

## 1206 Fast Acting SMD Fuses

### 12 100 Series



### Description

12 100 Series are the fuses set the industry standard for performance, reliability and quality. The solder-free design provides excellent on-off and temperature cycling characteristics during use and also makes our SMD fuses more heat and shock tolerant than typical subminiature fuses.



#### Electrical Characteristics

| Rated Current | 1.0In       | 2.5In      | 3.5In      |
|---------------|-------------|------------|------------|
| 250mA~5A      | 4 hour min. | 5 sec max. | -          |
| 6A~40A        |             | -          | 5 sec max. |

### Features

- AEC-Q200 Automotive Grade Certified
- Rapid interruption of excessive current
- Compatible with reflow and wave solder
- Ceramic and glass construction
- One time positive disconnect
- Lead Free and Halogen free material

### Specifications

| Specification |                          |                   |  |  |                           |   |               |      |    |
|---------------|--------------------------|-------------------|--|--|---------------------------|---|---------------|------|----|
| Part No.      | Rated Voltage DC         | Rated Current (A) | Breaking Capacity(A) <sup>1</sup>                  | Typical Cold Resistance (mOhms) <sup>2</sup> | Typical Voltage Drop (mV) | Typical Pre-Arcing I <sup>2</sup> t (A <sup>2</sup> Sec) <sup>3</sup> | Alpha Marking |      |    |
| 12 100.0.25   | 72V<br>63V<br>32V<br>24V | 250mA             | 50A@72Vdc<br>50A@63Vdc<br>150A@32Vdc<br>300A@24Vdc | 3608   | 1407                      | 0.0004  | .25           |      |    |
| 12 100.0.375  |                          | 375mA             |  | 1882   | 718                       | 0.0008  | E             |      |    |
| 12 100.0.5    |                          | 500mA             |  | 1028   | 650                       | 0.0022  | 0.5           |      |    |
| 12 100.0.75   |                          | 750mA             |  | 601  | 616                       | 0.0057  | .75           |      |    |
| 12 100.1      |                          | 1A                |  | 490  | 510                       | 0.10  | H             |      |    |
| 12 100.1.5    |                          | 1.5A              |  | 240  | 367                       | 0.15  | K             |      |    |
| 12 100.2      |                          | 2A                |  | 132  | 316                       | 0.41  | N             |      |    |
| 12 100.2.5    |                          | 2.5A              |  | 77   | 240                       | 0.65  | O             |      |    |
| 12 100.3      |                          | 3A                |  | 48   | 187                       | 1.39  | P             |      |    |
| 12 100.3.5    |                          | 3.5A              |  | 40   | 180                       | 1.68  | R             |      |    |
| 12 100.4      |                          | 4A                |  | 35   | 173                       | 1.73  | S             |      |    |
| 12 100.4.5    |                          | 4.5A              |  | 30   | 164                       | 2.62  | X             |      |    |
| 12 100.5      |                          | 32V<br>24V        |  | 5A   | 150A@32Vdc<br>300A@24Vdc  | 25  | 141           | 2.89 | T  |
| 12 100.6      |                          |                   |  | 6A   |                           | 16.5  | 142           | 11   | F  |
| 12 100.7      | 7A                       |                   | 12   | 140  |                           | 12.5  | 7             |      |    |
| 12 100.8      | 24V<br>32V               | 8A                | 150A@32Vdc<br>300A@24Vdc                           | 8.5  | 110                       | 14  | M             |      |    |
| 12 100.10     |                          | 10A               |  | 6.8  | 100                       | 20  | U             |      |    |
| 12 100.12     |                          | 12A               |  | 5  | 85                        | 11.5  | 12            |      |    |
| 12 100.15     |                          | 15A               |  | 3.9  | 78                        | 16.5  | 15            |      |    |
| 12 100.20     |                          | 20A               |  | 1.8  | 60                        | 47.17   | 20            |      |    |
| 12 100.25     |                          | 25A               |  | 1.5  | 57                        | 32  | 25            |      |    |
| 12 100.30     |                          | 30A               |  | 1.25   | 68                        | 43  | 30            |      |    |
| 12 100.40     |                          | 32V<br>24V        |  | 40A  | 200A@32Vdc<br>200A@24Vdc  | 0.85  | 95            | 240  | XL |

1. DC Interrupting Rating (Measured at rated voltage, time constant of less than 50 microseconds, battery source)

2. DC Cold Resistance are measured at <10% of rated current in ambient temperature of 25°C

3. Typical Pre-arcing I<sup>2</sup>t are measured at 10In Current

**Specifications are subject to change without notice. Application testing is strongly recommended.**

## 1206 Fast Acting SMD Fuses

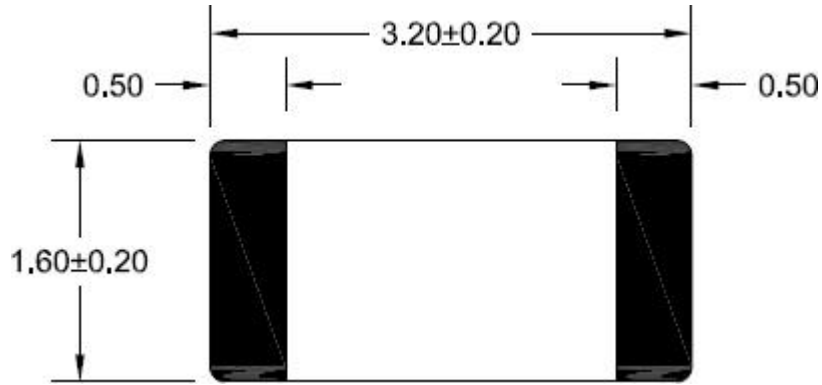
12 100 Series



### Dimension

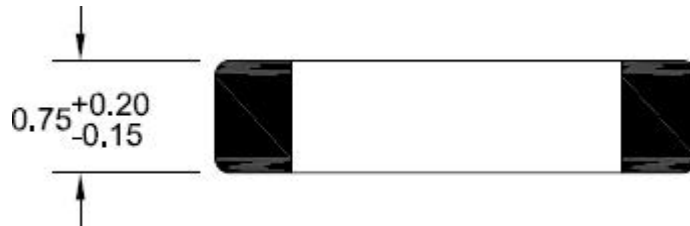
Drawing not to scale (Unit: mm)

Top view

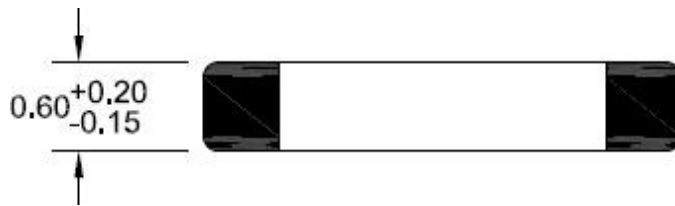


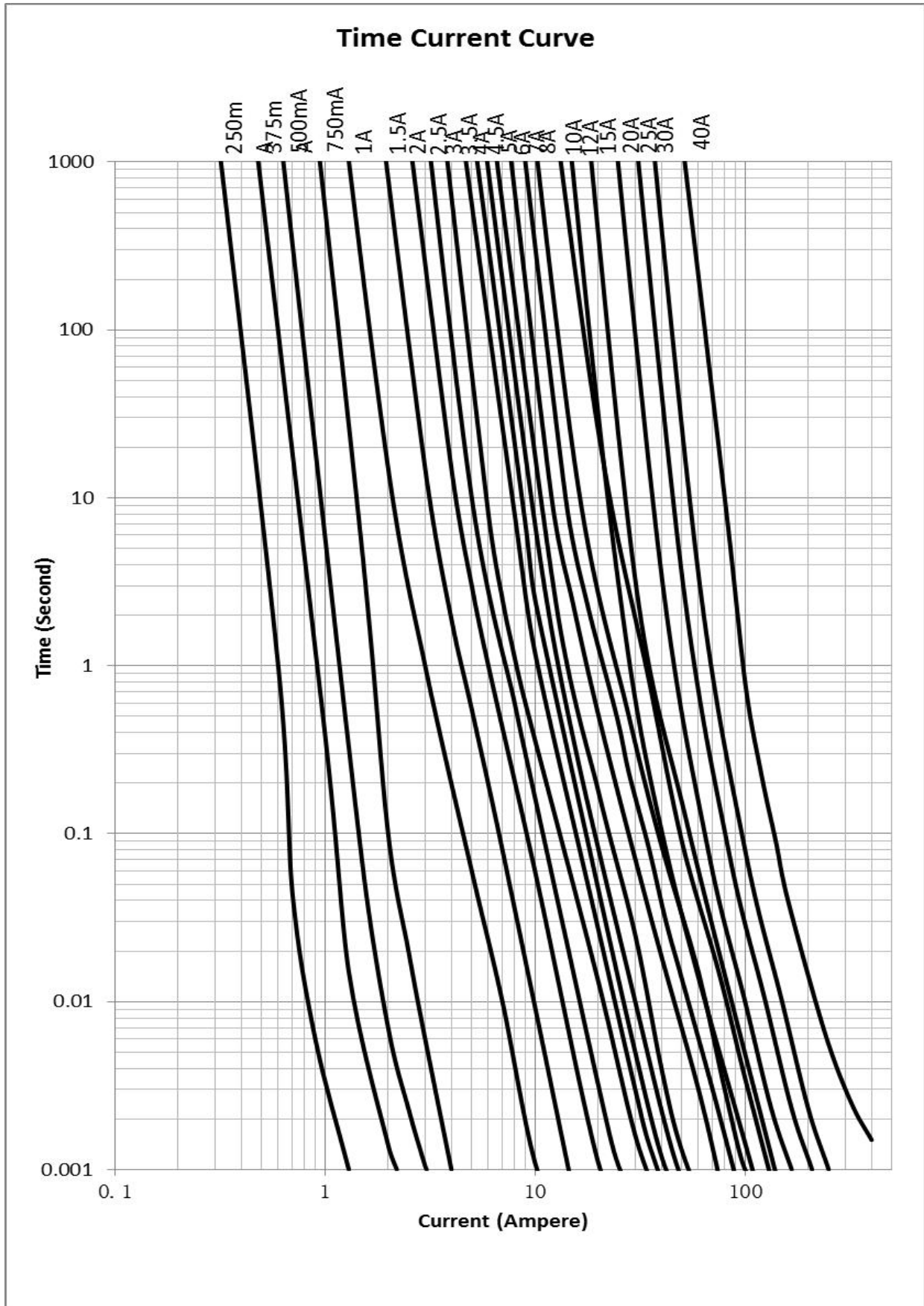
Side view:

250mA~750mA/20A~40A

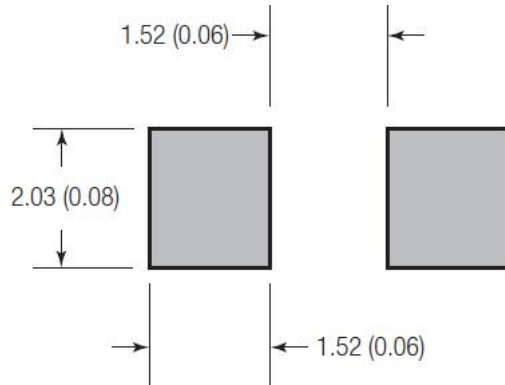


1A~15A





### Recommended landpattern

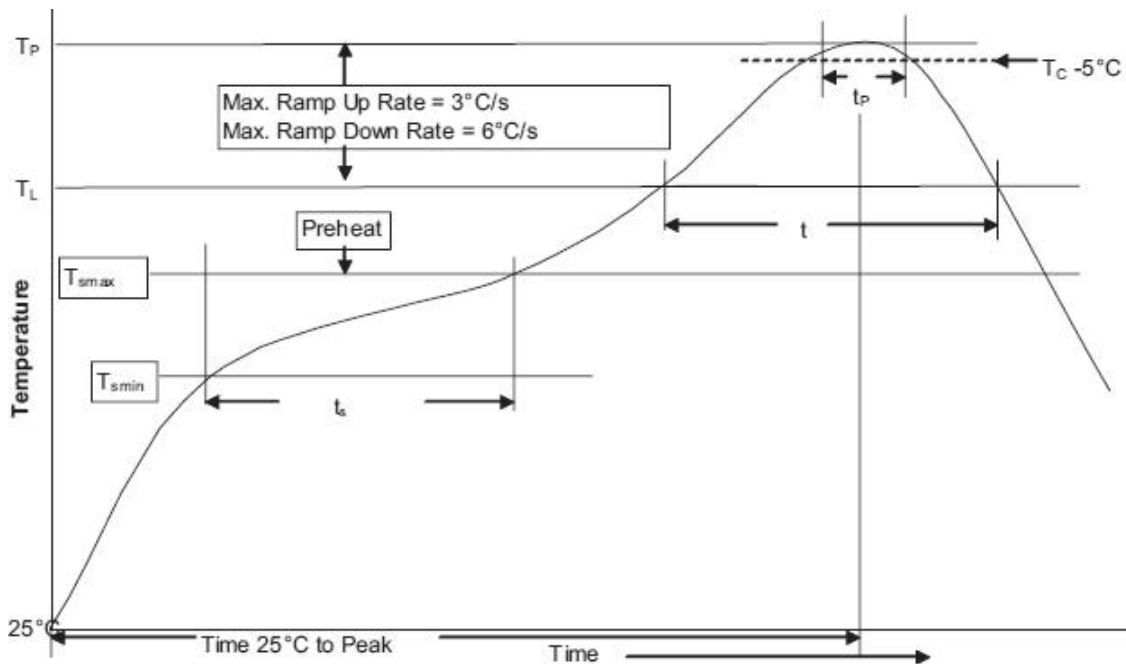


Unit: mm(inch)

### Soldering method

- Wave solder
  - Reservoir temperature: 260°C
  - Time in reservoir: 10 seconds maximum
- Infrared reflow
  - Temperature: 260°C
  - Time: 30 seconds maximum

### Solder reflow profile



| Profile Feature                          |   | Lead(Pb) free solder |
|--|---|----------------------|
| Preheat and soak                         | • Temperature min. ( $T_{smin}$ )             | 150°C                |
|  | • Temperature max. ( $T_{smax}$ )             | 200°C                |
|  | • Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ ) | 60 - 120 Seconds     |
| Average ramp up rate $T_{smax}$ to $T_p$ |   | 3°C / Second Max.    |

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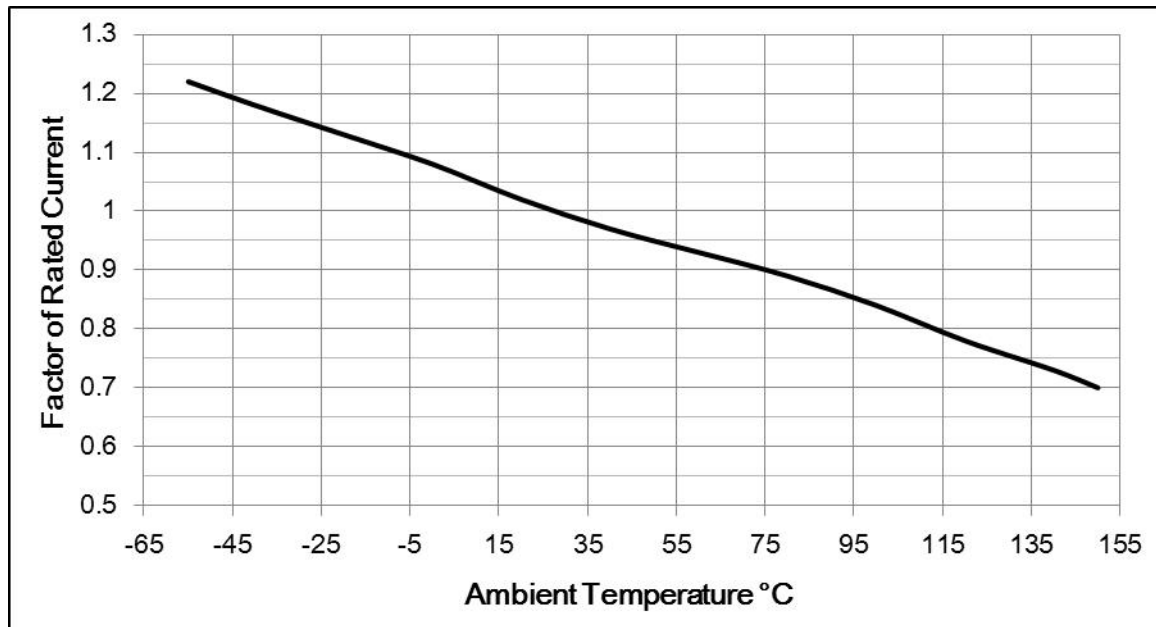


|   |                   |
|---|-------------------|
| Liquidous temperature ( $T_L$ )   | 217°C             |
| Time at liquidous ( $t_L$ )   | 60 - 150 Seconds  |
| Peak package body temperature ( $T_P$ )   | 260°C             |
| Time ( $t_P$ ) within 5°C of the specified classification temperature ( $T_C$ ) | 30 Seconds        |
| Average ramp-down rate ( $T_P$ to $T_{smax}$ )                                  | 6°C / Second Max. |
| Time (25°C to Peak Temperature)   | 8 Minutes Max.    |

### Temperature Derating Curve

Normal ambient temperature: 23+/-3°C

Operating temperature: -55 ~ 150°C, with proper correction factor applied



### Package

3000 fuses on 8mm tape-and-reel on a 7 inch (178mm) reel per EIA Standard 481.

--- End of Document ---

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