

HL8261

4-Channels USB Type-C Port Protector

Overview

The HL8261 is a high-performance USB Type-C connector protection IC that offers over-voltage protection (OVP) and ESD protection for the CC and SBU signals. When the HL8261 detects an over-voltage condition in the USB connector, it will shut down all four conducting paths to protect downstream circuits on the system side from damage. The HL8261 has four input pins (IN_CC1/2, IN_SBU1/2) with 24VDC maximum voltage rating which provides robust protection against 20V Short-to-VBUS over-voltage conditions.

The SBU and CC switches have low on-capacitance which allows high-speed signals to pass through without loss. The CC switches have low on-resistance that allows up to 1.25A for VCONN power.

During dead battery conditions, the internal resistors automatically pull down on CC1/2 such that the up-stream source provides 5V on VBUS.

Most systems require ESD protection for external pins. The HL8261 offers IEC61000-4-2 ESD protection for the CC1, CC2, SBU1, and SBU2 pins and eliminates the need to place discrete high voltage TVS diodes on the USB connectors.

The HL8261WL01/2 are packaged in a RoHS and Green compliant 16-bump WLCSP package.

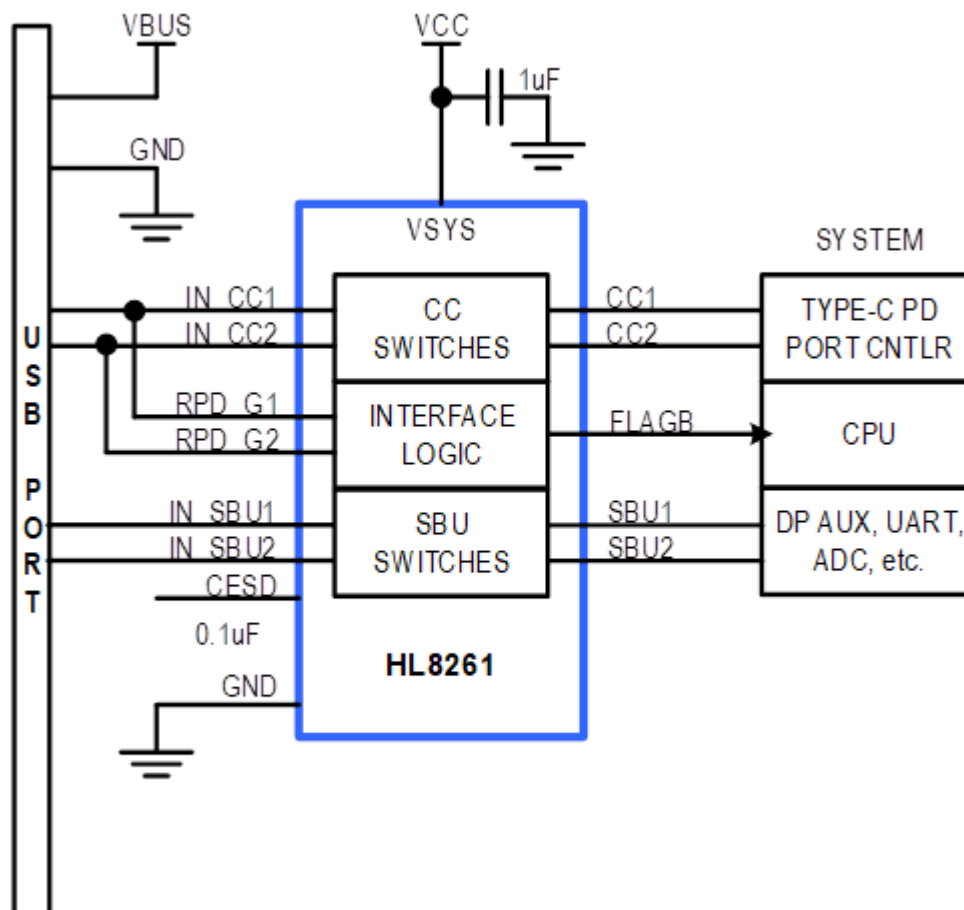
Features

- Short-to-VBUS over-voltage protection for CC1, CC2, SBU1, SBU2: 24VDC tolerance for connector side pins
- Over-voltage protection
 - CC1/2 = 6.0V
 - SBU1/2 = 4.5V (HL8261WL01), 3.8V (HL8261WL02)
 - Ultra-fast 30ns response time
- IEC61000-4-2 ESD protection
 - ±15kV air gap on IN_CC1/2, IN_SBU1/2
 - ±8kV contact on IN_CC1/2, IN_SBU1/2
 - ±2kV HBM on all pins
- IEC61000-4-5 surge protection
 - ±50V surge tolerance on IN_CC1/2
 - ±45V surge tolerance on IN_SBU1/2
- CC switches:
 - Built-in dead battery pull-down
 - Low 230 mΩ RON for passing VCONN power
 - 140MHz bandwidth
- SBU switches:
 - 4 Ω RON
 - 900MHz bandwidth
- Low quiescent current: 40μA (Typ.)
- Moisture detection compatible
- VSYS voltage range: 2.5 to 5.5V
- Operating temperature range = -40°C~85°C
- 16-bump WLCSP, 1.7mm×1.7mm, 0.4mm pitch

Applications

- Personal Computers
- Chromebooks
- Docking Stations
- Port Dongles and Adapters

Typical Application Diagram



Ordering Information

Part Number	SBU OVP	Operating Temperature	Size	Package
HL8261WL01	4.5V	-40°C to +85°C	1.70 mm x 1.70 mm	16-pin WLCSP
HL8261WL02	3.8V	-40°C to +85°C	1.70 mm x 1.70 mm	16-pin WLCSP

For other default output voltage and maximum load current options, contact a Halo Micro sales representative.

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