Button Pad 2x2 - Breakout PCB

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Downloads: Datasheet, STL, Blender

DESCRIPTION | DOCUMENTS

This a simple breakout board for the button pads. Each LED and button is connected to a pin on the edge of the board. The pads are spaced to fit on the back side of the PCB. We recommend trimming the connector leads on the button tabs as short as possible to reduce the deflection of the pad.

Note with footprints for stacked (not the super-cheap 16N-540 through-hole diodes. These can be used to isolate the switches to make for a bit easier stacking.

Button Pad 2x2 - Breakout PCB Product Help and Resources

DESIGN GUIDELINES

Core Skill: Soldering

This card defines how difficult the soldering is on a particular product. It might be a simple simple solder joints, or require special reflow tools.

Skill Level: Rookie - The number of pins increases, and you will have to determine polarity of components and some of the components might be a bit thinner or closer together. You might need solder wick or flux.
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COMMENTS 24 | RSS Feed

Customer Comments

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jeffbird | about a year ago | 0

Hi, we are a little late, and added ours. I was able to use the addressable LEDs. Man, they are cool. I think SF should really consider recreating this board, and the slot with the addressable LED layouts, especially if they are going to make a new version. I'm a little bummed that I had to cut the traces on the back of the board to use, you can do some quick soldering to reroute them. Once you cut the cards, with just one dimensionless pin, you'll see what I mean. I think I'm going to have to look into wiring several of these up no-legless to make a big fun button display.

Anyway, this is how I did it. With the addressable LEDs, the middle two pins are grid and VCC, those need to be connected to the board. The pin closest to the edge of the board is the data pin, that goes to a pin. Then the VCC is already all connected at the "SHUNT". You have to solder all the ground together.

Then, you look at where the traces are going on the board, and cut them so that the "GRIDS" and "REG" connections are left intact, and the "SHUNT" connection is left intact. Then, you cut the "GRIDS" and "REG" and the "VCC" of each LED is SHUNT. So you need to wire the first GRIDS to your microcontroller, and the first SHUNT to the second GRIDS, etc. I wired the last GRIDS to another PIN, just so it wouldn't have to be a dead end.

The traces are all pretty big, and you can run them with an exacto knife. I just scraped a couple of mm out, and then tacked with a soldiering iron. They are also nasty easy to see.

Mikeroo8 | about a year ago | 0

Always wished Sparkfun could create an addressable LED version of these boards, but they really do make a lot more sense as a button than a pad. Thanks for the tip on the cut traces, I'm planning on assembling a bit more thickness backing, so I've created an exact replica of this board so it will allow the use of each LEDs, and it's available on OSH Park. I've made it so that the LED portions are chamfered 3 millimeters so that the edge of the board can be used as a light guide. I'm also trying to fit a set of three 10 x 40 pen boards, but I'm the not sorted, which is a bit more than what Sparkfun offers, but there are nearly no grip Everyone is interested. Just note that these take a bit longer to arrive.

LINK: https://oshpark.com/shared_projects/mmmgw

These boards are completely made from the ground up, using available dimensions for the holes and the button contact locations. The silkscreen bottom Everything was same exactly the same. I've also managed to increase the resolution of the bottom contact grid, and due to being from OSH Park, all unused copper pours are left out, so the board is much more flexible than the original board. I've also left the connections where the Sparkfun button contact surface isolates very close, causing me to make sure I could not clean the contacts, which is about once a year or so). These are designed to use the ELFE-LED 1.7 LEDs (5mm). Tiled Sparkfun offers, or equivalent. Basically, I was trying to build from Arduino library / tutorial.

NOTE: The details with NO 3D necessary unless creating a covering matrix with multiple button boards. Simple projects are all fairly needed if using single boards for projects.

Member #746273 | about 2 years ago | 0

Looks very nice. Thanks for the effort. Don't suppose you have a version that uses 3 pins instead of 4? Maybe with a separate ground for the LEDs, but because the footprint is for a frame, they don't seem to any purpose. In fact I don't understand why they were added.

Rocky | about 3 years ago | 0

I was considering why SFE doesn't have a kit version of this, that comes with all the necessary hardware, which would include the basic LED's, button pad and backs. It would be much easier to buy just the kit, and I'm sure it would save customers and maybe even the SFE team some time in getting orders together.

GLYTR | about 3 years ago | 0

Yeah, even a pulse-width kit would be nice.

Stanley | about 3 years ago | 0

I made one.

Technoxy | about 3 years ago | 0

Hey Stanley, I'm interested in your kit, I'm sure you are very need two of these and two of the "tops" boards for the dual-matrix. They combine together to make you from having too many screws... clever.

The only need one of the "top" boards for the 2x2 matrix. Sorry! If you have a inquire on your microcontroller, you can use the 2x2 button pad pin without diodes. Just jumper the diode spots. Also, you can use the 2x2 button pad pin without diodes to connect to GND with software pullup as on your mono inputs. Thanks for the kit @Stanley :-)

Chet | about 3 years ago | 0

looking for the photo I found that the buttons are not in a matrix formation but as regular buttons, so the diodes are not needed at all.

Andrew | about 3 years ago | 0

Hey, this was 4 years ago, and you're correct, but for anyone entering this, you still need a jumper to bridge those holes together. I used 2 mm sockets because the size was convenient, - and what else am I gonna use them for?

Nate | about 2 years ago | 0

Hey, I made a pair of tutorial / example for this. I have included a schematic, breadboard layout, and two example sketches. Hopefully this helps. I'm a little bummed that I couldn't expand more things work. This nearly covers everything the LEDs, but the diagnostic pins cannot. Anyway, here:
http://www.sparkfun.com/tutorials/prod/Kit-contents/button-2x2-qwiic-kit-button-pad-with-an-arduino
Unfortunately still make the easier for someone who is as nice as I am. :)

LeRoyGrill | about 2 years ago | 0

I ordered the Eagle files for this and a bit off. I recently made a video using this board and I found out that the names of the signals going to the connectors aren't named properly. For instance, the signal next to SW1, which should be named "SW1" is actually the same as the LED-GND signals.

I know this is an old board, made by the SFE thread! Agree agreed it's just something to note.

Ismail | about 3 years ago | 0

Should be nice to have this breakout board layout for https://www.sparkfun.com/products/12646 (LED - RGB Addressable, PTH) Then share a form together!

Joel | about 3 years ago | 0

Would be great for prototyping, particularly controlling the LEDs. It would be great if sparkfun released a version that would work with the addressable LEDs as we could use the neopixel library.

Member ##15151 | about 4 years ago | 0

Hi Mikeroo8, - wouldn't it be nice to have this awesome product with these nice WS2812b blinkies instead of regular leds? That way you could control a lot of them with just a few pins of the micro or arduino!

Member ##15174 | about 3 years ago | 0

Hey Joel, I'm sorry I didn't see your comment. Yes, I'm with you. I'm sorry I didn't see your comment. Yes, I'm with you. I'm sorry I didn't see your comment. Yes, I'm with you.