

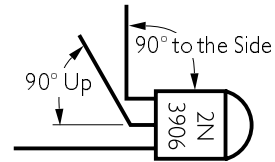
Solarengine Rosetta Stone[©]

The Freeform 1381 Solarengine

You will need a 2N3904 and 2N3906 transistor, a 2.2k resistor, a Panasonic 1381 trigger, a storage capacitor (1000 to 4700 μ F), and a motor and solarcell (solarcell must generate 3V MINIMUM).

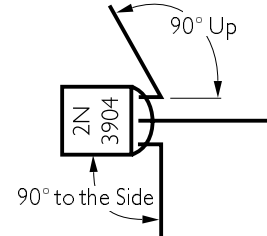
The 1381 triggers are commonly available from Digkey or Solarbotics, and are available in voltage flavours from "C" (2.0V) to "U" (4.7V). An "E" trigger is a good starting value

1 2N3906 Transistor



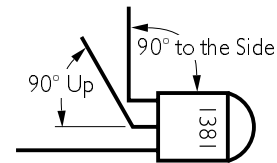
Bend the centre lead of the 3906 up at a 90° angle, and the left lead 90° to the left side.

2 2N3904 Transistor



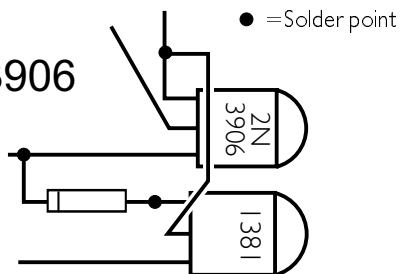
Bend the right side lead 90° up, so it points at you. Bend the left side lead 90° to the left side.

3 1381 Trigger



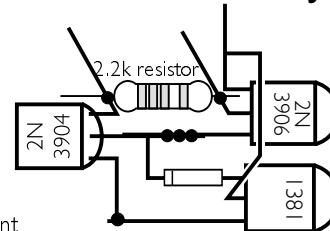
Just like with the 3906, bend the centre lead of the 1381 up at a 90° angle, and the left lead 90° to the left side.

4 1381 / 2N3906



Solder the diode to the 1381 left leg, THEN to the 3906 transistor as shown, with the 1381 middle leg connected to the 3906 left leg, and the 1381 left leg connected to the 3906 right leg.

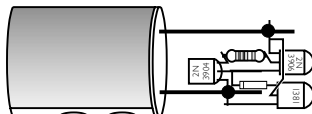
5 Transistor Assembly



Solder the middle lead of the 3904 to the right lead of the 3906 with about 5mm (3/8") overlap. Solder the right leg of the 1381 to the left leg of the 3904. Solder the resistor across the two vertical legs, and trim the excess off.

6 Circuit Assembly

Mount the transistor assembly across the capacitor leads as shown. Make sure the striped (-) capacitor lead is on the bottom.



VERY IMPORTANT: none of the leads can touch each other except where you have soldered them.

7 Final Assembly

Solder the Solar Cell in place, observing the polarity.

Solder the motor leads as shown.

Trim any excess wire.

You are now **DONE!**

