

NCV81599

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

Product Overview

For complete documentation, see the data sheet.

The NCV81599 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 NCV81599 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 NCV81599 operates with a 4.5V to 32V input supply and is offered in a 5mm by 5mm QFNW32 package.

Features

- Wide Input Voltage Range: from 4.5 V to 32 V for NCV81599
 - Dynamically Programmed Frequency from 150 kHz to 1.2 MHz
 - I2C Interface
 - Real Time Power Good Indication
 - Controlled Slew Rate Voltage Transitioning
 - Feedback Pin with Internally Programmed Reference
 - 2 Independent Current Sensing Inputs
 - Over Temperature Protection
 - Adaptive Non-Overlap Gate Drivers
 - Over-Voltage and Over-Current Protection
- For more features, see the data sheet

Benefits

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

Applications

- Automotive USB Charging Ports
- Wireless Charging
- Consumer Electronics

End Products

- Car Charger
- Docking Station
- Desktop
- Hub

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
NCV81599MWT XG	3.1137		Active	Step-Up/Step-Down	1	Current/Voltage Mode	4.5	32	1200	QFNW-32