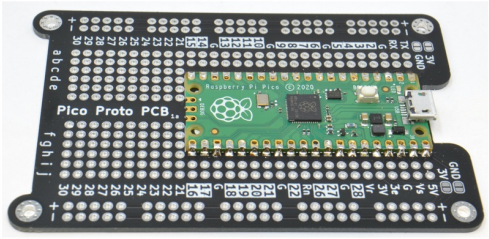
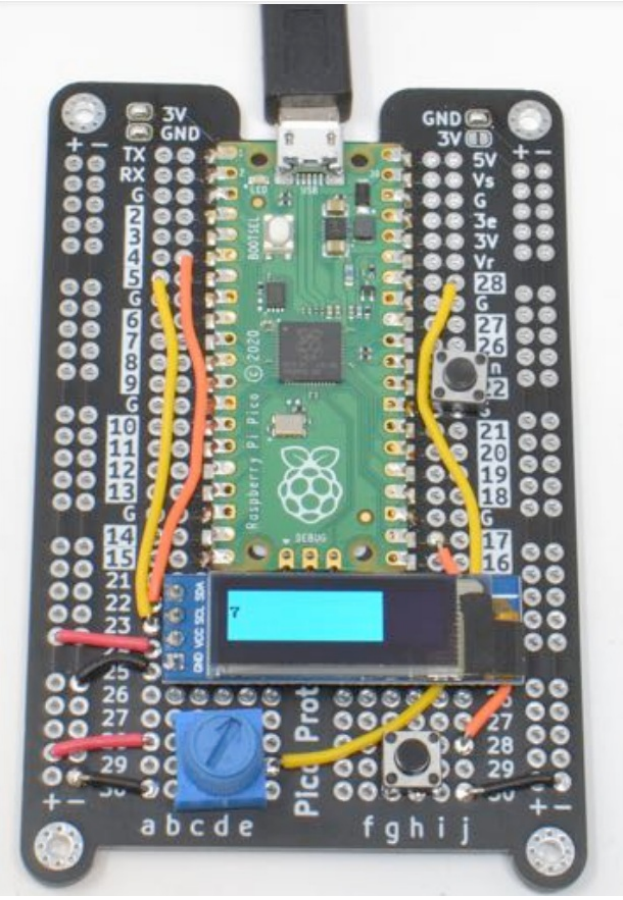


MONK MAKES MNK00093 Pico Proto PCB Prototyping Board Instructions

Instructions:
PICO PROTO PCB



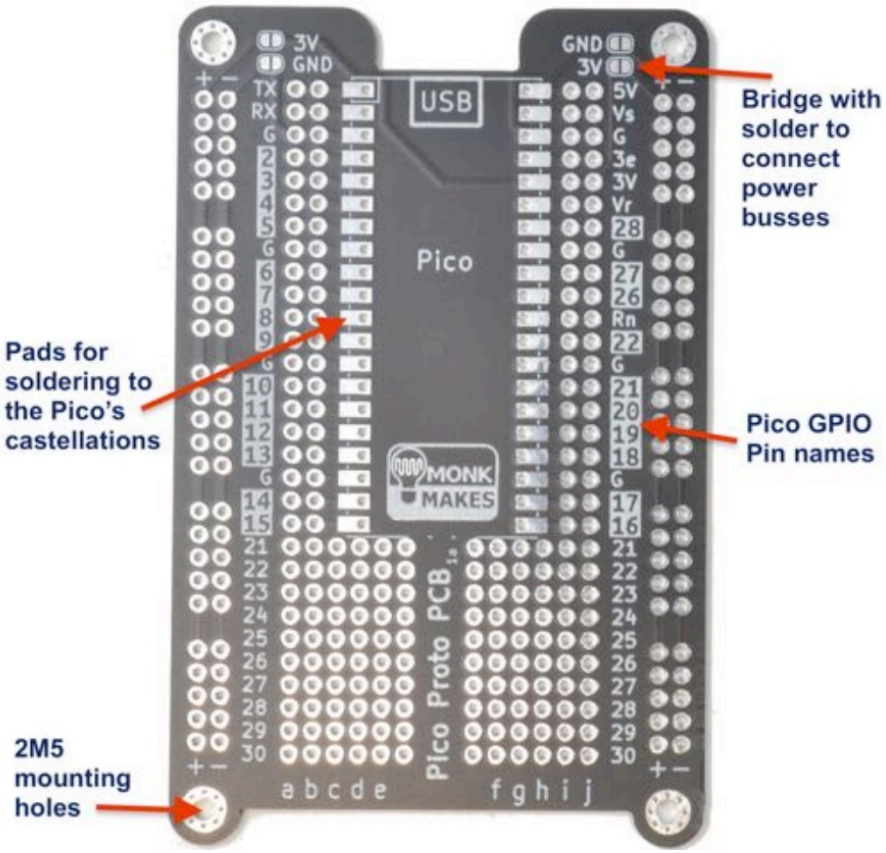
Contents

MNK00093 Pico Proto PCB Prototyping Board

It can be tricky to work out which pin is which when using a Raspberry Pi Pico with a prototyping board. The MonkMakes Pico Proto PCB solves this problem by labeling the Pico pins on the PCB.
WARNING: Low voltage, low current user only. Maximum 50V at 3A.

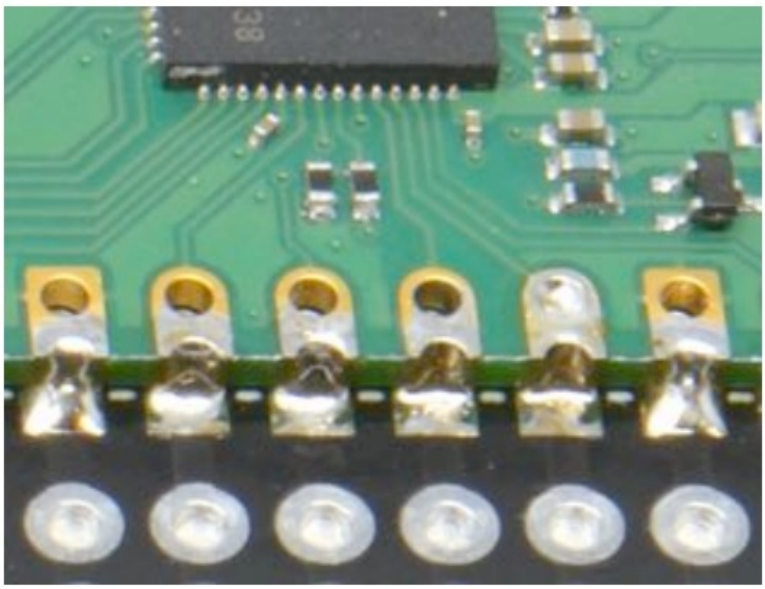
OVERVIEW

The MonkMakes Pico Proto PCB makes it easy to make soldered prototypes using the Raspberry Pi Pico. You can solder the Pico to the prototyping board using the castellations around the edge of the board, or using header pins, or even solder header sockets onto the Pico Proto PCB so that you can easily swap out the Pico. The layout of the Pico Proto PCB is modeled on a 400-point breadboard, and after the Pico is soldered to the PCB, there are 10 more rows, that can be used for through-hole components.

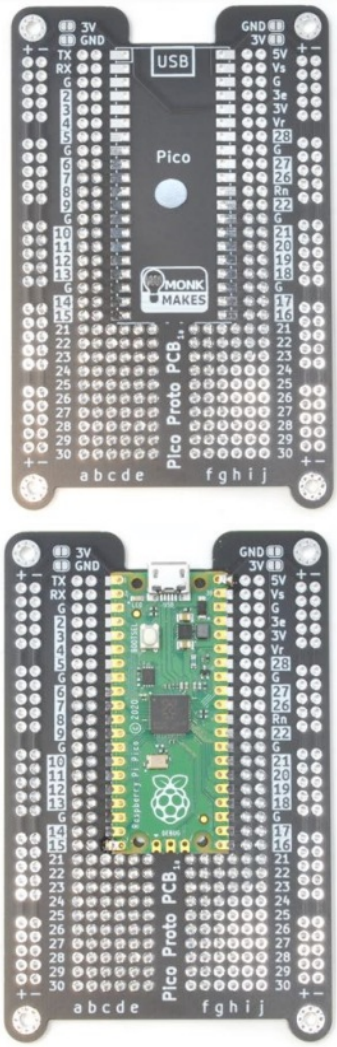


SOLDERING THE PICO

The simplest way to solder your Pico onto the Pico Proto PCB is to use the castellations around the edge of the Pico. It's best to first fix the Pico in place using double-sided sticky tape or as shown below, a tiny piece of adhesive putty.
This should be as thin as possible so that the castellations on the Pico are touching or almost touching the pads on the Pico Proto PCB.
Solder one pin in each corner, just to really fit the Pico in place, and then solder the rest of the castellations, by [lacing the soldering iron on the pad, close to where the pad and the Pico's castellation meet. Then run in enough solder to make sure that the pad and castellation are joined by a bridge of solder.



You can also solder your Pico to the PCB using header pins that are first soldered to the Pico and then to the Pico Proto PCB but make sure you have the Pico Proto PCB the right way up, or the pin labels will be mirrored.

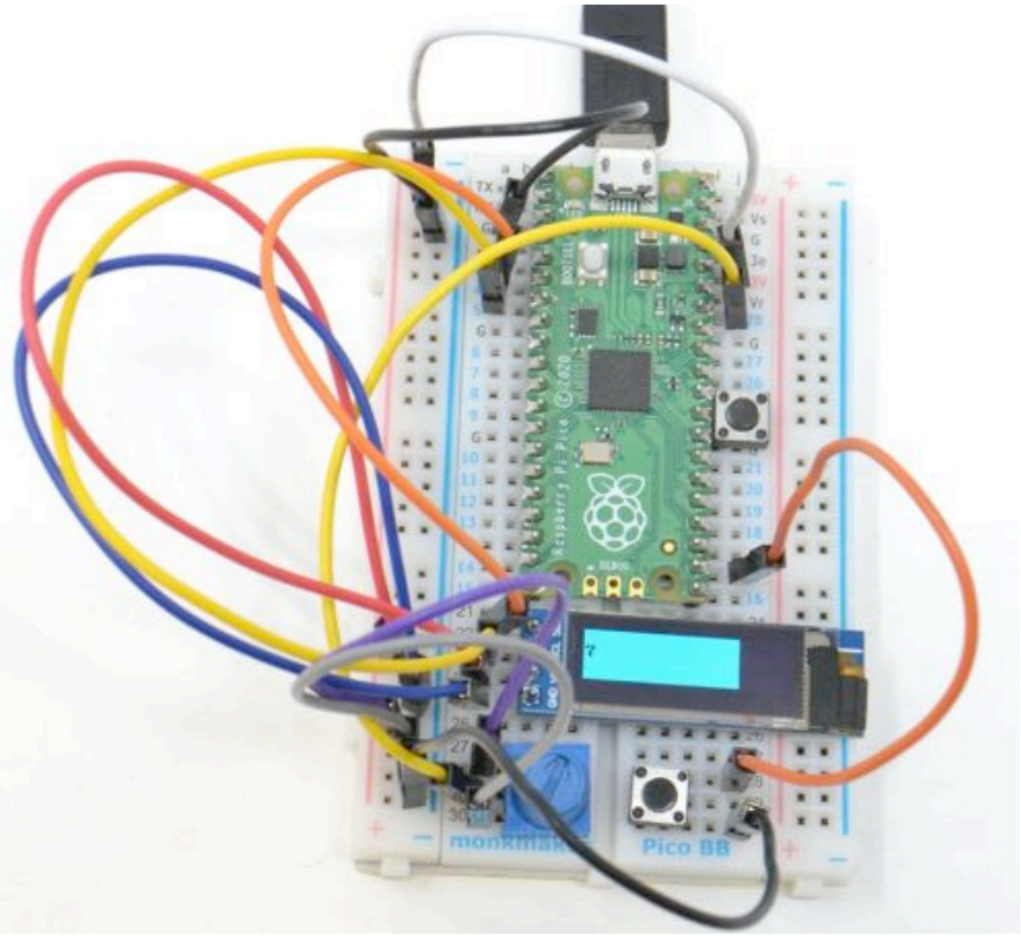


FROM BREADBOARD TO PICO PROTO PCB

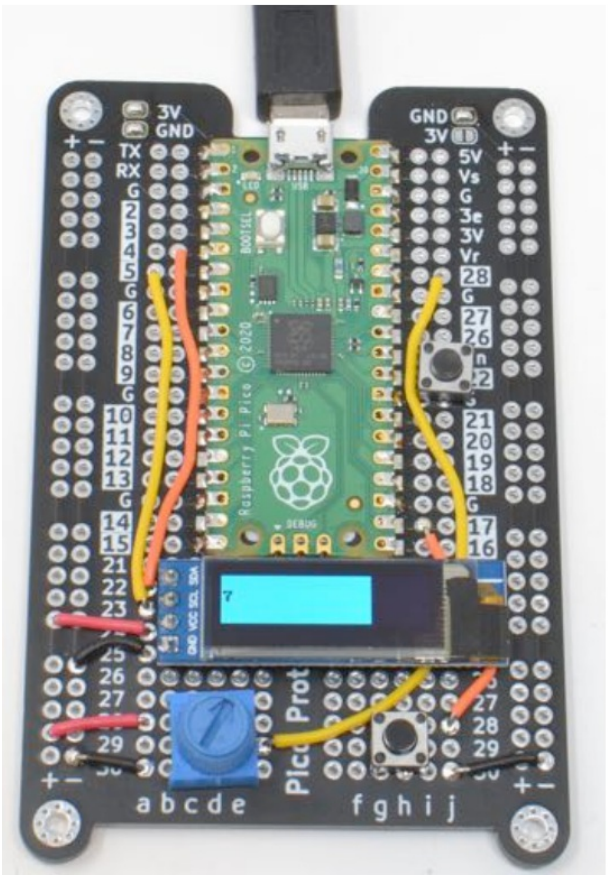
The Pico Proto PCB is intended to complement the MonkMakes Breadboard for Pico (**https://www.monkmakes.com/pico_bb**). Typically, you will design and perfect your project using a solderless breadboard and when you are happy with everything, commit your design to a much neater and more permanent form using a Pico Proto PCB.

As an example, here is a project that uses an OLED display, a variable resistor, and a push button. We will transfer this design from Breadboard for Pico to Pico Proto PCB.

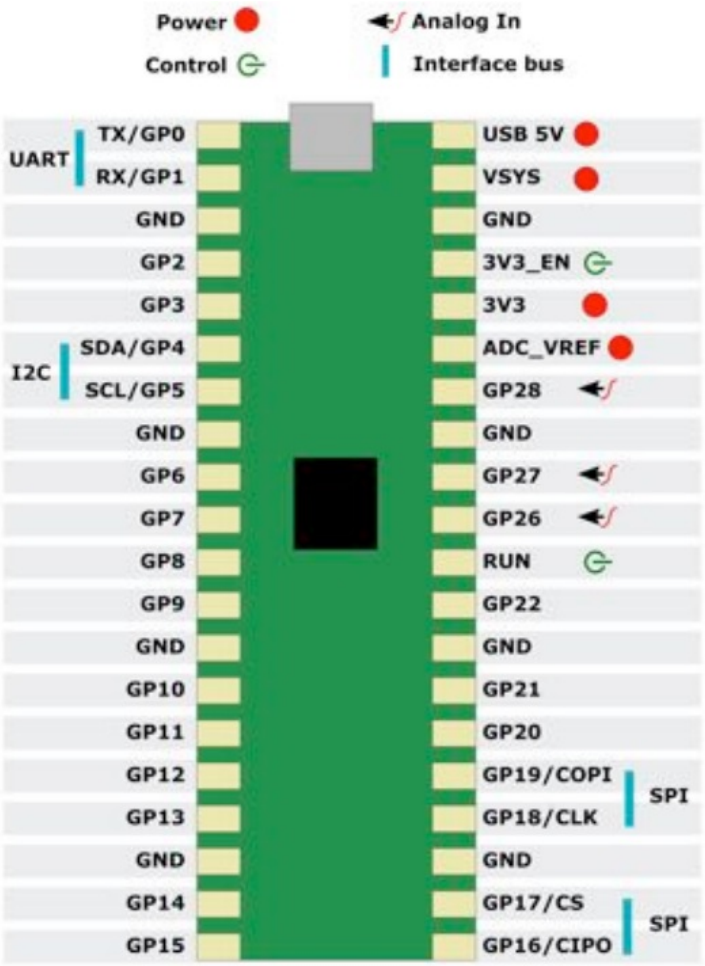
Here is the design on a breadboard, and on the next page, you can see the much neater version of exactly the same project soldered onto Pico Proto PCB.



You can find the code for this project here in the files oled_pot.py and ssd1306.py:
https://github.com/simonmonk/prog_pico_ed1/tree/main/bonus_material
The project doesn't do much except demonstrating the use of an OLED display with a variable resistor and switch. The OLED display was from eBay (search for SSD1306 OLED) and the other components were from the MonkMakes Electronics Kit 1 for Pico (**https://www.monkmakes.com/pico_kit1**).



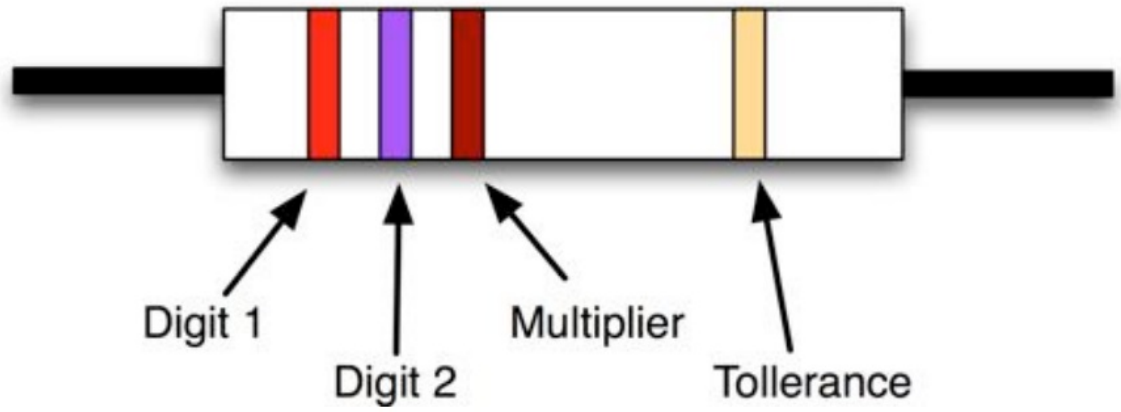
APPENDIX A. RASPBERRY PI PICO PINOUT



APPENDIX B. THE RESISTOR COLOR CODE

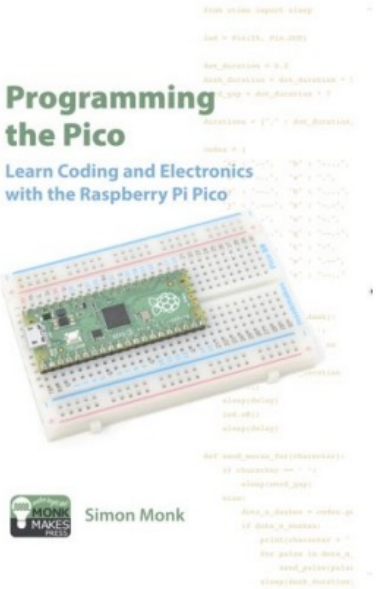
Resistors have little stripes on them that tell you their value. Here's how to read them.
Each color has a value.
There will generally be three colored bands together starting at one end of the resistor, a gap, and then a single band at one end of the resistor. The single band at the far side indicates the accuracy of the resistor value.
The first band is the first digit, the second digit, and the third 'multiplier' band is how many zeros to put after the first two digits.
The Gold and Silver stripes at the far end of the resistor are used to indicate how accurate the resistor is, so Gold is +-5% and Silver is +-10%. In other words, a Gold (5%) 1000Ω (1kΩ) resistor could have an actual resistance between 950Ω and 1050Ω. 5% is plenty accurate enough for the projects in this kit.

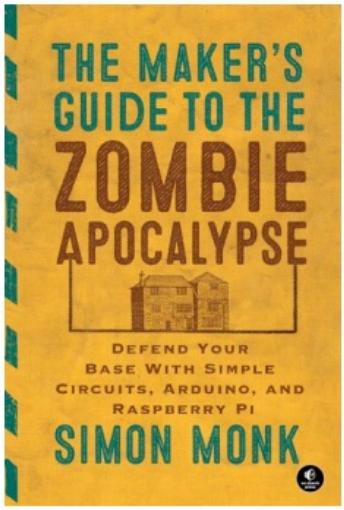
Black	0
Brown	1
Red	2
Orange	3
Yellow	4
Green	5
Blue	6
Violet	7
Gray	8
White	9
Gold	5%
Silver	10%

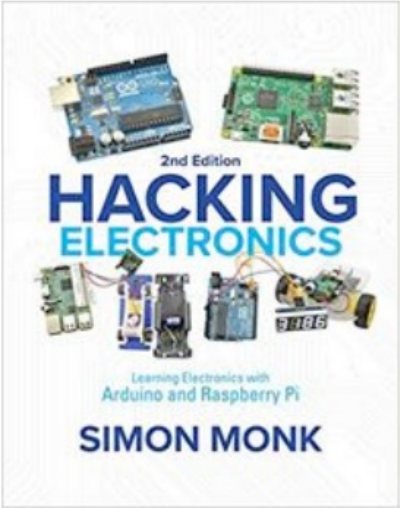


BOOKS

This kit gives you a good set of parts to go off and start developing your own projects. You may find that you want to learn more about using and programming the Raspberry Pi. These books were written by the designer of this kit.

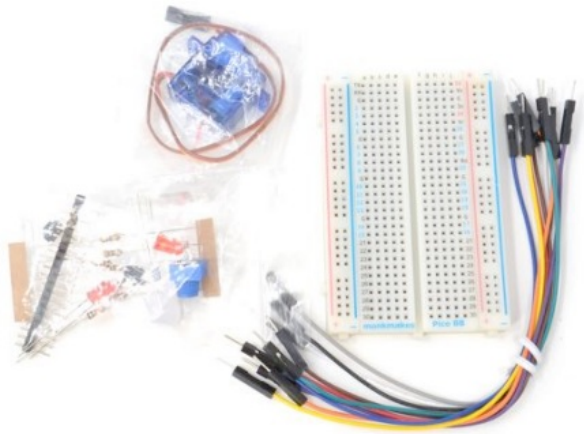




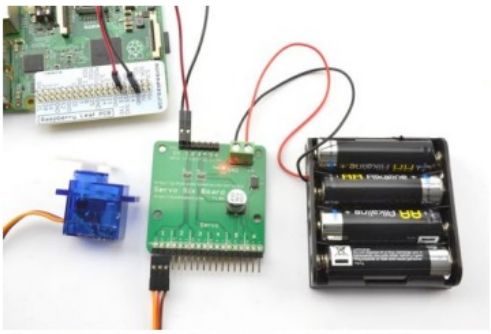


OTHER PRODUCTS

As well as this kit, MonkMakes makes all sorts of kits and gadgets to help with your projects.
Find out more, as well as where to buy here: **https://monkmakes.com** you can also follow MonkMakes on Twitter@monkmakes. For support, please email **support@monkmakes.com**



Electronics Kit 1 for Raspberry Pi Pico



ServoSix Kit for Raspberry Pi

Documents / Resources

	MONK MAKES MNK00093 Pico Proto PCB Prototyping Board [pdf] Instructions MNK00093, Pico Proto PCB Prototyping Board, MNK00093 Pico Proto PCB Prototyping Board