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AIC2341

1.0A Output, 2.5MHz Synchronous Buck-Boost DC/DC Converter

FEATURES

- Regulated Output with Input Voltage Above, Below, or Equal to the Output
- 1A Output Current at 3.3V in Step Down Mode (VIN = 3.6V to 5.5V)
- Up to 800mA Output Current at 3.3V in Boost Mode (VIN > 2.8V)
- Single Inductor
- 2.5V to 5.5V Input Voltage Range
- Fixed and Adjustable Output Voltage Options from 1.8V to 5.5V
- Up to 95% Efficiency
- Stable with Low ESR Ceramic Capacitors
- No Schottky Diode Required
- Output Disconnect in Shutdown
- <1uA Shutdown Current
- <65uA Quiescent Current
- Power Saving Mode for Improved Light Efficiency Operation
- Forced Fixed Frequency Operation Mode
- Load Disconnect During Shutdown
- Undervoltage Lockout Protection

APPLICATIONS

- All Three-Cell Alkaline, NiCd or NiMH or Single-Cell Li Battery
- MP3 Players
- Handheld Instruments
- Digital Cameras
- Smart Phones
- Portable GPS Units
- Miniature Hard Disk Drive Power

DESCRIPTION

The AIC2341 is a 1.0A output, low-noise, pulse-width-modulated (PWM) buck-boost DC-DC converter that operates from input voltage above, below, or equal to the output voltage. The device features two internal synchronous rectifiers for high efficiency; it requires no external Schottky diode. Internally fixed-frequency 2.5MHz operation provides easy post-filtering and allows the use of small inductors and capacitors. At low load currents the converter enters the Power Saving Mode to maintain a high efficiency over a wide load range. The Power Saving Mode could be disabled, forcing AIC2341 to operate at PWM mode. The AIC2341 is ideally suited for single Li-Ion battery applications. It is also useful for three-cell alkaline, NiMH, or NiCd applica-tions. Shutdown mode places the device in standby, reducing quiescent supply current to under 1uA.

Other features of the AIC2341 include internal soft-start, internal compensation, short circuit protection, current limit, and over temperature protection. The device is packaged in a DFN-10 (3x3) package.

TYPICAL APPLICATION