



Shaoxing Yuli Semiconductor CO., LTD

绍兴宇力半导体有限公司



U2103C Data Sheet

V 1.4

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High Current IO+/- 0.4/0.6A HALF-BRIDGE DRIVER

■ General Description

The U2103C Fully operated to +600V is high voltage, high speed power MOSFET and IGBT driver with dependent high and low side referenced output channels.

The logic input is compatible with standard CMOS or LSTTL output, down to 3.3V logic. The output drivers feature a high pulse current buffer stage designed for minimum driver cross-conduction. The floating channel can be used to drive an N-channel power MOSFET or IGBT in the high side configuration which operates up to 600 volts.

■ Product Summary

V _{OFFSET}	600V max
IO+/-	0.4A / 0.6A
V _{OUT}	4.8V~20V
ton/off (typ.)	420/200ns
Deadtime (typ.)	220ns
Work Tem	-40 ~125°C

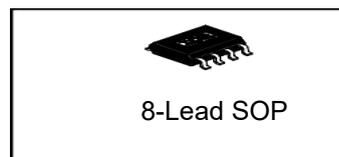
■ Key Features

- Integrated bootstrap Diode⁽¹⁾
- Floating channel designed for bootstrap operation
- Fully operational to +600V
- Tolerant to negative transient voltage dV/dt immune
- Gate drive supply range from 4.8 to 20V
- Undervoltage lockout
- 3.3V, 5V and 15V input logic compatible
- Cross-conduction prevention logic
- Matched propagation delay for both channels

■ Applications

- Home appliances
- Industrial applications and drives
- Motor drivers
- DC- AC Converter, PMDC and PMAC motors
- Induction heating
- HVAC

■ Packages

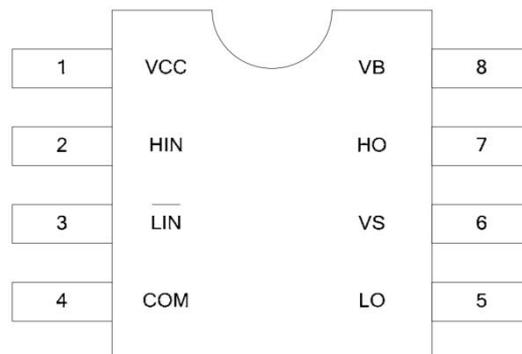


■ Product information

Base Part Number	Package Type	Standard OUT		V _{OFFSET}	Logic Control
		IO+	IO-		
U2103C	SOP8	0.4A	0.6A	600V	HIN & LIN

Note1: When using internal diode bootstrap power supply, please match the capacitor and MOS, and fully test and verify.

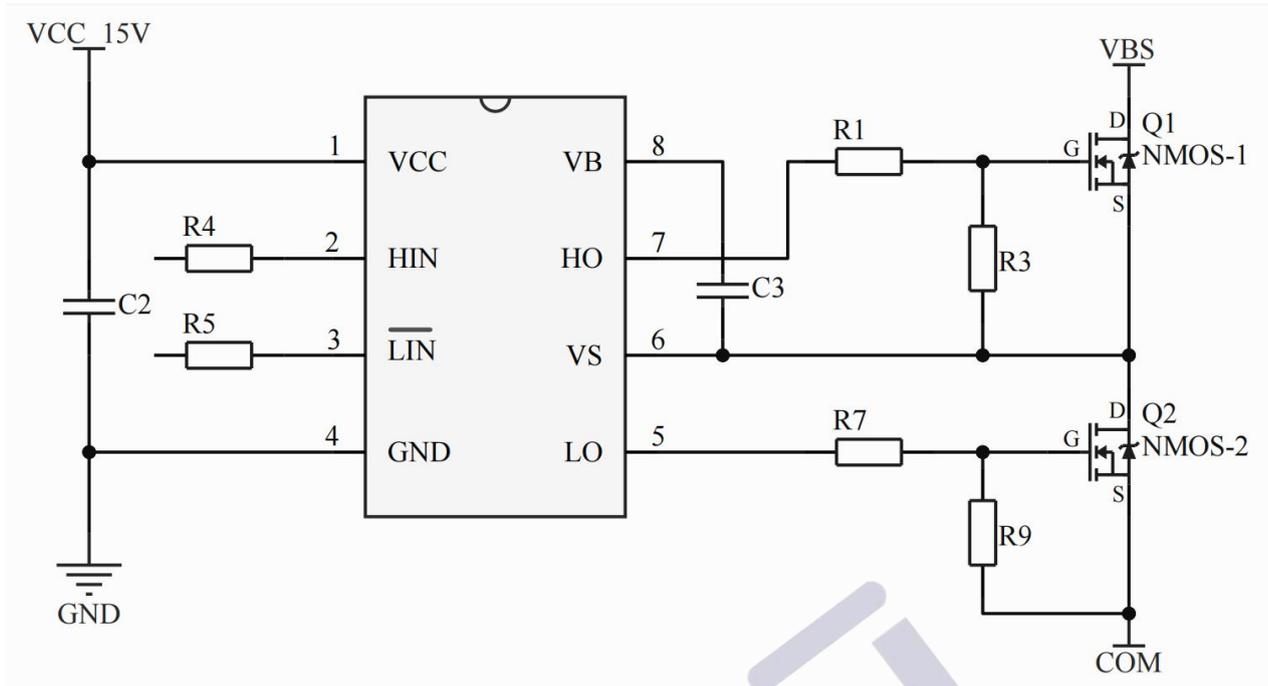
■ Pin Assignments



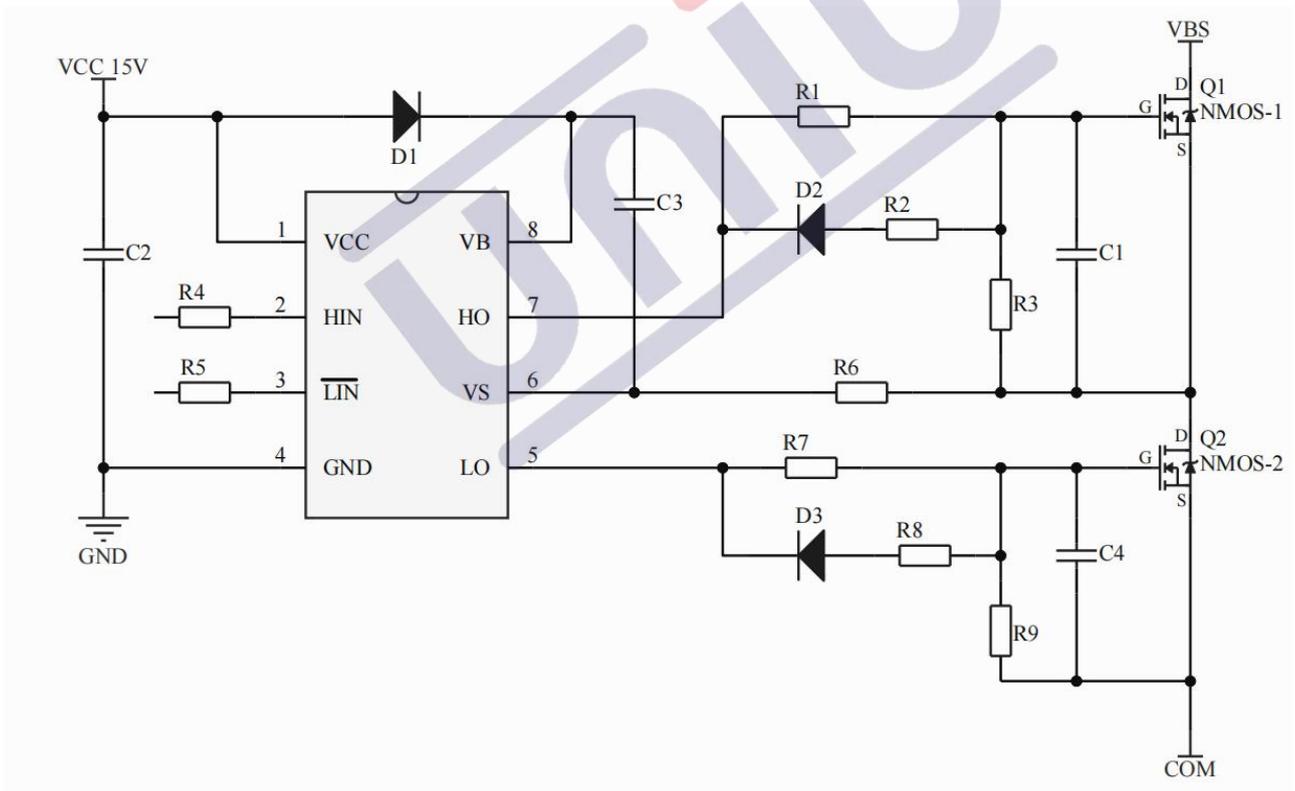
■ Pin Function

Number	Symbol	Description
1	VCC	Low side and logic fixed supply
2	HIN	Logic input for high side gate driver outputs (HO), in phase
3	$\overline{\text{LIN}}$	Logic input for low side gate driver outputs (LO), out of phase
4	COM	Low side return
5	LO	Low side gate drive output
6	VS	High side floating supply return
7	HO	High side gate drive output
8	VB	High side floating supply

■ Typical Connection



Air duct circuit application diagram



Typical application

- Note2: (1) If Q1, Q2 use AP3N50K, it is recommended that R1, R7 resistors choose 200~300R; if Q1, Q2 use AP5N50K, it is recommended that R1, R7 resistors choose 100~150R.
 (2) If other similar MOSFET, you can refer to this parameter.
 (3) The above circuits and parameters are for reference only. The actual application circuit should be designed with the measured results in setting the parameters.

1、Version Record

DATE	REV.	DESCRIPTION
2023/06/02	1.0	Split the specifications U2103 and U2106
2023/10/9	1.1	Update the Application Schematic and Parameters
2023/12/15	1.2	Add MOS matching parameters
2024/02/15	1.3	Specifications for the Combination of U2103C and U2106C
2026/01/18	1.4	Update Statement

2、Contact

Shaoxing Yuli Semiconductor CO.,LTD

Shaoxing Address: 4th & 5th Floors, Building 45, CECEP Science and Technology Innovation Park, No. 25 Paodu Road, Doumen Subdistrict, Yuecheng District, Shaoxing City, Zhejiang Province, China

Telephone: 0575-85087896 (R&D Department)

Fax: 0575-88125157

E-mail: htw@uni-semic.com

Wuxi Address: Room 503, Building 1# (Comprehensive Building), China Electronics (Wuxi) Digital Chip City, No. 6 Xianfeng Middle Road, Xishan District, Wuxi City, Jiangsu Province, China

Telephone: 0510-85297939

E-mail: zh@uni-semic.com

Shenzhen Address: Room 410, Yonghui International Business Building, Baoyuan Road, Nanchang Community, Xixiang Subdistrict, Bao'an District, Shenzhen, Guangdong Province, China

Telephone: 0755-84510976

E-mail: htw@uni-semic.com

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