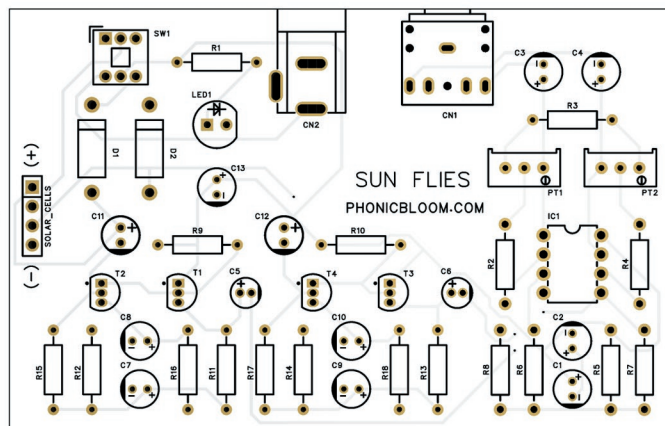


BUILD YOUR SUN FLIES



COMPONENTS LIST

In chronological soldering order

- 1a. R1, R11, R12, R13, R14: 1kΩ Resistor
- 1b. R2, R3, R4: 15kΩ Resistor
- 1c. R5, R6, R7, R8: 100kΩ Resistor
- 1d. R9, R10: 22kΩ Resistor
- 1e. R15, R16, R17, R18: 10kΩ Resistor
2. IC1: TL082AD Operational Amplifier
3. T1, T2, T3, T4: BC549C Transistor
4. CN1: Headphones 3.5mm Jack
5. CN2: DC Power 2mm Barrel Jack
6. H1: 2.54mm 4 Pin Header
7. LED1: 5mm Orange LED
- 8a. C1, C2, C3, C4, C7, C8, C9, C10, C13: 100uF Capacitor
- 8b. C5, C6: 10uF Capacitor
- 8c. C11, C12: 1uF Capacitor
9. SW1: Latching Push Switch
10. PT1, PT2: 50kΩ Multi-turn Potentiometer



1. Resistors are best to solder first, as they have the lowest profile. The polarity does not matter. To know which resistor goes where, check the components list (on the left) and follow the designators.

2. Then continue with the 8 pin DIP socket for IC1, operational amplifier. It's recommended to use the socket included in the kit instead of soldering the IC directly, in case you need to replace this part later.

3. Transistors are good to solder next. Polarity is critical, one of their side is flat, and the correct orientation is shown on the PCB.

4, 5, 6, 7. Then solder the connectors, the pin header and the LED diode. Similar to transistors, the polarity of the LED diode is marked on the PCB, the diode's flat side should match the printed outline.

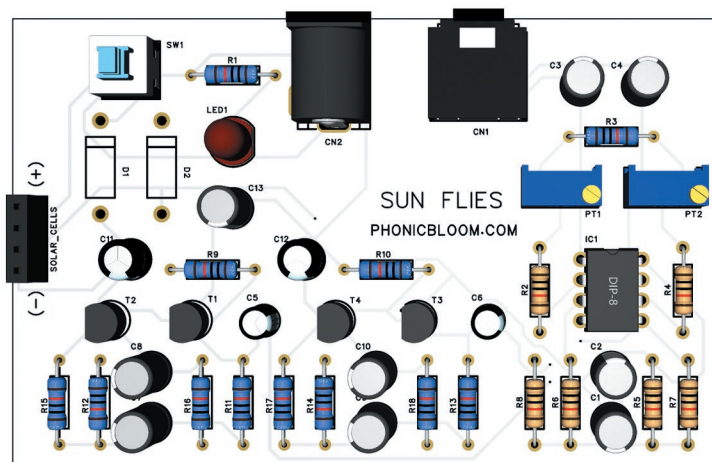


8. Now is a good time to solder capacitors C1 to C12. Please be careful about their polarity: the positive lead is longer, and the negative lead is indicated by a stripe on the capacitor's side. To know which capacitor goes where, check the components list and follow the designators. To avoid mistakes, you may want to start with C11 and C12, which are 1uF. Then continue with C5 and C6, which are 10uF. All the remaining capacitors are 100uF.

9. Add the SW1 switch, polarity matters if you want the circuit to be ON when the switch is locked down, and OFF when the actuator is released. If it's hard to tell where the pin 1 is, you can test the function before soldering the switch in: insert it to its position, power up the circuit and observe at which position the LED light glows. Then you can rotate the switch if needed, and solder it in when you're sure that the orientation is correct.

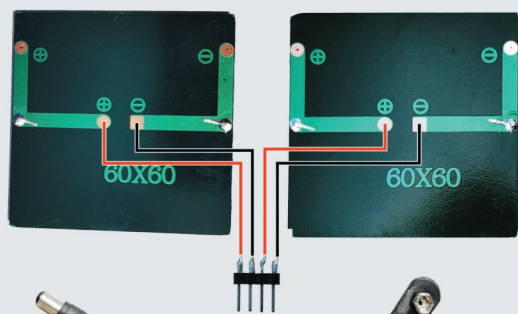
10. Then solder two potentiometers PT1 and PT2, the orientation doesn't really matter, but for aesthetic and practical reasons you can follow the outline as printed on the PCB (to ensure that turning the PT1 clockwise increases the gain instead of decreasing it).

11. Finally, now it is safe to insert the IC1 into its socket. Correct orientation is critical, pin 1 is marked by a circular depression in the IC's package, and it should be close to the "IC1" text on the PCB.



CONNECT SENSORS

In your kit you can find two photodiodes and two solar panels. Here you can see an example of the wiring, but please consider how you want the final assembly to look like. Find more information in the online DIY guide.



POWER IT ON Use the included 9V battery cable, or a compatible 3V-9V power source.

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