



Because we produce parts in high volumes, we can pass on the best prices and great service. In addition, for custom parts we can suggest design or manufacturability improvements to aid reliability and reduce costs. We have ISO 9001 certification, a sign of the commitment we have made to demand high quality as much as our customers do.

Automotive 12V Technology

In today's world, a wide array of automotive 12 volt plug-in cord sets, 12v-plugs and 12v-sockets are presented to designers of electronic systems and products. Some are hardly up to the challenges presented by the ever-increasing multitude of electronic devices like cell phones, iPods and portable navigation devices that have become as commonplace as tires on a vehicle.

Market Outlook: Automotive 12 volt cord sets are normally made with twin copper wires and in lengths typically from three to fifteen feet. Some use heavy gage copper wire in longer lengths and are greatly affected by changes in copper's pricing. Long lengths of heavy gage wires sometimes suffer twice because of higher freight costs with rising petroleum and labor costs.

Vibration. Heat. Shock. Humidity. Corrosion. Pressure. These real-world conditions cause device failures and higher support costs for suppliers. Without a reliable and continuous supply of current, an electronic device's operation will be interrupted and the system might be damaged. Repeated, forceful insertions and removals by consumers could cause stress fractures of plastic or metal components and wires.

Automotive plug-in cord set designs are traditionally full of trade-offs: size and weight constraints versus durability, ease of insertion and removal versus ability to retain the plug under rigorous conditions, and durability of materials versus component cost, to name a few. The increasing demand for ruggedness of portable devices has made the balancing act of 12v-plug design even trickier.

Retention: An automotive 12v-plug needs to be able to retain itself into the socket even under significant vibration, shock, and torque. Failure to properly hold the connection, even for a matter of microseconds, can result in an interruption of power and device malfunction. A well-designed 12v-plug will resist shock and vibration, while remaining easy to remove without tools.

Durability: Depending on the use, a device could have its 12v-plug inserted hundreds or even thousands of times throughout its lifespan. Because of the retention issues described above, an automotive plug must hold its connection securely. However, this results in extra wear upon the contacts as the same high grip which secured the 12v-plug causes increased wear under the stresses of removal and insertion. Thus, it is important to insure that 12v-plug materials be durable enough to withstand stresses that could cause dangerous fractures.

Corrosion Resistance: When components are exposed to humidity, airborne pollutants, extreme temperatures, and other environmental conditions, corrosion can result. Over time, this corrosive build-up can cause loss of electrical contact. The use of corrosion resistant contacts is particularly necessary for portable devices, where protection from the elements cannot be guaranteed.

Contact Conductivity: The choice of metals in 12v-plug sets determine how easily electricity will flow from the automobile to the device. Some types of platings are subject to oxidation and thus the resulting increase in electrical resistance. More conductive metals that resist oxidation, such as gold, allow high conductivity, meaning lower resistance, which allows for slightly quicker charging during short trips.

Fuses: A safety item that every automotive cord set should have but frequently do not. Many assume that the current in automobiles is not subject to voltage changes. An automobiles electrical system can have very high voltage spikes, for instance when the starter stops a minus 200 volt spike can occur, and large positive spikes can also occur. The battery does a good job as a filter because it acts like a large capacitor to absorb these spikes, but a fuse is an inexpensive insurance, especially in a product having worldwide distribution and use.



MEMORY PROTECTION DEVICES, INC. 200 BROAD HOLLOW ROAD, FARMINGDALE, NY 11735-4814

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ZA5035



ZA5036



ZA5053



ZA5054



ZA5073



ZA5073-B



ZA5073-2.5



ZA5075



ZA5077

12V Power Cord Sets

ZA5036	ZA1030 w/400 mm cord, 1.3 x 3.5 mm R/A plug
ZA5053	ZA1060 w/5' cord, 3 amp fuseholder 3 pin connector
ZA5054	ZA1060 w/10' cord, 2.5 x 5.5 mm DC plug
ZA5073	APP-001 w/5 amp fuse, 6' cord, 2.1 x 5.5 mm DC plug
ZA5073-2.5	APP-001 w/5 amp fuse, 6' cord, 2.5 x 5.5 mm DC plug
ZA5073-B	APP-001 w/5 amp fuse, 6' cord with tinned ends
ZA5075	APP-001 w/3 amp fuse, 5' cord + 2 pin connector
ZA5077	APP-001 w/3 amp fuse, 6' cord, 2.1 x 5.5 mm DC plug
ZA5077-R	APP-001 w/3 amp fuse, 6' cord, 2.1 x 5.5 mm DC plug, center Negative

12V Coiled Cord Sets



ZA5070



ZA5074



ZA5074-2.5



ZA5074-B

12V Coiled Cord Sets

ZA5070	APP-001 with 5 amp fuse, 12' coil cord, cigarette socket
ZA5074	APP-001 with 5 amp fuse, 12' coil cord, 2.1 x 5.5 mm
ZA5074-2.5	APP-001 with 5 amp fuse, 12' coil cord, 2.5 x 5.5 mm
ZA5074-B	APP-001 with 5 amp fuse, 12' coil cord, tinned leads

12V Extension Assemblies



ZA5070



ZA5071

12V Extension Assemblies

ZA5070	APP-001 with 5 amp fuse, 12' coil cord, cigarette socket
ZA5071	APP-001 with 10 amp fuse, 12' cord, cigarette socket



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12V Cigarette Plug Splitters



ZA5072

ZA5018

12V Cigarette Plug Splitters

ZA5018

One plug and two cigarette sockets, LED, 2 amp fuse

ZA5072

APP-001 with 10 amp fuse, 8" cord & twin cigarette sockets

Auto Cable Assembly Options



Tinned/Stripped
Wires and Cords

Terminals, Spades
and Lugs

DC Plugs- Straight

DC Plugs- Right Angle

2-Pin Auto Connector

Contact our factory
for details on
how to place an order
and to specify
assembly options.



2-Pin Plug Connector



Lead Acid Clip



ZA2010

Auto Cigarette Socket

Specialized Auto Cigarette Plugs



Voltage Meter

AP-125



USB Adapter

AP-133



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Auto Cigarette Plugs



APP-001



APP-002



APP-003



APP-004



ZA1010



ZA1030



ZA1060



ZA1080



ZA1090



ZA1091



ZA1093



AP-104-NT



AP-120



AP-121



AP-124



AP-129



AP-130



AP-131



AP-132

High Amperage Auto Cigarette Plugs



APP-001-10amp



APP-001-15amp



APP-001-20amp



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Vibration-Resistant Assembly

Weather resistant



Auto Cigarette Plugs

AP-104-NT	"ZA1094-NT" 12V plug, transformer, empty case
AP-120	Cigarette plug, adjustable head, on-off switch, green LED, 5 amp fuse
AP-121	Cigarette plug, weather-vibration resistant, twist & lock, green LED, 3 amp
AP-124	Cigarette plug, 5 amp fuse, high impact body
AP-129	12V auto plug, European style, CE listed
AP-130	12V auto plug, led, switch and fuse, CE listed
AP-131	12V auto plug, mini style with fuse, CE listed
AP-132	12V auto plug, adapter to aircraft plug
AP-125	12V auto plug, car battery analyzer
AP-133	12V auto plug, with USB outlet
APP-001	Black auto cigarette plug, red LED, 3 amp fuse
APP-001-10AMP	same as APP-001 but with 10 amp fuse
APP-001-15AMP	same as APP-001 but with 15 amp fuse
APP-001-20AMP	same as APP-001 but with 20 amp fuse
APP-002	Gray auto cigarette plug, red LED, 3 amp fuse
APP-003	Black auto cigarette plug, no LED, 3 amp fuse
APP-004	Gray auto cigarette plug, no LED, 3 amp fuse
ZA1010	Cigarette plug, bakelite with 3 amp fuse
ZA1030	Cigarette plug, bakelite
ZA1060	Cigarette plug, plastic
ZA1080	Cigarette plug, plastic with thumb grips
ZA1090	Cigarette plug, illuminated body, 3 amp fuse
ZA1091	Cigarette plug, Bakelite with 3 amp fuse
ZA1093	Cigarette plug, Bakelite with 3 amp fuse and dual contacts



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Covered Cigarette Sockets



AS-213



AS-215



AS-214



AS-203B



Marine Plugs

Panel Mounting Sockets



AS-212A



AS-212B



AS-212C



Top Mounting Sockets



AS-212L



AS-212D



Auto Antenna Plugs & Sockets



AP102



ZA2090



ZA2092



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Weather Resistant Socket



AS-212

(available with and without markings)



ZA2030



ZA2040



ZA2010



ZA2050



ZA2060



ZA2070



ZA2080



ZA2081-R



ZA2081-B

Auto Cigarette Sockets

AS-203B	12V auto socket with safety cap
AS-212	Weather & vibration resistant, 15 amps
AS-212B	Weather & vibration resistant, 15 amps, with quick-mount ring
AS-212C	12V socket, weather & vibration resistant
AS-212D	Weather & vib. resistant, 15 amps, mounting bracket, quick-mount ring
AS-212L	Weather & vibration resistant, 15 amps, with mounting bracket
AS-213	DIN, 12mm standard socket with cap, panel type with flat terminals
AS-214	DIN, 12mm standard socket with protective cap, cable type
AS-215	12V auto socket with cover
ZA2010	Cigarette socket, 12V plastic inline socket, unscrews for easy wiring
ZA2030	Cigarette socket, large panel, porcelain, screwlock, wall mounting plate
ZA2040	Cigarette socket, panel mounting with small plate, porcelain, screwlock
ZA2050	Cigarette socket, bakelite insulator, insert lock, panel mounting
ZA2060	Cigarette socket, bakelite insulator, screwlock, panel mounting
ZA2070	Cigarette socket, porcelain insulator, insert lock, panel mounting
ZA2080	Plastic ringlet, amber ring
ZA2081-R	Rubber cover for cigarette socket, red
ZA2081-B	PVC cover for cigarette socket, black

2AG and 5mm Fuse Clips



BK-6002



BK-6005



BK-6009

Low-profile, snap-in design, PC retention for wave soldering, available with legs for critical alignment during PC installation, available with or without stops. Rated 6.3 to 30 Amps.

3AG (.250") Fuse Clips and PC Fuse Holders



BK-6001



BK-6003



BK-6007



BK-6004 w. 3AG Fuse

Low-profile, snap-in design, PC retention for wave soldering, available with legs for critical alignment during PC installation, available with or without stops. Rated 6.3 to 30 Amps.

PC Automotive Blade Fuse Clips



BK-6006



BK-6008



BK-6011



BK-6012

Low-profile, snap-in design, PC retention for wave soldering, available with legs for critical alignment during PC installation, available with or without stops. Rated 6.3 to 30 Amps.

15 Amp PC Automotive Blade Fuse Holders



BK-6010



BK-6013

Thru hole PC mountable, maintains position during wave soldering. Holder design prevents solder wicking. Shock and vibration resistant. Durable grip, even after multiple uses.



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BF 303

BF301

BF302

BK-6001

BK-6002

BK-6003

BK-6004

BK-6005

BK-6006

BK-6007

BK-6008

BK-6009

BK-6010

BK-6011

BK-6012

BK-6013

Auto fuse holder for .110" x" .032" mini blade fuses

