

ISL95538B

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

FN8935
Rev.2.00
Nov 30, 2017

The [ISL95538B](#) 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. Intersil's advanced R3™ Technology is used to provide high light-load efficiency and fast transient response.

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

As an NVDC topology charger, it 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 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.

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 battery
- 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
- Package 4x4 32 Ld TQFN

Applications

- Mobile devices with rechargeable batteries

Related Literature

- For a full list of related documents, visit our website
 - [ISL95538B](#) product page

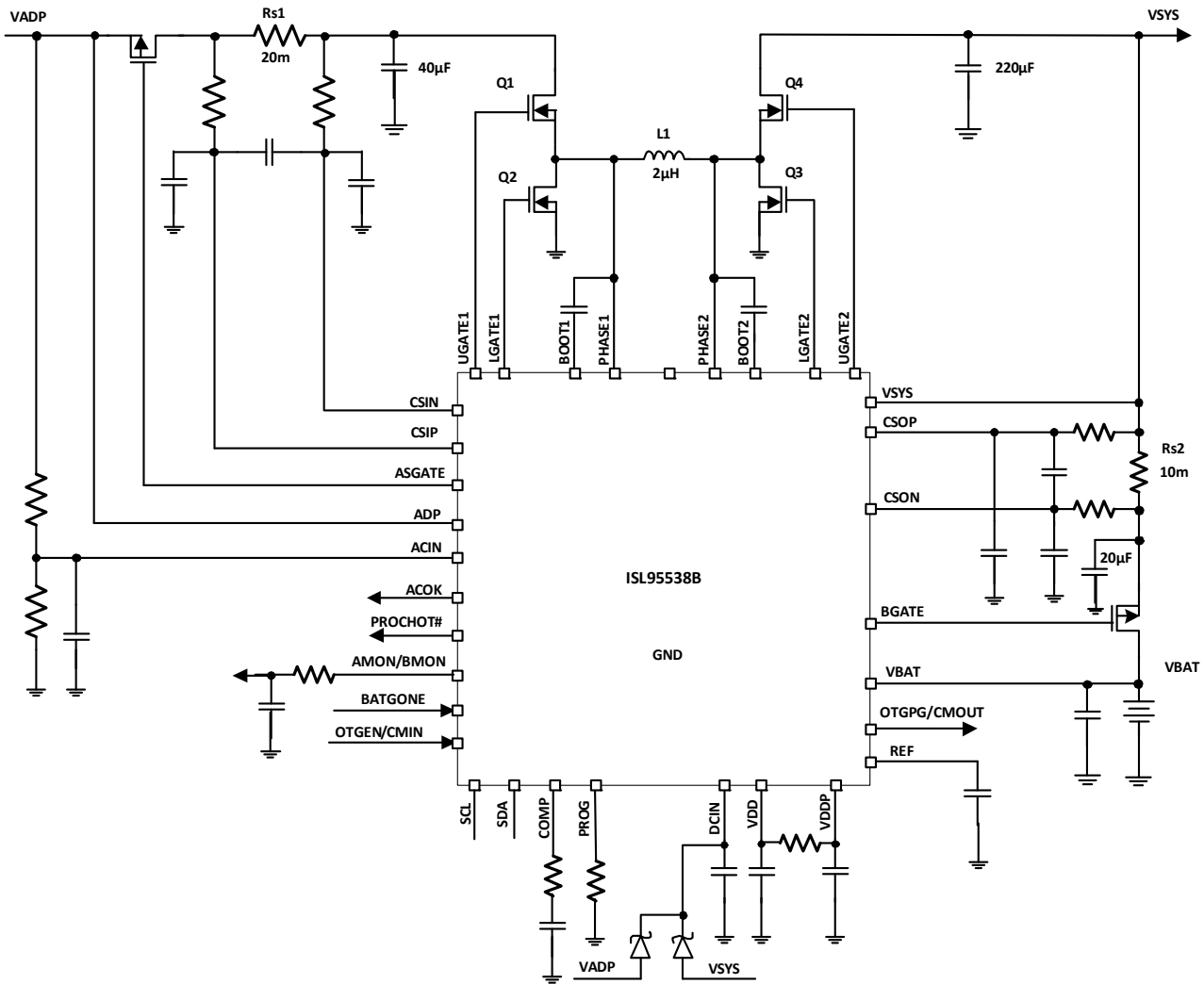


Figure 1. Typical Application Circuit

© Copyright Intersil Americas LLC 2017. All Rights Reserved.
 All trademarks and registered trademarks are the property of their respective owners.

For additional products, see www.intersil.com/en/products.html

Intersil products are manufactured, assembled and tested utilizing ISO9001 quality systems as noted in the quality certifications found at www.intersil.com/en/support/qualandreliability.html

Intersil products are sold by description only. Intersil may modify the circuit design and/or specifications of products at any time without notice, provided that such modification does not, in Intersil's sole judgment, affect the form, fit or function of the product. Accordingly, the reader is cautioned to verify that datasheets are current before placing orders. Information furnished by Intersil is believed to be accurate and reliable. However, no responsibility is assumed by Intersil or its subsidiaries for its use; nor for any infringements of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Intersil or its subsidiaries.

For information regarding Intersil Corporation and its products, see www.intersil.com