



2A, 18V, 340KHz Synchronous Rectified Step-Down Converter

FEATURES

- 2A Continuous Output Current
- Wide 4.75V to 18V Operating Input Range
- Integrated 130mΩ Power MOSFET Switches
- Output Adjustable from 0.925V to 15V
- Up to 93% Efficiency
- Programmable Soft-Start
- Stable with Low ESR Ceramic Output Capacitors
- Fixed 340KHz Frequency
- Cycle-by-Cycle Over Current Protection
- Input Under Voltage Lockout

TYPICAL APPLICATION

- Distributed Power Systems
- FPGA, ASIC, DSP Power Supplies
- Networking Systems
- Green Electronics/Appliances
- Notebook Computers

DESCRIPTION

The FT482 is a monolithic synchronous buck regulator. The device integrates top and bottom 130mΩ MOSFETS that provide 2A of continuous load current over a wide operating input voltage of 4.75V to 18V. Current mode control provides fast transient response and cycle-by-cycle current limit.

An adjustable soft-start prevents inrush current at turn-on and in shutdown mode, the supply current drops below 1μA. The FT482 is PIN compatible to the MP1482 2A/18V/Synchronous Step-Down Converter.

TYPICAL APPLICATION CIRCUIT

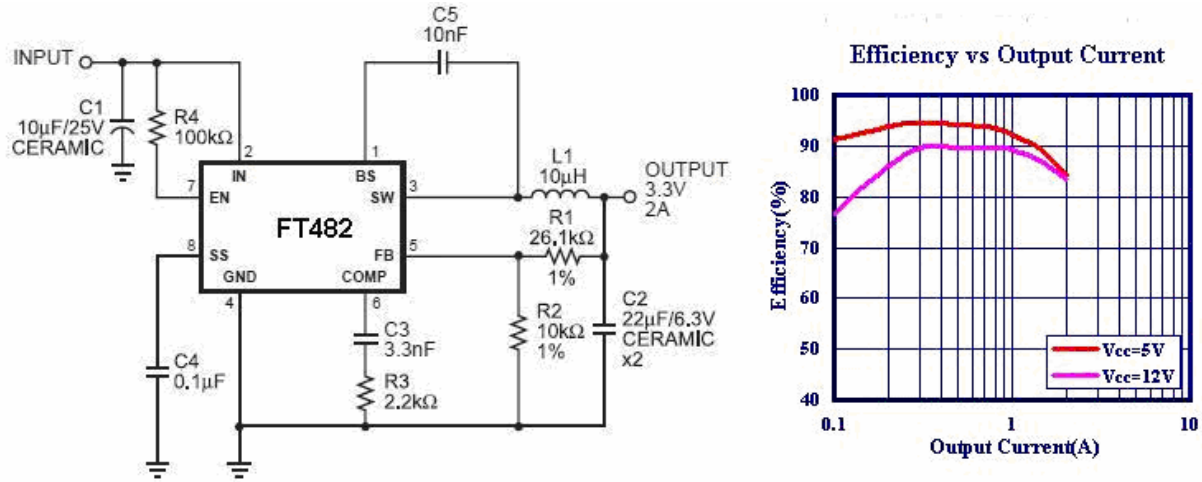


Figure 1: Typical Application Circuit

ABSOLUTE MAXIMUM RATINGS ⁽¹⁾

Supply Voltage V_{IN}	-0.3V to +20V
Switch voltage V_{SW}	21V
Boost Voltage V_{BS}	VSW -0.3V to VSW +6V
All Other Pins.....	-0.3V to +6V
Junction Temperature.....	150°C
Lead Temperature.....	260°C
Storage Temperature.....	-65°C to +150°C

Recommended Operating Conditions ⁽²⁾

Supply Voltage V_{IN}	4.75V to 18V
Output voltage V_{OUT}	0.925V to 15V
Ambient Operating Temp.....	-40°C to +85°C

NOTES:

- 1) Exceeding these ratings may damage the device.
- 2) The device is not guaranteed to function outside of its operating conditions.

PIN CONFIGURATION

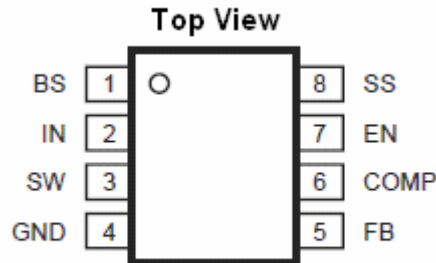


Figure 2: Pin Assignments

Part Number*	Package	Temperature
FT482	SOIC8	-40°C to +85°C

Table 1

TERMINAL DEFINITION

Pin	Name	Description
1	BS	High-Side Gate Drive Boost Input. BS supplies the drive for the high-Side N-Channel MOSFET Switch. Connect a 0.01 μ F or greater capacitor from SW to BS to power the high side switch.
2	IN	Power Input. IN supplies the power to the IC, as well as the step-down converter switches. Drive IN with a 4.75V to 18V power source. See Input Capacitor.
3	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.
4	GND	Ground (Connect the exposed pad to Pin 4).
5	FB	Feedback Input. FB senses the output voltage and regulates it. Drive FB with a resistive Voltage divider connected to it from the output voltage. The feedback threshold is 0.925V. See Setting the output Voltage.
6	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 Components.
7	EN	Enable input. En is a digital input that turns the regulator on or off. Drive EN high to turn on the regulator; low to turn it off. Attach to IN with a 100K Ω pull up resistor for automatic startup.
8	SS	Soft-Start Control Input. SS controls the soft-start period. Connect a capacitor from SS to GND to set the soft-start period. A 0.1 μ F capacitor sets the soft-start period to 15ms. To disable the soft-start feature, leave SS unconnected.

Table 2



APPENDIX A: REVISION HISTORY

Version A0: Original data sheet for the FT482 Series.

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