

PT4303

1x/1.5x Auto-Adjust Charge Pump 4-Channel White LED Driver with Two Dimming Modes

GENERAL DESCRIPTION

The PT4303 is a 4-channel 1x/1.5x auto-adjust charge pump white LED driver with three dimming modes. Auto-adjust charge pump achieves high efficiency for Li-Ion battery supply. The three LED dimming modes enable users to dim the four LEDs all together or individually. Only a few external components (two flying capacitors and two filter capacitors at V_{IN} and V_{OUT}) are needed, which makes the PT4303 ideally suited for mobile applications.

The current through the LED can be set by an external resistor. The four LEDs can be turned on and off individually or in a group of two to four through the two control terminals, which can also be used to dim the LEDs by applying PWM control signals.

Built-in soft-start circuit prevents the inrush current from the power supply during power on and 1x/1.5x mode change. The thermal shutdown and current limiter prevent the PT4303 from being damaged by a high-level current through it. A shutdown current of less than 1 μ A makes the battery last longer. The PT4303 is available in QFN-16 package.

FEATURES

- ◆ 3V-5.5V input voltage
- ◆ 1x/1.5x auto-adjust charge pump
- ◆ Set LED current by external resistor
- ◆ Dimming LED by PWM signal through 2 control terminal
- ◆ LED fault detection
- ◆ <3% current mismatch
- ◆ No inductor
- ◆ Less than 1 μ A shutdown current
- ◆ Built-in soft-start and soft mode decision

APPLICATIONS

- ◆ Cell phones
- ◆ Laptop computers and PDAs
- ◆ Digital cameras
- ◆ Small LCD displays
- ◆ Programmable current sink

TYPICAL APPLICATIONS

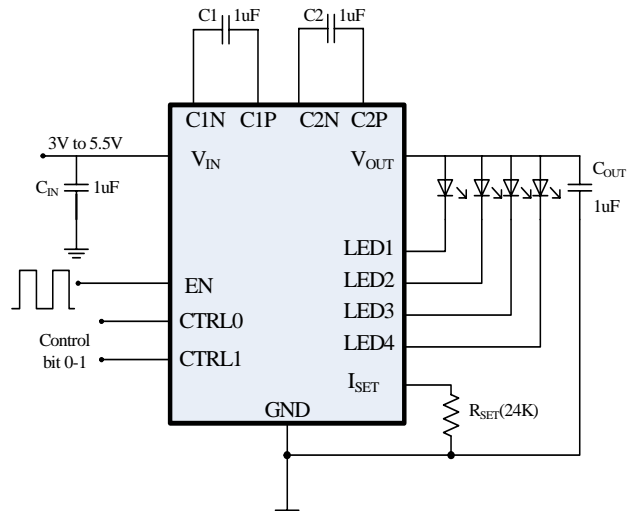


Figure 1. Li-Ion Battery Driving 4 White LEDs