USB PD DRP Controller for 48V EPR Application

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HUSB253

FEATURES

- USB Type-C DRP with PD Protocol Supported
- Bidirectional PD Protocol for Type-C with 48V EPR FPDO and EPR AVS Supported
- Embedded DPDM PHY to Support Multiple Proprietary Protocols including QC2 to QC5, AFC, FCP, SCP, UFCS and Divider 3 mode
- Chunking Messages Supported for VDMs and EPR Communication
- Integrated N-MOSFET Driver with Soft-start
- Cable Oriented Detection and VCONN Source Integrated
- Integrated Dead Battery Function for Power Requesting as SINK
- Hardware Protections for OCP, OVP, OTP, TSD
- Integrated 11-bit ADC
- Up to 68 V Maximum Voltage Rating at VIN and VBUS for Max Output Voltage to 48 V
- Programmable Sleep Mode to Save Power as Low as 2.5 mW when Attached
- Integrated VIN discharge controller at VIN Pin

APPLICATIONS

Battery Powered Devices

Power Tools

GENERAL DESCRIPTION

The HUSB253 is designed for a USB Type-C DRP product. It can support up to 7 PDOs with programmable voltage and current for different applications. It can also support the latest EPR mode by implementing chunking mechanism. All of PDOs are fully compliant with USB PD Specification Revision 3.2, Version 1.1.

Besides, the HUSB253 implements programmable DPDM PHY. Both D+ and D- pins can be configured to support multiple proprietary protocols including QC2.0, QC3.0, QC3+, AFC, FCP, SCP, UFCS and Divider 3 mode which provide excellent compatibility for the legacy devices.

The HUSB253 integrates an NMOS driver to control power path conduction between VIN and VBUS, protecting the devices connected to USB Type-C connector. The max output voltage is up to 48 V.

The high voltage tolerance and protections at CC1, CC2, D+ and D- pins provides more reliability for the system.

TYPICAL APPLICATION CIRCUIT

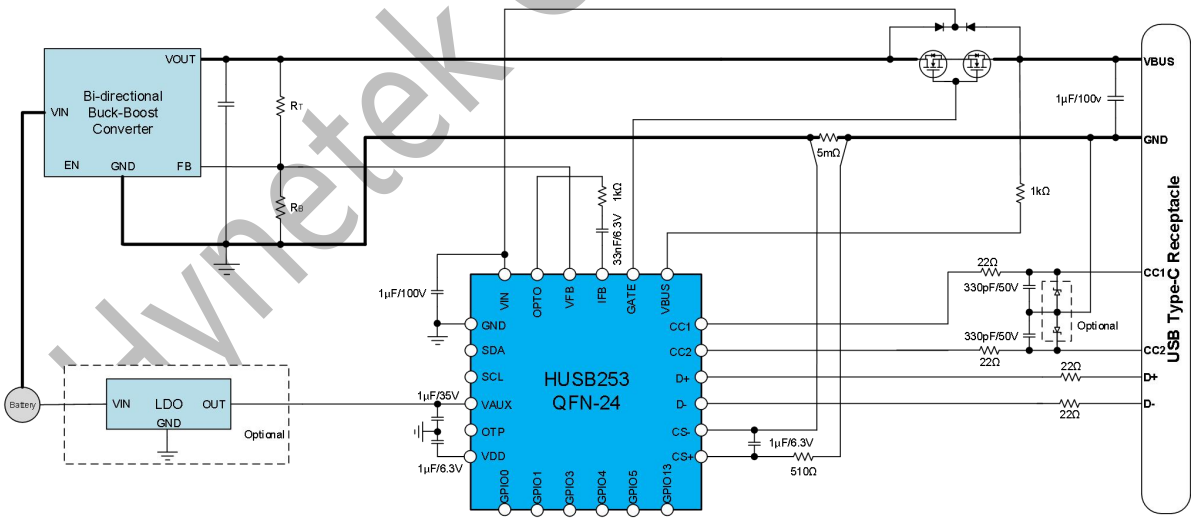

Figure 1. Typical Application Circuit