6.0V/ 3.5A, Fast Response, Adaptive COT Step-Down Converter

Datasheet Brierf

■ DESCRIPTION

FH4523 belongs to a new breed of high frequency synchronous Step-Down converters that combines the advantages of voltage mode control and Constant-On-Time control. Its adaptive Constant-On-Time control dynamically changes switch on time to achieve a constant switching frequency. It does not have the minimum on-time constrain normally a fixed-frequency current mode Step-down requires, allowing it to go down to very low duty ratio without affecting loop stability. The voltage mode nature of FH4523 also provides more superior load transient response and a seamless transition from PFM to PWM modes. FH4523 is capable of supplying output with current up to 3.5A at 1.2V output. All these features make FH4523 an excellent choice for ARM based CPU power supply.

FH4523 is in a tiny DFN2*2-8L package.

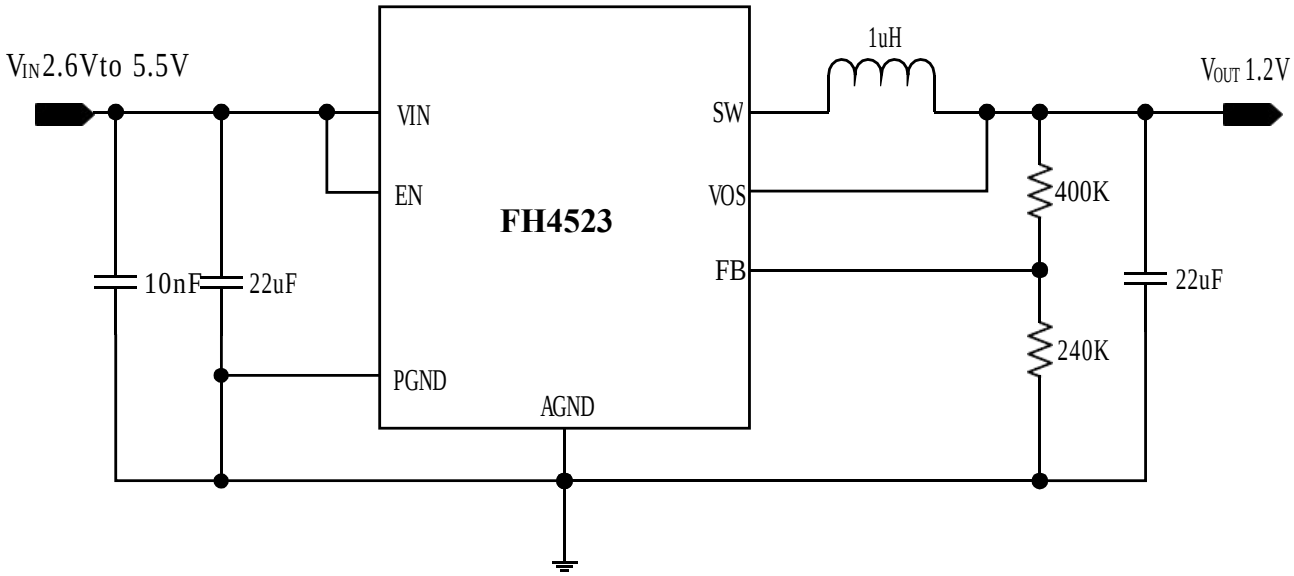
■ FEATURES

- Adaptive COT control
- Up to 95% Efficiency
- Up to 91% Efficiency for low output voltage
- Up to 3.5A Max Output current
- Feedback voltage 0.45V
- Excellent load transient response
- DFN2*2-8L Package

■ APPLICATIONS

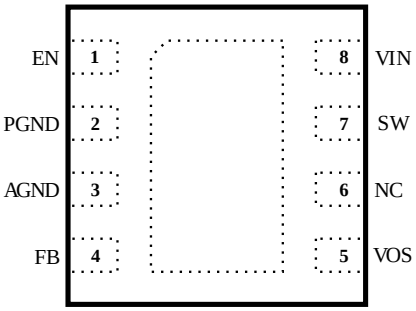
- ARM based CPUs
- Tablet, MID
- Smart Phone
- Smart Set-Top Box, OTT

■ TYPICAL APPLICATION



Typical Application Circuit of 1.2V Output

■ PIN CONFIGURATION



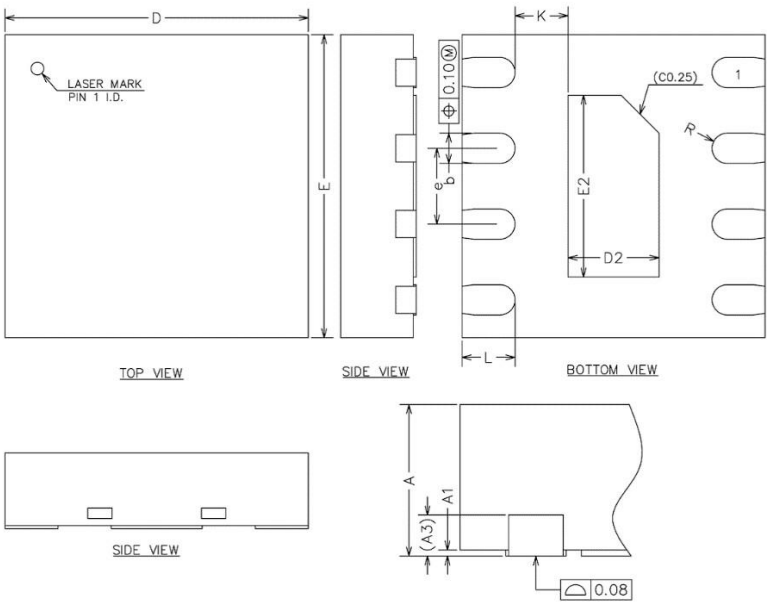
DFN2*2-8L

■ PIN DESCRIPTION

PIN #	NAME	DESCRIPTION
1	EN	Enable pin for the IC. Drive this pin to high to enable the part, low to disable.
2	PGND	Power Ground. The ground of internal power NMOS. Bypass with a 22μF ceramic capacitor to VIN
3	AGND	Analog Ground. To keep this ground free from noise by connecting a 10nF ceramic capacitor to VIN. Do not short his pin to PGND directly in PCB, but through a PCB trace to connect the 2 GND together.
4	FB	Feedback Input. Connect an external resistor divider from the output to FB and GND to set the output to a voltage between 0.45V and VIN
5	VOS	Output voltage sense pin, to be connected to the output node of regulator.
6	NC	Not connected. Please do leave this pin float.
7	SW	Inductor Connection. Connect an 1uH inductor Between SW and the regulator output.
8	VIN	Supply Voltage. Bypass with a 22μF ceramic capacitor to PGND and 10nF to AGND.

■ PACKAGE OUTLINE

- Type: **DFN2*2-8L**



COMMON DIMENSIONS
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	0.70	0.75	0.80
A1	0	0.02	0.05
A3		0.20REF	
b	0.15	0.20	0.25
D	1.90	2.00	2.10
E	1.90	2.00	2.10
D2	0.50	0.60	0.70
E2	1.10	1.20	1.30
e	0.40	0.50	0.60
K	0.20	–	–
L	0.30	0.35	0.40
R	0.09	–	–

■ ORDERING INFORMATION

PART NUMBER	FB Voltage	Output Current	PACKAGE	TOP MARK	SPQ
FH4523N08	0.45	3.50A	QFN2*2-8L	F B * *	5000PCS/Reel

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.

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 ForDevices 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.