To request the full datasheet, please visit www.intersil.com/products/isl91128

High Efficiency Buck-Boost Regulator with 4.5A Switches and I²C Interface

ISL91128

The ISL91128 is a high-current buck-boost switching regulator for systems using new battery chemistries. It uses Intersil's proprietary buck-boost algorithm to maintain voltage regulation while providing excellent efficiency and very low output voltage ripple when the input voltage is close to the output voltage. The device also includes a selectable bypass mode for low power consumption in applications that have a sleep or low power mode.

The ISL91128 is capable of delivering at least 2.2A continuous output current (V_{OUT} = 3.3V) over a battery voltage range of 2.5V to 4.35V. This maximizes the energy utilization of advanced single-cell Li-ion battery chemistries that have significant capacity left at voltages below the system voltage. Its fully synchronous low ON-resistance 4-switch architecture and a low quiescent current of only 30µA optimize efficiency under all load conditions.

The ISL91128 supports a broader set of programmable features that may be accessed via an I²C bus interface. With a programmable output voltage range of 1.9V to 5.0V, the ISL91128 is ideal for applications requiring dynamically changing supply voltages. A programmable slew rate can be selected to provide smooth transitions between output voltage settings.

The ISL91128 is available in a 20 bump, 0.4mm pitch WLCSP (2.15mmx1.74mm) and a 2.5MHz switching frequency, which further reduces the size of external components.

Features

- Accepts input voltages above or below regulated output voltage
- Automatic and seamless transitions between buck and boost modes
- I²C Interface
- Input voltage range: 1.8V to 5.5V
- Continuous output current: up to 2.4A (PVIN = 2.5V, V_{OUT} = 3.3V)
- High efficiency: up to 96%
- 30µA quiescent current maximizes light-load efficiency
- Selectable bypass power saving mode operation
- 2.5MHz switching frequency minimizes external component size
- Fully protected for short-circuit, over-temperature and undervoltage
- Small 2.15mmx1.74mm WLCSP

Applications

- Brownout-free system voltage for smart phones and tablet PCs
- Wireless communication devices
- 2G/3G/4G RF power amplifiers

Related Literature

- UG063, "ISL91128IIN-EVZ Evaluation Board User Guide"

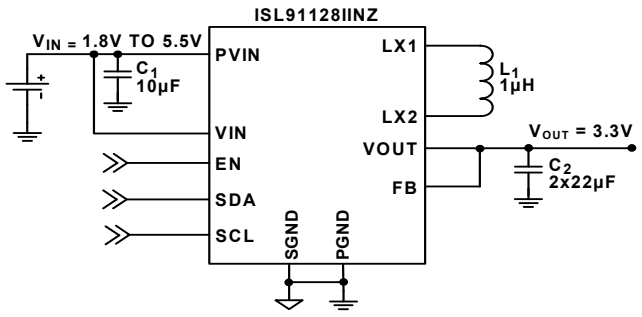


FIGURE 1. TYPICAL APPLICATION

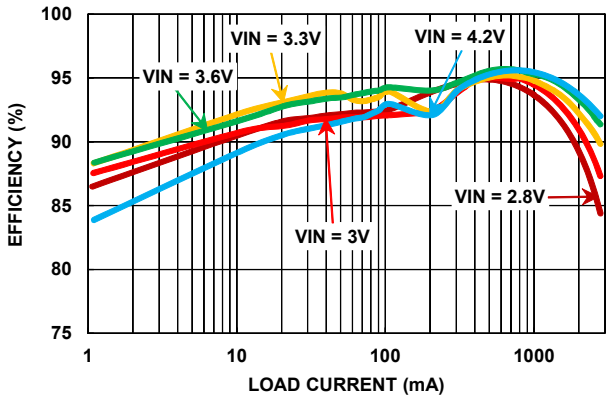


FIGURE 2. EFFICIENCY: V_{OUT} = 3.3V, T_A = +25°C

CAUTION: These devices are sensitive to electrostatic discharge; follow proper IC Handling Procedures.
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