BST73HD318

1. Product Overview

The BST73HD318 developed in this project is a dual-channel low-dropout linear regulator with an output voltage of 1.8V/3.3V. The output current can reach 750mA, the maximum input voltage is 8V, and it adopts a PMOS output power tube structure. It has enable control, temperature protection, overcurrent protection, and RESET functions, and can provide stable power for digital chips in various modes.

The BST73HD318 is pin-compatible with TI's TPS73HD318 and can be used as an in-situ replacement for that product.

2. Quality Grade

The product quality grade of BST73HD318 is GJB597B-2012 B and meets the standard requirements of electronic components for aerospace special projects.

3. Product Features

The BST73HD318 developed in this project is a dual-channel low-dropout linear regulator with an output voltage of 1.8V/ 3.3V . The output current of this project can reach 750mA, the maximum input voltage is 8V, and it adopts PMOS output power tube structure. It has enable control, temperature protection, overcurrent protection, and RESET functions, which can provide stable power supply for digital chips in various modes.

- Open-drain power-on reset with 200ms delay.
- 750mA Low Dropout Regulator.
- Fast transient response.
- The output accuracy can reach ±2% within the full temperature range.
- 2 8 -pin CSOP2 8 package with heat sink.
- Thermal shutdown protection.

4. Compatible models

Our product model	Replacement product models	Alternative Products Company	Alternative product country
BST 73HD318	TPS73HD318	TI	USA

5. Functional Block Diagram

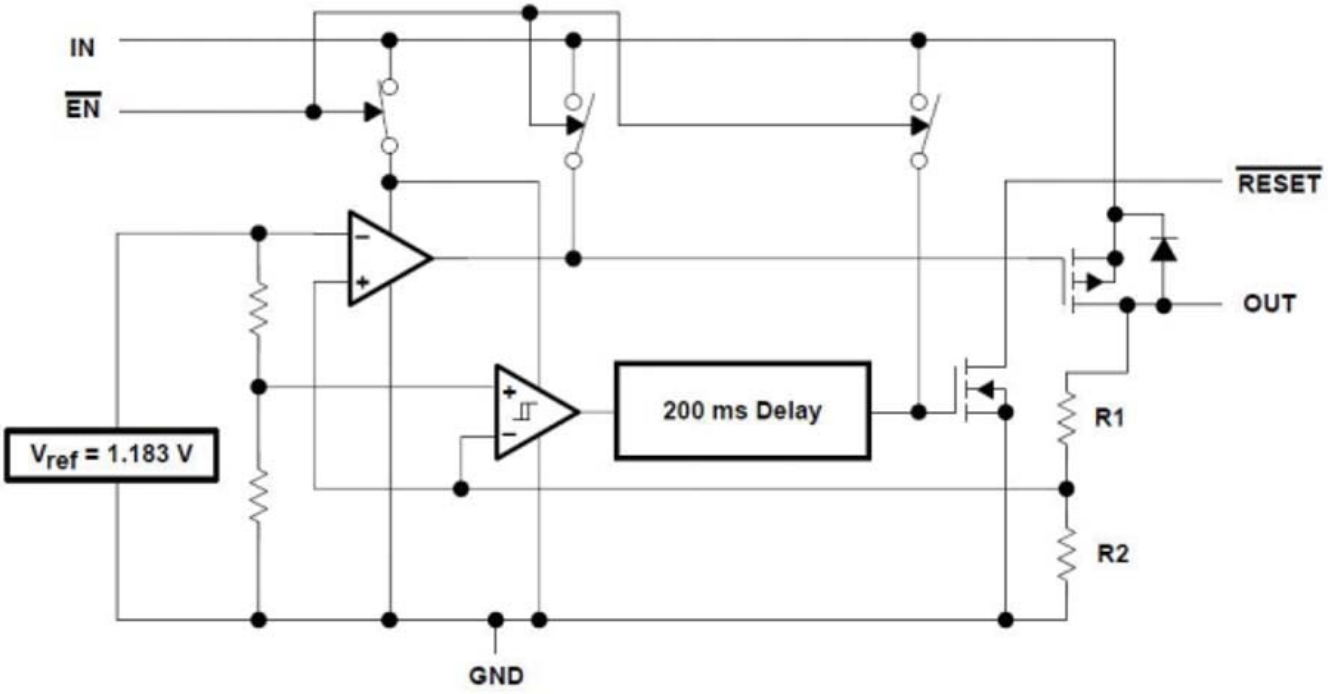

Figure 1. Functional module diagram

6. Product appearance

The device adopts 28 pins and is packaged in ceramic sealed CSOP28 with heat sink. The external dimensions refer to the provisions of GB/T 7092-2021, and the external dimensions are shown below.

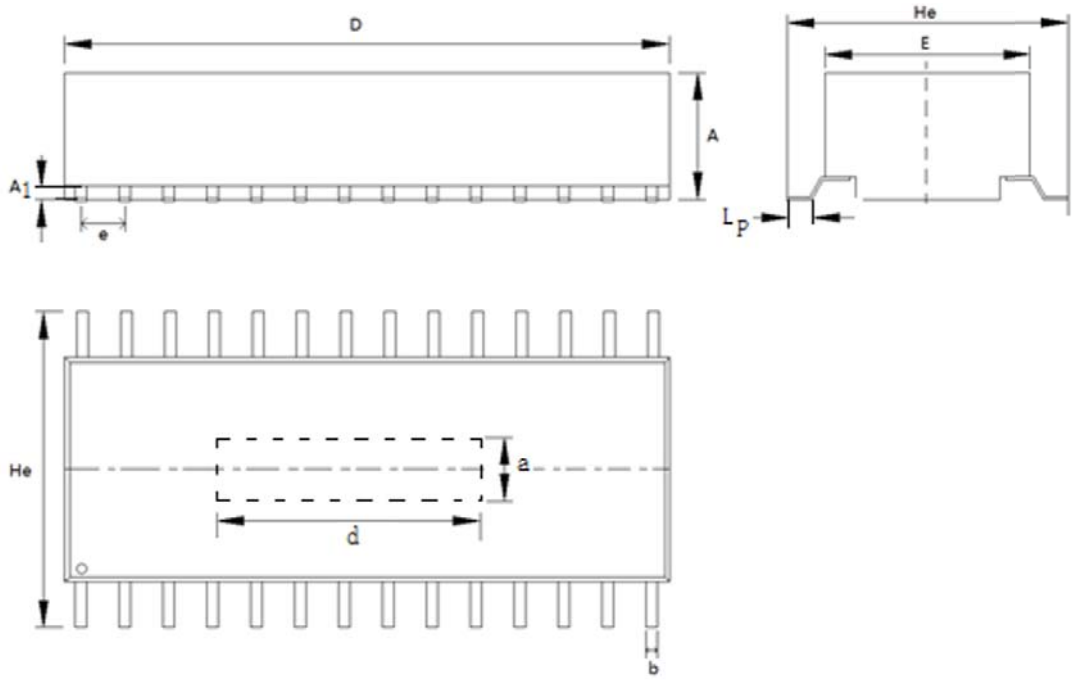

Figure 2. Dimensions

Table 1. Dimensions (mm)

Dimension symbols	Numeric		
	Minimum	Nominal	maximum
D	9.85	—	10.15
E	5. 25	—	5. 55
A	—	—	3.0 0
H e	6. 10	—	6. 7 0
e	—	0.65	—
b	0.20	—	0.30
A1	0.05	—	0.15
L P	0.45	—	—
a	0.90	—	—
d	5.70	—	—

Terminal arrangement

The lead-out terminal arrangement should be as shown in Figure 4 (top view).

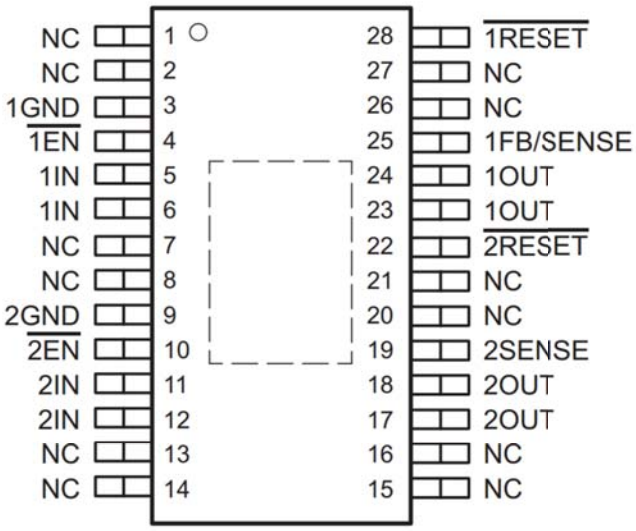

Figure 3. BST73HD318 package top view

Table 2 BST73HD318 package pin definition

Pin number	symbol	Function
1, 2, 7, 8, 13-16, 20, 21, 26, 27	NC	Dangling
3	1GND	Channel #1 Ground
4	$\overline{1EN}$	Channel #1 enable low level valid
5, 6	1IN	Channel #1 Input
9	2GND	Channel #2 Ground
10	$\overline{2EN}$	Channel #2 enable low level valid
11, 12	2IN	Channel #2 Input
17, 18	2OUT	Channel #2 Output
19	2SENSE	Channel #2 Feedback
twenty two	$\overline{2RESET}$	Channel #2 Reset
23, 24	1OUT	Channel #1 Output
25	1FB/SENSE	Channel #1 Feedback
28	$\overline{1RESET}$	Channel #1 Reset

7. Electrical properties

Unless otherwise specified, the electrical characteristics shall be as specified in Table 5 and shall apply over the full operating temperature range

Table 2. Electrical properties

parameter	symbol	Condition (Unless otherwise specified, V_I = 4.3 V, I_O =10 mA $\overline{EN}$=0V, -55 °C ≤ T A ≤125 °C)	Group A Grouping	Standard value		unit
				Minimum	maximum	
Static operating current (Single channel)	Q	$\overline{EN}$ ≤ 0.5V, 0mA ≤ I O ≤ 750mA	A1 A2 A3	—	550	μA
Standby current (Single channel)	I C	$\overline{EN}$ = V_I		—	2	μA
Standby leakage current (Single channel)	I lkg	$\overline{EN}$ = V_I		—	1	μA
Standby $\overline{EN}$ logic high	V	3.5V ≤ V_I ≤ 6V, I_O =0A		2	—	V
		6V ≤ V_I ≤ 8V, I_O =0A		2.7	—	V
Working $\overline{EN}$ logic low	V	I_O =10mA		—	0.5	V
$\overline{EN}$ Hysteresis voltage	V Y	25 °C, V_I = 8 V, I_O =0A			100	mV
$\overline{EN}$ Input Current (Single channel)	I	3.5V ≤ V_I ≤ 8V, I_O =0A, =0V,		-0.5	0.5	μA
Minimum input voltage to start working	V on	I_O = 0 A, =0 V		—	2.5	V
Minimum input voltage to make RESET effective	V RST	$I_{O(RESET)}$ = -300 μ A, I_O = 0 A		—	1.9	V