

## Hardware: ATtiny13 Prototyping Board

Please note there is no voltage regulator, maximum Vcc is 5v!

A: CP2102/FTDI Pinout for USB-UART Serial Device. On the ATtiny13 you can use basic serial communications, but you can not upload sketches over serial.

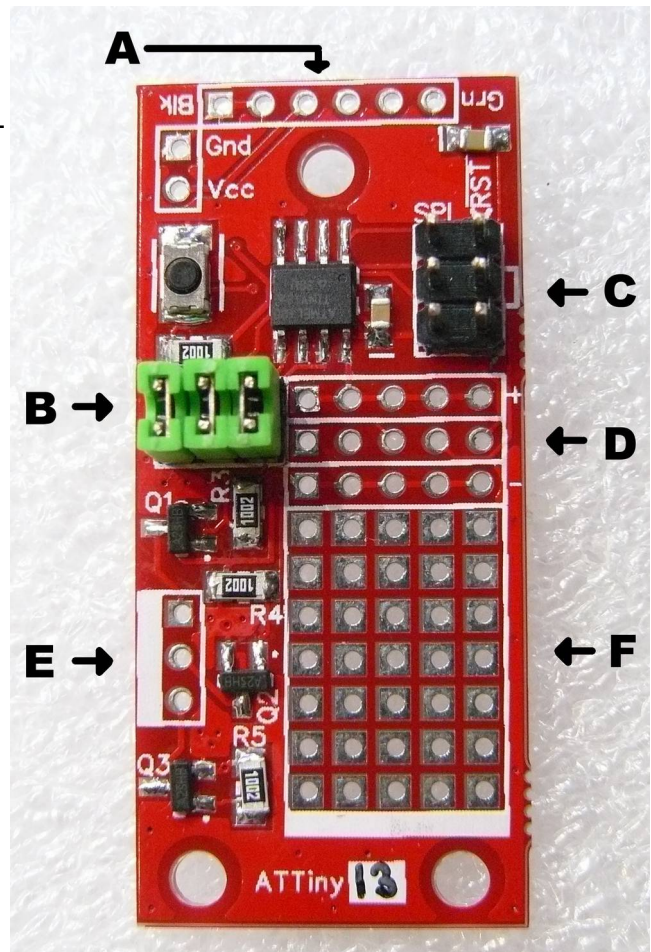
B: These three jumpers connect digital/analog pins 0, 1 and 2. You may want to disconnect them while programming as these pins are used by the programmer.

C: SPI (ISP) Programming header. Connect your 6 pin programming connector here. I recommend a USBasp.

D: The row marked + are all Vcc the row marked - are all Gnd. The row in the middle is from left to right, in "Arduino Pin Numbering" 0, 1, 2/A1, 3/A3, 4/A2, in native AVR that's PB0..PB4

E: These three pins connect to the Drain of an N-Channel Mosfet on each of Arduino pins 0, 1 and 2 (PB0..2). That is, if you `digitalWrite(0, HIGH)` then the top pin of these three will be connected to ground, `digitalWrite(1, HIGH)` connects the middle pin to ground, and `digitalWrite(2, HIGH)` connects the bottom pin to ground. Note that each mosfet is pulled down by a 10k resistor. The mosfet currently in use is the Si2302DS, but this may change in future.

F: This array of pads can be used for anything you like. You will see on the back of the PCB that the pads of each column are connected and you can cut the trace to split a column into two, or more.



## Software: ATtiny13 Arduino Core

If you are using the Arduino IDE, you will need to install a "core" for the ATtiny13 as the default Arduino does not support Tiny processors.

I recommend using Arduino IDE version 1.6.9 (or later) with my own personal fork and distribution of ATTinyCore which I have better optimised for very Tiny processors like the Tiny 13.

Install instructions can be found at:

<https://goo.gl/nQzMb2>

After install, choose Tools > Board > ATtiny13

When you have chosen the board, you will find some specific ATtiny13 examples in File > Examples > ATTinyCore > Tiny13