

General Description

The APS2406 is a high efficiency monolithic synchronous buck regulator using a constant frequency, current mode architecture. The device is available in an adjustable version and fixed output voltages, such as 1.2V, 1.5V, 1.8V, etc. Supply current with no load is 300 μ A and drops to <1 μ A in shutdown. The 2.5V to 6.5V input voltage range makes the APS2406 ideally suitable for single Li-Ion, two to four AA battery-powered applications. In low dropout operation mode, the duty cycle can reach to 100%, 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 1.5MHz, 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 APS2406 is available in a small SOT package.

Features

- High Efficiency: Up to 96%
- 1.5MHz Constant Switching Frequency
- 800mA Output Current at $V_{IN}=3V$
- Integrated Main switch and synchronous rectifier.
No Schottky Diode Required
- 2.5V to 6.5V Input Voltage Range
- Output Voltage as Low as 0.6V
- 100% Duty Cycle in Dropout
- Quiescent Current: 300 μ A (input < 4.2V)
- Slope Compensated Current Mode Control for Excellent
Line and Load Transient Response
- Short Circuit Protection and Thermal Fault Protection
- <1 μ A Shutdown Current
- Soft start
- Space Saving 5-Pin SOT23 package

Applications

- Cellular and Smart Phones
- Microprocessors and DSP Core Supplies
- Wireless and DSL Modems
- PDAs
- MP3 / MP4 / PMP Player
- Digital Still and Video Cameras
- Portable Instruments
- MID or UPMC

Typical Application Circuit

