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To request the full datasheet, please visit www.intersil.com/products/isl88732

# SMBus Level 2 Battery Charger with Boost Mode

## ISL88732

The ISL88732 is a highly integrated Lithium-ion battery charger controller, programmable over the SMBus system management bus (SMBus). The ISL88732 is intended to be used in a smart battery charger (SBC) within a smart battery system (SBS) that throttles the charge power such that the current from the AC-adapter is automatically limited. High efficiency is achieved with a DC/DC synchronous-rectifier buck converter, equipped with diode emulation for enhanced light load efficiency. The ISL88732 charges one to four Lithium-ion series cells, and delivers up to 8A charge current. Integrated MOSFET drivers and bootstrap diode result in fewer components and smaller implementation area. Low offset current-sense amplifiers provide high accuracy with 10mΩ sense resistors. The ISL88732 provides 0.5% end-of-charge battery voltage accuracy.

The ISL88732 is available in a small 5mmx5mm 28 Ld Thin (0.8mm) QFN package.

### Boost Mode

If system load current is higher than the adapter current limit, ISL88732 will operate in boost mode to draw power from the battery and boost it to adapter voltage. System load current will be supplied partly from the adapter and partly from the battery.

ISL88732 performs this function by (1) detecting high adapter current, (2) reducing charge current to zero and (3) controlling LFET ON time to boost current from the battery and limit current from the adapter.

## Features

- Boost Mode to support Intel “Turbo Mode”
- Pin compatible with ISL88731
- Over-temp and overcurrent protection
- 0.5% battery voltage accuracy
- 4% adapter current limit accuracy
- 3% charge current accuracy
- SMBus 2-wire serial interface
- Charge current limited by SMBus DAC OR analog voltage at the CCLIM pin
- Turbo-boost discharge current limit can be set to 3.3x, 4.85x, 6.37x or 9.31x the charge current limit by SMBus command
- Monitor outputs
  - Adapter current (3% accuracy)
  - Adapter overcurrent ALERT#. Threshold set by resistor divider
  - AC-adapter detection
- 11-bit battery voltage setting
- 6-bit charge current/adapter current setting
- 8A maximum battery charger current
- 11A maximum adapter current
- +8V to +22V adapter voltage range
- Pb-free (RoHS compliant)

## Applications

- Notebook computers
- Tablet PCs

## Typical Operating Performance

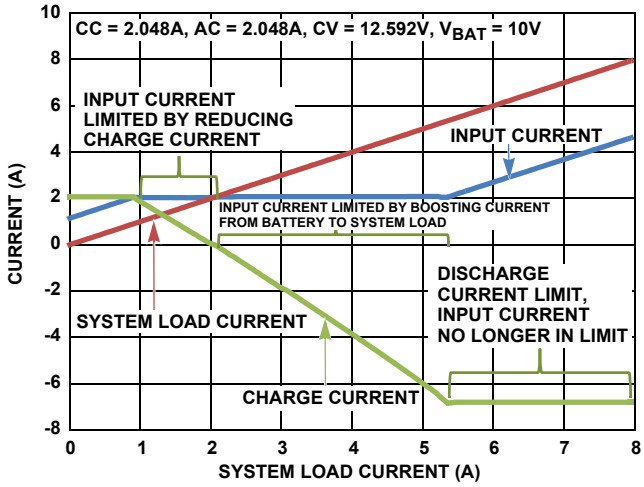


FIGURE 1. ISL88732 CURRENT CONTROL IN 4 MODES