



ZHEJIANG UNIÜ-NE Technology CO., LTD

浙江宇力微新能源科技有限公司



U5315-6 Data Sheet

V 3.1

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High Current IO+/- 1.0/1.2A 3-PHASE BRIDGE DRIVER

General Description

U5315/6 is a high-speed 3-phase gate driver for power MOSFET and IGBT devices with three independent high and low side referenced output channels. Built-in dead time protection and shoot-through protection prevent damage to the half-bridge. The UVLO circuits prevent malfunction when VCC and VBS are lower than the specified threshold voltage. A novel high-voltage BCD process and common-mode noise canceling technique provide stable operation of high-side drivers under high dV/dt noise conditions while achieving excellent negative transient voltage tolerance. low-PW consumption is included so that standby mode may be used to set the chip into a low quiescent current state to realize long battery lifetime.

Product Summary

V _{OFFSET}	280V max
I _{O+/-}	1.0 A / 1.2A
V _{CC}	4.5V to 20V
t _{on/off} (typ.)	310 & 120ns
Work Tem	-40 ~150 °C

Key Features

- Integrated DBOOT⁽¹⁾
- Floating channel designed for bootstrap operation
- Fully operational to +280 V
- Tolerant to negative transient voltage
- Gate drive supply range from 4.5V to 20V
- Independent 3 half-bridge drivers
- Low side output out of phase with inputs.
High side outputs out of phase
- 3.3V logic compatible
- Lower di/dt gate drive for better noise immunity

Applications

- E-BIKE/electric power tool 3-phase motor driver
- Battery-powered mini/micro motor control
- General purpose inverter

Package



Products Information

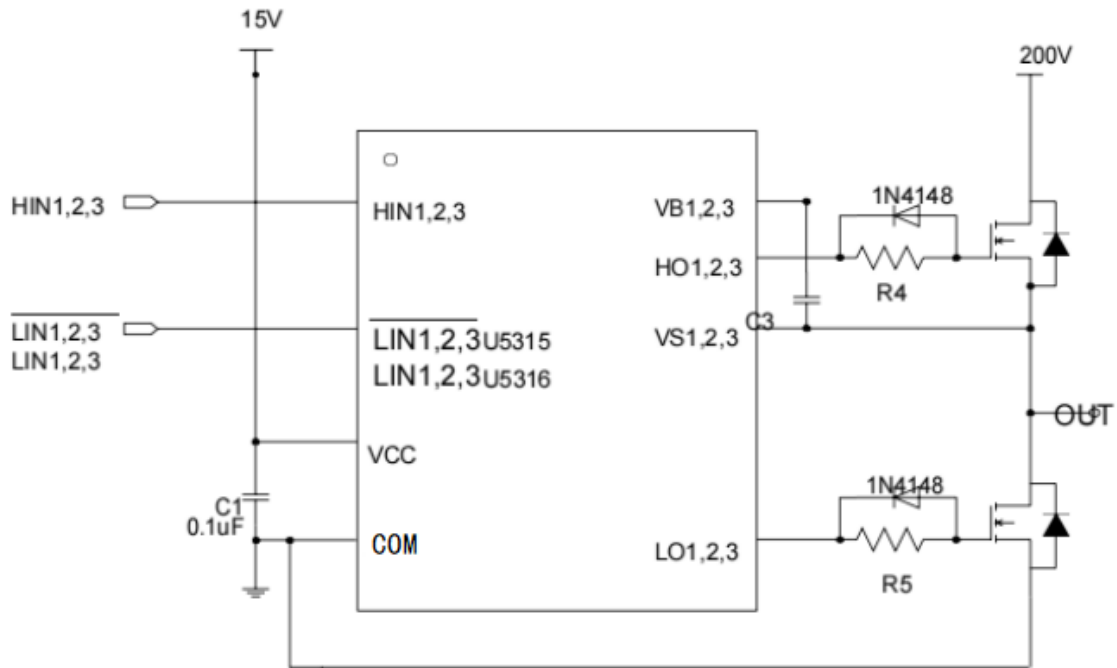
Base Part Number	Package Type	Standard OUT		V _{OFFSET}	Logic Control
		IO+	IO-		
U5315	QFN24	1.0A	1.2A	280V	HIN & LIN
U5316	QFN24	1.0A	1.2A	280V	HIN & LIN

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

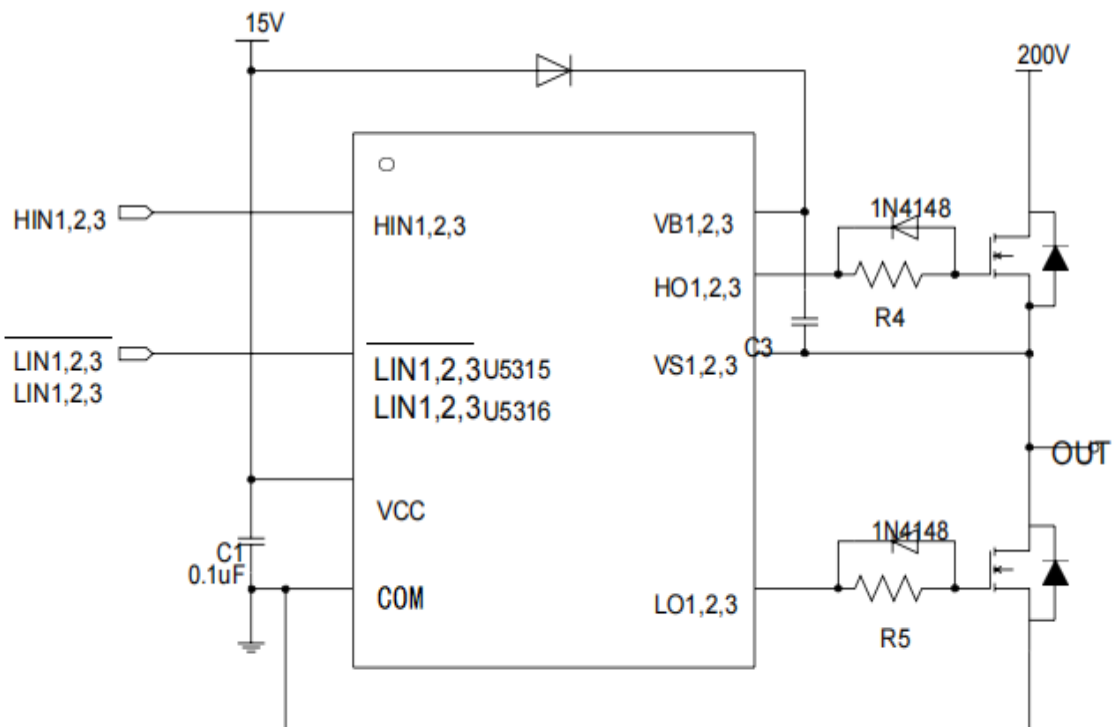
Base Part Number	Package Type	Standard OUT		VOFFSET	Logic Control
		IO+	IO-		
U5315	TSSOP20	1.0A	1.2A	280V	HIN & $\overline{\text{LIN}}$
U5316	TSSOP20	1.0A	1.2A	280V	HIN & LIN

Typical Application

NO-BOOT Application



BOOT Application

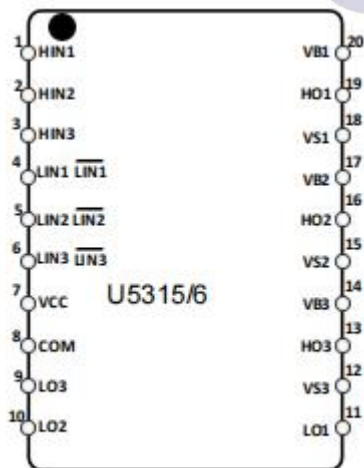


Pin Function

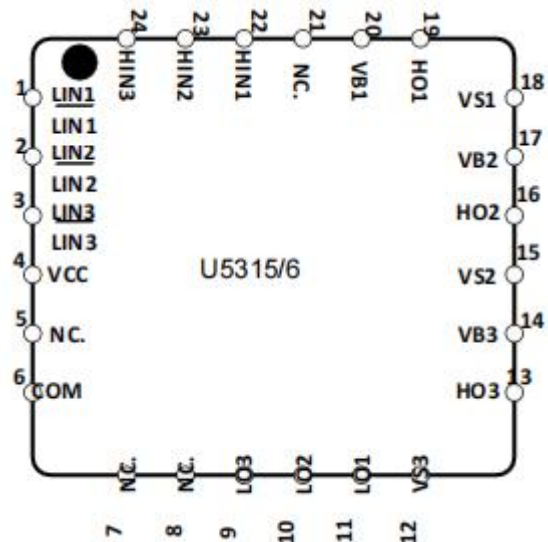
Number	Symbol	Description
1	VCC	Low side and logic fixed supply
2	HIN1,2,3	Logic inputs for high side gate driver outputs(HO1,2,3),in phase
3	U5316 LIN1,2,3	Logic inputs for high side gate driver outputs(LO1,2,3),in phase
4	U5315 LIN1,2,3	Logic inputs for high side gate driver outputs(LO1,2,3),out of phase
5	COM	Logic Ground
6	VB1,2,3	High side floating supply
7	HO1,2,3	High side gate driver outputs
8	VS1,2,3	High voltage floating supply returns
9	LO1,2,3	Low side gate driver output

Packages

20-PIN TSSOP



QFN24



1.版本记录

DATE	REV.	DESCRIPTION
2018/04/19	1.0	首次发布
2019/05/21	2.0	变更封装
2021/10/19	3.0	调整布局
2023/06/28	3.1	变更logo和更新免责声明

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