2.0A, Vin:4.5V~20.0V 1.0MHz DC-DC Buck(Step-Down) Converter

Datasheet Brierf

■ General Description

FH4684 is a fully integrated, high-efficiency 2.0A synchronous rectified buck(step-down) converter. The FH4684 operates at high efficiency over a wide output current load range.

This device offers two operation modes, PWM control and PFM Mode switching control, which allows a high efficiency over the wider range of the load.

The FH4684 requires a minimum number of readily available standard external components and is available in an 6-pin SOT23 RoHs compliant package.

■ Applications

- Distributed Power Systems
- Digital Set Top Boxes
- Flat Panel Television and Monitors
- Wireless and DSL Modems
- Notebook Computer

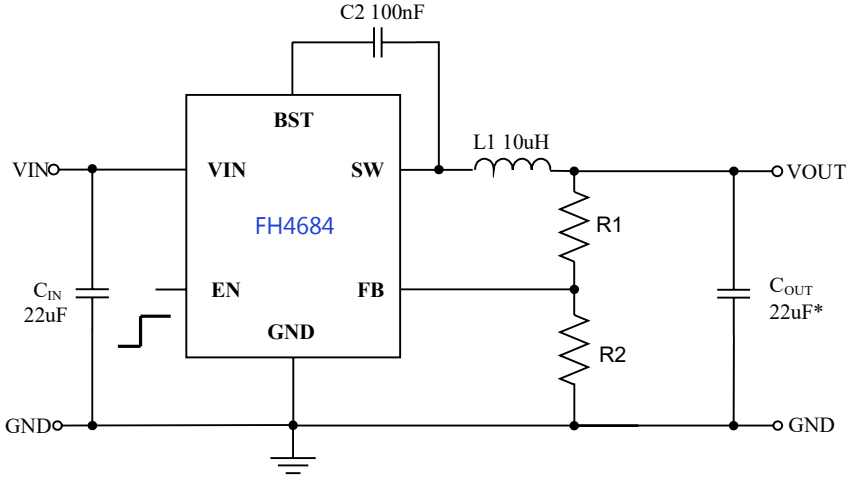
■ Package

- SOT-23-6L

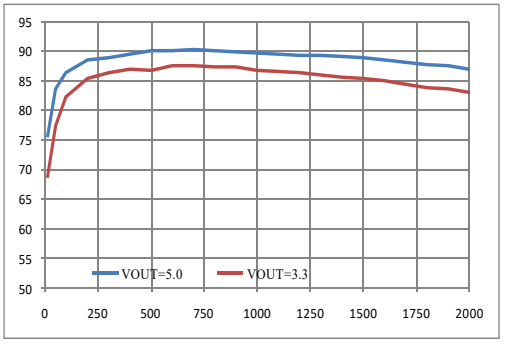
■ Features

- High Efficiency: Up to 96%
- Frequency Operation: 1.0MHz
- Output Current : 2.0A
- No Schottky Diode Required
- Input Voltage Range: 4.5V to 20.0V
- Reference Voltage: 0.60V
- Slope Compensated Current Mode Control for Excellent Line and Load Transient Response
- Integrated internal compensation
- Stable with Low ESR Ceramic Output Capacitors
- Over Current Protection with Hiccup-Mode
- Thermal Shutdown
- Inrush Current Limit and Soft Start
- Available in SOT-23-6L Package
- Temperature Range: -40°C to +85°C

■ Typical Application Circuit



Efficiency vs. Load Current

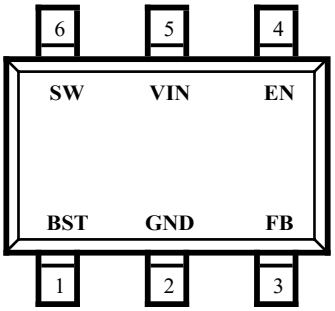


Load Current (mA)

Note:

- Avoid short between BST and SW.
- 200kΩ > R1 > 150kΩ; if R1 is less than 150kΩ, be sure to use 22uF or greater.
- The input capacitor is recommended for electrolyte capacitors.

■ Pin Configuration



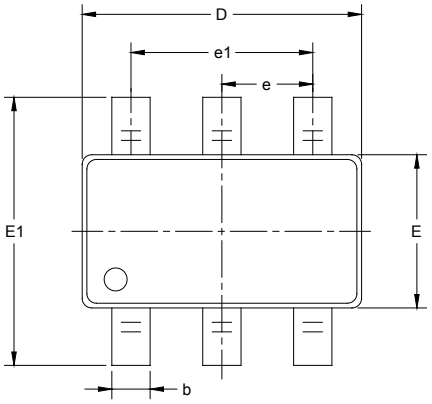
SOT-23-6L
(TOP VIEW)

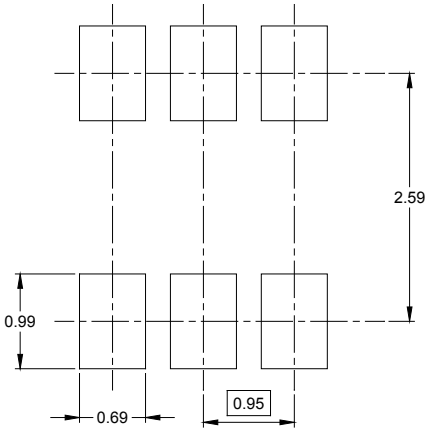
■ Pin Assignment

Pin Number SOT-23-6L	Pin Name	Function
1	BST	Bootstrap pin. Connect a 22nF capacitor from this pin to SW
2	GND	Ground
3	FB	Feedback Input. Connect an external resistor divider from the output to FB and GND to set VOUT
4	EN	Enable pin for the IC. Drive this pin high to enable the part, low to disable.
5	IN	Supply Voltage. Bypass with a 22μF ceramic capacitor to GND
6	SW	Inductor Connection. Connect an inductor Between SW and the regulator output.

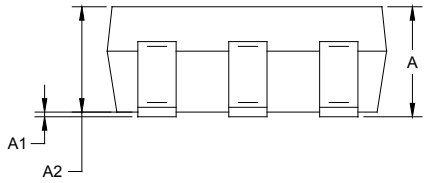
■ Package Information

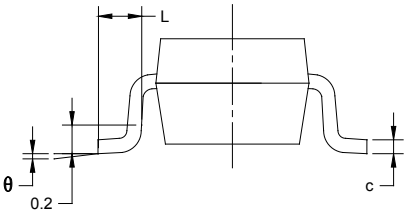
- Type: **SOT-23-6L**





RECOMMENDED LAND PATTERN (Unit: mm)





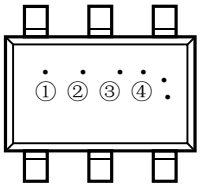
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

■ Ordering Information

Part Number	Feedback Voltage	Temperature Range	Package Type	Top Mark	SPQ
FH4684M6	0.6V	-40°C to +85°C	SOT-23-6L	* * * *	3000PCS/Reel

- FH4684 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.

■ Top Mark



SOT-23-6L
(TOP VIEW)

Note:

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Update by Sep.2017