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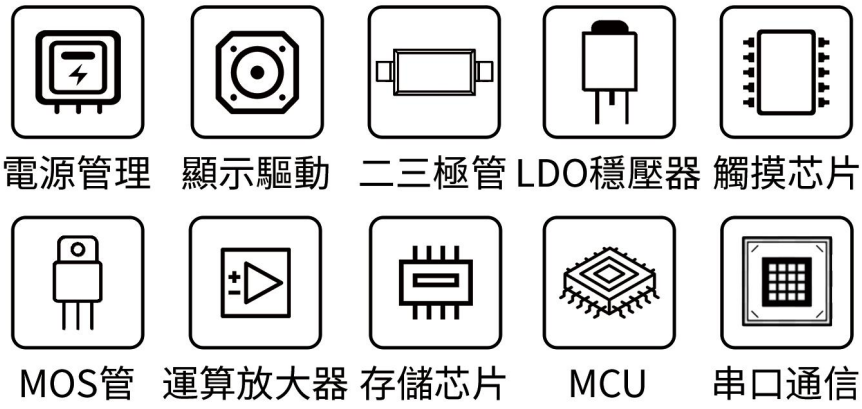


TD9110S

產品規格說明書

1、General Description

The TD9110S provides an integrated motor driver solution for consumer products, toys ,and other low-voltage or battery-powered motion control applications. The output driver block consists of N-channel power MOSFET's configured as an H-bridge to drive the motor winding.

Features:

- H-bridge motor driver
- Low standby current
- Typical power supply: 5V
- 400mA driver current @VDD1=VDD2=4.5V
- Drives a DC motor or other loads
- Package:SOP8/DFN8

Ordering Information：

Tube packing specifications：

Part number	Packaging form	Marking code	Tube quantity	Boxed tube quantity	Boxed quantity	Notes
TD9110S	SOP8	9110S	100 PCS/tube	100 tube/box	10000 PCS/box	Dimensions of plastic enclosure: 4.9mm×3.9mm Pin spacing:1.27mm

Reel packing specifications：

Part number	Packaging form	Marking code	Reel quantity	Boxed reel quantity	Notes
TD9110S	SOP8	9110S	4000PCS/reel	8000PCS/box	Dimensions of plastic enclosure: 4.9mm×3.9mm Pin spacing:1.27mm
TD9110	DFN8				

Note：If the physical information is inconsistent with the ordering information,please refer to the actual product.

2、Block Diagram And Pin Description

2.1、Block Diagram

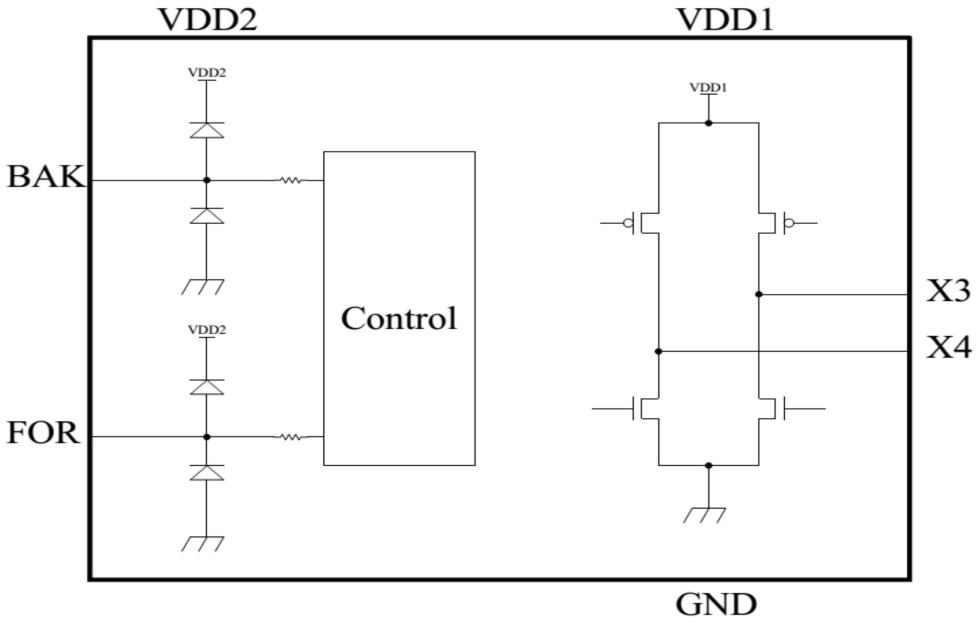


Figure 1 .TD9110S Block Diagram

2.2、Pin Configurations

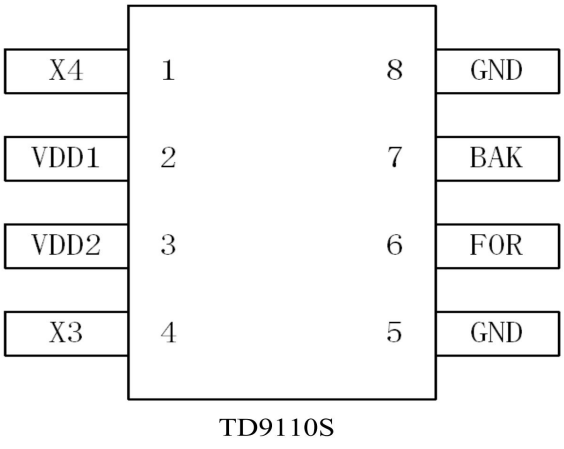


Figure 2 .TD9110S Pin Configurations
（PIN5 and PIN8 must be connected externally to GND）

2.3、Pin Description

Pin No.	Pin Name	Description
1	X4	Forward output
2	VDD1	Motor power supply
3	VDD2	Logic Power supply
4	X3	Reverse output
5	GND	Device ground, Must be connected to ground
6	FOR	Forward input
7	BAK	Reverse input
8	GND	Device ground, Must be connected to ground

2.4、Function Description

BAK and FOR is the motor steering control pins, X3 and X4 are the motor output drive pins, and the steering control function is realized by the level control of the BAK and FOR input pins. The following table shows the motor steering control logic truth table.

BAK	FOR	X3	X4	Function
0	0	Z	Z	Coast
0	1	0	1	Forward
1	0	1	0	Reverse
1	1	0	0	Brake

The waveform diagram:

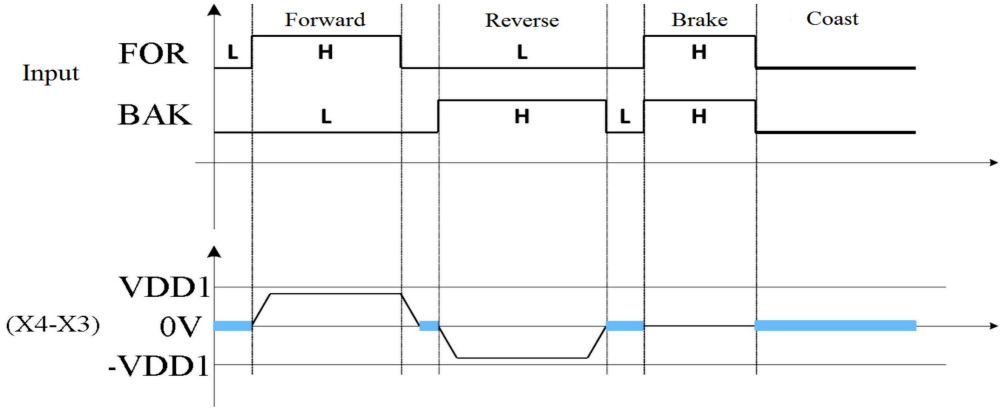


Figure 3 . waveform diagram

3、Electrical Parameter

3.1、Absolute Maximum Ratings

(T_{amb}=25℃, All voltage referenced to GND, unless otherwise specified)

Characteristic	Symbol	Conditions	Value	Unit
Power Supply Voltage	VDD	-	7.0	V
Input Voltage	VIN	-	-0.3～VDD+0.3	V
Junction temperature	TJ	-	150	℃
Storage Temperature	Tstg	-	-65～150	℃
Soldering Temperature	TL	10s	260	℃

3.2、Recommended Operating Conditions

Characteristic	Symbol	Min.	Max.	Unit
Power Supply Voltage	VDD	2.0	5.5	V
Operating Temperature	T_{amb}	-40	85	℃

3.3、Electrical Characteristics

(T_{amb}=25℃ , VDD1=VDD2=4.5V, GND=0V, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Power Supply Voltage	VDD	VDD1 and VDD2	2	5	5.5	V
V_{DD1} standby current	ISTB1	FOR=BAK=L,VDD1=5V	-	0.5	7	μA
V_{DD2} standby current	ISTB2	FOR=BAK=L,VDD2=5V	-	0	7	μA
V_{DD1} Quiescent Current	IDD1	FOR=H or KAK=H,X3/X4 no load,VDD1=VDD2=5V	-	170	-	μA
V_{DD2} Quiescent Current	IDD2		-	100	-	μA
Input logic high voltage	VIH	-	2.2	-	-	V
Input logic low voltage	VIL	-	-	-	0.8	V
High level output voltage	VOH	IOH=150mA,test X3/X4	4.3	4.42	-	V
Low level output voltage	VOL	IOL=150mA,test X3/X4	-	0.1	0.2	V
HS + LS FE on-resistance	Ron	IO=±150mA,VDD1=4.5V	-	0.56	-	Ω

4、Typical Application Circuit And Application Note

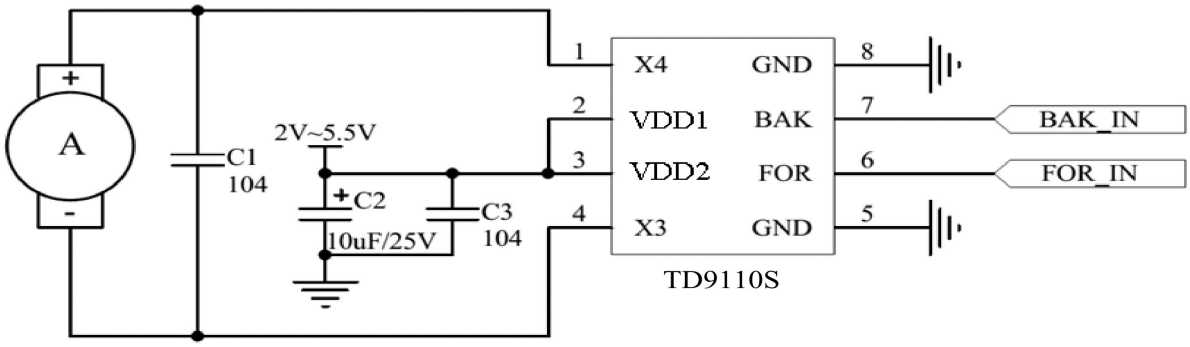


Figure 4. Typical Application Circuit

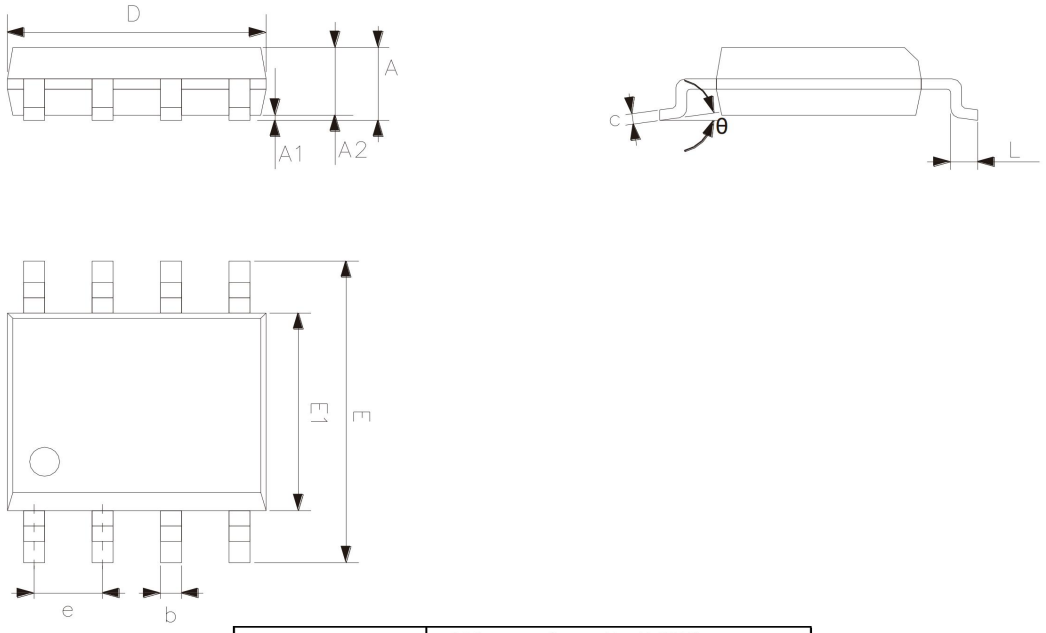
Note:

1． Capacitors must be added close to the power supply of the chip, otherwise the reliability of the chip will be seriously affected.

2． PIN5 and PIN8 must be connected externally to GND.

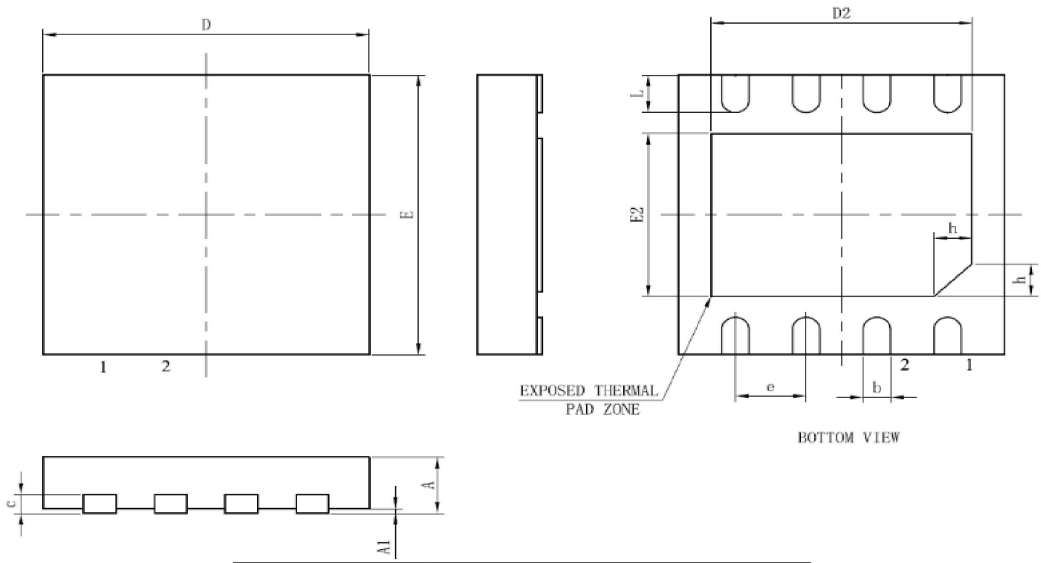
5、Package Information

5.1、SOP8



2023/12/A	Dimensions In Millimeters	
Symbol	Min.	Max.
A	1.35	1.80
A1	0.05	0.25
A2	1.25	1.55
D	4.70	5.10
E	5.80	6.30
E1	3.70	4.10
b	0.306	0.51
c	0.19	0.25
e	1.27	
L	0.40	0.89
θ	0°	8°

5.2、DFN8



2023/12/A	Dimensions In Millimeters	
Symbol	**Min**	**Max**
A	0.70	0.80
A1	—	0.05
b	0.25	0.35
c	0.18	0.25
D	2.90	3.10
D2	2.40	2.60
E	2.90	3.10
E2	1.45	1.65
e	0.65	
L	0.30	0.50
h	0.20	0.30

6、Statements And Notes

6.1、The name and content of Hazardous substances or Elements in the product

Part name	Hazardous substances or Elements									
	Lead and lead compounds	Mercury and mercury compounds	Cadmium and cadmium compounds	Hexavalent chromium compounds	Polybrominated biphenyls	Polybrominated biphenyl ethers	Dibutyl phthalate	Butylbenzyl phthalate	Di-2-ethylhexyl phthalate	Diisobutyl phthalate
Lead frame	○	○	○	○	○	○	○	○	○	○
Plastic resin	○	○	○	○	○	○	○	○	○	○
Chip	○	○	○	○	○	○	○	○	○	○
The lead	○	○	○	○	○	○	○	○	○	○
Plastic sheet installed	○	○	○	○	○	○	○	○	○	○
explanation	○: Indicates that the content of hazardous substances or elements in the detection limit of the following the SJ/T11363-2006 standard. ×: Indicates that the content of hazardous substances or elements exceeding the SJ/T11363-2006 Standard limit requirements.									