

# ZCASE® M10 Bolt Down Single Fuses

## Rated 32V

RoHS



### Specifications

|                                               |                                              |
|-----------------------------------------------|----------------------------------------------|
| <b>Voltage Rating:</b>                        | 32 V dc                                      |
| <b>Interrupting Rating:</b>                   | 2000 A @ 32 V dc                             |
| <b>Recommended Environmental Temperature:</b> | -40 °C to +125 °C                            |
| <b>Terminals Material:</b>                    | Tin-plated copper alloy                      |
| <b>Housing Material:</b>                      | PPA-GF33HS (UL 94 Flammability rating of HB) |
| <b>Net Weight per Fuse:</b>                   | 22 g ± 10 %                                  |
| <b>Mounting Torque M10</b>                    | 18 Nm ± 2 Nm                                 |
| <b>Insulating Tube:</b>                       | Ceramic                                      |

### Description

ZCASE® M10 32V automotive fuses take up minimal space while providing time-delayed/Slo-Blo® circuit protection similar to MEGA® 32V fuses. Typically used to protect starters, ZCASE M10 fuses with ampere ratings of 80 A to 250 A provide full wire protection. Use fuses rated 300–600 A only for short circuit protection.

### Features & Benefits

- One-bolt connection
- Can mount on a battery post, starter, or busbar
- High-contrast ampere rating stamp aids identification
- 425 A fuse, 600 A fuse, and shunt offered in addition to fuses listed in ISO standard

### Applications

- Commercial vehicles
- Buses
- Construction equipment
- Material handling equipment
- Agricultural machinery

### Ordering Information

| Part Number   | Current Rating (A) | Package Size |
|---------------|--------------------|--------------|
| 3298XXX.ZXM10 | 80–600 & SHUNT     | 480          |

# ZCASE® M10 Bolt Down Single Fuses

## Rated 32V

### Ratings

| Part Number              | Current Rating (A) | Test Cable Size (mm <sup>2</sup> ) | Typ. Voltage Drop (mV) | Typ. Cold Resistance (mΩ) | I <sup>2</sup> t (A <sup>2</sup> s) |
|--------------------------|--------------------|------------------------------------|------------------------|---------------------------|-------------------------------------|
| 3298080._                | 80                 | 10                                 | 95                     | 0.78                      | 32 000                              |
| 3298100._                | 100                | 16                                 | 80                     | 0.57                      | 23 200                              |
| 3298125._                | 125                | 16                                 | 90                     | 0.46                      | 51 000                              |
| 3298150._                | 150                | 25                                 | 78                     | 0.34                      | 81 600                              |
| 3298175._                | 175                | 25                                 | 97                     | 0.29                      | 108 600                             |
| 3298200._                | 200                | 35                                 | 94                     | 0.26                      | 126 400                             |
| 3298225._                | 225                | 35                                 | 80                     | 0.18                      | 126 900                             |
| 3298250._                | 250                | 50                                 | 82                     | 0.17                      | 160 900                             |
| 3298300._ <sup>2</sup>   | 300                | 35                                 | 28 <sup>3</sup>        | 0.14                      | 305 300                             |
| 3298350._ <sup>2</sup>   | 350                | 35                                 | 29 <sup>3</sup>        | 0.10                      | 583 900                             |
| 3298400._ <sup>2</sup>   | 400                | 50                                 | 27 <sup>3</sup>        | 0.08                      | 913 300                             |
| 3298425._ <sup>1 2</sup> | 425                | 50                                 | 27 <sup>3</sup>        | 0.08                      | 602 770                             |
| 3298500._ <sup>2</sup>   | 500                | 50                                 | 32 <sup>3</sup>        | 0.08                      | 1 250 000                           |
| 3298600._ <sup>1 2</sup> | 600                | 50                                 | 32 <sup>3</sup>        | 0.05                      | 3 140 000                           |
| 3298900._ <sup>1</sup>   | SHUNT              | 50                                 | 34                     | ---                       | ---                                 |

\* Note 1: Not mentioned in ISO standards

\* Note 2: Short circuit protector only

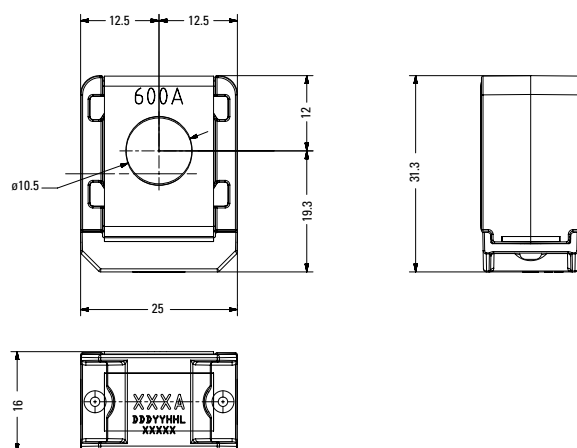
\* Note 3: Voltage drop measurements for short circuit protectors taken at 50 % of rated current.

The typical I<sup>2</sup>t is an average value calculated from the breaking capacity tests by using the melting time before arcing occurs.

### Dimensions

Dimensions in mm for reference only.

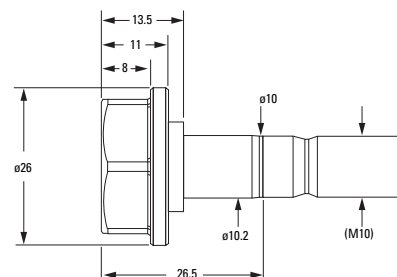
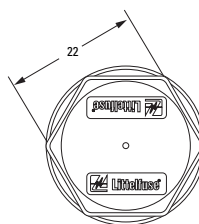
See outline drawing for dimensions and tolerances.



### Assembly Components Sold Separately

#### Part No. Description

902-192 Insulated M10 Bolt Required for Installation and Operation

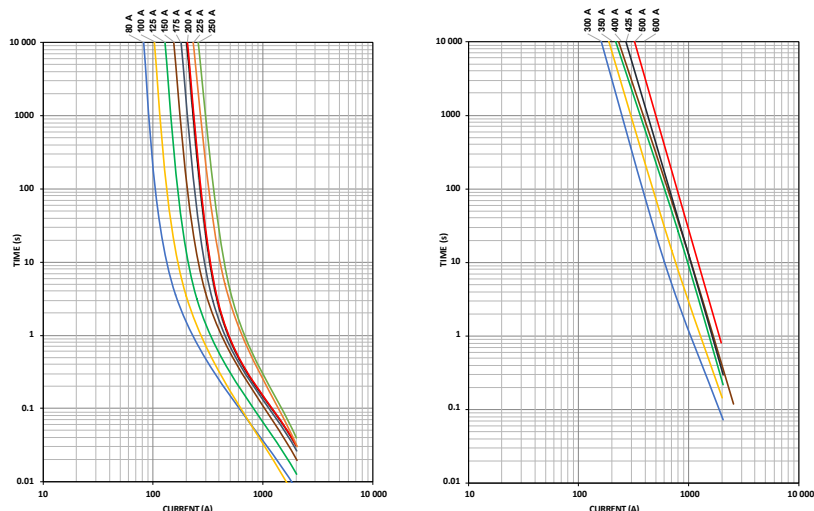


Please contact your Littelfuse representative for application support and information on mating hardware.

# ZCASE® M10 Bolt Down Single Fuses

## Rated 32V

### Time-Current Characteristic Curves



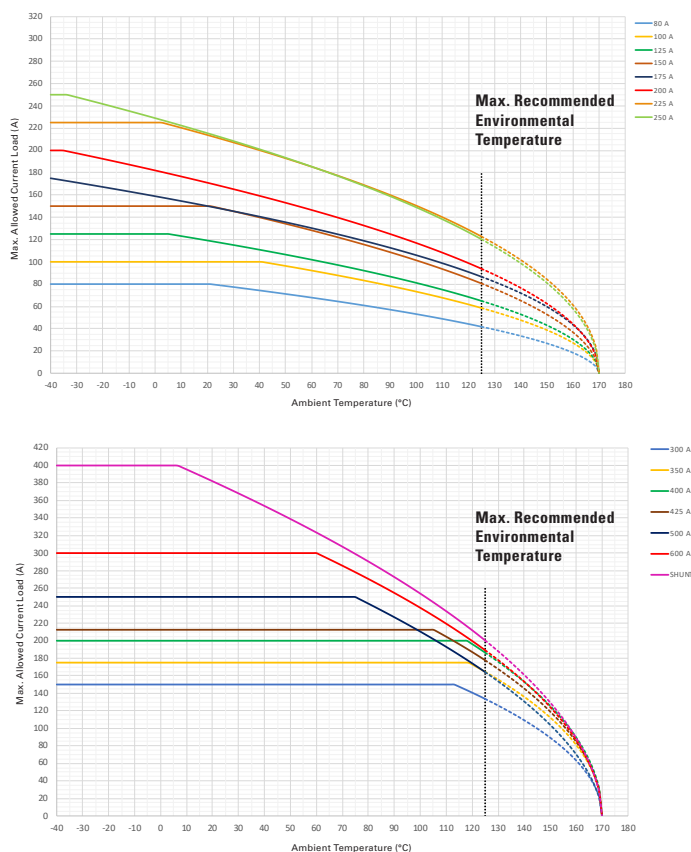
### Time-Current Characteristics

| % of Rating | Opening Time Min / Max (s) |            |            |
|-------------|----------------------------|------------|------------|
|             | 40-250 A                   | 300-500 A  | 600 A      |
| 50          | - / -                      | 14 400 / ∞ | 14 400 / ∞ |
| 100         | 14 400 / ∞                 | - / -      | - / -      |
| 135         | 120 / 1800                 | - / -      | - / -      |
| 200         | 1 / 15                     | 1 / 40     | 1 / 40     |
| 350         | 0.3 / 5                    | 0.3 / 5    | 0.3 / 5    |
| 500         | - / -                      | - / -      | 0.1 / 1    |
| 600         | 0.1 / 1                    | 0.1 / 1    | - / -      |

### Typical Derating of Fuse Melting Element

Temperature security margin is 20 %.

Please contact Littelfuse for details regarding derating test setup.



### Temperature Table

|       | Max. allowed current load (A) at ambient temperature (typical derating) |      |       |       |       |        |        |
|-------|-------------------------------------------------------------------------|------|-------|-------|-------|--------|--------|
|       | -40 °C                                                                  | 0 °C | 20 °C | 65 °C | 85 °C | 110 °C | 125 °C |
| 80 A  | 80                                                                      | 80   | 80    | 66    | 59    | 49     | 42     |
| 100 A | 100                                                                     | 100  | 100   | 90    | 81    | 68     | 59     |
| 125 A | 125                                                                     | 125  | 119   | 100   | 89    | 75     | 65     |
| 150 A | 150                                                                     | 150  | 150   | 125   | 112   | 94     | 81     |
| 175 A | 175                                                                     | 159  | 150   | 128   | 116   | 99     | 87     |
| 200 A | 200                                                                     | 182  | 171   | 143   | 129   | 108    | 94     |
| 225 A | 225                                                                     | 225  | 214   | 181   | 165   | 140    | 123    |
| 250 A | 250                                                                     | 229  | 215   | 181   | 164   | 138    | 120    |
| 300 A | 150                                                                     | 150  | 150   | 150   | 150   | 150    | 134    |
| 350 A | 175                                                                     | 175  | 175   | 175   | 175   | 175    | 164    |
| 400 A | 200                                                                     | 200  | 200   | 200   | 200   | 200    | 186    |
| 425 A | 213                                                                     | 213  | 213   | 213   | 213   | 205    | 178    |
| 500 A | 250                                                                     | 250  | 250   | 250   | 235   | 193    | 164    |
| 600 A | 300                                                                     | 300  | 300   | 293   | 263   | 219    | 189    |
| SHUNT | 400                                                                     | 400  | 382   | 316   | 282   | 234    | 200    |

Derating curves may change depending on the final condition of the application (terminals' characteristics, wire size, etc.). Please ask Littelfuse for more information.