BST5150

1. Product Overview

BST5150 is a high-performance low-dropout voltage regulator circuit with an output voltage of 5V. The input voltage range is 6V~40V, the output voltage is 5V, the output voltage accuracy is relatively high (±2%), and the load transient response voltage drop is ≤55mV (load current 8mA~150mA jump, 5V output). The no-load quiescent current is less than 100uA . It contains current limiting circuit, over-temperature protection circuit and short-circuit protection circuit.

2. Product Features

- Wide input voltage range from 6 V to 40 V.
- Low dropout output voltage.
- Low quiescent current.
- Output voltage tolerance is ± 2 %.
- At low output capacitance, it has a wide stability range.
- Overheat and overcurrent protection.
- Wide temperature protection range.

3. Functional Block Diagram

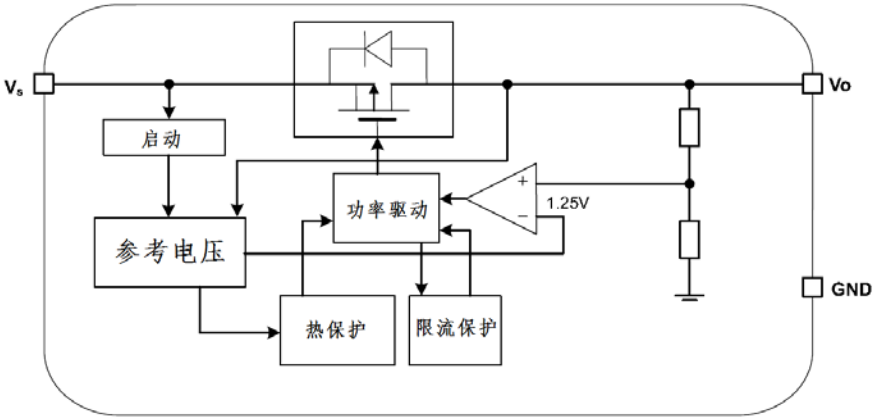
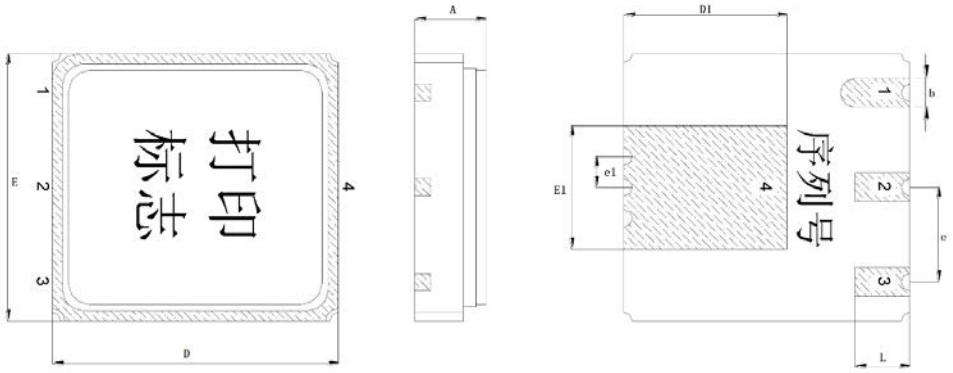


Figure 1. Functional Block Diagram

4. Product appearance

The package of BST5150 is C LCC4.



Unit is mm

Dimension symbols	Numeric		
	Minimum	Nominal	maximum
D	6.70	—	7 . 30
E	6.20	—	6.80
D1	3.70	—	4.30
E1	2.70	—	3.30
e	—	2.30	—
e1	—	0.75	—
b	0.55	—	0.85
L	1.15	—	1.55
A	—	—	2.50

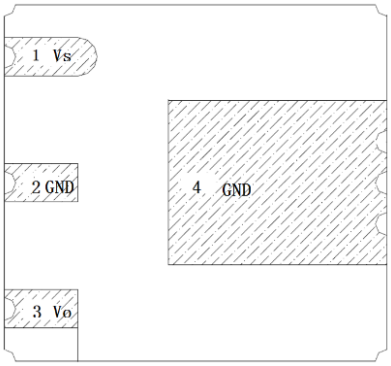


Figure 2BST5150 C LCC4 package outline and pin arrangement

The BST 5150 pin description is shown in the following table.

Table 1. Pin Description

Pin number	Pin Symbols	Functional Description
1	V_S	Regulator input voltage
2	GND	land
3	V_O	Regulator output voltage
4	GND	land

5. Electrical parameters

The electrical characteristics are the best indicators that this series of products can achieve. Different quality levels and packaging forms are slightly different. Please refer to the corresponding detailed specifications for details .

Table 2. Electrical properties

characteristic	symbol	condition (Unless otherwise specified, -55 °C ≤T_A≤125 °C)	Limit value		unit
			Minimum	maximum	
Input voltage range	V_S		5.6	4 0	V
Output voltage	V_O	VS =5.6V～ 40V	4.9	5.1	V
Maximum output current	I_O	V S =8V	150	—	mA
Line Regulation	V_{line}	6V≤V S ≤28V	—	80	mV
Load Regulation	V_{load}	VS = 8V ,8mA ＜ IO ≤150mA	—	80	mV
Short circuit current	I_{short}	VS = 12V		1.45	A
Output current limit	I_{lim}	VS =12V , VO = 4.9V	0.2	0.66	A
Minimum input-output pressure difference	V_{DO}	I O =150mA, VS = 4.9V	—	1200	mV
Current threshold (operating mode)	I_{oth_H}	VS = 12V	8	—	mA
Current Threshold (Low Power Mode)	I_{oth_L}	VS = 12V	—	1 .1	mA
Quiescent current in low power mode	I_{qn_1}	V S =12 V, 0.1mA ＜ I O ≤1mA	—	1 00	1
Quiescent current in operating mode	I_{qn_150}	VS = 12V, I O = 150 mA	—	4.2	mA