

USB Type-C Port Protector

1. General Description

The FA2209 is a single-chip USB Type-C port protection device that provides 20V Short-to- V_{BUS} protection. Since the release of the USB Type-C connector, many products and accessories for USB Type-C have been released that do not meet the USB Type-C specification. One example of this is USB Type-C Power Delivery adaptors that only place 20V on the V_{BUS} line. Another concern for USB Type-C is that mechanical twisting and sliding of the connector could short pins due to the close proximity they have in this small connector. This can cause 20V V_{BUS} to be shorted to the CC and SBU pins. Also due to the proximity of the pins in the Type-C connector, there is a heightened concern that debris and moisture will cause the 20V V_{BUS} pin to be shorted to the CC and SBU pins.

These non-ideal equipment and mechanical events make it necessary for the CC and SBU pins to be 20V tolerant, even though the pins only operate at 5V or lower. The FA2209 enables the CC and SBU pins to be 20V tolerant without interfering with normal operation by providing over-voltage protection on the CC and SBU pins. The device places high voltage FETs in series on the CC and SBU lines. When a voltage above the OVP threshold is detected on these lines, the high voltage switches are opened up, isolating the rest of the system from the high voltage condition present on the connector.

Features

- 4-Channels of Short-to- V_{BUS} Overvoltage Protection (CC1, CC2, SBU1, SBU2)
- 6-Channels of IEC 61000-4-2 ESD Protection (CC1, CC2, SBU1, SBU2, D1, D2)
- 600mA Capable for Passing V_{CONN} Power
- CC Dead Battery Resistors Integrated for Handling Dead Battery Use Case
- Halogen Free and Green Devices (RoHS Compliant)
- Available in 20-Pin QFN 3mmx3mm Package

Ordering Information

P/N	Dead Battery Function	Top Side Marking
FA2209NTR	YES	FA2209 YYWWZZ
FA2209ANTR	NO	2209A YYWWZZ

※Topside Marking Rule:

YY : Year 2022→22、2023→23、2024→24

WW : Week 01~53

ZZ : Series Code