# RICOH

R1203x/R1206N Series

PWM Step-up DC/DC Converter for White LED

The R1203x/R1206N Series are CMOS-based PWM step-up DC/DC converters, which are optimized to drive white LEDs with constant current. R1203x/R1206N includes an under-voltage lockout circuit (UVLO), and over-voltage protection circuit (OVP). By simply using an inductor, a resistor, capacitors and a diode as external components, white LEDs can be driven with constant current and high efficiency. 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. Two diffierent pin layout of SOT-23-6 package as R1203N and R1206N are available.

FEATURES

- Supply Current (I_{DD}) ····················· Typ. 500μA (No switching)
- Standby Current ($I_{standby}$) ·············· Max. 5μA (CE="L")
- Input Voltage Range (V_{IN}) ·············· 1.8V to 5.5V
  (Absolute maximum rating: 6.5V)
- Feedback Voltage (V_{FB}) ···················· 0.2V
- Feedback Voltage Accuracy ············ ± 10mV
- Oscillator Frequency (f_{osc}) ·············· 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)···· 29.5V
- LED High-speed Dimming Control
- Packages ··R1203x Series
  DFN1616-6B, SOT-23-6
  R1206N Series
  SOT-23-6

BLOCK DIAGRAM

R1203x071B
R1206N071B
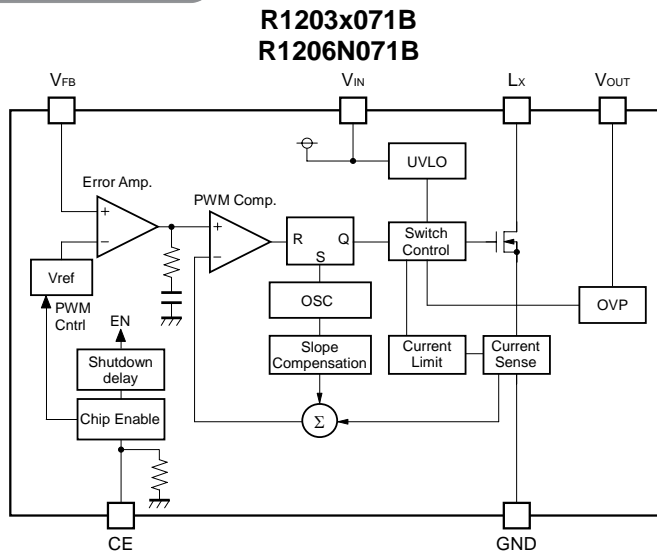
TYPICAL APPLICATION

R1203x071B
R1206N071B
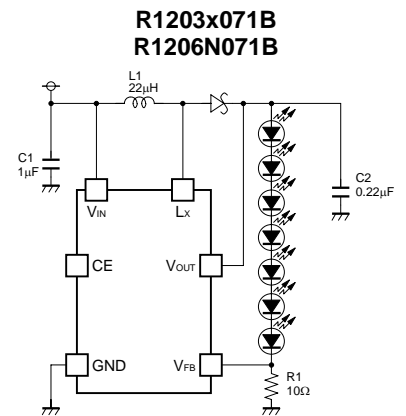
SELECTION GUIDES

Halogen Free	Package	Q'ty per Reel	Part No.
H/F	DFN1616-6B	5,000 pcs	R1203L071B -TR
H/F	SOT-23-6	3,000 pcs	R1203N071B -TR-FE
			R1206N071B -TR-FE

xxx : Specify the OVP Voltage.
(071) 29.5V

PACKAGES

DFN1616-6B

Top View
Bottom View

SOT-23-6

DFN1616-6B	
1	CE
2	VFB
3	Lx
4	GND
5	VIN
6	VOUT

R1203N			R1206N	
1	CE		1	Lx
2	VOUT		2	GND
3	VIN		3	VFB
4	Lx		4	CE
5	GND		5	VOUT
6	VFB		6	VIN

∗) The tab is substrate level (GND).

TYPICAL CHARACTERISTIC

7LEDs   Efficiency vs. Output Current
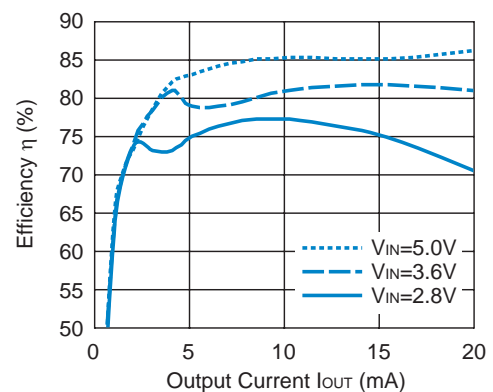
APPLICATION

- White LED driver for hand-held equipment

RICOH

RICOH COMPANY, LTD.
Electronic Devices Company

http://www.ricoh.com/LSI/