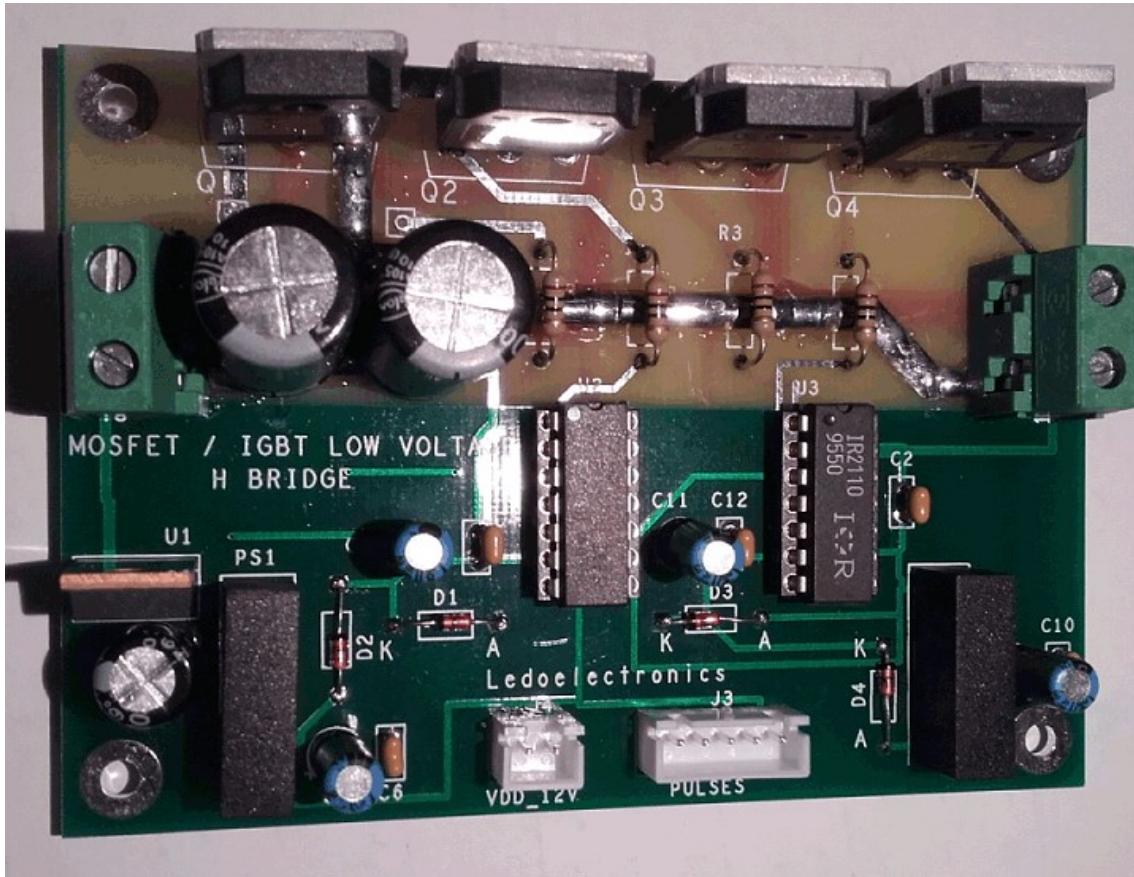


H BRIDGE WITH IR2110



- **Supply voltage: 12... 30V DC**
- **Load current up to 20 A**
- **Can be used for starting and stopping, turning inversion and speed regulation of a DC motor**
- **Compatible with 12V logic**

The bridge consists of two identical arms to the one shown in the diagram below. The TMA1212S isolated DC-DC converter is necessary only if you want to guarantee continuous operation of the MOSFETs, that is, they can remain in the ON or OFF state indefinitely.

Control pulses are compatible with 12V CMOS logic.

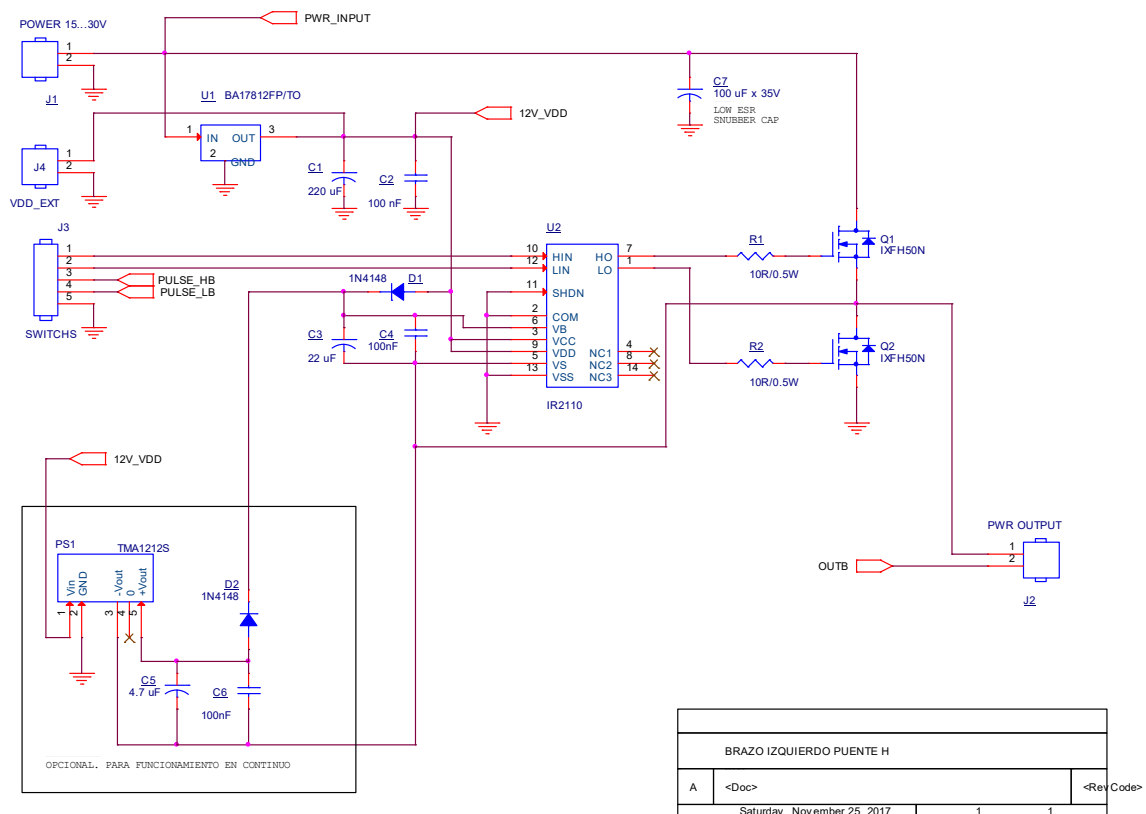
Capacitor C7 is the overvoltage protection element. It has to be of quality, with low ESR and ESL value. Its capacitance has to be proportional to the output current of the bridge.

The circuit's power tracks have been reinforced, so that the bridge can work continuously with currents up to 20 A, limited only by the power input and output connectors (J1 and J2).

The bridge can be used in several applications with different supply voltages. The control circuit can be powered by an external 12V DC source, in case the power circuit's supply voltage is less than 12V, or is above 30V DC.

To operate with supply voltages above 30 V, it is necessary to remove the voltage regulator U1 from the circuit and replace C7 and C8 with higher voltage capacitors.

In most applications, only two control signals are needed for circuit operation. In that case, one signal must be applied to pins 1 and 4 of connector J3, and the other one is applied to pins 2 and 3. These signals must be offset at an angle of 180 ° and for large powers the presence is recommended of a dead time between them.



The circuit has been successfully tested in the implementation of a power signal generator with an output voltage of 12 V AC, an output current of up to 20 A with a variable frequency between 90 Hz and 150 KHz. This generator is used to determine the inductance and saturation current of the inductors, as well as to determine the characteristics of the magnetic cores.

It can be used to drive DC motors with PWM modulation for speed regulation and reversal of rotation and braking.

In all cases, it is essential to use a heat sink suitable for the power being handled. All transistors must be electrically isolated from the heatsink.

