

To request the full datasheet, please visit www.intersil.com/products/ISL88738

Buck-Boost NVDC Battery Charger with SMBus Interface

ISL88738

The [ISL88738](#) is a buck-boost Narrow Output Voltage DC (NVDC) charger. The ISL88738 provides the NVDC charging function, system bus regulation and protection features for tablet, ultra-book, and notebook platforms. Intersil's advanced R3™ Technology is used to provide high light-load efficiency and fast transient response.

In Charging mode, the ISL88738 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 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 ISL88738 can operate with only a battery, only an adapter, or both connected. For Intel IMVP8 compliant systems, the ISL88738 includes System power monitor (PSYS) functionality, which provides an analog signal representing total platform power. The PSYS output will connect to a wide range of Intersil IMVP8 core regulators to provide an IMVP8-compliant power domain function.

The ISL88738 has serial communication via 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)
- System power monitor PSYS output, IMVP8 compliant
- 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
- 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 - [ISL88738](#) product page

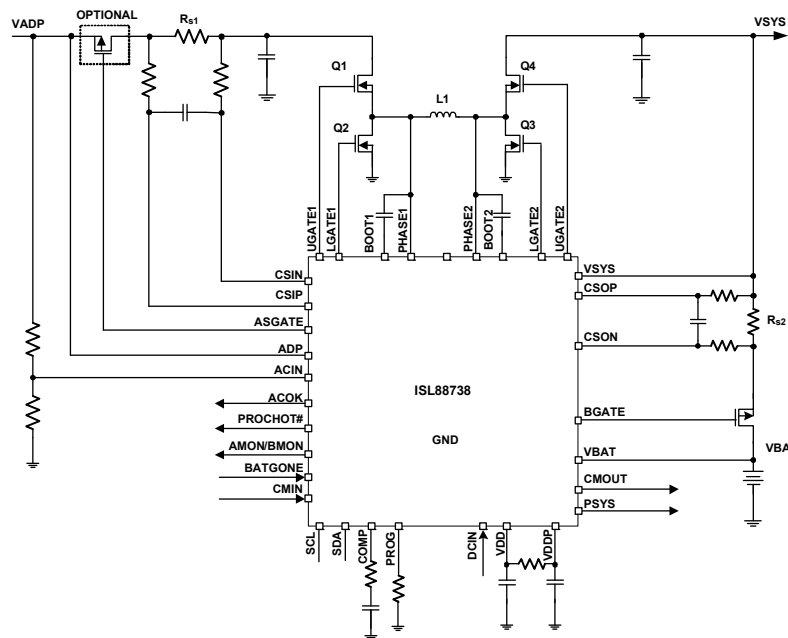


FIGURE 1. TYPICAL APPLICATION CIRCUIT

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 Corporation reserves the right to make changes in circuit design, software and/or specifications at any time without notice. Accordingly, the reader is cautioned to verify that data sheets 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