# Highly Integrated USB PD Type-C Controller for SMPS

## General Description

The RT7202 is a secondary-side USB Power Delivery (USB PD) Type-C controller for high-efficiency off-line AC-DC converters. The RT7202 integrates an MCU as a policy manager to handle USB PD protocol, and also integrates a built-in Biphase Mark Coding (BMC) transceiver for USB PD or other proprietary protocols. A programmable reference voltage for an operational amplifier is included for voltage-loop regulation to achieve programmable constant-voltage (CV) regulation in high precision.

## Ordering Information

RT7202□□□-□

- Programmed Firmware Code AABBX
  - AA : Application Code
  - BB : Model Code
  - X : Customer Approved Version Code
- Package Type
  - S : SOP-8 (RT7202A)
  - S : SOP-10 (RT7202D)
  - S : SOP-14 (RT7202E)
- Lead Plating System
  - G : Green (Halogen Free and Pb Free)
- RT7202 Version
  - (Refer to Version Table)

Note :

Richtek products are :

- RoHS compliant and compatible with the current requirements of IPC/JEDEC J-STD-020.
- Suitable for use in SnPb or Pb-free soldering processes.

## Features

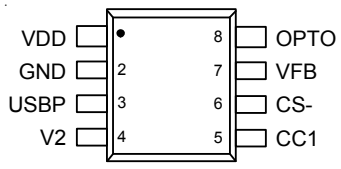
- **Protocols Supported**
  - **USB PD 2.0 and 3.0**
  - **Other Proprietary Protocols**
- **Highly Integrated**
  - **Embedded MCU with an Mask-ROM of 16kB, an OTP-ROM of 8kB, and an SRAM of 1.5kB**
  - **Embedded BMC Transceiver**
  - **Wide $V_{DD}$ Operation Range : 3.6V to 20V**
  - **Built-in Shut Regulator for Constant-Voltage Regulation**
  - **Programmable Cable Compensation**
  - **BLD Pin for Quick Discharge of Output Capacitor (RT7202E)**
  - **VDD Pin for Quick Discharge of Output Capacitor (RT7202A/D)**
  - **USBP Pin for Direct Drive of External Blocking P-MOSFET**
  - **Power-Saving Mode in Standby Mode**
- **Protection**
  - **Adaptive Over-Voltage Protection**
  - **Adaptive Under-Voltage Protection**
  - **Firmware-Programmable Over-Current Protection**

## Applications

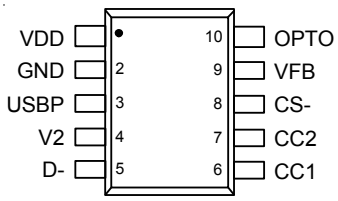
- USB PD Type-C Chargers/Adapters for Smart Phones, NBs, Tablets and All Other Electronics
- USB PD Extension Cores with Offline AC-DC Converters

## Pin Configuration

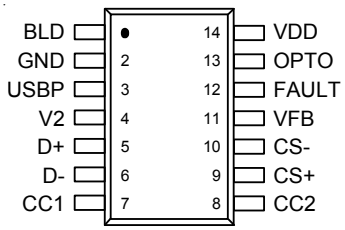
(TOP VIEW)




SOP-8




SOP-10




SOP-14