



Shaoxing Yuli Semiconductor CO., LTD

绍兴宇力半导体有限公司



U5316CT(CQ) Data Sheet

V1.1

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

General Description

U5316CT(CQ) 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}	5V to 20V
ton/off (typ.)	400 & 200ns
Work Tem	-40 ~125 °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 5V TO 20V
- Independent 3 half-bridge drivers
- VCC/VBS under voltage protection(UVLO)
- Output and input in phase
- 3.3V input 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

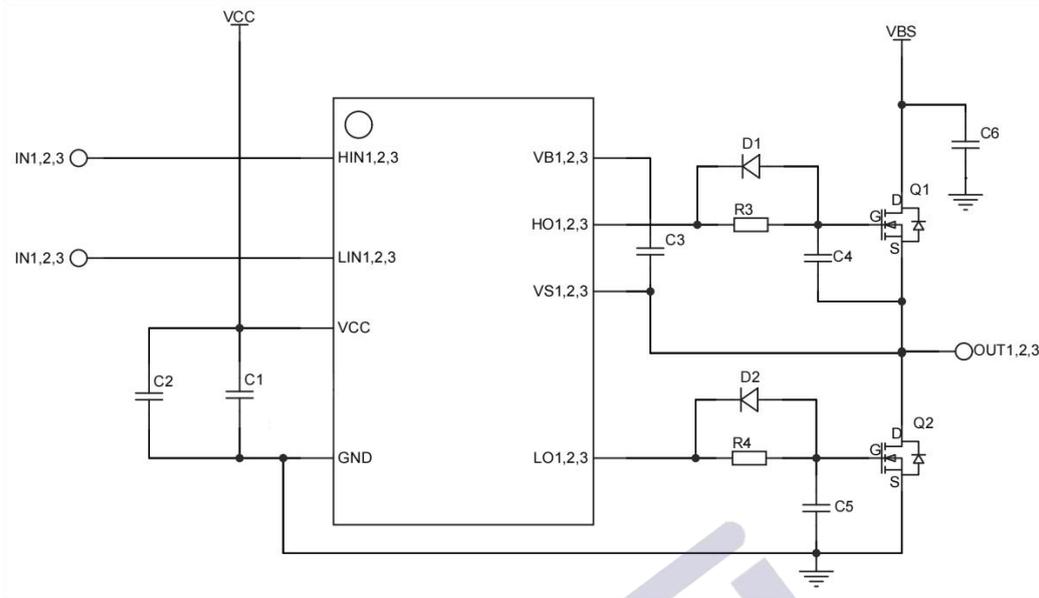


Products Information

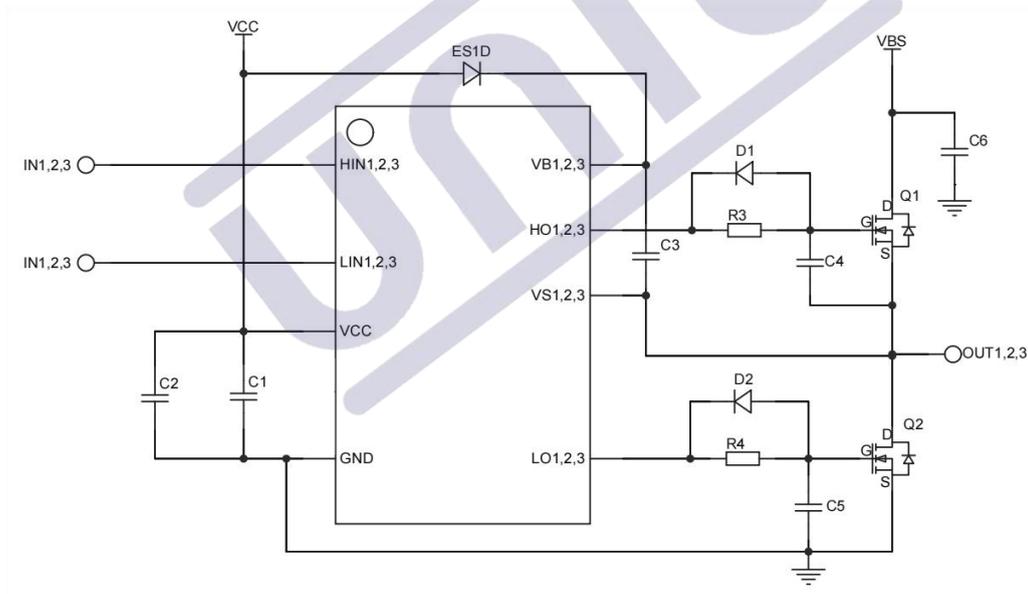
Base Part Number	Package Type	Standard OUT		V _{OFFSET}	Logic Control
		IO+	IO-		
U5316CT	TSSOP20	1.0A	1.2A	280V	HIN & LIN
U5316CQ	QFN24	1.0A	1.2A	280V	HIN & LIN

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

Typical Application



Small current application diagram



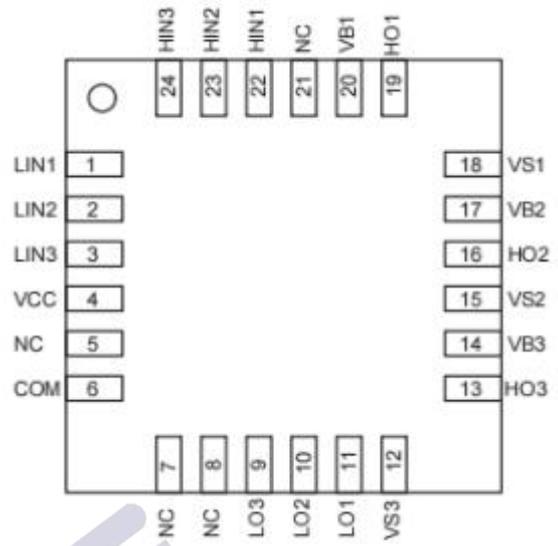
Typical application

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

Packages



TSSOP20(U5316CT)



QFN24(U5316CQ)

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	LIN1,2,3	Logic inputs for low side gate driver outputs(LO1,2,3),in phase
4	COM	Logic Ground
5	VB1,2,3	High side floating supply
6	HO1,2,3	High side gate driver outputs
7	VS1,2,3	High voltage floating supply returns
8	LO1,2,3	Low side gate driver output

1、Version Record

DATE	REV.	DESCRIPTION
2021/05/21	1.0	First Release
2022/10/19	1.1	Layout Adjustment

2、Contact

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