

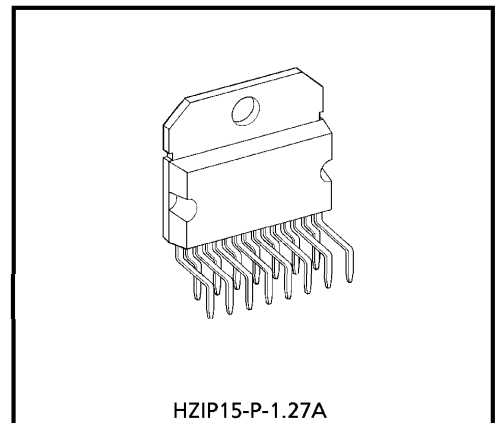
TA8082H

DUAL DC MOTOR DRIVER

The TA8082H contains two motor driver circuits with a current capacity of 1.5A for directly driving bidirectional DC motors. Inputs DI1A/B and DI2A/B are combined to select one of forward, reverse, stop, and brake modes. Since the inputs are TTL-compatible, this IC can be controlled directly from a CPU or other control system. In addition, the IC also has a low standby current function, a self-diagnostic function, and various protective functions.

FEATURES

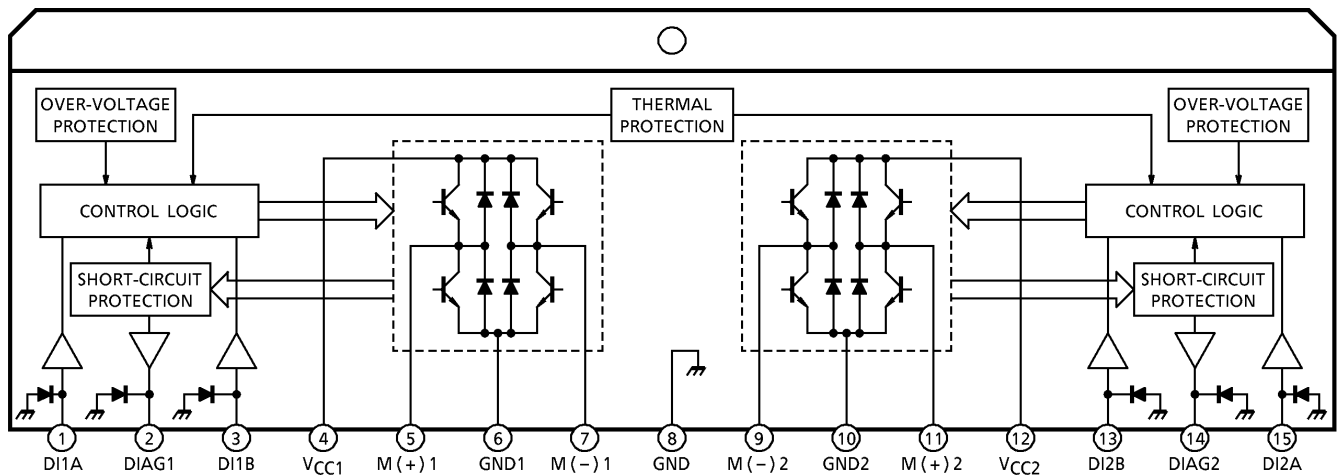
- 1.5A bidirectional DC motor driver
- Two circuits contained (power supply, self-diagnostic, and protective functions provided for each)
- Low standby current : 0.1mA (Max.)
- Self-diagnostic output
 - Short-circuit : 3A
 - Open : 10mA
- Multiple protective functions : Short-circuit, thermal-shutdown, over-voltage protection
- Built-in counter electromotive force absorption diodes.
- Plastic HZIP-15pin



HZIP15-P-1.27A

Weight : 5.7g (Typ.)

BLOCK DIAGRAM AND PIN LAYOUT



980910EBA2

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PIN DESCRIPTION

PIN No.		SYMBOL		DESCRIPTION
CH1	CH2	CH1	CH2	
1 3	15 13	DI1A DI1B	DI2A DI2B	Input pin. The signal from this pin controls the output state. (See TRUTH TABLE 1.)
2	14	DIAG1	DIAG2	Self-diagnosis output pin. (See TRUTH TABLE 2 and TIMING CHART.) This signal goes low when the output encounters over-current condition or is opened, whereas it goes high during normal operation or at the time of stop. This pin supplies an NPN open-collector output.
4	12	VCC1	VCC2	Power supply pin. This pin has a function to turn off the output when the applied voltage exceeds 32.5V, thus protecting the IC and the motor load.
5	11	M(+) ₁	M(+) ₂	Connects to the DC motor. Both the sink and the source have a current capacity of 1.5A. The circuit has a short-circuit protection function which protects the IC from load short-circuit, ground fault, or direct connection to high power. Diodes for absorbing counter electromotive force are contained on the VCC and GND sides.
6	10	GND1	GND2	Grounded pin for output section.
7	9	M(-) ₁	M(-) ₂	A motor is connected between this pin and M(+) ₁ pin. This pin has the function equivalent to that of M(+) ₁ pin, and is controlled by input to the DIA and DIB pins.
8		GND		Grounded.

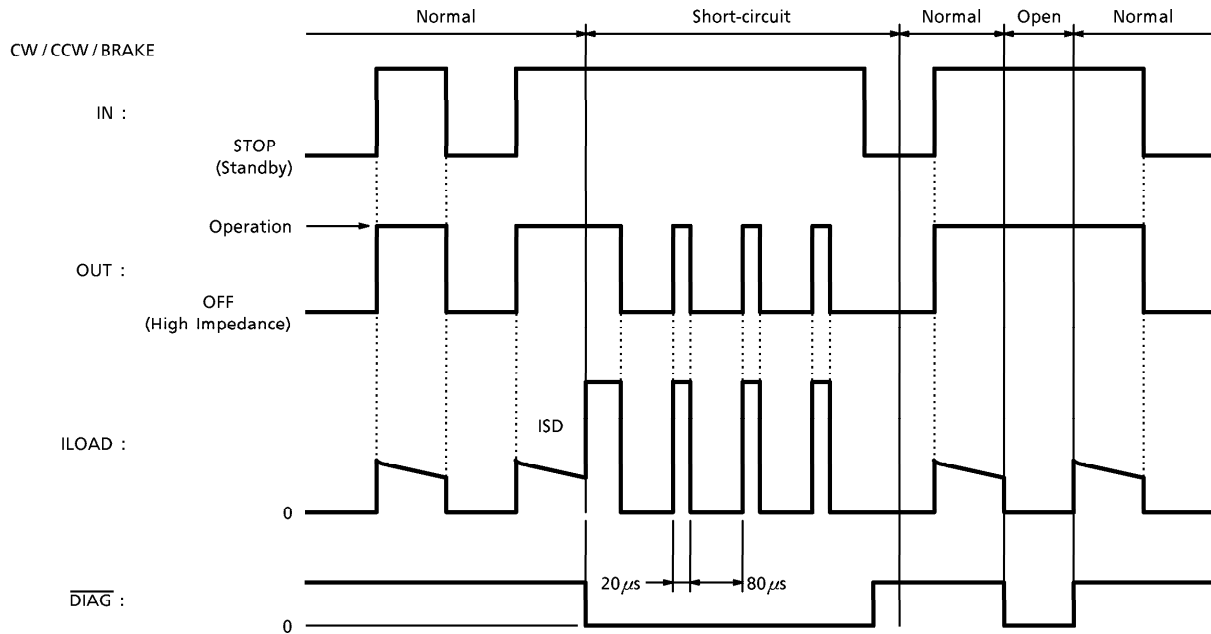
TRUTH TABLE 1 INPUT / OUTPUT

INPUT		OUTPUT		OPERATION MODE
DI1/2A	DI1/2B	M(+) _{1/2}	M(-) _{1/2}	
H	H	L	L	Brake
L	H	L	H	Reverse (CCW)
H	L	H	L	Forward (CW)
L	L	OFF (High impedance)		Stop (Standby)

TRUTH TABLE 2 SELF-DIAGNOSIS

INPUT		OUTPUT		DIAG
DI1/2A	DI1/2B	MODE	LOAD	
H	H	Brake	Normal	H
			Short	L
			Open	H
H/L	H/L	CCW/CW	Normal	H
			Short	L
			Open	L
L	L	Stop	—	H

SELF-DIAGNOSIS TIMING CHART



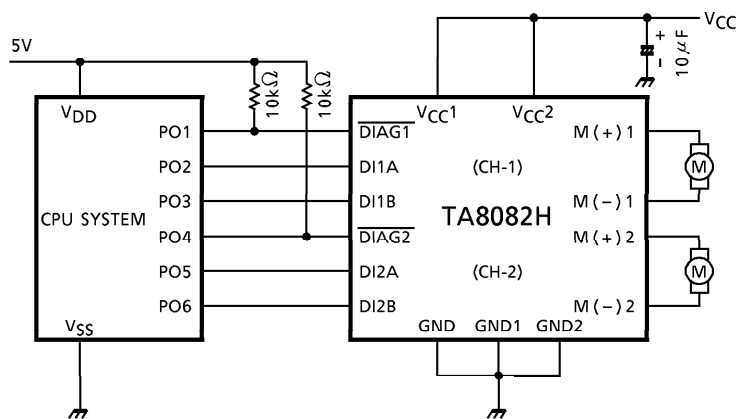
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Power Supply Voltage	V _{CC}	30	V
	V _{CC}	60 (1s)	
Input Voltage	V _{IN}	-0.3~V _{CC}	V
Output Current	I _{O AVE}	1.5	A
Power Dissipation	P _D	25	W
Operating Temperature	T _{opr}	-40~110	°C
Storage Temperature	T _{stg}	-55~150	°C
Lead Temperature·time	T _{sol}	260 (10s)	°C

ELECTRICAL CHARACTERISTICS ($V_{CC} = 6 \sim 16V$, $T_c = -40 \sim 110^\circ C$)

CHARACTERISTIC	SYMBOL	PIN	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Power Supply Current	I_{CC1}	V_{CC1}/V_{CC2}	—	CH1 / 2 Stop	—	—	0.1	mA	
	I_{CC2}		—	CH1 or 2 CW / CCW	—	20	40		
	I_{CC3}		—	CH1 / 2 CW / CCW	—	40	80		
	I_{CC4}		—	CH1 / 2 Brake	—	16	30		
Input Voltage	V_{IL}	DI1A / B DI2A / B	—	—	—	—	0.8	V	
	V_{IH}		—	—	2.0	—	—		
Input Current	I_{IL}		—	$V_{IN} = 0.4V$	—	10	20	μA	
	I_{IH}		—	$V_{IN} = V_{CC}$	—	140	300		
Output Saturation Voltage	V_{sat} (total)	1M (+) / (-) / 2M (+) / (-)	—	$I_O = 1.5A$, $T_c = 25^\circ C$	—	2.2	2.9	V	
			—	$I_O = 1.5A$, $T_c = 110^\circ C$	—	2.2	2.8		
Output Leakage Current	$I_{LEAK.U}$		—	$V_{OUT} = 0V$	—	—	-10	μA	
	$I_{LEAK.L}$		—	$V_{OUT} = V_{CC}$	—	—	10		
Diode Forward Voltage	$V_{F.U}$		—	$I_F = 1.5A$	—	2.6	—	V	
	$V_{F.L}$		—		—	1.5	—		
Output Voltage	V_{OUT}		DIAG1 / 2	—	$I_{OL} = 3mA$	—	0.2	0.5	V
Output Leakage Current	I_{LEAK}			—	$V_{OUT} = V_{CC}$	—	—	5	μA
Over-current Detection	I_{SD}	—	—	—	2	3	4	A	
Load-open Detection	I_{OS}	—	—	—	5	10	20	mA	
Shutdown Temperature	T_{SD}	—	—	—	—	150	—	$^\circ C$	
Over-voltage Detection	V_{SD}	—	—	—	30	32.5	35	V	
Thermal Resistance	$R\theta_{j-c}$	—	—	—	—	4	—	$^\circ C/W$	
Transfer Delay Time	t_{pLH}	—	—	—	—	1	10	μs	
	t_{pHL}	—	—	—	—	1	10		

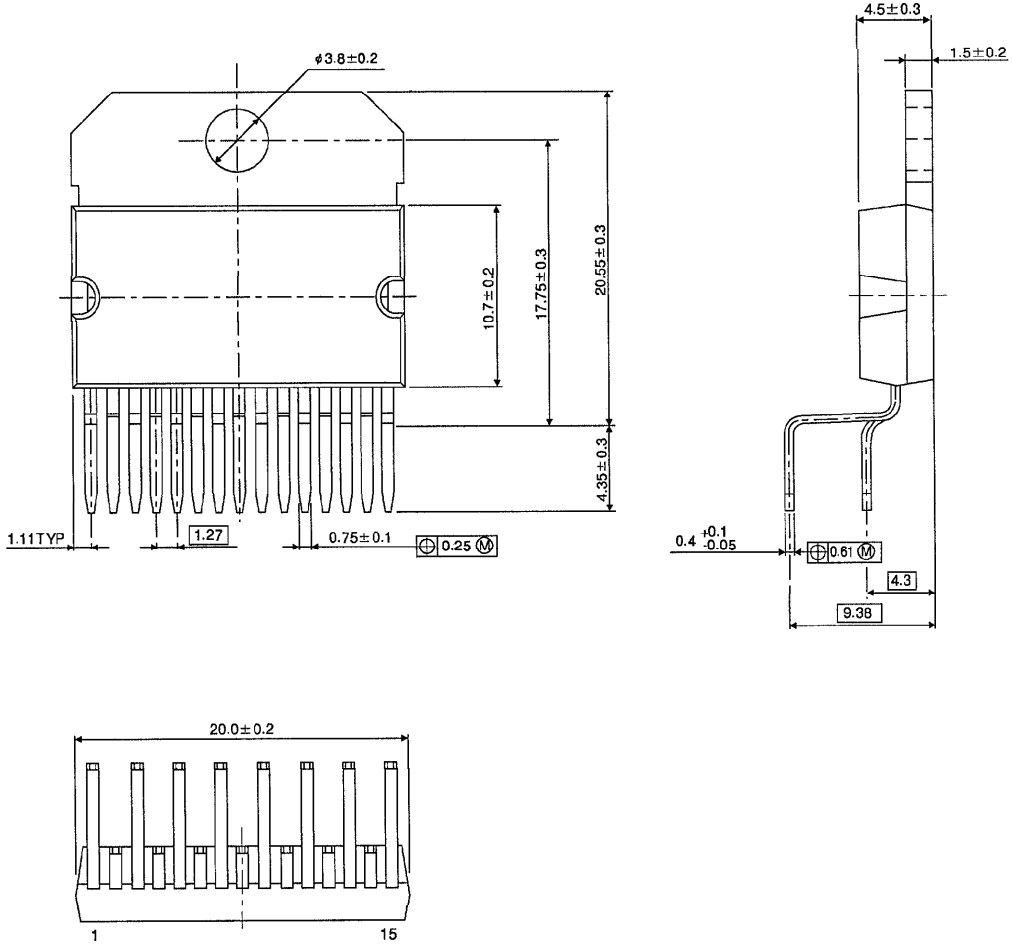
EXAMPLE OF APPLICATION CIRCUIT



- (*) Cautions for wirings
 C₁ is for absorbing disturbance, noise, etc. Connect it as close to the IC as possible.

OUTLINE DRAWING
HZIP15-P-1.27A

Unit : mm



Weight : 5.7g (Typ.)