

4.5V to 60V Vin, 1.2A, 500KHz, Asynchronous,
Buck(Step-Down) DC/DC Regulator Converter

PRELIMINARY DATASHEET

General Description

The FH48110 is a current mode monolithic buck (step-down) switching regulator. Operating with an input range of 4.5V to 60.0V, it supplies 1.2A of continuous output current over a wide input-supply range with excellent load and line regulation.

At light loads, the regulator operates in low frequency to maintain high efficiency and low output ripple. Current mode control provides tight load transient response. FH48110 achieves low EMI signature with well-controlled switching edges. Fault condition protection includes over-voltage protection, over-current protection, short-circuit protection, thermal shutdown and input under voltage lockout.

The FH48110 is available in 8-pin ESOP packages, with provides a compact solution with minimal external components.

Features

- Wide 4.5V to 60V Operating Input Range
- 1.2A Continuous Output Current
- 500KHz Switching Frequency
- Short-Circuit Protection
- Built-in Over Current Limit
- Built-in Over Voltage Protection
- PSM Mode for High Efficiency in Light Load
- 500mΩ Internal Power MOSFETs
- Output Adjustable from 0.8V
- Low EMI Signature
- Internal Soft-Start
- Thermal Shutdown
- Available in 8-pin ESOP packages
- -40°C to +85°C Temperature Range

Applications

- Automotive GPS
- Automotive Entertainment
- Power Supply for Linear Chargers
- Network Equipment

Device Information (1)

PART NUMBER	PACKAGE	BODY SIZE (NOM)
FH48110AS8	ESOP-8L	4.89mm x 3.90mm
FH48110CS8	ESOP-8L	4.89mm x 3.90mm

(1) For all available packages, see the orderable addendum at the end of the datasheet.

Typical Simplified Schematic

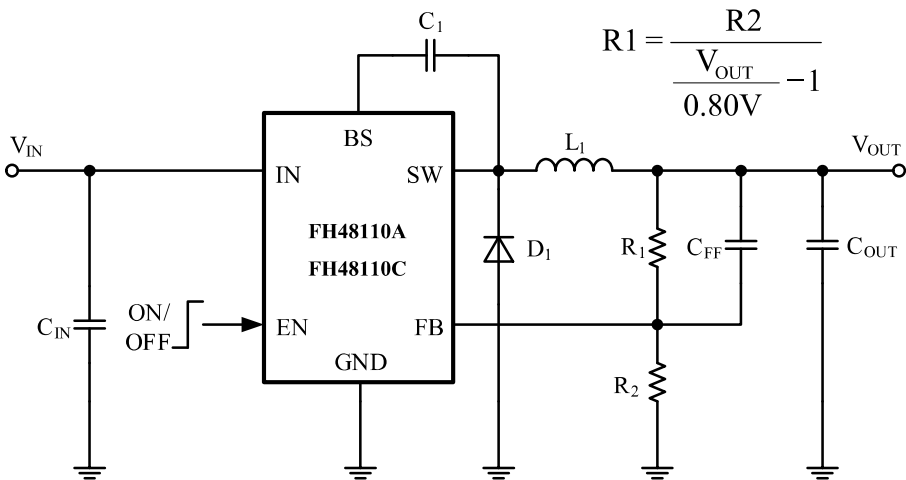
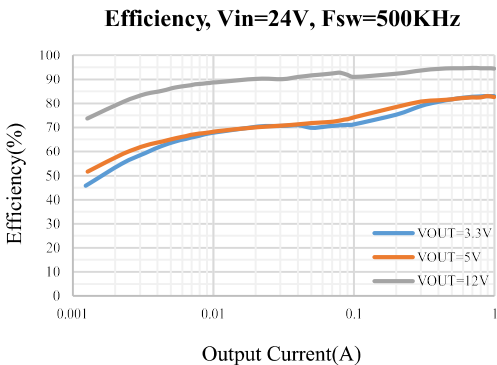
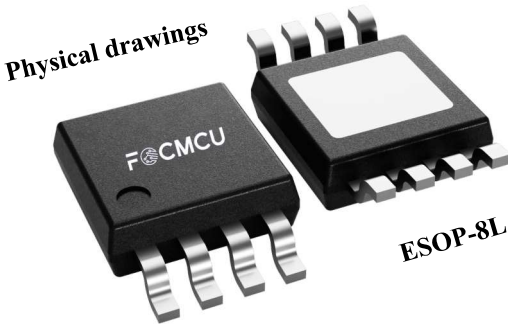
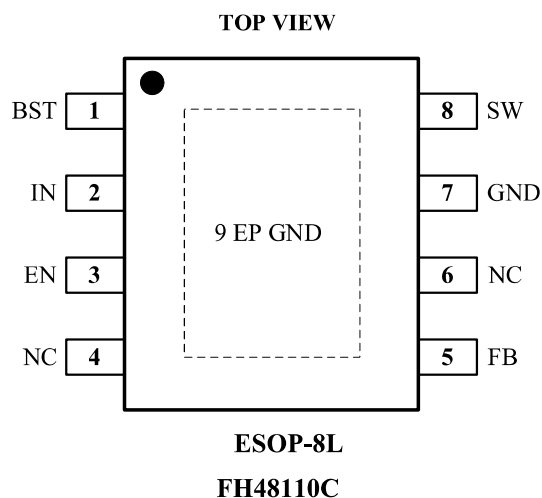
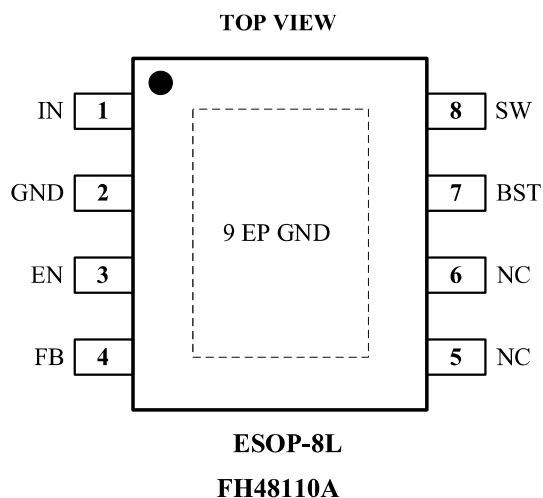


Figure 1. Typical Application Circuit



Pin Configuration

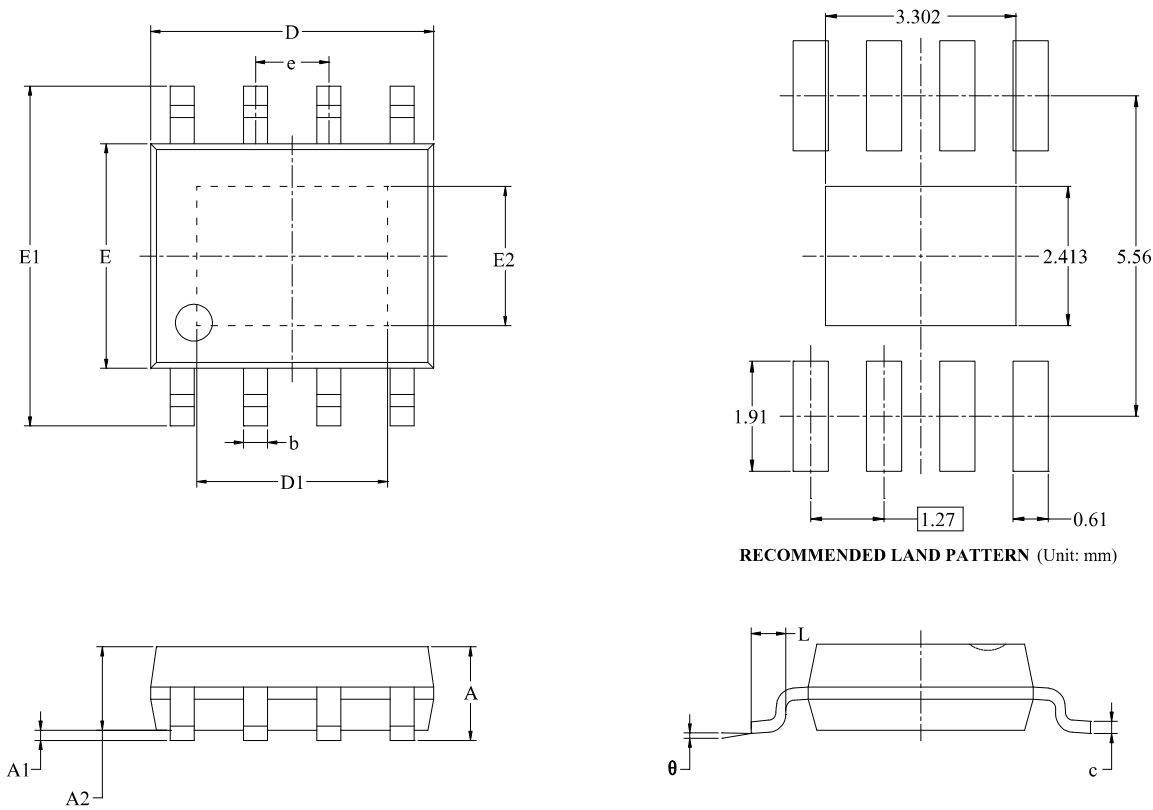


Pin Description

FH48110A Pin No.	FH48110C Pin No.	Name	Function
1	2	VIN	Input Supply Pin.
2	7	GND	Ground Pin.
3	3	EN	Enable Input. Pull this pin below the specified threshold to shut the chip down. Pull it above the specified threshold enables the chip.
4	5	FB	Feedback Input. Connect a resistor divider to FB.
5/6	4/6	NC	Not Connected.
7	1	BST	Bootstrap. Requires a capacitor to drive the power switch's gate above the supply voltage. Connect this capacitor between SW and BST pins to form a floating supply across the power switch driver. An on-chip regulator charges up the bootstrap capacitor. If the on-chip regulator is not strong enough, one optional diode can be connected from VIN or VOUT to charge the external boot-strap capacitor.
8	8	SW	Power Switch Output. SW is the drain of the internal MOSFET switch. Connect the power inductor and output rectifier to SW.
9	9	EPAD	Exposed pad should be connected directly to the GND pin.

PACKAGE OUTLINE DIMENSIONS

- ESOP-8L (Exposed Pad)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A		1.700		0.06 7
A1	0.000	0.1 00	0.00 0	0.004
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.00 7	0.010
D	4.700	5.100	0.185	0.20 1
D1	3.202	3.402	0.126	0.134
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.24 4
E2	2.313	2.513	0.091	0.099
e	1.27 BSC		0.050 BSC	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

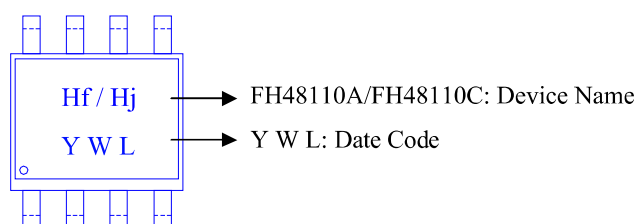
Order Information

Part Number	Input Voltage	Features	Operating Temperature	Package Type	Top Mark	SPQ
FH48110AS8	4.5V ~ 60.0V	<ul style="list-style-type: none"> DC-DC buck (step-down) VFB: 0.8V 	-40°C to +85°C	ESOP-8L	Hf <u>YWL</u>	3000EA/Reel
FH48110CS8	4.5V ~ 60.0V	<ul style="list-style-type: none"> Frequency: 500kHz Output Current: 1.2A Duty cycle: 80% 	-40°C to +85°C	ESOP-8L	Hj <u>YWL</u>	3000EA/Reel

Note:

- **FH48110A/FH48110C** 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: ESOP-8L



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.



Product Folder



Order Now



Technical Documents



Tools & Software



Support & Community

Note:

- The information described herein is subject to change without notice.
- ForDevices Inc. is not responsible for any problems caused by circuits or diagrams described herein whose related industrial properties, patents, or other rights belong to third parties. The application circuit examples explain typical applications of the products, and do not guarantee the success of any specific mass-production design.
- Use of the information described herein for other purposes and / or reproduction or copying without the express permission of FocDevice Inc. is strictly prohibited.
- The products described herein cannot be used as part of any device or equipment affecting the human body, such as exercise equipment, medical equipment, security systems, gas equipment, or any apparatus installed in airplanes and other vehicles, without prior written permission of ForDevices Inc.
- Although ForDevices Inc. exerts the greatest possible effort to ensure high quality and reliability, the failure or malfunction of semiconductor products may occur. The user of these products should therefore give thorough consideration to safety design, including redundancy, fire-prevention measures, and malfunction prevention, to prevent any accidents, fires, or community damage that may ensue.

