



ZHEJIANG UNIU-NE Technology CO., LTD

浙江宇力微新能源科技有限公司



## U2103C-6C Data Sheet

V 1.3

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

## General Description

The U2103C/U2106C 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 <sub>OFFSET</sub>	600V max
I <sub>O+/-</sub>	0.4A / 0.6A
V <sub>OUT</sub>	4.8V~20V
t <sub>on/off</sub> (typ.)	420/200ns
Deadtime (typ.)	220ns
Work Tem	-40 ~150 °C

## Key Features

- Integrated bootstrap Diode<sup>(1)</sup>
- 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



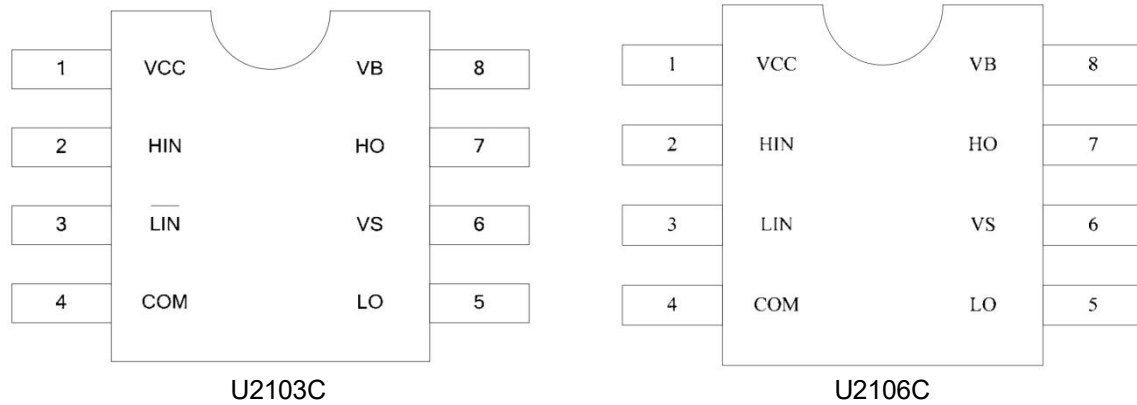
8-Lead SOP

## Product information

Base Part Number	Package Type	Standard OUT		V <sub>OFFSET</sub>	Logic Control
		IO+	IO-		
U2103C	SOP8	0.4A	0.6A	600V	HIN & $\overline{\text{LIN}}$
U2106C	SOP8	0.4A	0.6A	600V	HIN & LIN

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

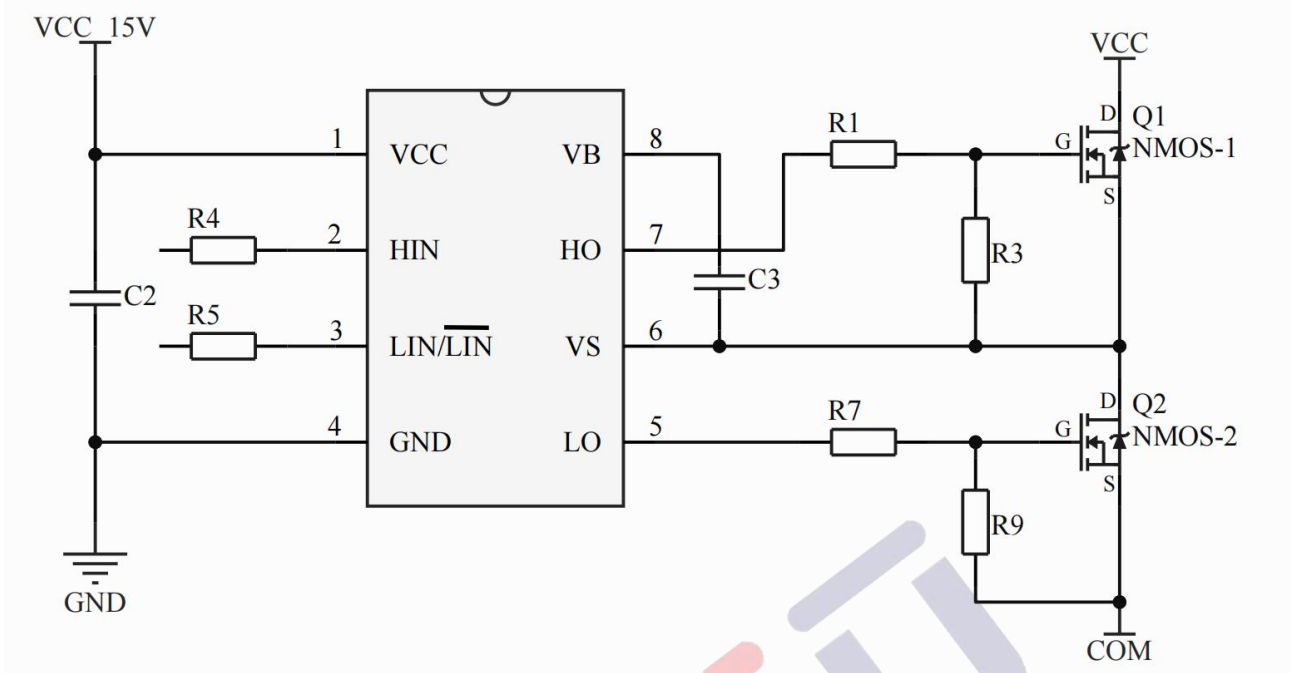
## Pin Assignments



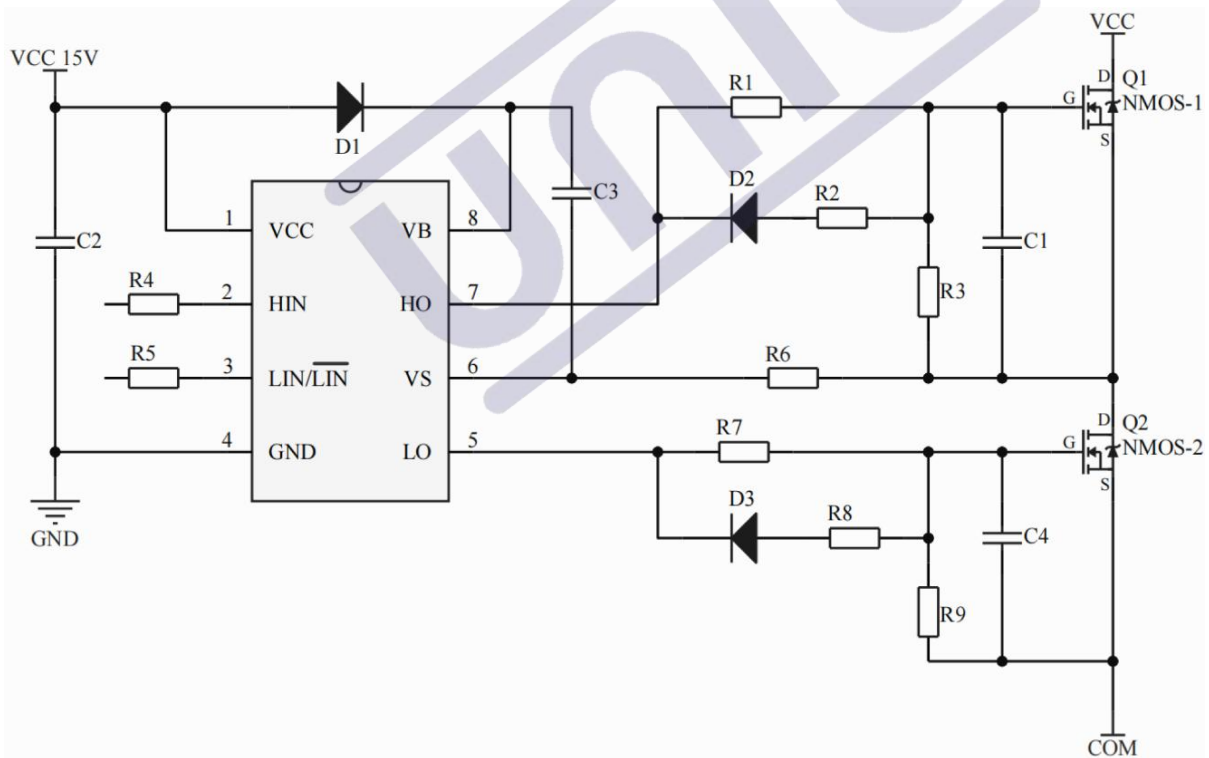
## Pin Function

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	LIN	Logic input for low side gate driver outputs (LO), in phase
	$\overline{\text{LIN}}$	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

- Note:**
- 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、版本记录

DATE	REV.	DESCRIPTION
2023/6/02	1.0	拆分规格书U2103和U2106
2023/10/9	1.1	更新应用原理图及应用参数
2023/12/15	1.2	新增MOS匹配参数
2024/2/15	1.3	合并U2103C和U2106C的规格书

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## 3、联系我们

浙江宇力微新能源科技有限公司

总部地址：绍兴市越城区斗门街道袍渚路25号中节能科创园45幢4/5楼

电话：0575-85087896（研发部）

传真：0575-88125157

E-mail:htw@uni-semic.com

无锡地址：江苏省无锡市锡山区先锋中路6号中国电子（无锡）数字芯城1#综合楼503室

电话:0510-85297939

E-mail:zh@uni-semic.com

深圳地址：深圳市宝安区西乡街道南昌社区宝源路泳辉国际商务大厦410

电话：0755-84510976

E-mail:htw@uni-semic.com