

1.5A, 2.0MHz, 5.5V Synchronous Buck(Step-down) Converter

PRELIMINARY DATASHEET

DESCRIPTION

The FH4507 is a high-efficiency, DC to DC buck (step-down) switching regulators, capable of delivering up to 1.5A of output current. The device operates from an input voltage range of 2.60V to 5.5V and provides an output voltage from 0.6V to VIN. Working at a fixed frequency of 2.00MHz 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 FH4507 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 FH4507 is available in 6-PIN DFN package.

Datasheet Brief

FEATURES

- High efficiency: up to 97%
- Up to 1.5A Max output current
- Switching frequency: 2.0MHz
- Low dropout 100% duty operation
- Internal compensation and soft-start
- Current mode control
- Reference 0.6V
- Logiccontrol shutdown ($I_Q < 1.0\mu A$)
- Thermal shutdown, UVLO
- Available in DFN2*2-6L | DFN1.6*1.6-6L

APPLICATIONS

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

TYPICAL APPLICATION

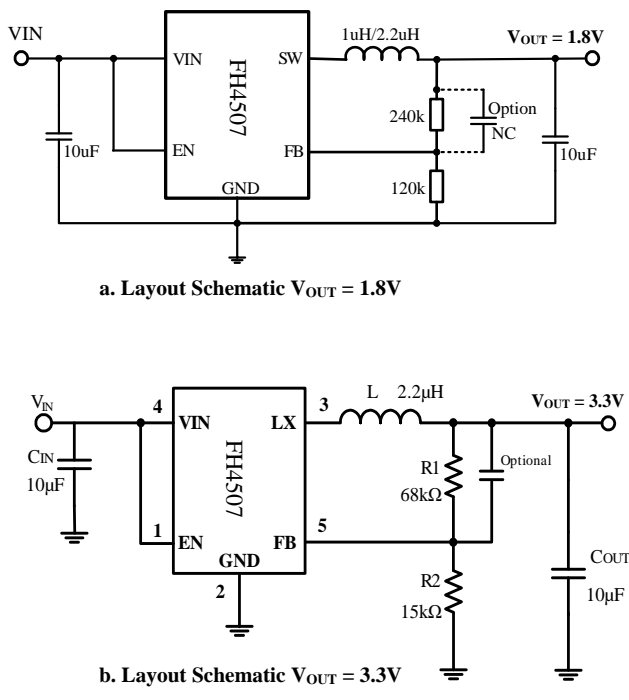
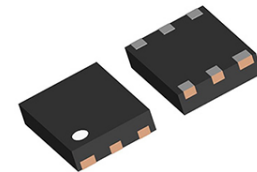


Figure 1. Basic Application Circuit



DFN2*2-6L | DFN1.6*1.6-6L

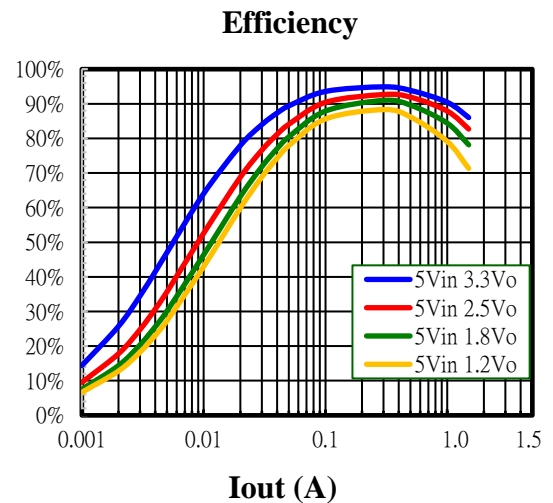
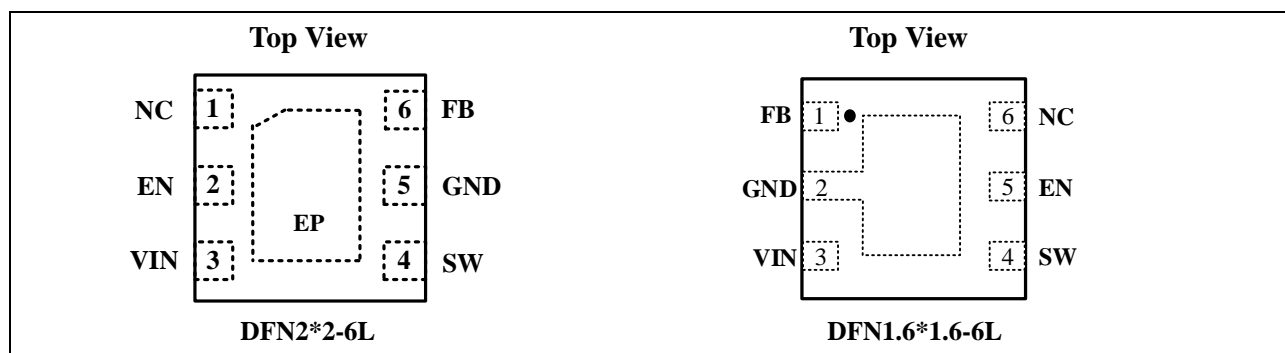


Figure 2. Efficiency(%) vs. Load Current(A)

Pin Configuration

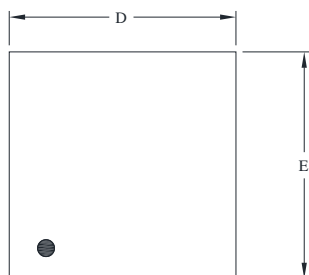


Pin Description

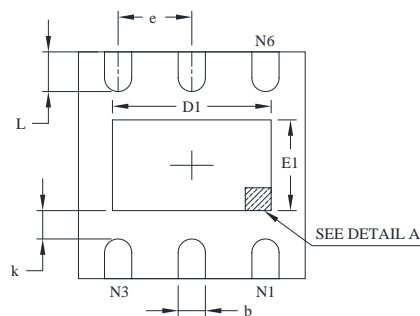
PIN #	NAME	DESCRIPTION
1	EN	Enable pin for the IC. Drive the pin to high to enable the part, and low to disable
2	GND	Ground
3	SW	Inductor connection. Connect an inductor between SW and the regulator output.
4	VIN	Supply voltage.
5	FB	Feedback input. Connect an external resistor divider from the output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

PACKAGE OUTLINE DIMENSIONS

DFN2*2-6L Unit: inches/mm



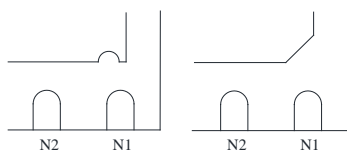
TOP VIEW



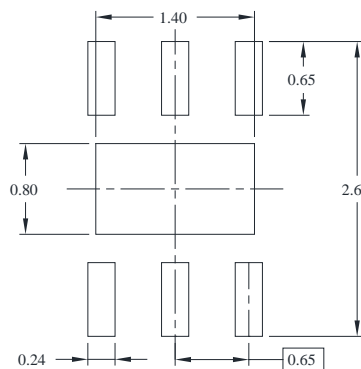
BOTTOM VIEW



SIDE VIEW



DETAIL A



RECOMMENDED LAND PATTERN(Unit: mm)

Pin #1 ID and Tie Bar Mark Options

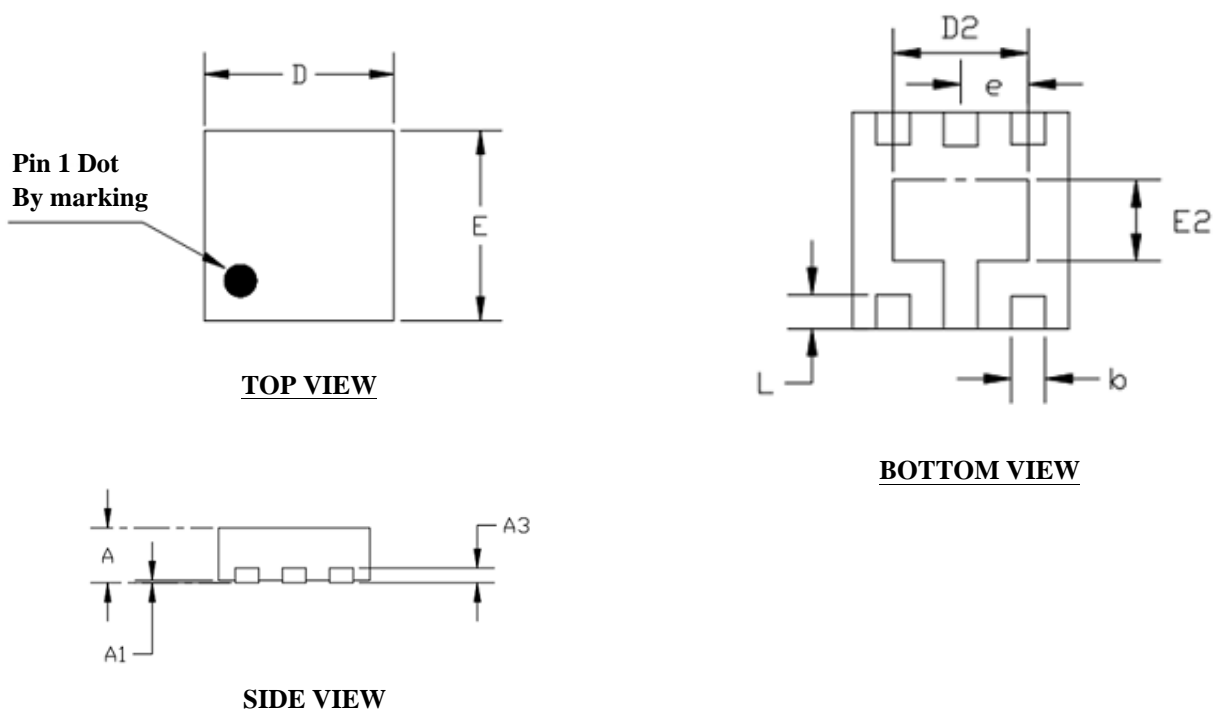
NOTE: The configuration of the Pin #1 identifier is optional, but must be located within the zone indicated.

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A2	0.203 REF		0.008 REF	
D	1.900	2.100	0.075	0.083
D1	1.100	1.450	0.043	0.057
E	1.900	2.100	0.075	0.083
E1	0.600	0.850	0.024	0.034
k	0.200 MIN		0.008 MIN	
b	0.180	0.300	0.007	0.012
e	0.650 TYP		0.026 TYP	
L	0.250	0.450	0.010	0.018

NOTE: This drawing is subject to change without notice.

PACKAGE OUTLINE DIMENSIONS

DFN1.6*1.6-6L Unit: inches/mm



SYMBOLS	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	0.50	0.55	0.020	0.024
A1	0.00	0.05	0.000	0.002
b	0.20	0.30	0.008	0.012
D	1.55	1.60	0.055	0.063
D1	0.36	0.56	0.014	0.022
E	1.55	1.60	0.055	0.063
E1	0.90	1.10	0.035	0.043
e	0.50 BSC		0.020 BSC	
L	0.200	0.25	0.007	0.013

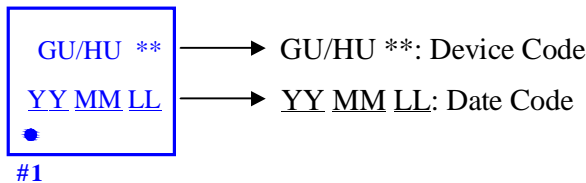
ORDERING INFORMATION

Part Number	Voltage Range	Features	Operating Temperature	Package Type	Top Mark	SPQ
FH4507AD6	2.6V ~ 5.5V	<ul style="list-style-type: none"> • DC-DC Buck(Step-down) • Output Current: 1.5A(Max.) • Switching Frequency: 2.0MHz 	-40°C to 85°C	DFN2*2-6L	GU ** YY MM LL	3000PCS/Reel
FH4507BD6	2.6V ~ 5.5V	<ul style="list-style-type: none"> • VFB: 0.6V • Max Input Voltage: ~8.0V • IQ: 80uA(Typ.) 	-40°C to 85°C	DFN1.6*1.6-6L	HU ** YY MM LL	3000PCS/Reel

Note:

- **FH4507AD6/FH4507BD6** 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.
- ForDevices reserves the right to amend and legally interpret the electrical parameters of this chip device. (<http://www.fordevices.com>)

Device Name: DFN2*2-6L | DFN1.6*1.6-6L



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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RoHS

Pb
Lead Free

▲ Update by Aug.2022