

### 835 Series, 5x20 mm, Time-Lag Fuse



#### Description

The 835 Series is a 5x20mm time-lag, ceramic body AC fuse with higher  $I^2t$ , high interrupting rating, and 1.5kA surge withstand capability. This series fuse provides enhanced over-current protection and surge withstand capability, ideal for LED/LCD TVs, digital display systems, and digital signage type of display applications. It is RoHS compliant and 100% Pb-Free.

#### Agency Approvals

Agency	Agency File Number	Ampere Range
	R50282025	4A-8A
	SU05001-14001A SU05001-14002	4A-6.3A 8A
	2020970207000047	4A-8A
	E10480	4A-8A
	Cartridge: NBK080205-E10480A NBK250702-E10480E	4A-5A 6.3A-8A
	Leaded: NBK080205-E10480B NBK250702-E10480F	4A-5A 6.3A-8A

#### Features

- Higher  $I^2t$  and 1.5kA Surge Withstand Capability
- High breaking capacity
- Operating temperature range from -55°C to 125°C
- RoHS compliant and Lead-free
- Recognized to UL/CSA/NMX 248-1 and UL/CSA/NMX 248-14
- Conforms to EN/J/K 60127-1, EN/J/K 60127-2 and EN 60127-7
- Conforms to GB 9364.1 and GB 9364.2

#### Transient Surge Ratings

Surge Wave Form	Short-Circuit Current	Number of Pulses	Ampere Rating
8/20 $\mu$ s <sup>2</sup>	1,500A	12	4A-8A

#### Notes:

1. Transient surge ratings are provided for reference only and may not represent surge withstand capability in the end application. Factors including, but not limited to, series impedance, mounting, and wiring may affect surge withstand capability.

2. In accordance with IEC 60060-1, front time = 8 $\mu$ s and time to half-value = 20 $\mu$ s

#### Applications

- LED/LCD TVs
- Digital Display Systems
- Digital Signage
- White Goods
- Power Supply Units

#### Additional Information



Datashheet



Resources



Samples



Accessories

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

#### Electrical Characteristics for Series

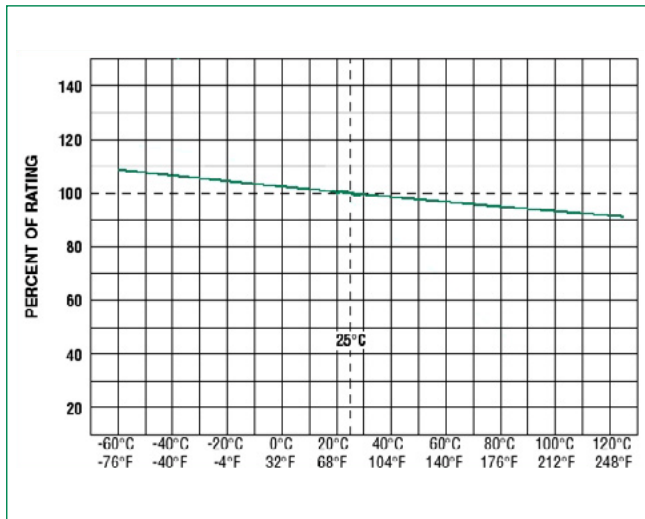
% of Ampere Rating	Ampere Rating	Opening Time
150%	4A-6.3A	60 minutes, Minimum
	8A	30 minutes, Minimum
210%	4A-8A	30 minutes, Maximum
275%		.75 sec. Min.; 80 secs. Max.
400%		.150 sec. Min.; 5 secs. Max.
1000%		.010 sec. Min.; .150 sec. Max.

#### Electrical Characteristic Specifications by Item

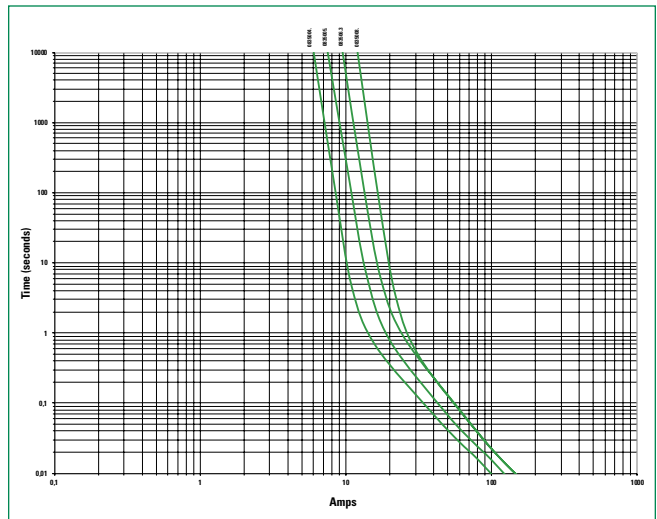
Amp Code	Amp Rating	Voltage Rating (V)	Interrupting Rating	Nominal Cold Resistance (Ohms)	Nominal Melting $I^2t$ (A <sup>2</sup> sec)	Agency Approvals				
004.	4	250	1500A@250VAC	0.0183	110	x	x	x	x	x
005.	5			0.0155	155	x	x	x	x	x
06.3	6.3			0.0118	300	x	x	x	x	x
008.	8			0.0092	230	x	x	x	x	x

$I^2t$  tested at 10x rated current

## Temperature Derating Curve



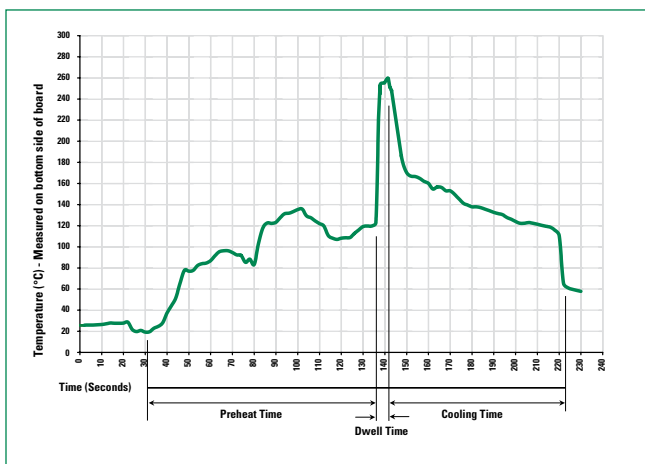
## Average Time Current Curves



## Product Characteristics

<b>Materials</b>	<b>Body:</b> Ceramic <b>Cap:</b> Nickel-plated Brass <b>Leads:</b> Tin-plated Copper
<b>Terminal Strength</b>	MIL-STD-202, Method 211, Test Condition A
<b>Solderability</b>	IEC 60068-2-20, Method 1 (235°C)
<b>Product Marking</b>	<b>Cap 1:</b> Brand logo, current and voltage ratings <b>Cap 2:</b> Agency approval markings
<b>Packaging</b>	Packed 1000 pieces on bulk
<b>Operating Temperature</b>	-55°C to +125°C
<b>Thermal Shock</b>	MIL-STD-202, Method 107, Test Condition B (5 cycles, -65°C to +125°C)
<b>Vibration</b>	MIL-STD-202, Method 201
<b>Humidity</b>	MIL-STD-202, Method 103, Test Condition A: High relative humidity (95%) and elevated temperature (40°C) for 240 hours
<b>Salt Spray</b>	MIL-STD-202, Method 101, Test Condition B

## Soldering Parameters - Wave Soldering



## Recommended Process Parameters:

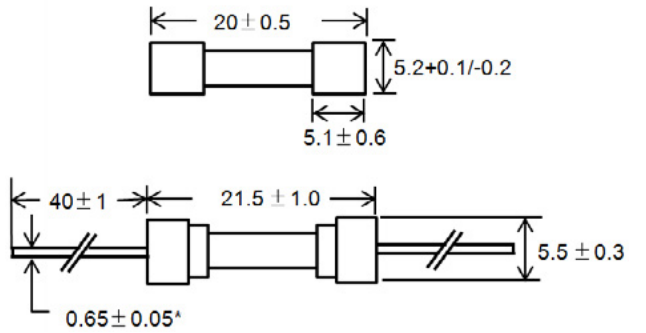
Wave Parameter	Lead-Free Recommendation
Preheat: (Depends on Flux Activation Temperature)	(Typical Industry Recommendation)
Temperature Minimum:	100°C
Temperature Maximum:	150°C
Preheat Time:	60-180 seconds
Solder Pot Temperature:	260°C Maximum
Solder Dwell Time:	2-5 seconds

### 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.**

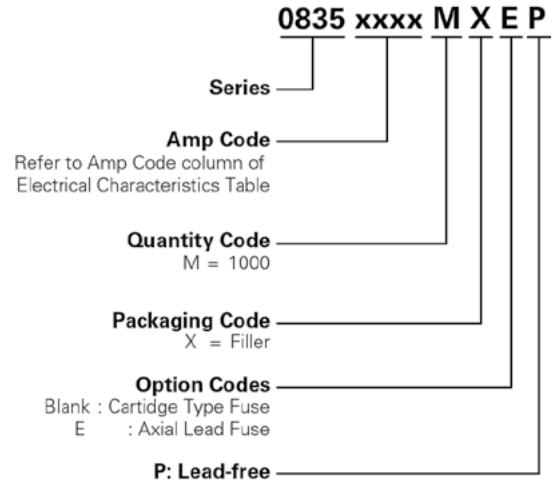
## Dimensions



All dimensions in mm

\*Ratings above 6.3A have 0.8±0.05mm diameter lead

## Part Numbering System



## Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Reel Size
<b>835 Series</b>				
Bulk	N/A	1000	MX	N/A
Bulk	N/A	1000	MXE	N/A
Bulk (Color Coding & forming)	N/A	1000	MXX	N/A

## Recommended Accessories

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