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ISL95538B

Buck-Boost Narrow VDC Battery Charger for Power Bank Application with SMBus Interface and USB OTG

FN8935 Rev. 5.00 Jan 23, 2019

The <u>ISL95538B</u> is a buck-boost Narrow Output Voltage DC (NVDC) charger. The ISL95538B provides the NVDC charging function, system bus regulation, and protection features for tablet, Ultrabook, and notebook platforms. The advanced Renesas R3TM Technology provides high light-load efficiency and fast transient response.

In Charging mode, the ISL95538B takes input power from a wide range of DC power sources (such as conventional AC/DC charger adapters, USB PD ports, travel adapters) and safely charges battery packs with up to 4-series cell Li-ion batteries.

As an NVDC topology charger, the ISL95538B also regulates the system output to a narrow DC range for stable system bus voltage. The system power can be provided from the adapter, battery, or a combination of both. The ISL95538B can operate with only a battery, an adapter, or both connected.

The ISL95538B supports reverse buck, boost, or buck-boost operation to the input port from 2- to 4-cell batteries.

The ISL95538B has serial communication using SMBus/I²C that allows programming of many critical parameters to deliver a customized solution.

Related Literature

For a full list of related documents, visit our website:

• ISL95538B device page

Features

- Buck-boost NVDC charger for 1-, 2-, 3-, or 4-cell Li-ion batteries
- Input voltage range 3.2V to 23.4V (no dead zone)
- System output voltage 3V to 18.304V
- Autonomous charging option (automatic end of charge and recharge)
- Up to 1MHz switching frequency
- Adapter current and battery current monitor (AMON/BMON)
- PROCHOT# open-drain output, IMVP compliant
- Allows trickle charging of depleted batteries
- Ideal diode control in Turbo mode
- Reverse buck, boost, and buck-boost operation from battery
- Two-level adapter current limit available
- · Battery Ship mode option
- SMBus and auto-increment I²C compatible
- 4x4 32 Ld TQFN package

Applications

• Mobile devices with rechargeable batteries

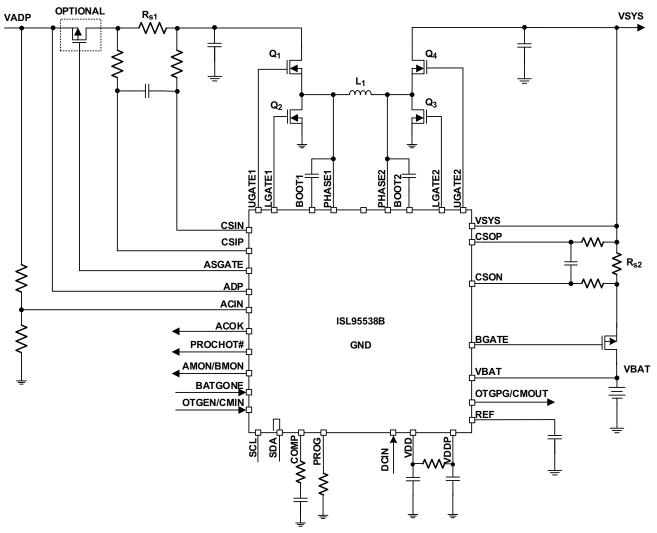


Figure 1. Typical Application Circuit

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(Rev.4.0-1 November 2017)

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