

235 Series, 5×20 mm, Fast-Acting Fuse



Description

5×20mm fast-acting glass body cartridge fuse designed to UL specification.

Features

- Designed to UL/CSA/ANCE 248 Standard
- RoHS compliant and lead-free
- Available in cartridge and axial lead format

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
	Cartridge: NBK030609-JP1021A	1-3.5A
	NBK190609-JP1021A	4-5A
	NBK030609-JP1021B	6-7A
	Leaded: NBK030609-JP1021C	1-3.5A
	NBK190609-JP1021B	4-5A
	NBK030609-JP1021D	6-7A
	SU05001 – 3007 SU05001 – 2002 SU05001 – 2003	0.100A – 0.400A 0.500A – 3A 4A – 6A
	E10480	0.100A - 7A
	29862	0.100A – 3A 4A – 6A
	N/A	0.100A – 7A

Electrical Characteristics for Series

% of Ampere Rating	Ampere Rating	Opening Time
100%	0.100A – 7A	4 hours, Minimum
135%		1 hour, Maximum
200%		5 seconds, Maximum

Additional Information



Datasheet



Resources



Samples



Accessories

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

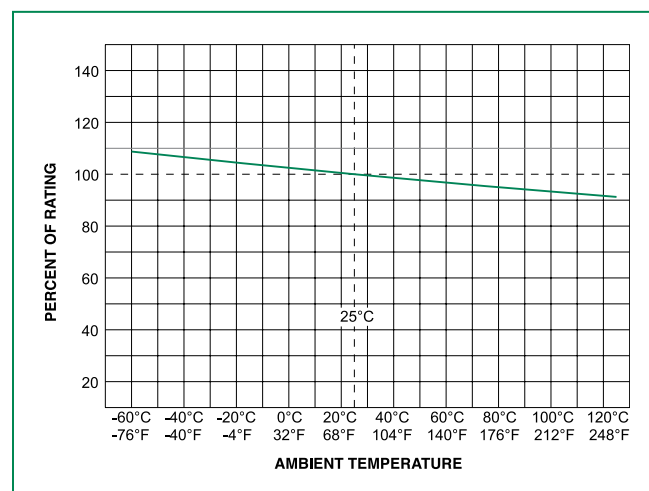
Axial Lead & Cartridge Fuses

5x20 mm > Fast-Acting > 235 Series

Electrical Characteristic Specifications by Item

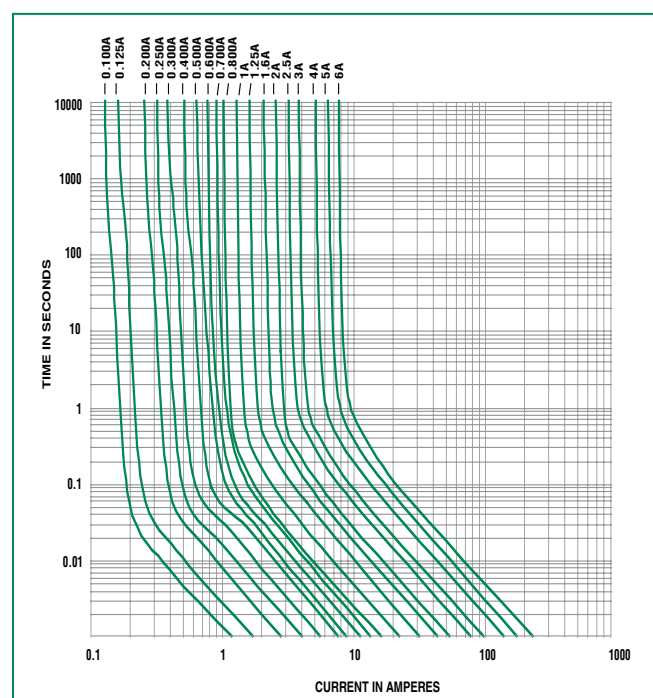
Amp Code	Amp Rating (A)	Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting I^2t (A ² sec)	Agency Approvals				
						CE	UL	SP	PS E	RC
.100	0.1	250	35A @ 250VAC 10kA @ 125VAC	8.4000	0.00127	x	x	x		x
.125	0.125	250		5.7500	0.00273	x	x	x		x
.200	0.2	250		3.1500	0.00867	x	x	x		x
.250	0.25	250		2.2500	0.01660	x	x	x		x
.300	0.3	250		1.6000	0.03215	x	x	x		x
.400	0.4	250		1.075	0.05845	x	x	x		x
.500	0.5	250		0.4265	0.06915	x	x	x		x
.600	0.6	250		0.3195	0.11200	x	x	x		x
.700	0.7	250		0.2625	0.15600	x	x	x		x
.800	0.8	250		0.1920	0.25300	x	x	x		x
001.	1	250	100A @ 250VAC 10kA @ 125VAC	0.1530	0.46750	x	x	x	x	x
1.25	1.25	250		0.1055	1.08500	x	x	x	x	x
01.6	1.6	250		0.0758	2.02500	x	x	x	x	x
002.	2	250		0.0603	2.64500	x	x	x	x	x
02.5	2.5	250		0.0437	5.44500	x	x	x	x	x
003.	3	250		0.0347	8.39500	x	x	x	x	x
03.5	3.5	250		0.0331	17.14000	x	x		x	
004.	4	125	10kA @ 125VAC	0.0246	17.14000	x	x	x	x	x
005.	5	125		0.0184	27.41000	x	x	x	x	x
006.	6	125		0.0148	47.32500	x	x	x	x	x
007.	7	125		0.0157	64.81500	x	x		x	

Temperature Re-rating Curve



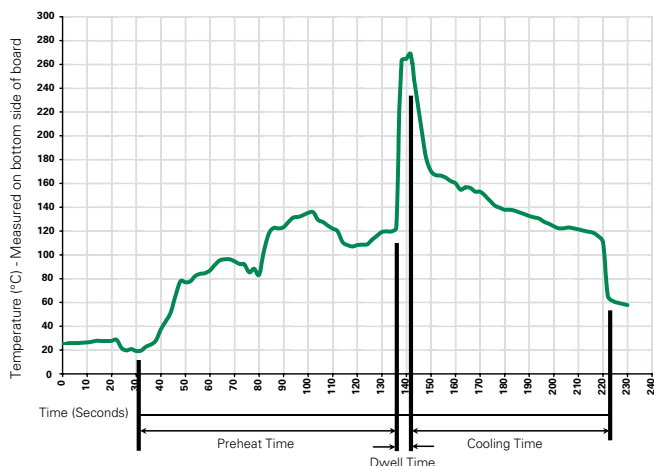
Note:
Rerating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

Average Time Current Curves



Please contact Littelfuse for details on T-C curve for 7A rating

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	Cap 1: Brand logo, current and voltage rating Cap 2: Series and agency approval markings
Packaging	Available in Bulk (M=1000 pcs/pkg) or on Tape/Reel (MRET1=1000 pcs/reel)

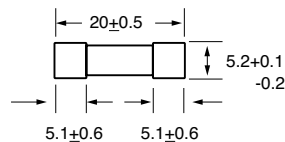
Operating Temperature	-55°C to +125°C
Thermal Shock	MIL-STD-202, Method 107, Test Condition B: (5 cycles -65°C + 125°C)
Vibration	MIL-STD-202, Method 201
Humidity	MIL-STD-202, Method 103, Test Condition A high RH (95%) and elevated temperature (40°C) for 240 hours
Salt Spray	MIL-STD-202, Method 101, Test Condition B

Axial Lead & Cartridge Fuses

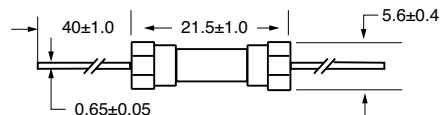
5×20 mm > Fast-Acting > 235 Series

Dimensions

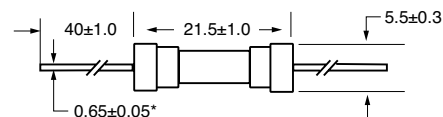
0235000P



**0235.100 XEP
to
0235.400 XEP**



**0235.500 XEP
to
0235006.XEP**



All dimensions in mm

Notes:

* Ratings above 6.3A have 0.8±0.05 diameter lead.

Part Numbering System

0235 xxxx M X E P

Series

Amp Code

Refer to Amp Code column of
Electrical Characteristics Table

Quantity Code

M = 1000

Packaging Code

X = Filler

Option Code

E = Axial Leaded

Lead-free

Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Taping Width
235 Series				
Bulk	N/A	1000	MX	N/A
Bulk	N/A	1000	MXE	N/A
Reel and Tape	EIA 296-E	1000	MRET1	T1=53mm (2.087")

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

Notes:

- Do not use in applications above rating.
- Please refer to fuseholder data sheet for specific re-rating information.
- Please contact factory for applications greater than the max voltage and amperage shown.