

1MHz, 3A Synchronous Step-Down Converter with Soft Start

DESCRIPTION

The EUP3084 is a constant frequency, current mode, PWM step-down converter. The device integrates a main switch and a synchronous rectifier for high efficiency. The 2.7V to 5.5V input voltage range makes the EUP3084 ideal for powering portable equipment that runs from a single cell Lithium-Ion (Li+) battery or 3-cell NiMH/ NiCd batteries. The output voltage can be regulated as low as 0.6V. The EUP3084 supports up to 3A load current and can also run at 100% duty cycle for low dropout applications, extending battery life in portable systems. Switching frequency is internally set at 1MHz, allowing the use of small surface mount inductors and capacitors.

The EUP3084 is available in TDFN-10L(3×3) Package.

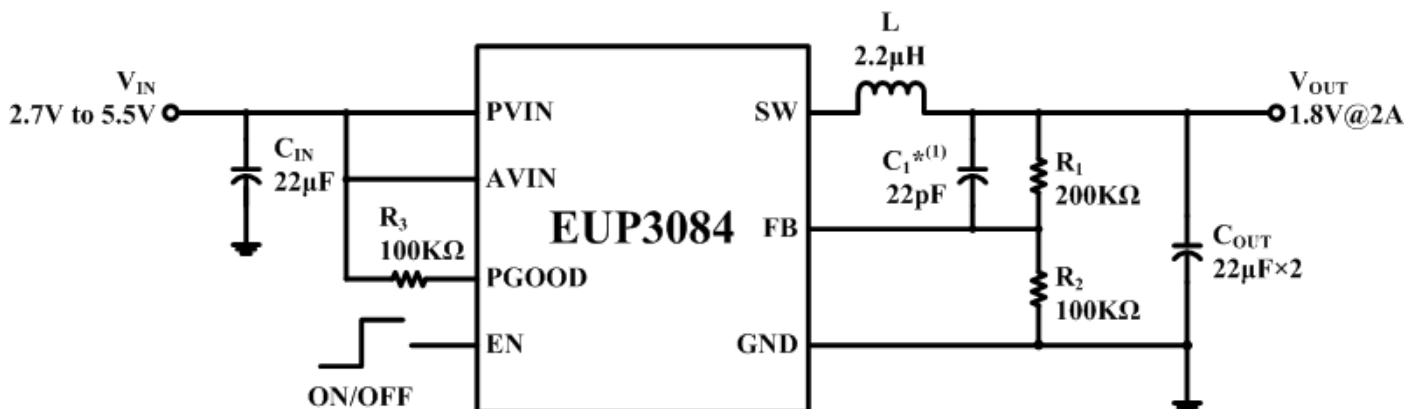
FEATURES

- High Efficiency up to 95%
- Low $R_{DS(ON)}$ for internal switches:
High-side: 100mΩ
Low-side: 60mΩ
- 2.7V to 5.5V Input Voltage Range
- 3A Available Load Current
- 30μA Typical Quiescent Current
- 1MHz Constant Switching Frequency
- Adjustable Output Voltage as Low as 0.6V
- 100% Duty Cycle Low Dropout Operation
- Short Circuit and Thermal Protection
- Excellent Line and Load Transient Response
- Soft Start Function
- Power Good
- Available in TDFN-10L(3×3) Package
- RoHS Compliant and Halogen-Free

APPLICATIONS

- Cellular and Smart Phones
- Portable Media Players/ MP3 Players
- Digital Still and Video Cameras
- Portable Instruments
- WLAN PC Cards

Typical Application Circuit



^{*(1)} Option for Better Performance

$$V_{OUT} = 0.6V \times (1 + R_1/R_2)$$

Figure 1. Application Circuit