Datasheet Brief
KTU1101

For full datasheet, click HERE.

USB Type-C Port Protector for CC and SBU Pins

Features

- Overvoltage Protection (OVP)
  - 24VDC Tolerance on CC1/2, SBU1/2
    - Robust 27V overshoot clamping
  - CC1/2 OVP = 5.8V
  - SBU1/2 OVP = 4.8V
  - Ultra-Fast 15ns Response Time
- IEC61000-4-5 Surge Protection
  - ±80V Surge Tolerance on CC1/2
  - ±35V Surge Tolerance on SBU1/2
- IEC61000-4-2 ESD Protection
  - ±15kV air gap on CC1/2, SBU1/2
  - ±8kV contact on CC1/2, SBU1/2
- ±2kV HBM on all pins (JEDEC JS-001-2017)
- Moisture Detection Compatible
  - Over 10MΩ to ground on CC1/2, SBU1/2
- CC Switches:
  - 1.25A, 330mΩ, 370pF, 17MHz
  - Automatic 5.1kΩ dead battery pull-down
- SBU Switches:
  - 4Ω, 27pF, 235MHz
  - Reverse current blocking when disabled
- 2.5V to 5.5V Operating Supply Voltage Range
- -40°C to 85°C Operating Temperature Range
- Pb-free 20 bump WLCSP (0.4mm pitch)

Brief Description

The KTU1101 provides ESD, surge, and overvoltage protection (OVP) for USB Type-C ports CC and SBU signal pins. 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.

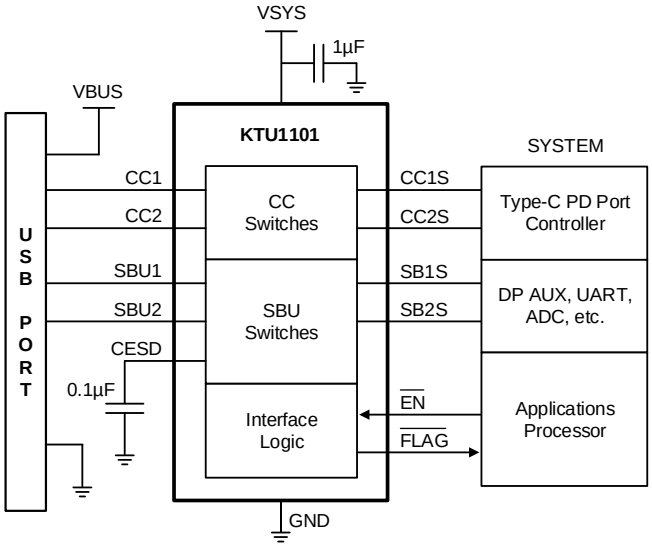
The SBU switches have low on-capacitance for passing high-speed signals. The CC1/2 switches have low on-resistance for passing V_{CONN} power up to 1.25A for CC power delivery communications. During dead battery conditions, internal 5.1kΩ resistors automatically pull down on CC1/2 to ensure that the up-stream source provides 5V to VBUS.

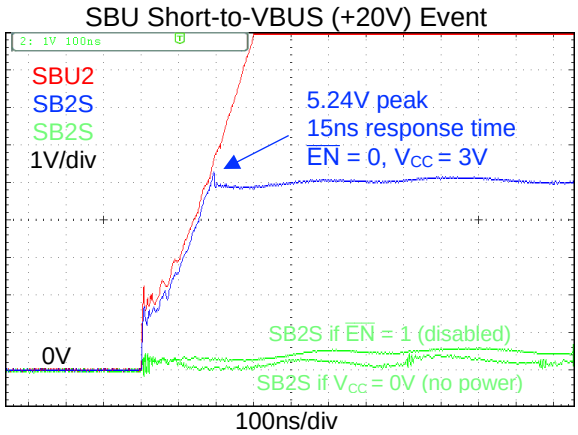
The KTU1101 is packaged in RoHS and Green compliant 1.7mm x 2.1mm wafer-level chip-scale package (WLCSP).

Applications

- Smartphones, Tablets, Notebooks, Monitors, TVs
- Accessories, AI/BT Loudspeakers, IoT
- Any USB Type-C port

Typical Application





Conditions: SBU2 = 25mΩ short to +20V
SB2S (SB2S) = open, no load

Ordering Information

Part Number	Marking[1]	Operating Temperature	Package
KTU1101EVF-TR	MCXXYYZZZZ	-40°C to +85°C	WLCSP45-20

1. “MC” is the device ID. “XXYY” is the date code and assembly code. “ZZZZ” is the serial number.