USB Type-C Protector for CC Pins

Features

- Overvoltage Protection:
  - 24VDC Tolerance on CC1/2
    - Robust 25V overshoot clamping
  - CC1/2 OVP = 5.8V
  - Ultra-fast 15ns Response Time
- Surge Protection
  - ±80V Surge Tolerance on CC1/2
- IEC61000-4-2 ESD Protection
  - ±15kV air gap on CC1/2
  - ±8kV contact on CC1/2
  - ±2kV HBM on all pins
- Moisture Detection Compatible
  - Over 10MΩ to ground on CC1/2
- CC Switches:
  - 1.25A, 240mΩ, 370pF, 13.2MHz
  - Automatic 5.1kΩ dead battery pull-down
- 2.5V to 5.5V Operating Voltage Range
- -40°C to 85°C Operating Temperature Range
- Pb-free 12 bump WLCSP (0.4mm pitch)

Brief Description

The KTU1108 provides ESD, surge, and over-voltage protection (OVP) for USB Type-C ports' CC1 and CC2 (CC and V_{CONN}) lines. ESD protection meets IEC61000-4-2 standards, eliminating the need for external TVS diodes. Surge protection meets IEC61000-4-5 standards, increasing immunity from power surges such as lightning strikes on the power lines while the USB cable is connected. Overvoltage protection (OVP) eliminates system damage due to physical or moisture-related shorts between the signal pins and VBUS at elevated PD voltage levels.
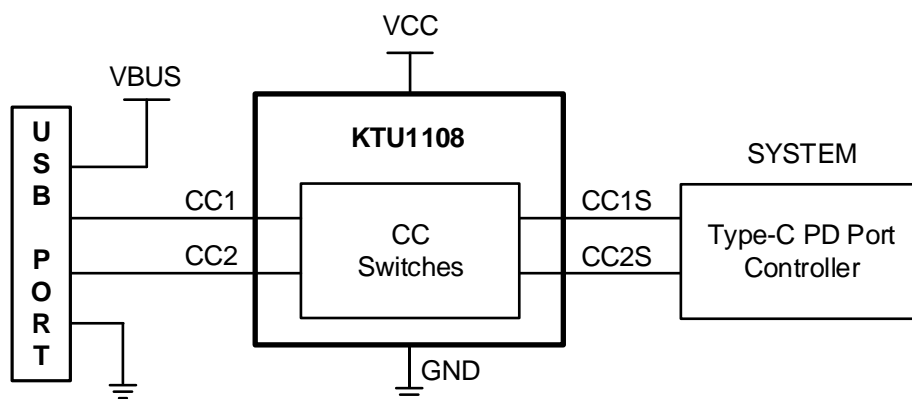
The CC1/2 switches are low on-resistance to minimize power dissipation for passing V_{CONN} power up to 1.25A. During dead battery conditions, internal 5.1kΩ resistors automatically pull down on CC1/2 to ensure that the up-stream source provides 5V to VBUS.

The KTU1108 is packaged in RoHS and Green compliant 1.29mm x 1.69mm wafer-level chip-scale package (WLCSP).

Applications

- Smartphones and Tablets
- Mobile Internet Devices, Accessories, Wearables

Typical Application

Ordering Information

Part Number	Marking[1]	Operating Temperature	Package
KTU1108EFAA-TR	MTXXYYZZZZ	-40°C to +85°C	WLCSP34-12

1. "MT" is the device ID, "XX" is the date code, "YY" is the assembly code and "ZZZZ" is the serial number.

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