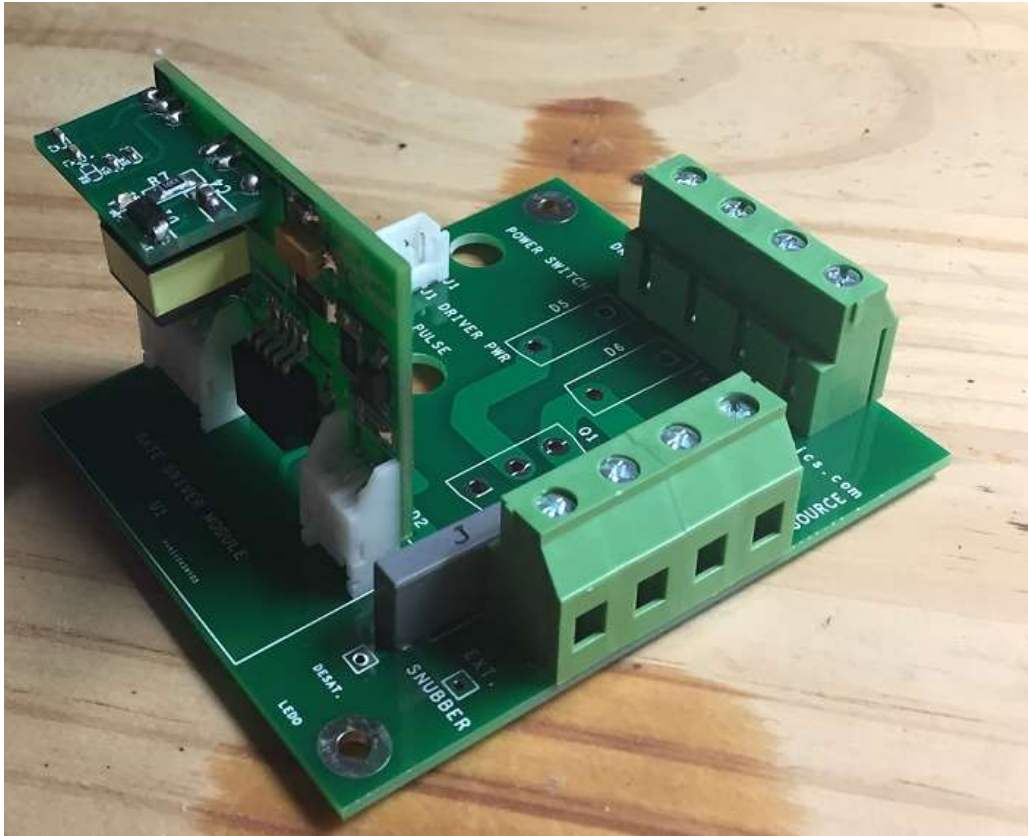


MOSFET / IGBT UNIVERSAL POWER SWITCH LE-S1b



- On board isolated gate driver
- Compatible with transistors and diodes TO-247. 5 ... 100A, 60 ... 1700V
- Compatible with MOSFETs, IGBTs and SiC MOSFETs
- Built-in RC Snubber
- Very flexible. It can be used in inverters of current, voltage, Buck regulators, Boost, capacitor discharge, etc.
- Eliminates the effect of the parasitic diode present in all MOSFETs
- Protection by detecting the desaturation of the power transistor.
- Maximum average working current: 50 A

The module was designed with the purpose of facilitating the tasks of searching for optimal power configurations, during the implementation phase of a converter for induction heating of several kilowatts of power.

As you can see in fig. 1, it can be integrated into any circuit, without the need for welding and the number of them can be increased to form different configurations: One switch, half bridge, H bridge, etc. It can be used with a diode, to implement a current inverter, with both to suppress the effects of the parasitic diode of the MOSFET, or without any diode. The power transistor can be chosen from an IGBT, a conventional silicon MOSFET, or a SiC MOSFET silicon carbide MOSFET or GaN.

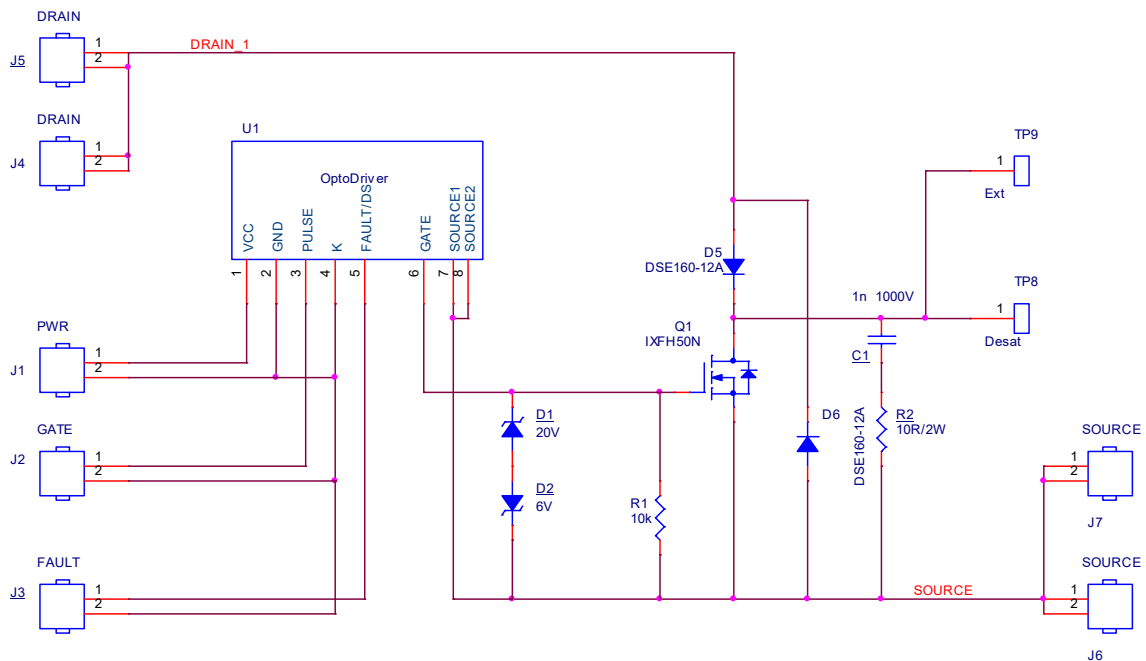


Fig.1. Power Switch schematics.

As a gate driver, you can choose between the different versions manufactured by Ledoelectronics, covering a frequency range from DC to 1MHz.

The power semiconductors are arranged so that they can be easily screwed to a heat sink using M3 screws.

The C1 and R2 components of the Snubber network must be selected according to the application (see web calculations page), an external snubber network can also be connected; However, if these modules are part of a bridge or semi-bridge configuration, it is recommended to use a special capacitor with low inductance and low ESR on the DC (DC Link) bus.

Diodes D5 and D6 improve the dynamics, since they suppress the operation of the slow diode that parasites in all MOSFETs, but in turn increase the conduction losses. They have to choose between the fast recovery, zero recovery or schottky silicon carbide diodes with the proper voltage and current.

The maximum working current (average value) is about 50 A, and is limited by the width of the PCB tracks. It is possible to work with up to 80 A, reinforcing the current circulation sections with copper wires.

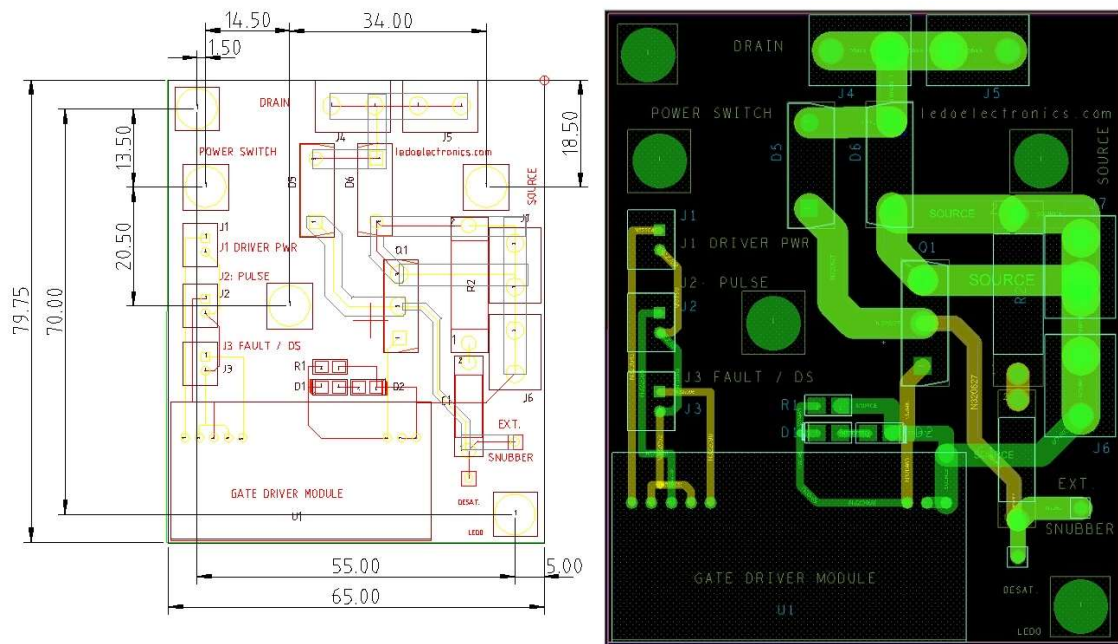


Fig.2. Board outline.

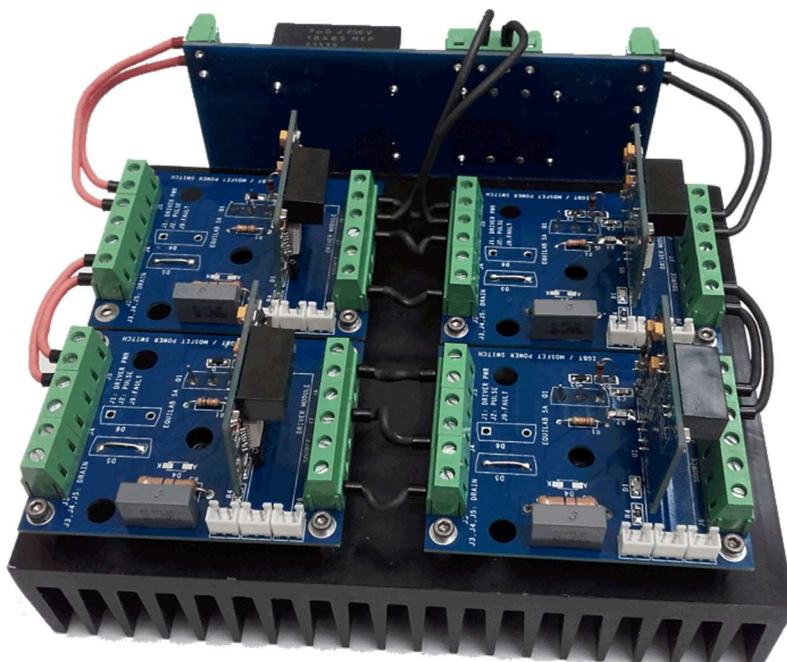


Fig.3. H Bridge using four modules.