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STEVAL-ISB032V1

Li-Ion battery charger evaluation board based on STNS01

Data brief



Features

- Charges single-cell Li-Ion batteries with CC-CV algorithm and charge termination
- Charge current programmable up to 400 mA
- 1% accuracy on floating voltage (4.2 V)
- Integrated 3.1 V LDO regulator
- Automatic power path management
- Battery over-charge protection
- Battery over-discharge protection
- Battery overcurrent protection
- Charging timeout
- Very low battery leakage in over-discharge/shutdown mode
- Low quiescent current
- Charge/fault status output
- Charger enable input
- RoHS compliant

Description

The STEVAL-ISB032V1 is a product evaluation board based on the STNS01, which is a linear charger for single-cell Li-Ion batteries integrating an LDO regulator and several battery protection functions. The device uses a CC/CV algorithm to charge the battery. The fast-charge current can be programmed using an external resistor. Pre-charge current and termination current are scaled accordingly. The floating voltage value is 4.2 V. The input supply voltage is normally used to charge the battery and provide power to the LDO regulator. When a valid input voltage is not present and the battery is not empty, the device automatically switches to battery power.

The STNS01 integrates over-charge, over-discharge and overcurrent protection circuitry to prevent the battery from being damaged under fault conditions. It also features a charger enable input to stop the charging process when battery overtemperature is detected by external circuitry.

When shutdown mode is activated, the battery power consumption is reduced to less than 500 nA to maximize battery life during shelf time.

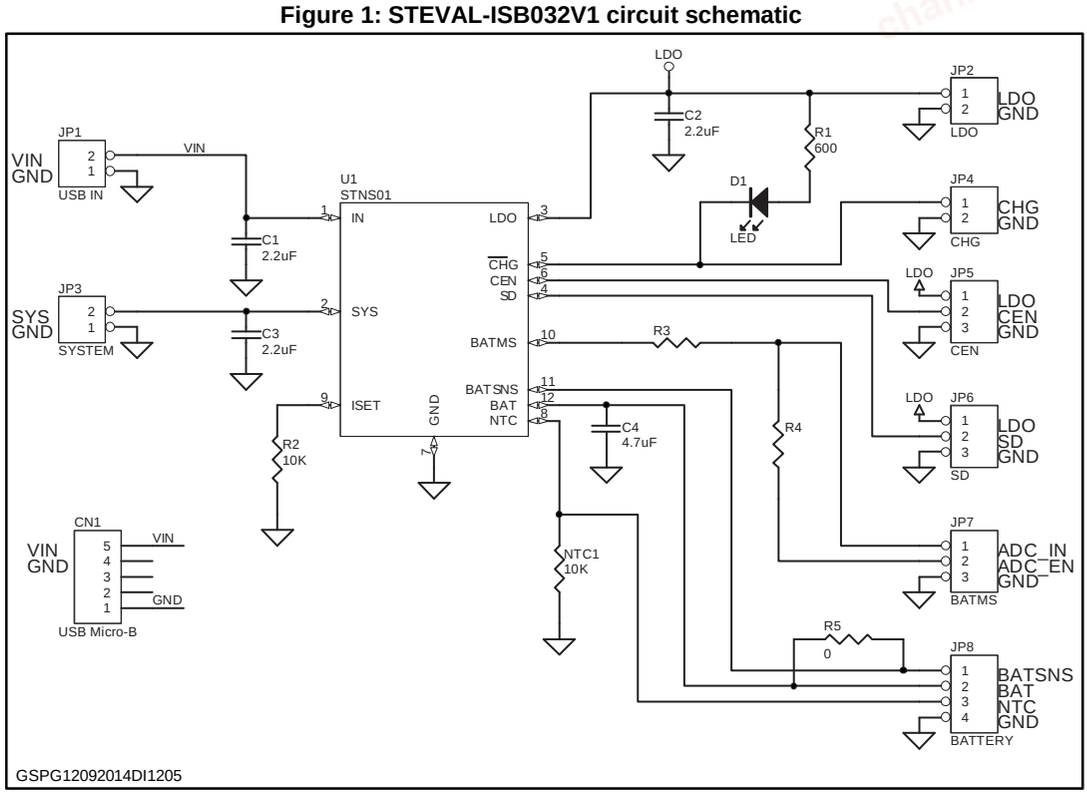
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1 Schematic diagram

Figure 1: STEVAL-ISB032V1 circuit schematic



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2 Revision history

Table 1: Document revision history

Date	Rev	Changes
21-Oct-2014	1	First release.
13-Nov-2014	2	Updated figure on the cover page.
26-Jan-2016	3	Updated title on the cover page.

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