# 1.5A | 2.0MHz | 5.5V | Synchronous Buck(Step-Down) Converter

## DESCRIPTION

The FH4510B is a high-efficiency, DC-to-DC step-down switching regulators, capable of delivering up to 1.5A of output current. The device operates from an input voltage range of 2.6V to 5.5V and provides an output voltage from 0.6V to VIN. Working at a fixed frequency of 2.0MHz allows the use of small external components, such as ceramic input and output caps, as well as small inductors, while still providing low output ripples. This low noise output along with its excellent efficiency achieved by the internal synchronous rectifier, making FH4510B an ideal replacement for large power consuming linear regulators. Internal soft-start control circuitry reduces inrush current. Short-circuit and thermal shutdown protection improves design reliability.

The FH4510B is available in SOT-23-5L package.

## FEATURES

- High efficiency: up to 97%
- Up to 1.5A Max output current
- 2.0MHz switching frequency
- Low dropout 100% duty operation
- Internal compensation and soft-start
- Current mode control
- Reference voltage 0.6V
- Logic control shutdown ($I_Q$<1.0uA)
- Thermal shutdown, UVLO
- Available in SOT-23-5L

## APPLICATIONS

- Cellular phones
- Digital cameras
- MP3 and MP4 players
- Wireless and DSL modems
- USB supplied devices in notebooks
- Set top boxes
- Portable devices

## TYPICAL APPLICATION

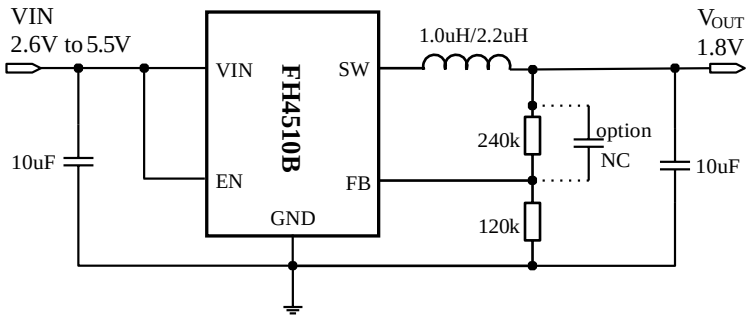
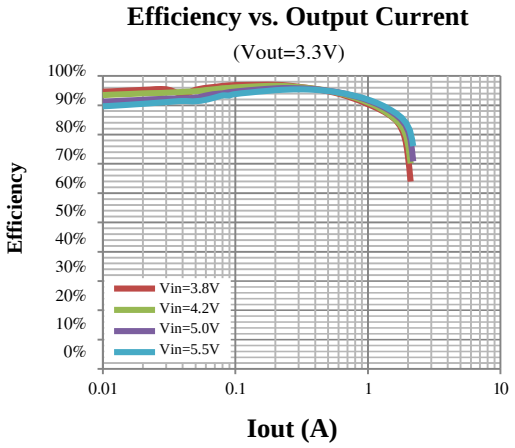
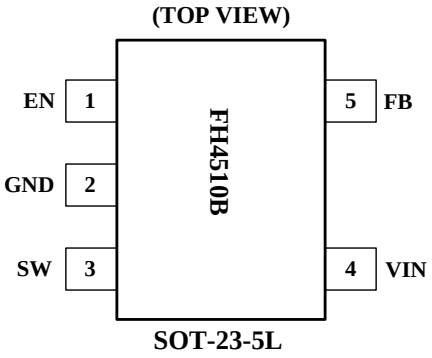



**Figure 1. Typical FH4510B Application Circuit**



## PIN CONFIGURATION

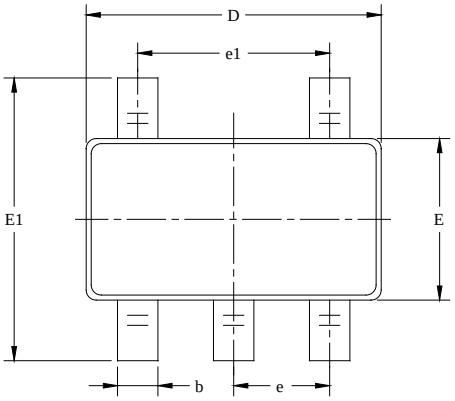


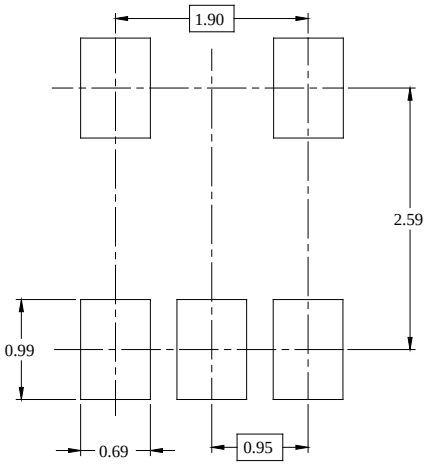

## PIN DESCRIPTION

| PIN # | NAME | DESCRIPTION |
|---|---|---|
| 1 | EN | Enable pin for the IC. Drive the pin to high to enable the part, and low to disable |
| 2 | GND | Ground |
| 3 | SW | Inductor connection. Connect an inductor between SW and the regulator output. |
| 4 | VIN | Supply voltage. |
| 5 | FB | Feedback input. Connect an external resistor divider from the output to FB and GND to set the output to a voltage between 0.6V and Vin |

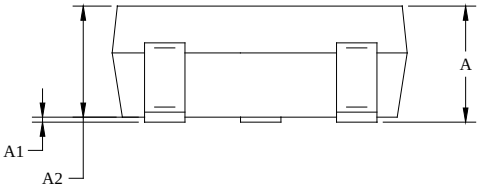
## PACKAGE OUTLINE DIMENSIONS

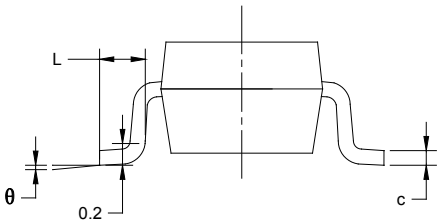
**Type: SOT-23-5L**




**RECOMMENDED LAND PATTERN**(Unit: mm)




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | MIN | MAX | MIN | MAX |
| A | 1.050 | 1.250 | 0.041 | 0.049 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 1.050 | 1.150 | 0.041 | 0.045 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.100 | 0.200 | 0.004 | 0.008 |
| D | 2.820 | 3.020 | 0.111 | 0.119 |
| E | 1.500 | 1.700 | 0.059 | 0.067 |
| E1 | 2.650 | 2.950 | 0.104 | 0.116 |
| e | 0.950 BSC | | 0.037 BSC | |
| e1 | 1.90 0 BSC | | 0.075 BSC | |
| L | 0.300 | 0.600 | 0.012 | 0.024 |
| θ | 0° | 8° | 0° | 8° |

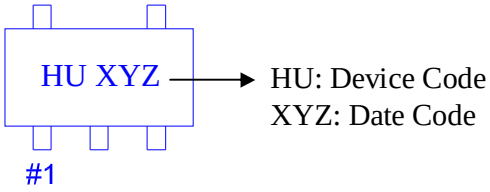
## ORDERING INFORMATION

| Part Number | Voltage Range | Features | Operating Temperature | Package Type | Top Mark | SPQ |
|---|---|---|---|---|---|---|
| FH4510BM5 | 2.6V ~ 5.5V | ● Synchronous Buck(Step-down)<br>● 97% Efficiency<br>● Switching frequency: 2.0MHz | -40℃ to 85℃ | SOT-23-5L | HU X Y Z | 3000PCS/Reel |

**Note**:

- **FH4510**B devices are Pb-free and RoHs compliant.
- The surface prints of our semiconductor devices are subject to change during the production process and do not involve changes in electrical parameters, and we will not separately state the notice.
- If you have any other custom purchase needs, please contact our sales department.

**Device Name:** SOT-23-5L




**ESD SENSITIVITY CAUTION**

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

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▲ Update by Jul.2021