USB PD DRP Controller Supporting EPR Mode

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HUSB239

FEATURES

- Fully Autonomous USB Type-C® and USB PD DRP Controller
- Compliant USB Type-C® Specification Reversion 2.1 and USB PD Specification Reversion 3.1
- Sink and DRP Port Role Configuration with Optional Accessary Support
- Maximum 48 V / 5 A PDO Supported
  - GPIO Mode: Support maximum 28 V / 3.25 A EPR PDO
  - I²C Mode: Support PPS, SPR AVS, maximum 48 V / 5 A EPR PDO and EPR AVS
- Automatic Legacy Protocols Detection in Sink Mode including BC1.2, Divider 3, QC2.0, AFC
- Up to 3 A Output Current in Source Mode
- Try.SRC and Try.Snk Modes for User Configurations
- Support SOP' Detection
- Typical Low Power Operation: I_{VDD}< 45 μA
- Max 33 V DC Tolerance on USB Pins
- Integrated VBUS Switch Driver
- Dead Battery Support
- 4 kV HBM ESD Rating for USB IO pins
- Small Package, 16 Lead QFN (3 mm x 3 mm)

APPLICATIONS

Power Tools

POS Terminals

Wireless Speakers

Headphones

GENERAL DESCRIPTION

The HUSB239 is a highly integrated stand-alone USB Type-C® and Power Delivery (PD) controller. The HUSB239 integrates the CC logic, USB PD protocol and the legacy protocols. The HUSB239 is freely to be configured by user as a Sink or DRP. Additionally, the debug accessories and audio accessories are both supported to be recognized.

The HUSB239 can run in two modes I²C mode and GPIO mode. In I²C mode, an I²C master can access the HUSB239 to configure settings, read back status and perform advanced functions such as PR Swap, DR Swap, VDM messages. The HUSB239 supports PPS, SPR AVS, maximum 48 V / 5 A EPR PDO and EPR AVS in I²C mode.

While in GPIO mode, the configuration is achieved via the setting pins. The HUSB239 can be configured to support maximum 28 V / 3.25 A PDO via VSET and ISET pins, only two resistors are used to set the voltage and current. And when HUSB239 acts as a source, the Rp can be configured via SRC_ISET pin.

The ultra-low operation current of the HUSB239 helps the system to reduce the total power dissipation and suitable for a battery application.

The HUSB239 is available in QFN 3 mm x 3 mm-16L package.

TYPICAL APPLICATION CIRCUIT

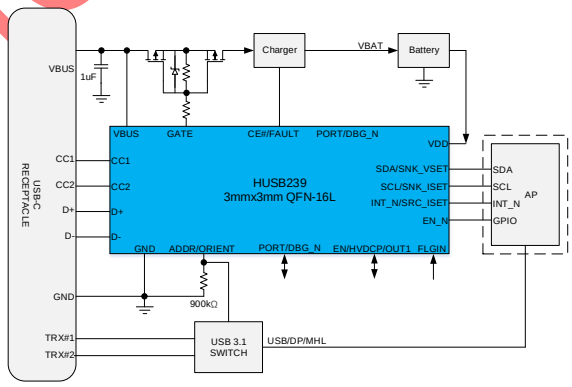

Figure 1. Typical Application Circuit