MP1482

2A, 18V Synchronous Rectified Step-Down Converter

The Future of Analog IC Technology

DESCRIPTION

The MP1482 is a monolithic synchronous buck regulator. The device integrates two 130mΩ MOSFETs, and provides 2A of continuous load current over a wide 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 to 1μA.

This device, available in an 8-pin SOIC package, provides a very compact solution with minimal external components.

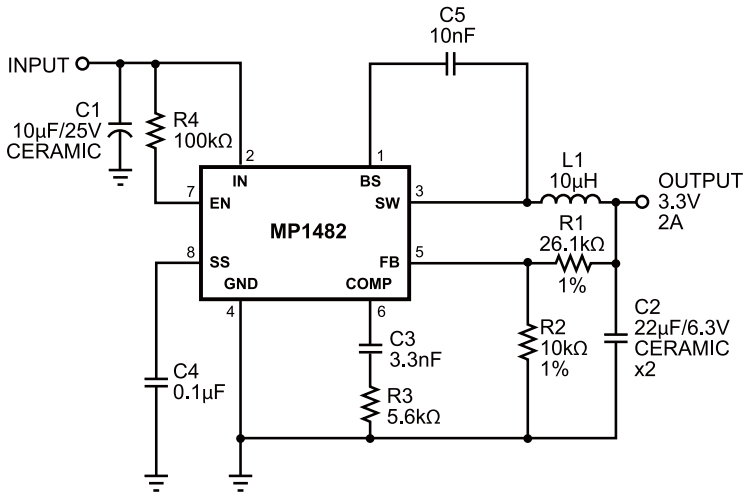
FEATURES

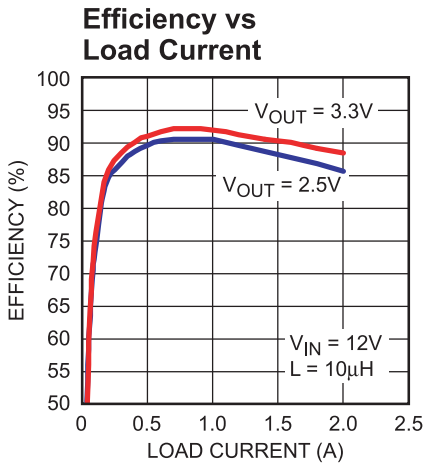
- 2A Output Current
- Wide 4.75V to 18V Operating Input Range
- Integrated 130mΩ Power MOSFET Switches
- Output Adjustable from 0.923V to 15V
- Up to 93% Efficiency
- Programmable Soft-Start
- Stable with Low ESR Ceramic Output Capacitors
- Fixed 340kHz Frequency
- Cycle-by-Cycle Over Current Protection
- Input Under Voltage Lockout
- 8–Pin SOIC

APPLICATIONS

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

TYPICAL APPLICATION



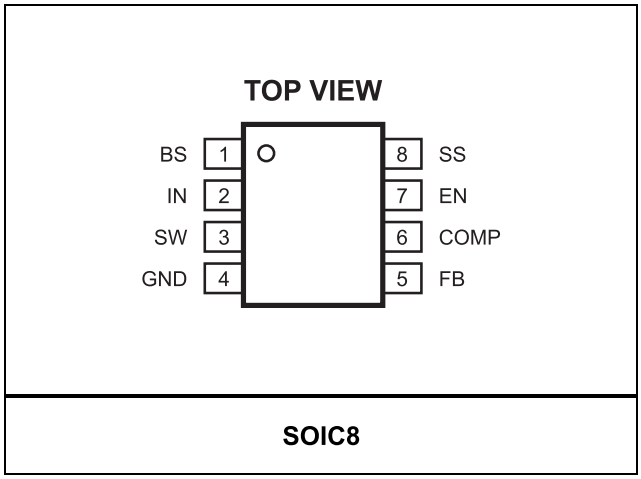


ORDERING INFORMATION

Part Number	Package	Top Marking	Free Air Temperature (T_A)
MP1482DS*	SOIC8	MP1482DS	-40°C to +85°C

* For Tape & Reel, add suffix –Z (e.g. MP1482DS–Z);
For RoHS Compliant Packaging, add suffix –LF (e.g. MP1482DS–LF–Z)

PACKAGE REFERENCE



ABSOLUTE MAXIMUM RATINGS (1)

Supply Voltage V_{IN} ..... -0.3V to +20V
Switch Node 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
Continuous Power Dissipation (T_A = +25°C)(2)
SOIC8 ..... 1.38W
Lead Temperature ..... 260°C
Storage Temperature ..... -65°C to +150°C

Recommended Operating Conditions (3)

Input Voltage V_{IN} ..... 4.75V to 18V
Output Voltage V_{OUT} ..... 0.923V to 15V
Operating Junct. Temp (T_J) ..... -40°C to +125°C

Thermal Resistance (4)

	θ_{JA}	θ_{JC}	
SOIC8	90	45	°C/W

Notes:

1) Exceeding these ratings may damage the device
2) The maximum allowable power dissipation is a function of the maximum junction temperature T_J(MAX), the junction-to-ambient thermal resistance θ_{JA}, and the ambient temperature T_A. The maximum allowable continuous power dissipation at any ambient temperature is calculated by $P_D(MAX)=(T_J(MAX)-T_A)/\theta_{JA}$. Exceeding the maximum allowable power dissipation will cause excessive die temperature, and the regulator will go into thermal shutdown. Internal thermal shutdown circuitry protects the device from permanent damage..
3) The device is not guaranteed to function outside of its operating conditions.
4) Measured on JESD51-7, 4-layer board.