

BST62044

1. Product Overview

The BST62044 is a high efficiency synchronous step-down DC-DC converter optimized for battery-powered portable applications. The BST62044 is ideal for portable applications powered by a single Li-Ion battery or 3 NiMH/NiCd batteries. The output voltage range of these devices is 0.7 V to 6.0 V. The BST62044 operates at a fixed switching frequency of 1.25 MHz and enters a power save mode at light load currents to maintain high efficiency over the entire load current range. For low noise applications, the device can be forced into a fixed frequency PWM mode by pulling the MODE pin high. The BST62044 supports load currents up to 1.2A.

2. Product Features

- Up to 95% conversion efficiency.
- Typical quiescent current: 18 μ A.
- Load current: 1.2 A.
- Operating input voltage range: 2.5V to 6.0V.
- Switching frequency: 1.25 MHz.
- 1.8V fixed output voltage.
- Power Save Mode Operation at Light Load Currents.
- 100% duty cycle for low dropout voltage.
- Internal soft start.

3. Functional Block Diagram

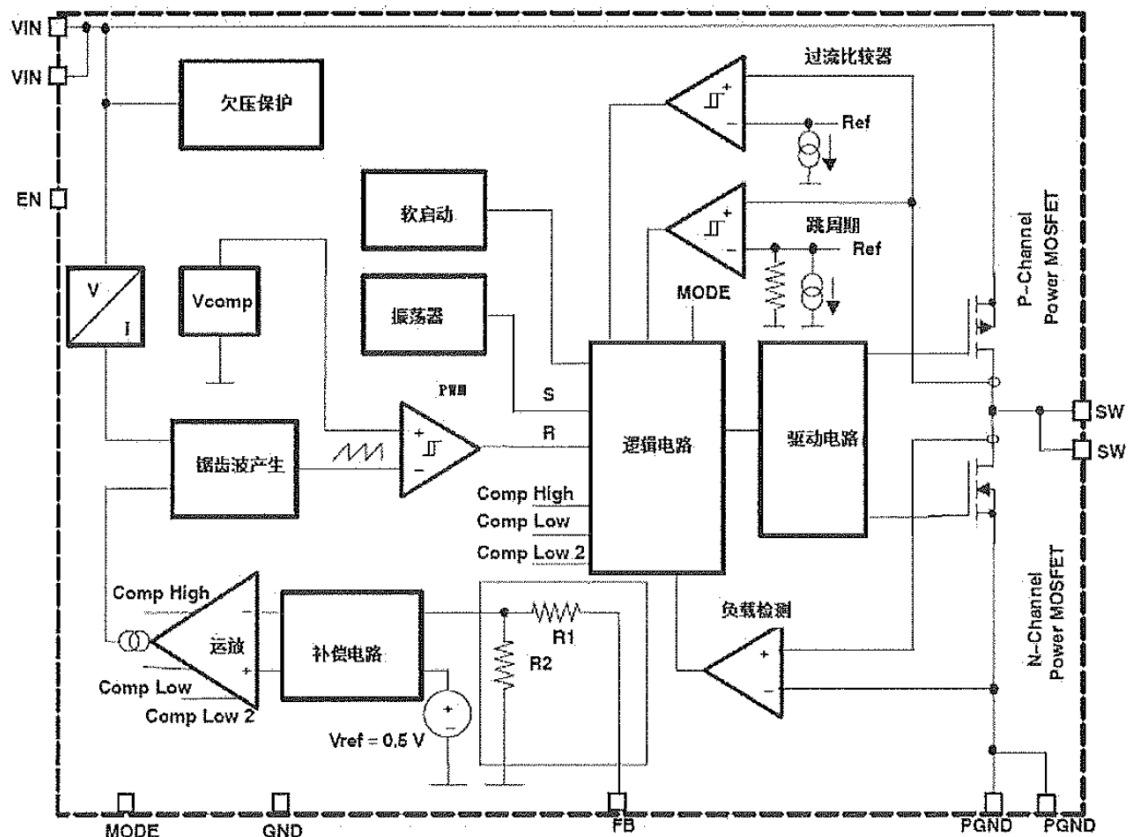


Figure 1 Functional Block Diagram.

4. Pin Information

Pin Assignment Diagram

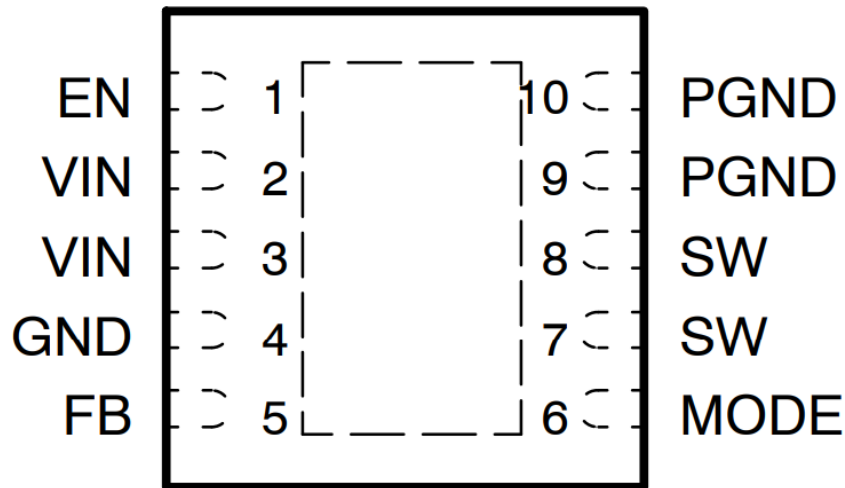


Figure 2. BST62044 pin arrangement diagram

Pin Description

Table 1. Pin Description

Dock number	Symbol	I/O	Function
1	EN	I	Enable terminal. High is effective. Cannot be left floating.
2	VIN	I	Voltage source.
3	VIN	I	Voltage source.
4	GND	-	land.
5	FB	I	Feedback input. It is best to connect to the output voltage.
6	MODE	I	Mode selection. When MODE is high , the chip enters the switching mode. When MODE is low, the chip enters the self-conversion mode.
7	SW	I/O	The dramatic change is at the junction of the upper stop and the lower tube.
8	SW	I/O	Hu rotation node, connected at the junction of the upper tube and the lower bone.
9	PGND	-	Gongche Land.
10	PGND	-	Power land.
	Exposed Thermal Pad	-	Heat sink. Connect to ground.

5. Absolute Maximum Ratings and Recommended Operating Ranges

Absolute Maximum Ratings

		Minimum	Maximum	unit
VI Input Voltage	VIN, FB EN MODE SW	-0.3	7	V
TJ Operating junction temperature		-40	150	°C
Storage temperature		-65	150	

Recommended working range

	Minimum	Maximum	unit
Input voltage, VI	2.5	6	V
Output Current		1.2	A
TJ Junction Temperature	-40	125	°C

6. Electrical characteristics parameters

Table 2. Electrical properties

Characteristic	Symbol	Condition (Unless otherwise specified, $V_{IN}=3.6V$, $-55^{\circ}C \leq T_A \leq 125^{\circ}C$)	A Group	Limit value			Unit
				Minimum	Typical	Maximum	
Power supply electric medical	V_{IN}	-	A1 A2 A3	2.5	-	6.0	V
Quiescent Current	I_Q	$I_O = 0$ mA, device is not switching		-	-	35	μA
Input undervoltage protection	V_{UVLO}	-		1.5	-	2.3	V
Make the ring effective	V_{EN}	-		1.4	-	-	V
Can be turned off	V_{EN}	-		-	-	0.4	V
Input bias voltage	I_{EN}	EN=GND or V_{IN}		-	-	1	μA
Mode High	$V_{(MODE)}$	-		1.4	-	-	V
Mode Low	$V_{(MODE)}$	-		-	-	0.4	V
Maximum output current	I_{OUT}	-		0.8	1.2	-	A
Mode Input Bias Current	$I_{(MODE)}$	MODE=GND or V_{IN}		-	-	1	μA
Power tube on-resistance	$R_{DS(on),P}$	$V_I = V_{GS} = 3.6V$	A9 A10 A11	-	-	210	m Ω
	$R_{DS(on),P}$	$V_I = V_{GS} = 2.5V$		-	-	270	m Ω
N power tube leakage wave	$I_{lkg}(N)$			-	-	1	μA
Thunder Road City Rate	f_S	$V_{FB} = 0.5V$		1	-	1.5	MHz
Output voltage plot	V_O	-		-3	-	3	%
SW port power off	I_{LKG}	-		-	-	1	μA

7. Dimensions

QFN10 package

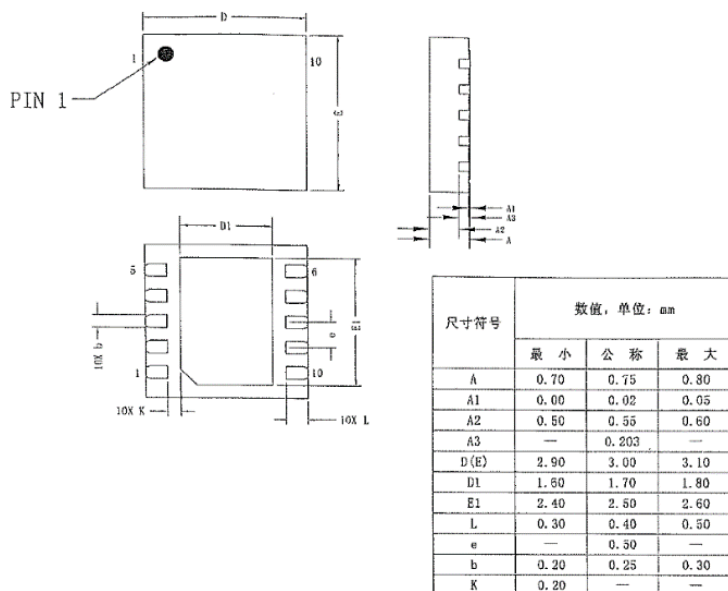


Figure 3. QFN 10 Package Dimensions

8. Ordering Information

Table 3. Product Ordering Information

model	Package	Packaging materials	Quality Grade	Detailed specifications	Product Status
BST62044	QFN 10	Plastic packaging	N1 Level	Q/BST 60025- 20 21	Mass production