



## **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 FT484 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 FT484 is PIN compatible to the MP1482 2A/18V/Synchronous Step-Down Converter.

TYPICAL APPLICATION CIRCUIT

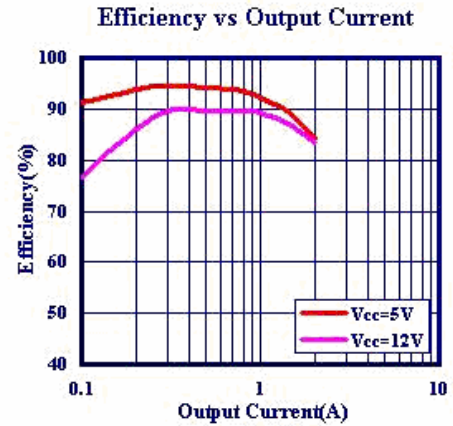
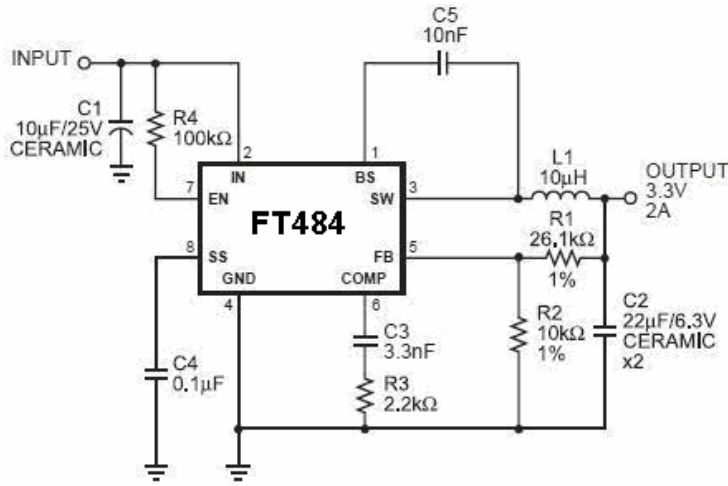


Figure 1: Typical Application Circuit

ABSOLUTE MAXIMUM RATINGS <sup>(1)</sup>

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

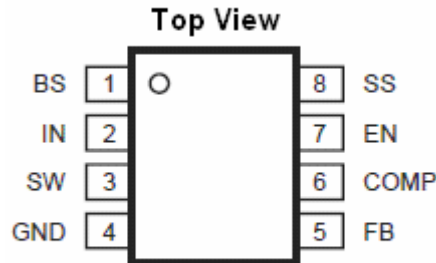
Recommended Operating Conditions <sup>(2)</sup>

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
FT484	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 $\mu$ 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, and additional capacitor form 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 $\Omega$ 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 $\mu$ 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 FT484 Series.**

*\* Information furnished is believed to be accurate and reliable. However, Fremont Micro Devices, Incorporated (BVI) assumes no responsibility for the consequences of use of such information or for any infringement of patents of other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent rights of Fremont Micro Devices, Incorporated (BVI). Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. Fremont Micro Devices, Incorporated (BVI) products are not authorized for use as critical components in life support devices or systems without express written approval of Fremont Micro Devices, Incorporated (BVI). The FMD logo is a registered trademark of Fremont Micro Devices, Incorporated (BVI). All other names are the property of their respective owners.*