

BST75801

1. Product Overview

BST75801 is a radiation-resistant LDO voltage regulator with a low dropout voltage of 300mV, an output current of 3A, and an output voltage of 1.22V~5V. It has a total dose resistance of ≥ 100 k rad(Si) and a single-particle latch threshold of ≥ 75 Mev.cm²/mg . It has undervoltage lockout, enable control functions, low quiescent current, and fast transient response characteristics, and is mainly used to provide a stable DC voltage for the subsequent load.

2. Product Features

- Adjustable output voltage 1.22V~5V.
- 3 A output voltage dropout 3 00mV.
- Typical static power consumption: 125μA.
- Fast transient response.
- Undervoltage lockout function.
- Output voltage accuracy $\pm 3\%$.
- Total dose resistance 100K rad(Si).
- Single event latch-up resistance 75Mev.c m ² /mg.

3. Functional Block Diagram

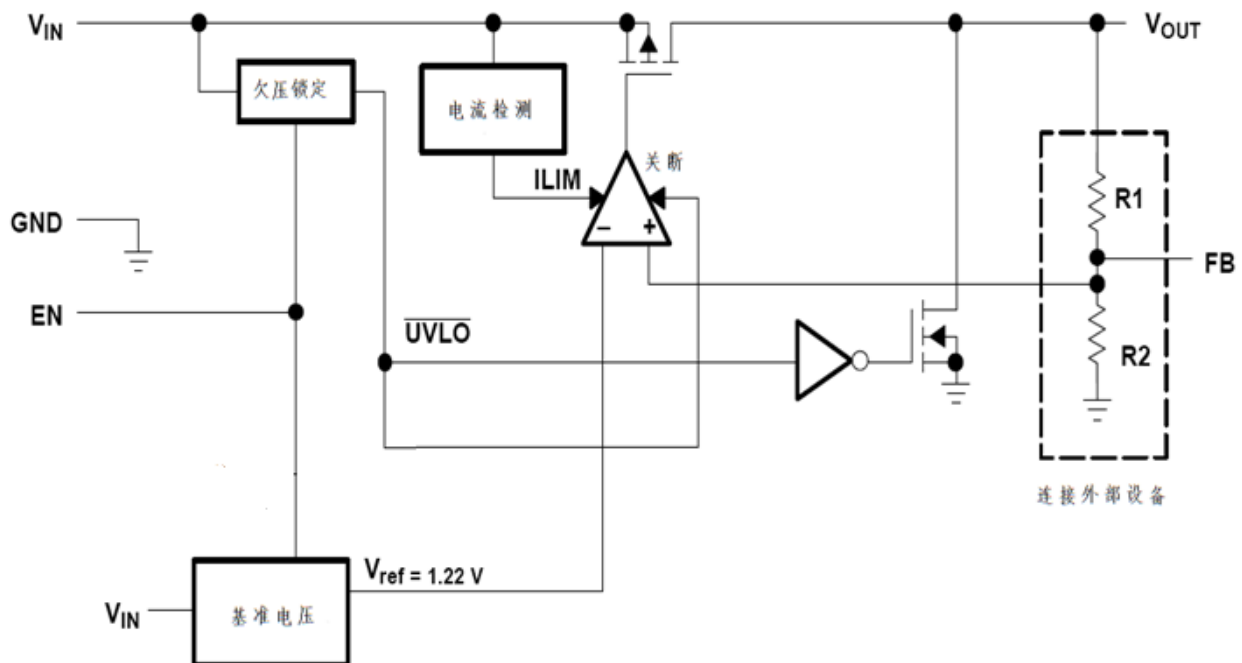


Figure 1. Functional Block Diagram

Pin Information

Pin Assignment Diagram

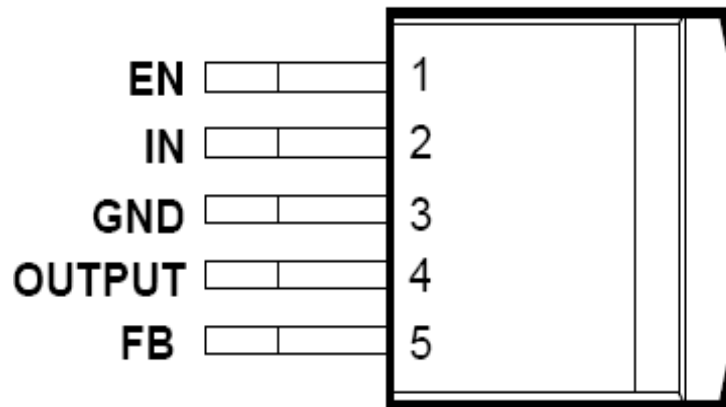


Figure 2. BST 75801 pinout diagram

Pin Description

Table 1. Pin Description

Pin number	Pin Symbols	Functional Description
1	EN	Enable input
2	IN	Input voltage
3	GND	land
4	OUTPUT	Output voltage
5	FB	Feedback input voltage

4. Product appearance

Metal TO-263 package

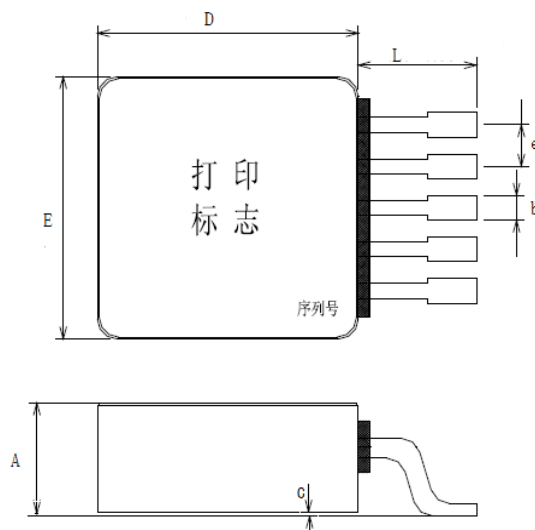


Figure 3. Metal TO-263 package dimensions

Table 2. Dimensional parameters

Unit is mm

Dimension symbols	Numeric		
	Minimum	Nominal	maximum
D	10.40	—	10.80
E	10.40	—	10.80
A	3.80	—	5.06
L	4.45	—	5.15
e	—	1.68	—
b	0.85	—	1.15
c	0.05	—	0.30

5. Electrical parameters

Table 3. Electrical properties

characteristic	symbol	condition Unless otherwise specified $V_I=2.8V$ or $V_I=V_O+1$, $I_O=1mA$, $EN=V_I$ $-55\text{ }^{\circ}\text{C} \leq T_A \leq 125\text{ }^{\circ}\text{C}$	Limit value		unit
			Minimum	maximum	
Output voltage	$V_{O\text{ut}}$	$1.26V \leq V_O \leq 4.8V$, $V_I=5.5V$	1.22	5.0	V
Output Current	I_O	—	3	—	A
Quiescent Current	I_q	—	—	0.2	mA
Output voltage linear regulation	R_V	$2.8V \leq V_I \leq 5.5V$	—	0.2	%/V
Load Regulation	R	$1mA \leq I_O \leq 3A$	—	25	mV
Output current limit	I_{Limite}	—	5.5	14	A
Standby current	I_S	$EN=0V$	—	10	uA
FB input current	I_{FB}	$FB=1.5V$	-1	1	uA
Input ripple rejection	PSRR	—	40	—	dB
EN Input Current	I_{EN}	$EN=V_I$	-1	1	uA
		$EN=0V$	-1	1	uA
EN high level input voltage	V_H	—	2	—	V
EN low level input voltage	V_L	—	—	0.7	V
Low dropout voltage	V_D	$I_O=3A$, $V_I=3.2V$	—	300	mV
Discharge current	I_{DIS}	—	10	—	mA
Undervoltage protection threshold	V_{UVLO}	V_I rises	2.2	—	V