6 Channel, 1X/1.5X Common Cathode Adaptive Charge Pump Parallel LED Driver with 1-Wire Pulse Counting Dimming Control
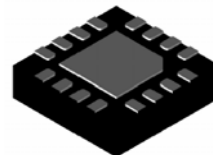
General Description

The CP2160, a 1X/1.5X common cathode adaptive charge pump parallel LED driver, is ideally suited for all applications powered by a single LI-Ion battery cell with input voltage varying between 2.7V to 5.5V. The CP2160 provides up to 25mA LED current per channel, set by an internal resistor. High efficiency is achieved by utilizing a 1x/1.5x adaptive fractional conversion technique based on the supply voltage and the output voltage. The unique Auto-Mirror™ technology is introduced in CP2160, which can guarantee a constant LED current in various operating conditions. The CP2160 uses the 1-wire pulse counting technique to adjust the brightness of LEDs, with the pulse signal on the EN/SET pin, the LED current varies according to 32 steps logarithmic scale. Only two 1μF input/output capacitors and two 1μF pump capacitors are needed for proper operation. The superior architecture ensures low inrush current and low EMI. The CP2160 adopts QFN 3*3 16L package.

3mm*3mm QFN 16L

-40℃～85℃

Features

- Drives up to 6 LEDs at 25mA each channel
- 1-Wire pulse counting dimming: 32 steps logarithmic scale
- LED current matching: ±1% (typical)
- High efficiency by adaptive mode selection between 1x and 1.5x modes
- Thermal shutdown protection and over-current protection
- Low input ripple and low EMI
- Fixed 1MHz switching frequency
- Supply voltage range: 2.7~5.5V
- Ultra-small 3mm *3mm QFN package
- Shutdown current less than 0.1μA
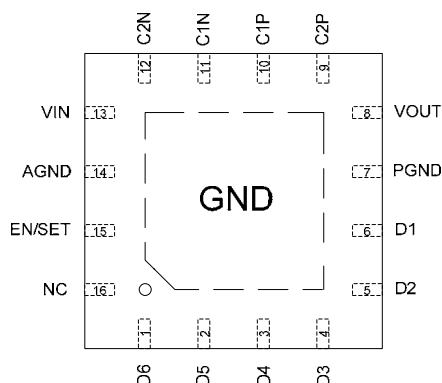- RoHS compliant and 100% Lead(Pb)-free

Applications

- Mobile phones
- Digital still camera
- MP3 players
- PDA

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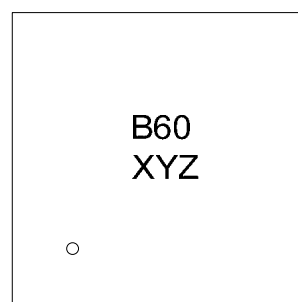
Pin Configuration
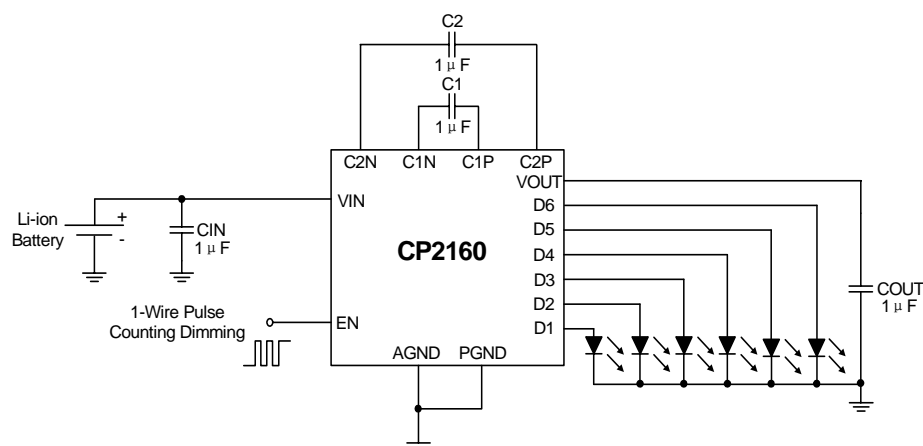
QFN-16L Package
(Top View)

QFN-16L Marking

XYZ – Manufacture Data Code
B60 – CP2160LQ

Typical Application Circuit

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