

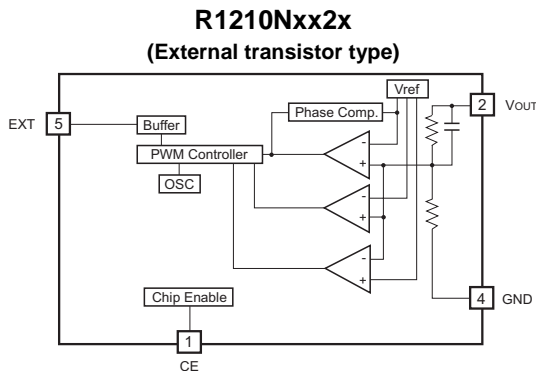
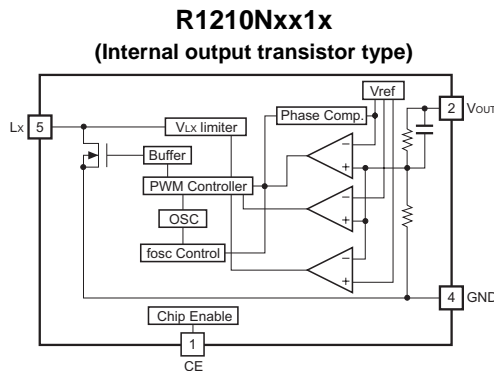
8V Input PWM Step-up DC/DC Converter

The R1210N Series are low supply current, CMOS-based PWM step-up DC/DC converters. By simply using an inductor, a diode, and a capacitor as external components, a high-efficiency step-up DC/DC converter can be easily configured. The xx1 version with an internal output transistor and the xx2 version with an external transistor are available. The oscillator frequency can be selected from 100kHz or 180kHz. The xx1A version is also available, which contains a basic frequency changeover circuit that switches the oscillator frequency from 100kHz to 35kHz when output load is reduced. R1210N also has a function that detects drastic changes in output voltage and reduces the amount of overshoot/undershoot by switching control mode.

FEATURES

- Supply Current (I_{DD1}) Typ. 35 μ A (R1210N301, 100kHz), Typ. 60 μ A (R1210N301, 180kHz) (Switching)
Typ. 20 μ A (R1210N302, 100kHz), Typ. 25 μ A (R1210N302, 180kHz)
- Supply Current (I_{DD2}) Typ. 10 μ A (No switching, 100kHz)
Typ. 15 μ A (Same as above, 180kHz)
- Standby Current ($I_{standby}$) Max. 0.5 μ A (CE="L")
- Input Voltage Range (V_{IN}) Max. 8.0V
- Start-up Voltage (V_{start}) Max. 0.9V (xx1 Version), 0.8V (xx2 Version)
- Output Voltage Range (V_{OUT}) 2.2V to 6.0V (Internally fixed) (2.2V to 3.5V for xx1A)
- Output Voltage Accuracy $\pm 2.5\%$
- Oscillator Frequency (f_{osc}) 100kHz (xx1A/xx1C/xx2C Version),
180kHz (xx1D/xx2D Version)
- Basic Frequency Change-over Circuit 100kHz \rightarrow 35kHz
(only xx1A Version)
- Oscillator Maximum Duty Cycle (Maxduty) Min. 70%, Typ. 85%
- Efficiency Typ. 88% (R1210N301,
 $V_{IN}=1.8V$, $I_{OUT}=10mA$)
- Package SOT-23-5

BLOCK DIAGRAMS



SELECTION GUIDE

Halogen Free	Package	Q'ty per Reel	Part No.
H/F	SOT-23-5	3,000 pcs	R1210Nxx* $\$$ -TR-FE

xx : Specify the output voltage within the range of 2.2V (22) to 6.0V (60) in 0.1V steps.
(up to 3.5V (35) for xx1A)

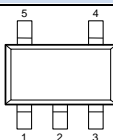
* : Select from (1) internal output transistor type or (2) external transistor type.

\$: Select from (A) oscillator frequency 100kHz, built-in basic frequency change-over circuit, (C) 100kHz or (D) 180kHz.

(R1210Nxx2A-TR-FE is not available.)

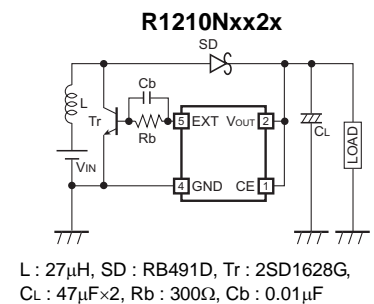
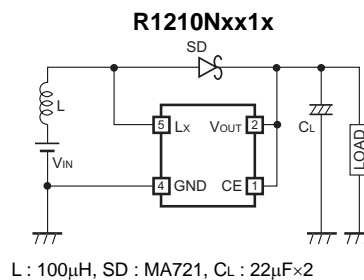
PACKAGE (Top View)

SOT-23-5



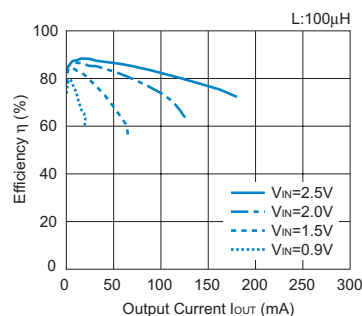
1	CE
2	VOUT
3	NC
4	GND
5	Lx or EXT

TYPICAL APPLICATIONS

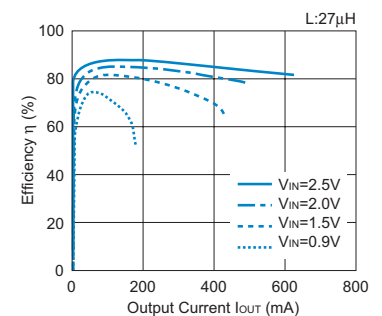


TYPICAL CHARACTERISTICS

R1210N301C Efficiency vs. Output Current



R1210N302C Efficiency vs. Output Current



APPLICATIONS

- Power source for battery-powered equipment
- Power source for hand-held communication equipment, cameras, and VCRs
- Power source for equipment that requires the voltage greater than the battery voltage



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For the conservation of the global environment, Ricoh is advancing the decrease of the negative environmental impact material.
After Apr. 1, 2006, we will ship out the lead free products only. Thus, all products that will be shipped from now on comply with RoHS Directive.
Basically after Apr. 1, 2012, we will ship out the Power Management ICs of the Halogen Free products only. (RicoH Halogen Free products are also Antimony Free.)

RICOH RICOH COMPANY, LTD. Electronic Devices Company

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RICOH COMPANY, LTD.

Electronic Devices Company

● Higashi-Shinagawa Office (International Sales)

3-32-3, Higashi-Shinagawa, Shinagawa-ku, Tokyo 140-8655, Japan
Phone: +81-3-5479-2857 Fax: +81-3-5479-0502

RICOH EUROPE (NETHERLANDS) B.V.

● Semiconductor Support Centre

"Nieuw Kronenburg" Prof. W.H. Keesomlaan 1, 1183 DJ, Amstelveen, The Netherlands
P.O.Box 114, 1180 AC Amstelveen
Phone: +31-20-5474-309 Fax: +31-20-5474-791

RICOH ELECTRONIC DEVICES KOREA Co., Ltd.

11 floor, Haesung 1 building, 942, Daechidong, Gangnamgu, Seoul, Korea
Phone: +82-2-2135-5700 Fax: +82-2-2135-5705

RICOH ELECTRONIC DEVICES SHANGHAI Co., Ltd.

Room403, No.2 Building, 690#Bi Bo Road, Pu Dong New district, Shanghai 201203,
People's Republic of China
Phone: +86-21-5027-3200 Fax: +86-21-5027-3299

RICOH COMPANY, LTD.

Electronic Devices Company

● Taipei office

Room109, 10F-1, No.51, Hengyang Rd., Taipei City, Taiwan (R.O.C.)
Phone: +886-2-2313-1621/1622 Fax: +886-2-2313-1623