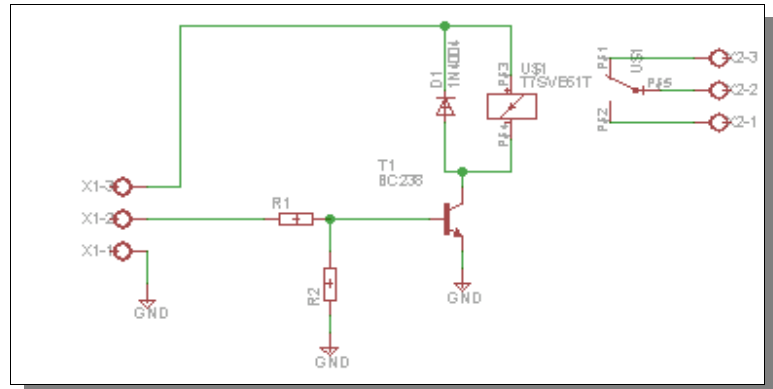


Relay with embedded driver

Device schematics

The circuit is based on a simple driver able to switch on a relay when an high logic level is present on the X1 connector central pin, typically connected to a microcontroller digital output line. The 220 Ohms R1 resistor limits the sink current if the transistor T1 is, for some reason, damaged. The 1000 Ohms resistor R2 forces a low logic level when the X1-2 pin is left unconnected, preventing false relay actuations. When a high logic level is applied to the X1-2 pin, the current flowing through the transistor base will generate an high current flowing between the emitter and the collector of the transistor itself. In this situation the relay will be turned on. When a low logical level will be applied to the X1-2 pin, instead, the base current will stop flowing and, consequently, the relay will be shut down. The diode D1 prevents that extra-voltages generated by the relay, when turned off, could damage the transistor T1.



How to mount it

We suggest to follow the sequence here reported, having the picture on the right side as reference. As a first step we suggest to solder the two ¼ Watts resistors. The R1 (220 ohm) is located on the right side; the R2 (1kOhm) is located between R1 and the transistor. Next step is to mount the diode D1 (a 1N4004 or 1N4007) placing the white reference band on the right side of the PCB. Next is the transistor T1, a Zetex ZTX450 (in this case the flat side has to be directed on the left side, opposite to the two resistors) or a BC238 (to be placed like in the picture). As last step we suggest to solder the relay and the two connectors.

How to use it

The relay block is really easy to use. All you need is to connect the ground and the 5V power supply to the connector X1. The X1 central pin has to be connected to a microcontroller digital output pin. The load will be driven through the X2 connector where a Normally Open and a Normally Closed contact are present. **Warning: This relay block could be used exclusively on hobby targeted circuits: systems where his malfunction couldn't damage or generate hazard or personal injuries. EtherMania is not responsible for any damage or personal injuries caused by this circuit or his derivatives.**

