

General Description

TCS5103B is a 1A constant current LED driver designed to provide a simple, high efficiency solution for driving high power LEDs. With a 100mV reference voltage feedback control to minimize power dissipation, an external resistor sets the current as needed for driving various types of LEDs. Supply current with no load is 40uA and drops to <1uA in shutdown. The 2.5V to 5.5V input voltage range makes the TCS5103B ideally suited for single Li-Ion battery powered applications. 100% duty cycle provides low dropout operation, extending battery life in portable systems. PWM mode operation provides a constant frequency whatever the duty cycle changes. Switching frequency is internally set at 1.5MHz, allowing the use of small surface mount inductors and capacitors. Additional features include user accessible CTRL pin for enabling and PWM dimming of LEDs, thermal shutdown, cycle-by-cycle current limit and overcurrent protection.

The TCS5103B requires a minimal number of readily available, external components and is available in a space saving SOT23-5 package.

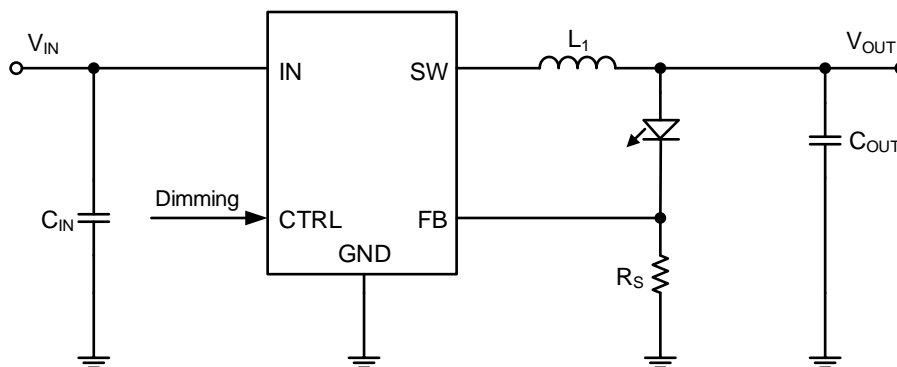
Features

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| 2.5V to 5.5V Input Voltage Range | PWM Brightness Control on Enable |
| 1A Continuous Output Current | 100mV Low Feedback Voltage |
| 1.5MHz Switching Frequency | No Schottky Diode Required |
| LED Open Load Protection | Over Temperature Protected |
| Built-in Over Current Limit | Low Quiescent Current: 40µA |
| Input Over Voltage Protection | LED Short Protection |
| Force-PWM Mode | Available in SOT23-5 package |
| Internal Soft-Start | -40°C to +85°C Temperature Range |

Applications

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| LED Drivers | LED Flashlights |
| Industrial Lighting | Digital Still and Video Cameras |

Typical Application Circuit



Basic Application Circuit