USB Smart Charge Modules

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

Features and Benefits

Single Port Charger

Modern Features
Easy to read lettering and display.
Blue LED backlighting.
Panel Thickness: 3.4 mm to 3.8 mm.

Electric Performance
1A output current.
Battery Operating Voltage: 9V to 16V.
Operating temperature: -40°C to 85°C.

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

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

Single Port USB Smart Charger

Charging Profiles Supported:
USB Battery Charging Specification BC1.2 compliant.
YD/T 1591-2009 (China Telecom Specification).
Apple MFI compliant.
1.2 V Mode.

Electric Performance
2.4A output current.
Battery Operating Voltage: 9V to 16V.
Operating temperature: -40°C to 85°C.

Safety Protection Features
Over voltage, Reverse battery and over current protection.
ESD and short circuit protection

Modern Features
Easy to read lettering and display.
LED backlight.
Painted and laser etched housing.
Panel Thickness: 2.35- 2.65 mm.

Quality Connector Styles
Automotive-grade USB Type A on the front.10K cycle life.
Molex Mini50 on the rear

Dual Port USB Smart Charger

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

Electric Performance
2.4A output current.
Battery Operating Voltage: 9V to 16V.
Operating temperature: -40°C to 85°C.

Charging Profiles Supported:
USB Battery Charging Specification BC1.2 compliant.
YD/T 1591-2009 (China Telecom Specification).
Apple MFI compliant.
1.2 V Mode.

Modern Features
Easy to read lettering and display.
Halo Lighting (Light Pipe).
Cosmetic Molding and Pad Printed Icon.
Panel Thickness: 2.5- 3.5 mm

Quality Connector Styles
Automotive-grade USB Type A on the front.
10K cycle life.
Molex Mini50 on the rear

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Applications

Commercial Vehicle
- Construction equipment
- Farm equipment
- Trains
- Airplanes

Automotive
- Cars
- Pickup trucks
- SUVs

Automotive

Commercial Vehicle

Specifications

Single Port USB Charger Module

REFERENCE INFORMATION
Packaging: Individual
Mates With: Micro-Fit 3.0™ Receptacle
(Series No. 43645) and Micro-Fit 3.0™
Female Crimp (Series 43030, 45773)
Use With:
USB A Type Connector
Designed In: Millimeters
RoHS: Yes (with exemption)
Halogen Free: No
Glow Wire Compliant: No

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 +85ºC (automotive grade)
Dimensions (mm): 48.00 H x 26.00 W x 37.05 D
Mating cycles: 5,000

Single Port USB Smart Charger Module

REFERENCE INFORMATION
Packaging: Per PK-68532-4510
Mates With: Mini50 and MicroFit
Use With: Mini50 and MicroFit
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).

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

MATERIALS
PCB: FR4, UL 94V-0
Plastic Housings: PC,
   Color: black for rear housing
    white for front housing
  Color finish: black over white material
   (on front housing)
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

PHYSICAL
Industrial Operating Range: -40ºC to +85ºC
Non-operating: -55°C to +85°CUSB Module
Envelope Dimensions:
   49.0 X 22.8 X 40.58 mm
Insertion: 35n max
   Extraction: 10n min
   Durability: 10,000 cycles
Pull out force for docking module measured on
   metal plate cut out/fixture (with recommended
   opening): 100n min.
Module weight: 0.028 kg

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Specifications

Dual Port USB Smart Charger Module

REFERENCE INFORMATION
Packaging: Per PK-68532-4460
Packaging for module 685324466 according to:
rpk_68532_001/2
Mates With: Mini50 and MicroFit
Use With: Mini50 and MicroFit
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).

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

MATERIALS
Front housing: pc+abs, pg05 black
Surface finish (faceplate): Light Texture
Light pipes: PC
Rear housing: pc+abs, pg05 black
Rubber cover: TPE
Printing circuit board: fr4
Input power conn.: 2usb ports type a
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

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

Ordering Information

Series No.	Ports	Output Current	Charging Profiles Supported
68532-4461	Dual	2.4 Amps	USB Battery Charging Specification BC1.2 compliant. YD/T 1591-2009 (China Telecom Specification) Apple MFI Compatible.
68532-4462			
68532-4510	Single		USB Battery Charging Specification BC1.2 compliant. YD/T 1591-2009 (China Telecom Specification) Apple MFI compliant. 1.2 V Mode
79540-5015		1 Amp	-----

www.molex.com/link/invehiclesmartcharging.html