



CHARGE PUMP CURRENT SOURCE FOR LED DRIVER WITH BRIGHTNESS CONTROL

AP3605

Description

The AP3605 is a step-up DC/DC converter based on 1.5x charge pump current source, it is specially designed for LED supplies in backlight display.

The AP3605 can provide constant current up to 20mA for each LED, which is programmed by an external resistor, so it has a total capability to provide 80 mA for 4 LEDs. The chip has a good performance of LED current matching and allows PWM brightness dimming control. Additionally, high switching frequency up to 1 MHz enables the use of two small external flying capacitors. Internal soft-start circuitry prevents excessive inrush current during start-up.

The AP3605 supply voltage range is from 2.7V to 5.5 V, ideally suited for applications powered by the Li-ion battery.

The AP3605 is available in a 3mm*3mm QFN-3x3-16 tiny package. Its operating temperature range is -40°C to 85°C

Features

- Regulated Output Current with $\pm 3\%$ Matching
- Regulated $\pm 10\%$ Output Current Source
- Drive up to 4 LEDs at 20 mA Each
- Wide Operating Voltage Range: 2.7V to 5.5V
- High Efficiency up to 93%
- High Operating Frequency: 1MHz
- Built-in Soft-Start to Limit the Inrush Current
- LED Brightness Control through PWM and Analog Signal
- Built-in Standby Mode to Make PWM Dimming Control Optimized
- Built-in OTSD (Over Temperature Shutdown) Function to Protect the Device from Burn Out

Applications

- Mobile Phone
- MP3, MP4
- White LED Backlight in Mobile Phone, PDA

Parametric Table

Input Voltage (V)	2.7 to 5.5
Supply Current (Typ) (mA)	1.5
Operating Frequency (Typ) (MHz)	1.0
Efficiency (Typ) (%)	93
Output Current (Max) (mA)	120
Current Matching (Min/Max) (%)	± 3
Soft Start Time (Typ) (μ S)	400
Standby Time (Typ) (ms)	2.0
Package	QFN-3x3-16

Benefits

- Wide Input Voltage Range
- High Current Matching Precision
- Built-in Standby to Make PWM Dimming Control Optimized

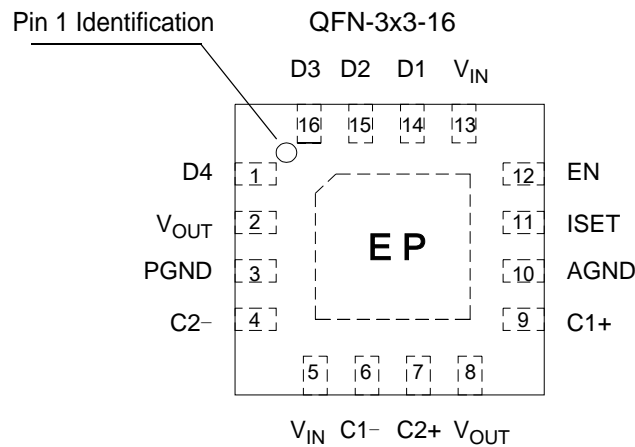
Additional Available Materials

- Samples
- Preliminary Datasheet
- Demo Board
- Application Note
- ESD Report





Pin Configuration



Ordering Information Example

Package	Temperature Range	Part Number	Marking ID	Packing Type
QFN-3x3-16	-40 to 85°C	AP3605FNTR-E1	F1A	Tape & Reel

Detailed information please refer to the relevant datasheet.

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