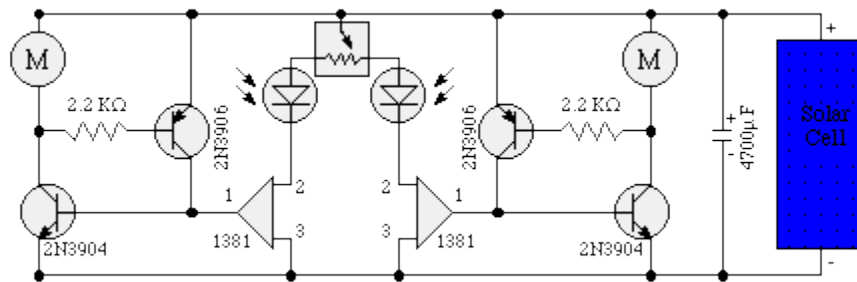


1381-BASED PHOTOPOPPERS AND 555-BASED PHOTOPOPPERS

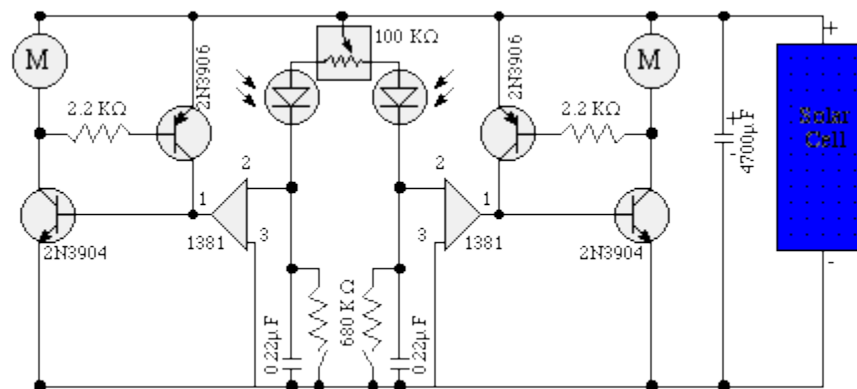
A collection of photopopper circuits based on the 1381 voltage detector.

Basic 1381-based photopopper



As you can see fairly quickly, this circuit is based on wiring two 1381-based solarengines together (with the addition of two photodiodes for photosensitivity, and a variable resistor for tunability).

1381-based photopopper with touch sensors

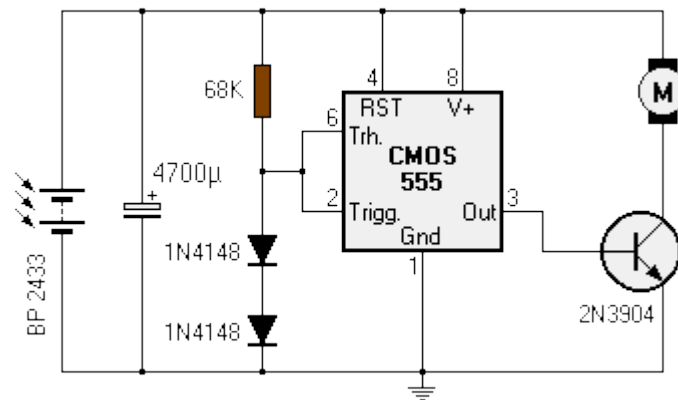


This circuit is a simple modification of the "Basic" circuit.

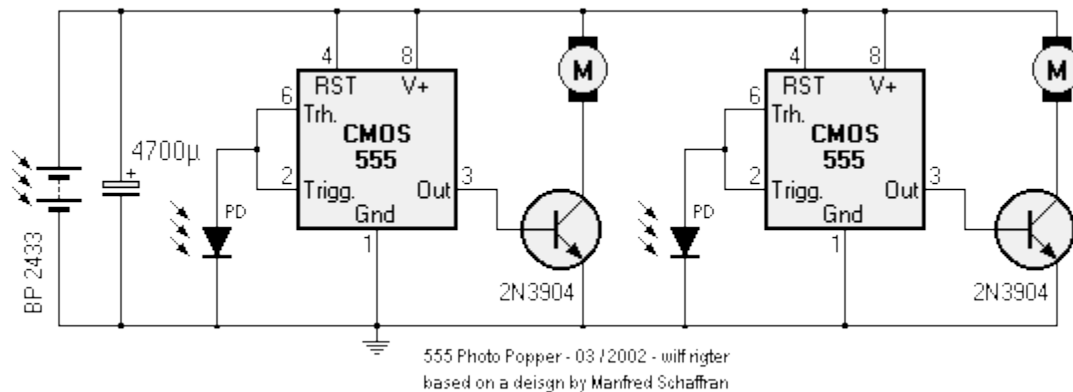
555-based photopoppers

Simple photopoppers, based on one IC

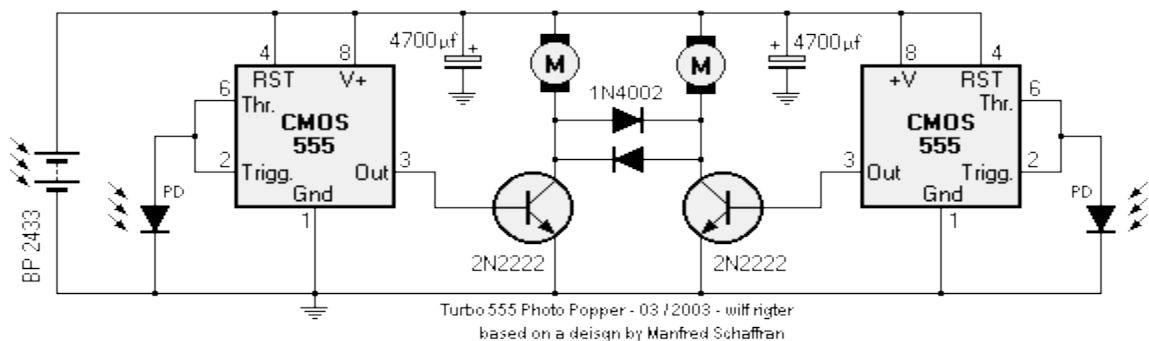
- A solar engine design using a 555 timer IC:



Wilf Rigter simplified this circuit a bit, made it phototropic, and doubled it up to yield a photopopper design in a post later the same day:



The trigger level is about 3 times the photovoltaic output of the photodiode. You can add a series Si diode to raise the trigger level by 300mV (3x 100mV) . Since the photodiode voltage rises with the log of the light level, the photodiode voltage changes little over a large light range, making the trigger level and the "pop" relatively constant over light level. The 555 with the lower photodiode output voltage will of course trigger first. The cap should be sized to cause the motor to turn the bot no more than 45 degrees each pop -- any larger cap and the bot does "twirls".



This is a new version that can use larger caps for longer pops by driving both motors at the same time but with a turning bias, which depends on the side triggered. The two diodes connect an active low output which drives a primary motor directly, also to the opposite motor. The diode drop reduces the voltage applied to the secondary motor so that it turns more slowly than the primary motor.

Source: http://www.solarbotics.net/library/circuits/bot_popper_555.html