

Jack 'o Lantern Solder Practice Kit



Please make sure all the components are present–see table below:

Designation	Description	Part#	Quantity
R1	1k Ω ¼W carbon resistor (Brown, Black, Red, Gold)	Q1K0	1
R2-R7	680 Ω ¼W carbon resistor (Blue, Grey, Brown, Gold)	Q680R	6
C1	4.7 μ F 63V electrolytic capacitor	4U7H63	1
C2	10nF ceramic capacitor	CER10N	1
C3	10 μ F 25V electrolytic capacitor	10H25	1
IC1	NE555N timer IC	NE555N	1
IC2	CD4017 decade counter IC	CD4017	1
D5	5mm green LED	H5G	1
D1-D4, D6-D15	5mm orange LED	H5O	14
BRIGHNESS	100k Linear 9mm vertical potentiometer	SVN100K	1
FREQUENCY	50k Linear 9mm vertical potentiometer	SVN50K	1
N/A	PP3 hard plastic battery snap	PP3H	1
N/A	8-pin IC socket	SDL8	1
N/A	16-pin IC socket	SDL16	1
N/A	PCB	CKPHPCB	1

Tools Required:

Soldering iron – 15W or higher
Good quality electronics solder
Side cutters/snippers

Assembly Instructions

Step 1) Bend the leads of the resistors and mount them on the PCB (Fig. 1 & Fig. 2), then solder the leads on the opposite side of the board. The resistors can be placed either way around – they do not have a polarity. The colour bands correspond to the values – see the components list above.



Fig. 1

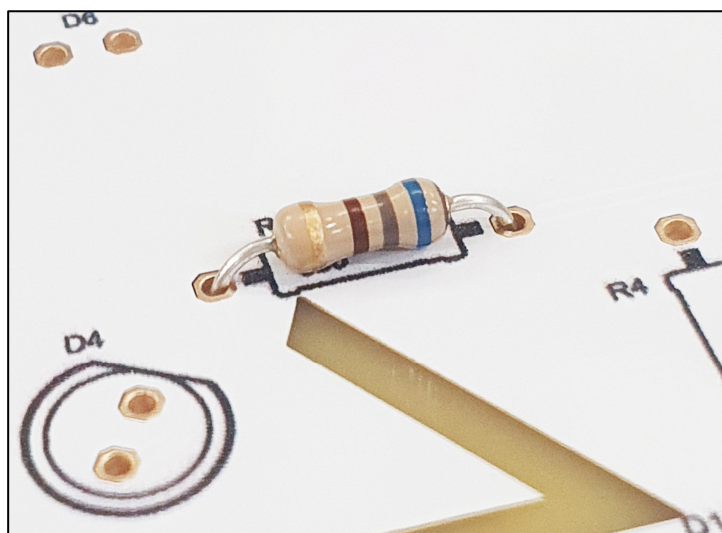


Fig. 2

Step 2) Place and solder the 10nF ceramic capacitor (Fig. 3). Like the resistors, the ceramic capacitor has no polarity and can therefore be placed either way around. Then, place and solder the two cylindrical electrolytic capacitors (Fig. 4). Note that these capacitors are polarized and therefore the long lead has to be soldered to the pad marked with a “+”.

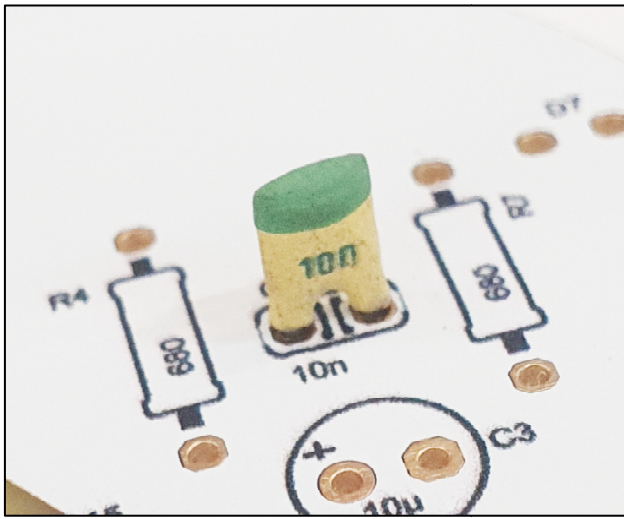


Fig. 3

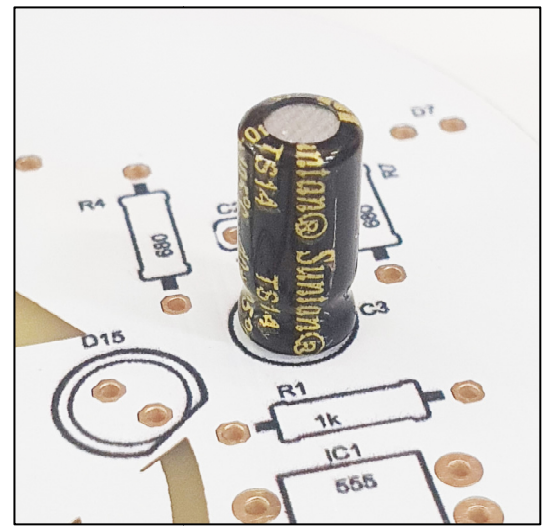


Fig. 4

Step 3) Place the IC sockets as marked on the PCB. Note the notch at one end of the socket – this notch has to match the notch printed on the PCB (Fig. 5). Insert the IC in the socket, making sure the notches match up. The pins of the IC might have to be bent in slightly inwards to fit in the socket.

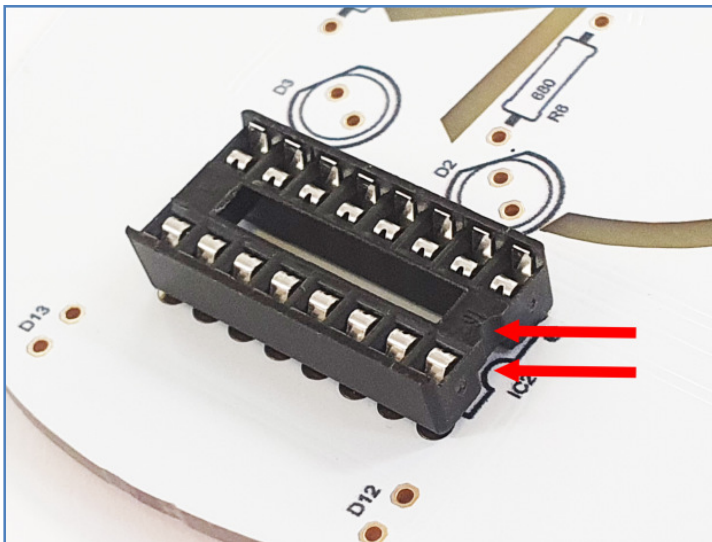


Fig. 5

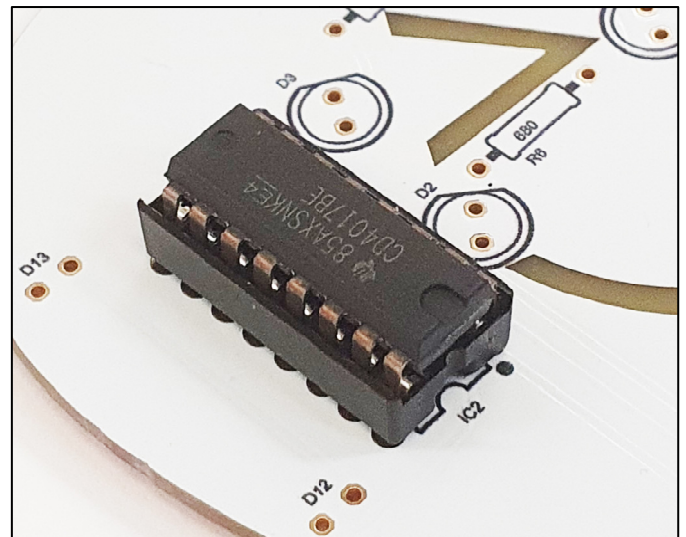


Fig. 6

Step 4) Place the two potentiometers on the PCB and solder all the pins. Notice the value written on the potentiometers and the PCB and match them up. The two pins on either side of the potentiometers are for stability – they are not electrically connected to the circuit and therefore require only a small amount of solder.

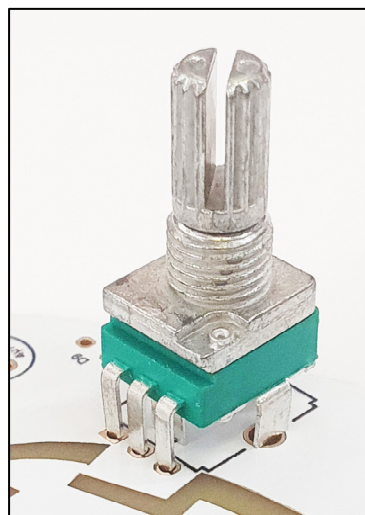


Fig. 7

Step 5) a. Mount the LED marked D1-D4 on the white side of the PCB, making sure they stand about 10-15mm above the PCB and solder them in. Notice the LED dome has a flat side to it – this is the cathode and it has to be matched to the marking on the PCB as shown in Fig. 8. Once the LEDs are soldered, bend them as shown in Fig. 9.

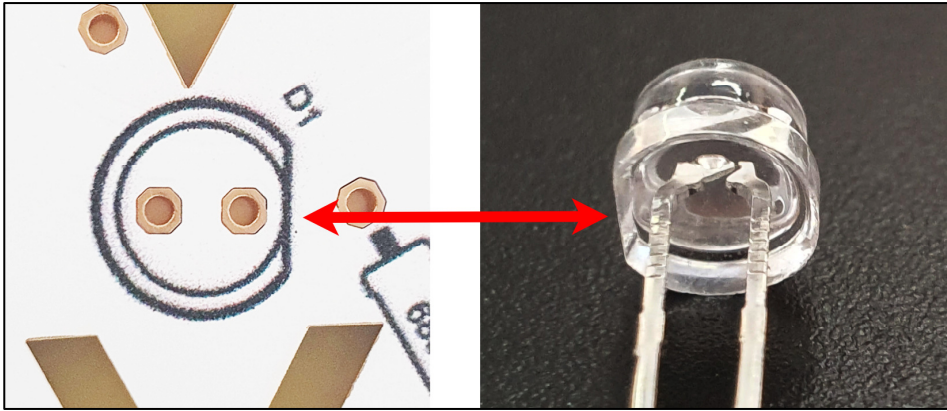


Fig. 8



Fig. 9

b. Mount and solder the rest of the LEDs (marked D5 through D14) on the other side of the PCB. These can be mounted close to the PCB. Observe the correct orientation (as shown in Fig. 8) and remember to solder the green LED at the “stem” of the PCB.



Fig. 9

Step 6) Lastly, solder the battery snap leads to the pads as shown below. Ensure that the red wire is soldered to the pad marked “+” and the black wire to “-”. Insert a battery in the battery snap (PP3 9V) and enjoy your creation!

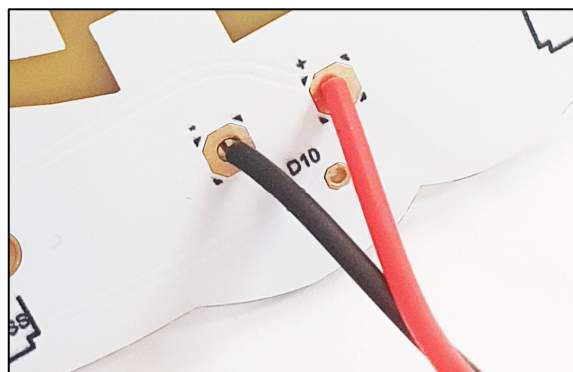


Fig. 10

We hope you enjoyed building the kit. If you have any questions or feedback, do not hesitate to get in touch via email (kits@cricklewoodelectronics.com) or call us on 020 8452 0161.