

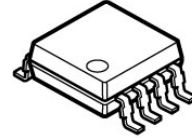
Single-phase DC Brushless Motor Driver IC

■ GENERAL DESCRIPTION

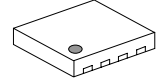
The NJU7364 is a single phase motor driver IC. It features a MOS FET motor driver, hall bias output, FG output and thermal shutdown circuit.

The driver is capable of 600mA maximum output current and continuous current of 250mA.

■ PACKAGE OUTLINE



NJU7364RB1

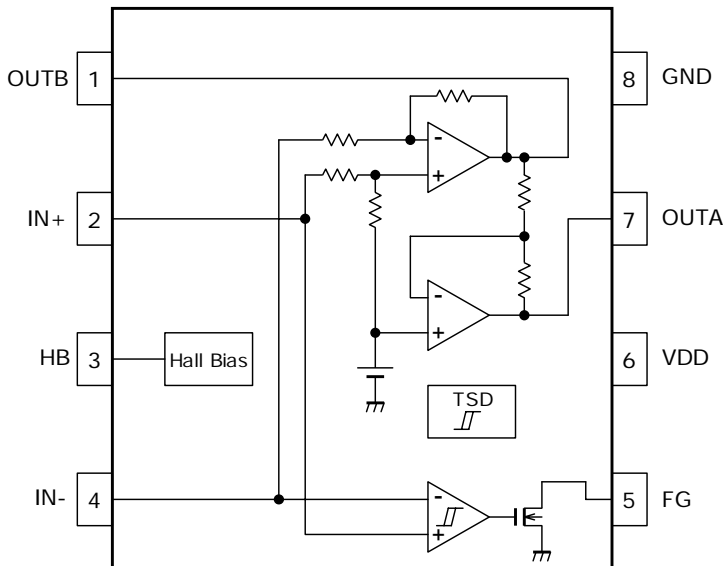


NJU7364KU1

■ FEATURES

- Supply Voltage $V_{DD}=2.0$ to $5.5V$
- Low Quiescent Current $I_{DD}=1mA$ typ.
- Output Voltage $V_{OM}=\pm 0.30V$ typ. @ $I_o=\pm 250mA$
- Hall Bias Terminal
- FG Output
- Thermal Shutdown Circuit
- CMOS Technology
- Package Outline TVSP8 / ESON8-U1

■ BLOCK DIAGRAM



NJU7364

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS		UNIT
Supply Voltage	V _{DD}	+7		V
Input Voltage	V _{ID}	-0.3 to V _{DD}		V
Output Current (Peak)	I _{OPEAK}	600		mA
FG Output Current	I _{FG}	10		mA
FG Output Voltage	V _{FG}	+7		V
Power Dissipation (TVSP8)	P _D	Device itself	400	mW
Power Dissipation (ESON8-U1)	P _D	(*1) Mounted on 2Layer Board	450	mW
		(*2) Mounted on 4Layer Board	1,200	
Operating Temperature	Topr	-40 to +85		°C
Junction Temperature	Tjmax	150		°C
Storage Temperature	Tstg	-50 to +150		°C

(*1): Mounted on glass epoxy board based on EIA/JEDEC. (101.5 × 114.5 × 1.6mm: 2-Layers FR-4)

(*2): Mounted on glass epoxy board based on EIA/JEDEC.

(101.5 × 114.5 × 1.6mm: 4-Layers FR-4 Internal foil area: 99.5 × 99.5mm)

■ RECOMMENDED OPERATING CONDITIONS

(Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V _{DD}	-	2.0	5	5.5	V
Input Common mode Voltage Range	V _{ICM}	-	0.4	-	4.0	V

■ ELECTRICAL CHARACTERISTICS

(V_{DD}=5V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
■ GENERAL						
Quiescent Current	I _{DD}	IN+=4V, IN-=0.4V	-	1.0	2.0	mA
Thermal Shutdown Operating Temperature	T _{TSD}	No-load	-	180	-	°C
Thermal Shutdown Hysteresis	T _{HYS}	No-load	-	50	-	°C
■ HALL AMP BLOCK						
Input Offset Voltage	V _{IO}	No-load	-10	-	10	mV
Close-loop Gain	A _V	No-load	-	44	-	dB
■ OUTPUT BLOCK						
Output Voltage	V _{OH}	I _O = -250mA	4.55	4.7	-	V
	V _{OL}	I _O =250mA	-	0.3	0.45	V
FGL Output Voltage	V _{FG}	I _{FG} =3mA	-	-	0.3	V
FGH Leak Current	I _{FG-LEAK}	V _{FG} =5V	-	-	5.0	uA
■ HALL BIAS BLOCK						
Hall Bias Voltage	V _{HB}	I _{HB} = -5mA	1.1	1.3	1.5	V

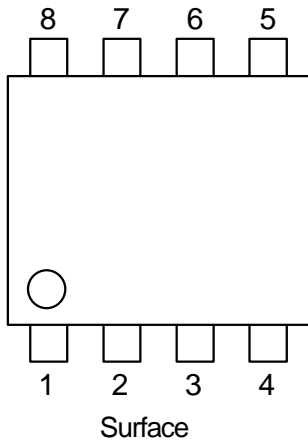
■ TRUTH TABLE

IN+	IN-	OUTA	OUTB	FG
H	L	H	L	L (FET Output: ON)
L	H	L	H	Z (FET Output: OFF)

※ Z : High-impedance

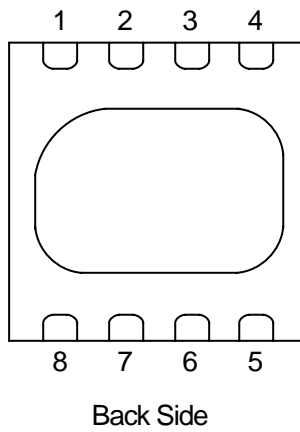
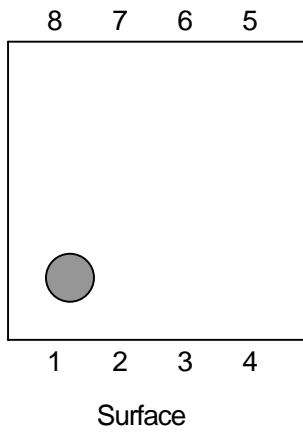
■ PIN FUNCTION

• VSP8/TVSP8



- 1: OUTB
- 2: IN+
- 3: HB
- 4: IN-
- 5: FG
- 6: VDD
- 7: OUTA
- 8: GND

• ESON8-U1

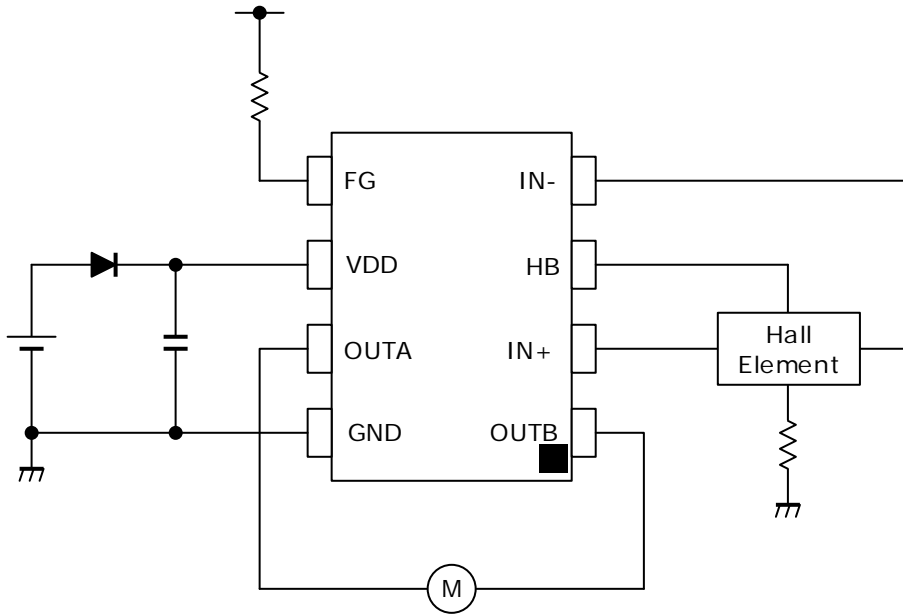


- 1: OUTB
- 2: IN+
- 3: HB
- 4: IN-
- 5: FG
- 6: VDD
- 7: OUTA
- 8: GND

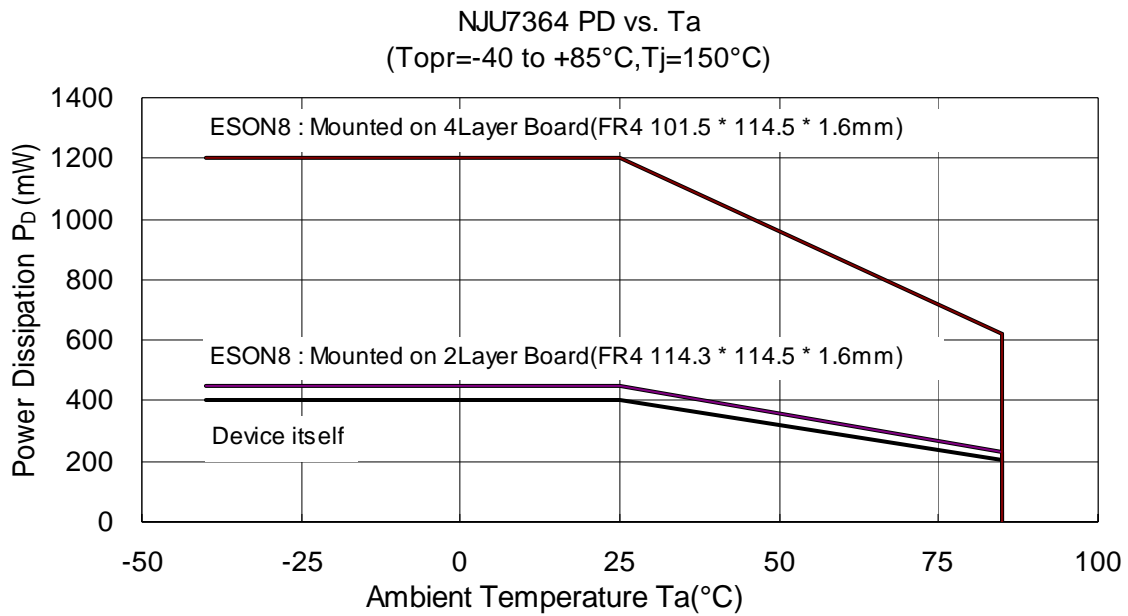
(*3):The PAD in the center part on the back is connected with the internal V_{DD} , therefore it is open or connects to V_{DD} .

NJU7364

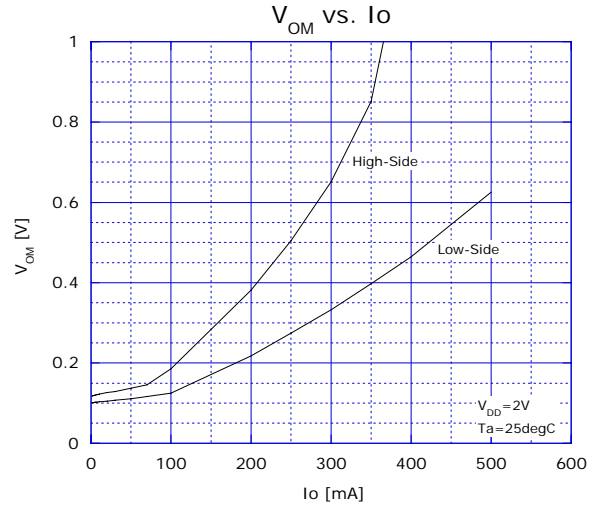
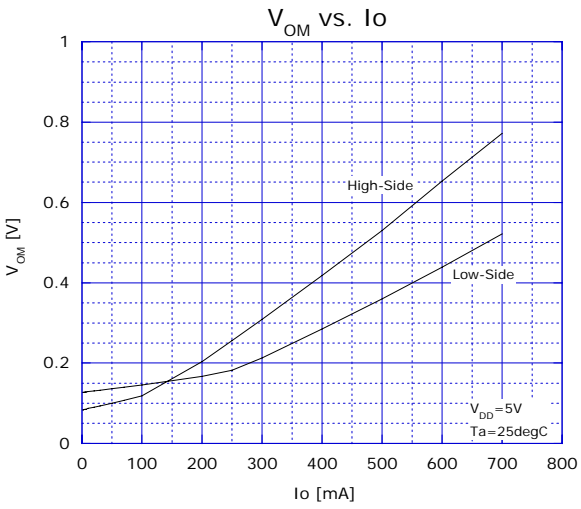
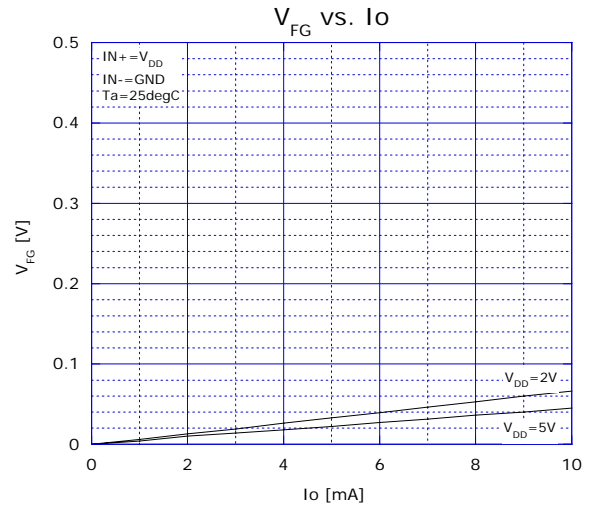
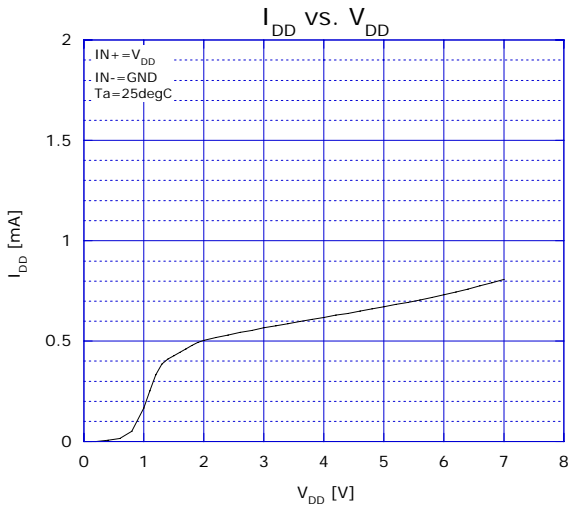
■ TYPICAL APPLICATION CIRCUIT



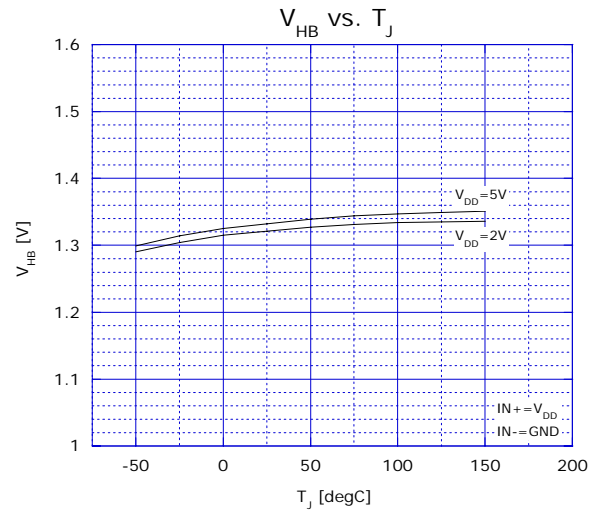
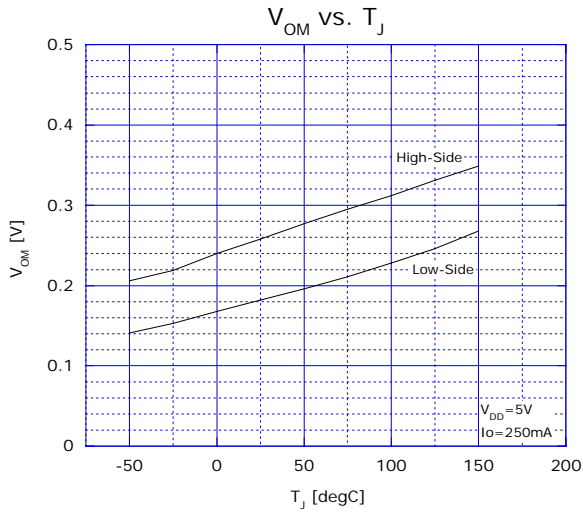
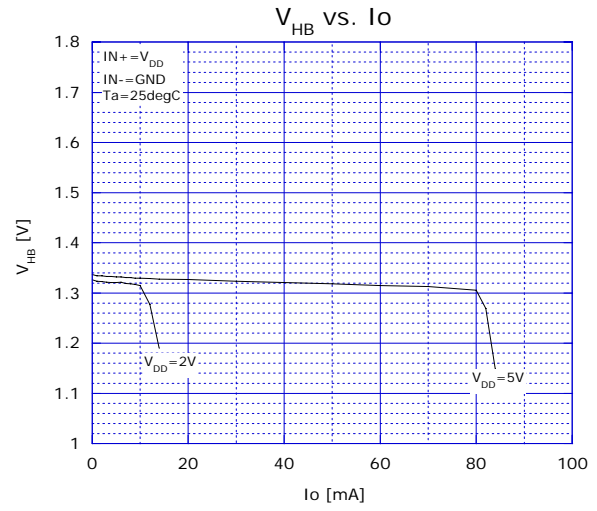
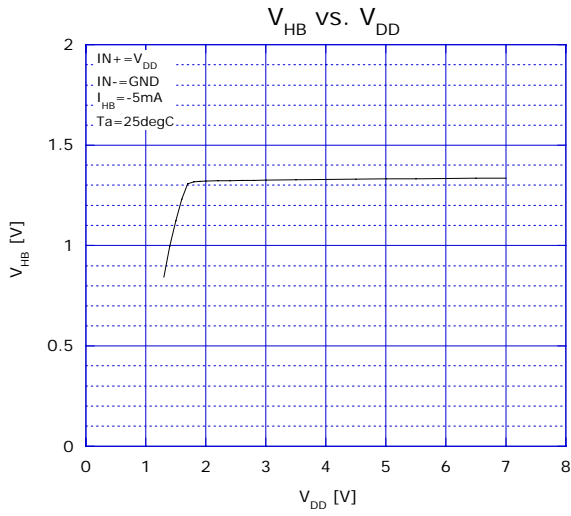
■ POWER DISSIPATION vs. AMBIENT TEMPERATURE



TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS



[CAUTION]
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