

400mA*PWM Step-down DC/DC Converter with Switch Function

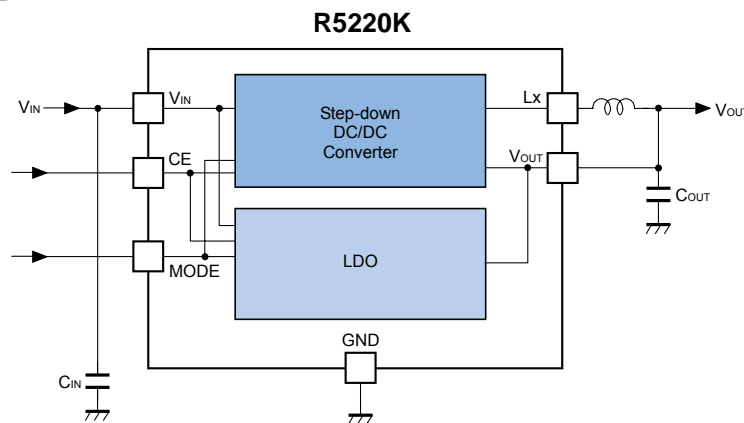
The R5220K Series are CMOS-based PWM step-down DC/DC converters with synchronous rectifier. R5220K also has the function of switching to the LDO regulator. By switching with the MODE pin, the device can be used as an LDO regulator (Output Current 50mA) in the smaller output current range, while it can be used as a DC/DC converter (Output Current 400mA*) under high load conditions. (The polarity of the MODE pin is selectable.) The DC/DC converter contains an under-voltage lockout circuit (UVLO), a soft start circuit, and a latch type protection circuit. By simply using an inductor and a capacitor, a high-efficiency DC/DC converter can be easily configured.

FEATURES

- Supply Current (I_{SS3}) Typ. 350 μ A (DC/DC mode)
- Supply Current (I_{SS2}) Typ. 5 μ A (LDO mode)
- Standby Current (I_{SS1}) Typ. 0.1 μ A (CE="L")
- Input Voltage Range (V_{IN}) 2.8V to 5.5V
(Absolute maximum rating: 6.5V)
- Output Voltage Range (V_{OUT}) 1.0V to 3.3V (Internally fixed)
- Output Voltage Accuracy $\pm 2\%$ ($V_{SET1, 2} \geq 1.5V$)
- UVLO Detect Voltage (V_{UVLO}) Typ. 2.35V
- Oscillator Frequency (f_{osc}) (DC/DC section) 1.2MHz
- Oscillator Maximum Duty Cycle (Maxduty) (DC/DC section) Min. 100%
- Fold-back Protection Circuit (VR section) Current limit Typ. 60mA
- Soft Start Time (t_{start}) (DC/DC section) Typ. 0.2ms ($V_{SET1} \geq 1.5V$)
- Coil-current Limit Circuit (DC/DC section) Current limit Typ. 800mA
- Latch Type Protection Circuit (DC/DC section) Delay time for protection Typ. 3ms
- Packages DFN(PLP)2514-6
- Ceramic capacitors can be used. $C_{IN}=C_{OUT}=10\mu F$ or more

*) This is an approximate value, because output current depending on conditions and external parts.

BLOCK DIAGRAM



SELECTION GUIDES

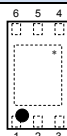
Halogen Free	Package	Q'ty per Reel	Part No.
H/F	DFN(PLP)2514-6	5,000 pcs	R5220Kxx\$*-TR

xx : Specify the output voltage within the range of 1.0V (10) to 3.3V (33) in 0.1V steps. Alternatively, specify a combination of output voltage using serial numbers.

- \$: Select from (1) standard code products, (2) optional code products. (For optional code products, visit our Website to check.)
- * : Select the polarity of the MODE pin from (A) "H" : DC/DC, "L" : VR or (B) "H" : VR, "L" : DC/DC.

PACKAGES (Top View)

DFN(PLP)2514-6

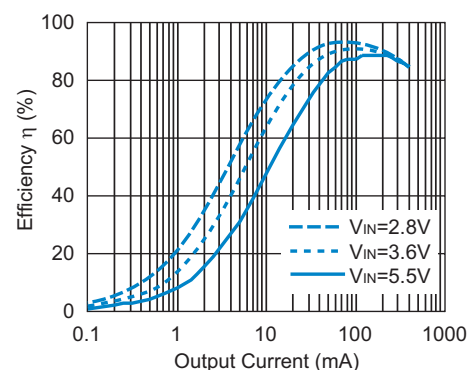


1	Lx
2	GND
3	MODE
4	CE
5	V _{OUT}
6	V _{IN}

*) The tab and tab suspension leads on back side are substrate level (GND).

TYPICAL CHARACTERISTIC

R5220K181A DC/DC Efficiency vs. Output Current



APPLICATIONS

- Power source for battery-powered equipment
- Power source for hand-held communication equipment, cameras, and VCRs



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RICOH RICOH ELECTRONIC DEVICES CO., LTD.

<http://www.e-devices.ricoh.co.jp/en/>

Sales & Support Offices

RICOH ELECTRONIC DEVICES CO., LTD.

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
Prof. W.H. Keesomlaan 1, 1183 DJ Amstelveen, The Netherlands
Phone: +31-20-5474-309

RICOH ELECTRONIC DEVICES KOREA CO., LTD.

3F, Haesung Bldg. 504, Teheran-ro, Gangnam-gu, Seoul, 135-725, Korea
Phone: +82-2-2135-5700 Fax: +82-2-2051-5713

RICOH ELECTRONIC DEVICES SHANGHAI CO., LTD.

Room 403, No.2 Building, No.690 Bilbo Road, Pu Dong New District, Shanghai 201203,
People's Republic of China
Phone: +86-21-5027-3200 Fax: +86-21-5027-3299

RICOH ELECTRONIC DEVICES CO., LTD.

Taipei office
Room 109, 10F-1, No.51, Hengyang Rd., Taipei City, Taiwan (R.O.C.)
Phone: +886-2-2313-1621/1622 Fax: +886-2-2313-1623