

BST76801PDFN6I

1. Product Overview

BST76801PDFN6I LDO voltage regulator is a voltage regulator with 1 A output current and fast transient response. The device uses a 10 μ F low impedance capacitor to achieve fast transient response. It adopts PMOS output power tube structure, has a low input-output voltage difference and has a good linear relationship with the output current. Because PMOS is a voltage-driven device, its quiescent current is very small and is not affected by the output (the typical value of quiescent current is only 85 μ A in the output current range from 0mA to 1A). This series of LDOs also provides a sleep mode: when a TTL high level is input to the $\overline{\text{EN}}$ terminal, the chip will be turned off, and its quiescent current is less than 1 μ A at room temperature. Power good (PG) can provide a high level output, which can be used for power reset and battery power low voltage indication. This series of products can achieve adjustable output, and its voltage range is 1.2 V to 5.0V. The output accuracy reaches 3 %. This series of products adopts PDFN6 package.

2. Product Features

- 1A Miniaturized LDO Voltage Regulator.
- Input voltage range 2.7V~5.5V.
- The output voltage range is 1.2V ~5.0V.
- Ultra-low quiescent current, 85 μ A typical.
- Fast transient response.
- Open drain output Power Good.
- PDFN 6 package (3mm×3mm).

3. Functional Block Diagram

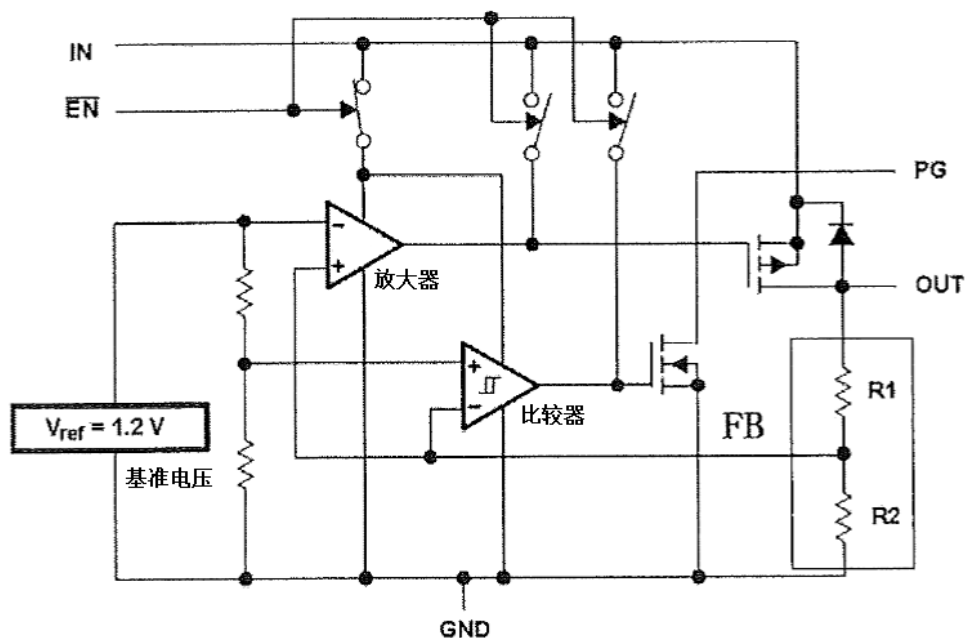
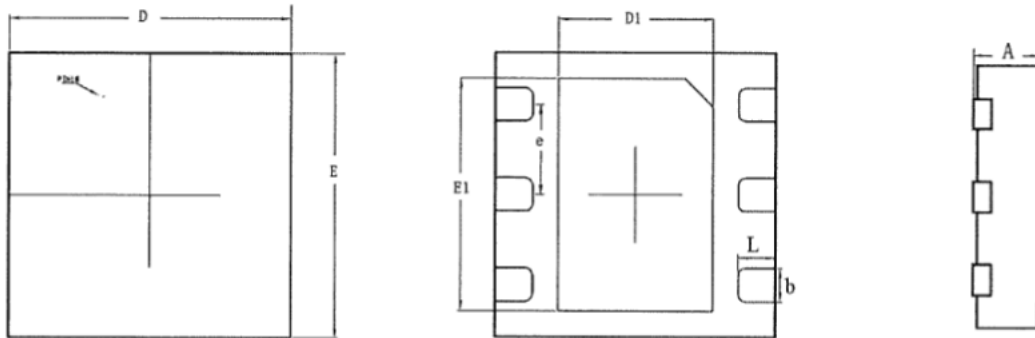


Figure 1. Functional Block Diagram

Packaging information

The package shape and pin arrangement of BST76801PDFN6I are shown in the figure below.



单位为毫米

尺寸符号	数值		
	最小	公称	最大
D	2.90	—	3.10
E	2.90	—	3.10
D1	1.45	—	1.85
E1	2.25	—	2.65
e	—	0.95	—
b	0.20	—	0.50
L	0.25	—	0.55
A	0.60	—	1.00

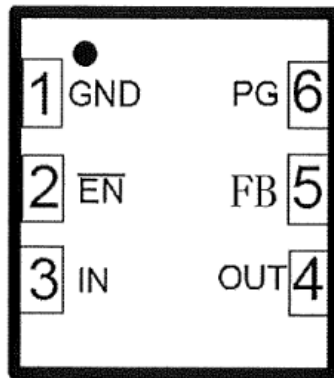


Figure 2. BST76801PDFN6I package outline and pin arrangement

The pin description of BST76801PDFN6I is shown in the following table.

Table 1Pin Description

Pin number	Pin Symbols	Functional Description
	$\overline{\text{EN}}$	Enable input, low effective
	IN	Voltage input terminal
	OUT	Voltage output
	FB/NC	Adjustable feedback voltage input terminal, fixed as NC
	PG	PG output

4. Electrical parameters

Unless otherwise specified, the electrical characteristics shall be as specified in Table 2 and shall be applicable to the full operating temperature range of $-55\text{ }^{\circ}\text{C} \leq T_A \leq 125\text{ }^{\circ}\text{C}$, and shall be tested with reference to GB/T17940-2000.

Table 2. Electrical properties

characteristic	symbol	condition (Unless otherwise specified, $V_{IN}=2.7V$, $-40\text{ }^{\circ}\text{C} \leq T_A \leq 85\text{ }^{\circ}\text{C}$)	Limit value		unit
			Minimum	maximum	
Input voltage range	V_{IN}		2.7	5.5	V
Output voltage	V_O	$1.2V \leq V_O \leq 5.0V$, $V_{IN}=5.5V$	$0.97 V_O$	$1.03 V_O$	V
Feedback voltage	V_{FB}		1.164	1.236	V
Feedback input current	I_{FB}	$FB = 1.5V$	—	10 0	nA
Quiescent Current	I_q	$1mA \leq I_O \leq 1A$	—	180	μA
Output current limit	I_{limit}	$V = 0V$	—	2.5	A
Standby current	I_{sb}	$EN = 0V_{IN}$	—	10	μA
High level enable input voltage	V_{ENH}		2.5	—	V
Low level enable input voltage	V_{ENL}		—	0.9	V
Enable Input Voltage Leakage Current	I_{EN}	$EN = 0V$	-1	1	μA
		$EN = V_{IN}$	-1	1	μA
Low dropout voltage	V_D	$I_O=1A$, $V_{OUT}=5V$	—	500	mV
Line Regulation	V_{REG_line}	$2.7V \leq V_{IN} \leq 5.5V$, $V_{OUT} = V_{FB}$	—	0.5	%/V
Load Regulation	V_{REG_load}	$1mA \leq I_O \leq 1A$ $V_{OUT} = V_{FB}$	—	30	mV
PG effective minimum input voltage	V_{PIN}	$I_{O(PG)} = 300\text{ }\mu A$	—	1.5	V
PG output low level voltage	V_{IR}	$I_{O(PG)} = 1mA$	—	0.4	V
PG leakage current	I_{PG}	$V_{(PG)} = 5V$, $V_{IN} = 5.5V$	—	1	μA
PG trigger threshold voltage	V_{TH_PG}	V_O decreases	92	98	% V_O