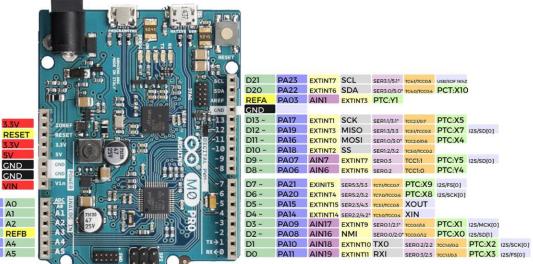
## Input and Output

Each of the 14 digital i/o pins on the M0 can be used as an input or output, using pinMode(), digitalWrite(), and digitalRead() functions. They operate at 3.3 volts. 7mA as maximum DC current for I/O pins and an internal pull-up resistor (disconnected by default) of 20-60 kOhms. In addition, some pins have specialized functions:

- Serial: 0 (RX) and 1 (TX). Used to receive (RX) and transmit (TX) TTL serial data using the ATSAMD21G18 hardware serial capability. Note that on the M0, the SerialUSB class refers to USB (CDC) communication; for serial on pins 0 and 1, use the Serial5 class.
- TWI: SDA and SCL. Support TWI communication using the Wire library.
- PWM: Pins 2 to 13 Provide 8-bit PWM output with the analogWrite() function. The resolution of the PWM can be changed with the analogWriteResolution() function. Note1 The pins 4 and 10 can not be used simultaneously as PWM. Note2 The pins 5 and 12 can not be used simultaneously as PWM.
- SPI: on the ICSP header. These pins support SPI communication using the SPI library. Note that the SPI pins are not connected to any of the digital I/O pins as they are on the Uno, They are only available on the ICSP connector. This means that if you have a shield that uses SPI, but does NOT have a 6-pin ICSP connector that connects to the M0's 6-pin ICSP header, the shield will not work.
- LED: 13. There is a built-in LED connected to digital pin 13. When the pin is HIGH value, the LED is on, when the pin is LOW, it's off.
- Analog Inputs: A0-A5. The M0 has 6 analog inputs, labeled A0 through A5.
  Pins A0-A5 appear in the same locations as on the Uno; Each analog input
  provides 12 bits of resolution (i.e. 4096 different values). By default the
  analog inputs measure from ground to 3.3 volts, though is it possible to
  change the upper end of their range using the AREF pin and the
  analogReference() function.
- DAC: pin A0 provides true analog outputs with 10-bits resolution (1023 levels) with the analogWrite() function. This pin can be used to create an audio output using the Audio library.
- Reset: Bring this line LOW to reset the microcontroller. This is typically
  used to add a reset button when shields are used that block the one
  already present on the board.



|        |         |        |         |         |       |      | GND<br>VIN |
|--------|---------|--------|---------|---------|-------|------|------------|
|        |         | DAC    | PTC:YO  | EXTINT2 | AINO  | PA02 | AO         |
|        | PTC:Y14 | TC4:0  | SER4:0  | EXTINT8 | AIN2  | PB08 | A1         |
|        | PTC:Y15 | TC4:1  | SER4:1  | EXTINT9 | AIN3  | PB09 | A2         |
| PTC:Y2 | TCCO:0  | SERO:0 | EXTINT4 | AIN4    | PA04  | A3   | REFB       |
|        | PTC:Y3  | TCCO:1 | SERO:1  | EXTIN5  | AIN5  | PA05 | A4         |
|        | PTC:Y8  | TC6:0  | SER5:0  | EXTINT2 | AIN10 | PB02 | A5         |