

1MHz, 2.5A, Synchronous Step-Down Converter

General Description

The PN6525 is a high efficiency monolithic synchronous buck regulator using a constant frequency, current mode architecture. Supply current with no load is 60uA and drops to <1uA in shutdown. The 2.7V to 6.0V input voltage range makes the PN6525 ideally suited for single Li-Ion, two to four AA battery-powered applications. 100% duty cycle provides low dropout operation, extending battery life in portable systems. PWM pulse skipping mode operation provides very low output ripple voltage for noise sensitive applications. Switching frequency is internally set at 1MHz, allowing the use of small surface mount inductors and capacitors. The internal synchronous switch increases efficiency and eliminates the need for an external Schottky diode. Low output voltages are easily supported with the 0.6V feedback reference voltage. The PN6525 is available in four kinds' SOT-23-5L, SOT-23-6L, 3mm x 3mm DFN-10L and MSOP10-EP package.

- 1MHz Constant Switching Frequency
- 2.0A Output Current at VIN=3V
- Integrated Main Switch and Synchronous Rectifier No Schottky Diode Required
- 2.7V to 6.0V Input Voltage Range
- Output Voltage as Low as 0.6V
- 100% Duty Cycle in Dropout
- Quiescent Current: 60μA(input < 4.2V)
- Slope Compensated Current Mode Control for Excellent Line and Load Transient Response
- Robust protection features, OCP, SCP, TSD
- Same BOM L-C passive components for 5Vin to Vout 3.3V, 2.5V, 1.8V, 1.2V, and 1.0V
- <1uA Shutdown Current
- Soft start
- Package: SOT-23-5L, SOT-23-6L, DFN-10L and MSOP10-EP.

Applications

- Set Top Box
- Portable Instruments
- Battery Powered Equipment
- Wireless Access Point Router and DSL Modems
- Personal and Notebook Computer
- Microprocessors and DSP Core Supplies
- Digital Still and Video Cameras

Features

- High Efficiency: Up to 97%

Typical Application Circuit

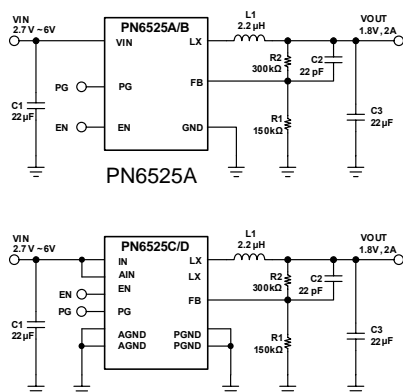


Figure 1. Typical Application Circuit

Package

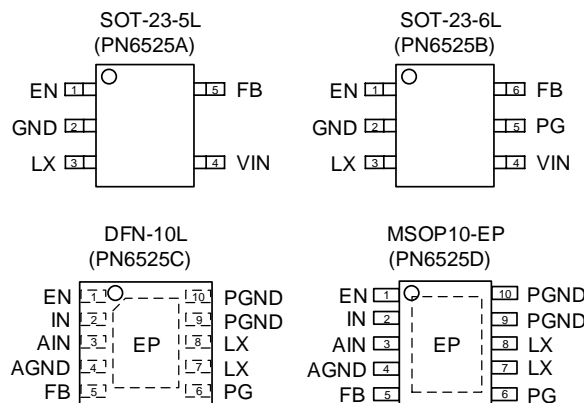


Figure 2. Typical Efficiency Curve