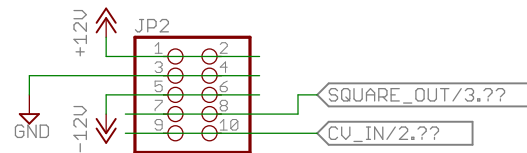
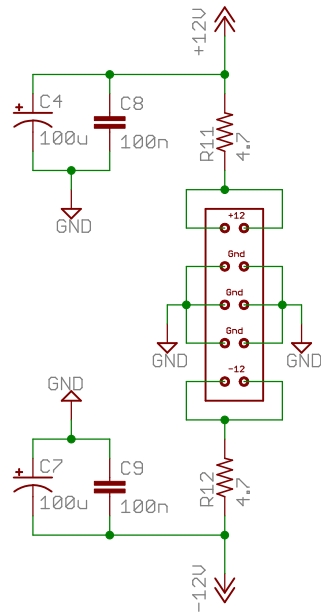


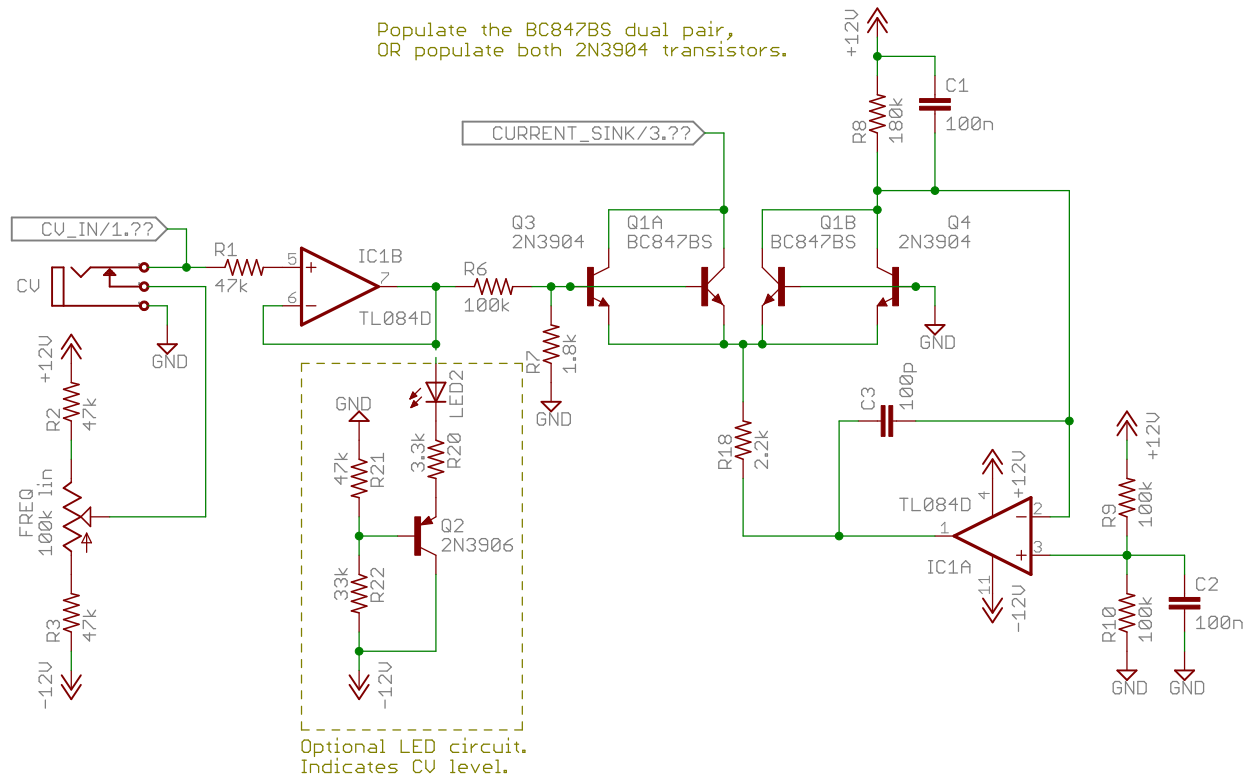
Ryan Jensen
2015-November

PS-VCO

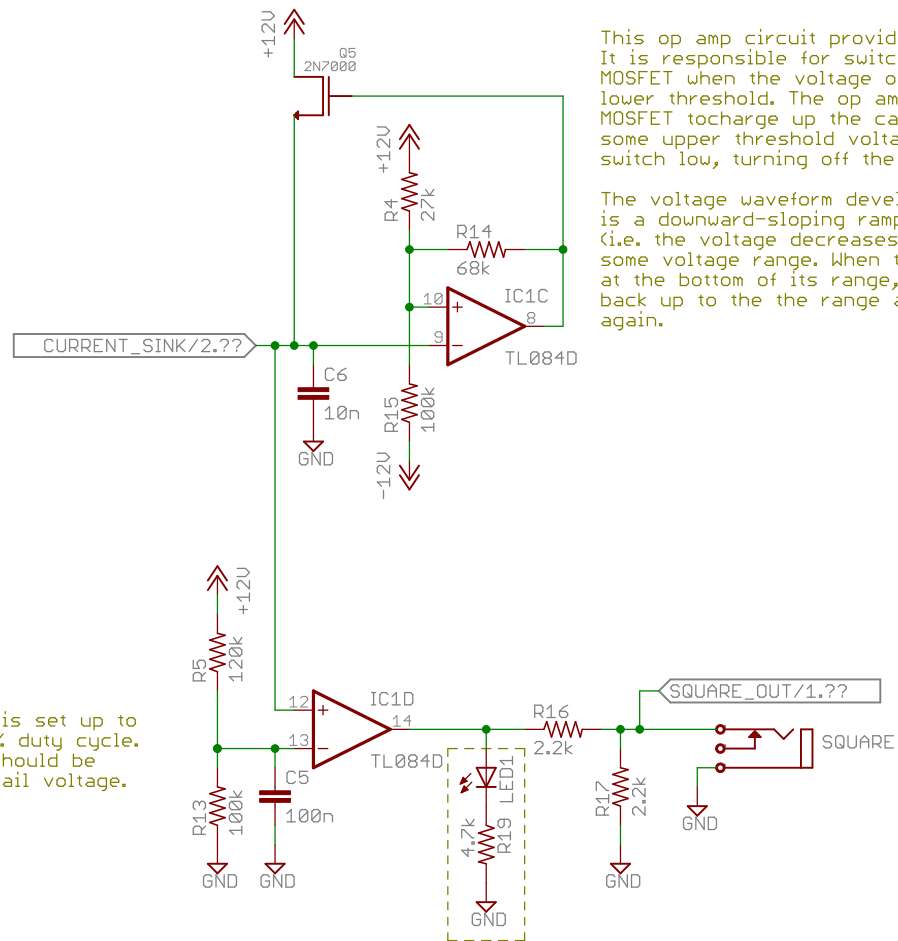
An attempt at creating a minimalistic VCO.



Experimental Data
using +12 V and - 12 V supply rails
output unloaded (disconnected)
pot turned down to lowest frequency = 11 Hz
+12 V line current draw = 8.6 mA
-12 V line current draw = -8.6 mA
0 V frequency = 660 Hz
+12 V line current draw = 10.1 mA
-12 V line current draw = -10.0 mA
pot turned up to highest frequency = 30 kHz
+12 V line current draw = 14.1 mA
-12 V line current draw = -13.7 mA



This op amp (configured as a comparator) is set up to output a square wave at approximately 50% duty cycle. The amplitude of the output square wave should be just slightly less than 50% of the power rail voltage.



This op amp circuit provides hysteresis. It is responsible for switching on the 2N7000 MOSFET when the voltage on C6 reaches some lower threshold. The op amp will use the MOSFET to charge up the capacitor to some upper threshold voltage, and then switch low, turning off the MOSFET.

The voltage waveform developed on C6 is a downward-sloping ramp waveform. (i.e. the voltage decreases linearly over some voltage range. When the voltage is at the bottom of its range, it quickly jumps back up to the the range and starts decreasing again.

Optional LED circuit.
Indicates Square Wave ON state.