

High-Accuracy Protector with Integrated MOSFET for Single Cell Li-ion/Polymer Battery

1 Descriptions

The SC5510I is a highly integrated IC for single-cell Li-ion battery protection. It controls integrated MOSFET and provides battery protection functions including battery over voltage protection and battery under voltage protection, charge/discharge over current protection and load short circuit protection etc. The SC5510I only requires little external components composites of one capacitor and one resistor, which can reduce space and cost effectively, especially for limited space battery pack application.

The SC5510I especially integrates compensation for internal MOSFET $R_{ds(on)}$ variations under different temperature and battery voltage, which effectively ensures high-accuracy voltage/current detection and delay circuit to avoid battery over charge/ over discharge. Therefore, battery is applied under safe region and lifetime is effectively prolonged.

The SC5510I consumes very low standby current for cell long-time storing. The integrated low- $R_{ds(on)}$ MOSFET ensures that battery delivers the maximum power.

The SC5510I is available in 8 pin 2x2 DFN(FC) package.

3 Applications

- Power bank
- Single-Cell Li-ion or polymer rechargeable battery pack
- Wearable device
- Mobile device

2 Features

- Single cell Li-ion/ polymer battery protector
- Low cost and easy to design, only one capacitor and resistor needed
- Accurate delay circuit
- Charge over voltage protection and release
- Discharge under voltage protection and release
- Charge over current protection
- Discharge over current protection
- Load short circuit protection
- Support 0V battery charging function
- Reverse charger protection
- Integrated ultra-low $R_{ds(on)}$ MOSFET(9m Ω , VM-GND)
- Low supply current and shutdown current (5uA/0.4uA)
- Thermal shutdown

4 Device information

Part Number	Package	Dimension
SC5510IDFER	DFN(FC) 2x2-8L	2.0mm x 2.0mm x0.55mm