

PRELIMINARY DATASHEET

36V/2A 500K/1.0MHz COT Synchronous Step-Down(Buck) Regulator

General Description

The FH4820 is a high frequency, synchronous, rectified, step-down(buck), switch-mode converter with internal power MOSFETs. FH4820 provides different frequency and FB versions, which can be selected according to different applications. It offers a very compact solution to provide a 2.0A continuous output current over a wide input supply range, with excellent load and line regulation. COT PSM control operation provides very fast transient response and easy loop design as well as very tight output regulation.

The FH4820 requires a minimal number of readily available, external components and is available in a space saving SOT-23-6L package.

Applications

- Automotive Systems
- Network Terminal Equipment
- Security Monitoring Camera
- Printer Systems
- Industrial Power Systems
- Distributed Power Systems

Typical Application Circuit

Features

- Wide 4.5V to 36V Operating Input Range
- Continuous Output Current: 2.0A(max.)
- Switching Frequency: 500K / 1.0MHz(FH4820H)
- COT Mode Control with Fast Transient Response
- Built-in Over Current Limit
- Built-in Over Voltage Protection
- PSM Mode for High Efficiency in Light Load
- Internal Soft-Start
- $100m \Omega/50m \Omega$ Low $R_{DS(ON)}$ Internal Power MOSFETs
- Output Adjustable from 0.6V / 0.8V
- No Schottky Diode Required
- Short Protection with Hiccup-Mode
- Integrated internal compensation
- Thermal Shutdown
- Available in SOT-23-6L Package
- Temperature Range: -40°C to +85°C

Package

• SOT-23-6L





Figure 1. Basic Application Circuit

Pin Configuration



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Pin Description

Pin	Name	Function
1	BS	Bootstrap. A capacitor connected between SW and BST pins is required to form a floating supply across the high-side switch driver.
2	GND	Ground Pin.
3	FB	Adjustable Version Feedback input. Connect FB to the center point of the external resistor divider.
4	EN	Drive this pin to a logic-high to enable the IC. Drive to a logic-low to disable the IC and enter micro-power shutdown mode.
5	IN	Power Supply Pin.
6	SW	Switching Pin.

Functional Block Diagram



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PACKAGE OUTLINE DIMENSIONS

• Type: SOT-23-6L





RECOMMENDED LAND PATTERN (Unit: mm)





Symbol	Dimen In Milli	sions meters	Dimensions In Inches		
,,	MIN	MAX	MIN	MAX	
А	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	
с	0.100	0.200	0.004	0.008	
D	2.820	3.020	0.111	0.119	
Е	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	1.900 BSC		0.075 BSC		
L	0.300	0.600	0.012	0.024	
θ	0°	8°	0°	8°	



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ORDERING INFORMATION

Part Number	Input Voltage	Features	Operating Temperature	Package Type	Top Mark	SPQ
FH4820AM6	4.5V ~ 36.0V	 DC-DC buck(step-down) VFB: 0.6V Frequency: 500kHz 	-40°C to +85°C	SOT-23-6L	h <u>x Y LL</u>	3000EA/Reel
FH4820BM6	4.5V ~ 36.0V	 DC-DC buck(step-down) VFB: 0.8V Frequency: 500kHz 	-40°C to +85°C	SOT-23-6L	h <u>x Y LL</u>	3000EA/Reel
FH4820HAM6	4.5V ~ 36.0V	 DC-DC buck(step-down) VFB: 0.6V Frequency: 1000kHz 	-40°C to +85°C	SOT-23-6L	h <u>x Y LL</u>	3000EA/Reel
FH4820HBM6	4.5V ~ 36.0V	 DC-DC buck(step-down) VFB: 0.8V Frequency: 1000kHz 	-40°C to +85°C	SOT-23-6L	h <u>x Y LL</u>	3000EA/Reel

Note:

- > FH4820 / FH4820H 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: SOT-23-6L

