

215 Series, 5x20 mm, Time-Lag Fuse



Description

5x20mm Time-Lag surge withstand ceramic body cartridge fuse designed to IEC specification

Features

- Designed to International (IEC) Standards for use globally
- Meets the IEC 60127-2, Sheet 5 specification for Time-Lag fuses
- High breaking capacity
- RoHS compliant and lead-free

Agency Approvals

Agency	Agency File Number	Ampere Range
	Cartridge: NBK080205-E10480A NBK250702-E10480E NBK100408-JP1021A	1A – 5A 6.3A – 15A 16A – 20A
	Leaded: NBK080205-E10480B NBK250702-E10480F NBK100408-JP1021B	1A – 5A 6.3A – 15A 16A – 20A
	2005010207145714	1A – 6.3A
	CQC07012021808	8A – 10A
	SU05001-2011B	1A – 2.5A
	SU05001-10001	3.15A – 6.3A
	SU05001-10002	8A
	SU05001-2012B	4A – 10A
	E10480	0.125A – 20A
	29862	0.5A – 12A
	1517218	0.125A-12A
		15A*, 16A*, 20A*
	40013521	0.2A – 8A
	40016610	*10A *12A
	KM41462	0.200A – 10A
	J50258578	16A/20A
	N/A	0.125A – 20A

* Approved for cartridge versions only

Applications

Used as supplementary protection in appliance or utilization equipment to provide individual protection for components or internal circuits.

Additional Information



Datasheet



Resources



Samples

Electrical Characteristics for Series

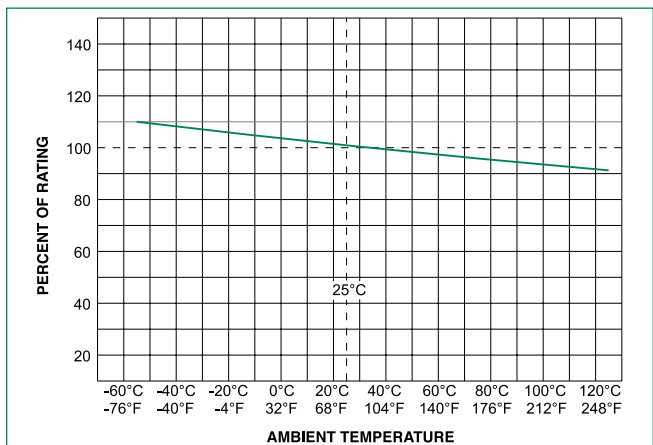
% of Ampere Rating	Ampere Rating	Opening Time
150%	0.125A – 0.800A	60 minutes, Minimum
	1A – 3.15A	60 minutes, Minimum
	4A – 6.3A	60 minutes, Minimum
	8A – 20A	30 minutes, Minimum
210%	0.125A – 0.800A	30 minutes, Maximum
	1A – 3.15A	30 minutes, Maximum
	4A – 6.3A	30 minutes, Maximum
275%	8A – 20A	30 minutes, Maximum
	0.125A – 0.800A	.25 sec. Min.; 80 secs. Max.
	1A – 3.15A	.75 sec. Min.; 80 secs. Max.
	4A – 6.3A	.75 sec. Min.; 80 secs. Max.
400%	8A – 20A	.75 sec. Min.; 80 secs. Max.
	0.125A – 0.800A	.05 sec., Min.; 5 secs. Max.
	1A – 3.15A	.095 sec., Min.; 5 secs. Max.
1000%	4A – 6.3A	.150 sec., Min.; 5 secs. Max.
	8A – 20A	.150 sec., Min.; 5 secs. Max.
	0.125A – 0.800A	.005 sec., Min.; .150 sec. Max.
	1A – 3.15A	.010 sec., Min.; .150 sec. Max.
1000%	4A – 6.3A	.010 sec., Min.; .150 sec. Max.
	8A – 20A	.010 sec., Min.; .150 sec. Max.

Electrical Characteristic Specifications by Item

Amp Code	Amp Rating	Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I ² t (A ² sec)	Maximum Voltage Drop at Rated Current (mV)	Maximum Power Dissipation at 1.5I _n (W)	Agency Approvals												
								UL	CSA	IEC	VDE	ULUS	SP	S	D'E	VDE	CQC	CCC	CE	
.125	0.125	250	1500 A @ 250 VAC	11.4455	0.0330	2600	1.6						x	x					x	
.160	0.16	250		7.1000	0.0465	2400	1.6							x	x					x
.200	0.2	250		1.8400	0.340	2100	1.6	x						x	x	x				x
.250	0.25	250		1.2400	0.545	1500	1.6	x						x	x	x				x
.315	0.315	250		0.8800	0.975	1100	1.6	x						x	x	x				x
.400	0.4	250		0.5825	1.325	1000	1.6	x						x	x	x				x
.500	0.5	250		1.1675	0.420	850	1.6	x						x	x	x				x
.630	0.63	250		0.7200	0.635	650	1.6	x						x	x	x				x
.800	0.8	250		0.4675	0.975	500	1.6	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				x
1.25	1.25	250		0.1074	3.200	300	2.5	x	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				x
002.	2	250		0.0566	11.680	190	2.5	x	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				x
3.15	3.15	250		0.0283	43.255	140	4	x	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				x
005.	5	250		0.0153	66.095	100	4	x	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				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
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	500 A @ 250Vac	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	

X* Approval for cartridge versions only
 N/A** - Please contact Littelfuse for details on these parameters
 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

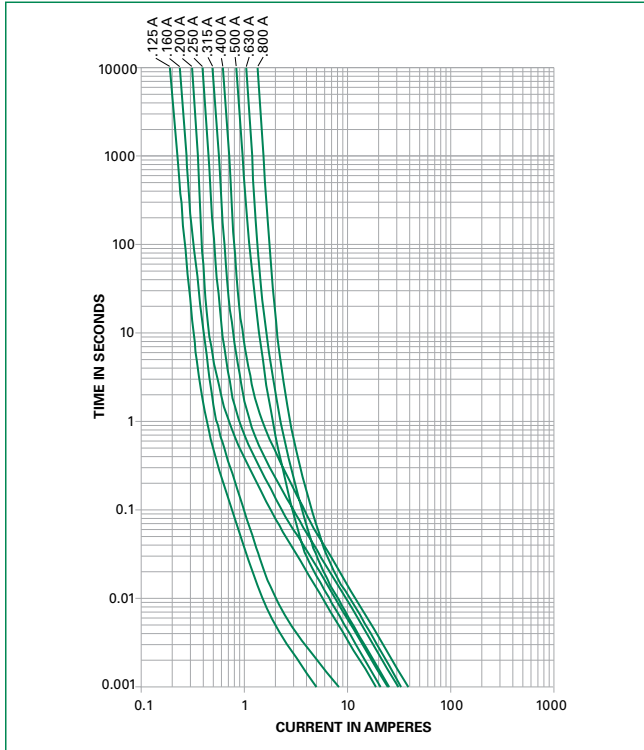


Product Characteristics

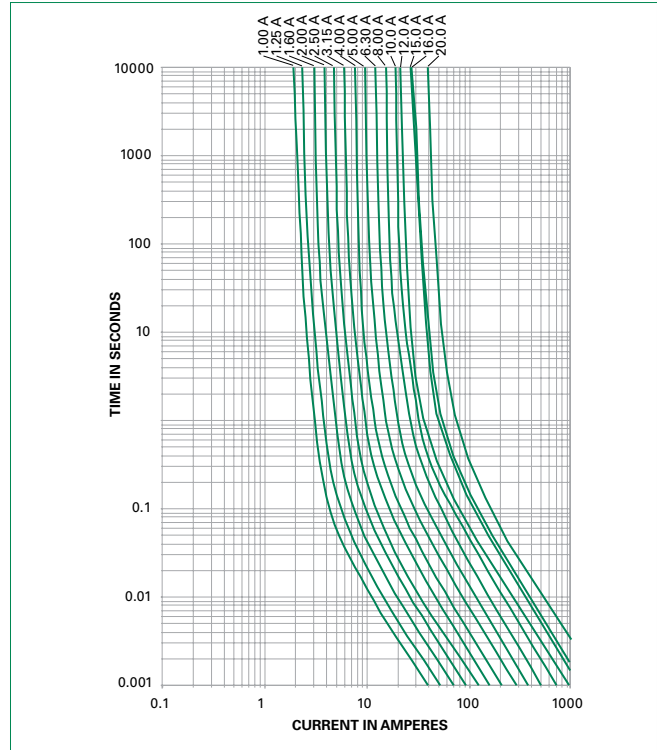
Materials	Body: Ceramic Cap: Nickel-plated Brass Leads: Tin-plated Copper
Terminal Strength	MIL-STD-202, Method 211, Test Condition A
Solderability	MIL-STD-202 Method 208
Product Marking	Cap 1: Brand logo, current and voltage ratings Cap 2: Agency approval markings
Operating Temperature	-55°C to +125°C
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

Average Time Current Curves

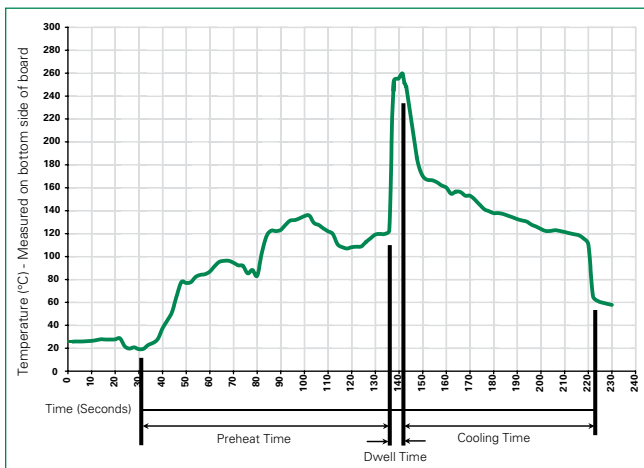
T-C Curves for 125mA to 800mA only



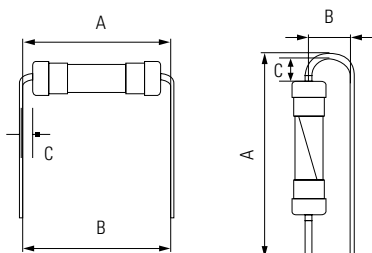
T-C Curves for 1A to 20A only



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:

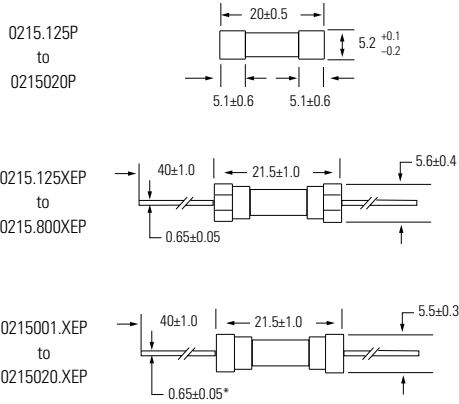
The distance C between cap flat surface and axial lead shall be greater than 1.0 mm.

PCB mounting:

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

Dimensions

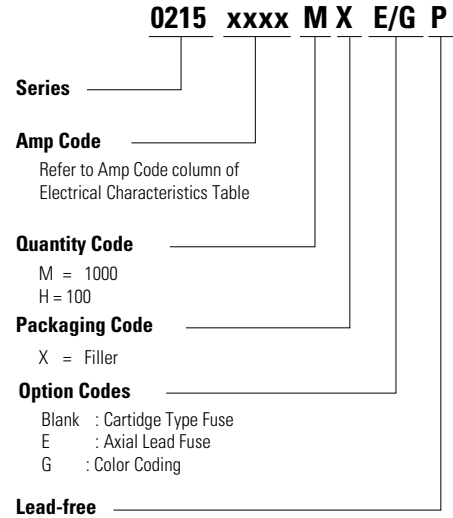
All dimensions in mm



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



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

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