

TC118 (File No: S&CIC1060)

Single channel DC motor driver

1. Features

- Single channel built-in power MOS Full bridge drive

Drive forward, reverse, stop and brake functions

Built-in hysteresis thermal effect overcurrent protection function

Low on-resistance (1.6Ω)
- Maximum continuous output current up to 1.8A, Peak 2.5A

No need for external filter capacitor

use DIP-8 , SOP-8 Package form

2. Product application

Toy motor drive

Three, pin diagram and pin description

Pin diagram	Serial number	ber symbol	I/O	Function Description
<div><div><div><div>NC 1</div><div>INA 2</div><div>INB 3</div><div>VDD 4</div><div>8 OUTA</div><div>7 PGND</div><div>6 AGND</div><div>5 OUTB</div></div><div>DIP-8</div><div>TC118D</div></div><div><div><div><div>NC 1</div><div>INA 2</div><div>INB 3</div><div>VDD 4</div><div>8 OUTA</div><div>7 PGND</div><div>6 AGND</div><div>5 OUTB</div></div><div>SOP-8</div><div>TC118S</div></div></div></div>	1	NC	—	Hang in the air
	2	INA	I	Join INB Decision state
	3	INB	I	Join INA Decision state
	4	VDD	P	Power positive
	5	OUTB	O	Full bridge output B end
	6	AGND	G	Ground
	7	PGND	G	Ground
	8	OUTA	O	Full bridge output A end

Fourth, the absolute maximum rating

parameter	symbol		Rated value	unit
voltage	VCC		7.2	V
Power consumption	Pd	DIP-8	1	W
		SOP-8	0.96	W
Thermal resistance	θJA	DIP-8	125	°C/ W
		SOP-8	130	°C/ W
Operating temperature	Topr		-20~85	°C
Junction temperature	Tj		150	°C
storage temperature	Tstg		-55~150	°C
Manual welding temperature			350~370	°C
Peak output current	Iop		2.5	A
Maximum continuous output current	Ioc		1.8	A

Note: The maximum continuous output current depends on the heat dissipation conditions.

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Five, recommended working conditions (Ta=25 °C)

parameter	symbol	Parameter value	unit
voltage	VCC	2.4~7.2	V
Control input voltage	VIN	0~VCC	V
Positive and reverse output current	Iout	-1500~1500	mA

Six, electrical characteristics (Ta=25 °C, VCC=3V , RL=15Ω , Except for special instructions.)

parameter	symbol	Test Conditions	Minimum	typical	maximum	unit
Overall route						
Circuit shutdown current	ICCST	INA=INB=1	—	0	10	uA
Working current	ICC	INA=H, INB=L or INA=L, INB=H or INA=H, INB=H	—	0.3	1	mA
Control input						
High level input voltage	VINH		2.0	—	—	V
Low-level input voltage	VINL		—	—	0.8	V
High level input current	IINH	VIN=3V	—	5	20	uA
Low-level input current	IINL	VIN=0V	- 1	0	—	uA
Pull-down resistor	RIN		—	1.5	—	MΩ
drive						
Output on impedance	RON	I _o =±200mA	—	1	1.6	Ω

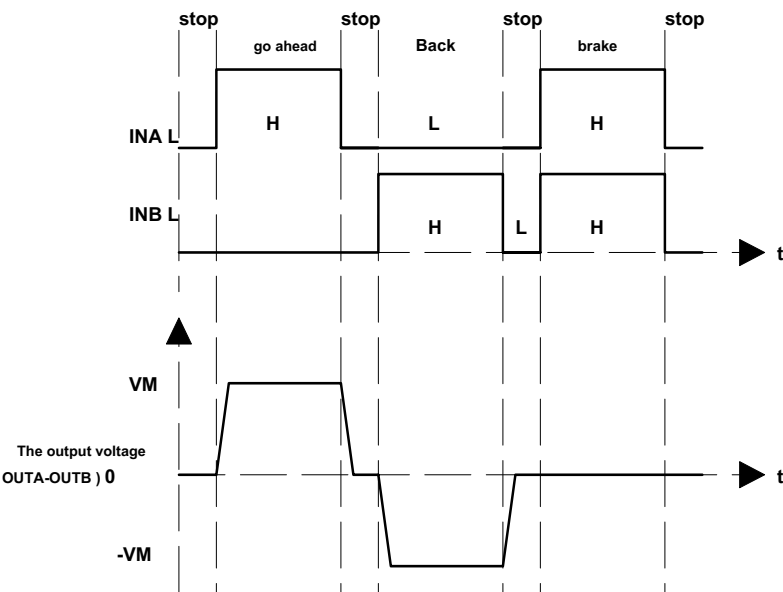
Seven, input/output logic table

enter		Output		the way
INA	INB	OUTA	OUTB	
L	L	Hi-Z	Hi-Z	Standby state
H	L	H	L	go ahead
L	H	L	H	Back
H	H	L	L	brake

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8. Input/output waveform



Nine, application reference circuit diagram

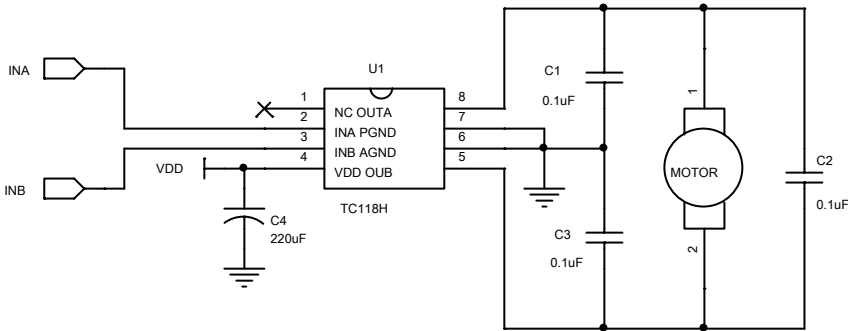


Figure 1 : Typical application scheme application circuit diagram

Note: 1 , Figure C2 (0.1uF) The capacitor is connected in parallel to the motor PCB On the board.

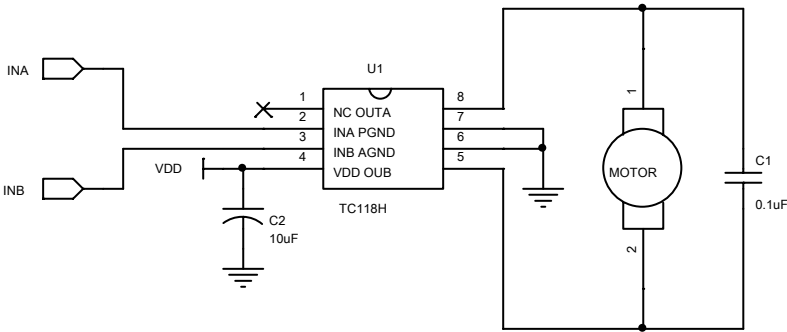


Figure 2 : Application circuit diagram of low voltage and low interference scheme

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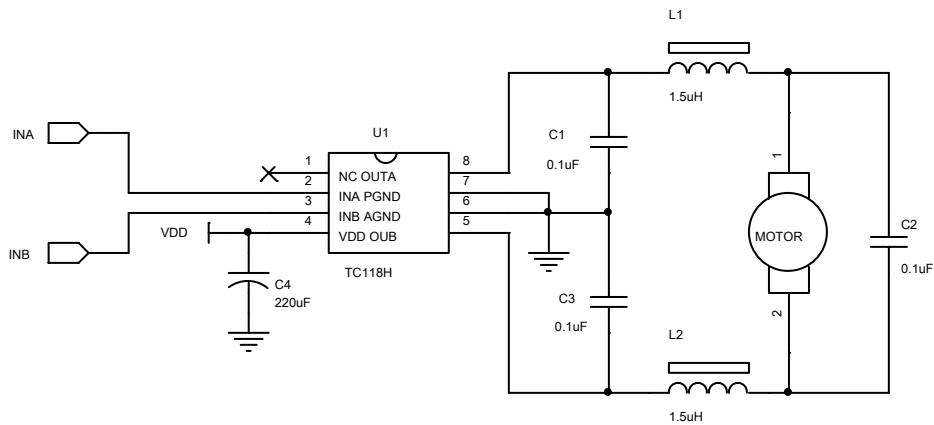


Figure 3 : Strong interference scheme application circuit diagram

Note: 1 , Figure C1 (0.1uF) The capacitor is connected in parallel to the motor PCB On the board.

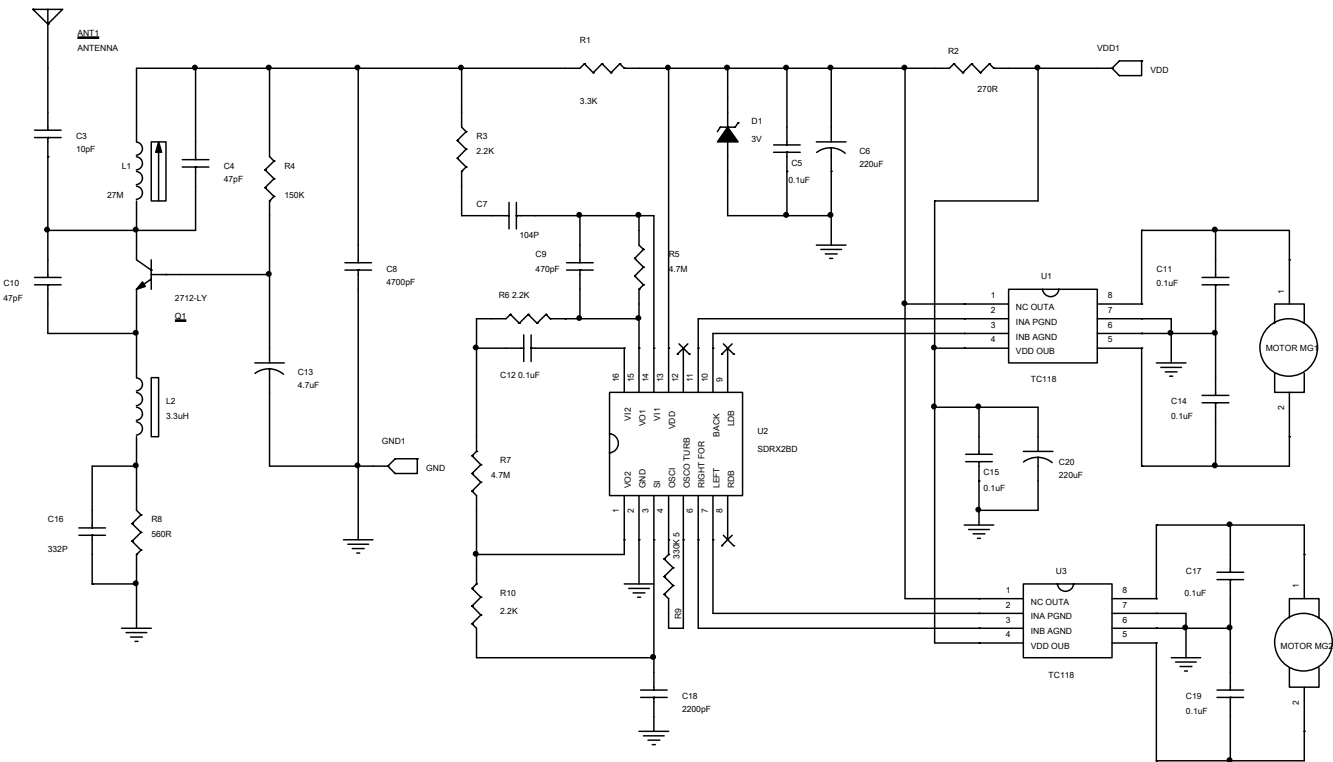


Figure 4 : Circuit schematic diagram of actual application scheme

10. Precautions for chip use

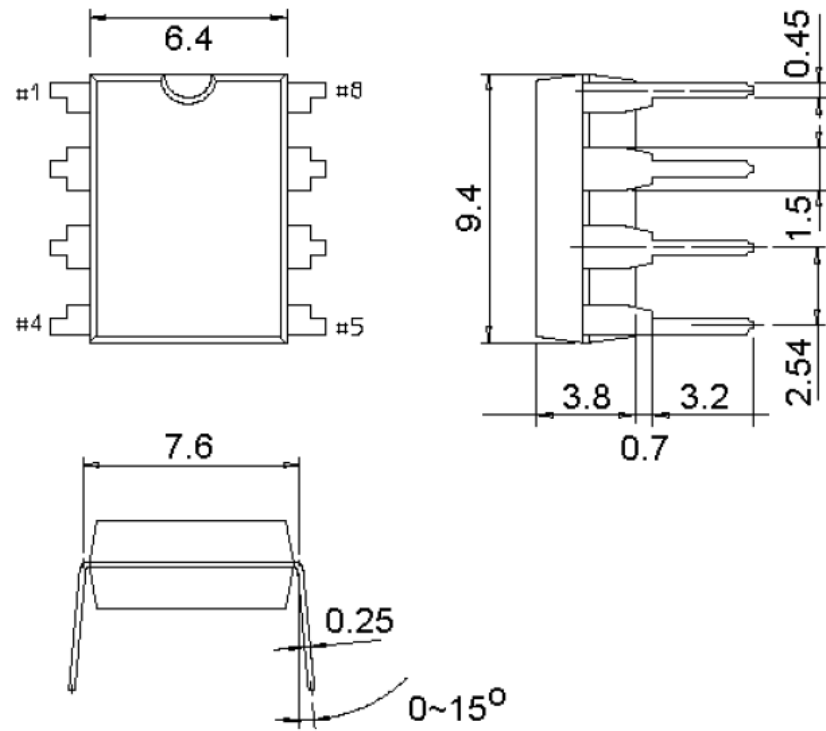
- 1 , The above recommended circuit and parameters are only applicable to ordinary remote control car toys, other toys and motor drives are in use TC118 Please make it according to the actual situation use.
- 2 、 Continuous current drive capability is affected by package form, VDD , VCC , Chip difference and ambient temperature, PCB The material and thickness are affected by factors such as The output parameters are for reference only. In actual use, please consider a certain margin according to the product.
- 3 , TC118 use MOS Process design and manufacture are sensitive to static electricity, and it is required to pay attention to anti-static in the whole process of packaging, transportation, processing and production Measures.
- 4 、 It is recommended not to exceed the current value at the moment the motor starts 2.5A .

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eleven, Package size chart

DIP-8



SOP-8

