

# V-Charger

## V-SERIES DUAL PORT USB 2.0 CHARGERS

The Carling Technologies USB V-Charger is designed to charge tablets, e-readers, mobile and gaming devices, digital cameras, as well as other compatible electronic devices.

Providing a total current of 3.15 amps, the V-Charger delivers fast charging times even in extreme temperatures from -40°C to +80°C. This innovative product safeguards its electronics with integrated over-current and thermal overload protection, as well as optional load dump circuitry, assuring prolonged safe and reliable operation. The center LED indicates charging is in progress. Snap-in mounting for an industry standard 1.450" x .830" panel cutout makes installation easy.

Additionally, the V-Charger's double torsion spring-loaded access doors automatically close and provide up to IP65 sealing protection with precision-fit silicone rubber seals.



### Resources:

[Configure a Complete Part](#)

[Download CAD & Sales Drawing >](#)

[Watch Product Video](#)



### Product Highlights:

- Dual USB Charging Ports
- 3.15 Amps for Faster Charging
- 10,000 Operating Cycles per Port
- Sealed up to IP65 for Above-Panel Components
- 12-24V Operating Voltage
- Protection for Internal Components
- Curved or Square Style Doors

### Typical Applications:

- On/Off-Highway Equipment
- Golf Carts
- Lawn & Garden Equipment
- Marine
- Military



**Carling Technologies®**

Innovative Designs. Powerful Solutions.

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# V-Charger

## DESIGN FEATURES

### DUAL USB 2.0 PORTS

Total current of 3.15 amps, facilitating faster charges

### SPRING LOADED DOORS

Stylish, curved or square double doors automatically close to cover and seal each port when not in use

### LED

Green LED brightens to indicate charging is in progress



### SEALING PROTECTION

Silicone rubber seal perfectly mates with door indent to provide sealing protection up to IP65 for above-panel components

### PANEL SEAL

Prevents water ingress beneath panel to protect critical connections

### MOUNTING

Fits industry standard panel opening size of 1.450" x .830"

## Electrical

USB Type	2.0
Number of USB Ports	2
Operating Voltage	12V/24V DC power systems (9 to 29 VDC)
Output Voltage	5.0 VDC
Max Output Current	3.15A DC Total
Current Draw (No Load)	12V: 1.5 mA, 24V: 3.5 mA
Compatibility	Charges mobile devices including iPad, iPhone, iPod, HTC, Galaxy, Blackberry, MP3 Players, Digital Cameras and PDA's
LED Indicator	Green LED brightens when charging is in progress.
Receptacle Insertion Life	10,000 operating cycles per port minimum
Terminals	Copper/silver plating 1/4" (6.3 mm) Quick Connect terminations
Reverse Polarity	Operational with correct polarity after reverse polarity exposure
Output Protection	Short Circuit and Overload
Thermal Overload Protection	Operation will cease if internal temperature reaches 125°C. Charging will resume after sufficient heat loss
ESD	15kV air, 8kV touch per ISO10605 for Operational; Packaging and Handling Tests
Load Dump Protection	ISO 16750-2: 10 pulses to 174V at 1 minute intervals (Pulse 5a, Ri= 8 ohms) ISO 7637-2 detailed data available. Consult factory for details.
Radiated Immunity	ISO 11452-2, 200 MHz to 2.7 GHz Field Strength for 200 MHz to 1 GHz: 60 V/m Field Strength for 1 to 2.7 GHz: 50 V/m Bulk Cable Injection ISO 11452-2, 1 to 400 MHz Field Strength: 80 mA
Emissions	FCC Part 15, Class B Radiated, Conducted and Far Field Emissions data available. Consult factory for details.

## Mechanical

Endurance	10,000 open/close cycles minimum per door
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## Environmental

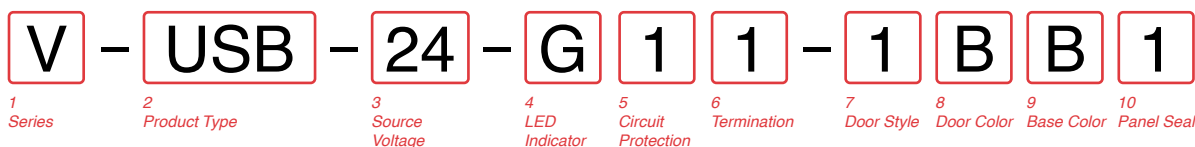
Sealing ( <i>when doors closed</i> )	Curved Doors: IP65, for above-panel components of actual switch only Square Doors: IP64, for above-panel components of actual switch only
Operating Temperature	-40° to +60°C at 3.15A -40° to +70°C at 2.4A -40° to +80°C at 2.1A
Vibration	MIL-STD 202G, Method 204D, Test Condition A. 0.06DA or 10G, 10-500 Hz
Shock	MIL-STD 202G, Method 213B, Test Condition K @ 30-G. No loss of circuit during test.
Chemical Exposure	Brush method with USB doors closed: diesel, gasoline, brake fluid, Windex, Armor All
Thermal Shock	MIL-STD 202G, Method 107G, Test Condition A, -40° to 85°C. Test Criteria: Remains functional without damage.
Moisture Resistance	MIL-STD 202G, Method 106G. Test Criteria: Remains functional without damage
Thermal Cycling	25 Cycles -40° to 85°C, 2 hours for each temperature every cycle
Salt Spray	MIL-STD 202G, Method 101E, Test Condition A
Blowing Dust	MIL-STD 810G Method 510.5, Air Velocity: 1750 ± 250 ft/min, Test Duration: 12 hours

## Physical

Materials	Housing: Polycarbonate/PBT Doors: Polyester Light Pipe: Polycarbonate Torsion Springs and Pins: Stainless Steel Door Seal: Silicone PCBA Gasket and Panel Gasket: Closed Cell Neoprene Terminals: Silver plated Copper Electronics: Two PCB Assemblies
Panel Opening	1.450" x .830"
Panel Thickness	.030 - .156 inches
Panel Mounting Method	Front Panel Insertion
Installation Insertion Force	12-28 lbs typical (dependent on panel design)
Panel Retention Force	Greater than 35 lbs (dependent on panel design)
Depth Behind Panel	See Dimensional Specifications
Connectors	VC1, VC2
Weight	Approximately 45g (1.6 oz)
Styling Options	Curved or square USB port doors (See Dimensional Specifications)
Port Protection	Twin, self-closing doors

\*Manufacturer reserves the right to change product specification without prior notice.

### Ordering Scheme



**1 SERIES**  
V

**2 PRODUCT TYPE**  
USB Charger

**3 SOURCE VOLTAGE**  
24 24 / 12 Volts DC

**4 LED INDICATOR (VOLTAGE MATCHES SOURCE)**  
G Green  
0 None

**5 CIRCUIT PROTECTION**  
1 Reverse Polarity, Thermal Overload & Overcurrent  
2 Load Dump, Reverse Polarity, Thermal Overload & Overcurrent

**6 TERMINATION**  
1 .250 Tab

**7 DOOR STYLE**  
1 Curved  
2 Square

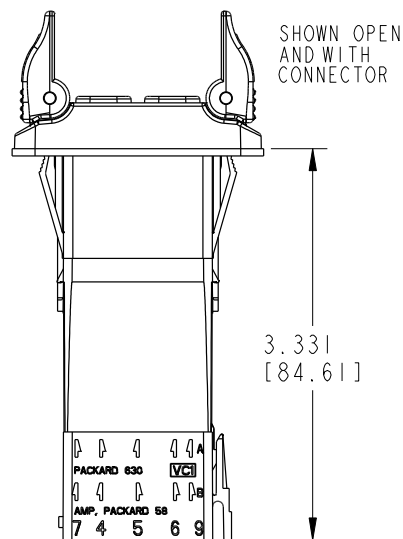
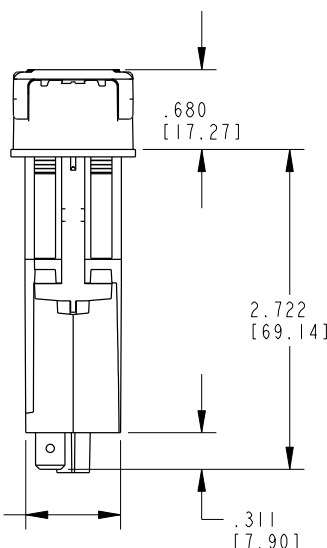
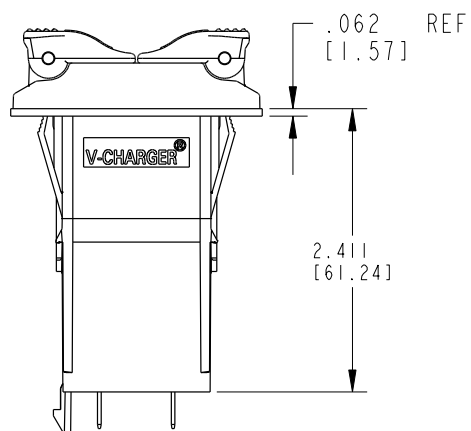
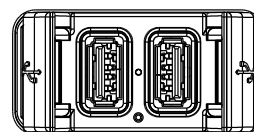
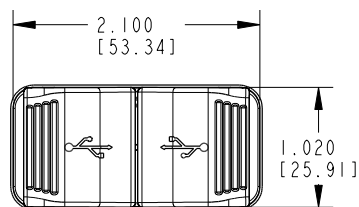
**8 DOOR COLOR**  
B Black

**9 FRAME COLOR**  
B Black

**10 PANEL SEAL**  
1 Yes

### Dimensional Specifications: in. [mm]

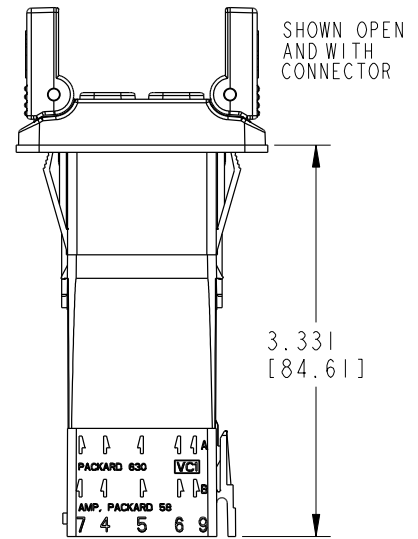
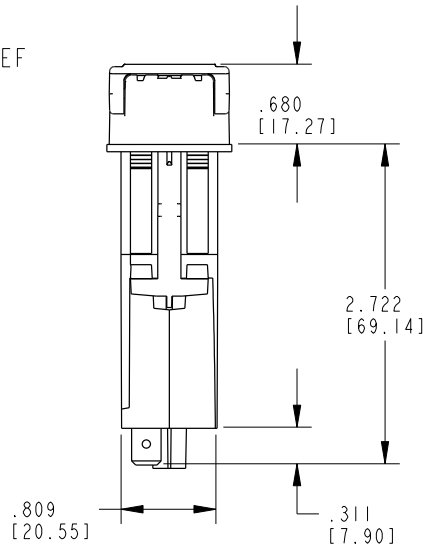
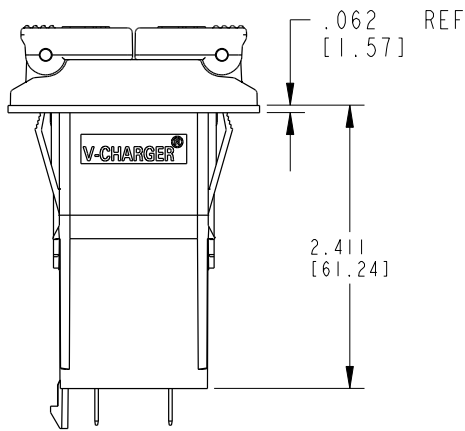
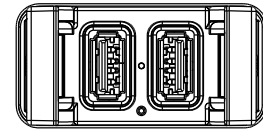
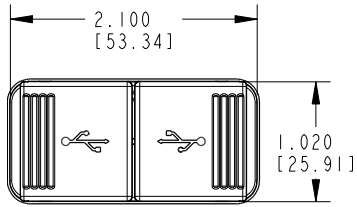
#### Curved Door Style Option



Notes:  
1 Charger to install into 1.450" X 0.830" panel opening

COS-0075 Rev: C  
CLA-0136 Rev: B

**Dimensional Specifications: in. [mm]**  
**Square Door Style Option**



**Notes:**

- 1 Charger to install into 1.450" X 0.830" panel opening

## Authorized Sales Representatives and Distributors

Click on a region of the map below to find your local representatives and distributors or visit [www.carlingtech.com/findarep](http://www.carlingtech.com/findarep).



## About Carling

Founded in 1920, Carling Technologies is a leading manufacturer of electrical and electronic switches and assemblies, circuit breakers, electronic controls, power distribution units, and multiplexed power distribution systems. With four ISO9001 and IATF16949 registered manufacturing facilities and technical sales offices worldwide, Carling Technologies Sales, Service and Engineering teams do much more than manufacture electrical components, they engineer powerful solutions! To learn more about Carling please visit [www.carlingtech.com/company-profile](http://www.carlingtech.com/company-profile).

To view all of Carling's environmental, quality, health & safety certifications please visit [www.carlingtech.com/environmental-certifications](http://www.carlingtech.com/environmental-certifications)

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