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ON Semiconductor®

Energy Efficient Innovations

Product Overview

NCP81599: I2C Configurable, 4-Switch Buck Boost Controller for USB-PD Power Delivery and Type-C Applications

For complete documentation, see the data sheet.

The NCP81599 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 desktop, docking station, hubs, and car charging accessory applications. The part is capable of delivering power to meet USB-PD standard for type C applications. The buck boost operates in a seamless manner when transitioning between buck to boost or boost to buck operation. The device is capable of operating at a 100% duty cycle.

The NCP81599 drives 4 external NMOS switches, allowing for external selection of mosfets to optimize the trade offs between size, cost, and performance. The internal drivers of the device is capable of driving mosfets to meet the 100W requirement.

The NCP81599 operates with a 4.5V to 28V input supply and is offered in a 5mm by 5mm 32 QFN package.

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 requirements
- 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
- Car charger

Part Electrical Specifications

Product	Pricing ($/Unit)	Compliance	Status	Topology	Phases	Control Mode	V_{CC} Min (V)	V_{CC} Max (V)	f_{SW} Typ (kHz)	Package Type
NCP81599MNTXG	0.66	Pb-free Halide free	NEW	Step-Up/Step-Down	1	Current/Voltage Mode	4.5	28	150 to 1200	QFN-32

For more information please contact your local sales support at www.onsemi.com.

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