Synchronous, Bi-directional Buck-Boost Charger Controller with I2C interface

1 Descriptions

SC8806 is a synchronous buck-boost charger, which supports buck mode, boost mode and buck-boost mode during forward charging or reverse discharging operation. SC8806 manages 1 to 4 cells battery charging from wide input range from 3.5V to 26V, supporting pre-charge, constant current charge, constant voltage charge. The battery discharging mode supports wide output range from 3V to 20.8V with 8mV resolution. SC8806 is compliant with Intel IMVP8/IMVP9 specification including system power, input current, charging or discharging current monitoring.

Through I2C interface, user can set the charging/discharging mode easily, and program the charging current, charging voltage, VINREG voltage, input current limit, reverse output voltage adjustment, current limits, switching frequency and other parameters flexibly. Besides, input current limit, charge voltage could be set by external resistors.

SC8806 supports pass through mode to reduce switching losses during forward charging. 10-bit ADC is integrated to monitor voltage, current and power. SC8806 can operate in learn mode and ship mode to meet the user's demands. Full protection is supported including input over voltage protection/undervoltage, system and battery over-voltage protection, MOSFETs over-current protection. over-temperature protection.

SC8806 is available in a 4mm x 4mm QFN-32 Package.

2 Features

- Wide input range: 3.5V to 26V, 30V sustainable
- High efficiency Buck-Boost conversion
- Buck-Boost battery charger for 1 to 4 cell batteries
- Charging management including fast charge, constant voltage charge
- Reverse discharging mode, output voltage range: 3V to 20.8V with 8 mV resolution, comply with USB PD 3.0 standards
- I2C interface
- Input current limit set by external resistor and internal register
- Switching frequency: 800kHz /1.2MHz
- Integrated IADPT/IBAT pin for current monitor
- Pass through mode (PTM)
- Input current optimizer (ICO) algorithm for maximum adapter power capacity
- Learn mode and ship mode for system application
- Integrated high accuracy ADC
- Protection including UVP, OVP, OCP, SCP, OTP
- QFN-28 Package

3 Applications

- Ultra-Books, Notebooks, Tablet PCs
- Power Banks
- Industrial Equipment
- Equipment with Rechargeable Batteries

4 Device Information

ORDER NUMBER	PACKAGE	BODY SIZE
SC8806QDER	28 pin QFN	4mm x 4mm x 0.75mm