10 White LED Boost Converter with PWM Dimming

DESCRIPTION

The EUP2537 is a constant current step-up converter specifically designed to drive white LEDs. With a 45V rated integrated switch FET, the step-up converter supports up to 10 white LEDs in series connection, so the LED currents are identical for uniform brightness. The boost converter runs at 1.0MHz fixed switching frequency with 1.3A switch current limit, and allows for the use of a high brightness LED in general lighting. The maximum white LED current is set with the external sensor resistor R_{FB}, and the feedback voltage is regulated to 200mV, as shown in the typical application. During the operation, the LED current can be controlled through the EN pin with a 8KHz or higher frequency PWM dimming signal on EN pin, EUP2537 operates in PWM dimming mode, which the duty cycle determines the feedback reference voltage. The EUP2537 does not generate audible noises on the output capacitor. For the protection, the EUP2537 provides 41.5V OVP to prevent damage from LED open.

The EUP2537 is available in low profile TSOT23-6 package.

FEATURES

- 2.6V to 5.5V Input Range
- 41.5V Output Over Voltage Protection
- Internal Soft-Start
- Internal Compensation
- External PWM Dimming with 8KHz - 100KHz Frequency Range
- Internal 45V N-FET
- 1MHz Fixed Switching Frequency
- Over Voltage Protection
- Over Thermal Protection
- V_{IN} Under Voltage LockOut
- Available in TSOT23-6 Package
- RoHS Compliant and 100% Lead (Pb)-Free Halogen-Free

APPLICATIONS

- Mobile Phones
- GPS Navigation Systems
- Portable Media Players
- Handheld Devices, Digital Camera
- Portable Game Machines

Typical Application Circuit

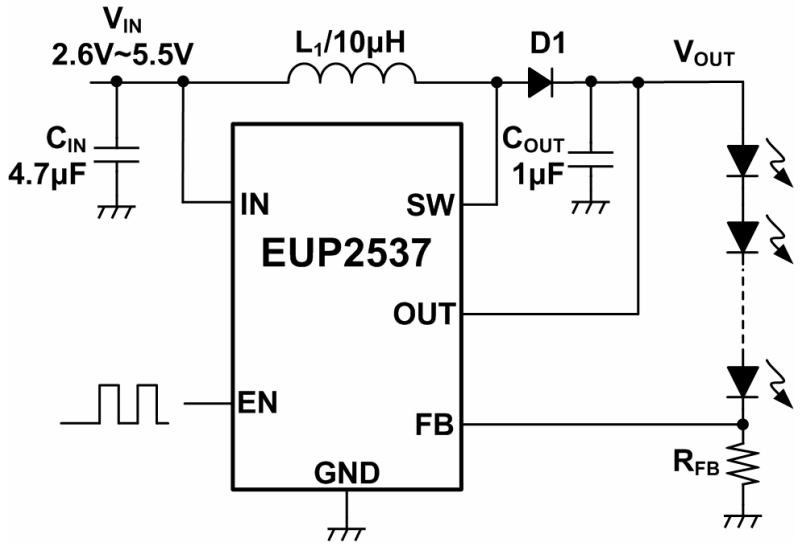


Figure 1. White LED Application