

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.

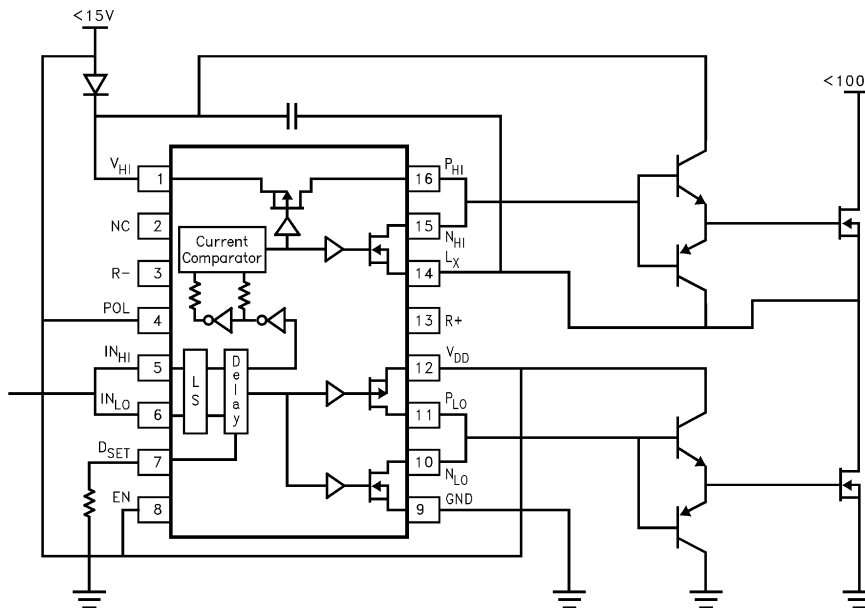


FIGURE 1. EL7661 HALF BRIDGE DRIVER WITH OUTPUT CURRENT BOOST

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.

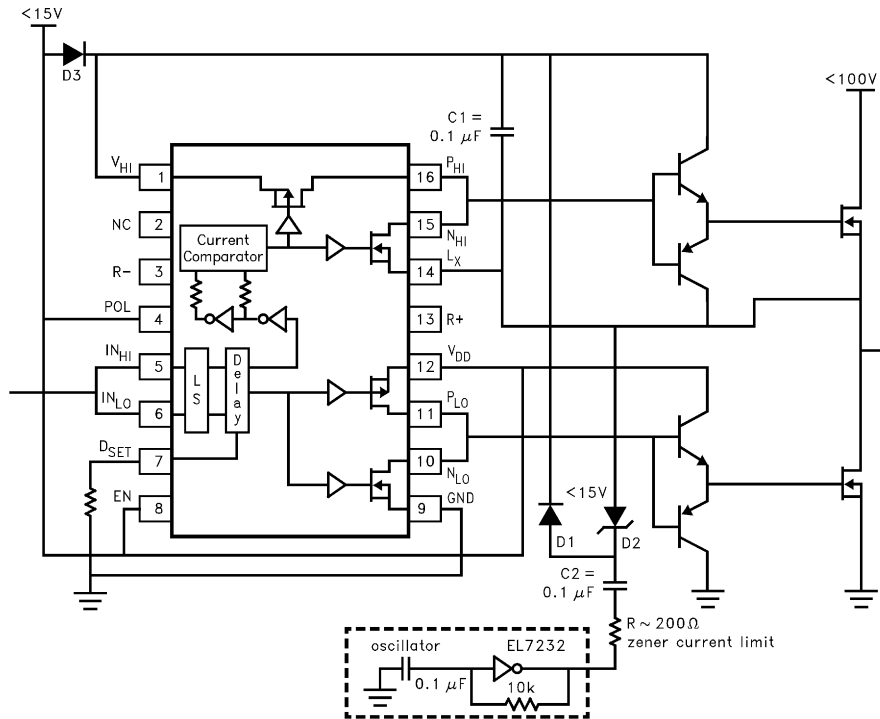


FIGURE 2. EL7661 HALF BRIDGE DRIVER DC STABILIZED WITH OUTPUT CURRENT BOOST

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