

Current Boosted and DC Stabilized Half Bridge Driver

Following are two applications notes for the EL7661 half bridge driver.

1. The current boosted half bridge driver offers the control functions of the EL7661 with enhanced drive capability. For example an application with $V_S = 16V$, a 25ns turn on time and a 3000pF load would require $I_{PK} = (V_S + V_{GS}) * C/T_{ON} = (16 + 10) * 3000pF/25ns = 3.12A$ peak current

from the driver. Since the EL7761 specifies $I_{PK} = 1A$ typical, the output requires current boosting to achieve the desired turn on time. This circuit is also useful in applications where the switching time is less stringent or the load is lighter but the output is required to swing over a greater range due to higher supplies voltages.

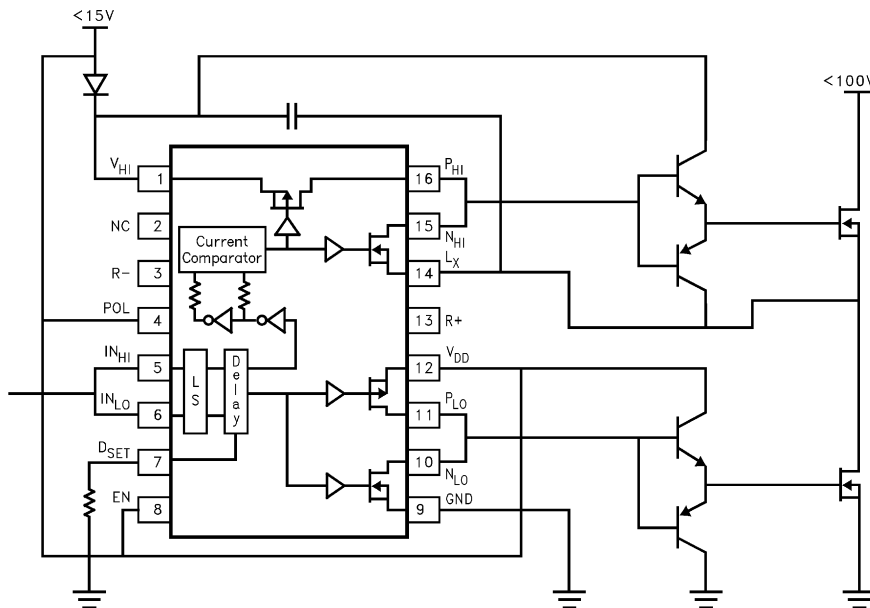


FIGURE 1. EL7661 HALF BRIDGE DRIVER WITH OUTPUT CURRENT BOOST

2. DC stabilization of the half bridge driver is achieved by charge pumping the high side supply storage capacitor while the output is in the high state. This keeps the top half of the circuit (V_{DD} to L_X) biased at 12V when a 12V Zener is used as shown. The Zener should be 15V or less. The EL7232 was selected for the oscillator since its output must swing between GND and the 16V supply and provide a

minimum of 10mA, the supply current of the EL7761. The EL7232 is capable of 1.5A peak. Any driver providing 30mA, swinging between GND and the 16V supply would also be suitable.

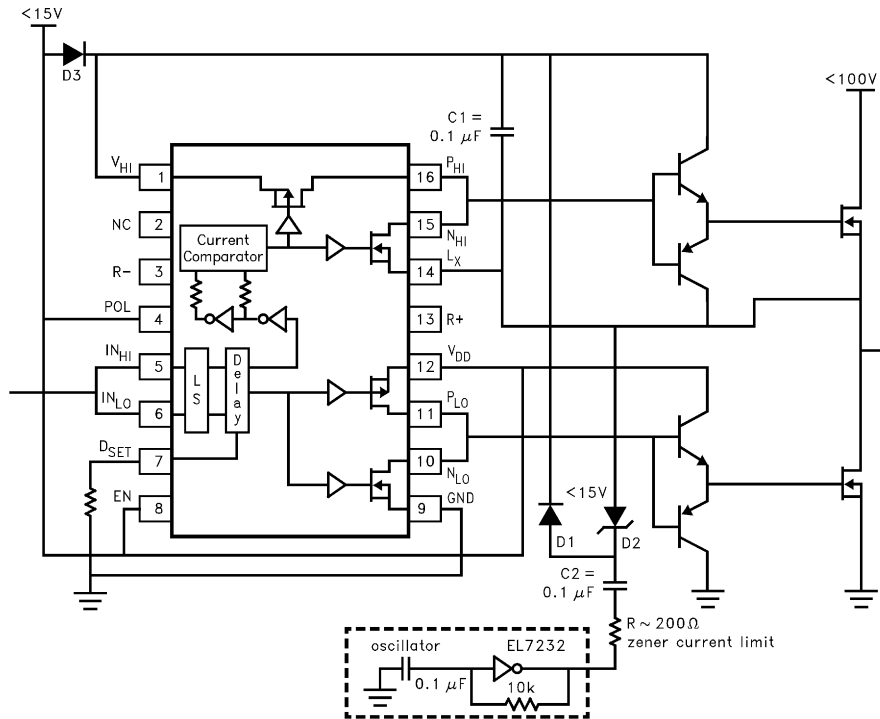


FIGURE 2. EL7661 HALF BRIDGE DRIVER DC STABILIZED WITH OUTPUT CURRENT BOOST

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Renesas Electronics America Inc.
1001 Murphy Ranch Road, Milpitas, CA 95035, U.S.A.
Tel: +1-408-432-8888, Fax: +1-408-434-5351

Renesas Electronics Canada Limited
9251 Yonge Street, Suite 8309 Richmond Hill, Ontario Canada L4C 9T3
Tel: +1-905-237-2004

Renesas Electronics Europe Limited
Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.
Tel: +44-1628-651-700, Fax: +44-1628-651-804

Renesas Electronics Europe GmbH
Arcadiastrasse 10, 40472 Düsseldorf, Germany
Tel: +49-211-6503-0, Fax: +49-211-6503-1327

Renesas Electronics (China) Co., Ltd.
Room 1709 Quantum Plaza, No.27 ZhichunLu, Haidian District, Beijing, 100191 P. R. China
Tel: +86-10-8235-1155, Fax: +86-10-8235-7679

Renesas Electronics (Shanghai) Co., Ltd.
Unit 301, Tower A, Central Towers, 555 Langao Road, Putuo District, Shanghai, 200333 P. R. China
Tel: +86-21-2226-0888, Fax: +86-21-2226-0999

Renesas Electronics Hong Kong Limited
Unit 1601-1611, 16/F., Tower 2, Grand Century Place, 193 Prince Edward Road West, Mongkok, Kowloon, Hong Kong
Tel: +852-2265-6688, Fax: +852-2886-9022

Renesas Electronics Taiwan Co., Ltd.
13F, No. 363, Fu Shing North Road, Taipei 10543, Taiwan
Tel: +886-2-8175-9600, Fax: +886-2-8175-9670

Renesas Electronics Singapore Pte. Ltd.
80 Bendemeer Road, Unit #06-02 Hyflux Innovation Centre, Singapore 339949
Tel: +65-6213-0200, Fax: +65-6213-0300

Renesas Electronics Malaysia Sdn.Bhd.
Unit 1207, Block B, Menara Amcorp, Amcorp Trade Centre, No. 18, Jln Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia
Tel: +60-3-7955-9390, Fax: +60-3-7955-9510

Renesas Electronics India Pvt. Ltd.
No.777C, 100 Feet Road, HAL 2nd Stage, Indiranagar, Bangalore 560 038, India
Tel: +91-80-67208700, Fax: +91-80-67208777

Renesas Electronics Korea Co., Ltd.
17F, KAMCO Yangjae Tower, 262, Gangnam-daero, Gangnam-gu, Seoul, 06265 Korea
Tel: +82-2-558-3737, Fax: +82-2-558-5338