

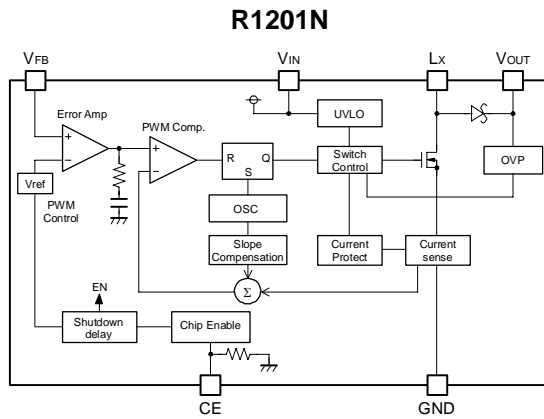
PWM Step-up DC/DC Converter for White LED

The R1201N Series are CMOS-based PWM step-up DC/DC converters, which are optimized to drive white LEDs with constant current. R1201N includes a diode, an under-voltage lockout circuit (UVLO), and over-voltage protection circuit (OVP). By simply using an inductor, a resistor, and capacitors as external components, white LEDs can be driven with constant current and high efficiency. A diode is built-in; therefore it is possible to drive up to 5 serial LEDs without an external diode. The oscillator frequency can be selected from 1MHz or 1.2MHz. The LED current can be determined by the value of current setting resistor. The brightness of the LEDs can be adjusted quickly by applying a PWM signal (200Hz to 300kHz) to the CE pin.

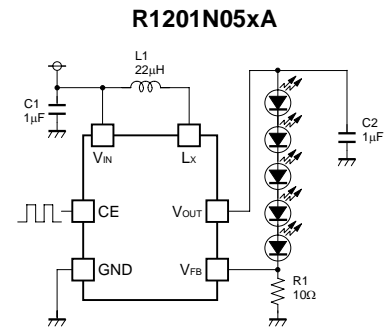
FEATURES

- Supply Current (I_{DD}) Typ. 500 μ A (1.2MHz, No switching)
Typ. 450 μ A (1MHz, Same as above)
- Standby Current ($I_{standby}$) Typ. 1 μ A ($CE="L"$)
- Input Voltage Range (V_{IN}) 1.8V to 5.5V (1A/3A Version)
1.8V to 4.5V (2A/4A Version)
(Absolute maximum rating : 6.5V)
- Feedback Voltage (V_{FB}) 0.2V
- Feedback Voltage Accuracy ± 10 mV
- Oscillator Frequency (f_{osc}) 1MHz, 1.2MHz
- Oscillator Maximum Duty Cycle (Maxduty) .. Min. 86%, Typ. 91%
- UVLO Detect Voltage (V_{UVLO}) Typ. 1.6V
- Coil-current Limit Circuit Current limit Typ. 700mA
- Over Voltage Protection Circuit (OVP)
- LED High-speed Dimming Control
- Package SOT-23-6

BLOCK DIAGRAM



TYPICAL APPLICATION



SELECTION GUIDE

Halogen Free	Package	Q'ty per Reel	Part No.
H/F	SOT-23-6	3,000 pcs	R1201NxxxA -TR-FE

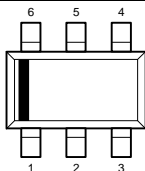
xxx : Specify a combination of the oscillator frequency and OVP voltage.

(021) 1.2MHz, 9.5V	(023) 1MHz, 9.5V
(031) 1.2MHz, 14.0V	(033) 1MHz, 14.0V
(041) 1.2MHz, 18.5V	(043) 1MHz, 18.5V
(051) 1.2MHz, 20.6V	(053) 1MHz, 20.6V
(052)* 1.2MHz, 21.6V	(054)* 1MHz, 21.6V

*) Input Voltage range:1.8V to 4.5V

PACKAGE (Top View)

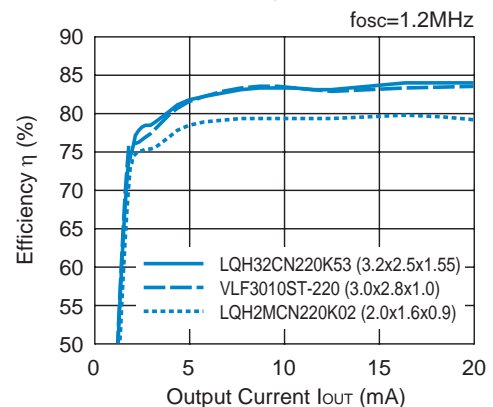
SOT-23-6



1	CE
2	V _{OUT}
3	V _{IN}
4	LX
5	GND
6	V _{FB}

TYPICAL CHARACTERISTIC

R1201N041A Efficiency vs. Output Current



APPLICATION

- White LED driver for hand-held equipment



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