

**DESCRIPTION**

The MT7004B is a Boost LED driver for driving up to 39 LEDs (3-series and 13-parallel) from a 5V system rail. The MT7004B uses current mode, fixed frequency architecture to regulate the LED current, which is measured through an external current sense resistor. Its low 110mV feedback voltage reduces power loss and improves efficiency. The OV pin monitors the output voltage and turns off the converter if an over-voltage condition is present due to an open circuit condition.

The MT7004B includes under-voltage lockout, current limiting and thermal overload protection preventing damage in the event of an output overload.

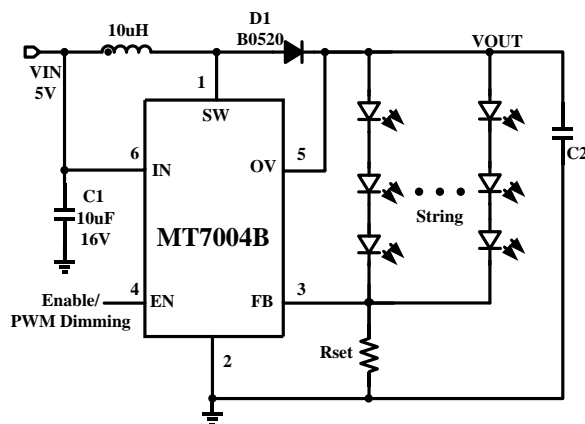
**FEATURES**

- 2.7V to 6V input voltage range
- Boost PWM with internal power MOSFET
- Drives up to 39 LEDs at 5V input.
- Up 90% Efficiency
- Low feedback voltage: 110mV
- PWM dimming frequency from 100Hz to 200kHz
- Under-Voltage lockout (UVLO) protection
- Internal thermal protection and Open Load Shutdown Threshold(OVP)
- Fixed switching frequency: 1.3MHz
- 1uA shutdown current
- Internal soft-start
- Available in SOT23-6 package

**APPLICATION**

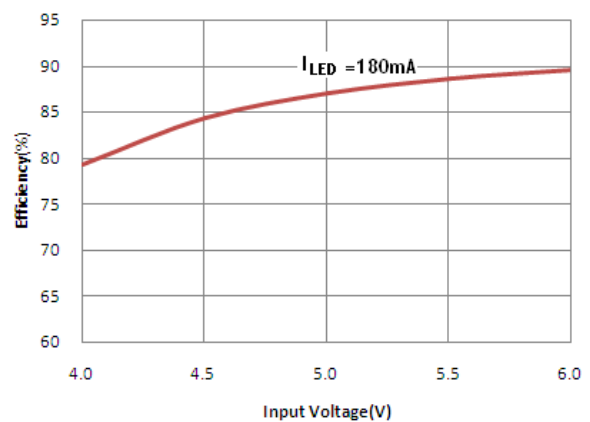
- Small LCD Panels
- Digital Picture Frames
- Handheld Computers and PDAs
- Digital Still Cameras
- Small LCD Displays

**Typical Application Circuit**

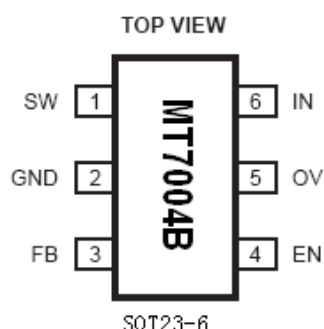


**Efficiency vs. Input Voltage**

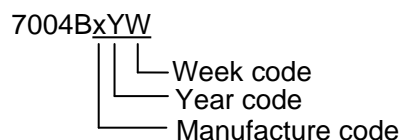
3LED, 9 Strings



### Pin configurations



### Chip Mark



### Pin description

Name	Pin No.	Description
SW	1	SW is the drain of internal power MOSFET. Connect the power inductor and output rectifier to SW. SW can swing between GND and VIN+0.3V.
GND	2	Ground.
FB	3	Feedback input. The MT7004B regulates the voltage across the current sense resistor between GND and FB. Connect a current sense resistor from the bottom of the LED string to GND. Connect the bottom of the LED string to FB. The regulation voltage is 110mV.
EN	4	Chip enable and Dimming Command Input. Holding EN pin low for more than 10ms will turn the part off. To use PWM dimming, add a 100Hz to 200kHz square wave signal to this pin. The EN pin can be left floating.
OV	5	Over Voltage Input. OV measures the output voltage for open circuit protection. Connect OV to the output at the top of the LED string. The default Over-voltage protection threshold is 30.5V. If add external resistor, the OVP threshold can be higher.
IN	6	Power supply. Decouple to ground with 10μF or higher ceramic capacitor close to device