

DESCRIPTION

The RS6512 is a high-efficiency asynchronous step-down DC/DC converter that can deliver up to 2A output current from 4.75V to 20V input supply. The RS6512's current mode architecture and external compensation allow the transient response to be optimized over a wide range of loads and output capacitors. Cycle-by-cycle current limit provides protection against shorted outputs and thermal shutdown protection.

The RS6512 also provides output under voltage protection and thermal shutdown protection. The low current ($30\mu\text{A}$) shutdown mode provides output disconnection, enabling easy power management in battery-powered systems.

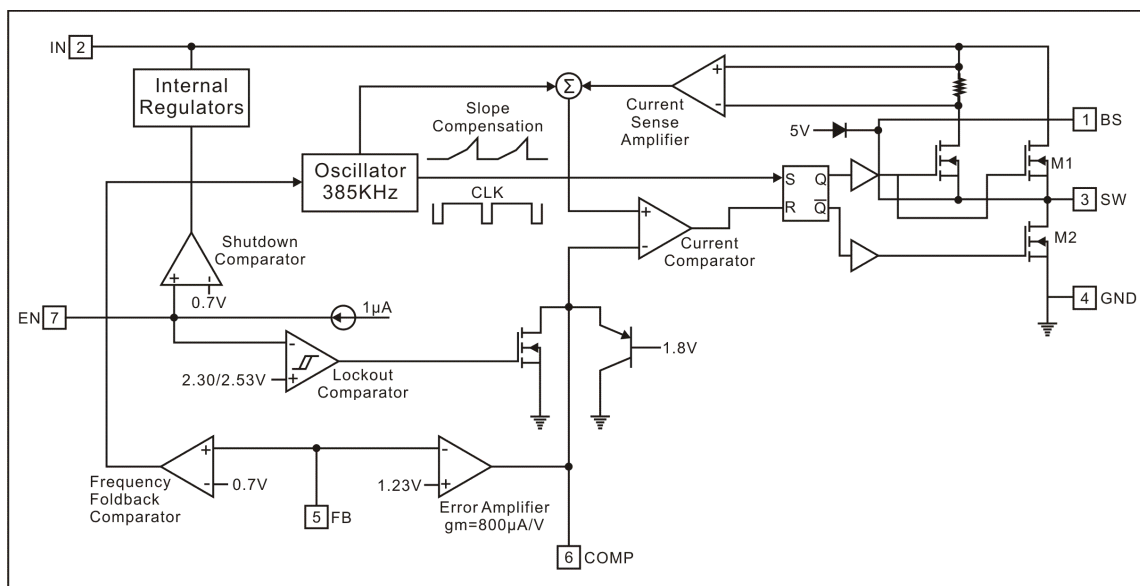
FEATURES

- 2A output current
- Up to 93% efficiency
- Integrated 100mW power MOSFET switches
- Fixed 400kHz frequency
- Cycle-by-cycle over current protection
- Thermal shutdown function
- Wide 4.75V to 20V operating input range
- Output adjustable from 1.23V to 18V
- Programmable under voltage lockout
- Available in an sop-8 package
- RoHS compliant and 100% lead (Pb)-free and green(halogen free with commercial standard)

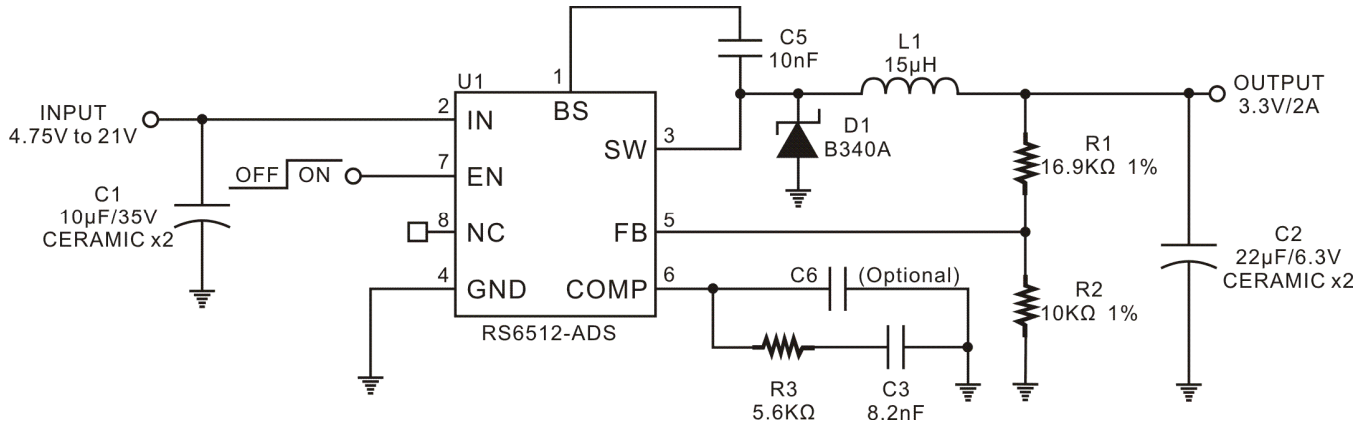
APPLICATIONS

- PC motherboard, graphic card
- LCD monitor
- Set-top boxes
- DVD-video player
- Telecom equipment
- ADSL modem
- Printer and other peripheral equipment
- Microprocessor core supply
- Networking power supply
- Pre-regulator for linear regulators
- Green electronics/appliances

BLOCK DIAGRAM



APPLICATION CIRCUIT

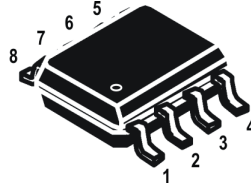


ORDER INFORMATION

Device	Device Code
RS6512-XX Y Z	<p>XX is nominal output voltage: AD: ADJ</p> <p>Y is package & Pin Assignments designator: S: SOP-8</p> <p>Z is Lead Free designator: P: Commercial Standard, Lead (Pb) Free and Phosphorous (P) Free Package G: Green (Halogen Free with Commercial Standard)</p>

PIN ASSIGNMENTS

SOP-8



PIN DESCRIPTION

Pin Name	Description	Pin No.
BS	Bootstrap. This capacitor (C5) is needed to drive the power switch's gate above the supply voltage. It is connected between the SW and BS pins to form a floating supply across the power switch driver. The voltage across C5 is about 5V and is supplied by the internal +5V supply when the SW pin voltage is low.	1
IN	Supply Voltage. The RS6512 operates from a 4.75V to 20V unregulated input. C1 is needed to prevent large voltage spikes from appearing at the input.	2
SW	Power Switching Output. SW is the switching node that supplies power to the output. Connect the output LC filter from SW to the output load. Note that a capacitor is required from SW to BS to power the high-side switch.	3
GND	Ground.	4
FB	Feedback Input. FB senses the output voltage and regulates it. Drive FB with a resistive voltage divider from the output voltage to ground. The feedback threshold is 1.23V. See Setting the Output Voltage.	5
COMP	Compensation Node. COMP is used to compensate the regulation control loop. Connect a series RC network from COMP to GND. In some cases, an additional capacitor from COMP to GND is required. See Compensation.	6
EN	Enable Input. EN is a digital input that turns the regulator on or off. Drive EN high to turn on the regulator, drive it low to turn it off. For automatic startup, leave EN unconnected.	7
NC	No internal connection.	8



IMPORTANT NOTICE

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