



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



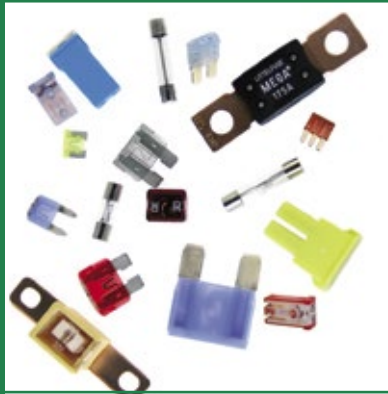
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**AFTERMARKET  
PRODUCTS  
CATALOG  
2016**



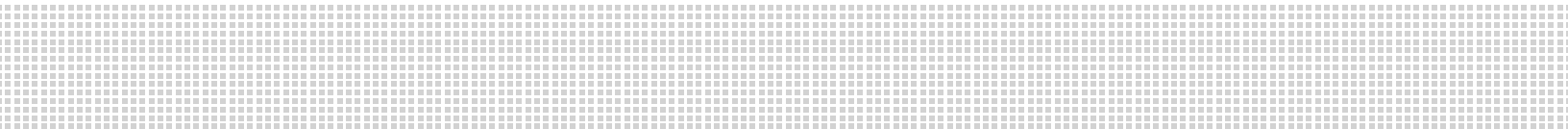
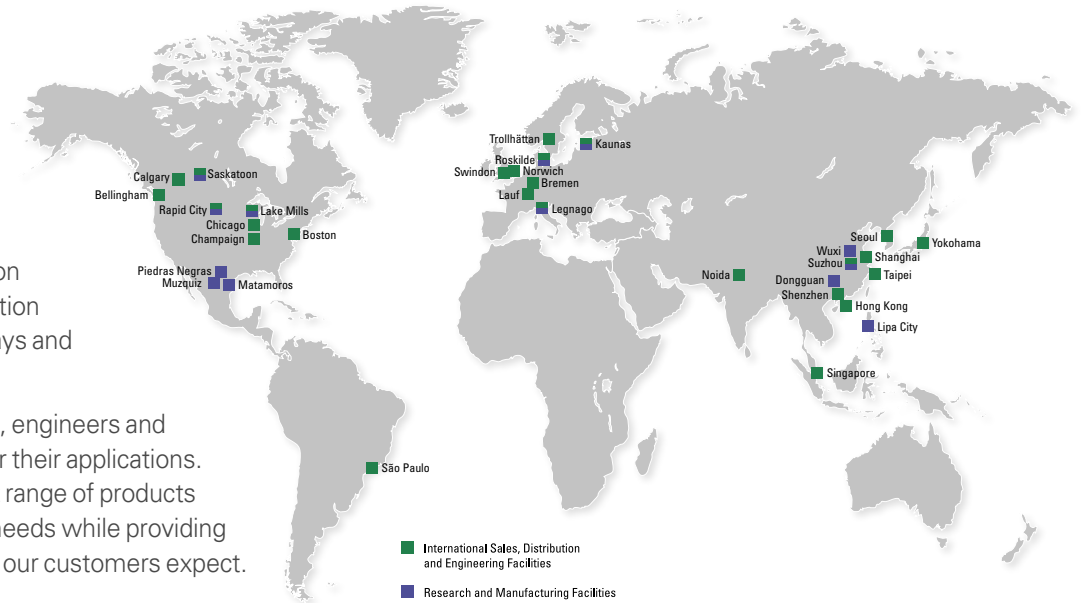
**Power Distribution | Relays | Solenoids  
Switches | Fuses & Fuse Holders**

# Local Resources for a **GLOBAL** Market

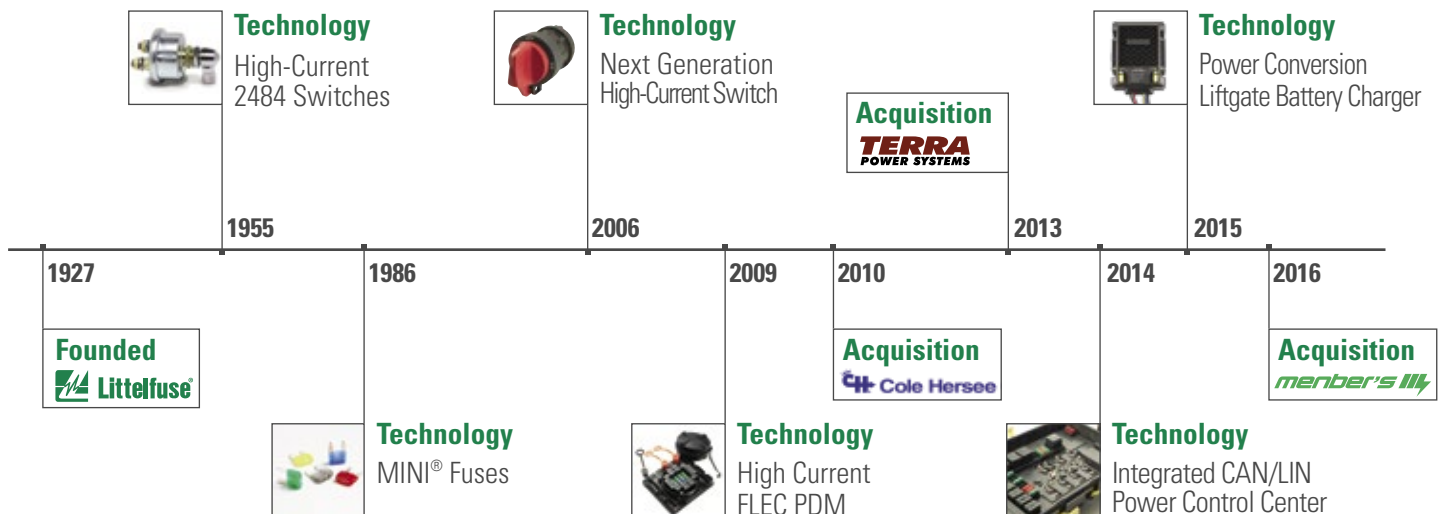
Littelfuse products help protect, control and distribute vehicle electrical power in OEM and aftermarket applications for industries such as heavy-duty truck, construction and agriculture.

We offer a broad and reliable selection of fuses, fuse blocks, power distribution modules, high-current switches, relays and solenoids to fit your requirements.

For decades, we have helped OEMs, engineers and end-users select the right product for their applications. Today, Littelfuse offers the broadest range of products for protection, sensing, and control needs while providing exceptional service and support that our customers expect.



## Nearly 90 Years of Electrical Power Expertise



# Our Market Focus **INDUSTRIES** and Applications



## Truck & Bus

- On-Highway
- Severe Duty
- Transit Buses
- Vocational



## Material Handling

- Fork Lifts
- Telehandlers
- Aerial Work Platform
- Pallet Jacks



## Construction

- Loaders
- Skid Steers
- Excavators
- Cranes



## Municipality

- Emergency
- Waste Trucks
- Fire & Rescue
- Utility



## Agriculture

- Tractors
- Harvesters
- Lawn Turf
- Loaders



## Marine & Recreational

- Boats & Marine
- Golf Carts
- Recreation Vehicles
- ATV & Snowmobiles

## Value Added Electrical System Features



Littelfuse Commercial Vehicle Products help add value to your equipment at every stage of its life cycle. Product safety features help keep end-customers protected from hazards and add unique selling features to your equipment. Engineering expertise allows us to create solutions that combine technologies to reduce your system costs. Intelligent solutions and a passion for durable products help to minimize vehicle downtime and raise operator productivity.

[Littelfuse.com/Aftermarket](http://Littelfuse.com/Aftermarket)



### Improve Safety

- Remote Indication & Control
- Built-In Lock-Out & Tag-Out
- Integrated Fusing
- Touch-Safe Features



### Reduce Costs

- Combined System Components
- Keyed Harness Connections
- Simplify Installation Features
- Global Supply Base & Production



### Minimize Downtime

- AssureLatch™ Technology
- Built-In Cover Tethers
- Self-Diagnostic Features
- Optimized Battery Life

# The Worldwide Leader in Circuit Protection

## Circuit Protection Today

### An overview of today's fuse market . . .

- New vehicles contain 90 to 150 fuses throughout the vehicle in 3 to 4 different fuse blocks. For example, the BMW 750i uses over 150 fuses.
- High amperage products — MAXI, MEGA, MIDI, PAL and JCASE fuses — make up 1 out of every 5 fuses in new vehicles.
- The past decade has produced more automotive circuit protection devices than the entire history of the industry.
- Fuse and circuit breaker applications have grown by 400% in the past 10 years.
- Glass fuses have not been used as a primary original equipment circuit protection device since 1981. Unit movement has been steadily declining, although glass fuses are used in many accessory applications.

Littelfuse partners with every major automotive and heavy-duty OEM. That is why more than 95% of domestic and 70% of foreign new vehicles contain Littelfuse fuses. (Your Customers and Installers will have a Littelfuse fuse in their hand when they need a source to replace a fuse.) Littelfuse has introduced every new fuse in the industry for the past three decades, starting with the ATO blade fuse. Littelfuse holds more than 130 patents on circuit protection devices, more than all the other fuse manufacturers in the world combined. Other fuse manufacturers are licensed by Littelfuse to utilize its product designs and trademarks.

## What is Driving the Circuit Protection Market?

The Circuit Protection market is experiencing accelerated growth caused by a combination of powerful forces driving the market. There has never been a better time to invest in the distribution of the Circuit Protection category.

- **One Wire — One Fuse Protection Trend:** Auto manufacturers are moving towards protecting every wire in the vehicle.
- **More Power Consumption:** Vehicles are consuming power at higher amperages than ever before, and manufacturers are now protecting high amp applications, such as the alternator, with MEGA, MIDI, PAL, JCASE and MAXI fuses.
- **Space & Weight Efficiency:** As vehicle designs get more complex, fuses must get smaller so more fuses can fit in the same amount of space.
- **Greater Diversity of Fuses:** Vehicles contain more fuses than ever before, so Aftermarket Customers and Installers are requiring a greater variety of circuit protection devices in their displays, assortments and merchandisers.
- **More On-Board Electronics:** Auto manufacturers and Aftermarket suppliers are offering a broader range of on-board components like cellular phones, CD players, Bluetooth, navigation, alarm systems and remote starters which require circuit protection for installation and replacement.

- **New Market Niches:** The increased demand in circuit protection is offering current channels of distribution new marketing opportunities in the Fast Lube, Warehouse Club and Electrical Accessories Installer channels or any outlet stocking electrical replacement parts.
- **Longer Vehicle Life:** The life expectancy of cars is increasing to 20+ years. This results in more miles driven and wiring that is aging, leading to more blown fuses that need to be replaced.
- **Easier Access to Fuse Blocks:** Auto manufacturers have moved fuse blocks into the passenger compartments, e.g. glove box, dashboard and trunk, making it easier for DIY replacement. Fuse blocks are also better marked for easier identification of the proper circuit.
- **Infotainment:** The increasing use of video and other new electronics in vehicles have challenged designers to protect even more sensitive automotive electronics. New technologies in circuit protection and fuse box design eliminate transient surges that can damage vehicle equipment.

## The Future of Circuit Protection

The Littelfuse new product development process is based on practical innovations designed around the needs of the customer. The circuit protection products of the future will offer greater features to protect increasingly complex electrical systems, meet the booming demand for on-board electronics and make the Circuit Protection category a continuously stronger part of the Automotive Aftermarket.

Here is a glimpse of the Littelfuse vision of circuit protection for tomorrow . . .

- Fuse count per vehicle to grow each year.
- Increased need for higher amp protection with MCASE and bolt-on devices like MEGA and MIDI fuses.
- Greater need for a broader range of fuse blocks and fuse holders, testers and pullers, fuse kits and assortments and creative merchandising systems.

- Greater need for more technical training materials, point of sale education support and more reliable application data.
- More compact fuses such as MINI, Micro and electronic surface mount fuses.
- Smart circuit protection — the vehicle will tell you what fuse needs to be replaced and its location.
- Special circuit protection products designed for electric and alternative fuel vehicles.
- Modular electrical systems that require modular fuse blocks in locations throughout the vehicle like the quarter panels, fender wells, door panels, etc.

# Table of Contents

## Circuit Protection - Fuses & Circuit Breakers

|  |       |
|--|-------|
| Fuse Selection Chart                         | 2     |
| Fuseology                                    | 3-4   |
| Retail Information, Packaging & Part Numbers | 5-7   |
| Blade Fuses                                  | 8-10  |
| Cartridge Fuses                              | 11    |
| Bolt-Down Fuses                              | 12    |
| Auto Link Fuses                              | 13    |
| Glass Fuses                                  | 13-14 |
| Ceramic Fuses                                | 14    |
| Circuit Breakers                             | 16-20 |
| Fuse Assortment Kits                         | 21-26 |
| Specialty Fuse Products                      | 27    |
| Fuse Cross-Reference Guide                   | 28    |



## Power Distribution Modules

|                            |       |
|----------------------------|-------|
| Hard-Wired Boxes           | 30-31 |
| Power Distribution Modules | 31-32 |



## Fuse Blocks & Holders

|                                      |       |
|--------------------------------------|-------|
| Bolt-Down Fuse Blocks                | 34    |
| In-line Fuse Holders                 | 35-38 |
| Multiple Position Fuse Blocks        | 39-40 |
| Power Feed                           | 41    |
| Fuse Pullers and Battery Accessories | 42    |



## Battery Management

|                                     |    |
|-------------------------------------|----|
| Battery Isolators                   | 44 |
| Battery Combiners & FlexMod Devices | 45 |
| Low Voltage Disconnects             | 46 |
| Liftgate Battery Chargers           | 46 |



## Relays & Solenoids

|  |       |
|--|-------|
| Solid State Relays                       | 48    |
| Standard High Current Relays (Solenoids) | 49-51 |
| Bi-Stable Latching Relays                | 52    |
| Plug-In Relays & MicroRelays             | 53-54 |



## Battery & Master Disconnect Switches

|                                       |       |
|---------------------------------------|-------|
| Master Disconnect Switches            | 56    |
| Standard Master Disconnect Switches   | 57-59 |
| Battery Disconnect Switch Accessories | 60    |



## Ignition Switches

|                                   |       |
|-----------------------------------|-------|
| Ignition Switches                 | 62-64 |
| Special Purpose Ignition Switches | 65-66 |
| Ignition Switch Accessories       | 66    |



## Rocker Switches

|                                     |       |
|-------------------------------------|-------|
| Sealed Rocker Switches              | 68-72 |
| Rocker Switch Accessories           | 72    |
| Standard Heavy Duty Rocker Switches | 73    |
| Dual & Wide Body Rocker Switches    | 74    |



## Toggle Switches

|                           |       |
|---------------------------|-------|
| Toggle Switches           | 76-82 |
| Toggle Switch Accessories | 82    |
| Switch Reference Guide    | 83    |
| Switch Wiring Diagram     | 84    |



## Momentary Switches

|                                |       |
|--------------------------------|-------|
| Momentary Push-Button Switches | 84-86 |
| Door Switches                  | 87-88 |



## Push-Pull, Rotary & Foot Switches

|                                       |       |
|---------------------------------------|-------|
| Push-Pull Switches                    | 90-91 |
| Rotary Switches                       | 91-92 |
| Foot Switches                         | 93    |
| Rotary Headlamp Switches              | 94    |
| Rotary Wiper Switches                 | 95-96 |
| Backup & Neutral Safety Ball Switches | 97    |
| Stoplamp Switches                     | 98    |



## Vehicle Connectors

|                                |         |
|--------------------------------|---------|
| Tractor-Trailer Connectors     | 100-104 |
| Trailer Connectors             | 105     |
| Connector Mounts & Accessories | 106     |



## Indicator Devices

|                              |         |
|------------------------------|---------|
| LED Pilot Lights             | 108     |
| Incandescent Pilot Lights    | 109-110 |
| Panel Lamps and Base Sockets | 111     |
| Buzzers and Alarms           | 112     |



## Appendix

|                                |         |
|--------------------------------|---------|
| Alphanumeric Part Number Index | 113-116 |
| Notes                          | 116-117 |

# Circuit Protection



## What Type of Fuse do I Need?

DC (automotive) fuses are offered in two basic forms: Blade or Bolt Down.

**Blade** – can be hand inserted into a fuse holder. These fuses provide protection for several amperage ratings up to 70A. They are well suited to protect smaller to medium diameter wires that are usually some distance from the battery. Single blade fuse holders are often called ‘In-Line’ fuse holders as they are spliced into the wiring. Remember to place the fuse holder as close to the battery and as far away from the load as possible. Littelfuse blade fuses include: Micro 2, Micro 3, mini, LP mini, ATO, Maxi, mCase, mCase +, J Case and LP JCase. We offer fuse holders for many of these fuses.

**Bolt Down** – need to be secured to the fuse holder with a screw or nut/bolt. These fuses provide protection from 30A to 500A. They are well suited to protect medium to large diameter wires that are usually closer to the battery. Ring terminals are crimped onto cables that are connected to these holders and spliced into the wiring. Remember to place the fuse holder as close to the battery and as far away from the load as possible. Littelfuse bolt-down fuses include: MIDI, MEGA, CF8 and Z-Case. We offer fuse holders for many of these fuses.

Also, there are still a wide variety of applications that use glass tube fuses. These are typically lower current values and are becoming less popular for most automotive applications due to their size, form factors, and lack of color coding.





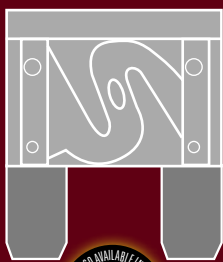
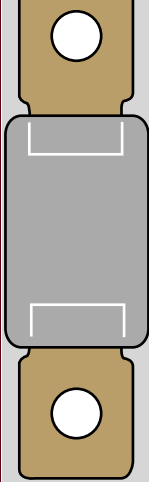
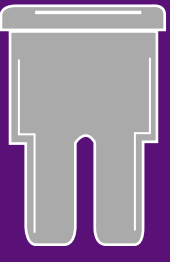
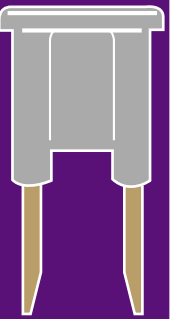









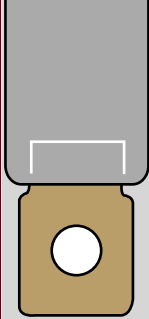





## It Glows When it Blows!

SmartGlow fuse technology makes identifying an open circuit quick and easy. Inside a fuse box, it can be difficult to locate which fuse in an array has blown. You can easily identify the SmartGlow because it lights up, indicating the need for replacement. Available in MINI®, ATO®, and MAXI® blade fuses.









## Do you Offer Fuse Holders?

Littelfuse offers a wide variety of fuse holder and power distribution modules in different configurations to meet unique needs. Please see the Power Distribution Modules or Fuse Blocks & Holders sections of the catalog to select a product that fits your application requirements.

# FUSE SELECTION CHART

| TYPE        | MICRO2  | ATO®  | MINI®   | MCASE®  | JCASE®  | MAXI  | MEGA®  | PAL Series 0  | PAL Series 1  | PAL Series 2  | PAL Series 3  | PAL Series 4  | PAL Series 5  |
|-------------|---|---|---|---|---|---|--|---|---|---|---|---|---|
|             |            |  |  |  |  |  |  |  |  |  |  |  |  |
| ACTUAL SIZE | MICRO3<br> |  |  |  |  |  |  |  |  |  |  |  |  |
|             |   | SMART GLOW FUSE   | SMART GLOW FUSE   |   | Low Profile JCASE®  | SMART GLOW FUSE   |  | Female Terminal   | Straight Male Terminal  | 13/16" Bent Male Terminal   | Mini Female Terminal  | 9/16" Bent Male Terminal  | Locking Female Terminal   |
| Black       | 1A  |   |   |   |   |   |  |   | 80A   | 80A   |   | 80A   |   |
| Gray        | 2A  |   | 2A  | 15A   |   |   |  |   | 120A  | 120A  |   |   |   |
| Violet      | 3A  | 3A  | 3A 3A   |   |   | 100A  |  |   |   | 140A  |   | 140A  |   |
| Pink        | 4A  | 4A  | 4A  | 30A   | 30A   |   | 250A   | 30A   | 30A   | 30A   | 30A   | 30A   |   |
| Tan         | 5A  | 5A  | 5A 5A   |   |   | 70A   | 70A  |   |   |   |   |   |   |
| Brown       | 7.5A  | 7.5A  | 7.5A 7.5A   |   |   |   |  |   |   | 70A   |   |   | 25A   |
| Red         | 10A   | 10A   | 10A 10A   | 50A   | 50A   | 50A   | 50A  | 50A   |   | 50A   |   | 50A   |   |
| Blue        | 15A   | 15A   | 15A 15A   | 20A   | 20A   | 60A   | 60A  | 20A   | 100A  | 100A  |   | 100A  |   |
| Yellow      | 20A   | 20A   | 20A 20A   | 60A   | 60A   | 20A   | 20A  | 60A   | 60A   | 60A   |   |   |   |
| Clear       | MICRO 2 ONLY<br>25A   | 25A   | 25A 25A   | 25A   |   | 80A   | 80A  |   |   |   |   |   |   |
| Green       | MICRO 2 ONLY<br>30A   | 30A   | 30A 30A   | 40A   | 40A   | 30A   | 30A  | 40A   |   | 40A   | 40A   | 40A   | 30A   |
| Orange      |   | 40A   |   |   |   | 40A   | 40A  |   |   |   |   |   |   |
| White       |   |   |   |   | 25A   |   | 175A   |   |   |   |   | 120A  |   |

**GLASS**

|   |   |   |  |   |   |   |   |   |                   |   |                       |
|---|---|---|--|---|---|---|---|---|-------------------|---|-----------------------|
|  |  |  |  | <b>AGA</b><br>1A, 1.5A, 2A, 2.5A, 3A, 5A, 6A, 7.5A, 10A, 15A, 20A, 25A, 30A | <b>AGC</b><br>.5A, 1A, 1.5A, 2A, 2.5A, 3A, 4A, 5A, 6A, 7.5A, 8A, 10A, 15A, 20A, 25A, 30A, 35A | <b>AGU</b><br>1A, 2A, 3A, 4A, 5A, 10A, 15A, 20A, 25A, 30A, 35A, 40A, 50A, 60A | <b>AGW</b><br>1A, 1.5A, 2.5A, 3A, 4A, 5A, 6A, 15A, 20A, 30A | <b>AGX</b><br>2A, 3A, 3A, 20A, 25A, 30A | <b>AGY</b><br>50A | <b>SFE</b><br>4A, 6A, 7.5A, 9A, 14A, 20A, 30A | <b>UK</b><br>35A, 50A |
|  |  |  |  |   |   |   |   |   |                   |   |                       |





# Fuseology

1

**Understanding how circuit protection works is a key to diagnosing automotive electrical problems. When a fuse blows, that means the fuse is doing its job — sending you a message that something needs to be fixed.**

## WHAT IS THE PURPOSE OF A FUSE?

A fuse is a safety valve. It is designed to stop current from exceeding the rating of the wires or components. Without fuses, excessive current could cause damage to electrical systems, and even result in fires.

In general, a fuse has a simple construction. The key component is the “element” — a short piece of metal wire or strap.



## WHAT CAUSES A FUSE TO BLOW?

The element is designed to melt at a specific temperature, to protect wires and equipment from overcurrents. An overcurrent is any current that exceeds the amperage rating or wiring capacity of equipment or devices under normal

conditions of use.

If an overcurrent causes the current in a circuit to rise above a specific level — often the circuit’s rating — the heat produced will melt the fuse’s element, causing the fuse to “blow.” This opens the circuit and immediately stops the flow of current. Fuses are designed to blow at temperatures far below those that would cause damage or hazards.

Once a fuse is blown, it can be replaced to allow the current to flow again. **But simply replacing a fuse may not be the solution to the problem.**

In fact, there is a chance the fuse will just blow again, because the fuse is signaling a problem in the system. Understanding the factors that cause a fuse to blow will help you diagnose automotive electrical problems.

There are two types of overcurrents that can cause a fuse to blow: overloads and short circuits.

### Overload

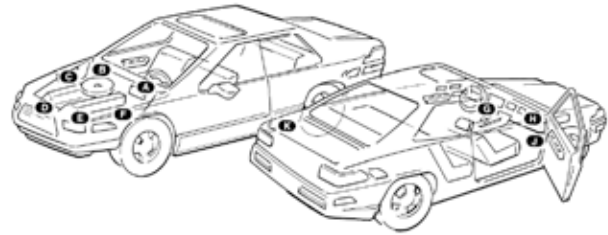
**What:** The current exceeds the amperage at which the wires or equipment are rated.

**Why:** Too many devices are connected to one circuit, or a device malfunctions and draws higher than its normal operating current. Sustained overloads cause overheating of circuit components and the fuse blows.

### Short Circuit

**What:** The current is out of its normal path.

**Why:** A malfunction creates an unintended path for electricity to flow from the battery or alternator to ground. This can be caused by the touching of any positive wire to a ground wire, e.g. due to frayed wire insulation, or tools laid across the positive and ground wires of a circuit. The uncontrolled current to ground then surpasses the normal resistance of the wire contained in the circuit, forcing higher and higher current to the point of the generating heat which blows the fuse.



**Bold letter indicates fuse block location.**

|                          |  |
|--------------------------|--|
| <b>A</b> Left fire wall  | <b>G</b> Behind/under dash left                        |
| <b>B</b> Right fire wall | <b>H</b> Behind/in glove box                           |
| <b>C</b> Right fender    | <b>J</b> Behind/under dash right                       |
| <b>D</b> Right front     | <b>K</b> Rear compartment                              |
| <b>E</b> Left front      | <b>IL</b> In-line with device protected                |
| <b>F</b> Left fender     | (locations may vary from car to car, see your dealer.) |

## FINDING A FUSE

To be able to address fuse issues, you first must be able to locate the appropriate fuse within the vehicle. In today’s vehicles, each individual wire is protected by a circuit protection device.

Fuses are contained in fuse blocks located at various points throughout the vehicle. The diagram above illustrates typical fuse block locations. For further help finding a fuse, use the *Littelfuse Automotive Fuse Guide*, which lists a letter corresponding to the fuse location for every fuse application listed.

## SELECTING THE RIGHT FUSE

Once you have found the fuse that has blown, and solved the problem in the vehicle, you must replace the blown fuse with an appropriate device.

When selecting the right fuse for replacement, you should consider the following:

### Physical Type

The replacement fuse must be of the same physical type as the blown fuse being replaced. It must be of the same style and have the same dimensions so that it can fit properly in the fuse block or fuse holder. Check your owner’s manual to determine the appropriate fuse type.

**Installation Tip:** Littelfuse holds patents for the designs on most automotive fuses. It is important to remember that the physical type of the fuse is important, but it is not the only factor affecting the fuse’s function. Although some fuses appear to be the same type and dimension as Littelfuse fuses, they do not necessarily have the same performance characteristics.

### Look for the Littelfuse OEM Label

To guarantee the same level of quality in circuit protection that the major automotive manufacturers of North America require for their original equipment fuses, look for the OEM seal on Littelfuse aftermarket products. Only Littelfuse products can guarantee this level of quality.



# Fuseology

## Beware of Counterfeit Fuses

At first glance, it's hard to tell the difference between a genuine Littelfuse blade fuse and a counterfeit. The counterfeit may have the same physical dimensions, but using it can be dangerous because it fails to perform to the stringent performance and safety specifications developed by Littelfuse and the OEMs.

In many cases, the elements in counterfeit fuses do not correspond with the amperage specification stamped on the fuse. This will prevent the elements from opening at the rated or correct amperage, which could result in an auto fire causing serious damage to the vehicle, its contents and its passengers.

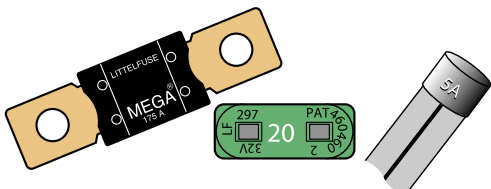
Responding to this growing problem, the United States International Trade Commission and then President Ronald Reagan issued and approved an exclusion order in 1983 prohibiting the importation of the look-alike blade fuses into the United States. This order was initiated because many of these fuses were proven to be totally unsafe. The photos shown here indicate why counterfeit fuses are potentially unsafe and present a fire risk.

To guarantee quality and safety, look for the Littelfuse name on fuses and fuse packaging.



## Current Rating – Amperage

The current rating, marked on every fuse, is the maximum current in amperes that the fuse can continuously carry under specified conditions.



**Tip:** When selecting a fuse, make sure the current rating of the fuse is the same amperage as the circuit. You can obtain the current rating of a circuit by looking in the owner's manual of the vehicle; checking to see if it is written on the fuse block; or consulting the Littelfuse Fuse Guide.

## Overfusing and Underfusing

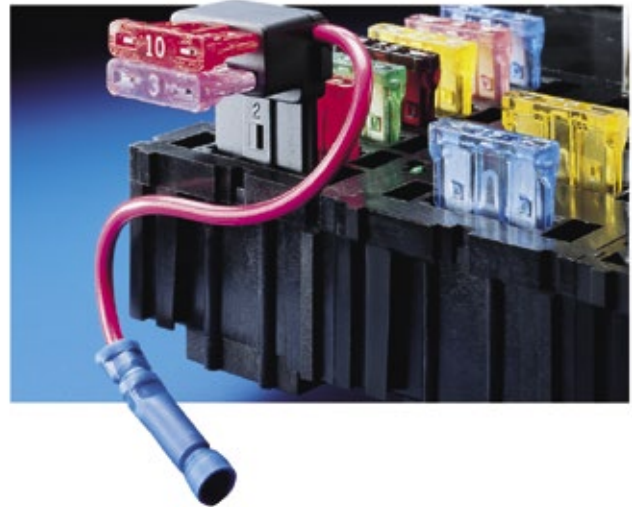
**Overfusing** is when the fuse has a current rating higher than the rating of the circuit. In this case, the fuse will not be able to protect the circuit properly because the circuit could reach overcurrent levels, causing damage and safety hazards, before the fuse would blow.

**Underfusing** is when the fuse is rated at a current too far below the rating of the circuit. In this case the fuse will blow, even though the circuit is functioning normally without an overcurrent. Underfusing almost guarantees that a fuse will blow repeatedly. This is referred to as a nuisance blow.

## Voltage Rating

The voltage rating, marked on every fuse, indicates the maximum voltage at which the fuse is designed to operate safely if an overcurrent occurs.

**Tip:** The fuse voltage rating must equal to or exceed this circuit voltage where the fuse is installed. This is not a problem in fuse selection because automotive fuse applications are typically around 12 volts, while the voltage rating of the majority of Littelfuse automotive fuses — including ATO Fuse, MINI Fuse, MAXI Fuse and MEGA Fuse — is 32 volts.



## ADDING A CIRCUIT

Always use a circuit protection device with a fuse holder or fuse block whenever adding additional circuits to ensure optimal safety. The fastest, easiest option for installers who need to add a circuit for applications such as electronic components, is the Littelfuse Add-A-Circuit Fuse Holder. Add-A-Circuit, available in ATO® and MINI® blade fuse versions, is designed to facilitate installation of fuses for accessories of 10 amps or less. The Add-A-Circuit adapts the fuse block to the installer's needs, quickly turning one slot in the fuse block into two, providing a safe, economical alternative to splicing or fusetaps.

**Caution:** Fusetaps are not a recommended alternative for adding circuits because they can overstress the terminals in the fuse block. This situation can create a loose fitting fuse, which in turn produces excessive heat, which can cause nuisance blows, even melting of the fuse and fuse block and possibly an expensive repair in the future. When a fusetap is used, in many cases there is no fuse protecting the new circuit, a condition which can also present a hazard.



Another alternative to adding a circuit is the Littelfuse Battery Power Feed (BPF1). This device attaches directly to the battery terminal, allowing the addition of up to three circuits. Then use an in-line fuse holder to protect the circuit properly.

# Retail Information

1



## Planogram

We developed the next generation of Retail Circuit Protection. You now can fit more product in the same planogram space — 36% more.

### MORE SPACE

for higher margin kits and assortments.

### OVER 70% GREATER PROFIT POTENTIAL

per square foot with additional SKU's

### DOUBLE PLANOGRAM PERFORMANCE

100% increase in retail dollar sales per square foot

### INCREASE MARKET COVERAGE

with high amp JCASE, MAXI and PAL Auto Link fuses

**ORIGINAL  
EQUIPMENT  
MANUFACTURER**

### OEM SYMBOL

Prominent on package assures consumers of quality and actual OE replacement.

### COLOR CODED

for easier stocking and consumer selection.

### RECLOSABLE

Keeps key marketing data with package until completely consumed.

### MULTI-LINGUAL

One SKU covers US, Canadian, German and Latin American markets.

| MATERIAL NUMBER | CATALOG NUMBER | DESCRIPTION  |
|-----------------|----------------|--|
| 00940477Z       | 094477         | Our 87 SKU, 510-piece pre-pack Plan-O-Gram includes full blade-fuse coverage, as well as expanded coverage into newer parts such as Low-Profile MINI, Low-Profile JCASE, MICRO2, MICRO3, MCASE and Emergency Kits. Includes blade fuses, glass fuses, circuit breakers, Assortment and Emergency kits, fuse holders and fuse tester/pullers. Measures approximately 36"x36". |
| 00940478Z       | 094478         | Our 103 SKU, 625-piece pre-pack Plan-O-Gram is our largest retail assortment featuring multiple facings of the most popular items. This assortment expands your line coverage to fill the needs of your DIY and professional dealer/installer customers as well. Measures approximately 48"x32".   |

## Graphic Header Cards

An attractive header card is available for Littelfuse Circuit Protection product displays. Measures 36" wide x 8" high or 48" X 8" high.



| MATERIAL NUMBER | DESCRIPTION   |
|-----------------|---|
| AA979           | 36" X 8" Display Header for 36" Planogram (PART# 00940477Z) |
| AA980           | 48" X 8" Display Header for 48" Planogram (PART# 00940478Z) |



# Retail Information

## Packaging / Part Numbering

1

### Bulk Carton

The outer corrugated cardboard box that holds several cartons.



### Carton

The outer corrugated cardboard box that holds several inner packs, or bulk fuses (no inner packs).

### Blister Pack

A retail package containing one or several identical products, such as fuses, or it may contain an assortment of fuses. Blister packs are designed to fit on a peg-hook. 'Bubble pack' or 'clamshell' packages are blister packs.

### Inner Pack

A small chipboard box containing several blister packs or pillboxes.

### Pill Box

A small plastic box containing fuses. Pillboxes are snap-shut resealable.

# Fuse Packaging

1

## Standard Fuse Packaging

| BOXED MERCHANDISE                               | PIECES/BOX  | STANDARD PACK        | ORDER    |
|---|-------------|----------------------|----------|
| ATO®, MINI® Fuses                               | 5 to a box  | 100 (twenty 5 packs) | by piece |
| Glass Ceramic Fuses                             | 5 to a box  | 50 (ten 5 packs)     | by piece |
| AGU Fuses                                       | 10 to a box | 10 (one 10 pack)     | by piece |
| MAXI, PAL, MEGA®, MIDI®                         | 1 to a pack | 10                   | by piece |
| Flashers, Circuit Breakers, Fuse Holders        | 1 to a pack | 10                   | by piece |
| RETAIL PACKAGED MERCHANDISE                     | FUSES/CARD  | STANDARD PACK        | ORDER    |
| ATO®, MINI® Fuses, Glass, Ceramic Fuses         | 5 to a card | 5 cards/shelf pack   | by card  |
| MAXI, PAL, MEGA®, MIDI® Fuses                   | 1 to a card | 5 cards/shelf pack   | by card  |
| Plus Packs                                      | 25          | 5 cards/shelf pack   | by card  |
| Retail Carded Kits and Assortments              | Various     | 5 cards/shelf pack   | by card  |
| Assortments, Jobber Boards, Merchandisers, etc. | Various     | Single unit          | by unit  |

### Examples of order numbers

Order numbers must have between 9 characters and 15 characters. These are for added description, such as ZXPRO. When you place an order, write or type the characters without a break in the string.

**0ATO 010. VP**

First set of four  
"ATO Fuses"

Second set of four  
"10 Amps"

"Retail pack of 5"

**OMIN 030. ZXPRO**

First set of four  
"MINI Fuses"

Second set of four  
"30 Amps"

"Professional Pack"

### Mandatory characters

#### First set of four:

These identify the product group, like LMIN (Low profile MINI fuse) or OMAX (MAXI fuses).

#### Second set of four:

These identify the product subgroup. In fuses, this usually identifies the amperage. The decimal point counts as one character, eg 010. = 10A, 100. = 100A, 01.5 = 1.5A.

#### 9th character:

Inner pack quantity. See list of codes below.

#### Inner Pack Codes

#### Quantity Code

|         |            |
|---------|------------|
| 1 = X   | 500 = U    |
| 5 = V   | 1,000 = M  |
| 10 = T  | 1,500 = D  |
| 20 = S  | 2,500 = E  |
| 50 = L  | 3,000 = W  |
| 100 = H | 4,000 = Y  |
| 200 = F | 5,000 = N  |
| 250 = G | 10,000 = K |

### Optional characters

#### 10th Character

Packaging type. P= Retail pack, B=Blister Pack.

#### Last set of 5:

May be used to give additional information such as, MXGLO for SmartGlow fuses

# Blade Fuses



## MINI® • 2-30A • Standard and Smart Glow Blade Fuses

The MINI® Fuse is quickly becoming the new standard for vehicle circuit protection. Its miniature design meets the need for more circuits to be protected while utilizing less space, and its ability to cope with high temperatures in adverse environments makes the MINI® Fuse the recommended choice for protection. Smart Glow fuses are innovative automotive style fuses that feature an indicator light that glows when the fuse is blown, saving time to troubleshoot an open circuit.

Additional information: [littelfuse.com/MINI](http://littelfuse.com/MINI)

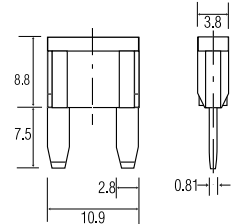
**Standard:** Voltage Rating Characteristics: 32V AC/DC Fast-Acting, Approvals: UL listed, SAE J2077.

**Smart Glow:** Interrupting Rating: 1000A @ 14V DC, Voltage Rating: 12V DC, Operating Temperature Range: -40°C to +125°C, Terminals: Silver plated Zinc alloy

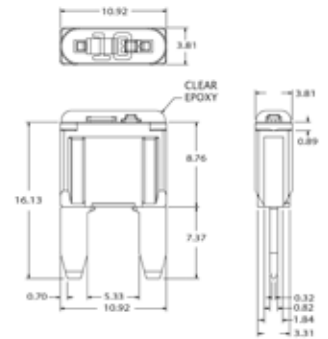


| COLOR CODE | CURRENT RATING (A) | BOXED           | CARDED                    | CARDED                    |
|------------|--------------------|-----------------|---------------------------|---------------------------|
|            |                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| Gray       | 2                  | 0MIN002.V       | 0MIN002.VP                | -                         |
| Violet     | 3                  | 0MIN003.V       | 0MIN003.VP                | 0MIN003.VPGLO             |
| Pink       | 4                  | 0MIN004.V       | 0MIN004.VP                | -                         |
| Tan        | 5                  | 0MIN005.V       | 0MIN005.VP                | 0MIN005.VPGLO             |
| Brown      | 7.5                | 0MIN07.5V       | 0MIN07.5VP                | 0MIN07.5VPGLO             |
| Red        | 10                 | 0MIN010.V       | 0MIN010.VP                | 0MIN010.VPGLO             |
| Blue       | 15                 | 0MIN015.V       | 0MIN015.VP                | 0MIN015.VPGLO             |
| Yellow     | 20                 | 0MIN020.V       | 0MIN020.VP                | 0MIN020.VPGLO             |
| Clear      | 25                 | 0MIN025.V       | 0MIN025.VP                | 0MIN025.VPGLO             |
| Green      | 30                 | 0MIN030.V       | 0MIN030.VP                | 0MIN030.VPGLO             |

### Dimensions MINI®



### Dimensions SMART GLOW MINI®



## Low Profile MINI® • 2-30A • Blade Fuses

The Low Profile MINI® fuse is designed to mate with tuning-fork terminals, which provides additional weight and material savings in fuse box designs by eliminating the need for female box terminals.

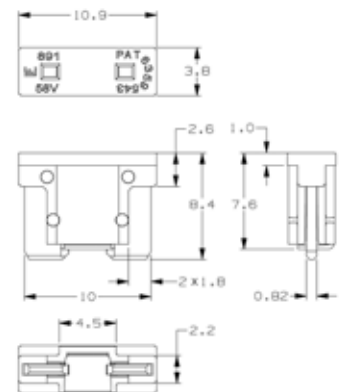
Additional information: [littelfuse.com/LPMINI](http://littelfuse.com/LPMINI)

Voltage Rating: 58V DC, Interrupting Rating: 1000A @ 58V DC, Operating Temperature Range: -40°C to +125°C, Terminals: either Ag or Sn plated zinc, Housing Materials: Nylon composite



| COLOR CODE | CURRENT RATING (A) | BOXED           | CARDED                    |
|------------|--------------------|-----------------|---------------------------|
|            |                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| Gray       | 2                  | LMIN002.V       | -                         |
| Tan        | 5                  | LMIN005.V       | LMIN005.VP                |
| Brown      | 7.5                | LMIN07.5V       | -                         |
| Red        | 10                 | LMIN010.V       | LMIN010.VP                |
| Blue       | 15                 | LMIN015.V       | LMIN015.VP                |
| Yellow     | 20                 | LMIN020.V       | LMIN020.VP                |
| Clear      | 25                 | LMIN025.V       | LMIN025.VP                |
| Green      | 30                 | LMIN030.V       | LMIN030.VP                |

### Dimensions Low Profile MINI®



# Blade Fuses

1



## ATO® • 1-40A • Standard and Smart Glow Blade Fuses

It is currently found on most cars, trucks, buses and off the road vehicles worldwide. Features Littelfuse designed industry standard color coding to indicate amp rating. Smart Glow fuses are innovative automotive style fuses that feature an indicator light that glows when the fuse is blown, saving time to troubleshoot an open circuit. Additional information: [littelfuse.com/ATO](http://littelfuse.com/ATO)

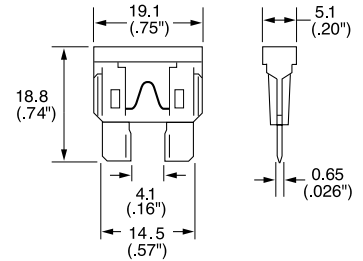
**Standard:** Voltage Rating Characteristics: 32V AC/DC Fast-Acting Approvals: UL listed, SAE J2077.

**Smart Glow:** Interrupting Rating: 1000A @ 14V DC Voltage Rating: 12V DC Operating Temperature Range: -40°C to +125°C Terminals: Silver plated Zinc alloy

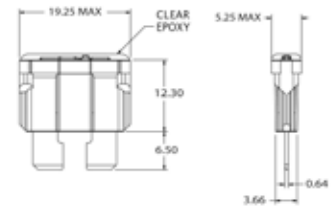


| COLOR CODE | CURRENT RATING (A) | BOXED           | CARDED                    | CARDED                    |
|------------|--------------------|-----------------|---------------------------|---------------------------|
|            |                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| Black      | 1                  | 0ATO001.V       | 0ATO001.VP                | —                         |
| Gray       | 2                  | 0ATO002.V       | 0ATO002.VP                | —                         |
| Violet     | 3                  | 0ATO003.V       | 0ATO003.VP                | 0ATO003.VPGLO             |
| Pink       | 4                  | 0ATO004.V       | 0ATO004.VP                | —                         |
| Tan        | 5                  | 0ATO005.V       | 0ATO005.VP                | 0ATO005.VPGLO             |
| Brown      | 7.5                | 0ATO007.5V      | 0ATO007.5VP               | 0ATO007.5VPGLO            |
| Red        | 10                 | 0ATO010.V       | 0ATO010.VP                | 0ATO010.VPGLO             |
| Blue       | 15                 | 0ATO015.V       | 0ATO015.VP                | 0ATO015.VPGLO             |
| Yellow     | 20                 | 0ATO020.V       | 0ATO020.VP                | 0ATO020.VPGLO             |
| Clear      | 25                 | 0ATO025.V       | 0ATO025.VP                | 0ATO025.VPGLO             |
| Green      | 30                 | 0ATO030.V       | 0ATO030.VP                | 0ATO030.VPGLO             |
| Orange     | 40                 | 0ATO040.V       | 0ATO040.VP                | —                         |

Dimensions ATO®



Dimensions SMART GLOW ATO®



## MAXI • 20-100A • Standard and Smart Glow Blade Fuses

MAXI Fuses are primarily used for under hood applications and are produced with a high temperature polymer and silver plated blades. They replace the commonly used fusible wire or fusible link to protect a high current segment or system of the wiring harness. Features Littelfuse designed industry standard color coding to indicate amp rating. Smart Glow fuses are innovative automotive style fuses that feature an indicator light that glows when the fuse is blown, saving time to troubleshoot an open circuit.

Additional information: [littelfuse.com/MAXI](http://littelfuse.com/MAXI)

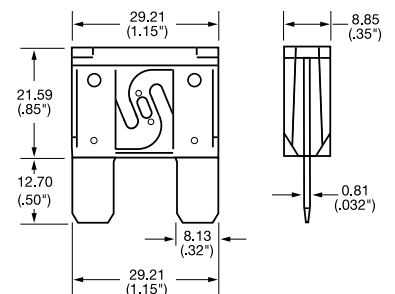
**Standard:** Voltage Rating: 32V DC, Interrupting Ratings: 1000A @ 32V DC, Operating Temperature Range: -40°C to +125°C, Terminals: Ag plated

**Smart Glow:** Voltage Rating: 32V DC, Interrupting Ratings: 1000A @ 32V DC, Operating Temperature Range: -40°C to +125°C, Terminals: Ag plated



| COLOR CODE | CURRENT RATING (A) | BOXED           | CARDED                    | CARDED                    |
|------------|--------------------|-----------------|---------------------------|---------------------------|
|            |                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| Yellow     | 20                 | 0MAX020.X       | 0MAX020.XP                | 0MAX020.XPGLO             |
| Green      | 30                 | 0MAX030.X       | 0MAX030.XP                | 0MAX030.XPGLO             |
| Orange     | 40                 | 0MAX040.X       | 0MAX040.XP                | 0MAX040.XPGLO             |
| Red        | 50                 | 0MAX050.X       | 0MAX050.XP                | 0MAX050.XPGLO             |
| Blue       | 60                 | 0MAX060.X       | 0MAX060.XP                | 0MAX060.XPGLO             |
| Tan        | 70                 | 0MAX070.X       | —                         | 0MAX070.XPGLO             |
| Clear      | 80                 | 0MAX080.X       | 0MAX080.XP                | 0MAX080.XPGLO             |
| Purple     | 100                | —               | —                         | 0MAX100.XPGLO             |

Dimensions MAXI



# Blade Fuses



## MICRO2™ • 5-30A • Blade Fuses

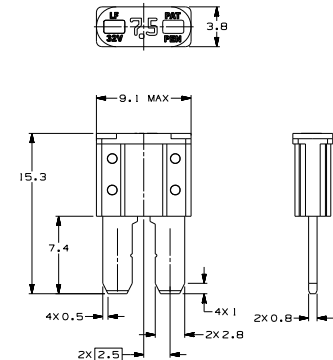
Its sub-miniature design meets the need for more circuits to be protected while utilizing less space and its ability to cope with high temperatures in adverse environments makes the MICRO2™ Fuse the recommended choice for protection.

Additional information: [littelfuse.com/MICRO2](http://littelfuse.com/MICRO2)

Voltage Rating: 32V DC, Interrupting Ratings: 1000A @ 32V DC, Operating Temperature Range: -40°C to +125°C

| COLOR CODE | CURRENT RATING (A) | BULK 50 PC      | BOXED 5 PC      | CARDED 5 PC     |
|------------|--------------------|-----------------|-----------------|-----------------|
|            |                    | MATERIAL NUMBER | MATERIAL NUMBER | MATERIAL NUMBER |
| Tan        | 5                  | 0327005.LXS     | MIC2005.V       | MIC2005.VP      |
| Brown      | 7.5                | 032707.5LXS     | MIC207.5V       | MIC207.5VP      |
| Red        | 10                 | 0327010.LXS     | MIC2010.V       | MIC2010.VP      |
| Blue       | 15                 | 0327015.LXS     | MIC2015.V       | MIC2015.VP      |
| Yellow     | 20                 | 0327020.LXS     | MIC2020.V       | MIC2020.VP      |
| Clear      | 25                 | 0327025.LXS     | MIC2025.V       | MIC2025.VP      |
| Green      | 30                 | 0327030.LXS     | MIC2030.V       | MIC2030.VP      |

### Dimensions MICRO2™



## MICRO3™ • 5-15A • Blade Fuses

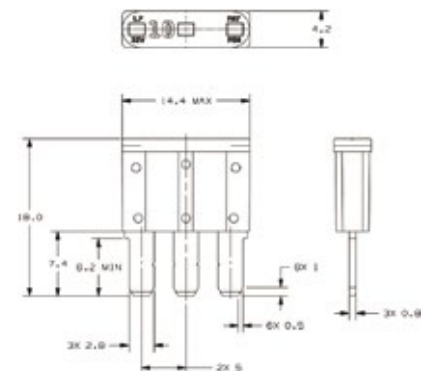
The MICRO3™ Fuse is the new standard for vehicle circuit protection. The MICRO3™ Fuse has 3 terminals and 2 fuse elements with a common center terminal. Its sub-miniature design meets the need for more circuits to be protected while utilizing less space and its ability to cope with high temperatures in adverse environments makes the MICRO3™ Fuse the recommended choice for protection.

Additional information: [littelfuse.com/MICRO3](http://littelfuse.com/MICRO3)

Voltage Rating: 32V DC, Interrupting Ratings: 1000A @ 32V DC, Operating Temperature Range: -40°C to +125°C

| COLOR CODE | CURRENT RATING (A) | BULK 50 PC      | BOXED 5 PC      | CARDED 5 PC     |
|------------|--------------------|-----------------|-----------------|-----------------|
|            |                    | MATERIAL NUMBER | MATERIAL NUMBER | MATERIAL NUMBER |
| Tan        | 5                  | 0337005.LXS     | MIC3005.V       | MIC3005.VP      |
| Brown      | 7.5                | 033707.5LXS     | MIC307.5V       | MIC307.5VP      |
| Red        | 10                 | 0337010.LXS     | MIC3010.V       | MIC3010.VP      |
| Blue       | 15                 | 0337015.LXS     | MIC3015.V       | MIC3015.VP      |

### Dimensions MICRO3™





# Cartridge Fuses

1



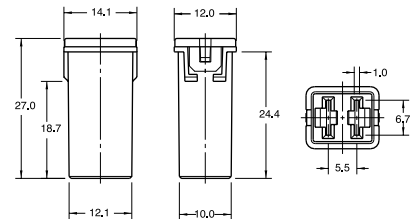
## JCASE® • 20-60A • Cartridge Fuses

Smaller space saving footprint is being designed in by many OEM's. Patented technology provides both increased time delay and low voltage drop. Features ANSI standard OCR-A font for visual inspection systems, double spring-beam box terminal and unique secondary locking feature holds terminal firmly in place. Additional information: [littelfuse.com/JCASE](http://littelfuse.com/JCASE)

Voltage Rating Characteristics: 32V AC/DC Slo-Blo®, Interrupting Ratings: 1000A @ 32V DC, Operating Temperature Range: -40°C to +125°C, Insertion Force: 53N max. (12lb), Extraction Force: 9N min. (2lb)

| COLOR CODE | CURRENT RATING (A) | BOXED           | CARDED                    |
|------------|--------------------|-----------------|---------------------------|
|            |                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| Blue       | 20                 | JCAS020.X       | JCAS020.XP                |
| White      | 25                 | JCAS025.X       | JCAS025.XPA               |
| Pink       | 30                 | JCAS030.X       | JCAS030.XP                |
| Green      | 40                 | JCAS040.X       | JCAS040.XP                |
| Red        | 50                 | JCAS050.X       | JCAS050.XP                |
| Yellow     | 60                 | JCAS060.X       | JCAS060.XP                |

### Dimensions JCASE®



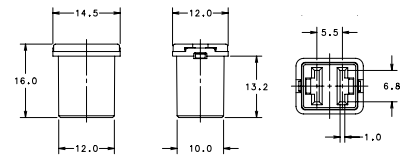
## Low Profile JCASE® • 20-60A • Cartridge Fuses

Smaller space saving footprint is being designed in by many OEM's. Patented technology provides both increased time delay and low voltage drop. Features ANSI standard OCR-A font for visual inspection systems, double spring-beam box terminal and unique secondary locking feature holds terminal firmly in place. Additional information: [littelfuse.com/LPJCASE](http://littelfuse.com/LPJCASE)

Voltage Rating: 58V DC, Interrupting Rating: 1000A @ 58V DC, Operating Temperature Range: -40°C to + 125°C, Insertion Force: 53N Max. (12 lb.), Extraction Force: 9N Min (2 lb.)

| COLOR CODE | CURRENT RATING (A) | BOXED           | CARDED                    |
|------------|--------------------|-----------------|---------------------------|
|            |                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| Blue       | 20                 | LJCA020.X       | LJCA020.XP                |
| White      | 25                 | LJCA025.X       | LJCA025.XPA               |
| Pink       | 30                 | LJCA030.X       | LJCA030.XP                |
| Green      | 40                 | LJCA040.X       | LJCA040.XP                |
| Red        | 50                 | LJCA050.X       | LJCA050.XP                |
| Yellow     | 60                 | LJCA060.X       | LJCA060.XP                |

### Dimensions Low Profile JCASE®



## MCASE+™ • 15-60A • Cartridge Fuses

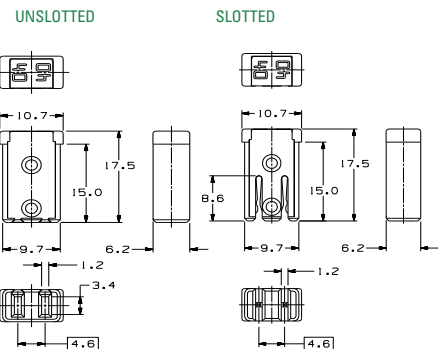
The Unslotted MCASE+™ Fuse is a cartridge style fuse up to 40A with female terminals for 2.8 mm male terminals. The Slotted MCASE+™ Fuse is available up to 60A and can mate with larger male 6.3mm terminals or mount directly to onto a busbar. Miniaturized footprint for optimal usage of space, featuring time delay and the ability to handle inrush currents.

Additional information: [littelfuse.com/MCASE](http://littelfuse.com/MCASE)

Voltage Rating: 32V DC, Interrupting Ratings: 1000A @ 32V DC, Operating Temperature Range: -40°C to +125°C Fuse Insertion Force: 50N (11.2lbf) Typical, Extraction Force: 4N Min. (0.9 lb.) | 24.5N Max. (5.5 lb)

| COLOR CODE | CURRENT RATING (A) | BULK 500 PC     | BOXED 1 PC      | CARDED          |
|------------|--------------------|-----------------|-----------------|-----------------|
|            |                    | MATERIAL NUMBER | MATERIAL NUMBER | MATERIAL NUMBER |
| Gray       | 15                 | 0695015.U       | MCAS015.X       | MCAS015.XP      |
| Blue       | 20                 | 0695020.U       | MCAS020.X       | MCAS020.XP      |
| White      | 25                 | 0695025.U       | MCAS025.X       | MCAS025.XP      |
| Pink       | 30                 | 0695030.U       | MCAS030.X       | MCAS030.XP      |
| Green      | 40                 | 0695040.U       | MCAS040.X       | MCAS040.XP      |
| Red        | 50                 | 0695050.U       | MCAS050.X       | MCAS050.XP      |
| Yellow     | 60                 | 0695060.U       | MCAS060.X       | MCAS060.XP      |

### Dimensions MCASE+™





# Auto Link Fuses

1



## PAL Female Terminal

| COLOR CODE | CURRENT RATING (A) | BOXED           | CARDED                    |
|------------|--------------------|-----------------|---------------------------|
|            |                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| Blue       | 20                 | OPAL020.X       | OPAL020.XP                |
| Pink       | 30                 | OPAL030.X       | OPAL030.XP                |
| Green      | 40                 | OPAL040.X       | OPAL040.XP                |
| Red        | 50                 | OPAL050.X       | OPAL050.XP                |
| Yellow     | 60                 | OPAL060.X       | OPAL060.XP                |



## PAL 9/16" Bent Male Terminal

| COLOR CODE | CURRENT RATING (A) | BOXED           | CARDED                    |
|------------|--------------------|-----------------|---------------------------|
|            |                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| Pink       | 30                 | OPAL430.X       | OPAL430.XP                |
| Green      | 40                 | OPAL440.X       | OPAL440.XP                |
| Red        | 50                 | OPAL450.X       | OPAL450.XP                |
| Black      | 80                 | OPAL480.X       | OPAL480.XP                |
| Blue       | 100                | OPAL4100X       | OPAL4100XP                |
| White      | 120                | –               | OPAL4120XP                |
| Purple     | 140                | –               | OPAL4140XP                |



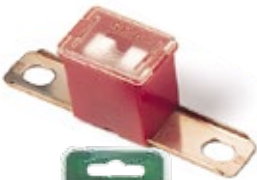
## PAL Straight Male Terminal

| COLOR CODE | CURRENT RATING (A) | BOXED           | CARDED                    |
|------------|--------------------|-----------------|---------------------------|
|            |                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| Pink       | 30                 | OPAL130.X       | OPAL130.XP                |
| Yellow     | 60                 | OPAL160.X       | OPAL160.XP                |
| Black      | 80                 | OPAL180.X       | OPAL180.XP                |
| Blue       | 100                | OPAL1100X       | OPAL1100XP                |
| Gray       | 120                | OPAL1120X       | OPAL1120XP                |



## PAL Locking Female Terminal

| COLOR CODE | CURRENT RATING (A) | BOXED           | CARDED                    |
|------------|--------------------|-----------------|---------------------------|
|            |                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| Brown      | 25                 | OPAL525.X       | OPAL525.XP                |
| Green      | 30                 | OPAL530.X       | OPAL530.XP                |



## PAL 13/16" Bent Male Terminal

| COLOR CODE | CURRENT RATING (A) | BOXED           | CARDED                    |
|------------|--------------------|-----------------|---------------------------|
|            |                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| Pink       | 30                 | OPAL230.X       | OPAL230.XP                |
| Green      | 40                 | OPAL240.X       | OPAL240.XP                |
| Red        | 50                 | OPAL250.X       | OPAL250.XP                |
| Yellow     | 60                 | OPAL260.X       | OPAL260.XP                |
| Brown      | 70                 | OPAL270.X       | OPAL270.XP                |
| Black      | 80                 | OPAL280.X       | OPAL280.XP                |
| Blue       | 100                | OPAL2100X       | OPAL2100XP                |
| Gray       | 120                | OPAL2120X       | OPAL2120XP                |
| Purple     | 140                | –               | OPAL2140XP                |



## PAL Mini Female Terminal

| COLOR CODE | CURRENT RATING (A) | BOXED           | CARDED                    |
|------------|--------------------|-----------------|---------------------------|
|            |                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| Pink       | 30A                | OPAL330.X       | OPAL330.XP                |
| Green      | 40A                | OPAL340.X       | OPAL340.XP                |



# Glass Fuses



## AG • Glass Fuses

Originally stood for “all glass.” The automotive industry uses the “AG” prefix (AGC, AGW) for most glass fuses. They vary in length, diameter and amperage rating.

Additional information: [littelfuse.com/Glass](http://littelfuse.com/Glass)

Voltage Rating: 32V AC/DC, 250V may be substituted

| CURRENT RATING (A) | BOXED           | CARDED                    |
|--------------------|-----------------|---------------------------|
|                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| <b>AGA</b>         |                 |                           |
| 1                  | 0AGA001.V       | 0AGA001.VP                |
| 2                  | 0AGA002.V       | 0AGA002.VP                |
| 3                  | 0AGA003.V       | 0AGA003.VP                |
| 5                  | 0AGA005.V       | 0AGA005.VP                |
| 6                  | 0AGA006.V       | –                         |
| 7.5                | 0AGA007.5V      | –                         |
| 10                 | 0AGA010.V       | 0AGA010.VP                |
| 15                 | 0AGA015.V       | 0AGA015.VP                |
| 20                 | 0AGA020.V       | 0AGA020.VP                |
| 25                 | 0AGA025.V       | –                         |
| 30                 | 0AGA030.V       | 0AGA030.VP                |
| <b>AGW</b>         |                 |                           |
| 1                  | 0AGW001.V       | –                         |
| 1.5                | 0AGW01.5V       | –                         |
| 2.5                | 0AGW02.5V       | –                         |
| 3                  | 0AGW003.V       | –                         |
| 4                  | 0AGW004.V       | –                         |
| 5                  | 0AGW005.V       | 0AGW005.VP                |
| 6                  | 0AGW006.V       | –                         |
| 15                 | 0AGW015.V       | 0AGW015.VP                |
| 20                 | 0AGW020.V       | 0AGW020.VP                |
| 30                 | 0AGW030.V       | 0AGW030.VP                |

| CURRENT RATING (A) | BOXED           | CARDED                    |
|--------------------|-----------------|---------------------------|
|                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| <b>AGC</b>         |                 |                           |
| .5                 | 0AGC.500V       | –                         |
| 1                  | 0AGC001.V       | 0AGC001.VP                |
| 1.5                | 0AGC01.5V       | 0AGC01.5VP                |
| 2                  | 0AGC002.V       | 0AGC002.VP                |
| 2.5                | 0AGC02.5V       | 0AGC2.5VP                 |
| 3                  | 0AGC003.V       | 0AGC003.VP                |
| 4                  | 0AGC004.V       | 0AGC004.VP                |
| 5                  | 0AGC005.V       | 0AGC005.VP                |
| 6                  | 0AGC006.V       | 0AGC006.VP                |
| 7                  | 0AGC007.V       | –                         |
| 7.5                | 0AGC07.5V       | 0AGC07.5VP                |
| 8                  | 0AGC008.V       | –                         |
| 10                 | 0AGC010.V       | 0AGC010.VP                |
| 15                 | 0AGC015.V       | 0AGC015.VP                |
| 20                 | 0AGC020.V       | 0AGC020.VP                |
| 25                 | 0AGC025.V       | 0AGC025.VP                |
| 30                 | 0AGC030.V       | 0AGC030.VP                |
| 35                 | 0AGC035.V       | 0AGC035.VP                |

| CURRENT RATING (A) | BOXED           | CARDED                    |
|--------------------|-----------------|---------------------------|
|                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| <b>AGU</b>         |                 |                           |
| 1                  | 0AGU001.T       | –                         |
| 2                  | 0AGU002.T       | –                         |
| 3                  | 0AGU003.T       | –                         |
| 4                  | 0AGU004.T       | –                         |
| 5                  | 0AGU005.T       | –                         |
| 10                 | 0AGU010.T       | –                         |
| 15                 | 0AGU015.T       | –                         |
| 20                 | 0AGU020.T       | –                         |
| 25                 | 0AGU025.T       | –                         |
| 30                 | 0AGU030.T       | –                         |
| 35                 | 0AGU035.T       | –                         |
| 40                 | 0AGU040.T       | 0AGU040.VPG               |
| 50                 | 0AGU050.T       | 0AGU050.VPG               |
| 60                 | 0AGU060.T       | 0AGU060.VPG               |
| <b>AGX</b>         |                 |                           |
| 2                  | 0AGX002.V       | –                         |
| 3                  | 0AGX003.V       | –                         |
| 20                 | 0AGX020.V       | 0AGX020.VP                |
| 25                 | 0AGX025.V       | 0AGX025.VP                |
| 30                 | 0AGX030.V       | 0AGX030.VP                |



## SFE • Glass Fuses

Glass fuses designed to specifications set by the Society of Fuse Engineers. All are 1/4 inch in diameter, but vary in length according to the ampere rating to ensure accurate fuse replacement.

Additional information: [littelfuse.com/Glass](http://littelfuse.com/Glass)

Voltage Rating: 32V AC/DC, 250V may be substituted

| CURRENT RATING (A) | BOXED           | CARDED                    |
|--------------------|-----------------|---------------------------|
|                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| 4                  | 0SFE004.V       | 0SFE004.VP                |
| 6                  | 0SFE006.V       | 0SFE006.VP                |
| 7.5                | 0SFE007.5V      | 0SFE007.5VP               |
| 9                  | 0SFE009.V       | 0SFE009.VP                |
| 14                 | 0SFE014.V       | 0SFE014.VP                |
| 20                 | 0SFE020.V       | 0SFE020.VP                |
| 30                 | 0SFE030.V       | 0SFE030.VP                |

## GBC • Torpedo Fuse

A thermoplastic type, torpedo shaped fuse that can be currently found in many European cars. Consisting of a heat resistant body, the fuse element stretches over the exterior of the body from end to end. The bodies vary in color (by amperage) to ensure proper replacement.

Additional information: [littelfuse.com/Glass](http://littelfuse.com/Glass)

Voltage Rating: 32V AC/DC, 250V may be substituted

| CURRENT RATING (A) | BOXED           | CARDED                    |
|--------------------|-----------------|---------------------------|
|                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| 5                  | 0GBC005.V       | –                         |
| 8                  | 0GBC008.V       | 0GBC008.VP                |
| 16                 | 0GBC016.V       | 0GBC016.VP                |
| 25                 | 0GBC025.V       | 0GBC025.VP                |

# Glass and Ceramic Fuses

1



A complete line of 3 AG 1" x 1-1/4" fuses designed for battery chargers, diagnostic equipment, appliances and sophisticated electronic equipment. Available bulk, boxed, and carded.

Additional information: [littelfuse.com/Glass](http://littelfuse.com/Glass)

## Indicating 3AG Slo-Blo® • Glass Fuses

Littelfuse patented design Indicating fuse instantly shows whether fuse is blown through discoloration of the glass body. Reduces downtime by eliminating time consuming circuit testing and guesswork. This unique design offers the same characteristics as the standard 3AG Slo-Blo 313 fuse.

Approvals: UL listed: 1/2 – 8A, UL Recognized: 10A, CSA Certified: 1/2 – 8A.

| VOLTAGE RATING | BOXED      | DESCRIPTION                   |
|----------------|------------|-------------------------------|
| 250V           | 313.500VID | 1/2A Indicating 3AG Slo-Blo   |
| 250V           | 313001VID  | 1A Indicating 3AG Slo-Blo     |
| 250V           | 3131.50VID | 1-1/2A Indicating 3AG Slo-Blo |
| 250V           | 313002VID  | 2A Indicating 3AG Slo-Blo     |
| 250V           | 313003VID  | 3A Indicating 3AG Slo-Blo     |
| 250V           | 313004VID  | 4A Indicating 3AG Slo-Blo     |
| 250V           | 313005VID  | 5A Indicating 3AG Slo-Blo     |
| 250V           | 3136.25VID | 6-1/4A Indicating 3AG Slo-Blo |
| 250V           | 313007VID  | 7A Indicating 3AG Slo-Blo     |
| 250V           | 313008VID  | 8A Indicating 3AG Slo-Blo     |
| 32V            | 313010VID  | 10A Indicating 3AG Slo-Blo    |

## Fast-Acting 3AG • Glass Fuses

Fast-acting protection of electronic equipment and appliances. The circuit protection standard for cost effective reliability and performance.

Approvals: UL listed: 1/2 – 8A, UL Recognized: 10A, CSA Certified: 1/2 – 8A.

| VOLTAGE RATING | BOXED    | DESCRIPTION            |
|----------------|----------|------------------------|
| 250V           | 312.250V | 1/4A 3AG Fast-Acting   |
| 250V           | 312.500V | 1/2A 3AG Fast-Acting   |
| 250V           | 312.750V | 3/4A 3AG Fast-Acting   |
| 250V           | 312001V  | 1A 3AG Fast-Acting     |
| 250V           | 3121.25V | 1-1/4A 3AG Fast-Acting |
| 250V           | 31201.5V | 1-1/2A 3AG Fast-Acting |
| 250V           | 312002V  | 2A 3AG Fast-Acting     |
| 250V           | 31202.5V | 2-1/2A 3AG Fast-Acting |
| 250V           | 312003V  | 3A 3AG Fast-Acting     |
| 250V           | 312004V  | 4A 3AG Fast-Acting     |
| 250V           | 312005V  | 5A 3AG Fast-Acting     |
| 250V           | 312006V  | 6A 3AG Fast-Acting     |
| 250V           | 312007V  | 7A 3AG Fast-Acting     |
| 250V           | 312008V  | 8A 3AG Fast-Acting     |
| 250V           | 312010V  | 10A 3AG Fast-Acting    |

## 3AG Slo-Blo® • Glass Fuses

3AG (313) series Slo-Blo® fuses have a time delay in the overload range, which provides superior protection for inductive loads such as motors, transformers and solenoids.

Approvals: UL listed: 1/2 – 8A, UL Recognized: 10A – 30A, CSA, Certified: 1/2 – 8A.

| VOLTAGE RATING | BOXED    | DESCRIPTION        | VOLTAGE RATING | BOXED    | DESCRIPTION        |
|----------------|----------|--------------------|----------------|----------|--------------------|
| 250V           | 313.250V | 1/4A 3AG Slo-Blo   | 250V           | 313003V  | 3A 3AG Slo-Blo     |
| 250V           | 313.500V | 1/2A 3AG Slo-Blo   | 250V           | 313004V  | 4A 3AG Slo-Blo     |
| 250V           | 313.750V | 3/4A 3AG Slo-Blo   | 250V           | 313005V  | 5A 3AG Slo-Blo     |
| 250V           | 313001V  | 1A 3AG Slo-Blo     | 250V           | 3136.25V | 6-1/4A 3AG Slo-Blo |
| 250V           | 31201.5V | 1-1/2A 3AG Slo-Blo | 250V           | 313008V  | 8A 3AG Slo-Blo     |
| 250V           | 313002V  | 2A 3AG Slo-Blo     | 32V            | 313010V  | 10A 3AG Slo-Blo    |
| 250V           | 31302.5V | 2-1/2A 3AG Slo-Blo | 32V            | 313015V  | 15A 3AG Slo-Blo    |

## 3AG Normal-Blo • Glass Fuses

3AG (311) series Normal-Blo fuses are for use in radios, amplifiers, etc. Features straight type fuse element positioned to center of fuse for easy identification of blown fuse.

| VOLTAGE RATING | BOXED   | DESCRIPTION        |
|----------------|---------|--------------------|
| 32V            | 311005V | 5A 3AG Normal-Blo  |
| 32V            | 311010V | 10A 3AG Normal-Blo |
| 32V            | 311015V | 15A 3AG Normal-Blo |
| 32V            | 311025V | 20A 3AG Normal-Blo |

## Fast-Acting 3AB Slo-Blo® • Ceramic Fuses

Ceramic body construction permits higher interrupting and voltage ratings. Ideal for applications where high current loads are expected.

Approvals: UL listed and CSA Certified: 1/8 – 15A, UL Recognized: 20 – 30A.

| VOLTAGE RATING | BOXED   | DESCRIPTION         |
|----------------|---------|---------------------|
| 250V           | 314010V | 10A 3AB Fast-Acting |
| 250V           | 314015V | 15A 3AB Fast-Acting |
| 250V           | 314020V | 20A 3AB Fast-Acting |
| 250V           | 326015V | 15A 3AB Slo-Blo     |

## 8AG Normal-Blo • Glass Fuses

8AG (362) series Normal-Blo fuses are smaller in size (1/4" x 1") and are designed to be used where space limitations prevent the use of 3AG fuses. Approvals: UL listed: 1/8 – 5A, CSA Certified: 1/4 – 5A.

| VOLTAGE RATING | BOXED   | DESCRIPTION       |
|----------------|---------|-------------------|
| 32V            | 362002V | 2A 8AG Normal-Blo |
| 32V            | 362005V | 5A 8AG Normal-Blo |

# Circuit Breakers

## Type I • Automatic Reset

Cycles or continuously resets until the fault is corrected. Type I circuit breakers are typically used to protect circuits which occasionally experience momentary overloads such as wiper motor and headlamp circuits where a self resetting device is preferred.

Additional information: [littelfuse.com/CircuitBreakers](http://littelfuse.com/CircuitBreakers)

## Type II • Modified Reset

Non-cycling, remains in open position while there is power to the circuit. Resets when ignition is turned off. Type II circuit breakers are typically used in applications where fuse replacement is objectionable, such as power window, seat and sunroof circuits.

## Type III • Manual Reset

Manually resettable circuit breakers remain in the open position until a button, lever or other external reset device is manually depressed. Type III circuit breakers are typically used in applications where a manual reset is desired for safe diagnosis of a circuit fault.

### MINI® Circuit Breakers Standard Mini Footprint • Circuit Breakers

Designed to fit in a MINI® Blade fuse block or panel. SAE Type II used primarily as a wiring harness protector in 12V DC automotive systems. Conforms to SAE J553C standard.

| CURRENT RATING (A) | BOXED           |
|--------------------|-----------------|
|                    | MATERIAL NUMBER |
| 5                  | 0MIB005.X       |
| 10                 | 0MIB010.X       |
| 15                 | 0MIB015.X       |
| 20                 | 0MIB020.X       |
| 25                 | 0MIB025.X       |
| 30                 | 0MIB030.X       |



### Wide MINI® Footprint • Circuit Breakers

Direct factory replacement for many domestic OEM applications. Designed to fit either in an ATO® or NI® Blade fuse block or panel. Their blade configuration is of the MINI design and fit in a standard ATO style slot or across two MINI slots. Available in either SAE Type I cycling or SAE Type II non-cycling used primarily as a wiring harness protector in 12V DC automotive systems. Conforms to SAE J553C standard.

| CURRENT RATING (A) | BOXED           | APPLICATION            | CYCLING | NON-CYCLING |
|--------------------|-----------------|------------------------|---------|-------------|
|                    | MATERIAL NUMBER |                        |         |             |
| 15                 | 0MMB015.X       | Heavy Truck Headlamp   | •       |             |
| 20                 | 0MMB020.X       | Automotive Headlamp    | •       |             |
| 10                 | 0MNB010.X       | Heavy Duty Truck       |         | •           |
| 15                 | 0MNB015.X       | Heavy Duty Truck       |         | •           |
| 20                 | 0MNB020.X       | Automotive/Heavy Truck |         | •           |
| 25                 | 0MNB025.X       | Automotive/Heavy Truck |         | •           |
| 30                 | 0MNB030.X       | Automotive/Heavy Truck |         | •           |

### Specialty OEM • Circuit Breakers

Direct factory replacement for many domestic OEM vehicles. SAE Type I and Type II modified reset used primarily as a wiring harness protector in 12V DC automotive systems. Conforms to SAE J553C standard. Designed to mount in ATO style fuse blocks and panels.



| CURRENT RATING (A) | BOXED           | CARDED          | APPLICATION            | OEM PART NUMBER                          |
|--------------------|-----------------|-----------------|------------------------|--|
|                    | MATERIAL NUMBER | MATERIAL NUMBER |                        |  |
| 20                 | –               | 0ACB020.XP      | Automotive Headlamp    | GM# 12040816                             |
| 30                 | –               | 0ACB030.XP      | Power Windows, & Locks | GM# 01252240                             |
| 20                 | 0FCB020.X       | 0FCB020.XP      | Power Windows          | Ford# 83507005                           |
| 25                 | 0CCB025.X       | 0CCB025.XP      | Windows, Seats & Locks | Ford# D9AB-14526-BA<br>Chrysler# 4527053 |

# Circuit Breakers

1



## Universal Style • Circuit Breakers

Universal Circuit Breakers function identically and have same internal components as OEM breakers but offer the versatility of snap off terminals for greater flexibility. SAE Type II modified reset used primarily as a wiring harness protector in 12V DC automotive systems. Meets OEM requirements. Conforms to SAE J553C standard. Designed to mount in ATO style fuse blocks and panels.

| CURRENT RATING (A) | BOXED           | BOXED 100       | BOXED BULK      | CARDED                    |
|--------------------|-----------------|-----------------|-----------------|---------------------------|
|                    | MATERIAL NUMBER | MATERIAL NUMBER | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| 5                  | OUCB005.X       | BUCB005.H       | BUCB005.Z       | OUCB005.XP                |
| 6                  | –               | –               | –               | OUCB006.XP                |
| 8                  | –               | –               | –               | OUCB008.XP                |
| 10                 | OUCB010.X       | BUCB010.H       | BUCB010.Z       | OUCB010.XP                |
| 15                 | OUCB015.X       | BUCB015.H       | BUCB015.Z       | OUCB015.XP                |
| 20                 | OUCB020.X       | BUCB020.H       | BUCB020.Z       | OUCB020.XP                |
| 25                 | OUCB025.X       | BUCB025.H       | BUCB025.Z       | OUCB025.XP                |
| 30                 | OUCB030.X       | BUCB030.H       | BUCB030.Z       | OUCB030.XP                |



## MAXI Style • Circuit Breakers

Direct factory replacement for many domestic OEM applications. Designed to fit a MAXI Blade fuse block or panel. Available in either SAE Type I cycling or SAE Type II non-cycling. Used primarily as a wiring harness protector in 12V DC automotive systems. Meet OEM requirements. Conforms to SAE J553C standard.

| CURRENT RATING (A) | BOXED           | APPLICATION   | OEM                                 | CYCLING | NON-CYCLING |
|--------------------|-----------------|---|-------------------------------------|---------|-------------|
|                    | MATERIAL NUMBER |   |                                     |         |             |
| 20                 | OMCB020.X       | Automotive Headlamp   | GM# 12065132                        | •       |             |
| 30                 | OMCB030.X       | Automotive Headlamp, Seats & Wipers   | GM# 12088553                        | •       |             |
| 40                 | OMCB040.X       | –   | –                                   | •       |             |
| 10                 | OMXB020.X       | Automotive Power Devices<br>Heavy Truck & Auto Cooling Fan                  | GM# 12077842<br>Ford# FGHT-14526-KA |         | •           |
| 15                 | OMXB020.X       | Automotive Power Window<br>Heavy Truck & Auto Cooling Fan &<br>Power Window | GM# 12077843<br>Ford# F6HT-14526-LA |         | •           |



## Fuse Clip • Circuit Breakers

Direct replacement for many OEM applications. Designed for glass fuses without physical alteration in the system. Fits 1-1/4" fuse clips. SAE Type II non-cycling used primarily as a wiring harness protector in 12V DC automotive systems. Conforms to SAE J553C standard.

| CURRENT RATING (A) | BOXED           | CARDED                    |
|--------------------|-----------------|---------------------------|
|                    | MATERIAL NUMBER | PACKAGING MATERIAL NUMBER |
| 10                 | OCBF010.Z       | OCBF010.XP                |
| 15                 | OCBF015.Z       | OCBF015.XP                |
| 20                 | OCBF020.Z       | OCBF020.XP                |
| 25                 | OCBF025.Z       | OCBF025.XP                |
| 30                 | OCBF030.Z       | OCBF030.XP                |
| 35                 | OCBF035.Z       | OCBF035.XP                |
| 40                 | OCBF040.Z       | OCBF040.XP                |

# Circuit Breakers

## 50-150A • 32V DC • Hi-Amp Type III • Circuit Breakers



These high amp circuit breakers are typically used in auxiliary and accessory circuits for trucks, buses, RVs and marine applications in battery charger systems and DC audio systems. All high amp circuit breakers comply with the SAE J1117 and J1625 standard for ignition protection.

- Agency Approvals: UL Approved for all amp ratings at 32V DC
- Interrupting Rating: 3000A @30V DC
- Ignition Protection: SAE J1625 and J1171
- Material: Thermoset Plastic UL Rating 94VO
- Temperature Range: -32C to 92C
- RoHS Compliant.
- Waterproof

| CURRENT RATING (A) | BOXED PART NUMBERS |                | CARDED PART NUMBERS |                | INTERRUPTING RATING | RoHS |
|--------------------|--------------------|----------------|---------------------|----------------|---------------------|------|
|                    | MATERIAL NUMBER    | CATALOG NUMBER | MATERIAL NUMBER     | CATALOG NUMBER |                     |      |
| 50                 | 0185050.X          | 185050         | –                   | –              | 3000A @ 30 VDC      | •    |
| 60                 | 0185060.X          | 185060         | –                   | –              | 3000A @ 30 VDC      | •    |
| 70                 | 0185070.X          | 185070         | –                   | –              | 3000A @ 30 VDC      | •    |
| 80                 | 0185080.X          | 185080         | –                   | –              | 3000A @ 30 VDC      | •    |
| 100                | 0185100.X          | 185100         | 0185100.XP          | 185100BP       | 3000A @ 30 VDC      | •    |
| 120                | 0185120.X          | 185120         | 0185120.XP          | 185120BP       | 3000A @ 30 VDC      | •    |
| 150                | –                  | –              | 0185150.XP          | 185150BP       | 3000A @ 30 VDC      | •    |

## Mini Type I • Circuit Breakers



Designed to fit in a MINI blade fuse block or panel. Conforms to SAE J553. Cycles or continuously resets until the fault is corrected. Type I circuit breakers are typically used to protect circuits which occasionally experience momentary overloads such as wiper motor and headlamp circuits where a self resetting device is preferred.

| CURRENT RATING (A) | BOXED PART NUMBERS |                | CARDED PART NUMBERS |                |
|--------------------|--------------------|----------------|---------------------|----------------|
|                    | MATERIAL NUMBER    | CATALOG NUMBER | MATERIAL NUMBER     | CATALOG NUMBER |
| 10                 | –                  | –              | 0211010.XP          | 211010BP       |
| 15                 | 0211015.X          | 211015         | 0211015.XP          | 211015BP       |
| 20                 | 0211020.X          | 211020         | 0211020.XP          | 211020BP       |
| 25                 | 0211025.X          | 211025         | 0211025.XP          | 211025BP       |
| 30                 | 0211030.X          | 211030         | 0211030.XP          | 211030BP       |



## 1

### Box Style Circuit Breakers

Steel or plastic housing. Steel box type is approximately 1 1/4" x 3/4" x 2/3" and comes with integral brackets (to be directly affixed with screws or bolts) or without (needs a mounting bracket). Breakers have 10-32 studs, blades or wire leads. Wire lead type has a 10" wire loop connected to studs and PVC-coated. Loop is intended to be cut, stripped and spliced into a circuit.

Datasheet, wiring diagram, and additional pack sizes visit: [littelfuse.com/CircuitBreakers](http://littelfuse.com/CircuitBreakers)



30056, 30137, 30171 - with studs, no bracket



30055, 30138, 30172 - with studs and bracket



300128 - with studs and cross-bracket



3088, 30507 - double breaker assembly

### Steel Case With Stud Terminals

| PART NUMBERS |       |        | VOLT (V DC) | AMPS (A) | SEALED | NOTES  |               |
|--------------|-------|--------|-------------|----------|--------|--------|---------------|
| BULK         | BOXED | RETAIL |             |          |        |        |               |
| 30056-8      | -BX   | -      | 12          | 8        |        | Type I |               |
| 30056-10     | -BX   | -      |             | 10       |        |        |               |
| 30056-15     | -BX   | -      |             | 15       |        |        |               |
| 30056-20     | -BX   | -      |             | 20       |        |        |               |
| 30056-25     | -BX   | -      |             | 25       |        |        |               |
| 30056-30     | -BX   | -BP    |             | 30       |        |        |               |
| 30056-40     | -BX   | -      |             | 40       |        |        |               |
| 30056-50     | -BX   | -      |             | 50       |        |        |               |
| 30137-6*     | -     | -      |             | 6        | •      |        | Type I sealed |
| 30137-10*    | -     | -      |             | 10       | •      |        |               |
| 30137-15     | -BX   | -      | 15          | •        |        |        |               |
| 30137-20     | -BX   | -      | 20          | •        |        |        |               |
| 30137-30     | -BX   | -      | 30          | •        |        |        |               |

| PART NUMBERS |       |        | VOLT (V DC) | AMPS (A) | SEALED                    | NOTES               |                            |
|--------------|-------|--------|-------------|----------|---------------------------|---------------------|----------------------------|
| BULK         | BOXED | RETAIL |             |          |                           |                     |                            |
| 30055-8*     | -     | -      | 12          | 8        |                           | Type I with bracket |                            |
| 30055-10     | -BX   | -      |             | 10       |                           |                     |                            |
| 30055-15     | -BX   | -BP    |             | 15       |                           |                     |                            |
| 30055-20     | -BX   | -BP    |             | 20       |                           |                     |                            |
| 30055-25     | -BX   | -      |             | 25       |                           |                     |                            |
| 30055-30     | -BX   | -BP    |             | 30       |                           |                     |                            |
| 30055-40     | -BX   | -BP    |             | 40       |                           |                     |                            |
| 30055-50     | -BX   | -BP    |             | 50       |                           |                     |                            |
| 30138-10*    | -     | -      |             | 10       | •                         |                     | Type I sealed with bracket |
| 30138-15*    | -     | -      |             | 15       | •                         |                     |                            |
| 30138-25*    | -     | -      | 25          | •        |                           |                     |                            |
| 30138-30     | -BX   | -      | 30          | •        |                           |                     |                            |
| 30138-40*    | -     | -      | 40          | •        |                           |                     |                            |
| 30128-10     | -BX   | -      | 12          | 10       | Type I with cross-bracket |                     |                            |
| 30128-15     | -BX   | -      |             | 15       |                           |                     |                            |
| 30128-20     | -BX   | -      |             | 20       |                           |                     |                            |
| 30128-30     | -BX   | -      |             | 30       |                           |                     |                            |
| 30128-40     | -BX   | -      |             | 40       |                           |                     |                            |

| PART NUMBERS |       |        | VOLT (V DC) | AMPS (A) | SEALED                         | NOTES  |                                       |
|--------------|-------|--------|-------------|----------|--------------------------------|--------|---------------------------------------|
| BULK         | BOXED | RETAIL |             |          |                                |        |                                       |
| 30171-10     | -BX   | -      | 24          | 10       |                                | Type I |                                       |
| 30171-15     | -BX   | -      |             | 15       |                                |        |                                       |
| 30171-20     | -BX   | -      |             | 20       |                                |        |                                       |
| 30171-30     | -BX   | -      |             | 30       |                                |        |                                       |
| 30172-10*    | -     | -      |             | 24       | 10                             |        | Type I with bracket                   |
| 30172-15     | -BX   | -      |             |          | 15                             |        |                                       |
| 30172-20     | -BX   | -      | 20          |          |                                |        |                                       |
| 30172-30     | -BX   | -      | 12          | 30       | Type I double breaker assembly |        |                                       |
| 3088-50*     | -     | -      |             | 50       |                                |        |                                       |
| 3088-60      | -BX   | -      |             | 60       |                                |        |                                       |
| 3088-80      | -BX   | -      |             | 80       |                                |        |                                       |
| 30507-60     | -BX   | -      |             | 12       |                                | 60     | Type I sealed double breaker assembly |
| 30507-80     | -BX   | -      |             |          |                                | 80     |                                       |



30062 with wire leads, with bracket



30063 with wire leads, without bracket



30407 - Studs and cross-bracket



30401 - steel case with blades

### Steel Case With Wire Terminals, PVC-Coated

| PART NUMBERS |       |        | VOLT (V DC) | AMPS (A) | SEALED | NOTES               |
|--------------|-------|--------|-------------|----------|--------|---------------------|
| BULK         | BOXED | RETAIL |             |          |        |                     |
| 30062-20     | -BX   | -      | 12          | 20       | •      | Type I with Bracket |
| 30062-30     | -BX   | -      |             | 30       | •      |                     |
| 30063-10*    | -     | -      | 12          | 10       | •      | Type I              |
| 30063-20     | -BX   | -      |             | 10       | •      |                     |
| 30063-30*    | -     | -      |             | 30       | •      |                     |

### Plastic Case, Stud Terminals

| PART NUMBERS |       |        | VOLT (V DC) | AMPS (A) | SEALED | NOTES                   |
|--------------|-------|--------|-------------|----------|--------|-------------------------|
| BULK         | BOXED | RETAIL |             |          |        |                         |
| 30407-15     | -BX   | -      | 12          | 15       |        | Type III, Cross-Bracket |
| 30407-20     | -BX   | -      |             | 20       |        |                         |
| 30407-25*    | -     | -      |             | 25       |        |                         |
| 30407-30     | -BX   | -      |             | 30       |        |                         |
| 30407-40     | -BX   | -      |             | 40       |        |                         |
| 30414-30*    | -     | -      |             | 12       | 30     |                         |
| 30414-50     | -BX   | -      | 50          |          | •      |                         |

### Steel Case With Blade Terminals

| PART NUMBERS |       |        | VOLT (V DC) | AMPS (A) | SEALED | NOTES  |
|--------------|-------|--------|-------------|----------|--------|--------|
| BULK         | BOXED | RETAIL |             |          |        |        |
| 30401-15     | -BX   | -      | 12          | 15       |        | Type I |
| 30401-20*    | -     | -      |             | 20       |        |        |

\*Special Order Item

# Circuit Breakers



## Stud Type Low Voltage (6–12 Volts) • Circuit Breakers

SAE Type I automatic reset provides protection in installations where it is not possible to manually reset a breaker because of location or safety requirements. Used primarily as a wiring harness protector in 12V DC automotive systems. Conforms to SAE J553C standard. Available with or without mounting bracket.

1

| CURRENT RATING (A) | BOXED W/O BRACKET | BOXED W/ BRACKET | CARDED          |
|--------------------|-------------------|------------------|-----------------|
|                    | MATERIAL NUMBER   | MATERIAL NUMBER  | MATERIAL NUMBER |
| 5                  | 0812005.ZXST      | 0813005.ZXST     | –               |
| 6                  | 0812006.ZXST      | 0813006.ZXST     | –               |
| 8                  | 0812008.ZXST      | 0813008.ZXST     | –               |
| 10                 | 0812010.ZXST      | 0813010.ZXST     | –               |
| 15                 | 0812015.ZXST      | 0813015.ZXST     | –               |
| 20                 | 0812020.ZXST      | 0813020.ZXST     | 0813020.XP      |
| 25                 | 0812025.ZXST      | 0813025.ZXST     | –               |
| 30                 | 0812030.ZXST      | 0813030.ZXST     | 0813030.XP      |
| 35                 | 0812035.ZXST      | 0813035.ZXST     | –               |
| 4                  | 0812040.ZXST      | 0813040.ZXST     | 0813040.XP      |
| 50                 | 0812050.ZXST      | 0813050.ZXST     | 0813050.XP      |

## Circuit Breaker Accessories

Breaker mounting brackets & busbars. Mounting brackets available in steel or nylon and accept 30056 and 30137 series breakers.

Busbars are made from heavy solid brass or copper, with holes or slots that make it easy to connect box-type circuit breakers with studs, in order to feed a number of protected circuits.



30090-04 4-gang steel bracket



87128-4 Nylon bracket



86099-5 brass busbar with holes



86126-4 copper busbar with slots

| PART NUMBERS |       | DESCRIPTION      | NUMBER OF GANGS | MATERIAL | DIMENSIONS                      | MOUNTING HOLE DIMENSIONS     | NOTES   |
|--------------|-------|------------------|-----------------|----------|---------------------------------|------------------------------|---|
| BULK         | BOXED |                  |                 |          |                                 |                              |   |
| 30090-2      | -BX   | Mounting Bracket | 2               | Steel    | .81" x 1.29" (122.2 x 32.8 mm)  | 4.00" (101.6mm) on centers   | For all steel breakers without a bracket. Breakers snap into position, engaging with dimples in the case of the breaker.    |
| 30090-3      | -BX   |                  | 3               |          | 5.71" x 1.29" (145.0 x 32.8mm)  | 1.90" (124.5mm) on centers   |   |
| 30090-4      | -BX   |                  | 4               |          | 6.62" x 1.29" (160.1 x 32.8mm)  | 5.81" (147.6mm) on centers   |   |
| 30090-6      | -BX   |                  | 6               |          | 8.43" x 1.29" (214.1 x 32.8mm)  | 7.62" (193.5mm) on centers   |   |
| 30090-8      | -BX   |                  | 8               |          | 10.25" x 1.29" (260.4 x 32.8mm) | 9.43" (239.5mm) on centers   |   |
| 87128-4      | -BX   | Mounting Bracket | 4               | Nylon    | 5.69" long (114.5mm)            | 4.89" (124.2mm) on centers   | Secure stud-type breakers by tightening the nuts on the breaker studs. Slots: .910" (23.1mm) on centers, .210" (5.3mm) wide |
| 87128-6      | -BX   |                  | 6               |          | 7.51" long (190.8mm)            | 6.71" (170.4mm) on centers   |   |
| 87128-8      | -BX   |                  | 8               |          | 9.33" long (237.0mm)            | 8.53" (216.7mm) on centers   |   |
| 87128-10     | -BX   |                  | 10              |          | 11.15" long (283.2mm)           | 10.35" (262.9mm) on centers  |   |
| 87128-13     | -BX   |                  | 13              |          | 13.88" long (352.6mm)           | 13.08" (332.2mm) on centers  |   |
| 86099-2      | -BX   | Busbar           | 2               | Brass    | 1.53" long (38.9mm)             | –                            | Holes: .910" (23.1mm) on centers, 0.21" (5.3mm) dia.  |
| 86099-3      | -BX   |                  | 3               |          | 2.43" long (61.7mm)             | –                            |   |
| 86099-4      | -BX   |                  | 4               |          | 3.34" long (84.8mm)             | –                            |   |
| 86099-5      | -BX   |                  | 5               |          | 4.24" long (107.7mm)            | –                            |   |
| 86126-2      | -BX   | Busbar           | 2               | Copper   | 1.41" x .560" (35.8 x 14.2mm)   | .910" (23.11mm) on centers   | Recommended for use with brackets 87128-X Slots: .910" on centers, .210" (5.3mm) wide                                       |
| 86126-4      | -BX   |                  | 4               |          | 3.23" x .560" (82.1 x 14.2mm)   | 2.73" (69.34mm) on centers   |   |
| 86126-6      | -BX   |                  | 6               |          | 5.05" x .560" (128.3 x 14.2mm)  | 4.55" (115.57mm) on centers  |   |
| 86126-8      | -BX   |                  | 8               |          | 6.87" x .560" (174.5 x 14.2mm)  | 6.37" (161.79mm) on centers  |   |
| 86126-12     | -BX   |                  | 12              |          | 10.51" x .560" (267.0 x 14.2mm) | 10.01" (254.25mm) on centers |   |