

216SP Series, 5×20 mm, Fast-Acting Fuse



Description

The 216SP Series is a 5×20mm fast-acting ceramic body cartridge fuse designed to IEC specification.

Features

- Designed to International Electrotechnical Commission (IEC) Standards for use globally
- Meets the IEC 60127-2, Sheet 1 specification for Fast-Acting fuses
- RoHS compliant and lead-free
- High breaking capacity

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 |
|--------|--|---------------------------|
| | NBK080205-E10480B NBK250702-E10480F | 1A – 5A 6.3A – 10A |
| | CQC10012049970 | 1A – 10A |
| | SU05001-11001A SU05001-11002A | 1A – 2.5A 3.15A – 6.3A |
| | E10480 | 1A – 10A |
| | 29862 | 1A – 10A |
| | 40013834 | 1 – 6.3A |
| | J50248090 | 8A, 10A |
| | N/A | 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 |

Additional Information



Datashheet



Resources



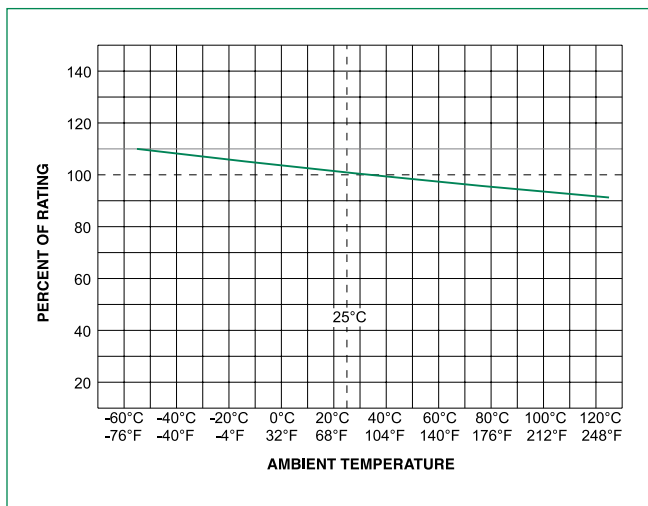
Samples

Electrical Characteristic Specifications by Item

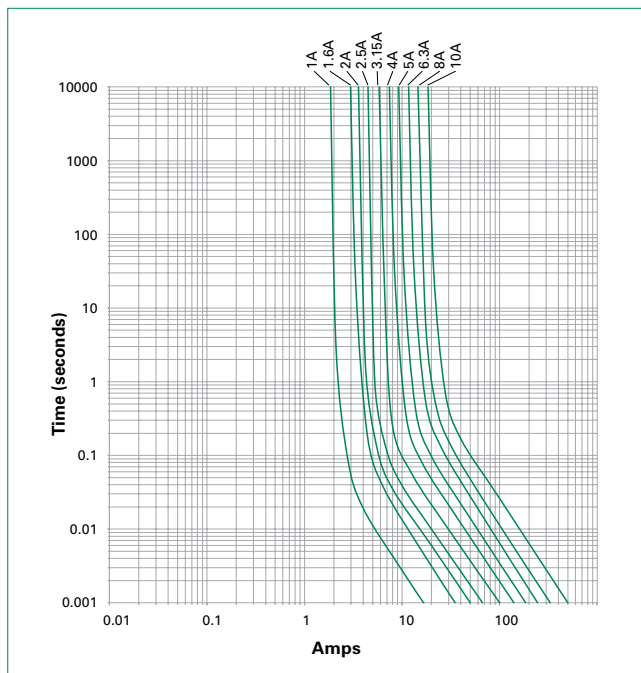
| Amp Code | Amp Rating | Voltage Rating | Interrupting Rating | Nominal Resistance Cold Ohms (Ohms) | Nominal Melting I ² t (A ² sec) | Maximum Voltage Drop at Rated Current (mV) | Maximum Power Dissipation at 1.5I _n (W) | Agency Approvals | | | | | | | | | |
|----------|------------|----------------|---------------------|-------------------------------------|---|--|--|------------------|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | |
| 001. | 1 | 250 | 1500 A @ 250 VAC | 0.2370 | 0.18000 | 1000 | 2.5 | x | x | x | x | x | x | x | x | x | |
| 01.6 | 1.6 | 250 | | 0.1112 | 1.00500 | 600 | 4 | x | 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 | x |
| 02.5 | 2.5 | 250 | | 0.0584 | 3.67200 | 400 | 4 | x | 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 | x |
| 004. | 4 | 250 | | 0.0247 | 14.99500 | 300 | 4 | x | 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 | x |
| 06.3 | 6.3 | 250 | | 0.0137 | 56.43000 | 200 | 4 | x | x | x | x | x | x | x | x | x | x |
| 008. | 8 | 250 | | 0.0123 | 64.31500 | 200 | 4 | x | x | x | x | x | x | x | x | x | x |
| 010. | 10 | 250 | | 0.0079 | 154.34000 | 200 | 4 | x | x | x | x | x | x | x | x | x | x |

I²t test at 10x rated current

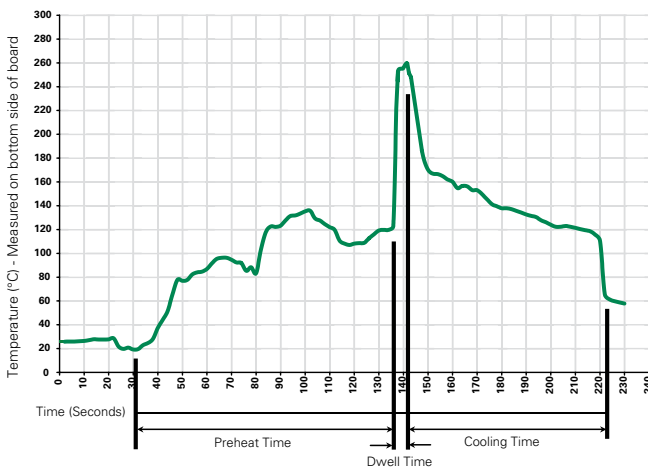
Temperature Re-rating Curve



Average Time Current Curves



Soldering Parameters - Wave Soldering



Recommended Process Parameters:

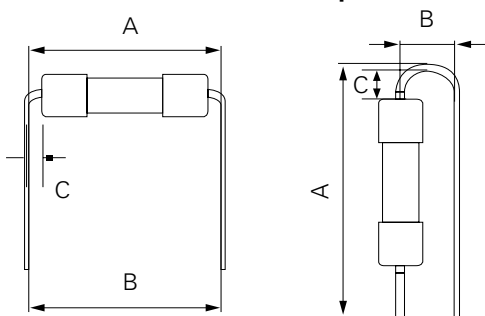
| Wave Parameter | Lead-Free Recommendation |
|---|--------------------------|
| Preheat: (Depends on Flux Activation Temperature) (Typical Industry Recommendation) | |
| Temperature Minimum: | 100°C |
| Temperature Maximum: | 150°C |
| Preheat Time: | 60-180 seconds |
| Solder Pot Temperature: | 260°C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

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.

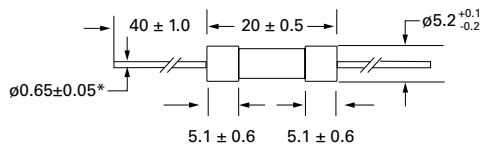
Product Characteristics

| | |
|--------------------------|--|
| Materials | Body: Ceramic 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 ratings Cap 2: Agency approval marks |

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

Dimensions

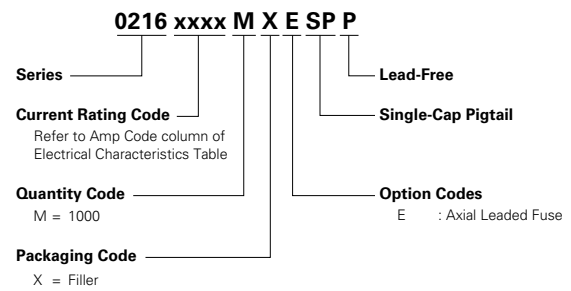
All dimensions in mm



Notes:

* Ratings 8A and 10A have 0.8 ± 0.05 diameter lead.

Part Numbering System



Packaging

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