

**RoHS** **Pb** **216SP Series, 5x20 mm, Fast Acting Fuse**


### Description

5x20mm fast acting ceramic body cartridge fuse Designed to IEC specification

### Features

- Designed to International (IEC) Standards for use globally
- Meets the IEC 60127-2, Sheet 1 specification for Fast-Acting Fuses.
- RoHS compliant and Pb-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              |
|--------|--|---------------------------|
|        | Certificate No. NBK080205-E10480B<br>NBK250702-E10480F | 1A – 5A<br>6.3A – 10A     |
|        | Certificate No. CQC10012049970                         | 1A – 10A                  |
|        | Certificate No. SU05001-11001A<br>SU05001-11002A       | 1A – 2.5A<br>3.15A – 6.3A |
|        | Recognised File No. E10480<br>Guide No. JDYX2          | 1A – 10A                  |
|        | File No. 029862<br>Acc. Class No. LR1422-30            | 1A – 10A                  |
|        | Licence. No. 40013834                                  | 1 – 6.3A                  |
|        |  | 1A – 10A                  |

### Electrical Characteristics for Series

| % of Ampere Rating | Ampere Rating | Opening Time                   |
|--------------------|---------------|--------------------------------|
| 210%               | 1A – 4A       | 30 minutes, Maximum            |
|                    | 5A – 6.3A     | 30 minutes, Maximum            |
|                    | 8A – 10A      | 30 minutes, Maximum            |
| 275%               | 1A – 4A       | 0.01 sec., Min.; 2 sec. Max.   |
|                    | 5A – 6.3A     | 0.01 sec., Min.; 3 sec. Max.   |
|                    | 8A – 10A      | 0.04 sec., Min.; 20 sec. Max.  |
| 400%               | 1A – 4A       | .003 sec., Min.; 0.3 sec. Max. |
|                    | 5A – 6.3A     | .003 sec., Min.; 0.3 sec. Max. |
|                    | 8A – 10A      | .01 sec., Min.; 1.0 sec. Max.  |
| 1000%              | 1A – 4A       | .02 seconds, Maximum           |
|                    | 5A – 6.3A     | .02 seconds, Maximum           |
|                    | 8A – 10A      | .03 sec.onds, Maximum          |

### Electrical Characteristic Specifications by Item

| Amp Code | Amp Rating | Voltage Rating | Interrupting Rating | Nominal Resistance Cold Ohms (Ohms) | Nominal Melting I <sup>2</sup> t (A <sup>2</sup> sec) | Maximum Voltage Drop at Rated Current (mV) | Maximum Power Dissipation at Rated Current (W) | Agency Approvals |   |   |   |   |   |   |   |   |
|----------|------------|----------------|---------------------|-------------------------------------|---|--|--|------------------|---|---|---|---|---|---|---|---|
|          |            |                |                     |                                     |   |  |  |                  |   |   |   |   |   |   |   |   |
| 001      | 1          | 250            | 1500 A @ 250 VAC    | 0.2370                              | 0.18000   | 1000                                       | 2.5  | x                | x | x | x | x | x | x | x |   |
| 016      | 1.6        | 250            |                     | 0.1112                              | 1.00500   | 600  | 4  | x                | x | x | x | x | x | x | x | x |
| 002      | 2          | 250            |                     | 0.0764                              | 1.87000   | 500  | 4  | x                | x | x | x | x | x | x | x | x |
| 02.5     | 2.5        | 250            |                     | 0.0584                              | 2.69500   | 400  | 4  | x                | x | x | x | x | x | x | x | x |
| 3.15     | 3.15       | 250            |                     | 0.0368                              | 6.70000   | 350  | 4  | x                | x | x | x | x | x | x | x | x |
| 004      | 4          | 250            |                     | 0.0247                              | 14.99500  | 300  | 4  | x                | x | x | x | x | x | x | x | x |
| 005      | 5          | 250            |                     | 0.0183                              | 27.46000  | 250  | 4  | x                | x | x | x | x | x | x | x | x |
| 06.3     | 6.3        | 250            |                     | 0.0137                              | 56.43000  | 200  | 4  | x                | x | x | x | x | x | x | x | x |
| 008      | 8          | 250            |                     | 0.0123                              | 64.31500  | 200  | 4  | x                | x |   | x | x |   |   | x |   |
| 010      | 10         | 250            |                     | 0.0079                              | 154.34000   | 200  | 4  | x                | x |   | x | x |   |   |   | x |

I<sup>2</sup>t test at 10x rated current

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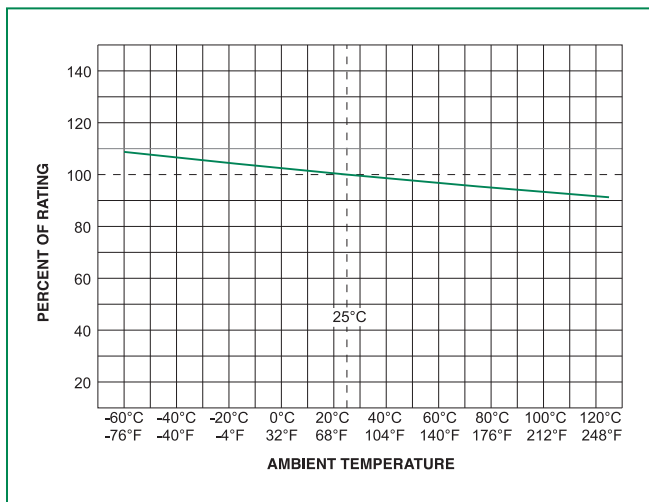
Specifications are subject to change without notice.  
Please refer to [www.littelfuse.com/series/216SP.html](http://www.littelfuse.com/series/216SP.html) for current information.

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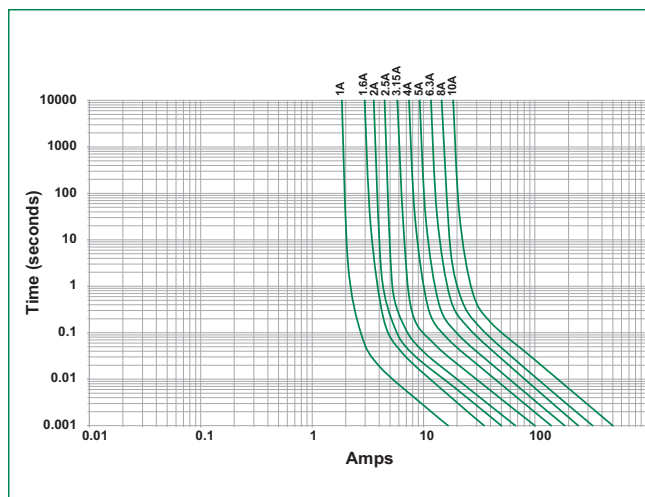
**216SP Series**

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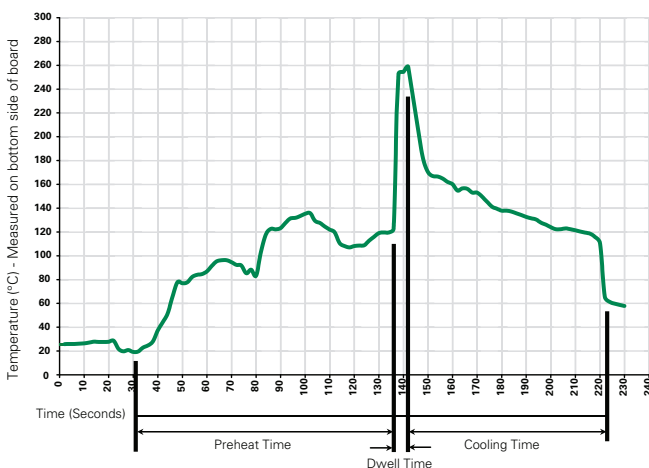
## Temperature Derating Curve



## Average Time Current Curves



## Soldering Parameters - Wave Soldering



### Recommended Process Parameters:

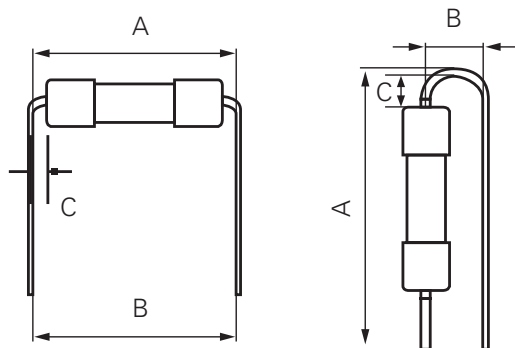
| Wave Parameter  | Lead-Free Recommendation          |
|---|-----------------------------------|
| <b>Preheat:</b><br>(Depends on Flux Activation Temperature) | (Typical Industry Recommendation) |
| Temperature Minimum:  | 100° C                            |
| Temperature Maximum:  | 150° C                            |
| Preheat Time:   | 60-180 seconds                    |
| <b>Solder Pot Temperature:</b>                              | 280° C Maximum                    |
| <b>Solder Dwell Time:</b>                                   | 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.**

Different values of A and B available, please contact the Littelfuse sales representative in your region:



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:

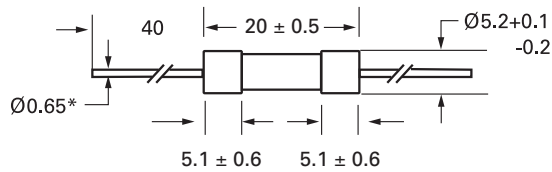
According to the standard of IPC-A-610, the distance between PCB and fuse cap is recommended to be a minimum of 1.5 mm.

### Product Characteristics

|                          |  |
|--------------------------|--|
| <b>Materials</b>         | <b>Body:</b> Ceramic<br><b>Cap:</b> Nickel-plated Brass<br><b>Leads:</b> 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>   | <b>Cap 1:</b> Brand logo, current and voltage ratings<br><b>Cap 2:</b> Agency approval marks |

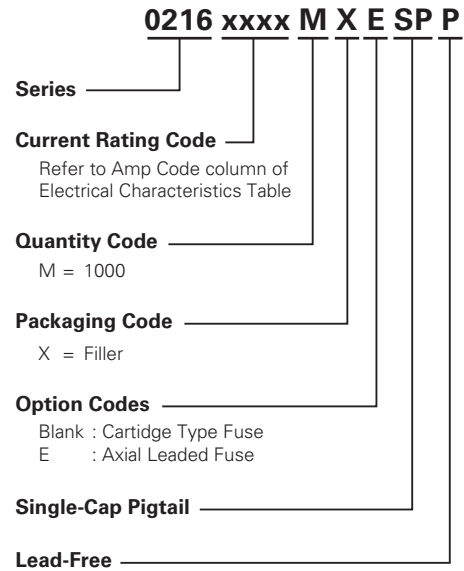
|                              |  |
|------------------------------|--|
| <b>Operating Temperature</b> | -55°C to +125°C  |
| <b>Thermal Shock</b>         | MIL-STD-202G, Method 107G, Test Condition B (5 cycles, -65°C to +125°C)                            |
| <b>Vibration</b>             | MIL-STD-202G, 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



\* 8A and 10A have 0.8mm diameter  
All unit in mm.

### Part Numbering System



### Packaging

| Packaging Option    | Packaging Specification | Quantity | Packaging Code | Reel Size |
|---------------------|-------------------------|----------|----------------|-----------|
| <b>216SP Series</b> |                         |          |                |           |
| Bulk                | N/A                     | 1000     | MXE            | N/A       |

# Mouser Electronics

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