

SC8902A High Efficiency, Synchronous, Bi-Directional Buck-Boost Charge Converter with Four Integrated MOSFET

1 Description

SC8902A is a synchronous 4-switch buck-boost charger controller which also supports reverse discharging operation. Four switches are integrated to simplify the system design. It is able to effectively manage charging for 1~3 cell batteries no matter input/output voltage is higher, lower or equal to battery voltage. When system needs to discharge from battery, SC8902A will deliver desired output from the battery.

SC8902A supports very wide input and output voltage range. It can support applications from 2.7V to 22V input range and 2.7V to 22V output range. It employs current-mode control and can support bi-directional outputs by controlling DIR pin. It supports input current limit, output current limit, DPM (dynamic power management) function, dynamic output voltage adjustment, internal current limit, output short protection and over temperature protections to ensure safety under different abnormal conditions.

The SC8902A is in a 40 pin 6x6 QFN package.

3 Applications

- Power Bank with Fast Charge Function
- USB Power Delivery
- Type C Hub
- Industrial Power Supplies

2 Features

- Buck-Boost Battery Charger for 1 to 3 Cell Batteries
- Charging Management: trickle Charging, CC Charging, CV Charging and Charging Termination
- Buck-Boost Reverse Discharging Mode
- Integrated Four Switches
- Wide VBAT Range: 2.7 V to 14 V, 24V sustainable
- Wide VBUS Range: 2.7 V to 22 V, 24V sustainable
- High Efficiency Buck-Boost Conversion
- DP / DM Handshaking for Fast Charging Mode
- Dynamic Output Voltage Control
- Programmable Input and Output Current Limit
- Dynamic Input Current Limit Control
- Input and Output Current Monitor
- Charging Status Indication and Small Current Indication
- Under Voltage Protection, Over Voltage Protection, Over Current Protection
- Short Protection and Thermal Shutdown Protection
- QFN-40 Package

4 Device Information

Part Number	Package	Dimension
SC8902AQDHR	40 pin QFN	6.0mm x 6.0mm x 0.75mm