

# 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<br>(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)<br>ISO 7637-2 detailed data available. Consult factory for details.  |
| Radiated Immunity           | ISO 11452-2, 200 MHz to 2.7 GHz<br>Field Strength for 200 MHz to 1 GHz: 60 V/m<br>Field Strength for 1 to 2.7 GHz: 50 V/m<br>Bulk Cable Injection ISO 11452-2, 1 to 400 MHz<br>Field Strength: 80 mA |
| Emissions                   | FCC Part 15, Class B<br>Radiated, Conducted and Far Field Emissions data available. Consult factory for details.   |

**Mechanical**

|           |   |
|-----------|---|
| Endurance | 10,000 open/close cycles minimum per door |
|-----------|---|

**Environmental**

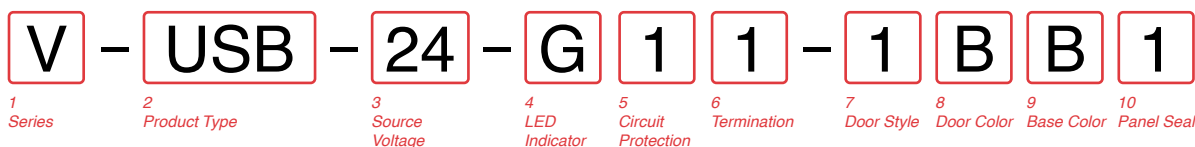
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|--------------------------------------|--|
| Sealing ( <i>when doors closed</i> ) | Curved Doors: IP65, for above-panel components of actual switch only<br>Square Doors: IP64, for above-panel components of actual switch only |
| Operating Temperature                | -40° to +60°C at 3.15A<br>-40° to +70°C at 2.4A<br>-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<br>Doors: Polyester<br>Light Pipe: Polycarbonate<br>Torsion Springs and Pins: Stainless Steel<br>Door Seal: Silicone<br>PCBA Gasket and Panel Gasket: Closed Cell Neoprene<br>Terminals: Silver plated Copper<br>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<br>(dependent on panel design)  |
| Panel Retention Force        | Greater than 35 lbs<br>(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<br>(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

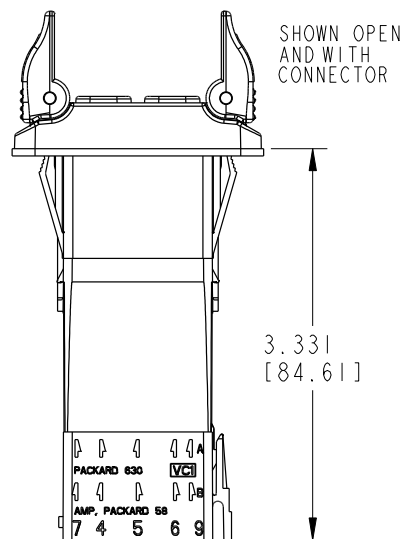
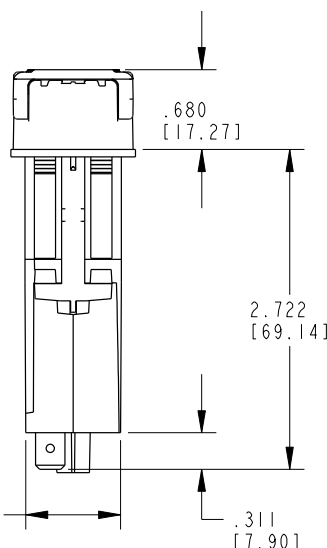
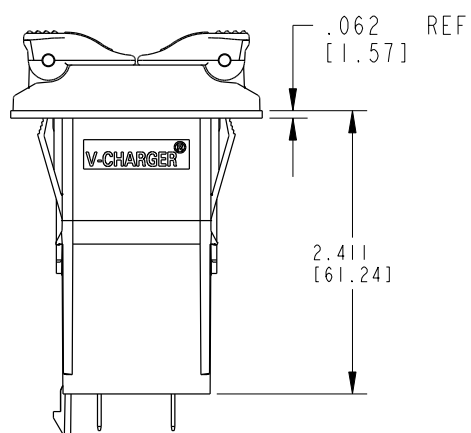
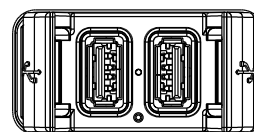
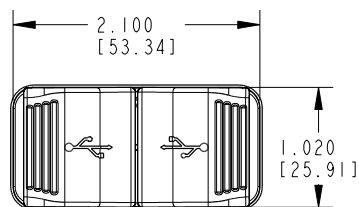
**8 DOOR COLOR**  
B Black

**9 FRAME COLOR**  
B Black

**10 PANEL SEAL**  
1 Yes

### Dimensional Specifications: in. [mm]

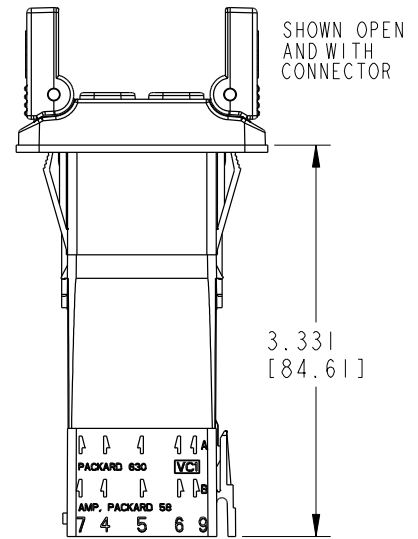
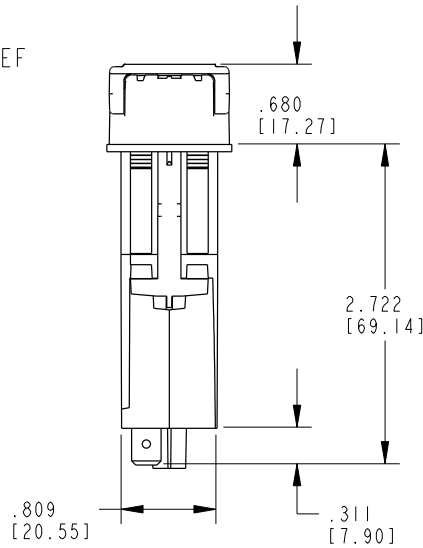
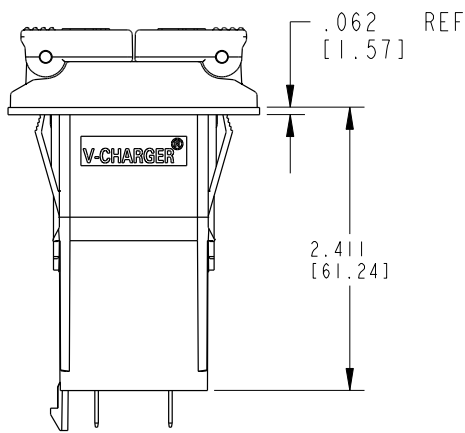
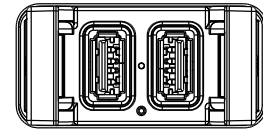
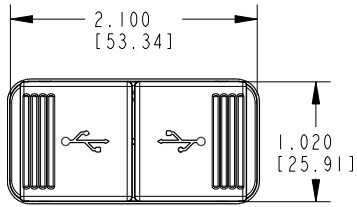
#### Curved Door Style Option



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

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