



MP2632 All-in-One, 3A Battery Charger

DESCRIPTION

The MP2632 is a highly integrated, flexible, switch-mode battery charger with system power-path management and is designed for single-cell Li-ion or Li-polymer battery use in a wide range of applications.

The IC can operate in both charge mode and boost mode to allow for full system and battery power management.

The IC has an integrated IN-to-SYS pass-through path to pass the input voltage to the system. The pass-through path has built-in over-voltage and over-current protection and has a higher priority over the charging path.

When the input power is present, the device operates in charge mode. The MP2632 detects the battery voltage automatically and charges the battery in three phases: trickle current, constant current and constant voltage. Other features include charge termination and auto-recharge. The MP2632 also integrates both input current limit and input voltage regulation to manage input power and meet the priority of the system power demand.

In the absence of an input source, the IC switches to boost mode through PB to power SYS from the battery. In boost mode, OLIM programs the output current limit, and the IC turns off at light load automatically. The IC also uses output short-circuit protection to disconnect the battery from the load completely in the event of a short-circuit fault. The MP2632 resumes normal operation once the short-circuit fault is removed.

The 4-LED driver is integrated for voltage-based fuel gauge indication. Together with torch-light control, the MP2632 provides an all-in-one solution for power banks and similar applications without an external micro-controller.

The MP2632 is available in a 26-pin QFN (4mmx4mm) package.

FEATURES

- Up to 14V Sustainable Input Voltage
- 4.65V to 6V Operating Input Voltage Range
- Power Management Function, Integrated Input Current Limit, Input Voltage Regulation
- Up to 3A Programmable Charge Current
- Trickle-Charge Function
- Selectable 4.2V/4.35V/4.45V Charge Voltage with 0.5% Accuracy
- 4-LED Driver for Battery Fuel Gauge Indication
- Automatic Turn-Off at Light Load
- Input Source Detection
- Output Source Signaling
- Torch-Light Control
- Negative Temperature Coefficient Pin for Battery Temperature Monitoring
- Programmable Timer Back-Up Protection
- Thermal Regulation and Thermal Shutdown
- Internal Battery Reverse Leakage Blocking
- Integrated Over-Voltage Protection (OVP) and Over-Current Protection (OCP) for Pass-Through Path
- Reverse Boost Operation Mode for System Power

- Up to 3.0A Programmable Output Current Limit for Boost Mode
- Integrated Short-Circuit Protection (SCP) and Output Over-Voltage Protection for Boost Mode

APPLICATIONS

- Sub-Battery Applications
- Power-Bank Applications for Smart Phones
- Tablets and Other Portable Devices

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TYPICAL APPLICATION

