

The R1242S Series are 30V input, CMOS-based PWM step-down DC/DC converters featuring 3A* output current. R1242S includes a soft start circuit and a latch or fold-back protection circuit. By simply using an inductor, resistors, a low side switch (FET), and capacitors as external components, a high-efficiency step-down DC/DC converter can be easily configured. Due to current mode PWM control, the R1242S provides a fast response and high efficiency. Ceramic output capacitors can be used.

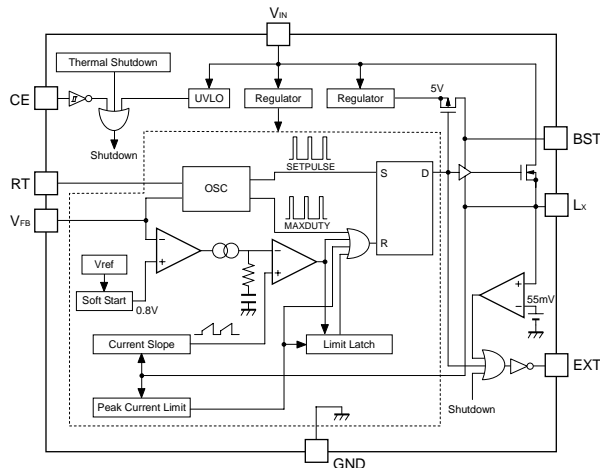
FEATURES

- Supply Current (I_{DD}) Typ. 0.8mA ($V_{IN}=30V$, SET $V_{FB}=1.0V$)
- Standby Current ($I_{standby}$) Max. 20 μ A ($V_{IN}=30V$, CE="L")
- Input Voltage Range (V_{IN}) 5.0V to 30.0V
- Output Voltage Range (V_{OUT}) 0.8V to 15.0V (externally adjustable)
(Feedback voltage : 0.8V)
- Feedback Voltage Accuracy $\pm 12mV$
- Output Current (I_{OUT}) 3A*
- Oscillator Frequency (f_{osc}) Select from 330kHz to 1MHz with an external resistor (A/B Version),
330kHz (C/D), 500kHz (E/F), or 1MHz (G/H)
- Oscillator Maximum Duty Cycle (Maxduty) ... Typ. 88%
- UVLO Detect Voltage (V_{UVLO}) Typ. 3.6V
- Soft Start Time (t_{start}) Typ. 0.5ms
- High Side Switch Limit Current Typ. 4.5A
- Thermal Shutdown Circuit Stops at 160°C
- Latch Protection Circuit Delay time for protection
Typ. 5ms (A/C/E/G Version)
- Fold-back Protection Circuit Fold-back frequency
 $f_{osc} \times 1/4$ (B Version),
83kHz (D Version),
125kHz (F Version),
250kHz (H Version)
- Package HSOP-8E

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

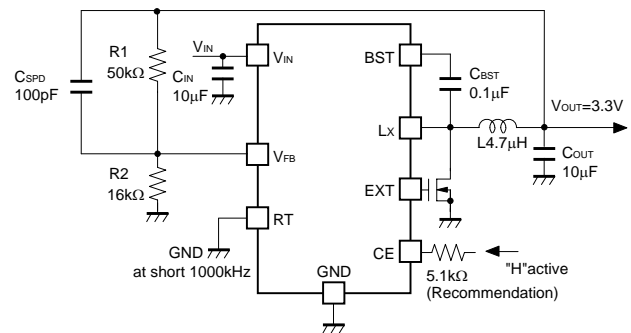
BLOCK DIAGRAM

R1242S001A



TYPICAL APPLICATION

R1242S001A/B Efficiency vs. Output Current



CSPD: Speed-up capacitor
CIN, COUT: Ceramic capacitors can be used.
CBST: Bootstrap Capacitor
R1, R2: Resistors for setting output voltage

SELECTION GUIDE

Halogen Free	Package	Q'ty per Reel	Part No.
H/F	HSOP-8E	1,000 pcs	R1242S001* -E2-FE

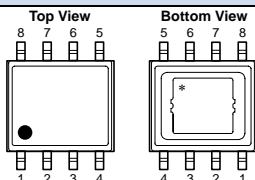
* : Specify a combination of the oscillator frequency and the protection circuit.

- A : Oscillator Frequency adjustable, Latch type
- B : Oscillator Frequency adjustable, Fold-back type

- C : 330kHz, Latch type
- D : 330kHz, Fold-back type
- E : 500kHz, Latch type
- F : 500kHz, Fold-back type
- G : 1MHz, Latch type
- H : 1MHz, Fold-back type

PACKAGE

HSOP-8E



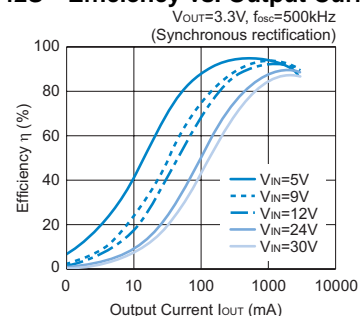
*) The tab is substrate level (GND).

*2) The TEST pin connected to the GND level or should be open.

1	CE
2	EXT
3	BST
4	VIN
5	Lx
6	GND
7	VFB
8	RT or TEST*2

TYPICAL CHARACTERISTIC

R1242S Efficiency vs. Output Current



APPLICATIONS

- Power source for digital home appliances such as digital TVs and DVD players
- Power source for hand-held communication equipment, cameras, and VCRs
- Power source for office automation equipment such as printers and fax machines
- Power source for battery-powered equipment



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■ Ricoh awarded ISO 14001 certification.

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Ricoh completed the organization of the Lead-free production for all of our products. 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.