Molex USB smart-charge modules lead the market by combining automotive-grade durability and off-the-shelf availability through distribution.

**Features and Advantages**

**Modern Features**
- Easy to read lettering and display.
- Blue LED backlighting.
- Panel Thickness: 3.40 to 3.80mm

**Charging Profiles Supported:**
- USB battery charging specification
- BC1.2 compliant.
- Apple MFI compliant.
- 1.2V Mode

**Safety Protection Features**
- Over-voltage, reverse-battery and over-current protection.
- ESD and short-circuit protection.
- Optional tethered dust caps

**Quality Connector Styles**
- Automotive-grade USB Type A on the front. 10K cycle life. Molex MiniSO on the rear.

**Electric Performance**
- 1.0A output current.
- Battery operating voltage: 9 to 16V
- Operating temperature: -40 to +85˚C

**Easy to Design-In**
- Plastic housing designed to fit existing rocker panel switch cut out.

**Single-Port USB Smart Charger**

**Modern Features**
- Easy to read lettering and display.
- LED backlight.
- Painted and laser-etched housing.
- Panel Thickness: 2.25 to 2.65mm

**Safety Protection Features**
- Over-voltage, reverse-battery and over-current protection.
- ESD and short-circuit protection.
- Optional tethered dust caps

**Quality Connector Styles**
- Automotive-grade USB Type A on the front. 10K cycle life. Molex MiniSO on the rear.

**Electric Performance**
- 2.4A output current.
- Battery operating voltage: 9 to 16V
- Operating temperature: -40 to +85˚C

**Dual-Port USB-A Smart Charger**

**Modern Features**
- Easy to read lettering and display.
- Halo lighting (light-pipe).
- Cosmetic molding and pad printed icon.
- Panel Thickness: 2.50 to 3.50mm

**Safety Protection Features**
- Over-voltage, reverse-battery and over-current protection.
- ESD and short circuit protection.

**Quality Connector Styles**
- Automotive-grade USB Type A on the front. 10K cycle life. Molex MiniSO Connector on the rear

**Electric Performance**
- 2.4A output current.
- Battery operating voltage: 9 to 16V
- Operating temperature: -40 to +85˚C

**Dual-Port USB-A and USB-C Smart Charger**

**Modern Features**
- Easy to read lettering and display.
- Halo lighting (light-pipe). Cosmetic molding and pad printed icon. Panel thickness: 2.50 to 3.50mm

**Safety Protection Features**
- Over-voltage, reverse-battery and over-current protection.

**Quality Connector Styles**
- Automotive-grade USB-A and USB-C ports on the front. 10K cycle life. Molex MiniSO Connector on the rear

**Electric Performance**
- USB-C output current: 3.0A
- USB-A output current: 2.4A
- Battery operating voltage: 9 to 16V
- Operating temperature: -40 to +85˚C

**Charging Profiles Supported**
- USB battery charging specification
- BC1.2 compliant.
- Apple MFI compliant.
- 1.2V Mode
# USB Smart Charge Modules

## Applications

<table>
<thead>
<tr>
<th>Commercial Vehicle</th>
<th>Automotive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction equipment</td>
<td>Cars</td>
</tr>
<tr>
<td>Farm equipment</td>
<td>Pickup trucks</td>
</tr>
<tr>
<td>Trains</td>
<td>SUVs</td>
</tr>
<tr>
<td>Airplanes</td>
<td></td>
</tr>
</tbody>
</table>

## Specifications

### Single-Port USB Charger Module

#### ELECTRICAL
- **Voltage (max.):** 16V DC
- **Input:** 9 to 16V DC
- **Output (max.):** 5V DC +/-5% 1.0A
- **Backlight:** Blue LED, 12V DC

#### MATERIALS
- **Housing:** Polycarbonate/Acrylonitrile Butadiene Styrene (PC+ABS), Black

#### PHYSICAL
- **Operating Temperature:** -40 to +85°C (automotive grade)
- **Dimensions (mm):** 48.00 by 26.00 by 37.05mm
- **Mating cycles:** 5,000

### Single-Port USB Charger Module

#### ELECTRICAL
- **Input voltage range:** 9 to 16V DC
- **Output voltage range:** 5V DC +/-10% USB output
- **Maximum output charging current:** 2.4A DC, limited to 2.9A
- **Maximum input current at maximum load:** 1.5A DC
- **Maximum input current for illumination line:** 12mA DC
- **Component BOM:** AEC-Qualified

#### MATERIALS
- **PCB:** FR4, UL 94V-0
- **Plastic Housings:** Color: black over white material
- **USB Type A:** Housing material: high temp thermoplastic, UL-94v-0, color: black.
- **Terminal:** phosphor bronze, plating: gold 0.75μm
- **Shield:** stainless steel Ni 0.75μm min.
- **Mini50 connector:** Housing material: polyester alloy, color: black
- **Terminal:** brass, plating: tin

### REFERENCES
- **Packaging:** Per PK-68532-4510
- **Mates With:** Mini50
- **Use With:** Mini50
- **Designed In:** Millimeters
- **RoHS:** Yes (with exemption)
- **Glow Wire Compliant:** No

---

### Additional Information

- **PV Test Report:** Test Data Restricted
- **Molex PPAP:** In-Process
Specifications

Dual-Port USB-A Smart Charger

REFERENCE INFORMATION
Packaging: Per PK-68532-4460
Mates With: Mini50
Use With: Mini50
Designed In: Millimeters
RoHS: Yes (with exemption)
Halogen Free: No
Glow Wire Compliant: No

Supported charging schemes:
- D+ and D- Divider Mode 2.7V and 2.7V
- D+ and D- 1.2V Mode
- D+ and D- Shorted Mode per USB Battery Charging Specification 1.2 (BC1.2)

PV Test Report: Test Data Restricted
Molex PPAP: In-Process

ELECTRICAL
Input voltage range: 9 to 16V DC
Output voltage range: 5V DC +/- 0.25V @ 2.4A
Maximum output charging current: 2.4A DC, limited to 2.9A
Maximum input current at no load: 26mA
Component BOM: AEC-Qualified

MATERIALS
Front housing: pc+abs, pg05 black
Surface finish (faceplate): Light Texture
Light pipes: PC
Rear housing: pc+abs, pg05 black
Rubber cover: TPE
Printed circuit board: fr4

PHYSICAL
Industrial Operating Range: -40 to +85ºC
Non-operating: -55 to +85°C USB Module
Color for illuminated USB halo is white.
Insertion: 49N max
Extraction: 68.8N min
Durability: 10,000 cycles

Dual-Port USB-A and USB-C Smart Charger

REFERENCE INFORMATION
Packaging: Per PK-68532-4460
Mates With: Mini50
Use With: Mini50
Designed In: Millimeters
Halogen Free: No
Glow Wire Compliant: No

Supported charging schemes:
- D+ and D- Divider Mode 2.7V and 2.7V
- D+ and D- 1.2V Mode
- D+ and D- Shorted Mode per USB Battery Charging Specification 1.2 (BC1.2)

PV Test Report: Test Data Restricted
Molex PPAP: In-Process

ELECTRICAL
Input voltage range: 9 to 16V DC
Output voltage range: 5V DC +/- 2.5V @ 2.4A/3.0A
Maximum output charging current:
- USB-A: 3.0A DC, limited to 3.6A
- USB-C: 2.4A DC, limited to 2.9A
Maximum input current at no load: 26mA

MATERIALS
Front housing: pc+abs, cycloloy lg9000, pg05 black
Surface finish (faceplate): nissan#424
Light pipes: sc-28876 rtp 0300 2405 lt diff.
Rear housing: pc+abs, cycloloy lg9000, pg05 black
Rubber cover: empilon ha65s4
Printed circuit board: fr4, thickness 1.6 mm
Input power conn.: 1 USB-A port, 1 USB-C port

PHYSICAL
Industrial Operating Range: -40 to +85ºC
Non-operating: -55 to +85°C USB Module
Color for illuminated USB halo is white.
Insertion (max.): 49N
Extraction (min.): 68.8N
Durability: 10,000 cycles

Ordering Information:

<table>
<thead>
<tr>
<th>Series No.</th>
<th>Ports</th>
<th>Output Current</th>
<th>Charging Profiles Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>68532-4462</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>79540-5015</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>79540-5067</td>
<td>Dual</td>
<td>USB-A: 2.4A, USB-C: 3.0A</td>
<td>USB Battery Charging Specification BC1.2 compliant. YD/T 1591-2009 (China Telecom Specification)</td>
</tr>
</tbody>
</table>

www.molex.com/link/invehiclesmartcharging.html

Molex is a registered trademark of Molex, LLC in the United States of America and may be registered in other countries; all other trademarks listed herein belong to their respective owners.