

### Description

The CY43785/CY43785H (CY43785(H)) is a highly integrated USB Type-C® power delivery (PD) controller and targeted for dual-port Type-C PD monitors, projectors and hubs. It is compliant to USB Power Delivery PD3.1 V1.8 with Standard Power Range (SPR) / Programmable Power Supply (PPS) up to 21V and Qualcomm® QC2.0/3.0/4/4+/5 protocols. With external resistor divider circuitry, the CY43785H could support PD3.1 Extended Power Range (EPR) 28V with Adjustable Voltage Supply (AVS).

When the CY43785(H) used in Type-C PC monitors and TV display devices, the Type-C port #A can support Dual-Role Power (DRP) charging as well as Upstream Facing Port (UFP) for data/video transfer, including Type-C to Type-C mode and DisplayPort™-Over-Type-C Alternate (Alt) mode. The CY43785(H) manages various parameter setting for signal conditioning and routing chips through I2C interface. The Type-C port #B could be configured to support additional power source charging or power sink input.

By controlling Enable Pin of the associated DC/DC controller with GATE\_A/B pin, and connecting VFB\_A/B pin to its DC/DC feedback pin, the CY43785(H) supports two independent USB Type-C PD3.1 PPS charging without PD output MOS at each port.

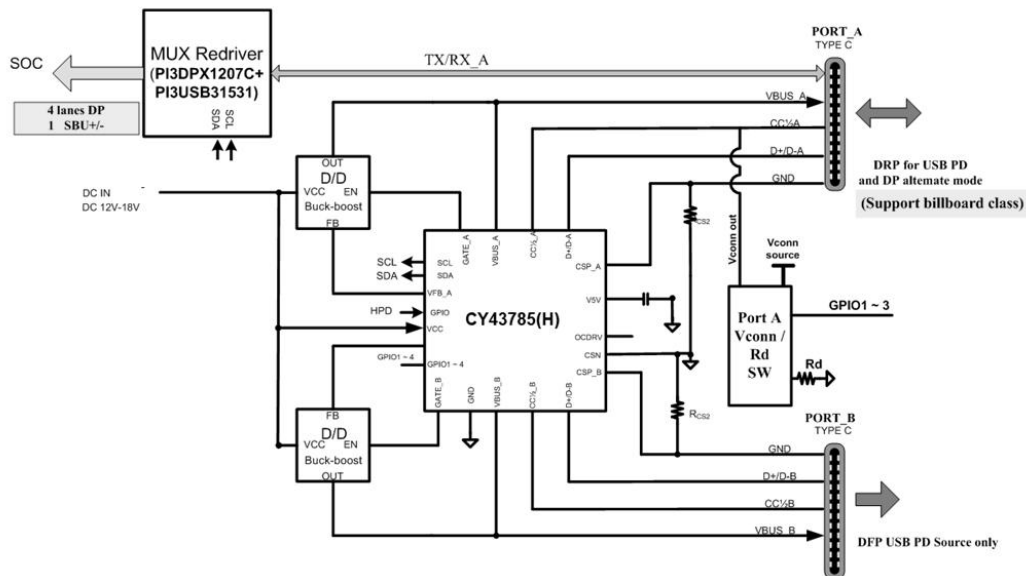
The CY43785(H) offers comprehensive safety protection schemes, including over-voltage protection (OVP), under-voltage protection (UVP), over-current protection (OCP), short-circuit protection (SCP), and/or over-temperature protection (OTP). Besides, based on high-voltage process, the CY43785(H) supports VBUS short protection for CC1/CC2 up to 28V.

The CY43785(H) supports W-QFN5050-28 package.

### Applications

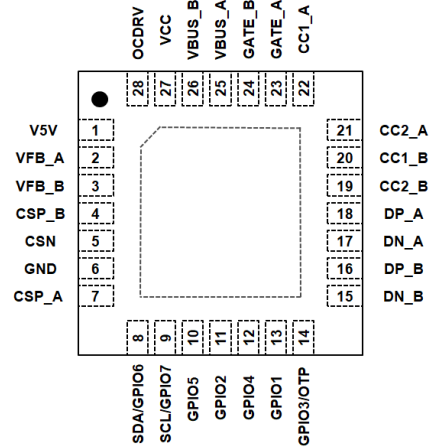
- Monitors with Type-C ports
- TV power boards with Type-C ports
- USB Type-C Power and Video Hubs

### Typical Application Circuit



### Pin Assignments

(Top View)



W-QFN5050-28 (Type A1)

### Features

- Compliant with USB PD Rev 3.1 V1.8 EPR mode
- Support SPR / PPS up to 21V with 20mV/step and 50mA/step
- Support EPR / AVS up to 28V with resistor divider (CY43785H only)
- Support UFP for data/video transfer and Type-C Alternative Mode for DisplayPort™ (DP)
- Support I2C interface for parameter setting of signal conditioning and routing chips
- Support USB PD3.1 DRP power control
- Support Qualcomm® QC2.0/3.0/4/4+/5 protocols
- Support 2 DAC feedback paths for the external DC/DCs
- Support E-Marker cable detection
- OTP ROM for main firmware and MTP ROM for system configuration
- Support OVP/UVP/OCP/SCP/OTP with Auto Restart
- Support VBUS short protection for CC1/CC2 pins up to 28V