

LED Driver

PT4301 1x/1.5x Auto-Adjust Charge Pump 4-Channel White LED Driver With 3Dimming Modes

GENERAL DESCRIPTION

The PT4301 is a 4-channel 1x/1.5x auto-adjust charge pump white LED driver with three dimming modes. Auto-adjust charge pump achieve high efficiency for Li-Ion battery supply. Three LED dimming modes enable user to dimming 1 to 4 LED all together or separately. Few external component (two flying capacitors, and two filter capacitors at VIN and VOUT) make the PT4301 ideally suited for mobility application.

The current through the LED can be pre-set by external resistor. And the current can also be regulated from 3mA to 25mA in 3mA step by the EN/SET pin, which is a digital interface to enable, disable the chip and set the LED current. And which LED is on or off can be controlled by 3 control terminals, so you can dim each LED by PWM control signals.

Built-in soft-start circuit prevents the inrush current from supply source during power on and 1x/1.5x mode change. Thermal shut down and current limiter prevent the PT4301 damaged by the high-level current through it. Shut-down current less than 1uA make the battery time longer. PT4301 is packaged with QFN-16.

FEATURES

- ◆ 3V-5.5V input voltage
- ◆ 1x/1.5x auto-adjust charge pump
- ◆ Set LED current by external resistor
- ◆ Programming 4-channel LED current up to 25mA with 8 levels through EN/SET pin
- ◆ Dimming LED by PWM signal through 3 control terminal
- ◆ LED fault detection
- ◆ <3% current mismatch
- ◆ No inductor
- ◆ Less than 1uA shut down current
- ◆ Built-in soft-start and soft mode decision

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APPLICATIONS

- ◆ Cell Phones
- ◆ Handheld Computers and PDAs
- ◆ Digital Cameras
- ◆ Small LCD Displays
- ◆ Programmable current sink

TYPICAL APPLICATIONS

LED Driver

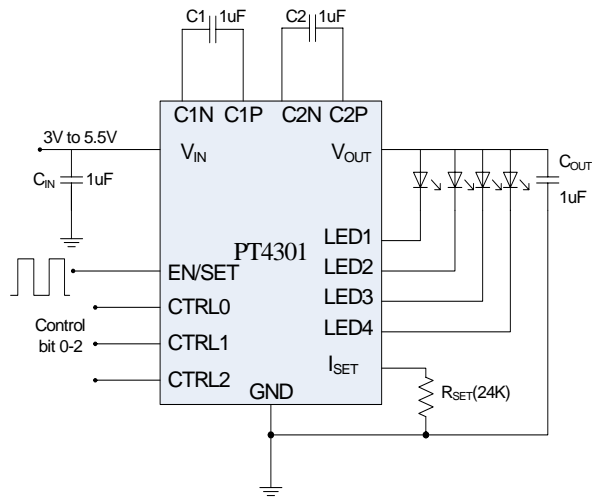


Figure 1. Li-Ion Driver for 4 White LEDs