

### RoHS **209 Series** Lead-Free 2AG, Slo-Blo® (Time-Lag) Fuse



#### Agency Approvals

| Agency                                                                            | Agency File Number                                                | Ampere Range |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------|--------------|
|  | E10480                                                            | 250mA-7A     |
|  | NBK210405-E10480G/H<br>NBK210405-E10480C/D<br>NBK210405-E10480E/F | 1A-7A        |
|  |                                                                   | 250mA-7A     |

#### Description

Littelfuse 209 Series (2AG) 350V, Time-Lag (Slo-Blo®) Fuses are available in cartridge form or with axial leads. This series provides the same performance characteristics as its 3AG counterpart, while occupying one-third the space. Sleeved fuses are available.

#### Features

- In accordance with Underwriter's Laboratories Standard UL 248-14
- Available in cartridge and axial lead form and with various forming dimensions
- RoHS compliant and Lead-free

#### Applications

- Electronic Lighting Ballasts

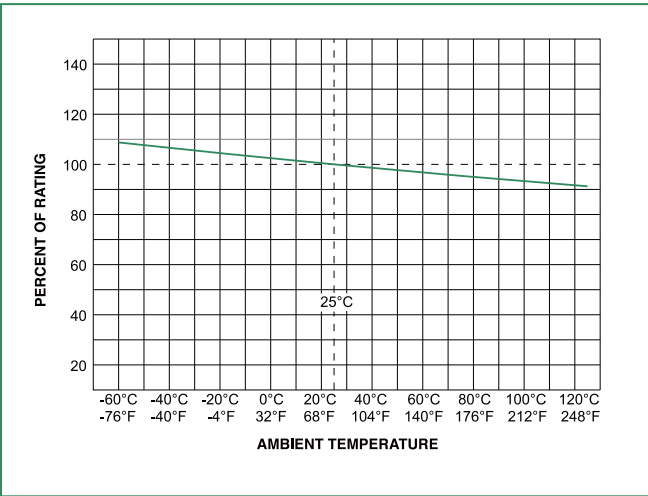
#### Electrical Characteristics for Series

| % of Ampere Rating | Opening Time                             |
|--------------------|------------------------------------------|
| 100%               | 4 Hours, <b>Min.</b>                     |
| 135%               | 1 Hour, <b>Max.</b>                      |
| 200%               | 3 Sec. <b>Min.</b> ; 20 Sec. <b>Max.</b> |

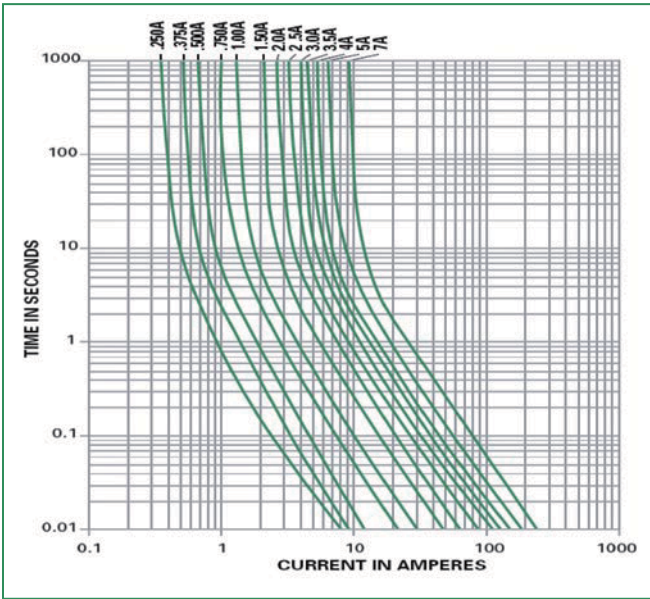
#### Electrical Characteristic Specifications by Item

| Amp Code | Ampere Rating (A) | Voltage Rating (V) | Interrupting Rating | Nominal Cold Resistance (Ohms) | Nominal Melting I <sup>2</sup> t (A <sup>2</sup> sec) | Agency Approvals                                                                      |                                                                                       |                                                                                       |
|----------|-------------------|--------------------|---------------------|--------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|          |                   |                    |                     |                                |                                                       |  |  |  |
| .250     | 0.25              | 350                | 100A @ 350Vac       | 2.410                          | 0.216                                                 | x                                                                                     |                                                                                       | x                                                                                     |
| .375     | 0.375             | 350                |                     | 1.170                          | 0.580                                                 | x                                                                                     |                                                                                       | x                                                                                     |
| .500     | 0.5               | 350                |                     | 0.688                          | 1.160                                                 | x                                                                                     |                                                                                       | x                                                                                     |
| .600     | 0.6               | 350                |                     | 0.477                          | 1.750                                                 | x                                                                                     |                                                                                       | x                                                                                     |
| .750     | 0.75              | 350                |                     | 0.340                          | 2.950                                                 | x                                                                                     |                                                                                       | x                                                                                     |
| .800     | 0.8               | 350                |                     | 0.304                          | 3.450                                                 | x                                                                                     |                                                                                       | x                                                                                     |
| 001.     | 1                 | 350                |                     | 0.210                          | 5.640                                                 | x                                                                                     | x                                                                                     | x                                                                                     |
| 1.25     | 1.25              | 350                |                     | 0.1460                         | 9.80                                                  | x                                                                                     | x                                                                                     | x                                                                                     |
| 01.5     | 1.5               | 350                |                     | 0.1077                         | 15.0                                                  | x                                                                                     | x                                                                                     | x                                                                                     |
| 002      | 2                 | 350                |                     | 0.0689                         | 30.0                                                  | x                                                                                     | x                                                                                     | x                                                                                     |
| 2.25     | 2.25              | 350                |                     | 0.0567                         | 39.0                                                  | x                                                                                     | x                                                                                     | x                                                                                     |
| 02.5     | 2.5               | 350                |                     | 0.0502                         | 50.0                                                  | x                                                                                     | x                                                                                     | x                                                                                     |
| 003      | 3                 | 350                |                     | 0.0383                         | 77.0                                                  | x                                                                                     | x                                                                                     | x                                                                                     |
| 03.5     | 3.5               | 350                |                     | 0.0312                         | 110                                                   | x                                                                                     | x                                                                                     | x                                                                                     |
| 004      | 4                 | 350                |                     | 0.0258                         | 148                                                   | x                                                                                     | x                                                                                     | x                                                                                     |
| 005      | 5                 | 350                |                     | 0.0186                         | 267                                                   | x                                                                                     | x                                                                                     | x                                                                                     |
| 006      | 6                 | 350                |                     | 0.0141                         | 380                                                   | x                                                                                     | x                                                                                     | x                                                                                     |
| 007      | 7                 | 350                |                     | 0.0116                         | 464                                                   | x                                                                                     | x                                                                                     | x                                                                                     |

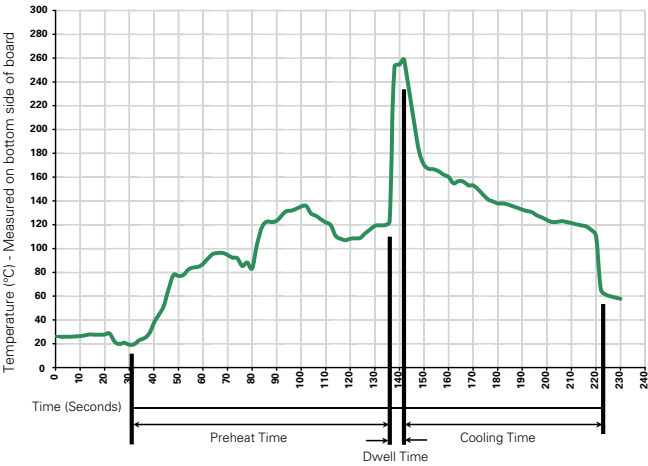
Temperature Derating Curve



Average Time Current Curves



Soldering Parameters - Wave Soldering



Recommended Process Parameters:

| Wave Parameter                                              | Lead-Free Recommendation |
|-------------------------------------------------------------|--------------------------|
| <b>Preheat:</b><br>(Depends on Flux Activation Temperature) |                          |
| 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.

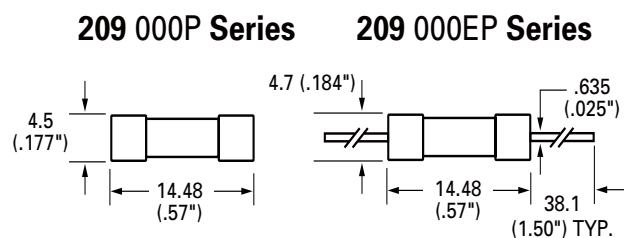
**Note: These devices are not recommended for IR or Convection Reflow process.**

### Product Characteristics

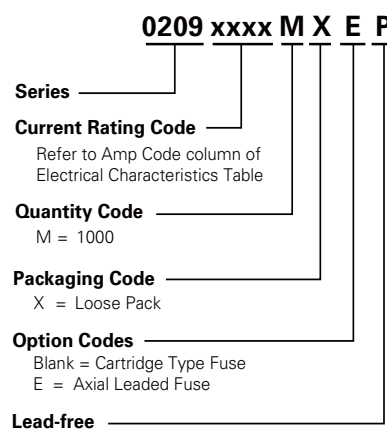
|                          |                                                                                           |
|--------------------------|-------------------------------------------------------------------------------------------|
| <b>Materials</b>         | Body : Glass<br>Cap : Nickel-plated brass<br>Leads: Tin-plated Copper                     |
| <b>Terminal Strength</b> | MIL-STD-202G, Method 211A, Test Condition A                                               |
| <b>Solderability</b>     | Reference IEC 60127 Second Edition 2003-01 Annex A                                        |
| <b>Product Marking</b>   | Cap1 : Brand logo, current and voltage ratings<br>Cap2 : Series and agency approval marks |

|                               |                                                                                                   |
|-------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Operating Temperature:</b> | -55°C to 125°C.                                                                                   |
| <b>Thermal Shock:</b>         | MIL-STD-202G, Method 107G, Test Condition B (5 Cycles -65°C to +125°C).                           |
| <b>Vibration</b>              | MIL-STD-202G, Method 201A                                                                         |
| <b>Humidity</b>               | MIL-STD-202G, Method 103B, Test Condition A: High RH (95%) and elevated temp (40°C) for 240 hours |
| <b>Salt Spray</b>             | MIL-STD-202G, Method 101D, Test Condition B                                                       |

### Dimensions



### Part Numbering System



### Packaging

| Packaging Option  | Packaging Specification | Quantity | Quantity & Packaging Code | Taping Width     |
|-------------------|-------------------------|----------|---------------------------|------------------|
| <b>209 Series</b> |                         |          |                           |                  |
| Bulk              | N/A                     | 1000     | MX                        | N/A              |
| Bulk              | N/A                     | 1000     | MXE                       | N/A              |
| Reel and Tape     | EIA 296-E               | 1500     | DRT1                      | T1=52mm (2.062") |

