■ Introduction

The WD8837LA is an H-bridge motor driver used for driving reversible motors, which can drive one DC motor, one winding of a stepper motor, or other loads.

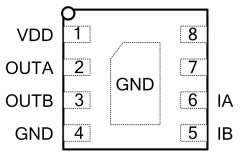
The WD8837LA operates on a motor power supply voltage from 2.7V to 6V, which can supply an output current of up to 0.8A according to the logic control.

The WD8837LA is controlled by two input pins. The two on/off inputs determine the output mode: forward, reverse, coast, or brake. Very low standby circuit current can be achieved when the two inputs are both at a low level.

The WD8837LA is available with DFN2x2-8 package.

■ Features

- Wide Power Range: 2.7V to 6V
- 0.8A Maximum Continuous Output
- Above 3A peak current ability
- Low MOSFET On Resistance: Rhs=0.3Ω, Rls=0.15Ω
- Forward, Reverse, Coast, or Brake Output Modes
- Suitable for wide range MCU control logic
- Input logic hysteresis
- Thermal Shutdown



DFN2x2-8 Top View

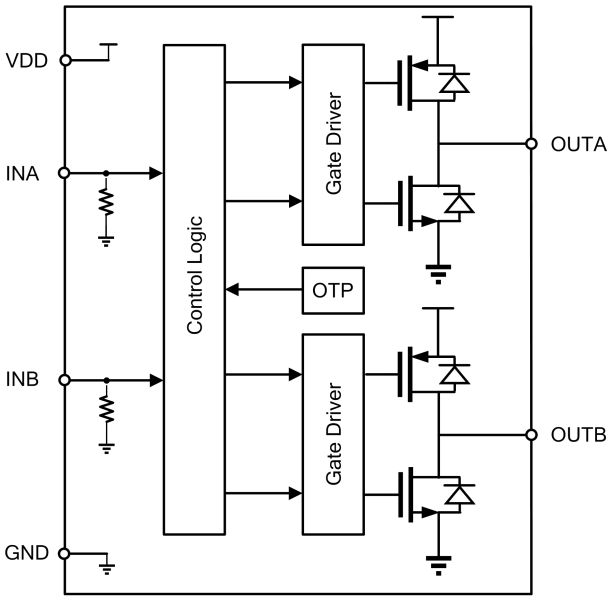
■ APPLICATIONS

- Smart Breaker
- Smart Lock
- Smart Water/Gas Meter
- Toys

■ Order Information

Part No.	Package	Tape/Reel	Mark*
WD8837LA	DFN2x2-8	4000/Reel	WD8837LA

■ Simplified Block Diagram



■ Pin Description

DFN2x2-8	Symbol	Description
2	OUTA	Output, Connect this pin to the motor winding.
1	VDD	High Voltage Supply voltage. A decap capacitor is required to prevent large voltage spikes.
3	OUTB	Output, Connect this pin to the motor winding.
4,9	GND	Thermal PAD is also GND.
6	INA	Logic input, with a large internal pull-down resistor.
5	INB	Logic input, with a large internal pull-down resistor.

■ Input Logic Truth Table

INA	INB	OUTA	OUTB	Function (DC Motor)
L	L	Hi-Z	Hi-Z	Coast or Standby
L	H	L	H	Reverse
H	L	H	L	Forward
H	H	L	L	Brake

■ Absolute Maximum Ratings

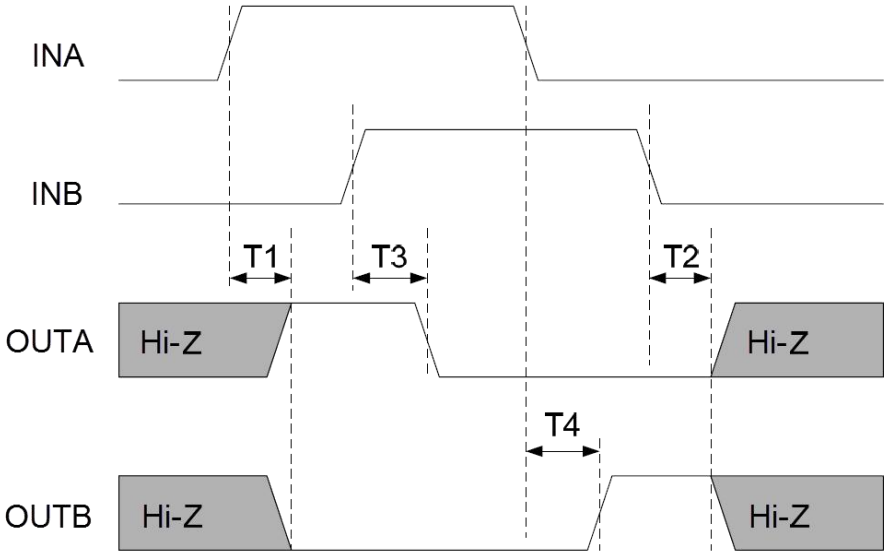
Symbol	Parameter	Value	Unit
V_{VDD}	VDD Supply Voltage Range	-0.4 ~ +7	V
V_{OUTx}	Output Pins Voltage Range	V_{IN}	V
V_{INx}	Input Pins Voltage Range	GND-0.4 ~ +7	V
T_J	Maximum Junction Temperature	150	℃
T_{STG}	Storage Temperature Range	-55~160	℃
θ_{JA}*	Package Thermal Resistance (Ambient to Junction)	DFN2x2-8 140	℃/W
$V_{ESD\ (HBM)}$	Electrostatic Discharge Voltage (HBM)	4000	V

*Note: There is 8 cm2 copper foil on PCB.

■ Electrical Characteristics

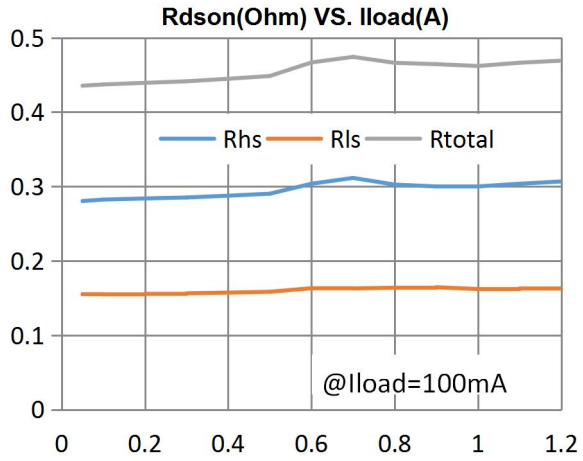
Test conditions: TA=25°C, VDD=6V, unless otherwise noted.

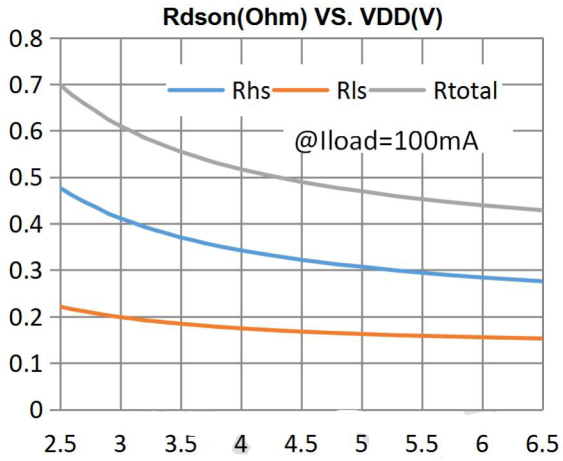
Parameters	Symbol	Condition	Min	Typ.	Max	Units
Operating supply voltage	VDD		2.7		6	V
Standby mode supply current	Iq0	INA=INB=0V		0.1	1	μA
Operating supply current	Iq1	At least one input =3.3V		40	65	μA
Input high voltage	VIH		2.3			V
Input low voltage	VIL				0.3	V
Input high current	IIH	VIN=3.3V		3		μA
Input pull-down resistance	RIN			1.2		MΩ
HS switch on resistance	Rhs	ILOAD=100mA		0.30	0.50	Ω
LS switch on resistance	Rls	ILOAD=100mA		0.15	0.25	Ω
Output enable time	T1			150		ns
Output disable time	T2			200		ns
Delay time	T3	INx high to OUTx high		150		ns
	T4	INx low to OUTx low		350		ns
Dead time				200		ns
Thermal shutdown threshold				155		°C
Thermal shutdown hysteresis				25		°C

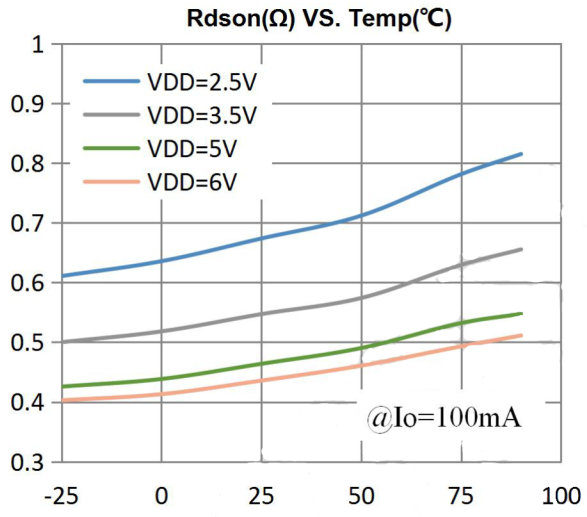

INA
INB
T1
T3
T2
OUTA
Hi-Z
Hi-Z
T4
OUTB
Hi-Z
Hi-Z

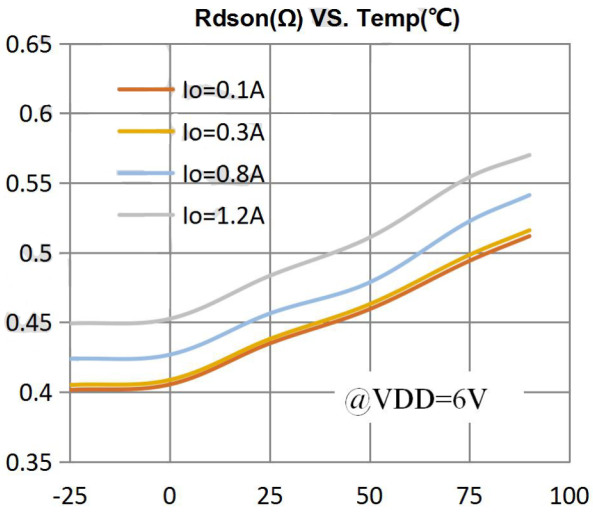
■ Typical Characteristics

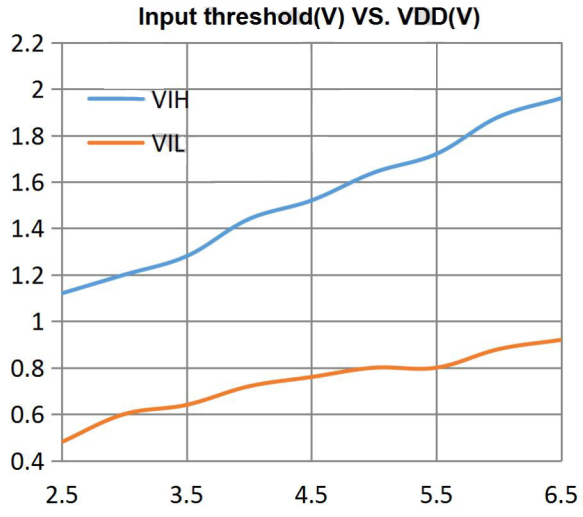
Test condition: TA=25° C, VIN=6V，Iload=0mA, unless otherwise noted.

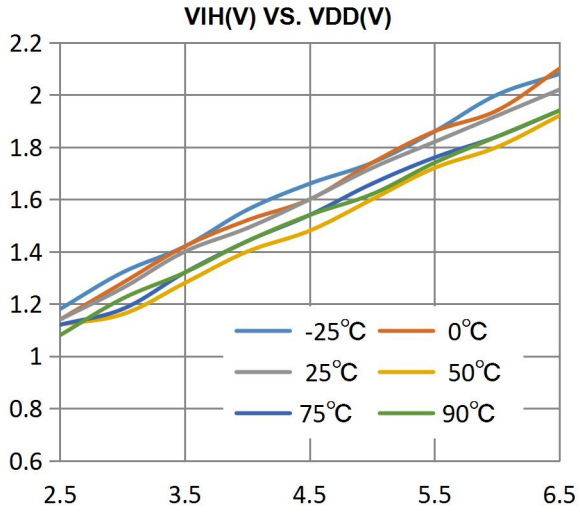


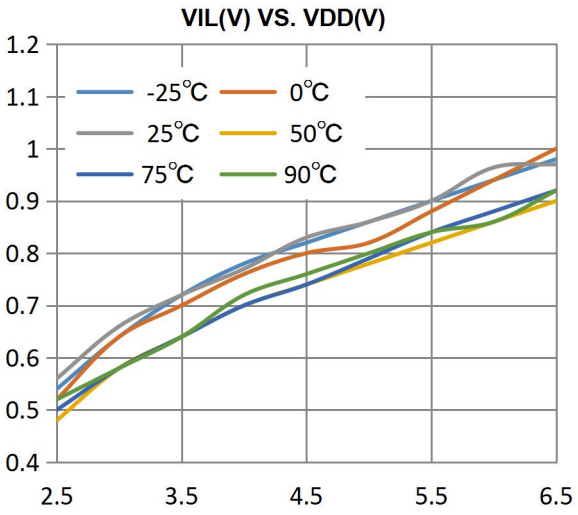


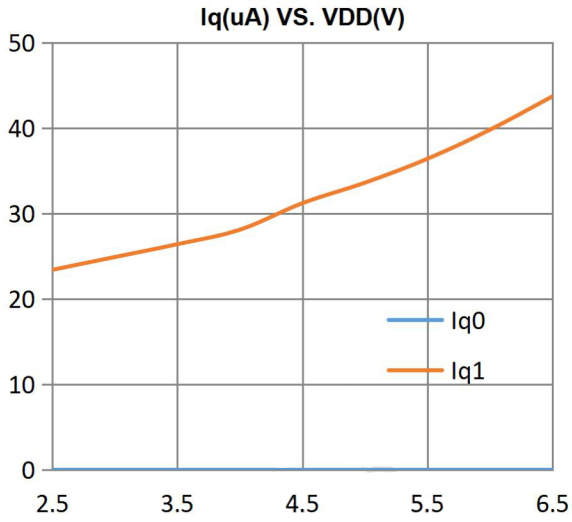


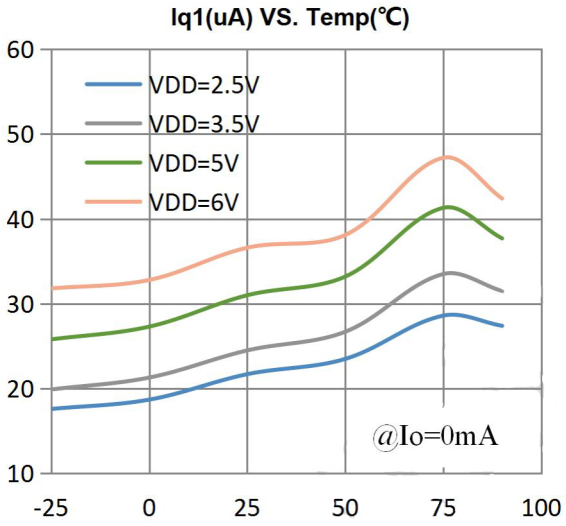




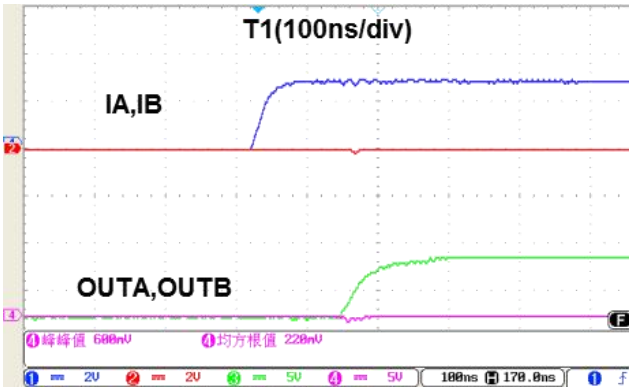



VIL(V) VS. VDD(V)
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
-25℃
0℃
25℃
50℃
75℃
90℃
2.5
3.5
4.5
5.5
6.5

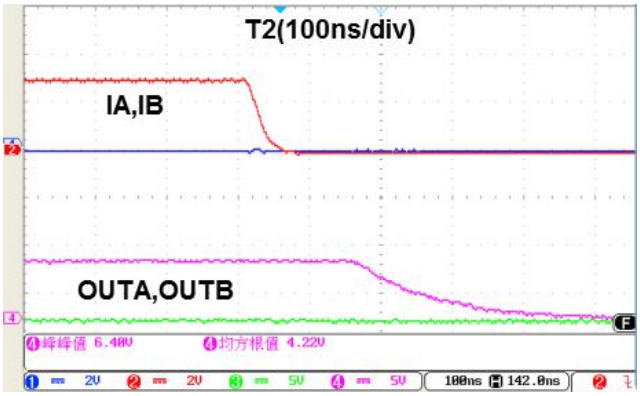

Iq(uA) VS. VDD(V)
50
40
30
20
10
0
Iq0
Iq1
2.5
3.5
4.5
5.5
6.5


Iq1(uA) VS. Temp(℃)
60
50
40
30
20
10
VDD=2.5V
VDD=3.5V
VDD=5V
VDD=6V
@Io=0mA
-25
0
25
50
75
100

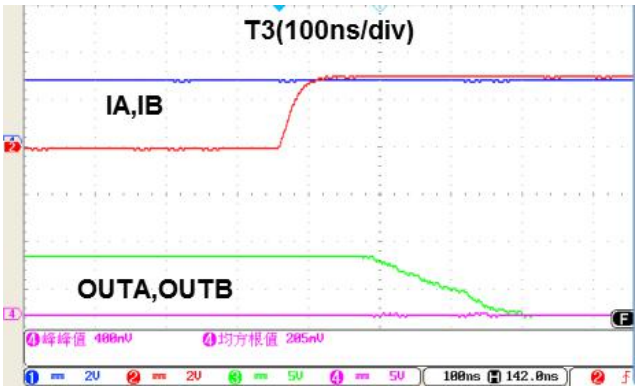
Output Enable Time T1



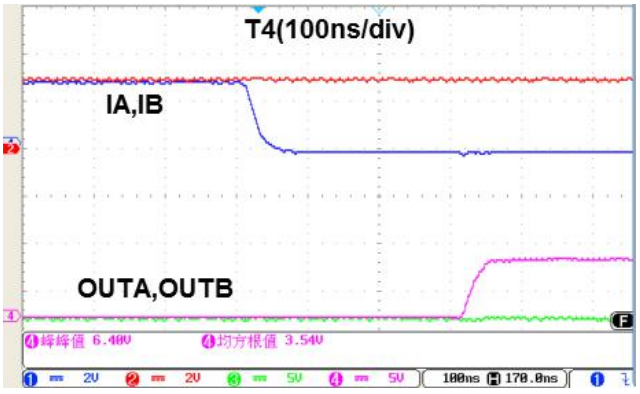
Output Enable Time T2



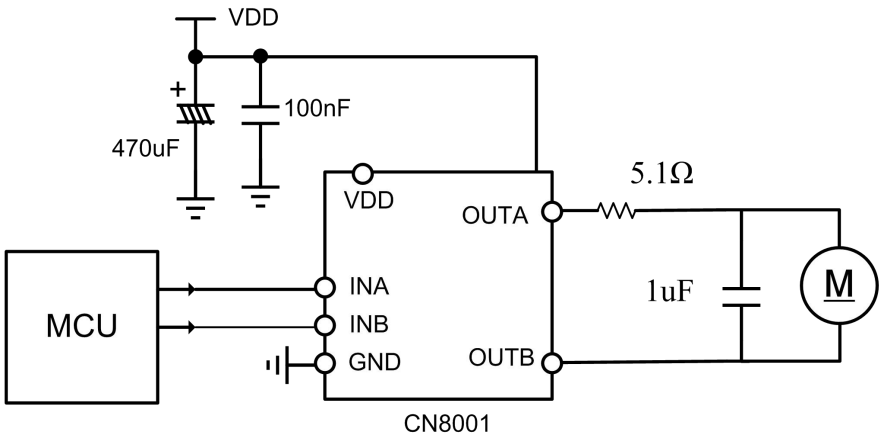
Delay Time T3



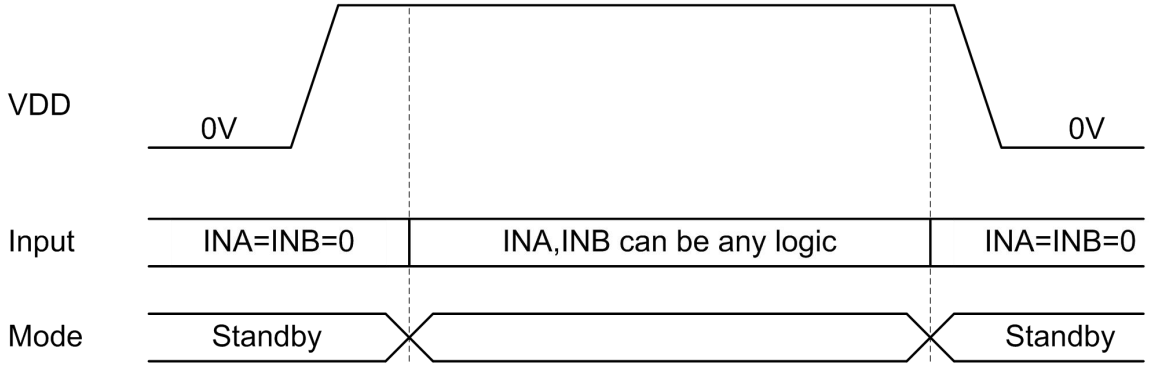
Delay Time T4



■ Typical Application



Please make sure that the input pins INA and INB remain low during power-up and power-down.



■ Package Outline

DFN2x2-8

尺寸 / 标注	最小(mm)	标准(mm)	最大(mm)	尺寸 / 标注	最小(mm)	标准(mm)	最大(mm)
A	0.70	0.75	0.80	e		0.50BSC	
A1	0.00	0.02	0.05	E	1.95	2.00	2.05
b	0.18	0.29	0.30	E2	0.70	0.75	0.80
c		0.20REF		L	0.25	0.30	0.35
D	1.95	2.00	2.05	h	0.10	0.15	0.20
D2	1.50	1.55	1.60		L/F载体尺寸（mm）:1.00*1.80