5.0V Fixed Output, 1.5A Load Current, DC-DC Synchronous Boost with Current Limit Setting, 6-Pin SOT Packaged

PRELIMINARY DATASHEET

DESCRIPTION

The FH4139 is a high efficiency synchronous boost(step-up) converter that can provide up to 1.5A to a fixed output up to 5.0V from a low voltage source. Unlike most step-up converter, it incorporates circuits that disconnect the input from output, during shutdown, short-circuit, output current overloading, or other events when output is higher than the input. This eliminates the need for an external MOSFET and its control circuitry to disconnect the input from output, and provides robust output overload protection.
And FH4139 also provides the flexibility of setting input peak current limit and thus, output current is limited.

A switching frequency of 1.0MHz minimizes solution footprint by allowing the use of tiny and low profile inductors and ceramic capacitors. An internal synchronous MOSFET provides highest efficiency and with a current mode control that is internally compensated, external parts count is reduced to minimal.

FH4139 is housed in a tiny 6-pin SOT package.

FEATURES

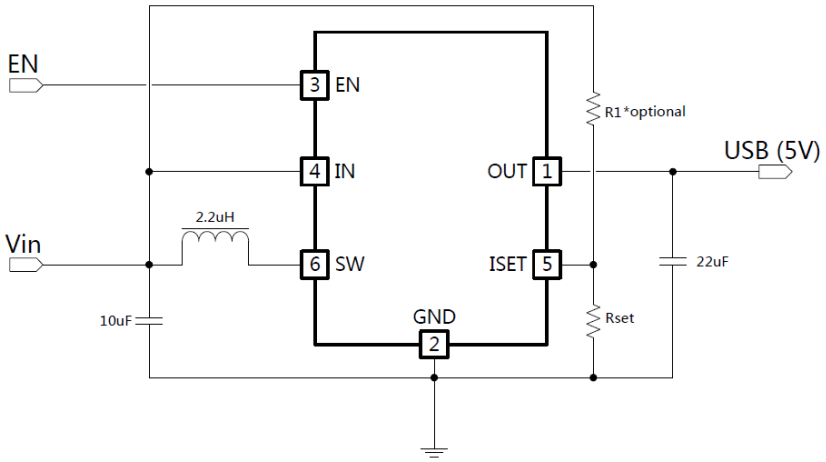
- Output Disconnect
- Short-circuit Protection
- 5.0V/1.5A Output Power
- Output to Input Reversed Current Protection
- Up to 96% Efficiency
- 40uA No load I_Q and light load PFM Mode
- Internal Synchronous Rectifier
- Current Limit Programmable
- Current Mode control
- Logic Control Shutdown and Thermal shutdown
- Package Type: SOT-23-6L(3000EA/Reel)

APPLICATIONS

- USB OTG for MIDs, Smartphones
- Mobile back-up Battery Chargers
- Alkaline, NiCd, and NiMh batteries applications
- USB powered devices

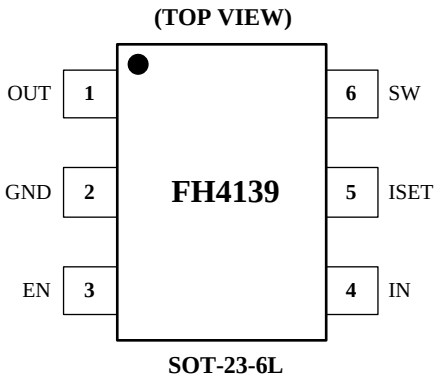
Brierf Datasheet

TYPICAL APPLICATION



Typical Application Circuit

PIN CONFIGURATION



PIN DESCRIPTION

PIN #	NAME	DESCRIPTION
1	OUT	Output pin. Bypass with a 22uF or larger ceramic capacitor closely between this pin and GND
2	GND	Ground Pin
3	EN	Enable pin for the IC. Drive this pin high to enable the part, low to disable.
4	IN	Input Supply Voltage. Bypass with a 4.7uF ceramic capacitor to GND
5	ISET	Current limit setting, connecting a resistor (Rset) to GND will set the input peak current, and with an additional resistor(R1) from Vin to ISET pin could achieve a constant output current limit.
6	SW	Inductor Connection. Connect an inductor Between SW and the input.

BLOCK DIAGRAM