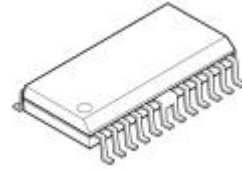


## DUAL H BRIDGE DRIVER

### GENERAL DESCRIPTION

The NJW4371 is a general purpose dual H Bridge driver IC. It consists of a pair of Nch DMOS H bridges, gate driving charge pump circuit, thermal shut down and UVLO circuit. Each H bridge can individually be controlled with TTL/CMOS compatible signal. Therefore, it is applicable for a wide range of applications such as driving a two phase stepping motor, two DC brushless motors, solenoids, lamps and other high voltage switching needs using micro controller.

### PACKAGE OUTLINE

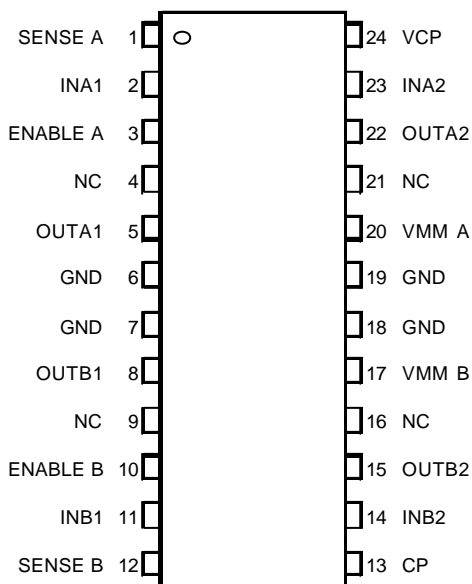


**NJW4371E3**

### FEATURES

- Wide Voltage Range  $V_{MM}=10$  to  $27V$
- Low ON Resistance  $R_{ON}=1.65\Omega$  typ. @ $I_o=\pm 1000mA$
- Low Quiescent Current  $I_{MM}=10mA$  typ.
- PWM Control Available
- Under Voltage Lock Out (UVLO)
- Thermal Shutdown Circuit
- BCD Process Technology
- Package Outline EMP24

### PIN CONFIGURATIONS



### ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	RATINGS	SYMBOL (unit)	NOTE
Maximum supply voltage	31	V <sub>S</sub> (V)	
Charge pump output voltage	40	V <sub>CP</sub> (V)	
Output current	0.8	I <sub>O</sub> (A)	
Output current (peak)	1.5	I <sub>O</sub> (A)	
Operating temperature	-40 ~ +85	T <sub>opr</sub> (°C)	
Storage temperature	-50 ~ +150	T <sub>stg</sub> (°C)	
Total power dissipation (EMP)	5.0	P <sub>D</sub> (W)	T <sub>GND</sub> =25°C
	2.0		T <sub>GND</sub> =125°C

### OPERATING CONDITIONS

(Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply voltage	V <sub>MM</sub>		10	-	27	V
Junction temperature range	T <sub>j</sub>		-40	-	125	°C
Output current	I <sub>O</sub>		-	-	0.7	A

### ELECTRICAL CHARACTERISTICS

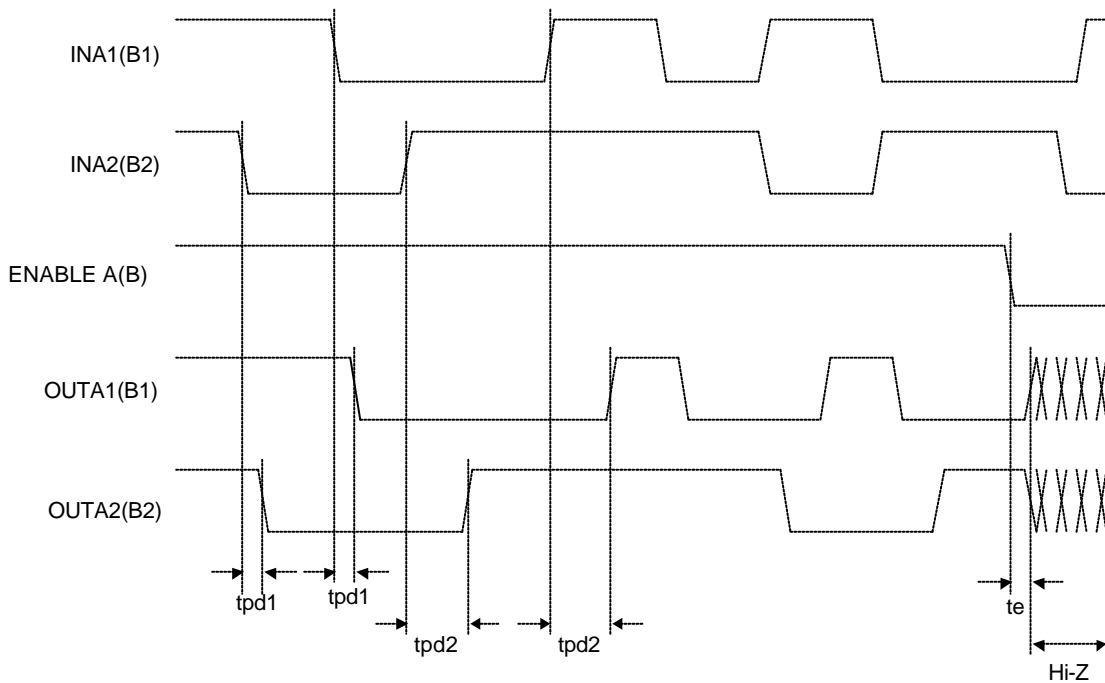
(V<sub>MM</sub>=24V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
<b>□ GENERAL</b>						
Quiescent current	I <sub>MM</sub>	INA1=INB1=H, INA2=INB2=L	-	10	15	mA
Under voltage lockout	UVLO		6.3	6.8	7.3	V
Hysteresis voltage	dUVLO		0.25	0.35	0.45	V
Thermal shutdown	T <sub>SD</sub>		-	180	-	°C
Thermal shutdown hysteresis	T <sub>HYS</sub>		-	50	-	°C
<b>□ LOGIC</b>						
Input high voltage	V <sub>IH</sub>		2	-	-	V
Input low voltage	V <sub>IL</sub>		-	-	0.8	V
H level Input current	I <sub>IH</sub>	V <sub>i</sub> =2.0V	-	-	1	μA
L level input current	I <sub>IL</sub>	V <sub>i</sub> =0.8V	-1	-	-	μA
<b>□ CHARGE PUMP</b>						
CP output voltage	V <sub>CP</sub>	C <sub>CP</sub> =10nF, C <sub>vc</sub> =100nF	-	V <sub>MM</sub> +8	-	V
Oscillation frequency	f <sub>osc</sub>	C <sub>CP</sub> =10nF, C <sub>vc</sub> =100nF	-	500	-	kHz
<b>□ OUTPUT</b>						
Output ON resistance	R <sub>ONH</sub>	I <sub>O</sub> = +1000mA	-	0.85	1.35	Ω
	R <sub>ONL</sub>	I <sub>O</sub> = -1000mA	-	0.80	1.30	
Leak current	I <sub>Leak</sub>	ENABLE=L	-	-	0.5	mA
Dead recovery time	t <sub>d</sub>		-	500	-	ns
Delay time	t <sub>pd</sub>		-	200	-	ns

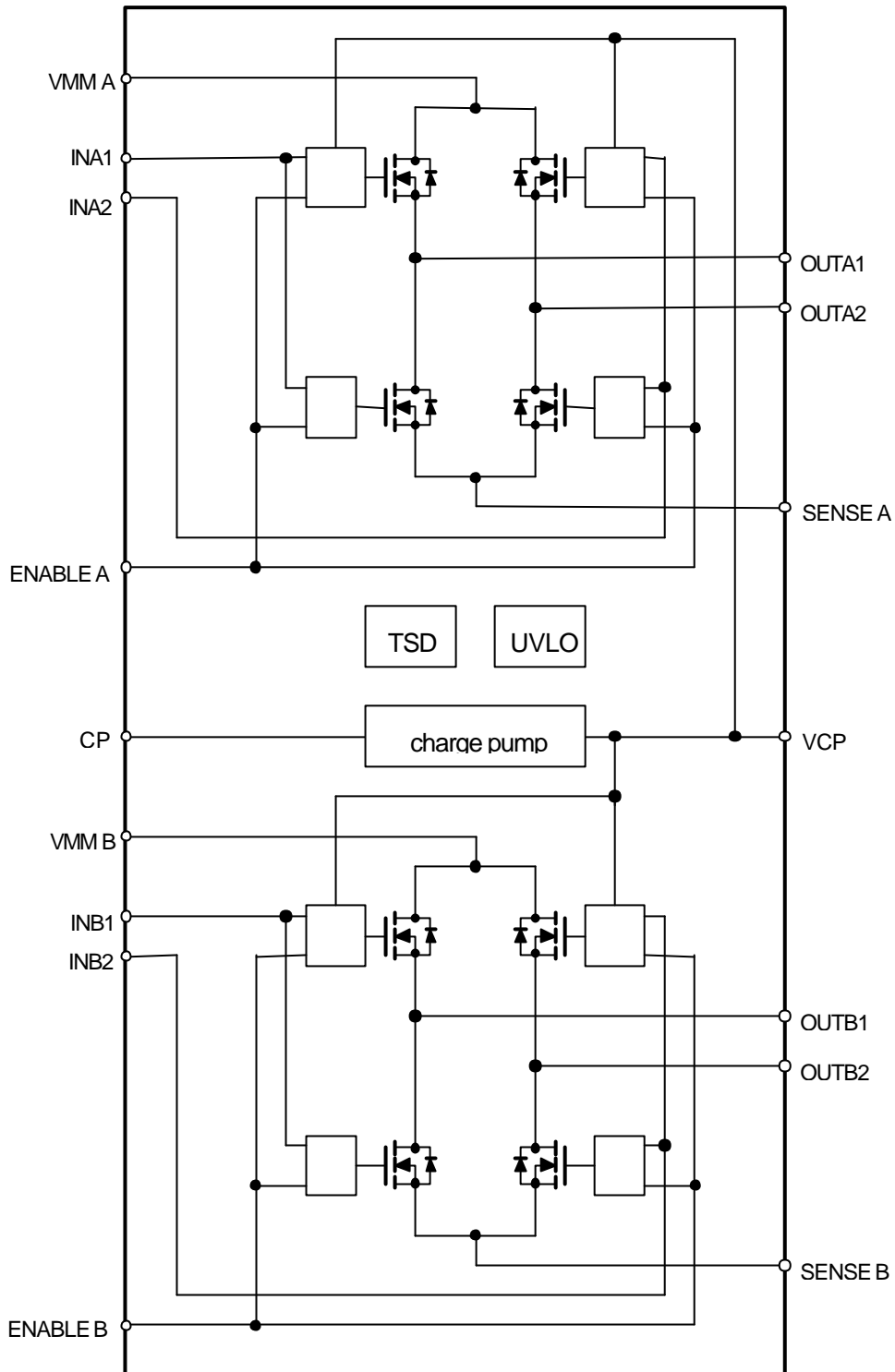
## TRUTHTABLE

INPUT (L=Low,H=High,X=Don't care)			OUTPUT (H=Source,L=Sink)		OUTPUT mode
ENABLE A=H ENABLE B=H	INA1 INB1	INA2 INB2	OUTA1 OUTB1	OUTA2 OUTB2	
	L	L	L	L	short break 1
	L	H	L	H	CW
	H	L	H	L	CCW
	H	H	H	H	short break 2
ENABLE A=L ENABLE B=L	X	X	All Transistor turend OFF		

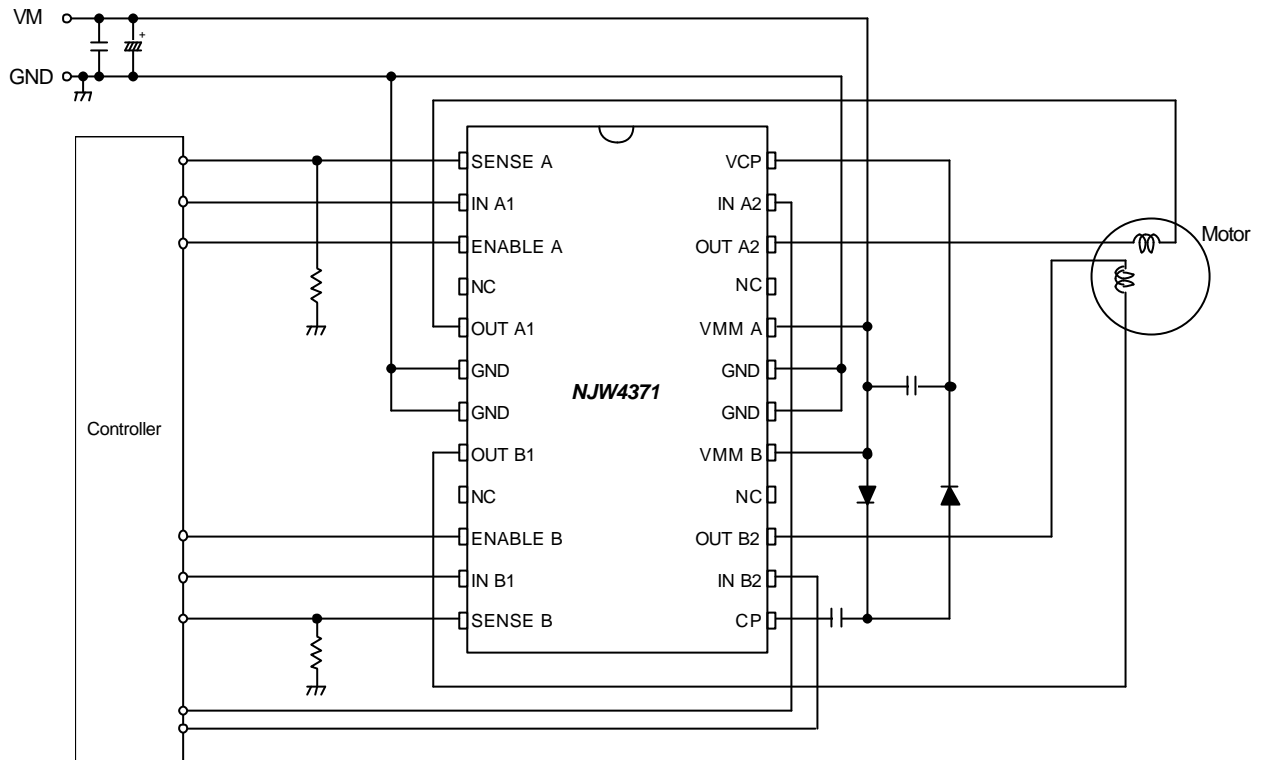
## TIMING CONDITION



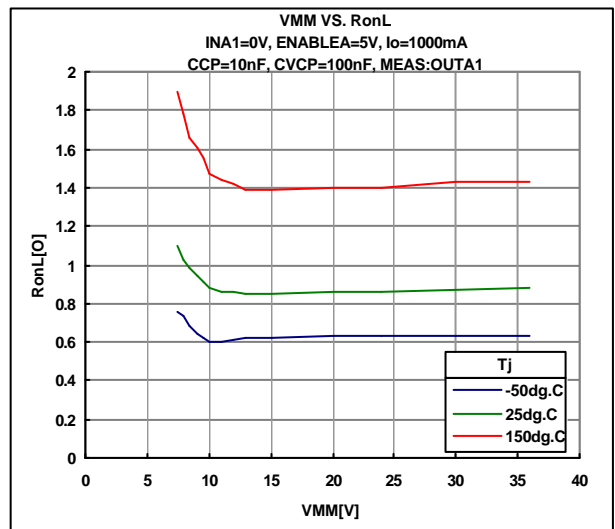
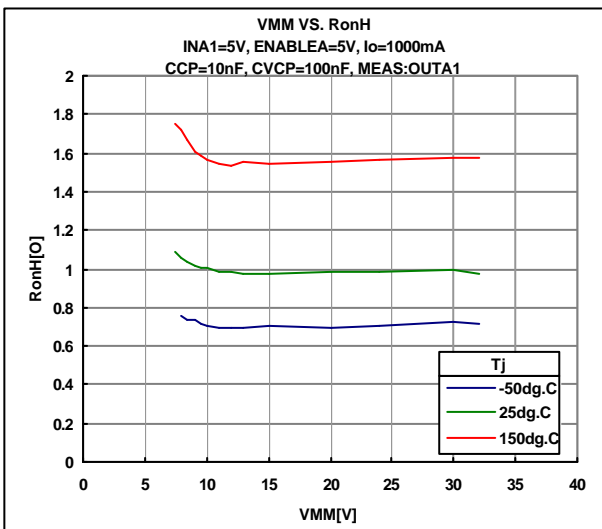
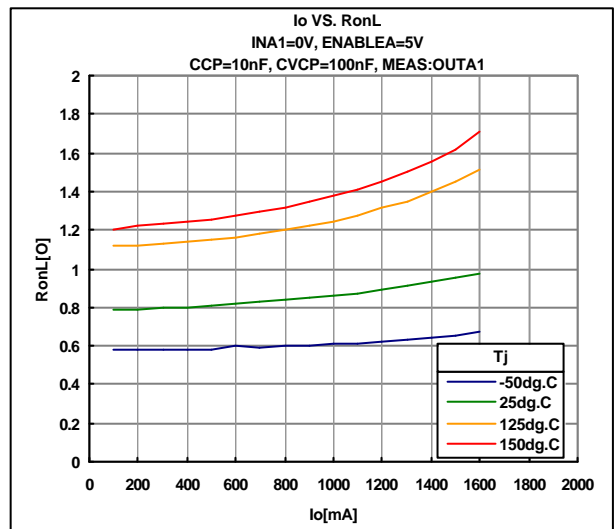
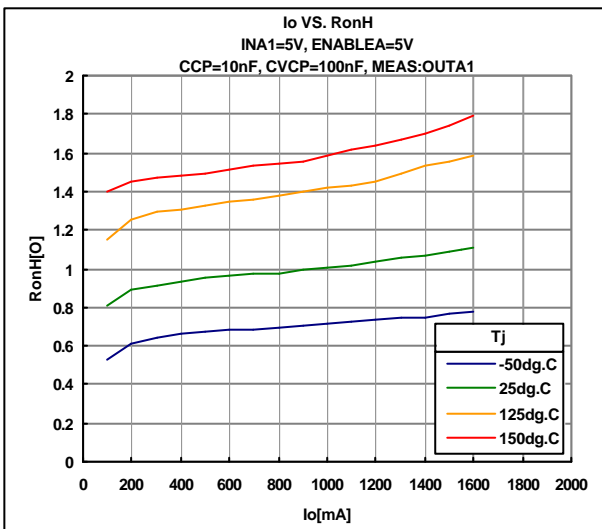
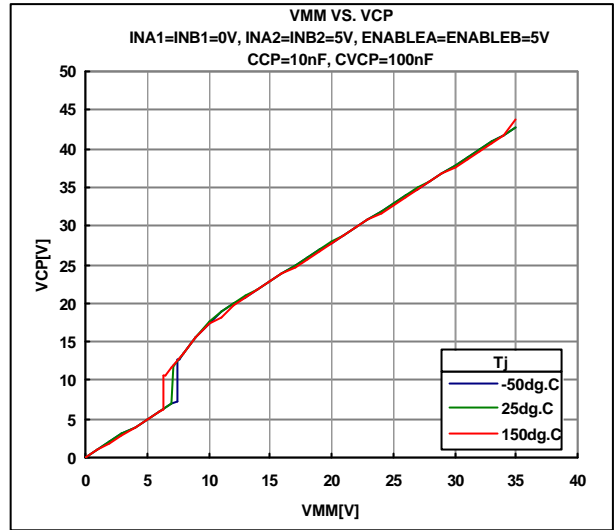
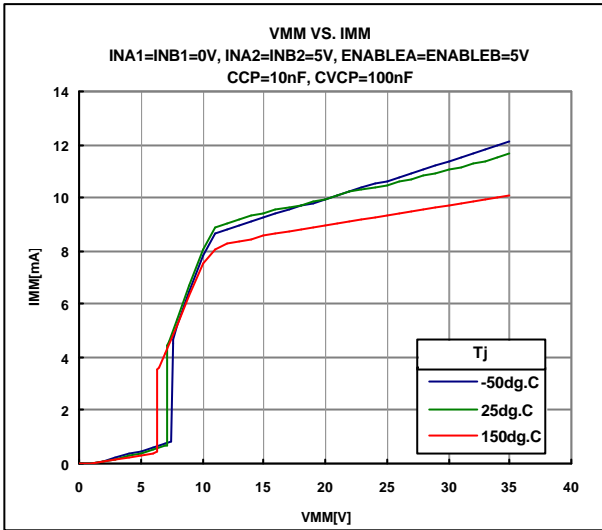
## BLOCK DIAGLAM



## APPLICATION CIRCUIT



## TYPICAL CHARACTERISTICS



**[CAUTION]**

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