

**1.0MHz / 2.0A Synchronous Step-Down Converter**

**DESCRIPTION**

The **FH4510** is a 1.0MHz constant frequency, current mode step-down converter. It is ideal for portable equipment requiring very high current up to 2.0A from single-cell Lithium-ion batteries while still achieving over 90% efficiency during peak load conditions. The FH4510 also can run at 100% duty cycle for low dropout operation, extending battery life in portable systems while light load operation provides very low output ripple for noise sensitive applications. The FH4510 can supply up to 2.0A output load current from a 2.5V to 6V input voltage and the output voltage can be regulated as low as 0.6V. The high switching frequency minimizes the size of external components while keeping switching losses low. The internal slope compensation setting allows the device to operate with smaller inductor values to optimize size and provide efficient operation.

The FH4510 is offered in a 5-pin, SOT package, and is available in an adjustable version. This device offers two operation modes, PWM control and PFM Mode switching control, which allows a high efficiency over the wider range of the load.

**FEATURES**

- High Efficiency: Up to 96% (@3.3V)
- 1.0MHz Constant Frequency Operation
- Output Current: 2.0S
- No Schottky Diode Required
- Input Voltage Range: 2.5V to 6.0V
- Output Voltage as Low as 0.6V
- PFM Mode for High Efficiency in Light Load
- 100% Duty Cycle in Dropout Operation
- Low Quiescent Current: 40μA
- Short Circuit Protection
- Thermal Fault Protection
- Inrush Current Limit and Soft Start
- Input over voltage protection(OVP)
- <1μA Shutdown Current
- SOT23-5 package

**APPLICATIONS**

- Cellular and Smart Phones
- Wireless and DSL Modems
- Portable Instruments
- Digital Still and Video Cameras
- PDAs
- PC Cards

**TYPICAL APPILCATION**

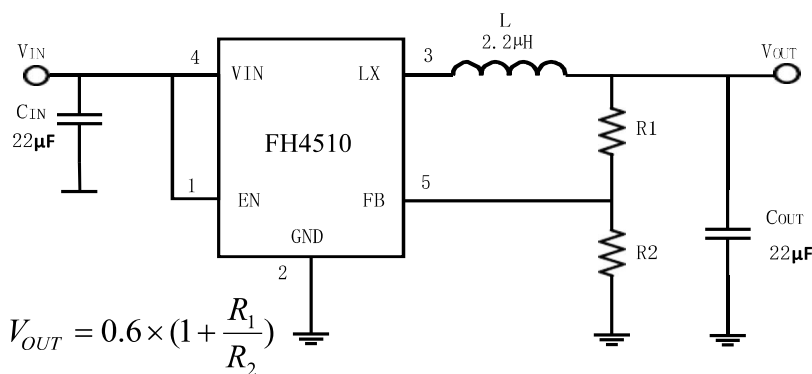


Figure 1. Basic Application Circuit

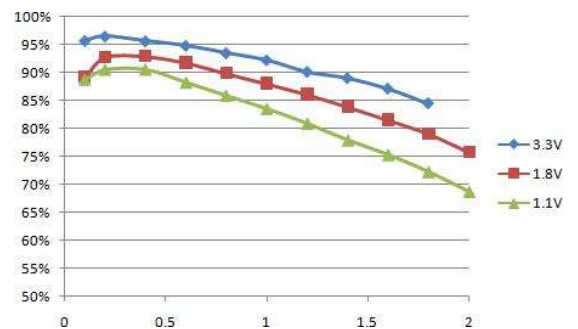
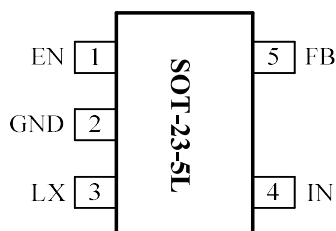


Figure2. Efficiency(%) vs. Load Current(A)

## PACKAGE

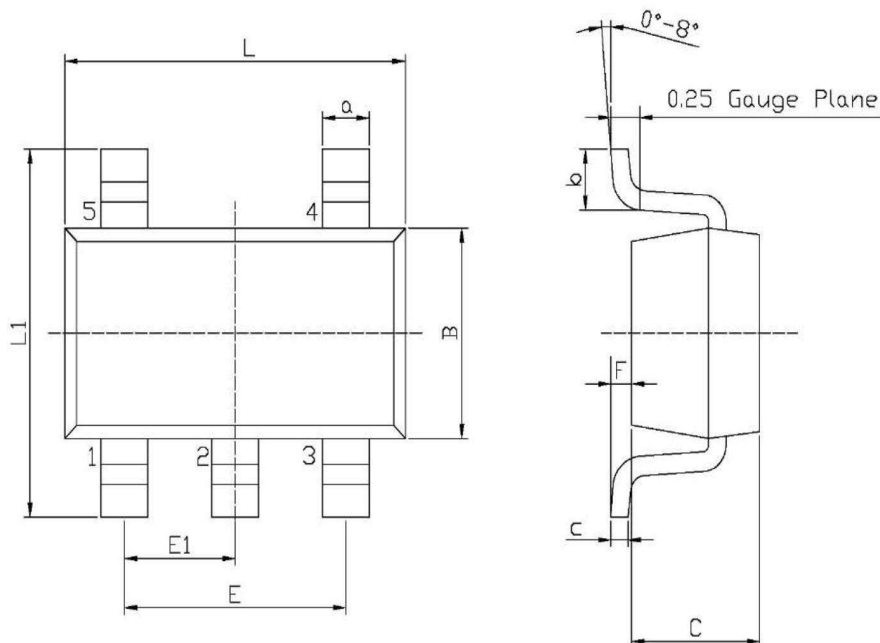


## PIN DESCRIPTION

Pin	Name	Function
1	EN	Chip Enable Pin. Drive EN above 1.5V to turn on the part. Drive EN below 0.3V to turn it off. Do not leave EN floating.
2	GND	Ground pin.
3	LX	Power Switch Output. It is the switch node connection to Inductor. This pin connects to the drains of the internal P-ch and N-ch MOSFET switches.
4	VIN	Power supply input pin.
5	FB	Output Voltage Feedback Pin.

## PACKAGE INFORMATION

### ■ SOT-23-5L



Unit: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.82	3.02	E1	0.85	1.05
B	1.50	1.70	a	0.35	0.50
C	0.90	1.30	c	0.10	0.20
L1	2.60	3.00	b	0.35	0.55
E	1.80	2.00	F	0	0.15

#### Note:

- 1) All dimensions are in millimeters.
- 2) Package length does not include mold flash, protrusion or gate burr.
- 3) Package width does not include inter lead flash or protrusion.
- 4) Lead popularity (bottom of leads after forming) shall be 0.10 millimeters max.
- 5) Pin 1 is lower left pin when reading top mark from left to right.

## ORDER INFORMATION

Part Number	Package	Top mark	Quantity/ Reel
FH4510M5	SOT23-5	S***** T*****	3000

FH4520 devices are Pb-free and RoHS compliant.

Top Mark: S15XXX (S15: Device Code, XXX: Inside Code)