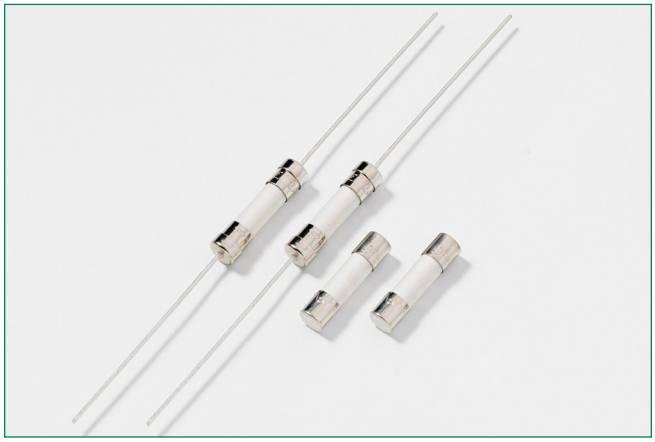
215 Series

5×20 mm, Time-Lag Fuse



Additional Information

Resources | Accessories | Samples

Electrical Characteristics for Series

% of Ampere Rating	Ampere Rating	Opening Time
150%	0.125A – 0.800A	60 minutes, Minimum
	1A – 3.15A	60 minutes, Minimum
	4A – 6.3A	60 minutes, Minimum
	8A – 20A	30 minutes, Minimum
210%	0.125A – 0.800A	30 minutes, Maximum
	1A – 3.15A	30 minutes, Maximum
	4A – 6.3A	30 minutes, Maximum
	8A – 20A	30 minutes, Maximum
275%	0.125A – 0.800A	0.25 sec. Min.; 80 secs. Max.
	1A – 3.15A	0.75 sec. Min.; 80 secs. Max.
	4A – 6.3A	0.75 sec. Min.; 80 secs. Max.
	8A – 20A	0.75 sec. Min.; 80 secs. Max.
400%	0.125A – 0.800A	0.05 sec., Min.; 5 secs. Max.
	1A – 3.15A	0.095 sec., Min.; 5 secs. Max.
	4A – 6.3A	0.150 sec., Min.; 5 secs. Max.
	8A – 20A	0.150 sec., Min.; 5 secs. Max.
1000%	0.125A – 0.800A	0.005 sec., Min.; .150 sec. Max.
	1A – 3.15A	0.010 sec., Min.; .150 sec. Max.
	4A – 6.3A	0.010 sec., Min.; .150 sec. Max.
	8A – 20A	0.010 sec., Min.; .150 sec. Max.

Description

The 215 Series is a 5x20mm Time-lag, surge-withstand, ceramic body cartridge fuse that is designed to IEC specifications.

Features

- Conforms to EN/IEC/K/J 60127-1 and EN/IEC/K/J 60127-2
- High breaking capacity
- Meets Standard Sheet 5 of IEC 60127-2 as a Time-Lag fuse
- RoHS compliant and lead-free
- Recognized to UL/CSA/NMX 248-1 and UL/CSA/NMX 248-14
- Conforms to GB 9364.1 and GB 9364.2
- CE Mark indicates compliance with Low-Voltage and RoHS Directives.

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
PS E	Cartridge: NBK080205-E10480A NBK250702-E10480E NBK100408-JP1021A Leaded: NBK080205-E10480B NBK250702-E10480F NBK100408-JP1021B	1A – 5A 6.3A – 15A 16A – 20A 1A – 5A 6.3A – 15A 16A – 20A
	2020970207000067	0.125A-10A
	SU05001-2011B SU05001-10001 SU05001-10002 SU05001-2012B	1A – 2.5A 3.15A – 6.3A 8A 4A - 10A
	E10480	0.125A - 20A
	29862	0.5A – 12A
	SE-S-2101268	0.125A-12A 15A*, 16A*, 20A*
	40013521	0.2A – 8A *10A
VDE	40016610	*12A
	KM41462	0.200A – 10A
	J50248091 J50258578	10A 16A, 20A
CE	N/A	0.125A – 20A

* Approved for cartridge versions only

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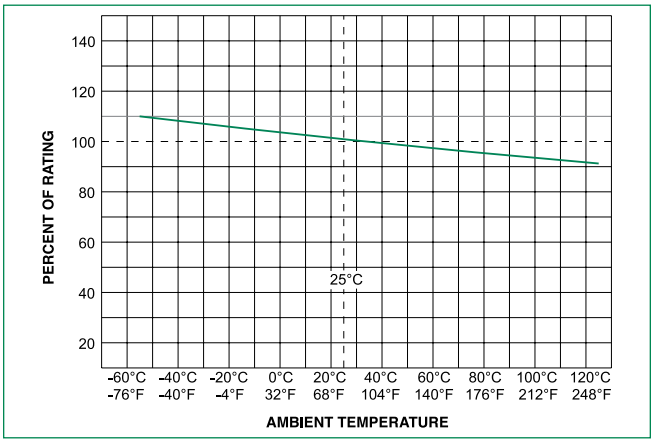
Electrical Characteristic Specifications by Item

Amp Code	Amp Rating	Voltage Rating (V)	Interrupting Rating+	Nominal Cold Resistance (Ohms)	Nominal Melting I²t (A² sec)	Maximum Voltage Drop at Rated Current (mV)	Maximum Power Dissipation at 1.5In (W)	Agency Approvals										
.125	0.125	250	1500 A @ 250 VAC	11.4455	0.0330	2600	1.6	-	-	x	-	x	-	x	-	-	-	x
.160	0.16	250		7.1000	0.0465	2400	1.6	-	-	x	-	x	-	x	-	-	-	x
.200	0.2	250		1.8400	0.340	2100	1.6	x	-	x	-	x	-	x	x	-	-	x
.250	0.25	250		1.2400	0.545	1500	1.6	x	-	x	-	x	-	x	x	-	-	x
.315	0.315	250		0.8800	0.975	1100	1.6	x	-	x	-	x	-	x	x	-	-	x
.400	0.4	250		0.5825	1.325	1000	1.6	x	-	x	-	x	-	x	x	-	-	x
.500	0.5	250		1.1675	0.420	850	1.6	x	-	x	-	x	x	x	x	-	-	x
.630	0.63	250		0.7200	0.635	650	1.6	x	-	x	-	x	x	x	x	-	-	x
.800	0.8	250		0.4675	0.975	500	1.6	x	-	x	-	x	x	x	x	-	-	x
001.	1	250		0.1515	1.520	350	2.5	x	x	x	x	x	x	x	x	-	-	x
1.25	1.25	250		0.1074	3.200	300	2.5	x	x	x	x	x	x	x	x	-	-	x
01.6	1.6	250		0.0707	6.830	200	2.5	x	x	x	x	x	x	x	x	-	-	x
002.	2	250		0.0566	11.680	190	2.5	x	x	x	x	x	x	x	x	-	-	x
02.5	2.5	250		0.0386	22.290	180	2.5	x	x	x	x	x	x	x	x	-	-	x
3.15	3.15	250		0.0283	43.255	140	4	x	x	x	x	x	x	x	x	-	-	x
004.	4	250		0.0185	46.960	100	4	x	x	x	x	x	x	x	x	-	-	x
005.	5	250		0.0153	66.095	100	4	x	x	x	x	x	x	x	x	-	-	x
06.3	6.3	250		0.0108	128.750	100	4	x	x	x	x	x	x	x	x	-	-	x
008.	8	250		0.0092	209.880	100	4	x	x	x	x	x	x	x	x	-	-	x
010.	10	250		0.0066	333.565	100	4	x	x	x	x	x	x	x	x*	-	x	x
012.	12	250		0.0061	515.500	100	4	-	x	-	-	x	x	x	-	x*	-	x
015.	15	250	500 A @ 250Vac	0.0033	1237.0	N/A**	N/A**	-	x	-	-	x	-	x*	-	-	-	x
016.	16	250		0.0031	1408.0	N/A**	N/A**	-	x	-	-	x	-	x*	-	-	x	x
020.	20	250	400 A @ 250Vac	0.0023	2600.0	N/A**	N/A**	-	x	-	-	x	-	x*	-	-	x	x

***** Approval for cartridge versions only
****** Please contact Littelfuse for details on these parameters
+ Interrupting Rating may differ based on Agency Approval. See Agency Approval certificate for more details.
1A to 2A have an IR : 100A@500VAC, 4A to 6-3A have the IR : 100A@305 VAC and 1000A@72VDC
I2t test at 10x rated current.
10A have an IR:1000A@300Vac for cURus

Temperature Re-rating Curve



Product Characteristics

Materials	Body: Ceramic 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	Cap 1: Brand logo, current and voltage ratings Cap 2: Agency approval markings
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 temp (40°C) for 240 hours)
Salt Spray	MIL-STD-202, Method 101, Test Condition B

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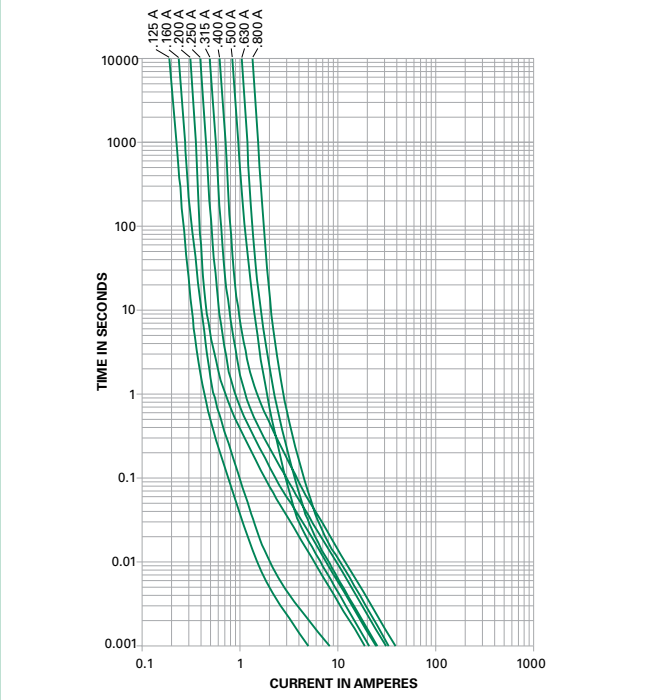
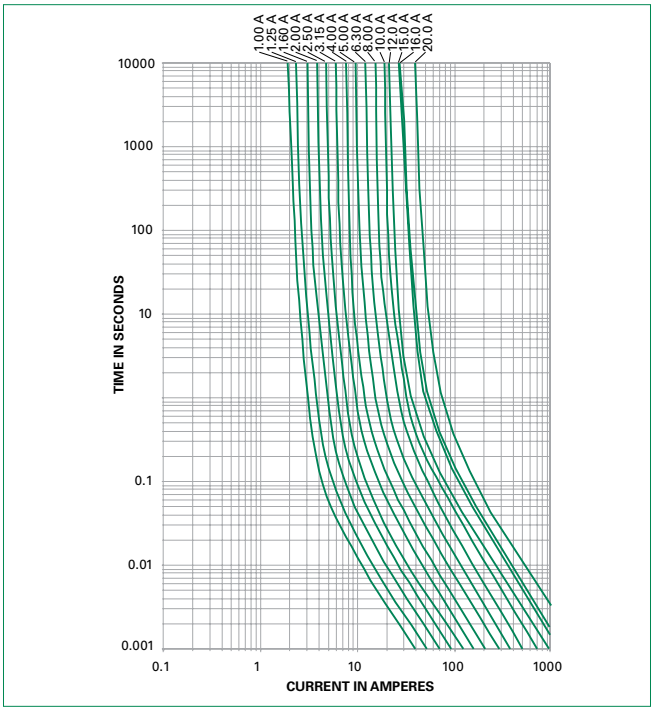
Average Time Current Curves

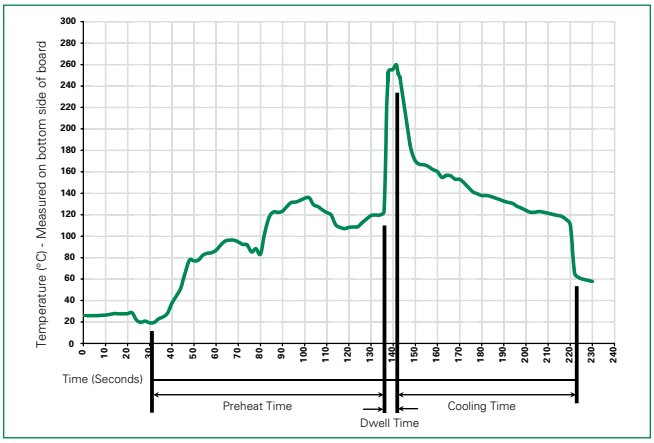
T-C Curves for 125mA to 800mA only



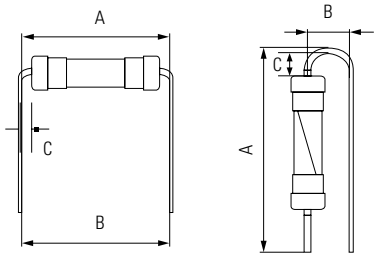
T-C Curves for 1A to 20A only



Soldering Parameters - Wave Soldering



Different values of A and B available, please contact the Littelfuse sales representative in your region:



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.

For the pigtailed fuse, please follow the recommendations below for axial lead forming and mounting into PCB:

Lead forming:

The distance C between cap flat surface and axial lead shall be greater than 1.0 mm.

PCB mounting:

The distance between PCB and fuse cap is recommended to be a minimum of 1.5 mm.

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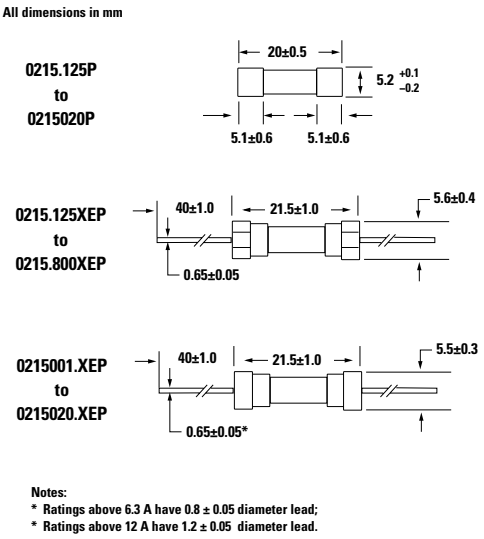
Dimensions

All dimensions in mm



Notes:
* Ratings above 6.3 A have 0.8 ± 0.05 diameter lead;
* Ratings above 12 A have 1.2 ± 0.05 diameter lead.

Part Numbering System

0215 xxxx M X E/G P

Series

Amp Code
Refer to Amp Code column of Electrical Characteristics Table

Quantity Code
M = 1000
H = 100

Packaging Code
X = Filler

Option Codes
Blank : Cartidge Type Fuse
E : Axial Lead Fuse
G : Color Coding

Lead-free

Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Taping Width
		215 Series		
Bulk	N/A	1000	MX	N/A
Bulk	N/A	1000	MXE	N/A
Reel and Tape	N/A	1000	MRET1	T1=53mm (2.087")
Bulk and Color Coding	N/A	1000	MXG	N/A
Bulk	N/A	1000	MXB	N/A
Bulk	N/A	100	HX	N/A

Recommended Accessories

Accessory Type	Series	Description	Max Application Voltage	Max Application Amperage
Holder	345_ISF	Panel Mount Shock-Safe Fuseholder	250	10
	345	Shock-Safe Fuseholder with PC Mount, Solder Mount and Panel Mount options		20
	830	PC Mount Shock-Safe Miniature Fuseholder		16
Block	520	Metric OMNI-BLOK® Fuse Block		10
	646	PC Mount Miniature Fuse Block		6.3
	658	Surface Mount Miniature Fuse Block		10
Clip	520_W	PC Mount Miniature Fuse Clip		6.3
	111	PC Board Mount Fuse Clip		10
	445	PC Board Mount Fuse Clip		10

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