General Description

The TCS4331C is a high-efficiency monolithic synchronous buck regulator using a constant frequency, current mode architecture. The device is available in an adjustable version. Supply current with no load is 40uA and drops to <1uA in shutdown. The 2.5V to 5.5V input voltage range makes the TCS4331C ideally suited for single Li-Ion battery powered applications. 100% duty cycle provides low dropout operation, extending battery life in portable systems.

PWM/PFM mode operation provides very low output ripple voltage for noise sensitive applications.

Switching frequency is internally set at 1.2MHz, allowing the use of small surface mount inductors and capacitors.

Low output voltages are easily supported with the 0.6V feedback reference voltage.

The TCS4331C is offered in a low profile (1mm) 5-pin, thin SOT package, and is available in an adjustable version.

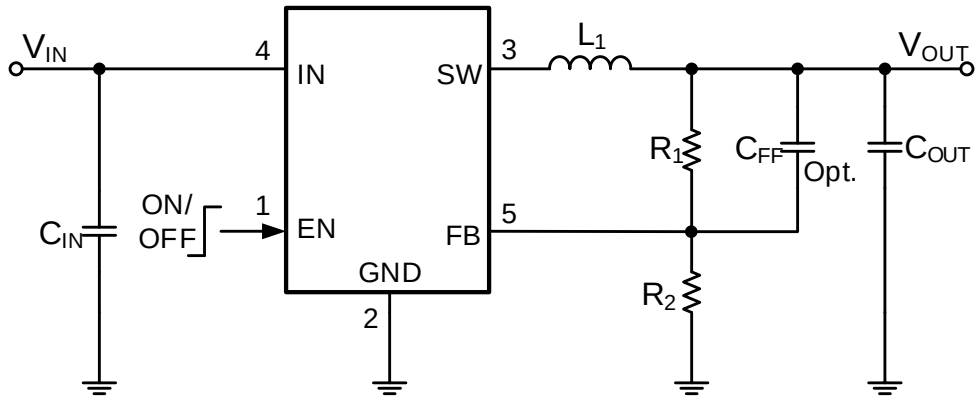
Features

- High Efficiency: Up to 96%
- 2.5V to 5.5V Input Voltage Range
- 1.2MHz Constant Frequency Operation
- Up to 3.0A Current Output
- No Schottky Diode Required
- PFM Mode for High Efficiency in Light Load
- Over temperature Protected
- Low Quiescent Current: 40μA
- Short Circuit Protection
- Inrush Current Limit and Soft Start
- Low Dropout Operation:100% Duty Cycle
- SOT23-5 package

Applications

- Cellular and Smart Phones
- Wireless and DSL Modems
- PDAs
- Portable Instruments
- Digital Still and Video Cameras
- PC Cards

Typical Application Circuit



Basic Application Circuit