NCP81239

4-Switch Buck Boost Controller, USB Power Delivery and Type-C Applications

Product Overview

For complete documentation, see the data sheet.

The NCP81239 USB Power Delivery (PD) Controller is a synchronous buck boost that is optimized for converting battery voltage or adapter voltage into power supply rails required in notebook, tablet, and desktop systems, as well as many other consumer devices using USB PD standard and C-Type cables. The NCP81239 is fully compliant to the USB Power Delivery Specification when used in conjunction with a USB PD or C-Type Interface Controller. NCP81239 is designed for applications requiring dynamically controlled slew rate limited output voltage that require either voltage higher or lower than the input voltage. The NCP81239 drives 4 NMOSFET switches, allowing it to buck or boost and support the consumer and provider role swap function specified in the USB Power Delivery Specification which is suitable for all USB PD applications. The USB PD Buck Boost Controller operates with a supply and load range of 4.5 V to 28 V.

Features

- 4.5 V to 28 V operating range
- I2C interface
- Switching frequency from 150 kHz to 1200 kHz
- Slew rate control during transition
- Supports USB-PD, QC2.0, and QC3.0 profiles
- Overvoltage and overcurrent protection

Benefits

- Wide operating range for various applications
- Allows for uC to interface to device to meet USB-PD power requirements
- Optimize efficiency and size trade-off
- Allow easy implementation for USB-PD specification

Applications

- Consumer
- Computing
- Point of Sales
- USB Type-C
- USB PD

End Products

- Desktop
- Hubs
- Docking Station
- Power bank
- Car charger