

DUAL H BRIDGE DRIVER

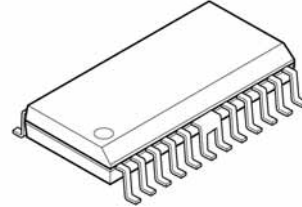
■ GENERAL DESCRIPTION

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

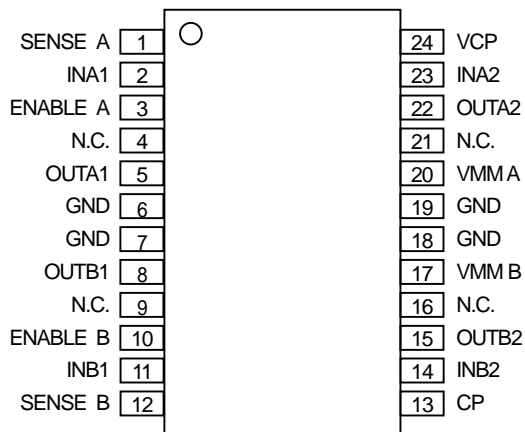


NJW4371E3
(SOP24-E3)

■ 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 SOP24-E3 JEDEC 300mil

■ PIN CONFIGURATIONS



SOP24-E3

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	RATINGS	SYMBOL (unit)	NOTE
Maximum supply voltage	31	V _S (V)	
Charge pump output voltage	40	V _{CP} (V)	
Output current	0.8	I _O (A)	
Output current (peak)	1.5	I _O (A)	
Operating temperature	-40 ~ +85	T _{opr} (°C)	
Storage temperature	-50 ~ +150	T _{stg} (°C)	
Total power dissipation (SOP)	5.0	P _D (W)	T _{GND} =25°C
	2.0		T _{GND} =125°C

■ OPERATING CONDITIONS

(Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply voltage	V _{MM}		10	-	27	V
Junction temperature range	T _j		-40	-	125	°C
Output current	I _O		-	-	0.7	A

■ ELECTRICAL CHARACTERISTICS

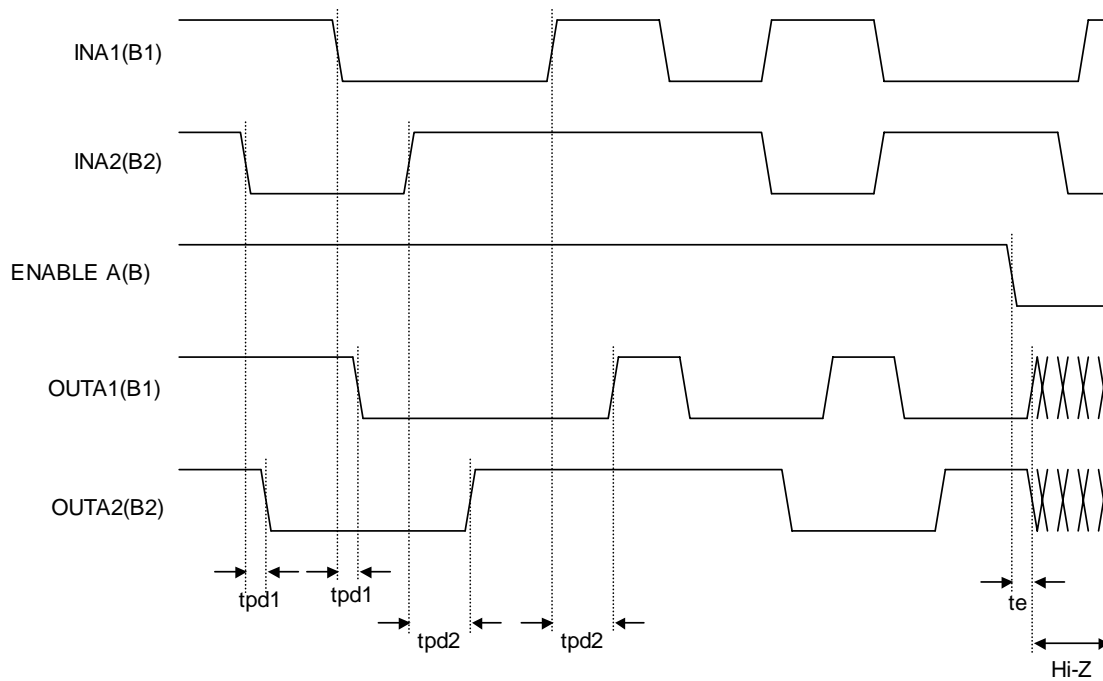
(V_{MM}=24V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
■ GENERAL						
Quiescent current	I _{MM}	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 _{SD}		-	180	-	°C
Thermal shutdown hysteresis	T _{HYS}		-	50	-	°C
■ LOGIC						
Input high voltage	V _{IH}		2	-	-	V
Input low voltage	V _{IL}		-	-	0.8	V
H level Input current	I _{IH}	V _i =2.0V	-	-	1	μA
L level input current	I _{IL}	V _i =0.8V	-1	-	-	μA
■ CHARGE PUMP						
CP output voltage	V _{CP}	C _{CP} =10nF, C _{vcp} =100nF	-	V _{MM} +8	-	V
Oscillation frequency	f _{osc}	C _{CP} =10nF, C _{vcp} =100nF	-	500	-	kHz
■ OUTPUT						
Output ON resistance	R _{ONH}	I _O = +1000mA	-	0.85	1.35	Ω
	R _{ONL}	I _O = -1000mA	-	0.80	1.30	
Leak current	I _{Leak}	ENABLE=L	-	-	0.5	mA
Dead recovery time	t _d		-	500	-	ns
Delay time	t _{pd}		-	200	-	ns

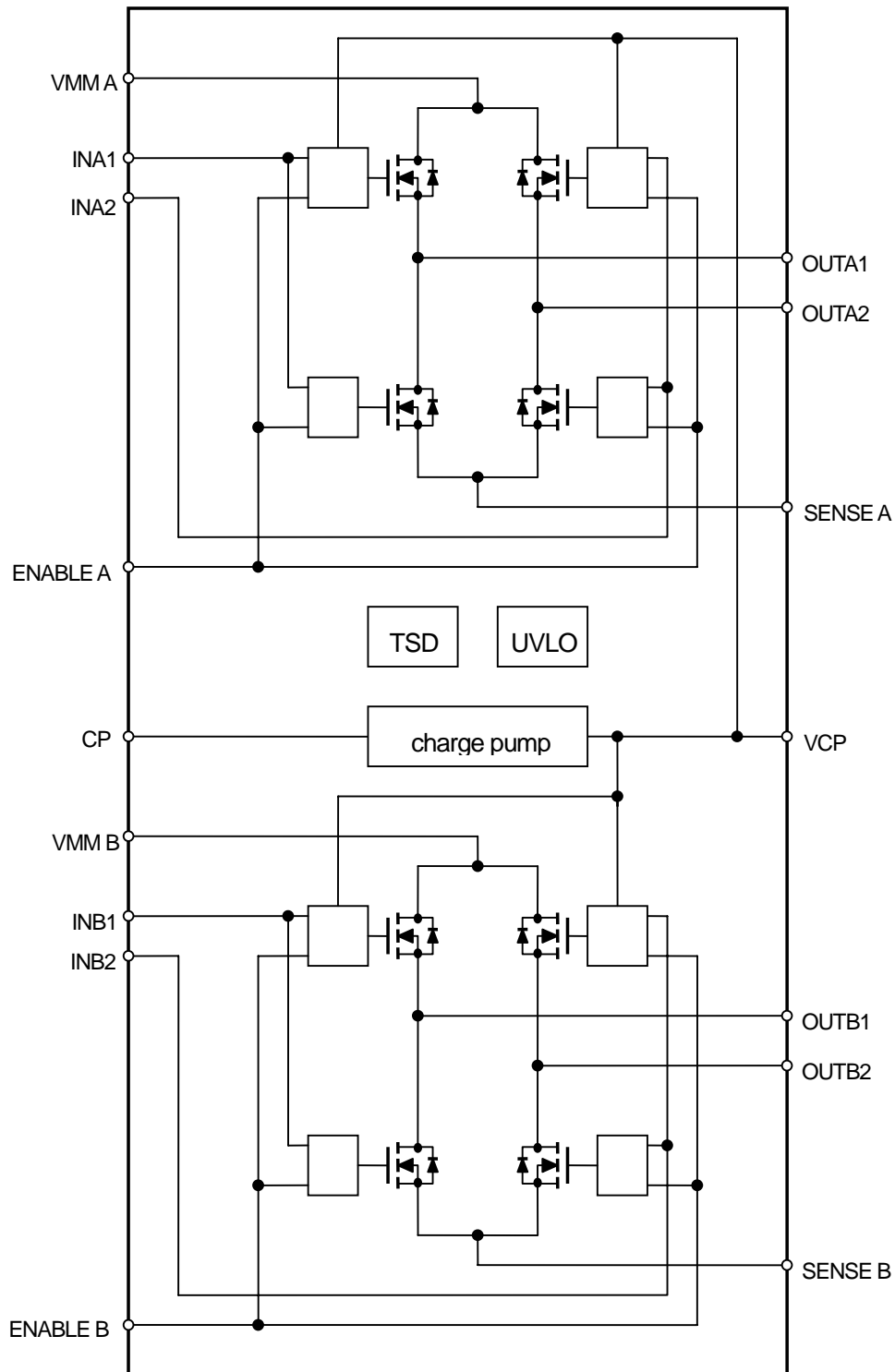
TRUTH TABLE

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 Brake 1
	L	H	L	H	CW
	H	L	H	L	CCW
	H	H	H	H	Short Brake 2
ENABLE A=L ENABLE B=L	X	X	All Transistor turend OFF		

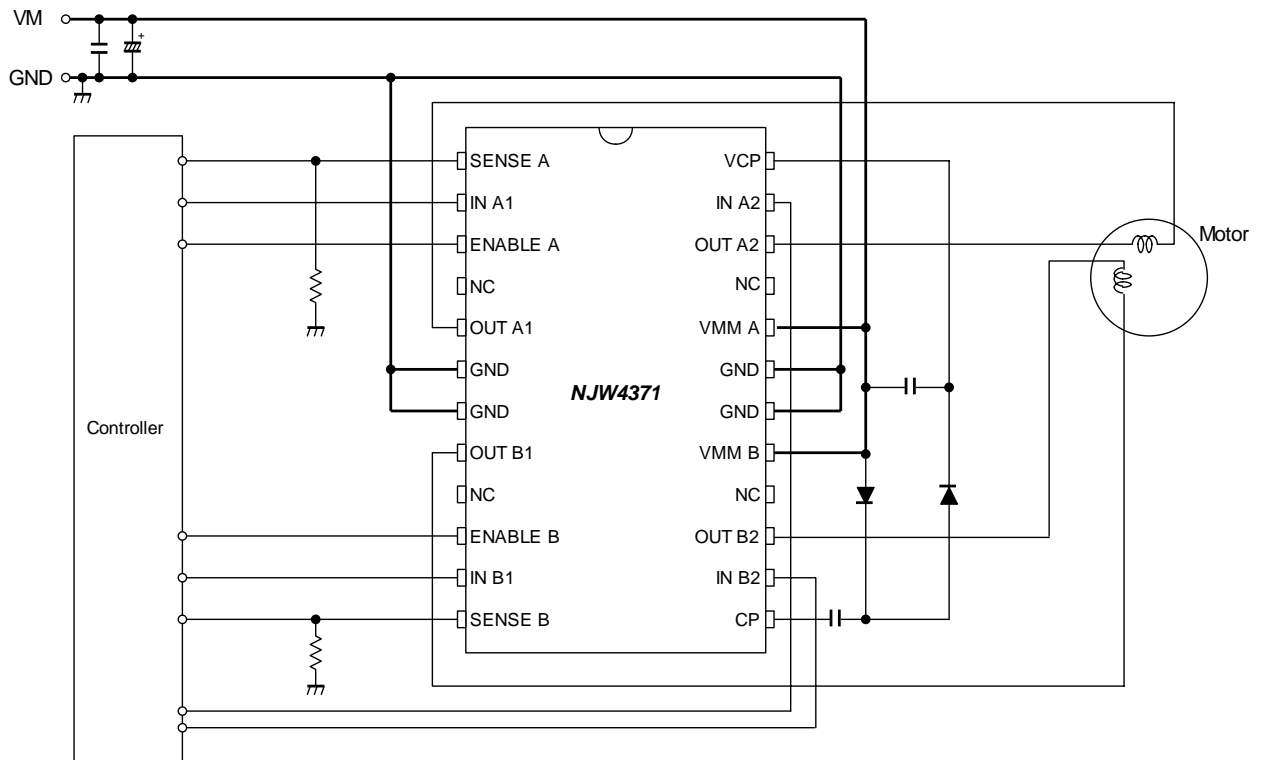
TIMING CONDITION



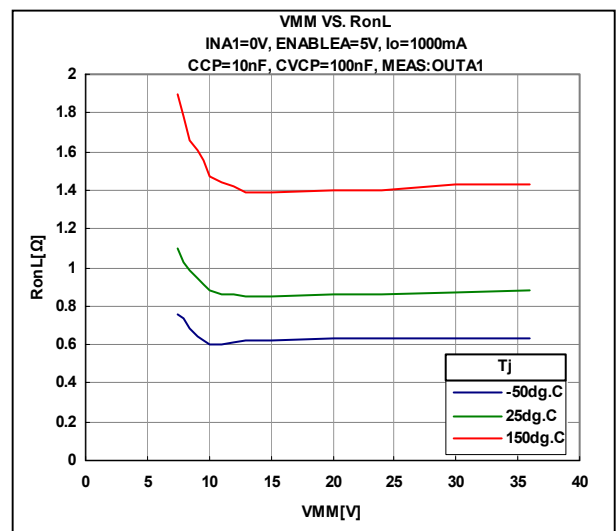
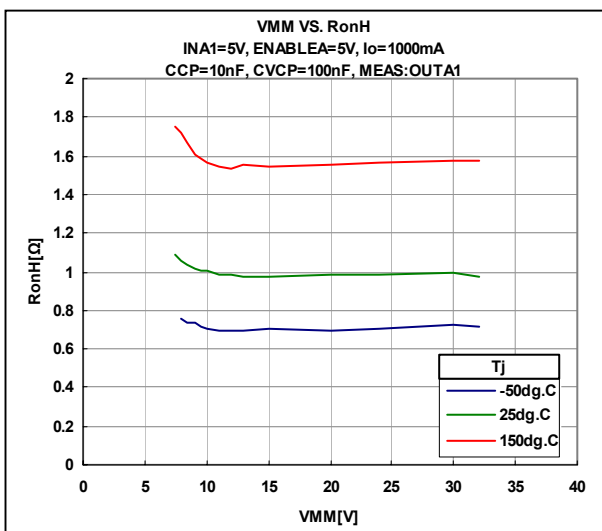
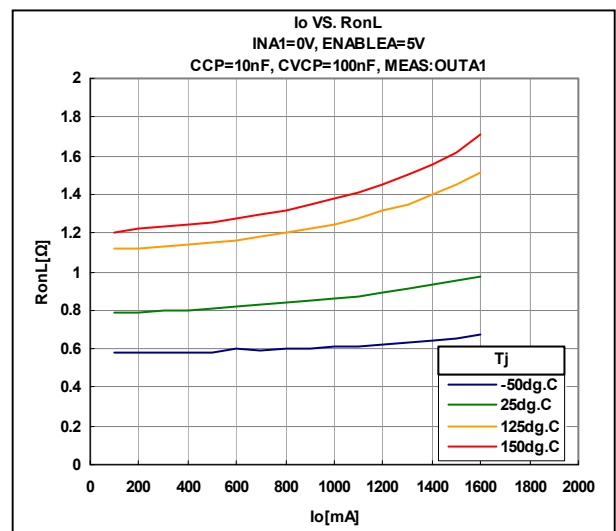
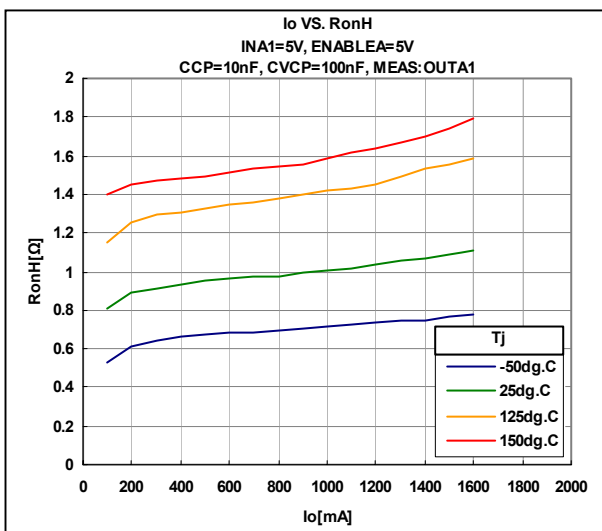
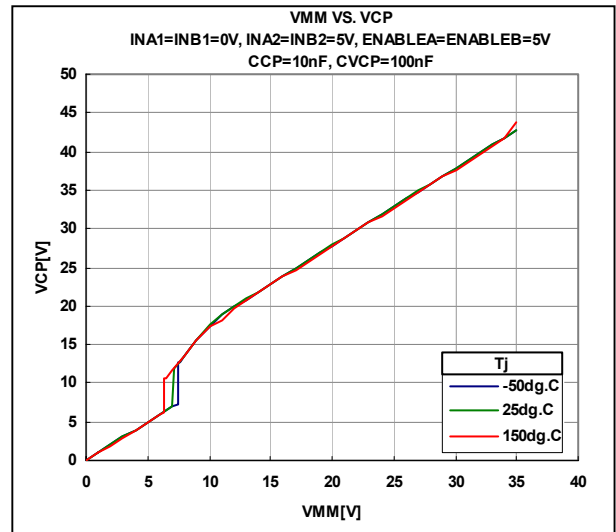
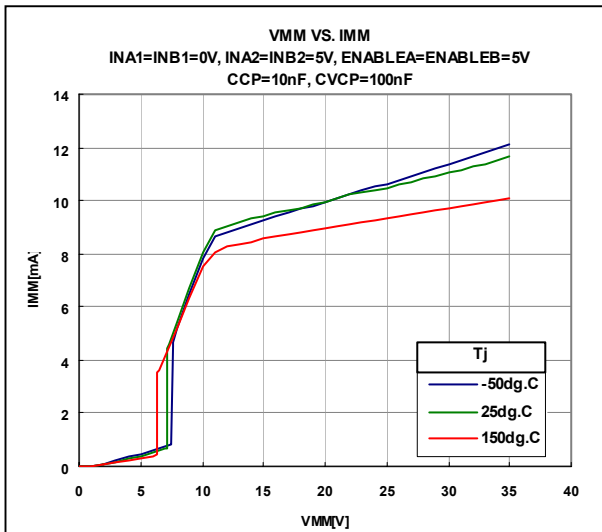
■ BLOCK DIAGLAM



APPLICATION CIRCUIT



■ TYPICAL CHARACTERISTICS



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