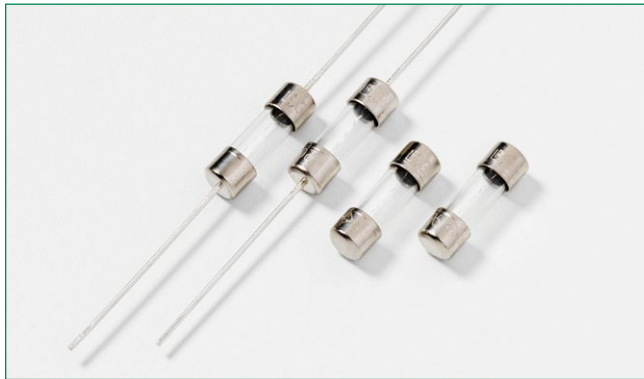


224/225 Series Lead-Free 2AG, Fast-Acting



**Description**

The 2AG Fast-Acting Fuses are available in cartridge form or with axial leads. 2AG Fuses provide the same performance characteristics as their 3AG counterpart, while occupying one-third the space. Sleeved fuses are available.

**Features**

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

**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                             |
|--------|--|--|
|        | E10480   | 0.375A - 3.5A                            |
|        | E10480   | 4A - 10A                                 |
|        | 29862  | 0.375A - 10A                             |
|        | 225 (Cartridge Version)<br>NBK200405-E10480A<br>NBK200405-E10480C<br>NBK110512-E10480A<br>NBK190619-E10480A    | 1A<br>1.5A - 3.5A<br>4A - 5A<br>6A - 10A |
|        | 224 (Axial Leaded Version)<br>NBK200405-E10480B<br>NBK200405-E10480D<br>NBK110512-E10480B<br>NBK190619-E10480B | 1A<br>1.5A - 3.5A<br>4A - 5A<br>6A - 10A |
|        | N/A  | 0.375A - 10A                             |

**Electrical Characteristics for Series**

| % of Ampere Rating | Opening Time     |
|--------------------|------------------|
| 100%               | 4 hours, Minimum |
| 135%               | 1 hour, Maximum  |
| 200%               | 1 sec., Maximum  |

**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 |   |   |   |   |
|----------|-------------------|--------------------|---|--------------------------------|---|------------------|---|---|---|---|
|          |                   |                    |   |                                |   |                  |   |   |   |   |
| .375     | 0.375             | 250                | 35A@250Vac<br>10KA@125Vac<br>10KA@125Vdc  | 0.3950                         | 0.171   | x                |   | x |   | x |
| .500     | 0.5               | 250                |   | 0.2650                         | 0.365   | x                |   | x |   | x |
| .750     | 0.75              | 250                |   | 0.1520                         | 1.050   | x                |   | x |   | x |
| 001.     | 1                 | 250                | 100A@250Vac<br>10KA@125Vac<br>10KA@125Vdc | 0.1027                         | 2.220   | x                |   | x | x | x |
| 01.5     | 1.5               | 250                |   | 0.0712                         | 0.800   | x                |   | x | x | x |
| 002.     | 2                 | 250                |   | 0.0497                         | 2.180   | x                |   | x | x | x |
| 02.5     | 2.5               | 250                |   | 0.0372                         | 3.820   | x                |   | x | x | x |
| 003.     | 3                 | 250                |   | 0.0317                         | 4.620   | x                |   | x | x | x |
| 03.5     | 3.5               | 250                |   | 0.0265                         | 6.700   | x                |   | x | x | x |
| 004.     | 4                 | 125                | 100A@250Vac<br>500A@125Vac                | 0.0240                         | 9.400   |                  | x | x | x | x |
| 005.     | 5                 | 125                |   | 0.0186                         | 17.0  |                  | x | x | x | x |
| 005.     | 5                 | 250                |   | 0.0186                         | 17.0  |                  | x | x |   | x |
| 006.     | 6                 | 125                |   | 0.0154                         | 22.1  |                  | x | x | x | x |
| 007.     | 7                 | 125                |   | 0.0130                         | 40.0  |                  | x | x | x | x |
| 008.     | 8                 | 125                |   | 0.0107                         | 56.0  |                  | x | x | x | x |
| 010.     | 10                | 125                |   | 0.0075                         | 116.0   |                  | x | x | x | x |

\* 10A with 500A @ 125 Vdc internal breaking capacity testing  
 \*\*: Interrupting Rating may differ based on Agency Approval. See Agency Approval certificate for more details..

**Additional Information**



**Resources 224 Series**



**Samples 224 Series**



**Accessories 224 & 225 Series**



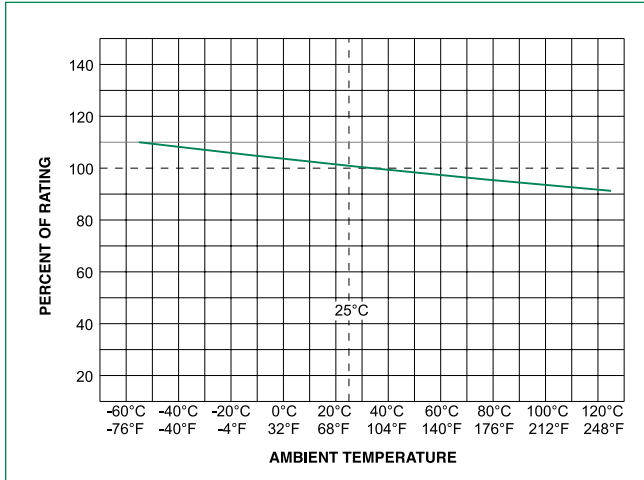
**Resources 225 Series**



**Samples 225 Series**

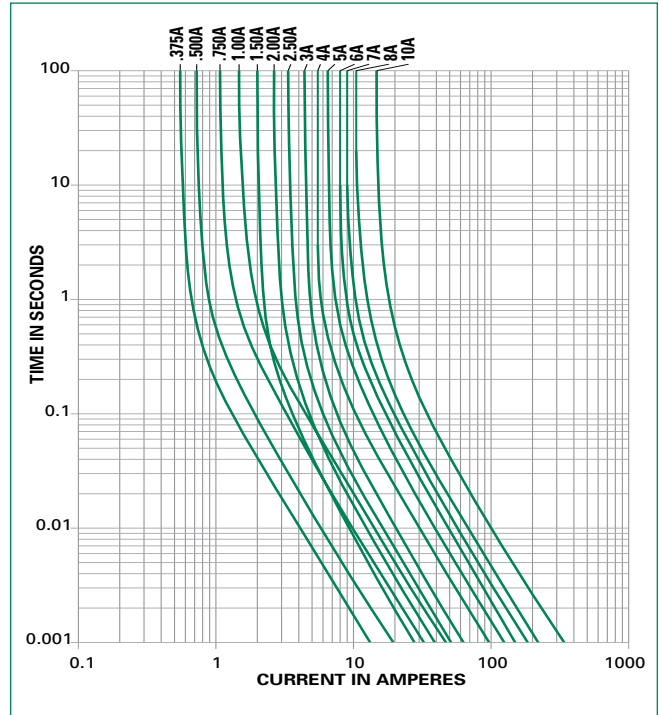
For recommended fuse accessories for this product series, see '[Recommended Accessories](#)' section.

**Temperature Re-rating Curve**

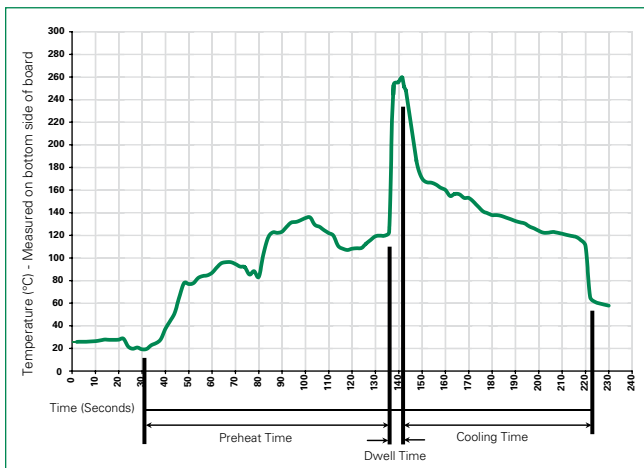


**Note:**  
Rerating depicted in this curve is in addition to the standard derating of 25% for continuous operation.

**Average Time Current Curves**



**Soldering Parameters - Wave Soldering**



**Recommended Process Parameters:**

| Wave Parameter                                       | Lead-Free Recommendation          |
|--|-----------------------------------|
| Preheat:<br>(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.

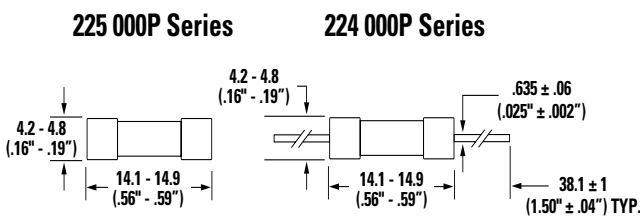
**Note: These devices are not recommended for IR or Convection Reflow process.**

### Product Characteristics

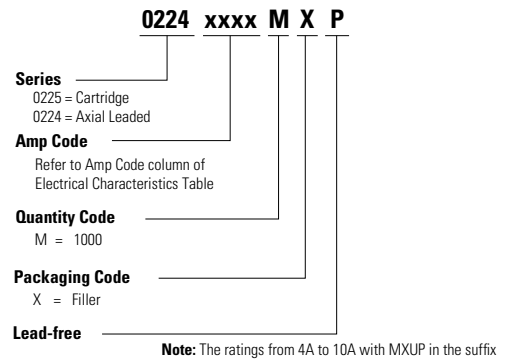
|                          |   |
|--------------------------|---|
| <b>Materials</b>         | Body : Glass<br>Cap : Nickel-plated brass<br>Leads: Tin-plated Copper                     |
| <b>Terminal Strength</b> | MIL-STD-202, Method 211, Test Condition A   |
| <b>Solderability</b>     | MIL-STD-202 Method 208  |
| <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-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 RH (95%) and elevated temp (40°C) for 240 hours |
| <b>Salt Spray</b>             | MIL-STD-202, Method 101, Test Condition B   |

### Dimensions



### Part Numbering System



### Packaging

| Packaging Option | Packaging Specification | Quantity | Quantity & Packaging Code | Taping Width     |
|------------------|-------------------------|----------|---------------------------|------------------|
| 224 Series       |                         |          |                           |                  |
| Bulk             | N/A                     | 1000     | MX                        | N/A              |
| Bulk             | N/A                     | 100      | HX                        | N/A              |
| Reel and Tape    | EIA 296-E               | 1500     | DRT1                      | T1=53mm (2.087") |
| 225 Series       |                         |          |                           |                  |
| Bulk             | N/A                     | 1000     | MX                        | N/A              |
| Bulk             | N/A                     | 100      | HX                        | N/A              |

### Recommended Accessories

| Accessory Type | Series              | Description                                | Max Application Voltage | Max Application Amperage |
|----------------|---------------------|--|-------------------------|--------------------------|
| Holder         | <a href="#">245</a> | Panel Mount Shock-Safe Fuseholder          | 300                     | 10                       |
|                | <a href="#">150</a> | In-Line Fuseholder                         | 350                     | 10                       |
|                | <a href="#">286</a> | Panel Mount Flip-Top Shock-Safe Fuseholder | 250                     | 10                       |
| Block          | <a href="#">254</a> | OMNI-BLOK <sup>®</sup> Fuse Block          | 400                     | 10                       |
| Clip           | <a href="#">111</a> | PC Board Mount Fuse Clip                   | 250                     | 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.

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