

## **2A 2-Cell Switchmode Li-Ion/Polymer Battery Charger with System Power-Path Selection**

### **DESCRIPTION**

The EUP8217 is a highly integrated 2-cell Li-ion and Li-polymer battery charger. It integrates a constant-frequency PWM controller with high accuracy regulation of input current, charge current, and voltage. It also provides battery detection, pre-conditioning, charge termination, and charge status monitoring.

The EUP8217 provides power path selection function. When the qualified adapter is present, the system is powered by the adapter. Otherwise, the system is powered by the battery.

The EUP8217 charges the battery in three phases: pre-conditioning, fast-charge constant current and constant voltage. In all stages, an internal control loop monitors the IC junction temperature and reduce charge current if the internal temperature threshold (120°C) is exceeded. Additionally, a battery pack thermistor monitoring input (TS) is included that monitors battery temperature for safety charging.

Charge is terminated when the current reaches 10% of the fast charge rate. A programmable charge timer offers a safety back up. The EUP8217 automatically restarts the charge cycle if the battery voltage falls below an internal threshold, and enters a low-quiescent current sleep mode when the input voltage falls below the battery voltage.

The EUP8217 features Dynamic Power Management (DPM) to reduce the charge current when the input power limit is reached to avoid over-loading the adapter. A highly-accurate current-sense amplifier enables precise measurement of input current from adapter to monitor overall system power.

The EUP8217 is available in a 28-pin, 4mm×4mm TQFN package.

### **FEATURES**

- 9V-20V Input Operating Range
- High Integration
  - Automatic Power Path Selector Between Adapter and Battery
  - Dynamic Power Management
  - Integrated 20V High Side Switching MOSFET
- Safety
  - Thermal Regulation Loop Throttles Back Current to Limit  $T_j=120^{\circ}\text{C}$
  - Thermal Shutdown
  - Battery Thermistor Sense Hot/Cold Charge Suspend & Battery Detect
  - Input Over-Voltage Protection with Programmable Threshold
- Accuracy
  - $\pm 1\%$  Charge Voltage Regulation
  - $\pm 10\%$  Charge Current Regulation
  - $\pm 10\%$  Input Current Regulation
- Less than 30 $\mu\text{A}$  Battery Current with Adapter Removed
- Less than 5mA Input Current with Adapter Present and Charge Disabled
- 4mm×4mm TQFN-28 Package
- RoHS Compliant and 100% Lead (Pb)-Free Halogen-Free

### **APPLICATIONS**

- Mobile and Smart Phones
- Tablet PC
- Handheld Devices