

2.0A High Efficiency 1.2MHz Current Mode Boost(Step-up) Converter

PRELIMINARY DATASHEET

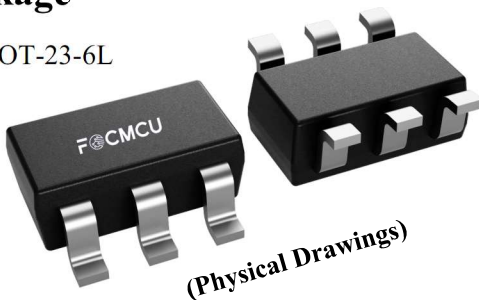
GENERAL DESCRIPTION

The FH4204 is a constant frequency, 6-pin SOT23 current mode step-up converter intended for small, low power applications. The FH4204 switches at 1.20MHz and allows the use of tiny, low cost capacitors and inductors 2mm or less in height. Internal soft-start results in small inrush current and extends battery life.

The FH4204 features automatic shifting to pulse frequency modulation mode at light loads. The FH4204 includes under-voltage lockout, current limiting, and thermal overload protection to prevent damage in the event of an output overload. The FH4204 is available in a small 6-pin SOT-23 package.

Package

- SOT-23-6L



FEATURES

- Integrated 80mΩ Power MOSFET
- Input Voltage: 2.0V to 24.0V
- 1.2MHz Fixed Switching Frequency
- Internal 4.0A Switch Current Limit
- Adjustable Output Voltage
- Internal Compensation
- Up to 28.0V Output Voltage
- Automatic Pulse Frequency Modulation Mode at Light Loads
- Up to 93% Efficiency
- Available in a 6-Pin SOT23 Package

APPLICATIONS

- Battery-Powered Equipment
- Set-Top Boxed
- LCD Bias Supply
- DSL and Cable Modems and Routers

TYPICAL APPLICATION

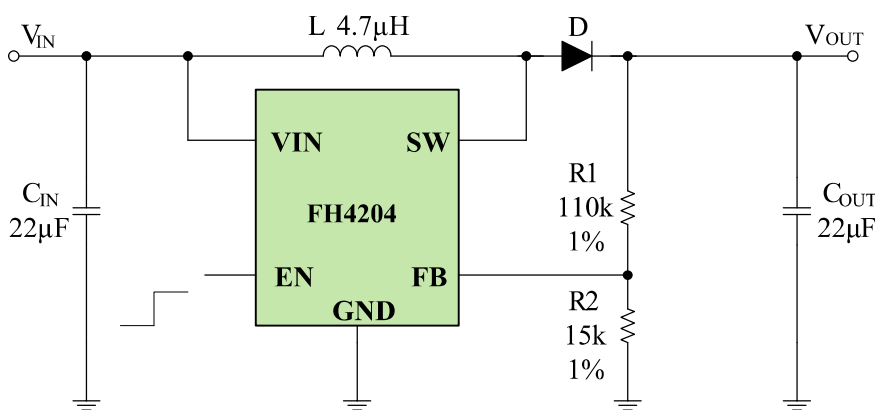
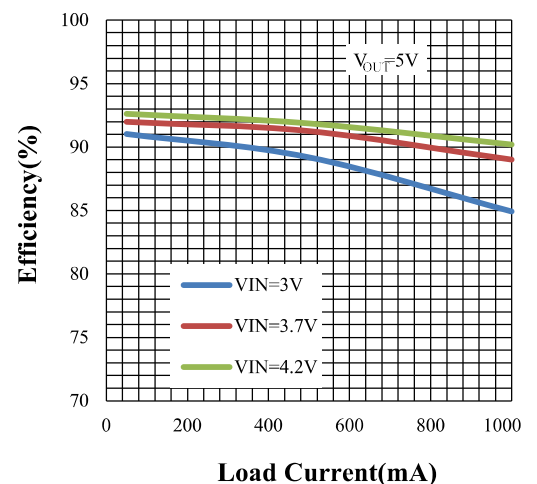
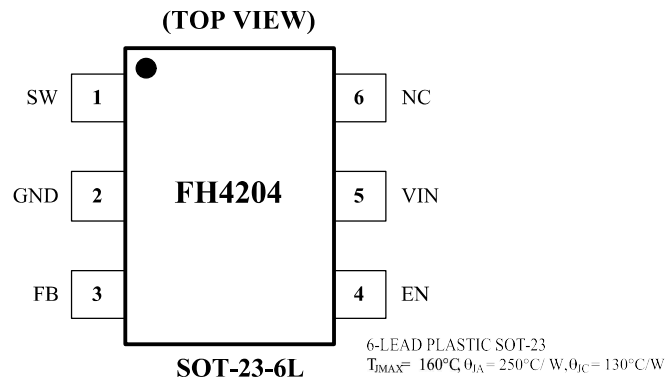


Figure 1. Basic Application Circuit



Pin Configuration



Pin Description

Pin Name	Pin Number	Description
SW	1	Power Switch Output. SW is the drain of the internal MOSFET switch. Connect the power inductor and output rectifier to SW. SW can swing between GND and 28V.
GND	2	Ground Pin
FB	3	Feedback Input. The FB voltage is 0.6V. Connect a resistor divider to FB.
EN	4	Regulator On/Off Control Input. A high input at EN turns on the converter, and a low input turns it off. When not used, connect EN to the input supply for automatic startup.
VIN	5	Input Supply Pin. Must be locally bypassed.
NC	6	No Connect

BLOCK DIAGRAM

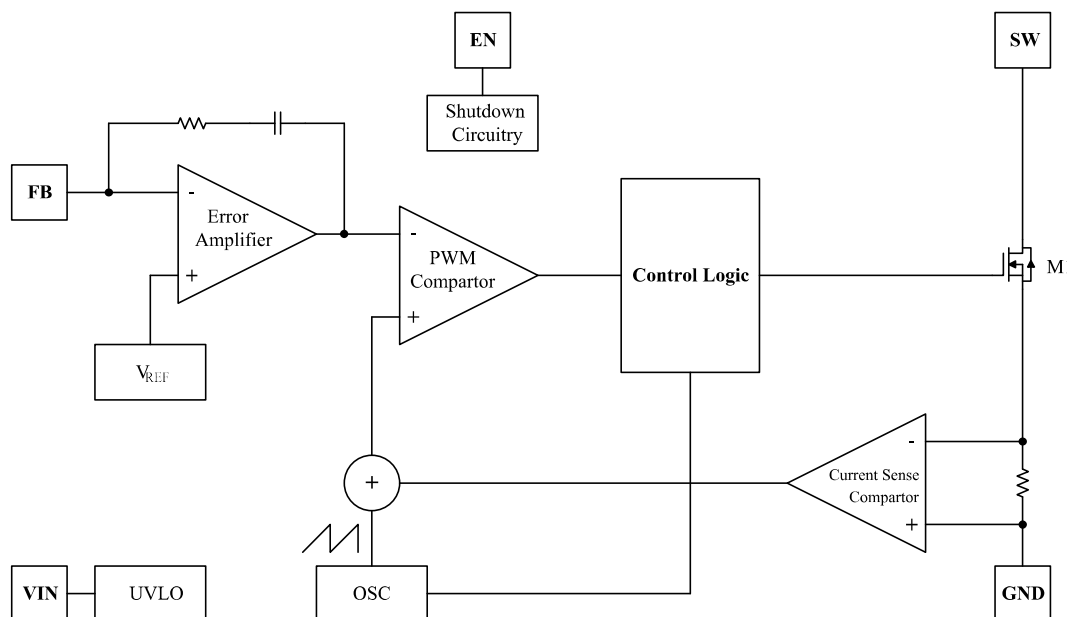
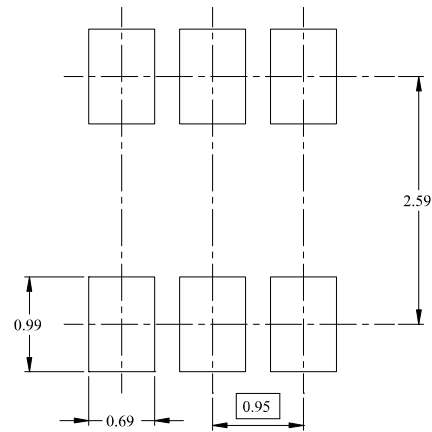
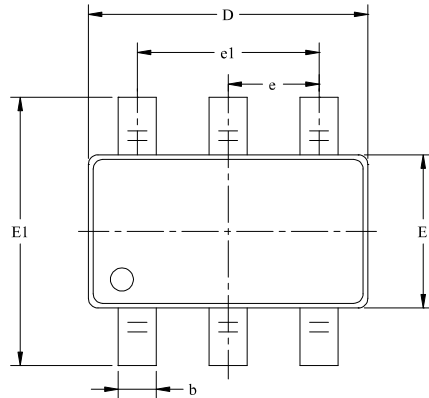


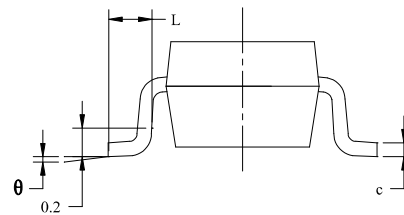
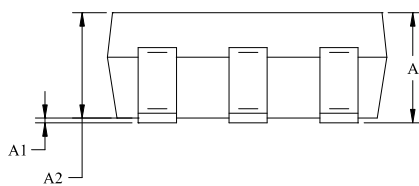
Figure 2. FH4204 Block Diagram

PACKAGE OUTLINE DIMENSIONS

- 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	1.900 BSC		0.075 BSC	
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

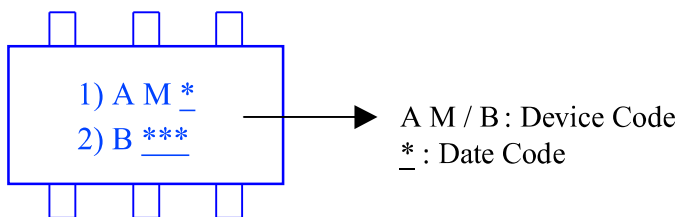
ORDER INFORMATION

Part Number	Input Voltage	Features	Operating Temperature	Package Type	Top Mark	SPQ
FH4204M6	2.0V ~ 24.0V	<ul style="list-style-type: none"> • DC-DC boost (step-up) • VFB: 0.6V • Frequency: 1200kHz • Current limit: 4.0A • Up to 28.0V 	-40°C to +85°C	SOT-23-6L	1) A M _ 2) b ***	3000EA/Reel

Note:

- **FH4204** 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



#1



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.



Note:

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▲ Update by Aug.2020