Shaoxing Yuli Semiconductor CO.,LTD

绍 兴 宇 力 半 导 体 有 限 公 司

U9310 Data Sheet

V 1.1

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High Current IO+/- 0.2/0.4A 3-PHASE BRIDGE DRIVER

General Description

The U9310 is high voltage, high speed power MOSFET and IGBT drivers with three independent high and low side referenced output channels for 3- phase applications. Proprietary HVIC technology enables ruggedized monolithic construction. Logic inputs are compatible with CMOS or LSTTL outputs, down to 3.3V logic.

The output drivers feature a high pulse current buffer stage designed for minimum driver cross-conduction. Propagation delays are matched to simplify use in high frequency applications.

The floating channels can be used to drive N-channel power MOSFETs or IGBTs in the high side configuration which operates up to 600 V.

Key Features

- Integrated bootstrap Diode[1]
- Fully operational to +600V
- Tolerant to negative transient voltage
- Gate drive supply range from 10 V to 20 V
- Undervoltage lockout for all channels
- Independent 3 half-bridge drivers
- Matched propagation delay for all channels
- Cross-conduction prevention logic
- Outputs in phase with inputs
- 3.3 V/5V logic compatible
- Lower di/dt gate drive for better noise immunity

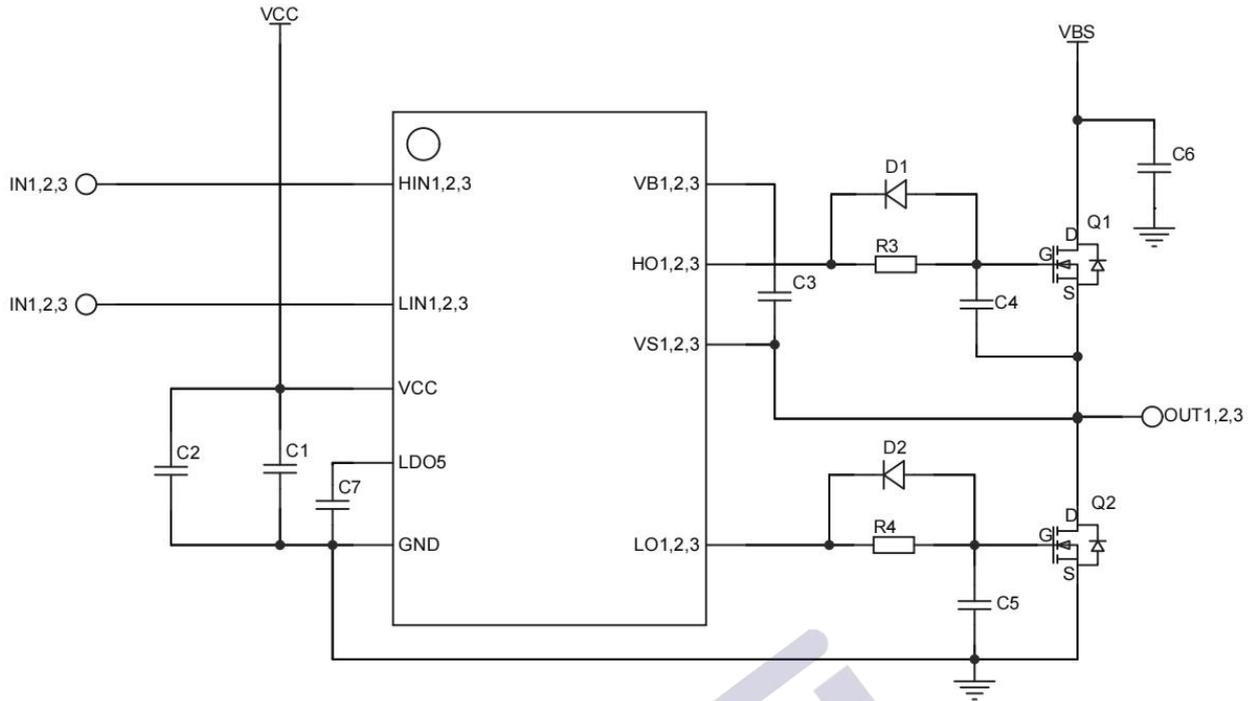## Applications
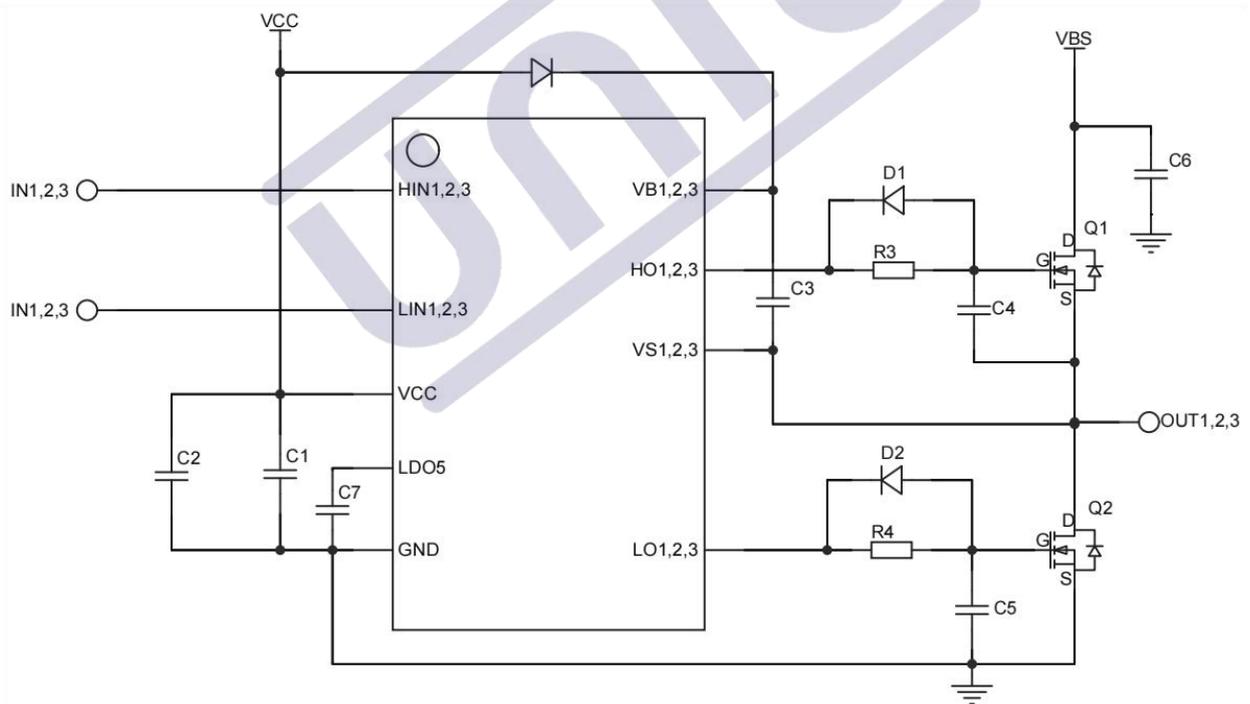
- 3-phase motor driver
- DC - AC inverter

Package

SSOP24

Product Summary

VOFFSET	600V max
IO+/-	0.2A / 0.4A
VCC	10~20V
Deadtime(typ.)	250nS
Work Tem	-40 ~125 ℃

Products Information

Base Part Number	Package Type	Standard OUT		VOFFSET	Logic Control
		IO+	IO-		
U9310	SSOP24	0.2A	0.4A	600V	HIN & LIN

Note：(1)When using internal diode bootstrap power supply, please match the capacitor and MOS, and fully test and verif.

Typical Application

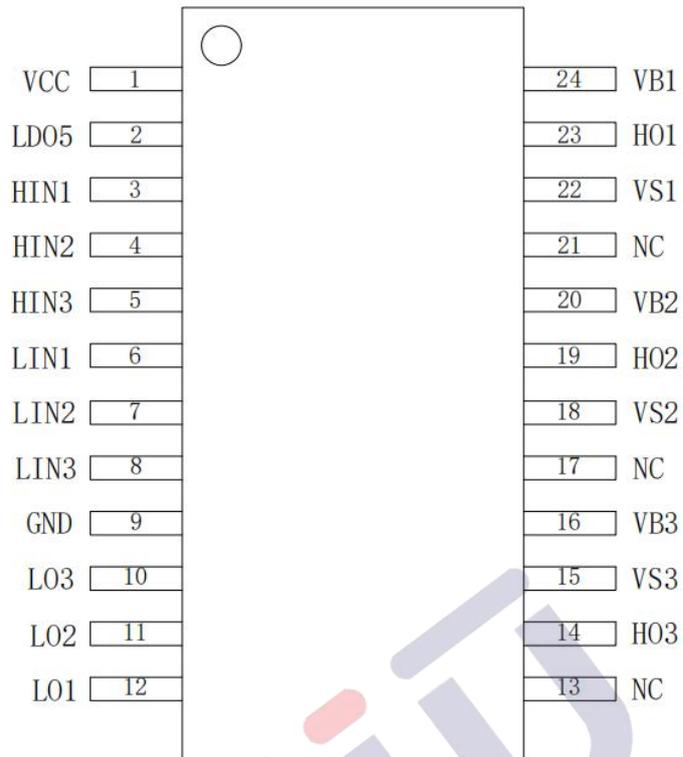Small current application diagram

Typical application

Note: The above circuits and parameters are for reference only. The actual application circuit should be designed with the measured results in setting the paramete.

Packages

SSOP24

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         ┌─────────────────────┐
  VCC ──┤ 1          ○      24 ├── VB1
 LDO5 ──┤ 2                 23 ├── HO1
 HIN1 ──┤ 3                 22 ├── VS1
 HIN2 ──┤ 4                 21 ├── NC
 HIN3 ──┤ 5                 20 ├── VB2
 LIN1 ──┤ 6                 19 ├── HO2
 LIN2 ──┤ 7                 18 ├── VS2
 LIN3 ──┤ 8                 17 ├── NC
  GND ──┤ 9                 16 ├── VB3
  LO3 ──┤ 10                15 ├── VS3
  LO2 ──┤ 11                14 ├── HO3
  LO1 ──┤ 12                13 ├── NC
         └─────────────────────┘
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Pin Function

Symbol	Description
VCC	Low side and logic fixed supply
LDO5	LDO 5V
HIN1,2,3	Logic input for high side gate driver output (HO1,2,3),, in phase
LIN1,2,3	Logic inputs for low side gate driver outputs(LO1,2,3),in phase
LO1,2,3	Low side gate driver output
COM	Low side gate driver return
VB1,2,3	High side floating supply
HO1,2,3	High side gate driver outputs
VS1,2,3	High voltage floating supply returns

1、Version Record

Date	Rev.	Description
2024/03/09	1.0	First Release
2024/09/08	1.1	Layout Adjustment

2、Contact

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