

Sync. Rectifier Step Up Converter

General Description

The AP2007 is a compact, high-efficiency, synchronous step-up converter with power Mosfets embedded and with output turn off true shutdown function for a single-cell Li-ion/polymer battery. The AP2007 uses only 70 μ A (typ) quiescent current and allows the converter to switch only when needed at no load and light loads, and when load is higher than 150mA, it uses fixed-frequency PWM technique at 1MHz. It features a current mode control for fast transient response with internal compensation. The AP2007 includes cycle-by-cycle current limit to maximum inductor current and over-temperature protection circuit. The AP2007 is suitable for iPad-like computers, smart phones and portable handheld devices.

The AP2007 is available in a SOP8-PP package. The operating temperature range is from -45°C to +85°C.

Applications

- iPad-like computers, smart phones and portable handheld devices.

Features

- Up to 90% Efficiency at $I_{out}=2A$ $V_{OUT} = 5V$ from 3.6V Input

Typical Application Circuit

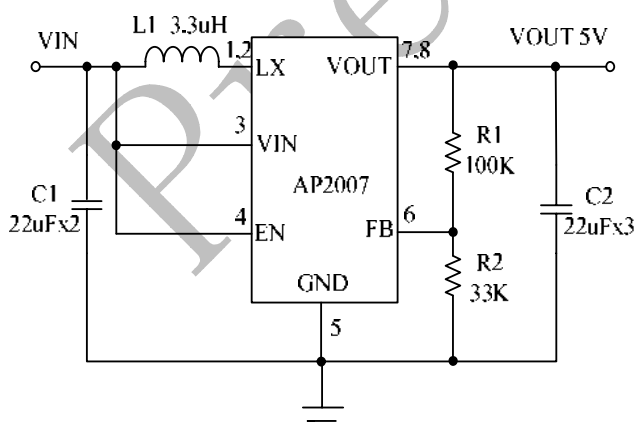


Figure 1. Basic Application Circuit with AP2007

- Low 70 μ A Quiescent Current
- Guaranteed 2A Output Current at $V_{OUT} = 5V$ from 3.3V Input
- 1MHz PWM Switching Frequency
- Synchronous and Embedded Power Mosfets
- No Schottky Diode Required
- Internal Soft-Start to Limit Inrush Current
- Adjustable Output
- Output turn off true shutdown function
- Current Mode Operation with Internal Compensation
- For Excellent Line and Load Transient Response
- Overload/Short-Circuit Protection
- Shutdown Current <1 μ A
- Thermal Shutdown
- Compact 8 pin, SOP8-PP package

Package

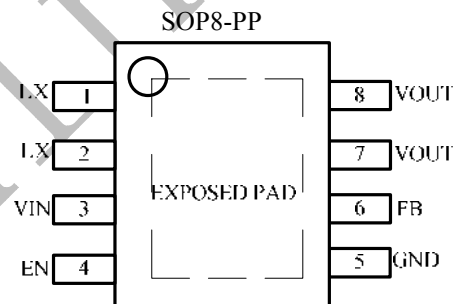


Figure 2. Typical Efficiency Curve