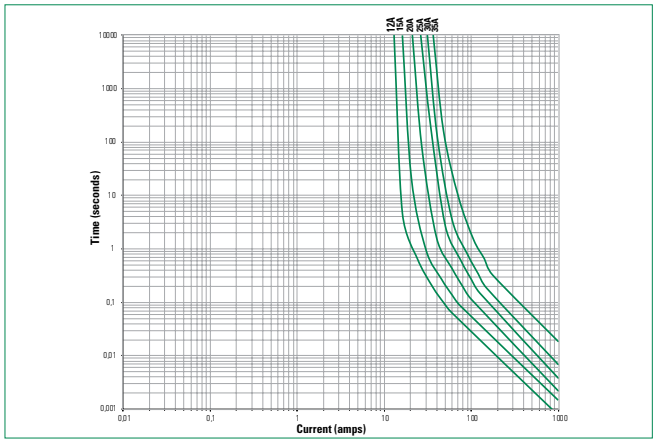
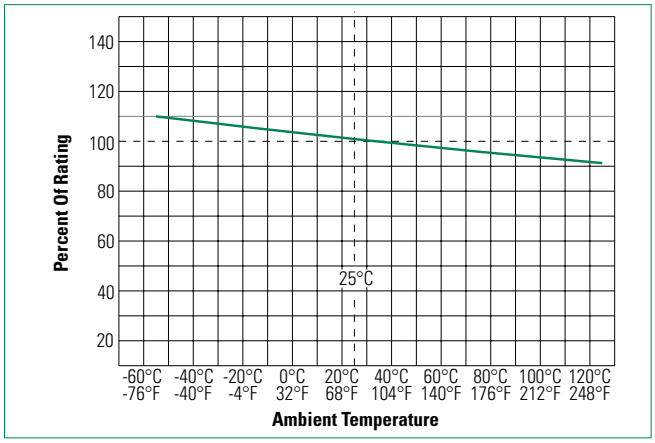
Average Time Current Curves





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

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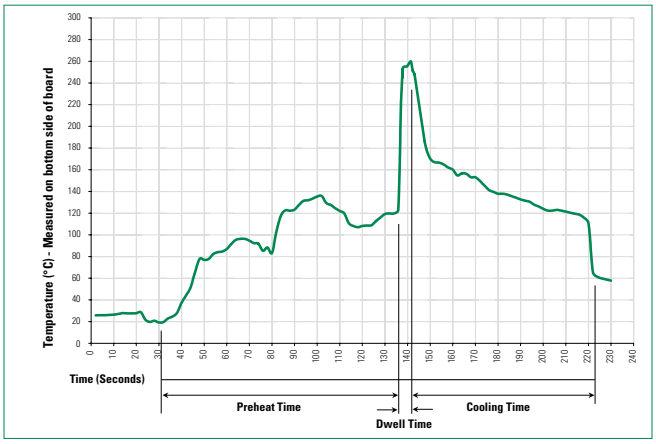
Soldering Parameters - Wave Soldering



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.

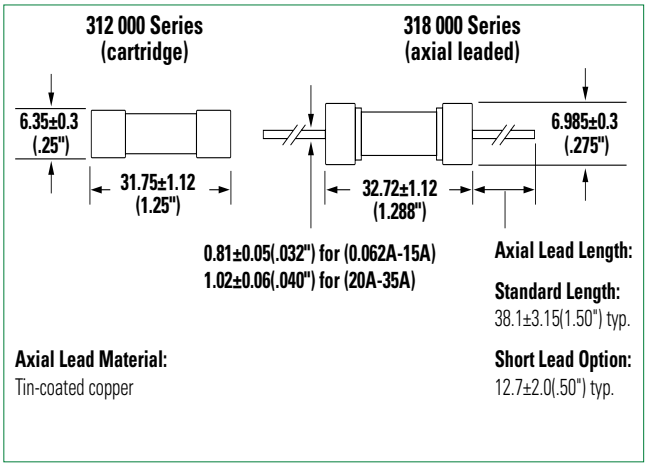
Product Characteristics

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

0312 xxxx M X P

Series
312 = Cartridge
318 = Axial Leaded

Amp Code
Refer to Amp Code column of Electrical Characteristics Table

Quantity Code
M = 1000

Packaging Code
X = Filler

Lead-free

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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	600	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.