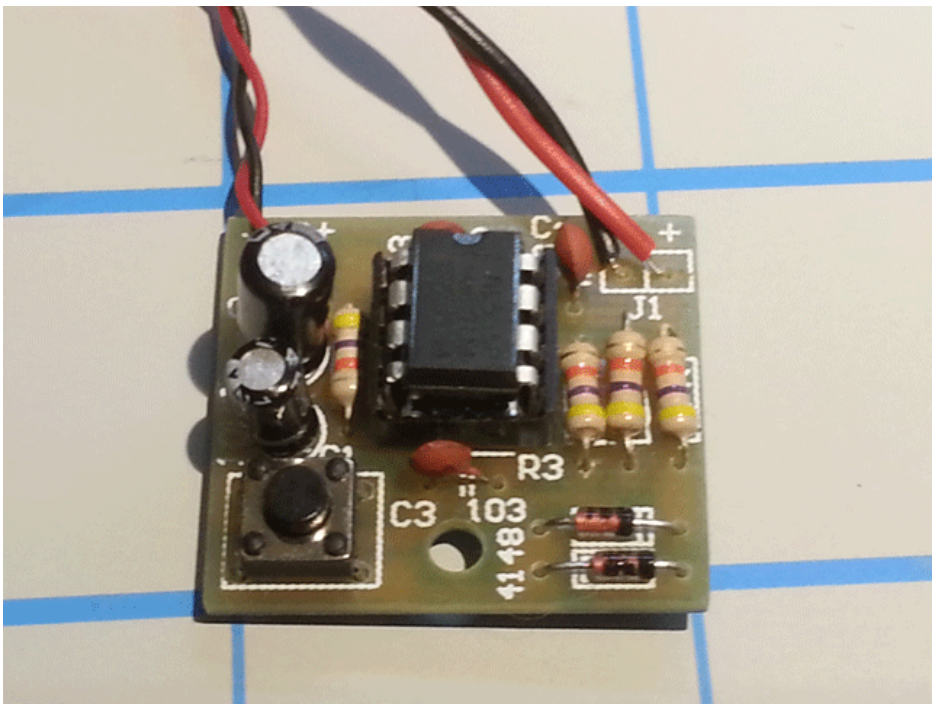
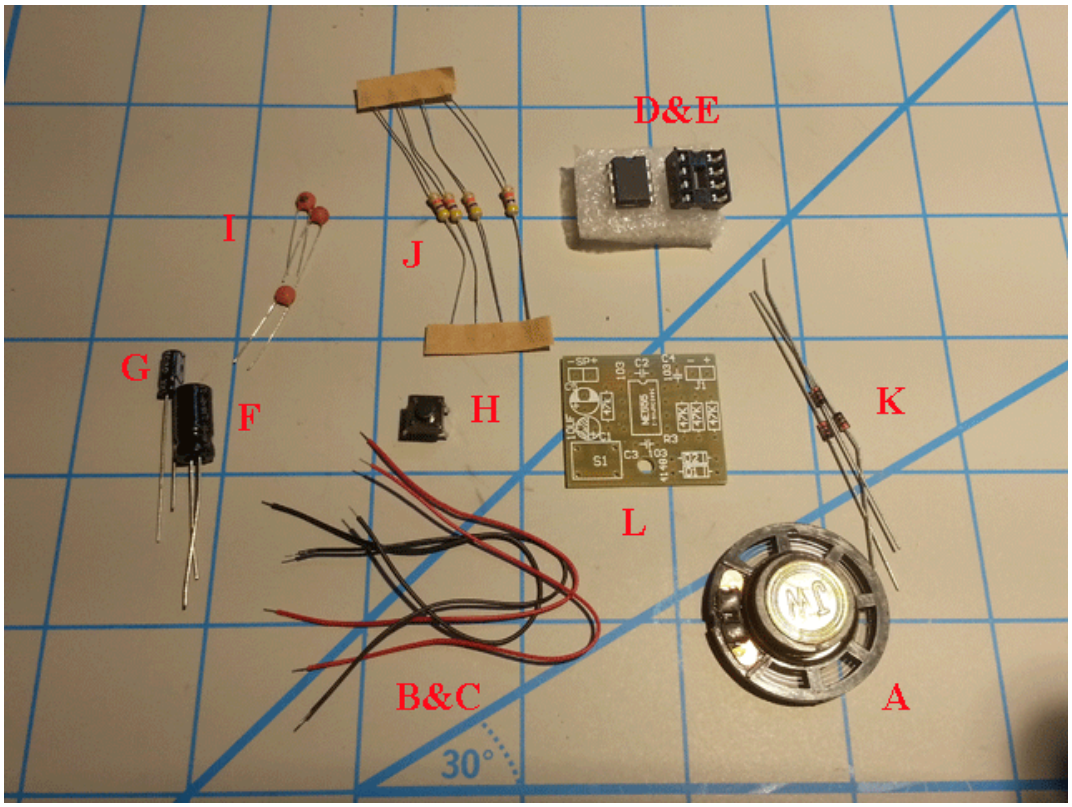
Club Door Bell Project



First we need to check to make sure we have all the parts.



Because of issues we ran into with the design, we need to make a few changes.
Once you know you have all the parts in above. We need to make a few changes.

- We need to swap the 100 UF capacitor for a 4.7 UF. (F)

- Also we will swap one of each red and black wire for a batter clip. (B&C)
- Then we need back one diode as you only need two and have 3. (K)

Let's get started.

There isn't really any one way to build projects like this. But I recommend you start with the smallest components that mount close to the circuit board first and then work out. I recommend you install a few components and slightly bend over the wire on the solder side to keep it from falling out. Once you have a few mounted and secured, it's solder time. Of course you can solder them one at a time or all together. Components that have tape on the ends (resistors) might be better off being cut off near the tape with and the tape left behind. This will ensure the goo from the tape don't get into the ckt board holes. The leads are way long enough.

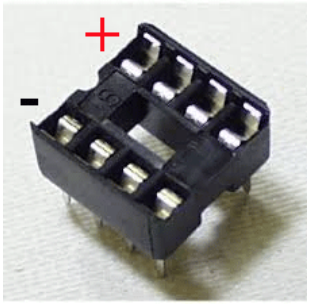
1 So maybe using the picture start off mounting the resistors (J). They are not polarity sensitive, so either way is fine. This might be a good time to solder the 8 leads if you haven't already.
2 Now maybe mount the 2 diodes (K). Now these ARE polarity sensitive, so make sure the line on the diode lines up with the line on the board. (Towards the edge) And solder them.
3 Next up might be the 3 capacitors (I). These are not polarity sensitive, so mounting direction isn't an issue. But it's always nice to mount them so you can read their value at a glance if you were building something that had many different values. Once these are mounted solder all 6 leads.
4 Now is the time to mount the IC Socket. (E) Notice the one end has a notch and the board has a notch corresponding to that notch. Insert the socket and slightly bend over a few leads to keep it from falling out when you flip it over for soldering. Yup, solder it now.
5 Now lest install one of red & black wires on the board (B&C). They are for the speaker and labeled + sp - While in this case the speaker will work either way, let's put the red on + and the black on -. It might be that you will need to solder them right away to keep them from falling out.
6 Once that is soldered, we need to connect the other end of the wire. If you look at the bottom of the speaker (A) You will notice two placed that has solder already. Try not to unsolder those connections but solder to the outside copper side of each. Solder the ends of the red to one side and the black on the other.
7 Now let's solder the battery clip. The red goes on the J1+ and the black on J1-. Double check to make sure these are correct.
8 It's time to mount and solder the switch (H). It will only fit in the board one way. The other way the pins won't line up. Once you have the pins lined up with the hole, slight pressure will snap it in place.

9 So that's it for the lower level. Time for mount the two capacitors (F&G). These ARE polarity sensitive so be careful. The shaded side of the board markings is the negative (-). So make sure you insert the – led in that hole. The + is also indicated. The capacitors are also marked with a strip down the side on the – side and is also the shortest lead.
10 With all that said lest mount the 10 UF capacitor. (G). The value is marked on the side.
11 Now mount the replacement 4.7 UF capacitor.
12 Once these are both mounted and you are sure the polarity is correct, solder them up.

Now let's make a few tests before we plug in the IC.
Don't continue until the test results are as indicated.

- Let's check the speaker connection: With your multimeter in its lowest ohms position , we are looking for about 8 ohms between the red and black (+ & -) speaker wires at the board end.

- Take a close look at all your solder connections. Look for any solder bridges and also make sure the actual solder pad on the board has solder on it and flows onto the component. Re-solder if in doubt.
- Setting your meter to measure DC voltage, plug in the battery and measure about 9 volts at the red/black battery wires at the + & - on the board.
- At the notch end of the chip socket, put your red meter probe on pin 8 and the black on pin 1. See the photo as a guide.



- Your meter should read about the same voltage measured in the previous step (About 9 volts). Make sure you don't show a '-' sign (negative sign) This would mean either the battery leads are soldered in the wrong holes on the board or most likely your test probes are backwards.
- Once all the above makes sense, let's continue.
- Unplug the battery and set aside.
- Pick up the 8 pin chip and inspect the leads to make sure they look straight and in-line.
- Making sure to match the notch on the chip to match the notch on the socket, carefully set the chip on the socket. Before pushing it down, double check to make sure all 8 pins line up with the holes in the socket. Then push down from the top. It should snap in place.
- Once it's secure in the socket, take a close look from the ends of the socket and look down the rows of pins to make sure they all went into the socket and not bent under the chip. If you need to unplug the chip, use something like a small screwdriver inserted under the open end of the chip and slightly twist the screwdriver to release the chip.
- When you are convinced the chip and socket notches are aligned up along with the notch painted on the board, let's plug in the battery.
- When you plug in the battery you might hear a quiet click from the speaker. That's a very good sign.
- Well, here we go. Press the black switch and you should hear a tone. You should hear the other tone when you release the switch.
- When you are finished, make sure to unplug the battery as this design continues to drain the battery even if the switch isn't pressed.

Congratulations, you are now the proud owner of your created door bell. Sit back and marvel at your accomplishment and think back of all the ground you have covered in the last few months. You are well on your way to bigger and better projects. I hope the world is ready!

Joe Loucka AG4QC