

## 12 mΩ Power Switch with Current Limit and Charging Port Controller

### 1 DESCRIPTION

The SC7004 is a power switch which integrates an ultra-low R<sub>dson</sub> (12mΩ) N-channel MOSFET. It is designed for USB port applications or other applications which require high current switch. It provides current limit function, and the current limit can be programmable through an external resistor. The SC7004 also integrates USB charging port controller function. It can support traditional type A USB port with DP and DM signals. It monitors the DP/DM data line voltage, and automatically supports the DCP schemes for Battery Charging specification (BC1.2), the divider Mode and 1.2V/1.2V Mode.

The SC7004 also supports various protections, including over voltage protection, under voltage protection, short circuit protection, and thermal shutdown protection.

The SC7004 requires a minimum number of external components to complete USB switch and charging port solution. It is available in TSOT23-8 package.

### 3 APPLICATIONS

- USB chargers
- USB HUB
- USB power supplies
- USB peripherals

### 2 FEATURES

- 12mΩ Ultra-low R<sub>dson</sub> NMOS Switch
- Programmable Current Limit
- ± 5% Current Limit Accuracy at 2.7A
- Built-in Soft-Start
- Ultra-low Operation Current
- Status Indication
  - ✓ Device Removal Indication
  - ✓ Short Circuit Fault Indication
- USB Charging Port Controller Function
  - ✓ Battery Charging specification BC1.2 for DCP
  - ✓ Chinese telecommunication industrial standard YD/T 1591-2009
  - ✓ D+/D- option for Apple device (2.4A)
  - ✓ D+/D- option for Samsung device
- Input Under Voltage Protection
- Input Over Voltage Protection
- Over Current Protection
- Short Circuit Protection
- Thermal Shutdown Protection
- ±8kV HBM ESD Rating for USB IO pins
- TSOT23-8 package

### 4 ORDERING INFORMATION

Part Number	Package	Dimension
SC7004SAER	TSOT23-8	2.92*2.8*0.95 mm