

All credit to Foostan: <https://github.com/foostan/crkbd>

Oh and google translate and some guessing.

**Guessers:** Durnlaw and Skyvsaur

[Reddit link that got us here](#)

# Build Guide

## Parts

### Required

Name	Number	Remarks
PCBs	2	
Plate	2 set	
ProMicro	2 sheets	
TRRS jacks	2	
TRS (3 pole) cable ***	1	<b>TRRS (4 pole) cable can be used</b>
Tact switch	2	
Diode	42	Only for surface mounting in case of low profile
key switches	42	
Keycap	42 pieces	1 u 40 pieces, 1.5 u 2 pieces
Spacer M	2	6 mm 10 mm 3 mm in case of low profile
Spacer M	2	8 mm or 4 mm
Screw M2	28	
Cushion rubber	10 pieces	

**\*\*\* (Builders have reported that TRRS is required for theirs to work. Thanks Colton!)**

### Optional

Name	Number	Remarks
1 or 2	OLED modules	
4 Pin Headers	Two	When using two OLED modules
4 Pin Sockets	Two	When using an OLED module
SK6812 MINI	54 pieces	42 upward mounting, 12 mounting downward
Serial LED Tape	2 books	It is not supposed to be used in conjunction with

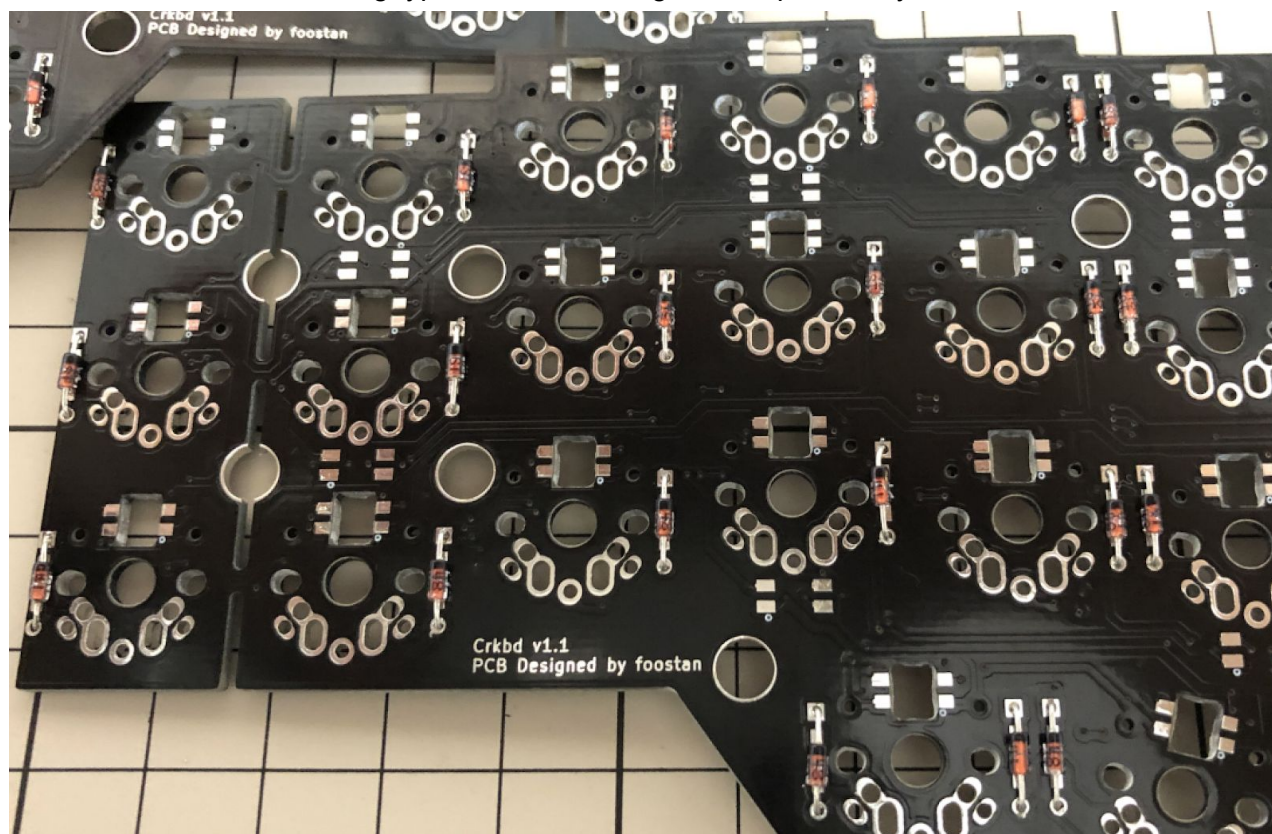


## Implementation

Because the PCB is reversible, first decide which one to use for left / right.

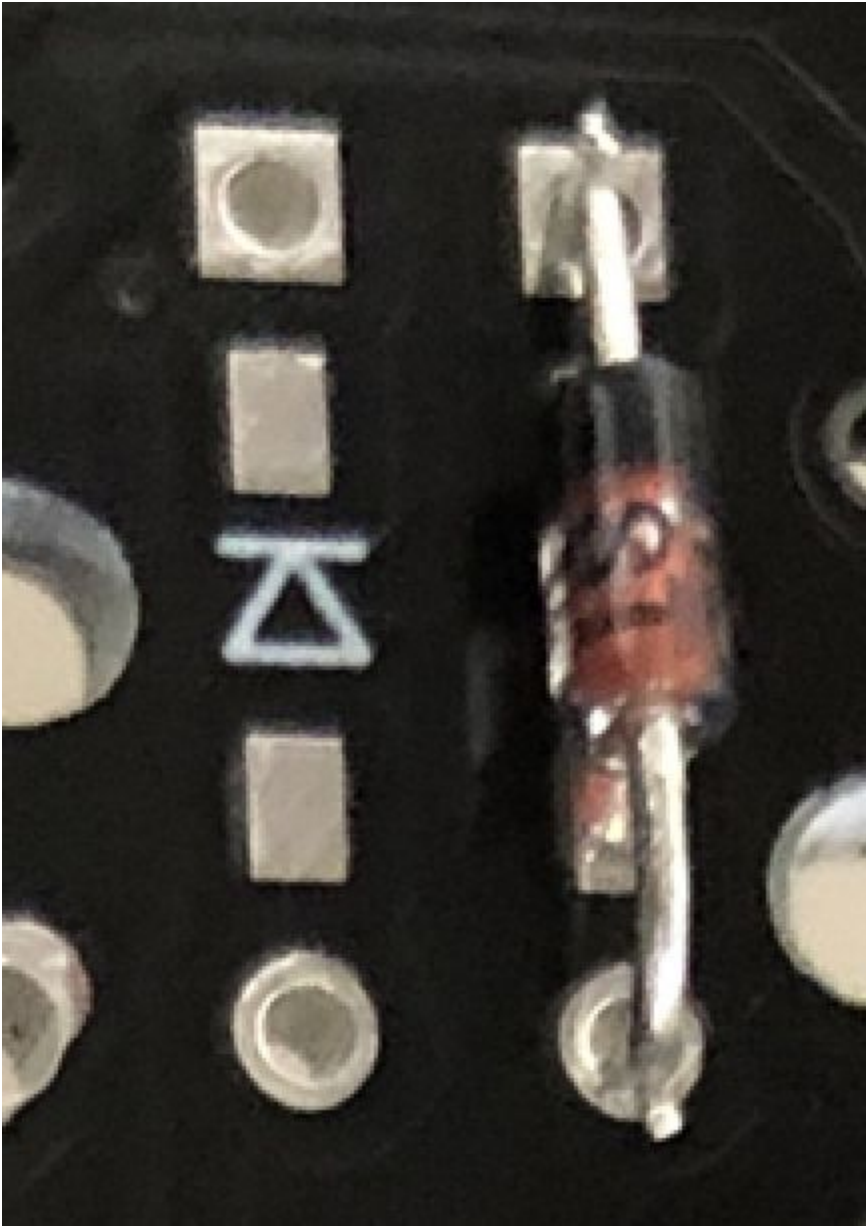
## Diodes

When not using low profile key switches, mount the diode in the position of the photo. I prefer to mount it on either side, but when mounting the Undergrow LED it is recommended to mount it on the surface to avoid interference. You can use the surface mounting type as well as using the low profile key switch.



Please note that the diode orientation.

<- Before implementation | After implementation ->



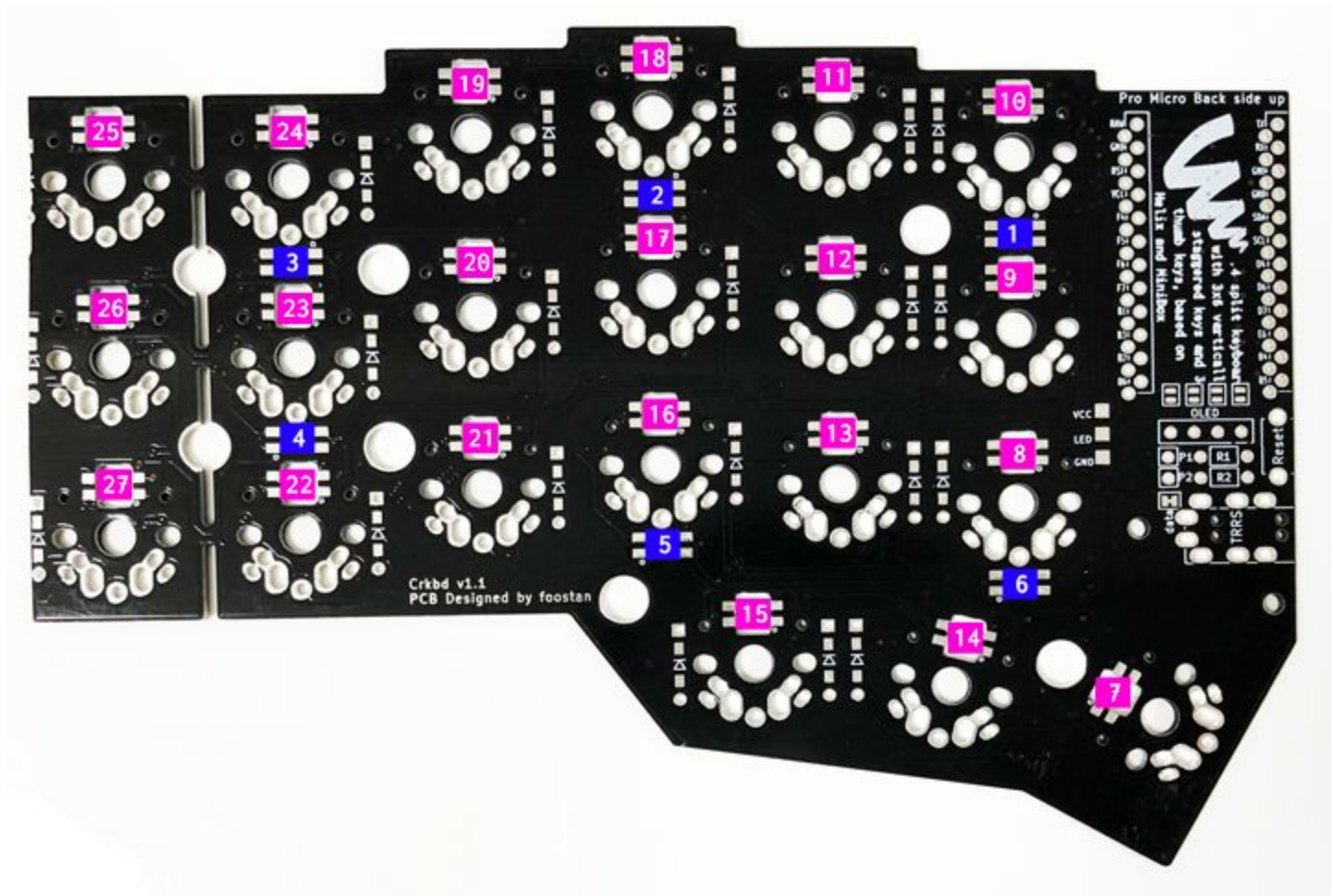
#### **When using low profile key switch**

When using a low profile switch, make sure to use a surface mounting type diode and mount it on the back side. If it is mounted on the surface, the top plate will interfere with the diode.



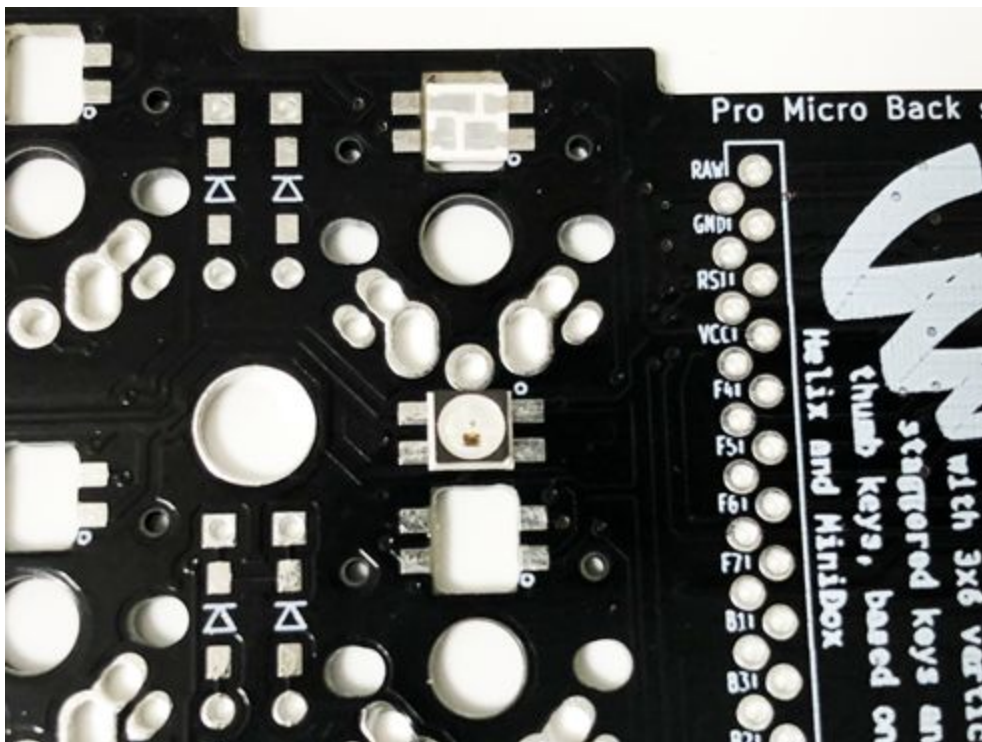
### LED (option)

Mount the LEDs (7-27) on the back of the key switch so that the front side glows, so that the other side (1-6) glows on the back side. Below is the position to mount the LED.



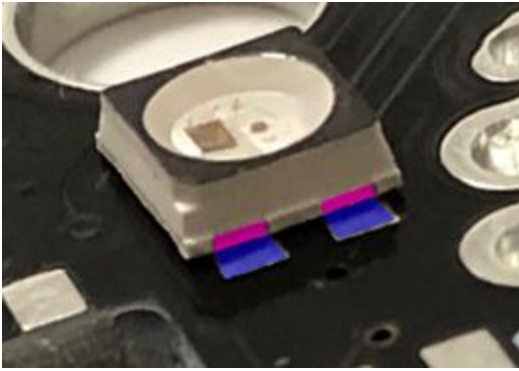
Install each LED from the back as shown below. Please be careful with the direction of the LED with reference to the ○ mark.

**Note:** The face up LED is in position 1. The LED that is face down is in position 10.





Solder 1-6 LEDs to the slightly outward pattern on the side (pink on the picture) and the pattern on the PCB (blue on the picture). After adding flux, take a small amount of solder with a soldering iron and press it against the boundary of the pattern below.

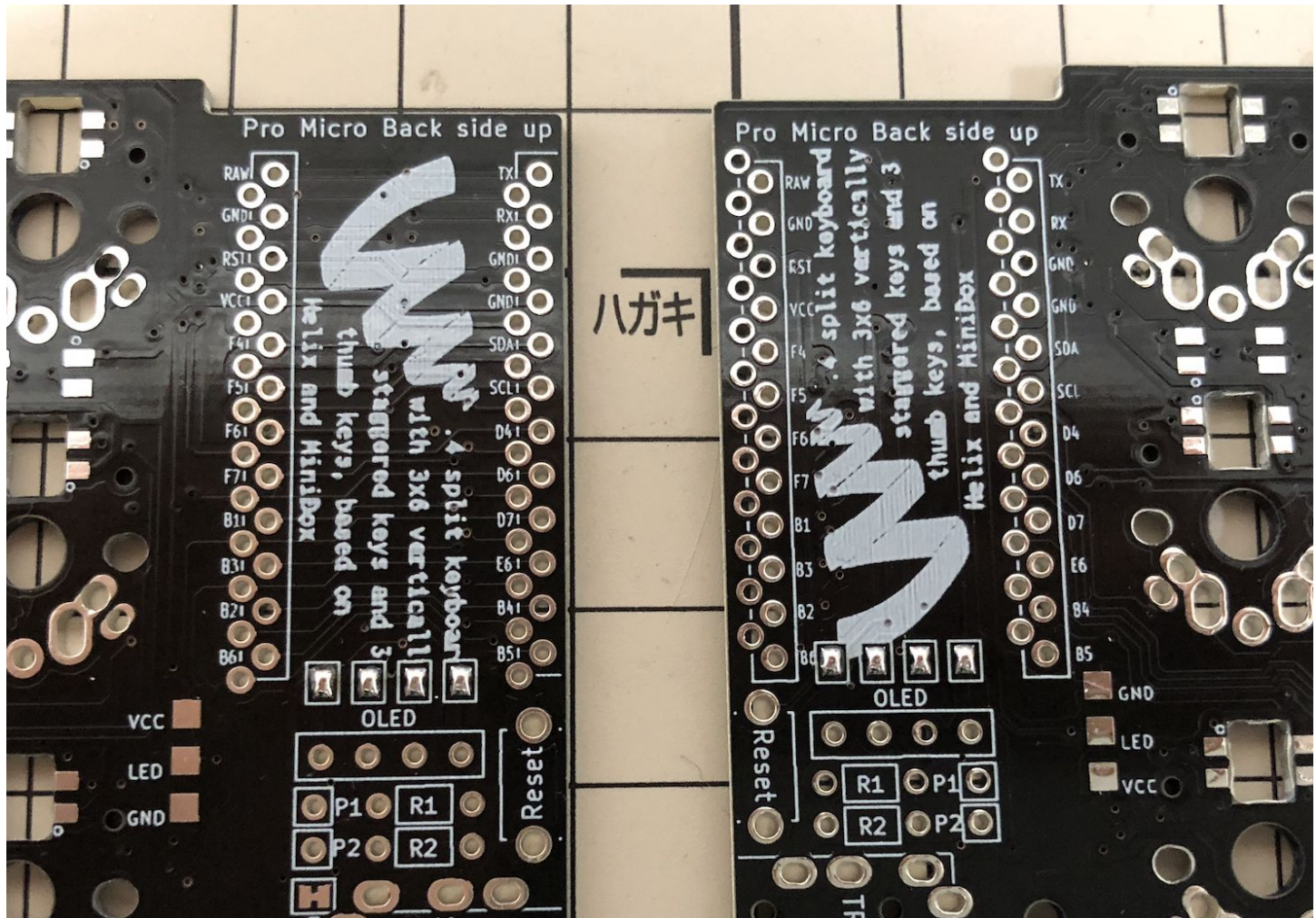


**Note:** I'm not sure what this below portion is about other than general troubleshooting.

When checking the lighting of the LED, since it is connected according to the number of the above picture, if it turns on only half way, it will not be lit. If there is a high possibility of mounting mistake of the LED or the one before the LED, check it please look.

### Jumper (optional) for OLED module

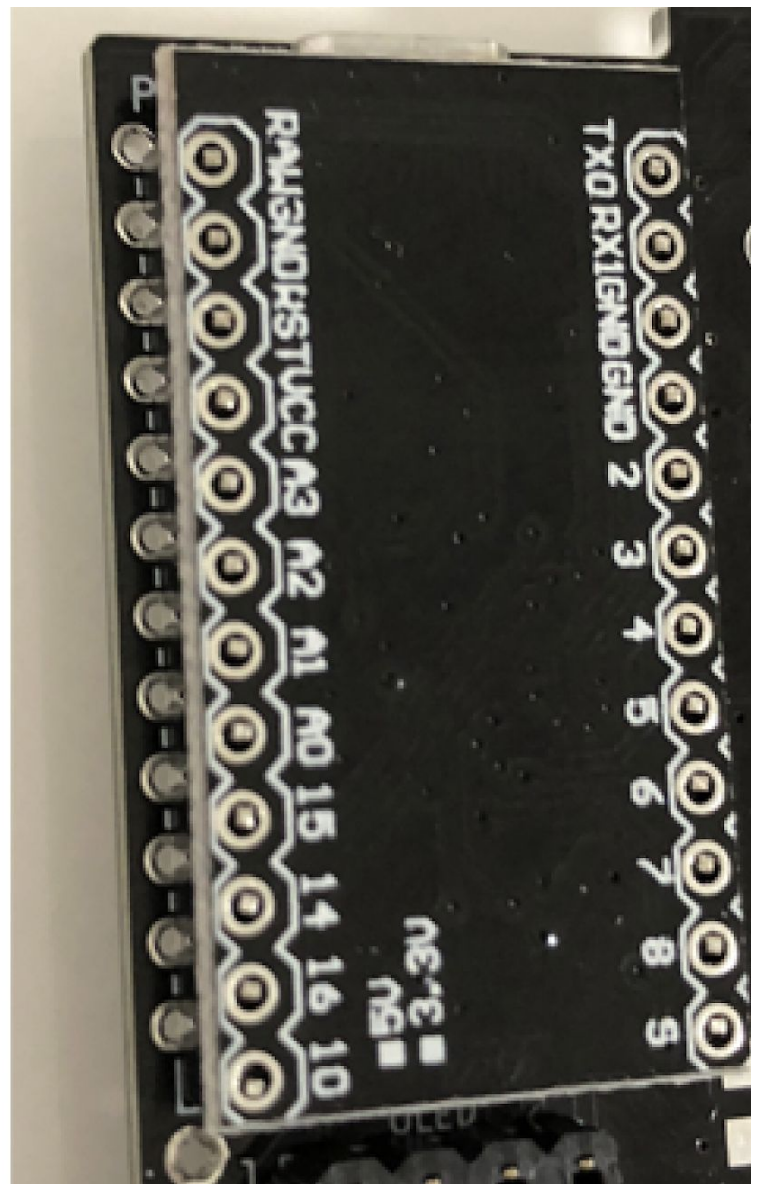
To use the OLED module, jump as follows. Please just jumper the surface.



### Pro Micro

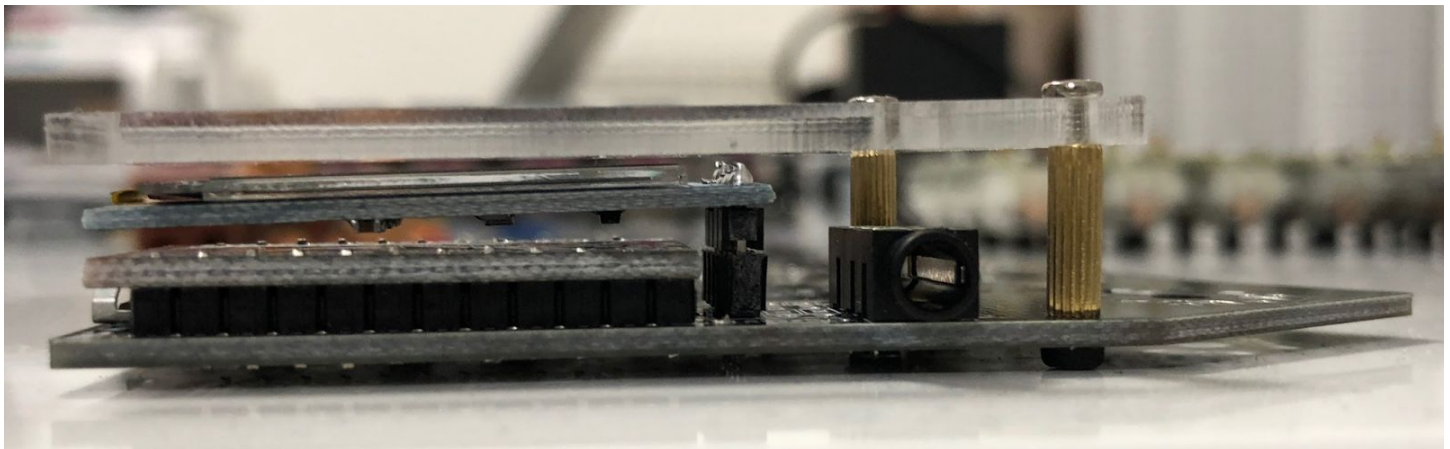
Mount the pin header so that it fits into the white frame and mount it on the back side of ProMicro. The following pictures are for the right hand, but for the left hand also mount the pin headers on the white frame and mount with ProMicro's back side up.





**OLED module**

Mount the pin header on the OLED module and insert it in the pin socket.



Adjust the height of the spacer to depend on the height of the pin socket and pin header. In the photograph, it is using a common pin socket and pin header and 10 mm spacer available at electronic parts store.

## ProMicro socketing

**Note:** I am unfamiliar with this section so I will leave it unedited.

If ProMicro is broken down by socketing ProMicro, you can replace it readily. I will introduce two patterns of socketing. Socket formation using spring headers

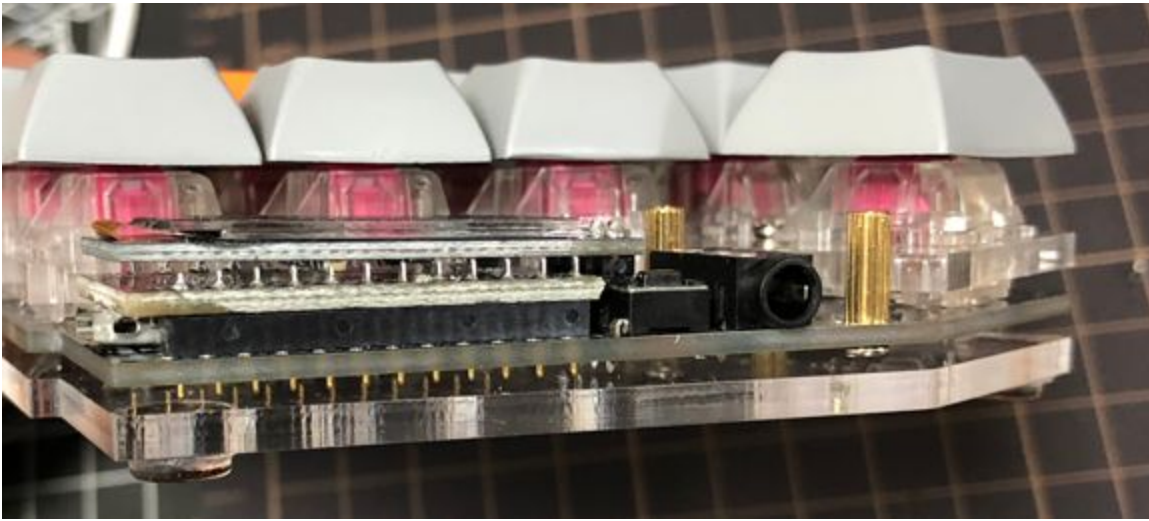
It is a method using a special pin header that enables socketing. Please refer to Helix's build guide for usage.

[https://github.com/MakotoKurauchi/helix/blob/master/Doc/buildguide\\_jp.md#pro-micro](https://github.com/MakotoKurauchi/helix/blob/master/Doc/buildguide_jp.md#pro-micro)

A set of spring headers and ProMicro can be purchased at the workhouse.

<https://yushakobo.jp/shop/promicro-spring-pinheader/>

If you use the pin header that comes with the OLED which can also be purchased at the yard studio, it fits neatly without gaps as shown below. Moreover, because it can use 8 mm spacer it will be thinner finish.



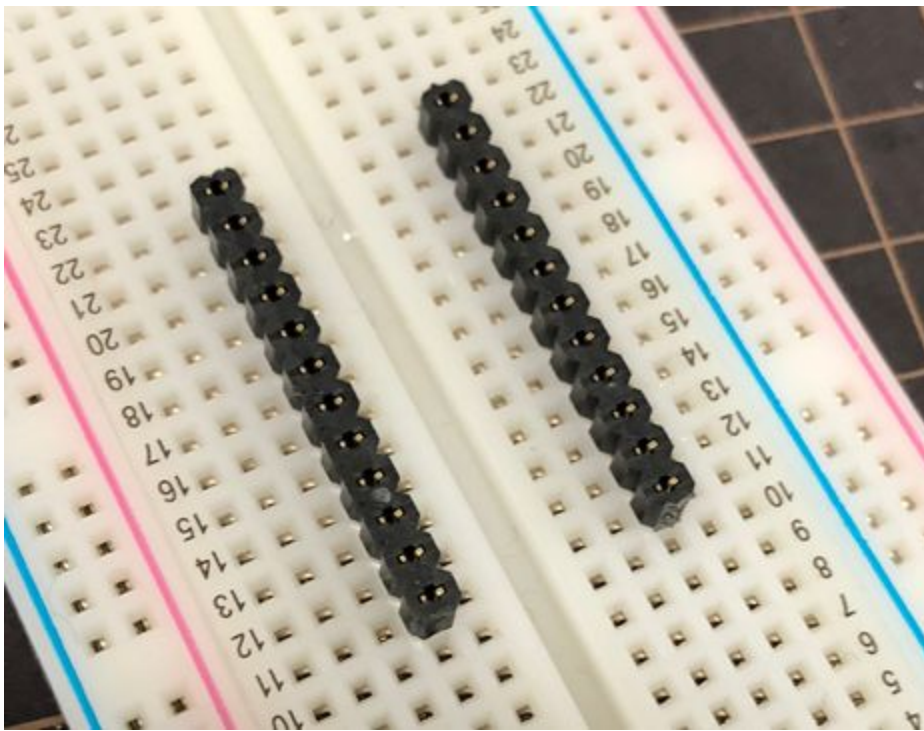
## Socket making using pin socket

It is a method using a short pin socket that can be purchased with Akizuki Electric etc .. A little work is required.

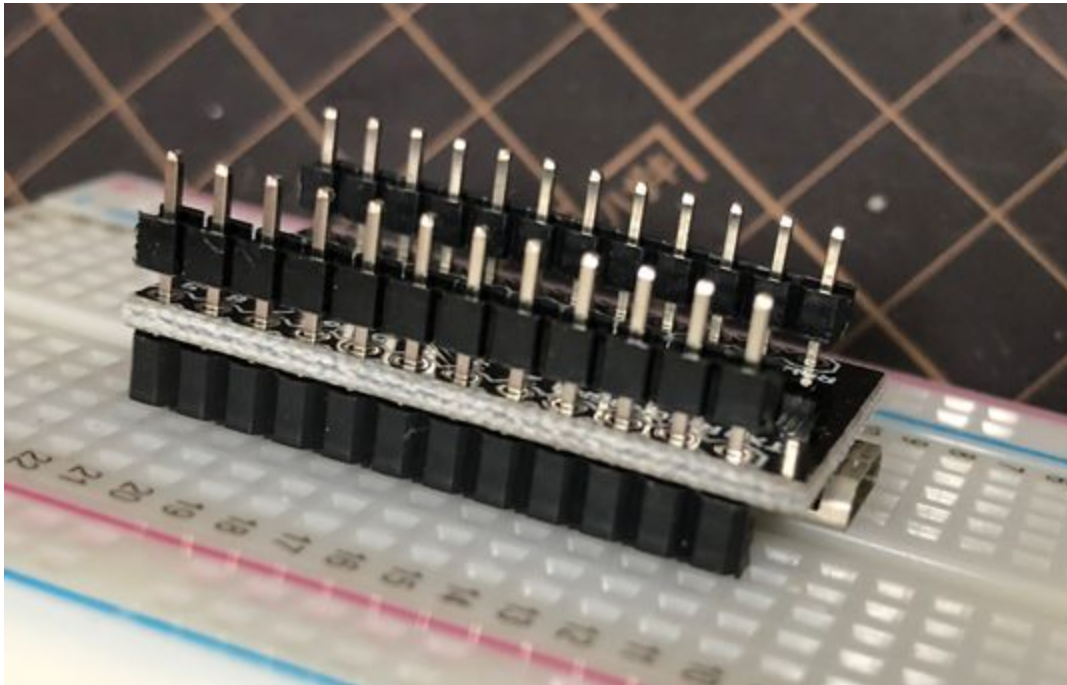
<http://akizukidenshi.com/catalog/g/gC-03138/>

Prepare twelve connecting pin sockets and secure them to bread board etc.



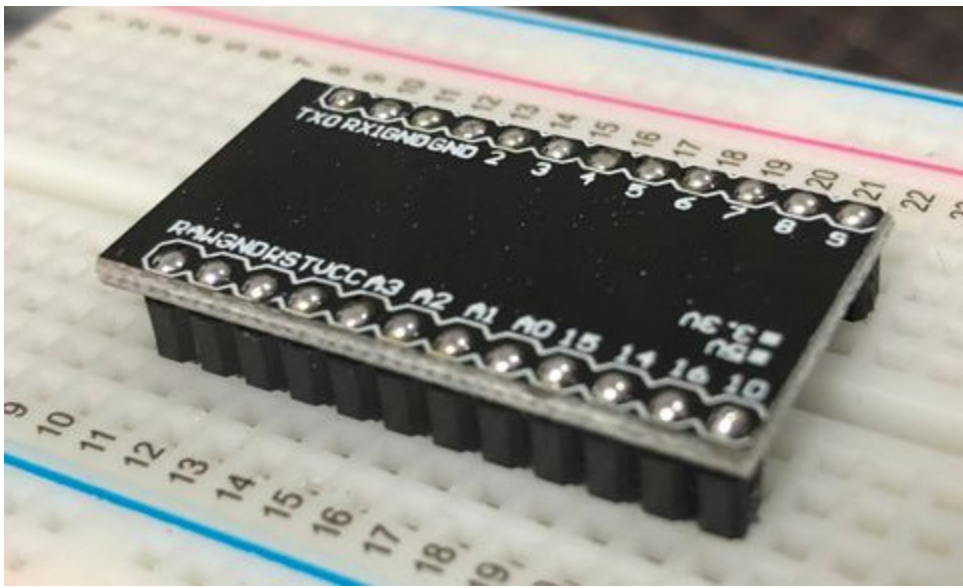


Insert it firmly from the top so as to pinch the pin header ProMicro attached to ProMicro.



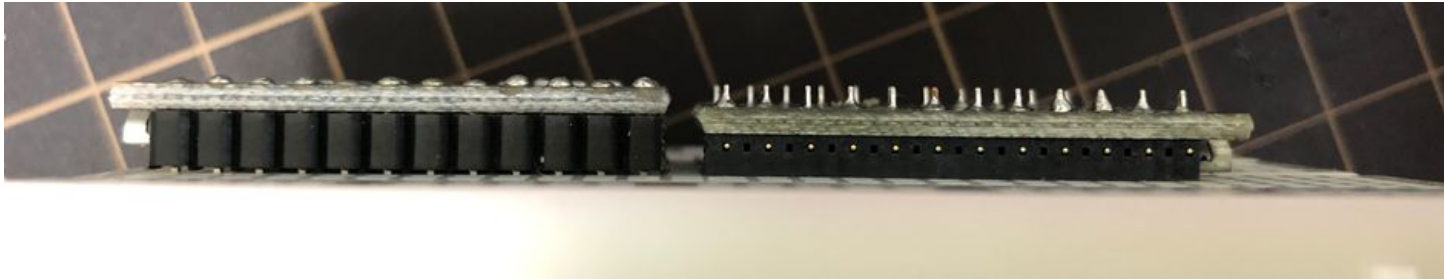
After soldering pin header and ProMicro, cut off extra pin header and it is done.



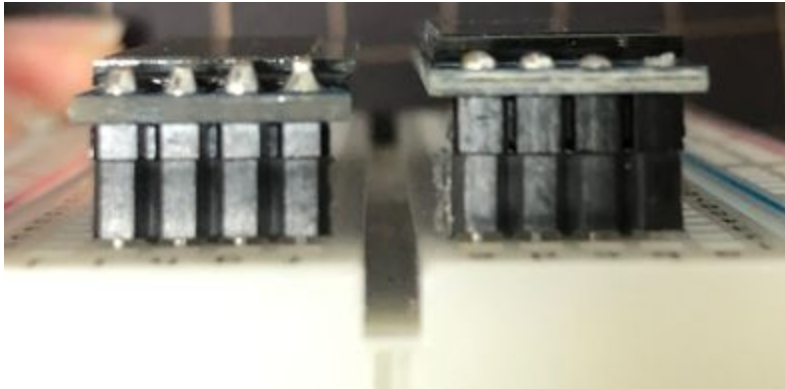


### Comparison

The following is a comparison between using a spring header and using a pin socket. Using a spring header can reduce the height.



Below is a comparison of pin headers used for OLED. OLED that can be purchased at the workshop is slightly lower as shown on the left.

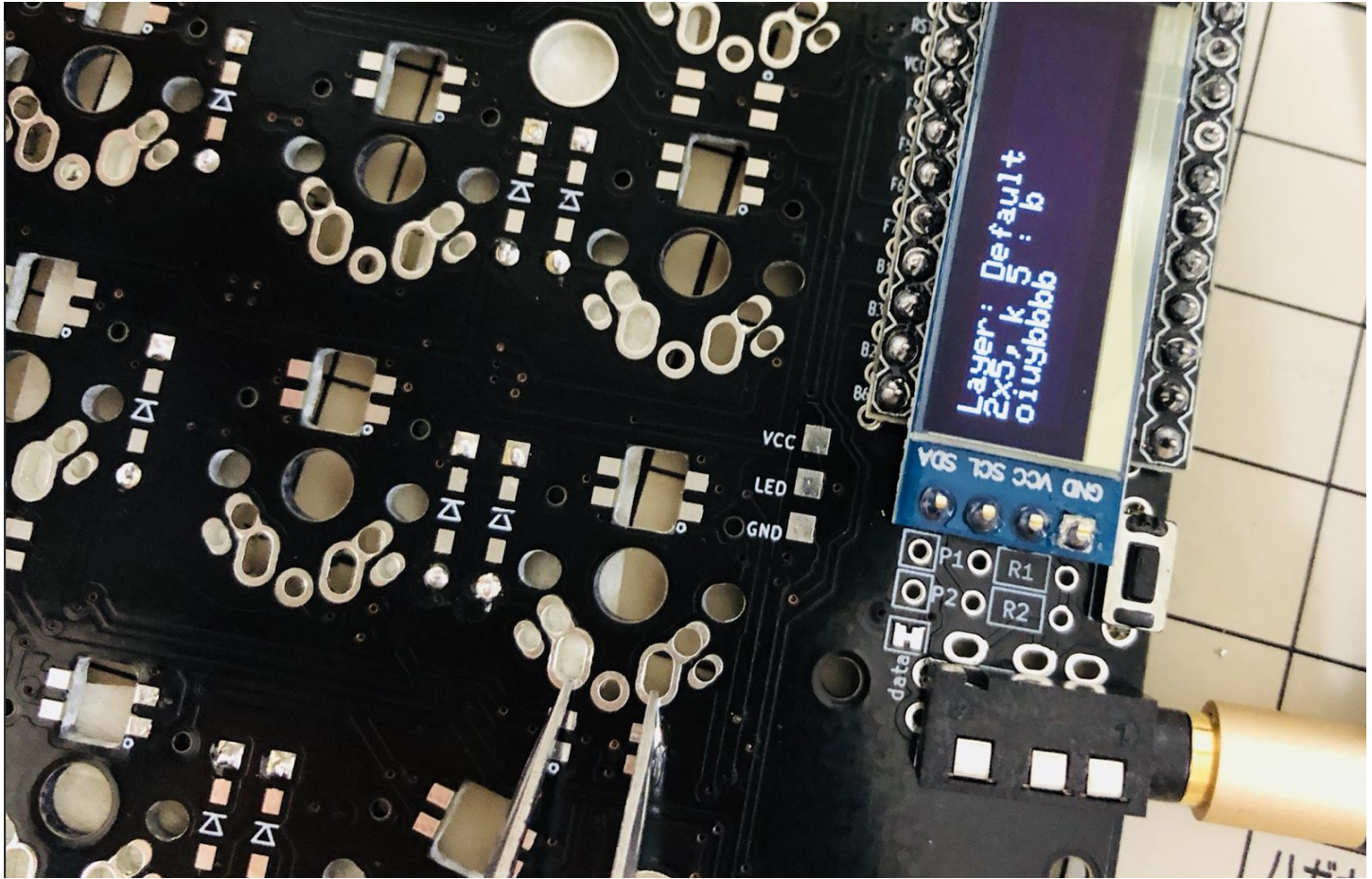


## Operation check

**Note:** Ok, we are back.

Since it is difficult to correct when there is something wrong with the key switch, we recommend checking the operation when ProMicro and the OLED module are attached.

To confirm the operation, please refer to the "Firmware" section below first and insert the firmware for crkbd into ProMicro.



Applying the default keymap displays information about the key pressed on the OLED. Operation can be checked by shorting the switch part with tweezers or the like.

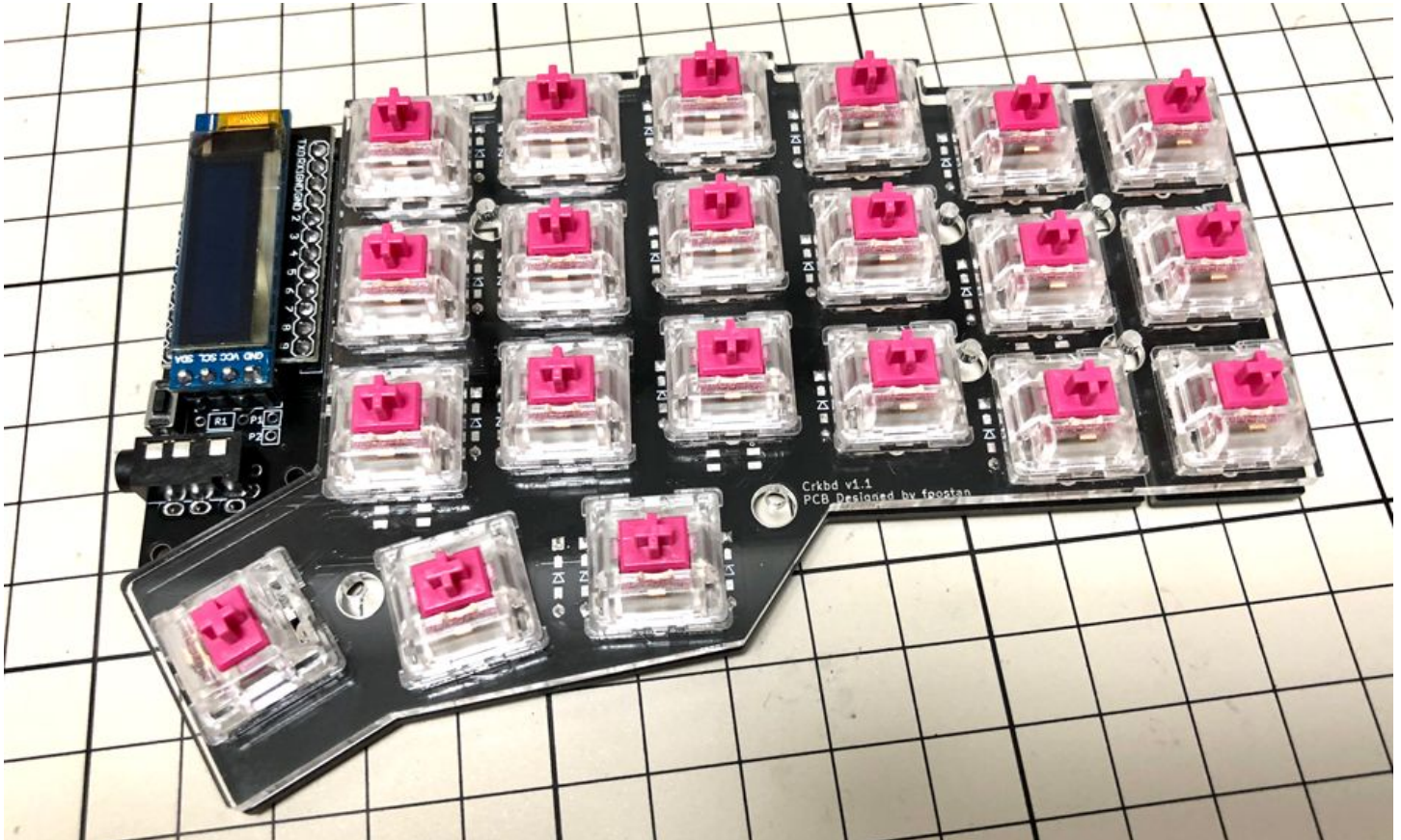


Make sure that all LEDs are lit when LED is mounted.



Key switch and top plate

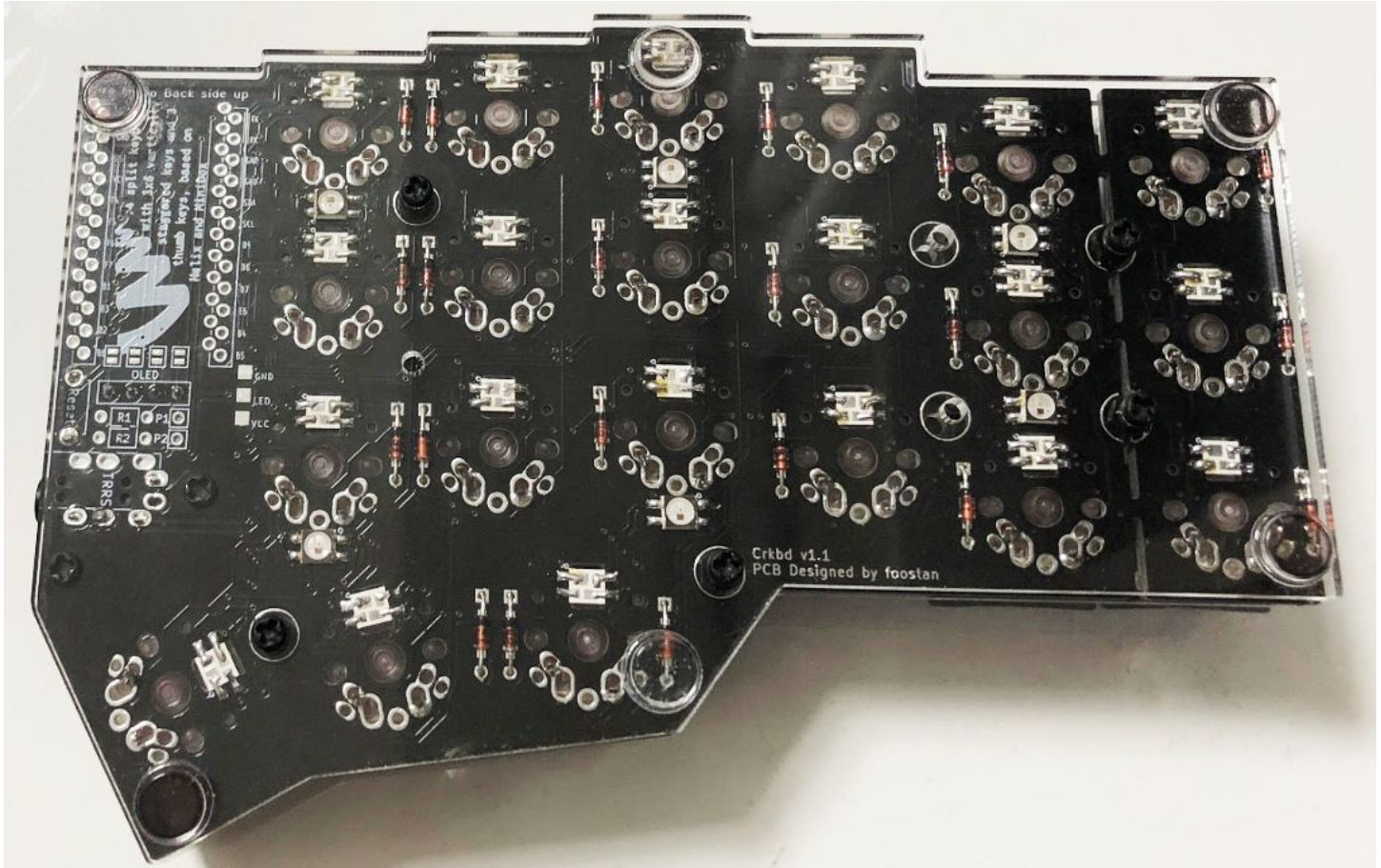
Mount the top plate between the key switch and PCB and mount it on the surface.





## Bottom plate

In the case of a low-profile machine, attach a bottom plate after attaching a 3 mm spacer, otherwise attach a 6 mm spacer. I also attached six cushion gummies.



## Key caps

Finally, mounting the keycap is completed.





## Firmware

[https://docs.qmk.fm/#/newbs\\_getting\\_started](https://docs.qmk.fm/#/newbs_getting_started)

Please see here and prepare the environment to write the firmware.

When environment is created, build the firmware for Let's Split with the following command.

```
make crkbd:default
```

When the build is completed, execute the following command.

```
make crkbd:default:avrdude
```

I think that it will be able to confirm that the number of logs is increased with the following as it executes. During this time, pressing the reset switch twice completes the firmware writing.

### <Omission>

Checking file size of crkbd\_rev1\_default.hex

[OK]

\* File size is fine - 27328/28672

Copying crkbd\_rev1\_default.hex to qmk\_firmware folder

[OK]

Detecting USB port, reset your controller now.....

### <Omission>

When firmware writing is completed on one side of ProMicro, the other side also writes in the same procedure.

That's all there is to it.