

# TA7257P

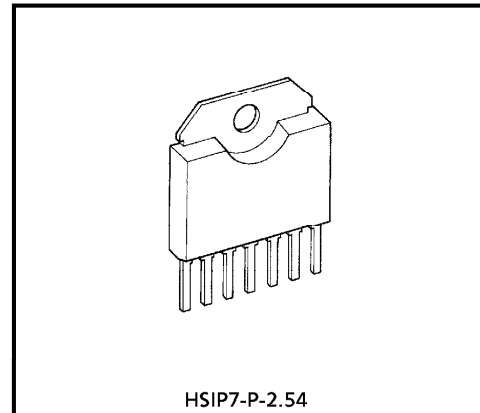
## BRIDGE DRIVER

The TA7257P is a Full Bridge Driver for blashed DC Motor Rotation control.

Forward Rotation, Reverse Rotation, Stop and Braking operations are available.

It's designed for Loading and Reel Motor driver for VTR and Tape Deck, and any other consumer and industrial applications.

TA7257P have Operation Supply Voltage terminal and Motor Driving Supply Voltage terminal independently therefore Servo control operation is applicable.

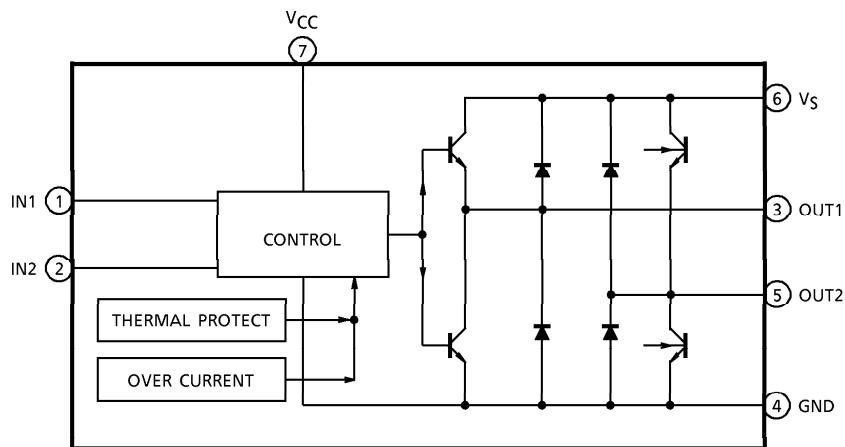


Weight : 1.88g (Typ.)

### FEATURES

- Output Current Up to 1.5A (AVE.), and 4.5A (PEAK).
- 4 Function Modes (CW, CCW, STOP and Brake) are Controlled by 2 Logic Signals Fed Into 2 Input Terminals.
- Build in Over Current Protector and Thermal Shut Down Circuit.
- Operating Voltage Range :  $V_{CC(opr.)} = 6\sim 18V$ ,  $V_S(opr.) = 0\sim 18V$

### BLOCK DIAGRAM



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**PIN FUNCTION**

PIN No.	SYMBOL	FUNCTIONAL DESCRIPTION
1	IN1	Input terminal
2	IN2	Input terminal
3	OUT1	Output terminal
4	GND	GND terminal
5	OUT2	Output terminal
6	V <sub>S</sub>	Supply voltage terminal for Motor drive
7	V <sub>CC</sub>	Supply voltage terminal for Logic

**FUNCTION**

IN1	IN2	OUT1	OUT2	MODE
1	1	L	L	Brake
0	1	L	H	CW / CCW
1	0	H	L	CCW / CW
0	0			Stop

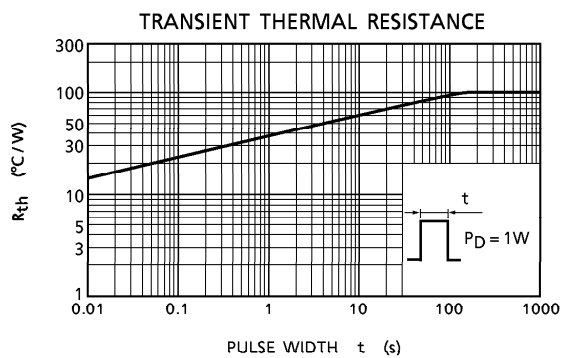
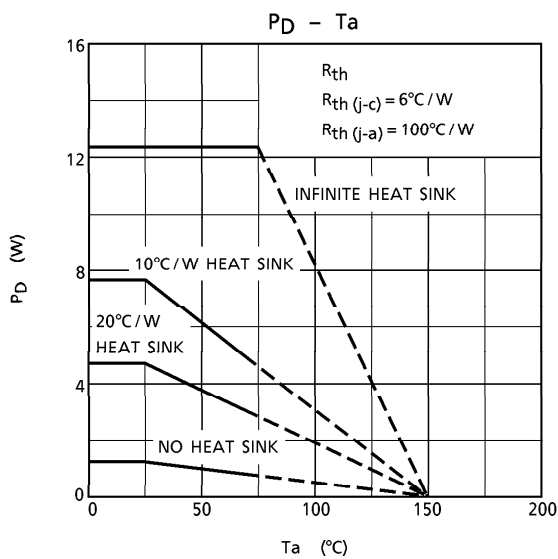
**MAXIMUM RATINGS (Ta = 25°C)**

CHARACTERISTIC		SYMBOL	RATING	UNIT
Peak Supply Voltage	Peak	V <sub>CC</sub> (MAX.)	25	V
	Operate	V <sub>CC</sub> (opr.)	18	
Output Current	PEAK	I <sub>O</sub> (PEAK)	4.5	A
	AVE.	I <sub>O</sub> (AVE.)	1.5	
Power Dissipation		P <sub>D</sub>	12.5 (Note)	W
Operating Temperature		T <sub>opr</sub>	- 30~75	°C
Storage Temperature		T <sub>stg</sub>	- 55~150	°C

(Note) T<sub>c</sub> = 75°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	I <sub>CC1</sub>	—	V <sub>CC</sub> = 18V Output OFF stop mode	—	6.5	13	mA
	I <sub>CC2</sub>	—	V <sub>CC</sub> = 18V Output OFF CW/CCW mode	—	10	20	
Saturation Voltage	Upper	V <sub>S1U</sub>	V <sub>CC</sub> = 18V, I <sub>O</sub> = 0.1A	—	0.7	1.0	V
	Lower	V <sub>S1L</sub>		—	0.6	0.9	
	Upper	V <sub>S2U</sub>	V <sub>CC</sub> = 18V, I <sub>O</sub> = 1.1A	—	1.0	1.4	
	Lower	V <sub>S2L</sub>		—	0.9	1.3	
Output Transistor Leakage Current	Upper	I <sub>L U</sub>	V <sub>S</sub> = 18V	—	—	100	μA
	Lower	I <sub>L L</sub>		—	—	100	
Input Voltage 1, 2	V <sub>IN (H)</sub>	—	T <sub>j</sub> = 25°C, pin① and pin②	3.0	—	—	V
	V <sub>IN (L)</sub>	—		—	—	0.8	
Diode Forward Voltage	V <sub>F U</sub>	—	I <sub>F</sub> = 1.0A	—	2.0	—	V
	V <sub>F L</sub>	—		—	1.25	—	
Limiting Current	I <sub>SC</sub>	—	—	—	3.5	—	A
Input Current	I <sub>IN</sub>	—	—	—	1	10	μA



**APPLICATION NOTE**

(1) Input circuit

Input circuit is shown in Fig.1. It's a "Low active" type voltage comparator that's one input connect to Input terminal (pin①, or ②) and the other to built-in temperature compensated voltage reference ( $V_{TH} = 1.4V$  Typ.)

If a voltage above  $V_{IN(H)}$  fed into the Input Terminal that means "Logic 1" and less than  $V_{IN(L)}$  or connect to GND means "Logic 0".

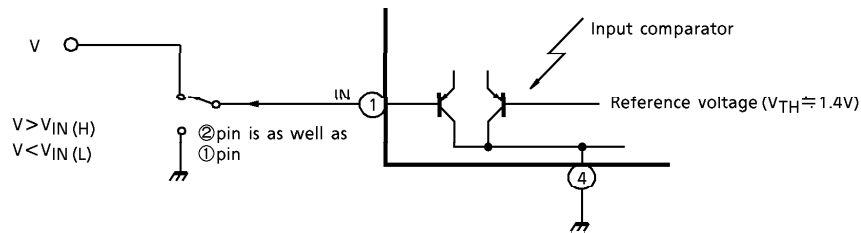


Fig.1

(2) Basic application circuit

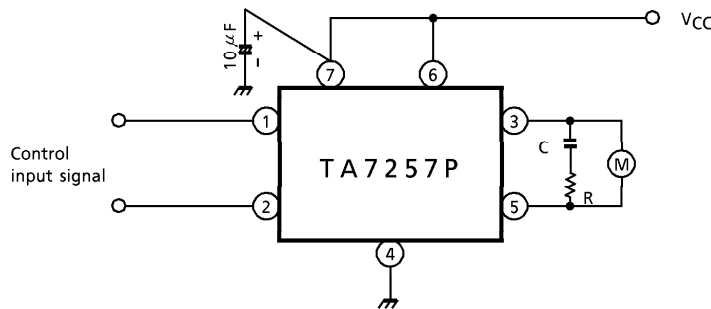


Fig.2

(Note) Fig.2 shows the basic application circuit. Optimum values of the C, R depend on the inherent constant of a motor and parasitic C, R values around the circuit. Normally, recommended to use  $0.1\mu F$  and  $33\Omega$ .

(3) Additional diode

- i) If the braking operation is so loose, connect a additional diode between each output to GND, (See Fig.3)
- ii) If the back electromotive pulse generated in output coil is so strong. Internally connected back electromotive suppression diode may be damaged by this pulse. In such a case connect a additional diode between each output to  $V_{CC}$ . (See Fig.4)

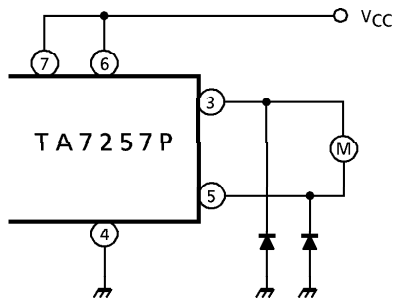


Fig.3

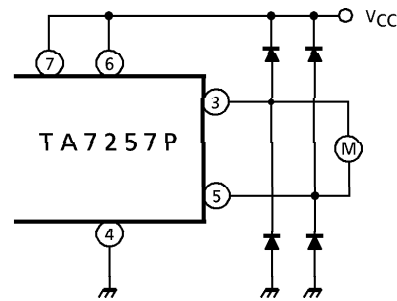
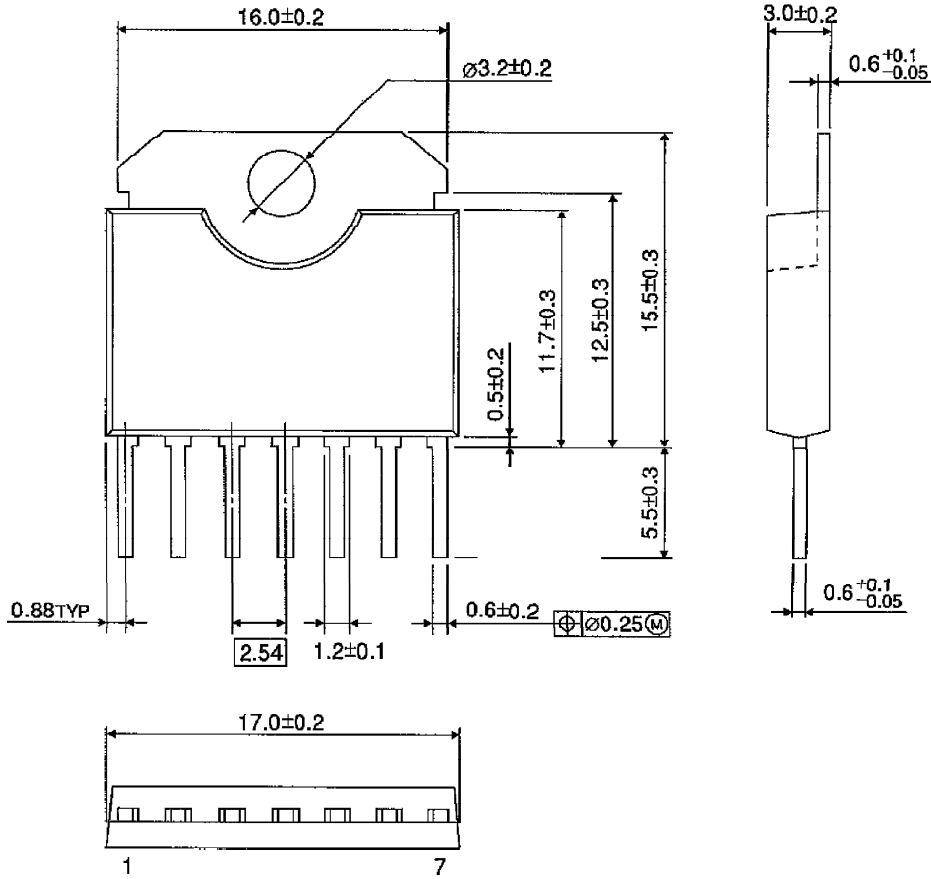


Fig.4

(Note) Utmost care is necessary in the design of the output line,  $V_S$  and GND line since IC may be destroyed due to short-circuit between outputs, air contamination fault, or fault by improper grounding.

OUTLINE DRAWING  
HSIP7-P-2.54

Unit : mm



Weight : 1.88g (Typ.)