



# Preliminary YB1510

## Step-up DC-DC Converter, White LED Driver

### Description

The YB1510 is a step-up DC-DC converter; operates as current source to drive up to 7 white LEDs in series. Series connecting of the LEDs provides identical LED currents resulting in uniform brightness and eliminating the need for ballast resistors. The light intensity of these LEDs is proportional to the current passing through them. The YB1510 switches at a fixed frequency of 700KHz, allowing the use of tiny, low profile inductors and capacitors to minimize footprint and cost in space consideration applications for cellular phone backlighting or other hand held equipment.

The YB1510 can drive up to 7 white LEDs from a single Li-Ion battery. The wide input voltage range from 2.7V to 16V is ideal for portable and automotive (5V/12V) applications with higher conversion efficiency. To control LED brightness, the LED current can be pulsed by applying a PWM (pulse width modulated) signal with a frequency range of 100Hz to 50KHz to the CTRL pin.

YB1510 has integrated Over Voltage Protection that prevents damage to the device in case of a high impedance output due to faulty LED or open circuit caused by abnormal conditions.

### Features

- Built-in internal switch
- Adjustable output voltage up to 35V
- 2.7V to 16V input range
- <1uA shutdown current
- High efficiency
- Drives up to 7 white LEDs
- Over voltage protection
- Small 5-Lead SOT-23 package

### Applications

- LCD Display Module
- White LED Backlighting
- PDAs, GPS terminals
- Digital Cameras
- Cellular Phone
- Electronic Books
- Portable Applications

### Typical Application Circuit

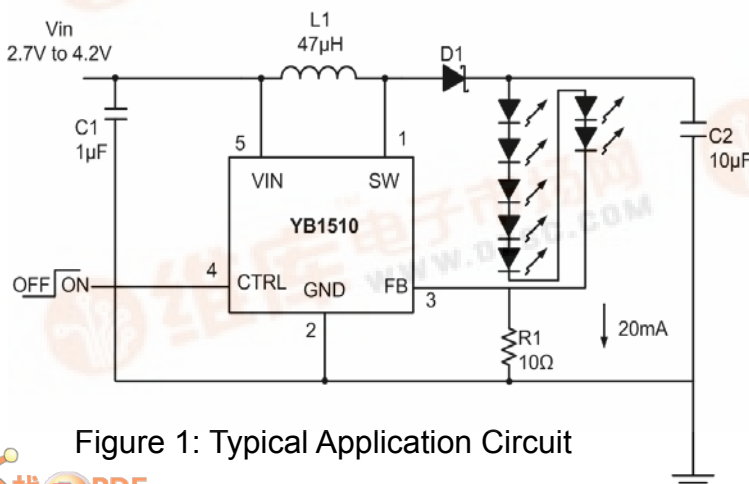


Figure 1: Typical Application Circuit

