1.5 MHz, 600mA Synchronous Step-Down Converter with Low Quiescent Current

GENERAL DESCRIPTION

The APS1016 is a 1.5 MHz constant frequency, high efficiency, slope compensated current mode PWM step-down converter. The device integrates a main switch and a synchronous rectifier for high efficiency without an external Schottky diode. The APS1016 can operate from a 2.5V to 5.5V input voltage and is ideal for powering portable equipment that runs from a single cell lithium-Ion (Li+) battery. It can supply 600mA output current and can also run at 100% duty cycle for low dropout operation, extending battery life in portable system.

The APS1016 features a Power Saving Mode which reduces quiescent current to just 30μA and significantly improves efficiency at light load.

The APS1016 is offered in a low profile (1mm) 5-pin, SOT package, and is available in an adjustable version and fixed output voltage of 1.2V, 1.5V and 1.8V.

APPLICATIONS

- Cellular and Smart Phones
- PDAs
- MP3 Player
- DSP Core Supplies
- Digital Still Cameras
- Portable instruments

FEATURES

- High Efficiency: Up to 96%
- 1.5MHz Constant Switching Frequency
- 600mA Output Current at V_{IN}=3.0V
- Integrated Main switch and synchronous rectifier.
- No Schottky Diode Required
- 2.5V to 5.5V Input Voltage Range
- Output Voltage as Low as 0.6V
- 100% Duty Cycle in Dropout
- Low Quiescent Current: 30μA
- <1uA Shutdown Current
- Slope Compensated Current Mode Control for Excellent Line and Load Transient Response
- Short Circuit and Thermal Fault Protection
- Space Saving 5-Pin Thin SOT23 package

Order Information

Part Number	Top Mark	Temp Range
APS1016ES5	C1XY*	-40°C to +85°C
APS1016ES5-1.5	C2XY	
APS1016ES5-1.8	C3XY	
APS1016ES5-1.2	C4XY	

*Note XY = Manufacturing Date Code

Typical Application

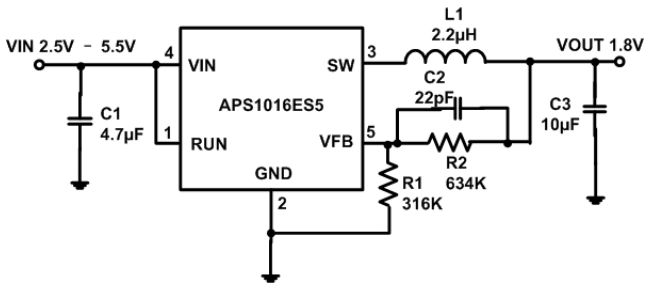

Figure 1. Basic Application Circuit with APS1016 adjustable version