USB PD Sink Controller Supporting EPR Mode

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HUSB238A

FEATURES

- Fully Autonomous USB Type-C® and USB PD Sink Controller
- Compliant USB Type-C® Specification Reversion 2.1 and USB PD Specification Reversion 3.1
- Maximum 48V/5A PDO Supported
  - GPIO Mode: Support maximum 28V/3.25A EPR PDO
  - I²C Mode: Support APDO, maximum 48V/5A EPR PDO and EPR AVS
- Automatic Legacy Protocols Detection including BC1.2, Divider 3, QC2.0
- Support SOP' Detection
- Typical Low Power Operation: I_{VDD}< 45 μA
- Integrated VBUS Switch Driver
- Dead Battery Support
- VBUS over-voltage protection (OVP) and under-voltage protection (UVP)
- Over-temperature protection (OTP) with programmable thresholds
- 4 kV HBM ESD Rating for USB IO pins
- Small Package, 16 Lead QFN (3 mm x 3 mm)

APPLICATIONS

PD sink devices

USB-C cables

Wireless charger

GENERAL DESCRIPTION

The HUSB238A is a highly integrated stand-alone USB Type-C® and Power Delivery (PD) Sink controller. The HUSB238A integrates the CC logic, USB PD protocol and the legacy protocols.

The HUSB238A can run in I²C mode and GPIO mode. In I²C mode, an I²C master can access the HUSB238A to configure settings, read back status and perform advanced functions such as DR Swap, VDM messages. The HUSB238A supports APDO, maximum 48V/5A EPR PDO and EPR AVS in I²C mode.

While in GPIO mode, the configuration is achieved via the setting pins. The HUSB238A can be configured to support maximum 28V/3.25A PDO via VSET and ISET pins, only two resistors are used to set the voltage and current.

The ultra-low operation current of the HUSB238A helps the system to reduce the total power dissipation and suitable for a battery application.

The HUSB238A is available in QFN 3 mm x 3 mm-16L package.

TYPICAL APPLICATION CIRCUIT

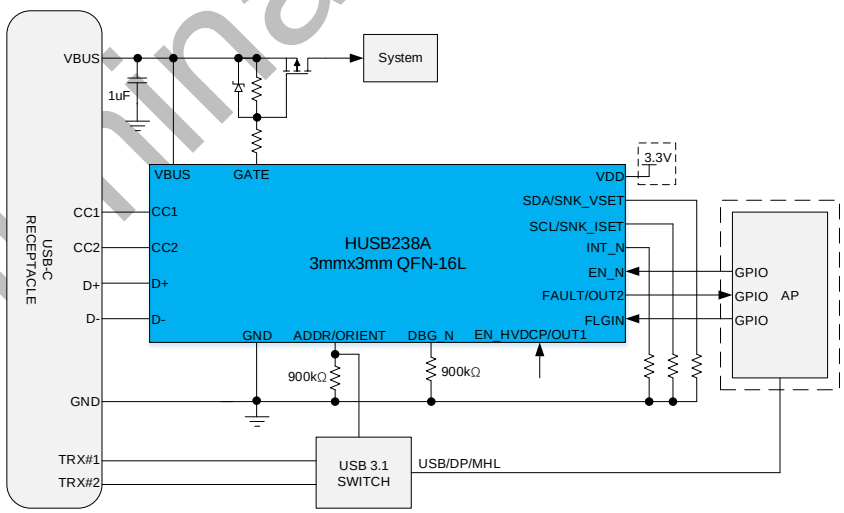

Figure 1. Typical Application Circuit