



Shaoxing Yuli Semiconductor CO., LTD

绍兴宇力半导体有限公司



U3316T(Q) Data Sheet

V 1.2

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High Current IO+/- 1.5/1.8A 3-PHASE BRIDGE DRIVER

General Description

U3316T(Q) 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}	70V max
I _{O+/-}	1.5 A / 1.8A
V _{CC}	5V to 20V
t _{on/off} (typ.)	280 & 80ns
Work Tem	-40 ~125 °C

Key Features

- Floating channel designed for bootstrap operation
- Fully operational to +70 V
- Tolerant to negative transient voltage
- Gate drive supply range from 5V to 20V
- Independent 3 half-bridge drivers
- Low side output out of phase with inputs.
High side outputs out of phase
- 3.3V/5V 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

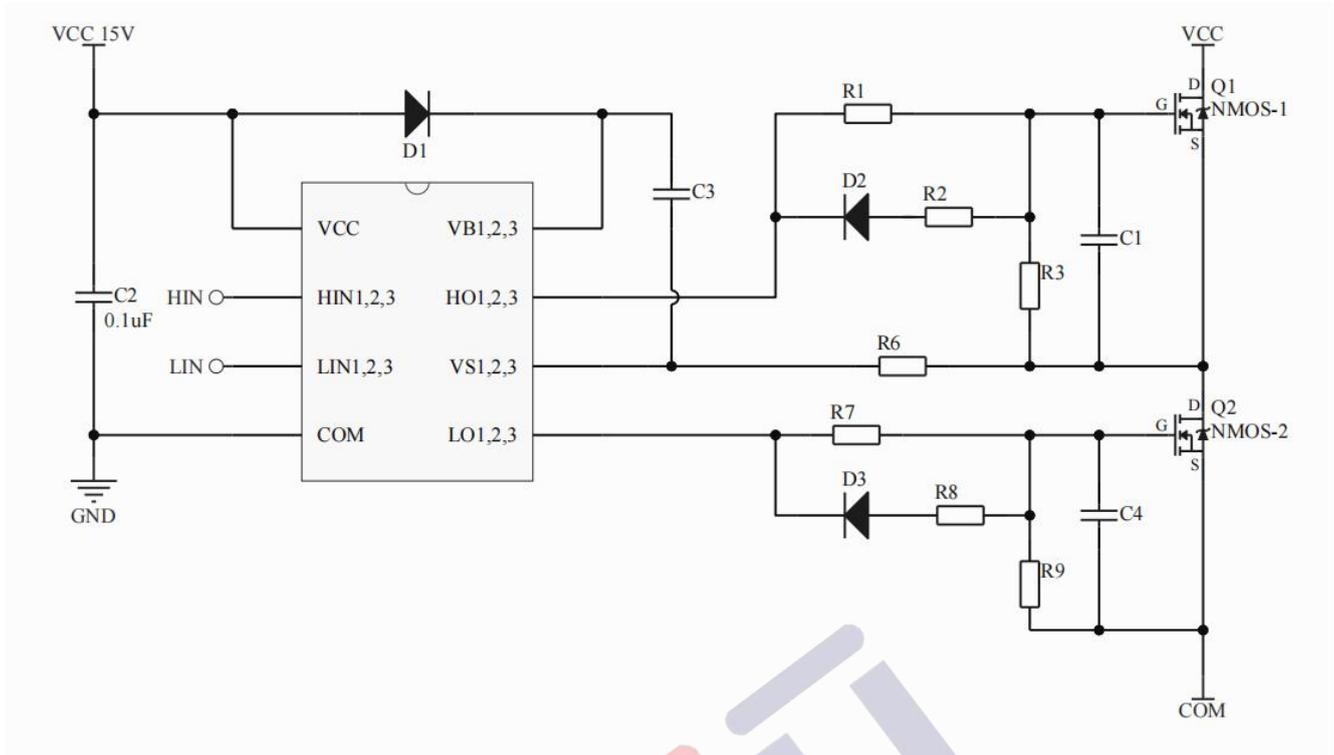
Package



Products Information

Base Part Number	Package Type	Standard OUT		V _{OFFSET}	Logic Control
		IO+	IO-		
U3316Q	QFN24	1.5A	1.8A	70V	HIN & LIN
U3316T	TSSOP20	1.5A	1.8A	70V	HIN & LIN

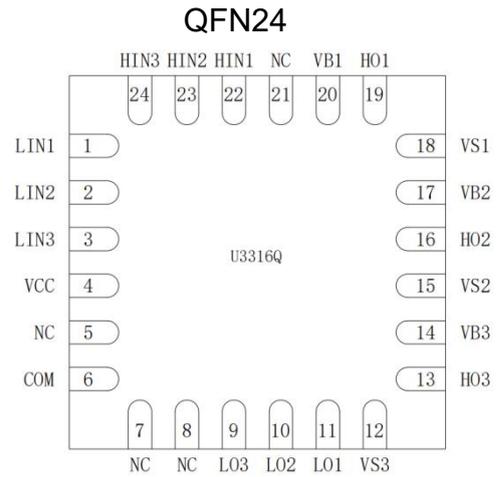
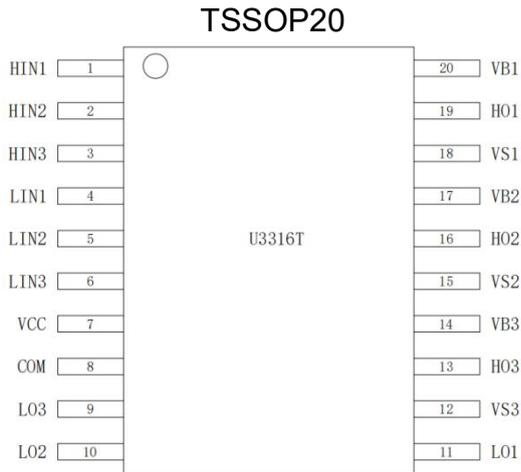
Typical Application



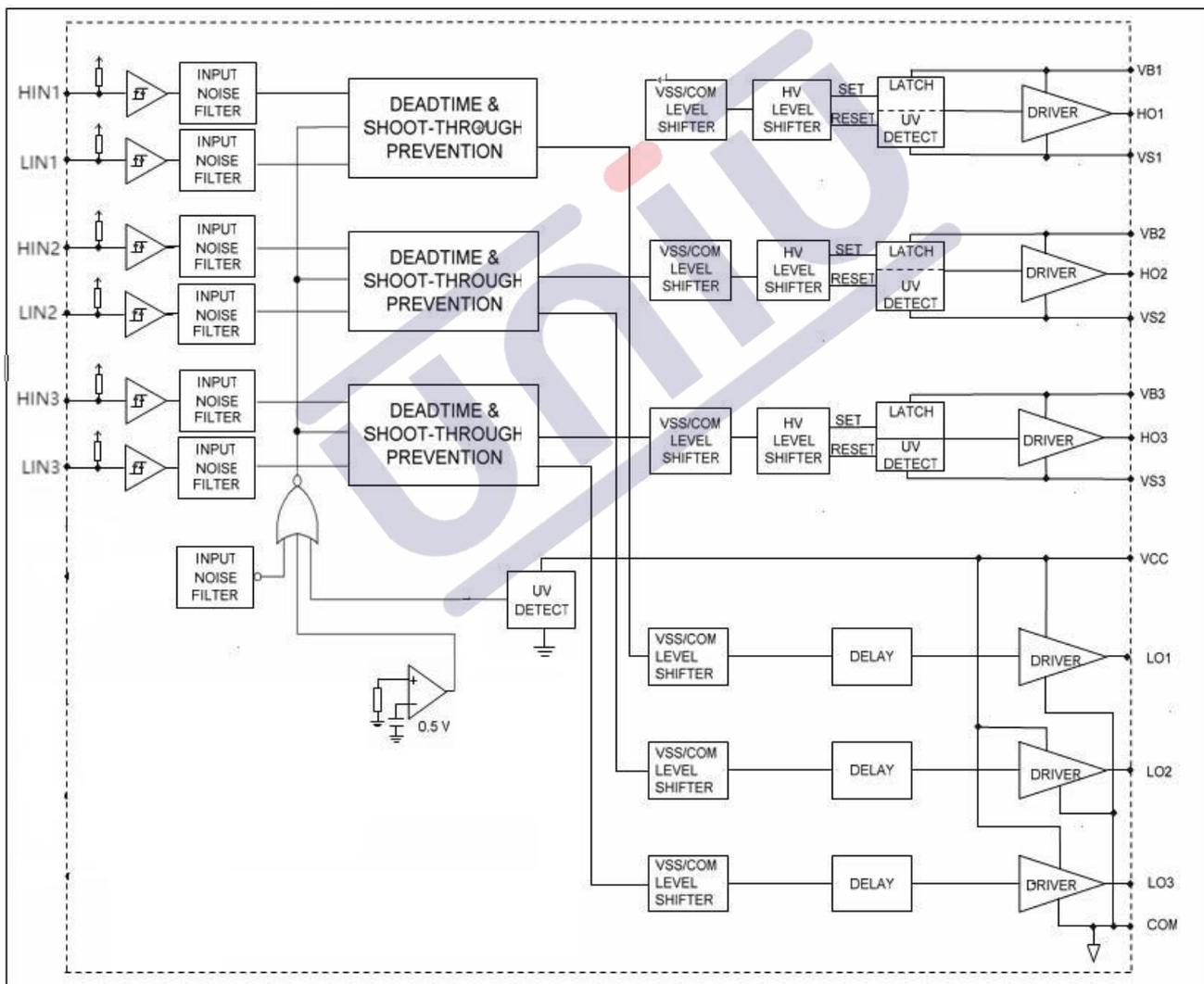
Pin Function

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	LIN1,2,3	Logic inputs for low side gate driver outputs(LO1,2,3),in 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



Block Diagram



1、Version Record

Date	Rev.	Description
2022/10/19	1.0	First Release
2023/02/01	1.1	Layout Adjustment
2024/03/05	1.2	Parameter Optimization

2、Contact

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