SC8803 High Efficiency, Synchronous, Bi-directional Buck Charger Controller

1   Description

SC8803 is a synchronous buck charger controller. It is able to effectively manage charging when input voltage is higher than battery voltage. In charging mode, SC8803 supports trickle charging, constant current (CC) charging and constant voltage (CV) charging management functions automatically.

SC8803 supports very wide input and output voltage range. It is suitable for applications of 1 to 4 series battery. The driver voltage is set to 10V to fully utilize external MOSFETs for maximum efficiency.

SC8803 supports bi-directional outputs by controlling DIR pin. Under discharging mode, SC8803 can output a boosted voltage from battery to VBUS. It also supports input current limit, output current limit, dynamic output voltage regulation, internal current limit, and over temperature protections to ensure safety under different abnormal conditions.

SC8803 adopts 32 pin QFN 4x4 package.

3   Applications

Power Bank
USB HUB
Smart USB Sockets
USB PD

4   Device Information

ORDER NUMBER	PACKAGE	BODY SIZE
SC8803QDER	32 pin QFN	4mm x 4mm x 0.75mm

2   Features

- Buck charging mode supports charging functions for 1 to 4 battery in series, including trickle charging, CC charging, CV charging and charging termination function
- Reverse boost mode operation (discharging mode)
- Wide input voltage range (VBUS in charging mode): VBAT to 36 V
- Wide reverse output range (VBAT in discharging mode) : VBAT to 36 V
- Dynamic adjustable discharging voltage by PWM signal
- Dynamic adjustable input/output current limits by PWM signal
- High efficient buck/boost operation
- Integrated 10V, 2A gate driver
- Adjustable frequency from 200KHz to 600KHz
- Internal current limit
- Under voltage protection
- QFN-32 package