



Two Channel (5V3A and 12V2A) High Efficiency Battery Charging and Discharging Power Bank SOC

1 Descriptions

The SC9802 is a highly integrated SoC for power bank, with an integrated two-channel charger to support power management and synchronous boost conversion. Two chargers can work at the same time, supporting 5V3A and 12V2A dual charge-discharge. The 5V charger of SC9802 integrates Type-C protocol and smart USB protocol (compatible with DCP recognition function, compatible with BC1.2, Apple and Samsung mobile phones), can support Type-C interface adapter charging, Type-C interface discharge and USB-A interface discharge, providing 5V4A charge and discharge function. High voltage charger supports fast charging protocol for power bank. Work with an external protocol IC can provide up to 12V2A 24W discharge capacity. The two-channel charger structure of SC9802 ensures the true and fast charging function when working in two-channel mode, which can effectively reduce the difficulty of the overall solution, provide a complete solution for the power bank and reduce the BOM cost. SC9802 supports charging management functions such as trickle charge, constant current charge, constant voltage charge, charge cutoff and recharge. The built-in 10bit ADC ensures the real-time monitoring of the battery voltage and current and the voltage and current of each port, accurately displays the battery power, and supports multiple over-voltage protection and over-current protection to improve the reliability. When no load, it automatically enters the sleep mode, reduces the static current, and ensures that the battery consumption current is below 100µA. SC9802 supports battery power display and button function. The SC9802 is in a 44-pin 5x6 QFN package.

3 Applications

- Power bank
- Portable WiFi, energy storage devices

4 Devices

器件号	封装	尺寸
SC9802QDGR	44 pin QFN	5mm x 6mm x 0.75mm

2 Features

- Two-channel charger structure, support 5V charging and discharging, support high voltage charging and discharging
- 5V Charger integrates synchronous switching tube
 - Support 5V 3A charging / 5V 3.4A discharging
 - Integrate power path management, support charging and discharging
 - Support load current line compensation function
 - Boost efficiency up to 97% (including isolation tube)
- High voltage supports synchronous switch tube drive
 - Support 12V 2A charging and discharging
 - External MOS improves the boost efficiency and heat dissipation performance, the efficiency is up to 98%
 - Support two-channel NMOS power path management drive
- Charging
 - High voltage charger supports fast charging handshake to realize high voltage fast charging
 - Supports dual chargers charging at the same time, reducing charging time
 - Adaptive charging current adjustment, matching various adapters
 - Support trickle charging
 - Support 4.2V/4.3V/4.35V/4.4V charger, charging voltage accuracy up to ±0.5%
- Integrate multiple protocols
 - 5V interface provides smart USB recognition function, support Android/Apple/Samsung phones
- Integrated Type-C DRP protocol, support single input and output
 - High-voltage charger input terminal supports fast charging handshake
- Path management function
 - Integrated charging and discharging isolation tube for 5V charger
 - The high voltage charger is driven by a two-channel NMOS isolation tube
- Power display
 - Built-in 10bit ADC and voltmeter
 - Support 4 LED power display
 - Support battery internal resistance compensation
- Other functions
 - Automatic detection of adapter and phone insertion and pull out
 - Support button
 - The phone will automatically stand by after pulling out, and the standby current is less than 100µA
- Multiple protection
 - Input overvoltage protection and undervoltage protection
 - Over charge protection, over discharge protection, over current protection
 - Output over voltage protection, over current protection, short circuit protection
 - Chip overtemperature protection
 - TC detection of battery temperature, high and low temperature charge and discharge protection
 - Charge over time protection