

# High Efficiency, Synchronous Buck Charger for 1-3 cell Li-ion Battery with PowerPath management

## 1 DESCRIPTION

The SC89133 is a highly integrated switch-mode buck charger for 1-3 cells Li-ion battery applications. It supports 4-24V input, up to 1A charging current and provide battery charge management functions including trickle charge, constant current charge, constant voltage charge, charge termination, Auto recharge and charging status indication.

SC89133 also integrates NMOS driver and PMOS driver for PowerPath management, it is easy to support dynamic power management for charging and system power.

The SC89133 supports flexible charge current and input current option, and the user can program the current freely through external resistor for different applications.

The SC89133 supports input current limit, input over voltage and under voltage protections, internal cycle by cycle current limit, battery short circuit protection, and battery over voltage protection. It also offers charging safety timer and battery temperature protection to ensure safety under different abnormal conditions.

Besides, SC89133 keeps monitoring IC temperature and automatically decreases charging current to ensure IC working in normal temperature range.

The SC89133 is available in QFN-3.5\*5.5 package.

## 3 APPLICATIONS

- Blue-tooth speaker charger
- Portable Media Players
- Notebook, Tablet
- POS machine

## 2 FEATURES

- Wide input voltage: 4V~24V, 30V sustainable
- Integrated low-Rdson synchronous buck charger, efficiency up to 97%
- Charging Management (Trickle Charge / Constant Current Charge / Constant Voltage Charge / Charge Termination/Auto-Recharge)
- Adjustable Input Current Limit and Charging Current
- Selectable Constant Voltage
  - 4.2V/8.4V/12.6V for 1 to 3 cells battery
- PowerPath management for System Power Selector
- Adjustable Charge Safety Timer
- NTC supporting JEITA Standard for Battery temperature Protection
- Charging Status Indication
- Adjustable Input Over Voltage and Under Voltage Protection
- Battery Over Voltage Protection
- Battery Short Circuit Protection
- Charging Over Current and Under Current Protection
- Thermal Regulation and Shutdown
- QFN 3.5\*5.5 footprint

## 4 DEVICE INFORMATION

| Part Number | Package    | Dimension     |
|-------------|------------|---------------|
| SC89133QDNR | 24 pin QFN | 3.5mm x 5.5mm |