

MidiFoot Assembly

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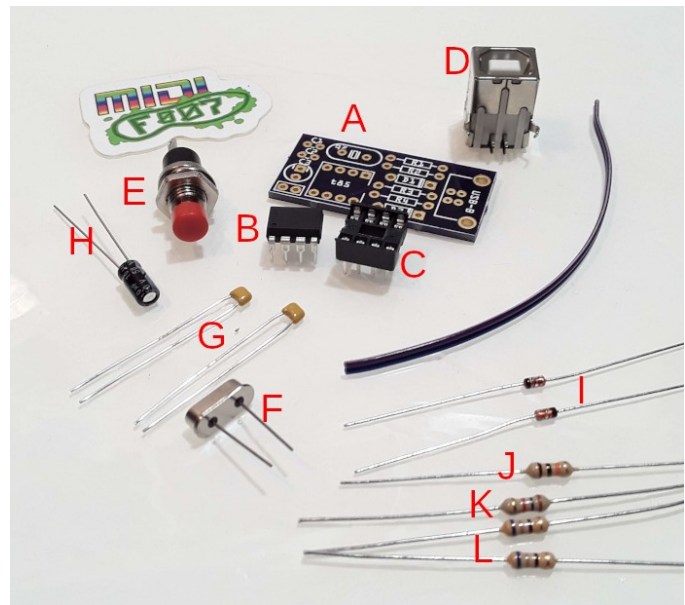
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Tools Needed

- Soldering iron, solder
- Wire strippers (26 AWG)
- Flush cutters

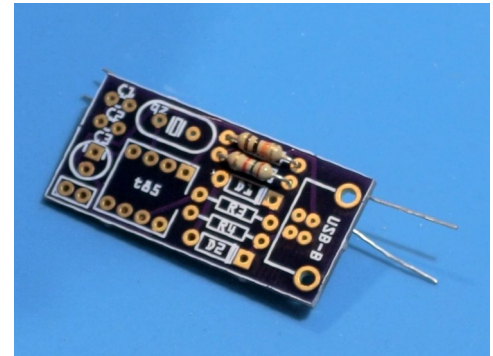
Bill of Materials

- A. (1) Printed circuit board (PCB)
- B. (1) ATTiny85
- C. (1) 8-pin IC socket (8-pin)
- D. (1) USB-B jack
- E. (1) pushbutton
- F. (1) 16MHz quartz oscillator (qz)
- G. (2) 22pF capacitors (C1, C2)
- H. (1) 10µF capacitor (C3)
- I. (2) 3.6V Zener diodes (D1, D2)
- J. (1) 10k ohm resistor (R1)
- K. (1) 1.5k ohm resistor (R2)
- L. (2) 68 ohm resistors (R3, R4)
- M. A strip of 26 AWG ribbon cable

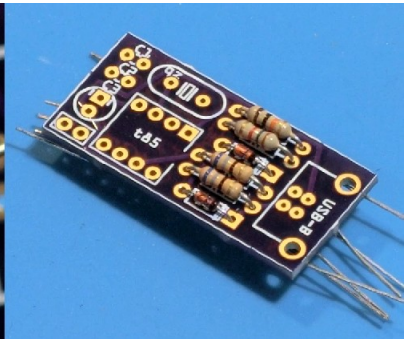
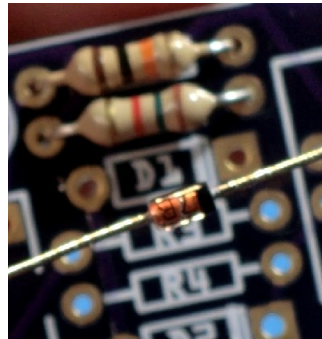


Directions

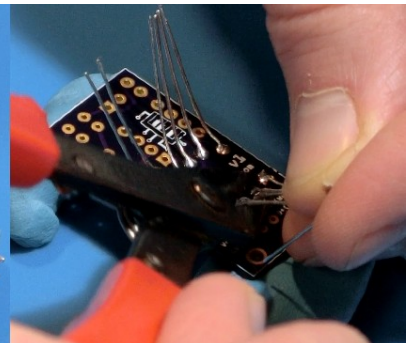
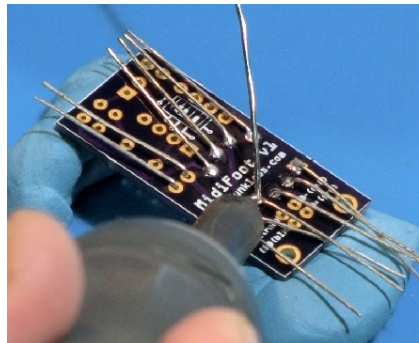
1. Bend the resistor legs down, insert them in the board at the designated locations and push them flat against the PCB, and bend the legs out to hold them in place.



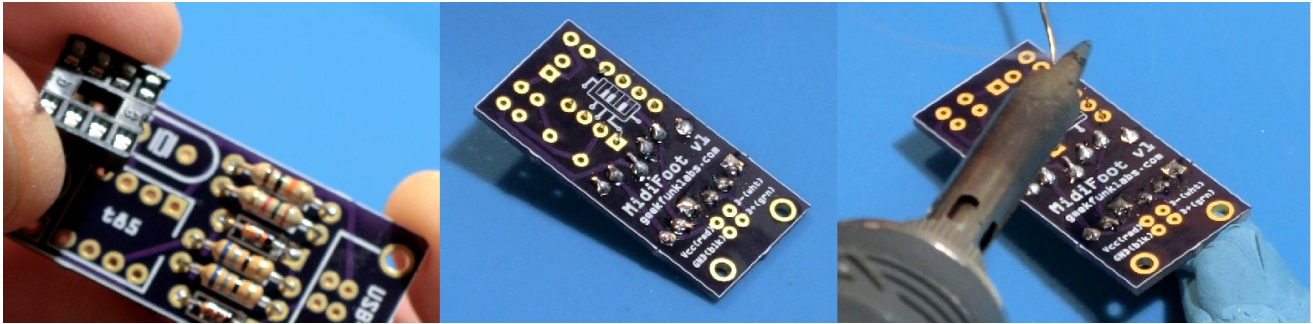
2. The diodes have a stripe that shows which way they should be inserted in the board. Line it up with the stripe on the silkscreen, push the diodes flat against the PCB, and bend the legs out.



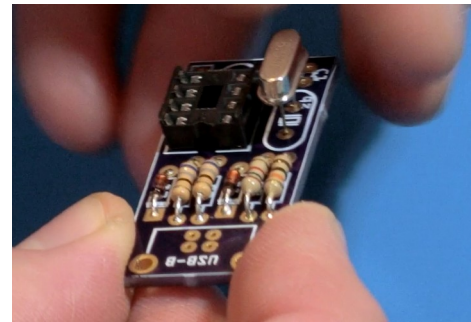
3. Solder the diodes and resistors in place and trim the excess leads away with flush cutters.



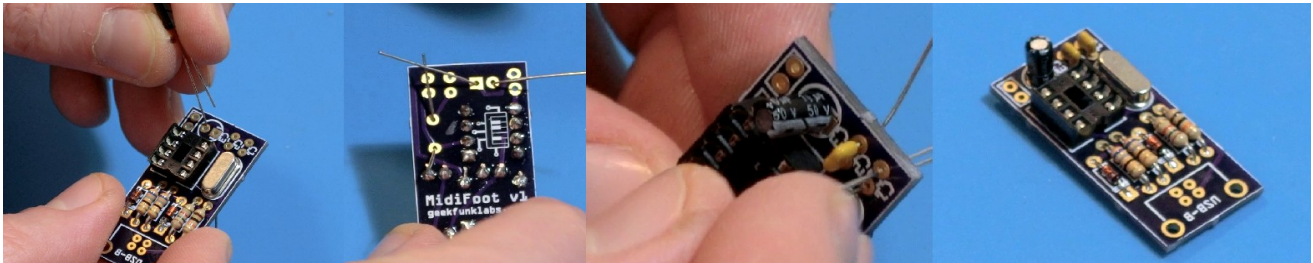
4. The IC socket has a notch on one end that lines up with the gap in its silkscreen outline. Insert it into the PCB and bend two of the legs at opposite corners to hold it in place while you solder all the pins. Start with one pin and check that the socket lays flush against the PCB. If not, reheat the solder by holding the iron against it while you push the socket flat.



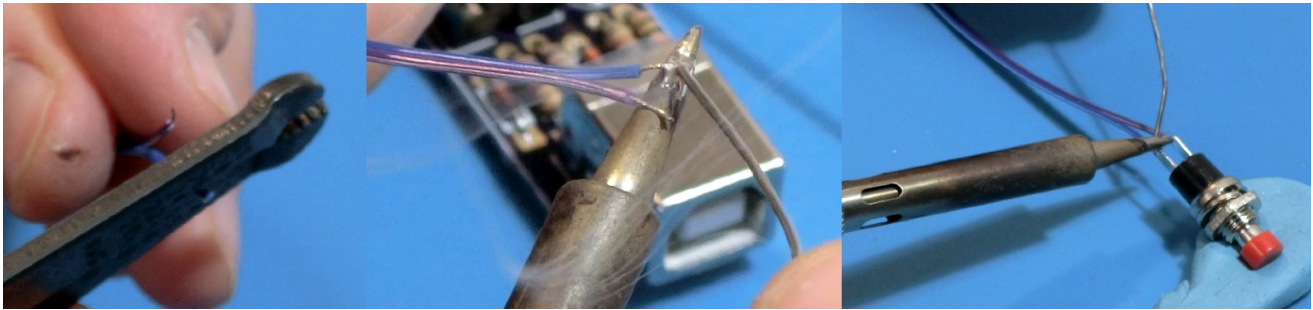
5. The quartz oscillator goes in the oval-shaped silkscreen that matches its outline. Press it flat and bend the legs out to hold it in place while you solder.



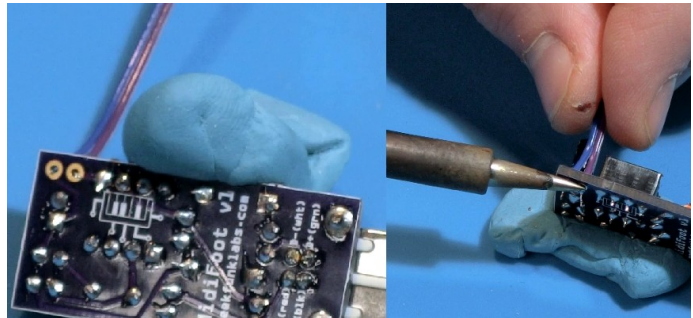
6. The can-shaped 10 μ F capacitor must be inserted with its shorter leg in the square pad that is marked with a "-". The negative terminal on the capacitor is also marked with a gray stripe. The 22pF capacitors have no polarity and can be inserted in either direction.



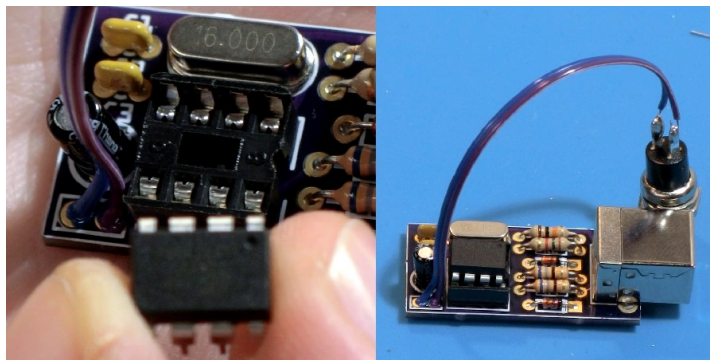
7. Split the ends of the ribbon cable apart, strip them with the wire cutters, and tin them by melting some solder onto the stripped ends. Thread the wires at one end of the ribbon cable through the lugs on the pushbutton and solder them in.



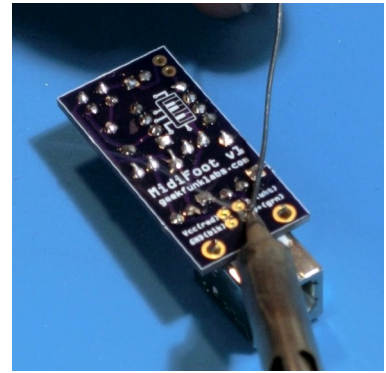
8. Solder the other end of the ribbon cable to the two pads in the corner of the board. Optionally, you can heat both solder joints and push the wires in a little farther, melting some of the insulation to the board to provide some strain relief.



9. Insert the ATtiny85 into the IC socket. The end with the dot lines up with the notched edge of the IC socket. Make sure you've pushed the microcontroller all the way into the socket.



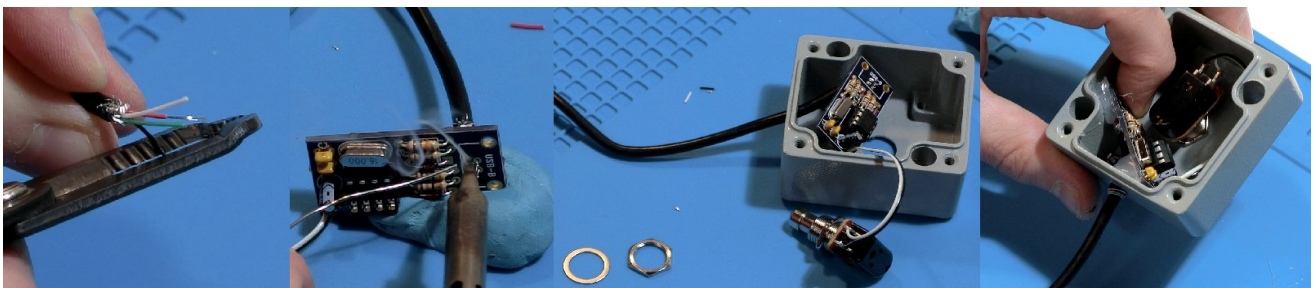
10. You can solder the USB-B jack onto the board or solder a cable directly to the board. The latter method is more permanent and requires you to cut apart a USB cable, but might be a cleaner look than cutting a big hole in your enclosure so you can fit a plug into the jack. If you're soldering the jack to the board, push it in until the angled feet snap in and hold it in place. Solder each of the pins and put a lot of solder on the feet to hold them.



11. Drill a 5/16" hole in your enclosure for the pushbutton. If you've soldered the jack into the board, drill another hole of about 9/16" so the USB-B plug fit through it. Test fit a cable as shown, and hot glue the board in place in your enclosure.



12. If soldering a cable directly to the board, cut the B plug off a spare USB A-B cable. Strip off the outer jacket, cut away the fiber jacket and foil shield to expose the individual wires. Strip and tin the ends of the wires. Drill a hole in your enclosure just big enough to for the cable, thread it through, and solder the wires to the board (the wire color that should be soldered in each spot is shown on the bottom silkscreen). Wrap a zip tie, some tape, or put a blob of hot glue around your cable against the inside wall of your enclosure for strain relief.

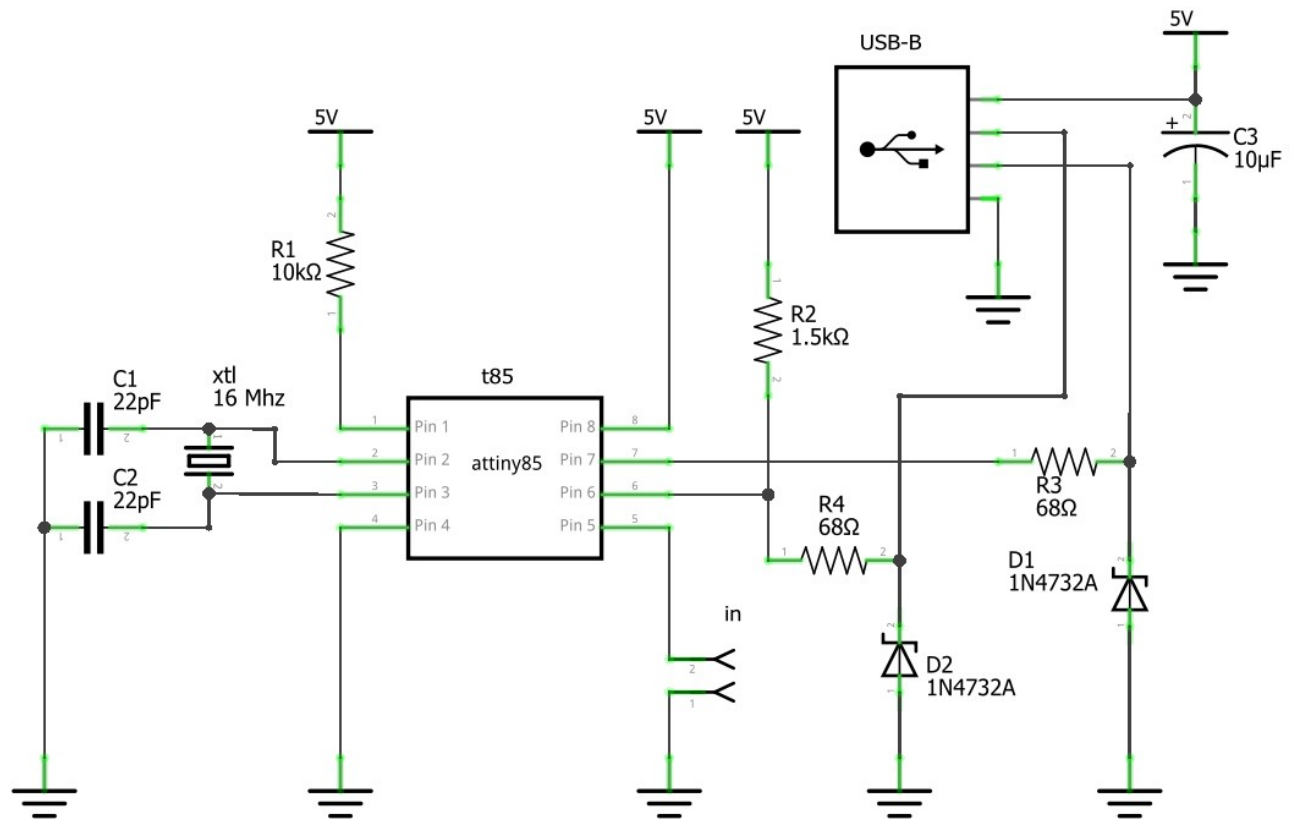


Your MidiFoot is finished! Plug it into your computer and it should be recognized as a MIDI device, then you can use it as a sustain pedal or kickdrum trigger, or map its MIDI messages to whatever you need in your DAW. For additional support, visit geekfunklabs.com.

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Schematic



PCB Detail

