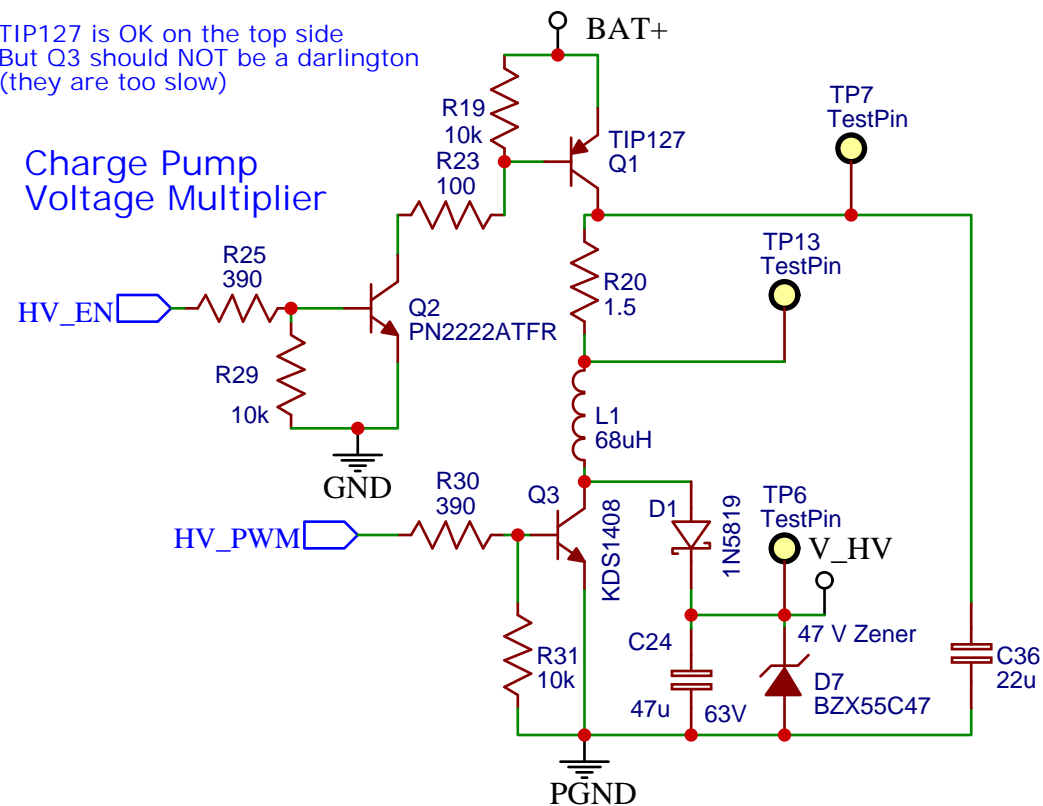


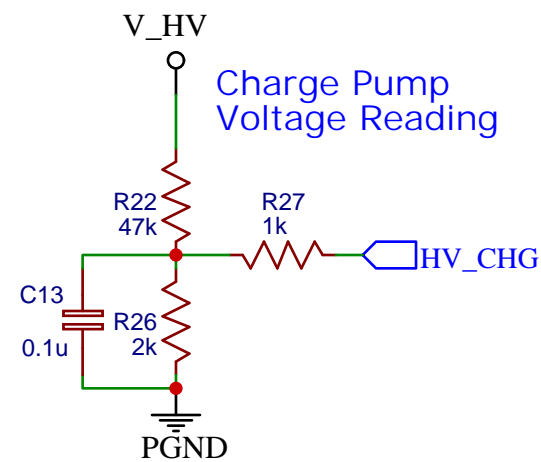
TITLE: Metal Detector MCU and Digital Controls		REV:2.0
EasyEDA	Company: John Clymer	Sheet: 1/2
	Date: 2022-12-31	Drawn By: stimeymn

TIP127 is OK on the top side
But Q3 should NOT be a darlington
(they are too slow)

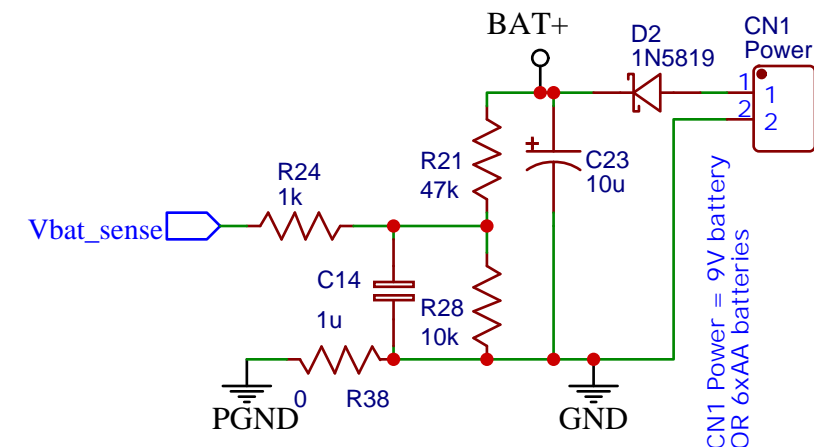
Charge Pump Voltage Multiplier



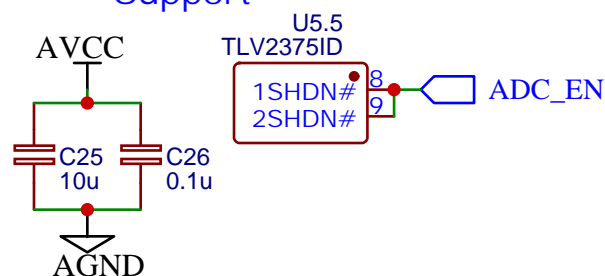
Charge Pump Voltage Reading



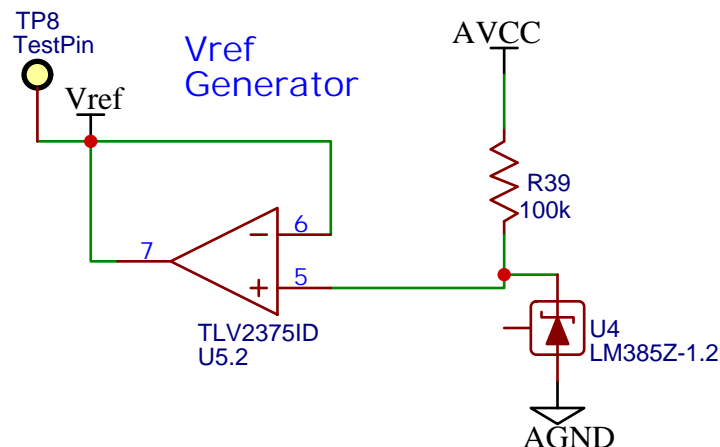
Battery Input and Voltage Reading



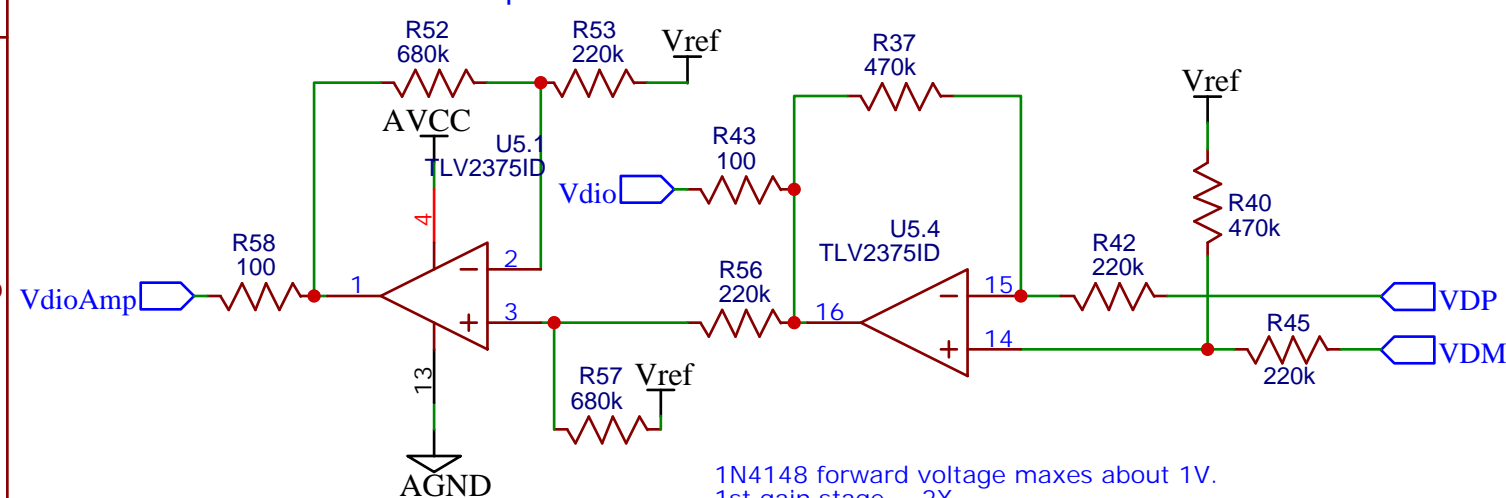
Opamp Support



Vref Generator

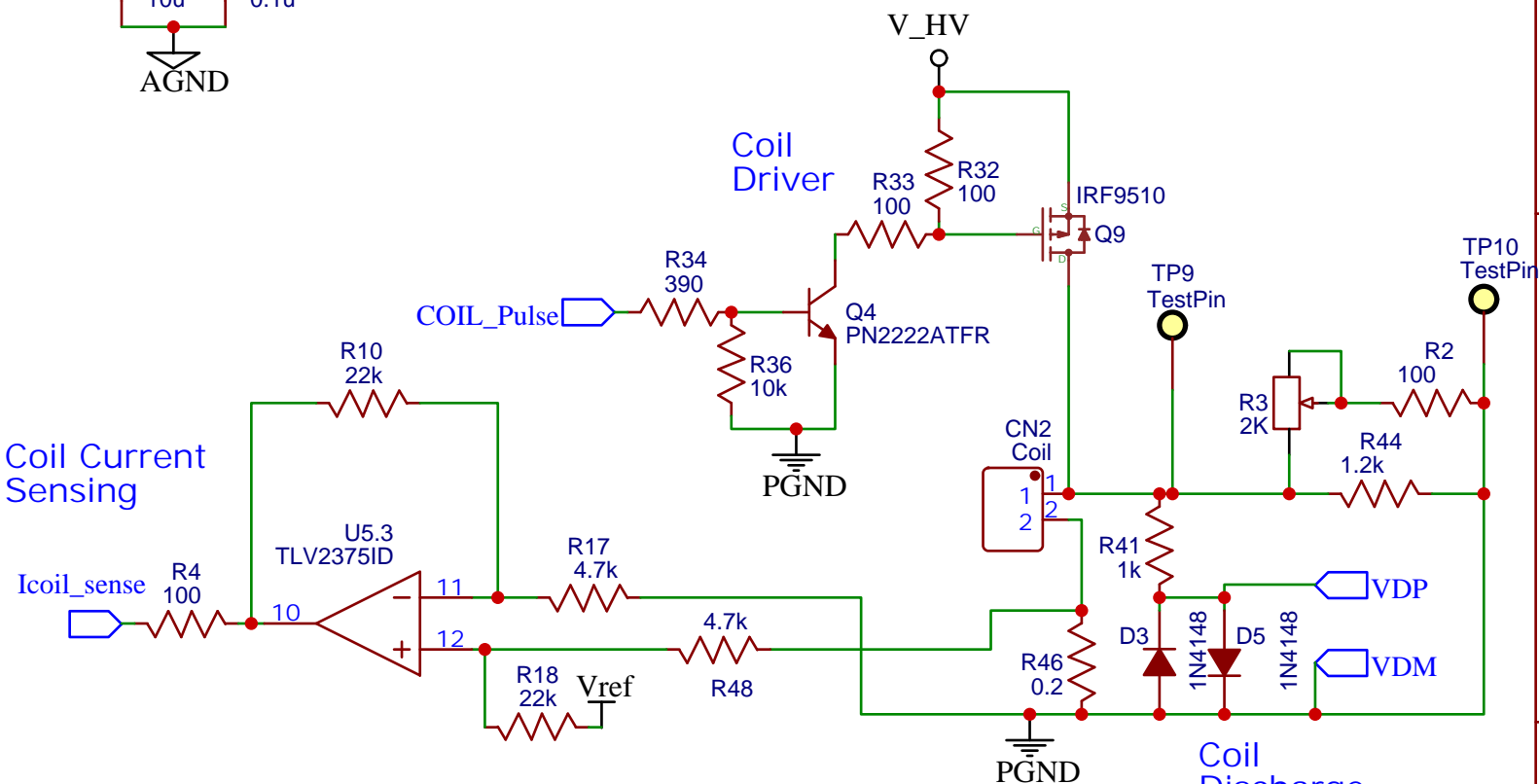


Diode Detector Amplifier

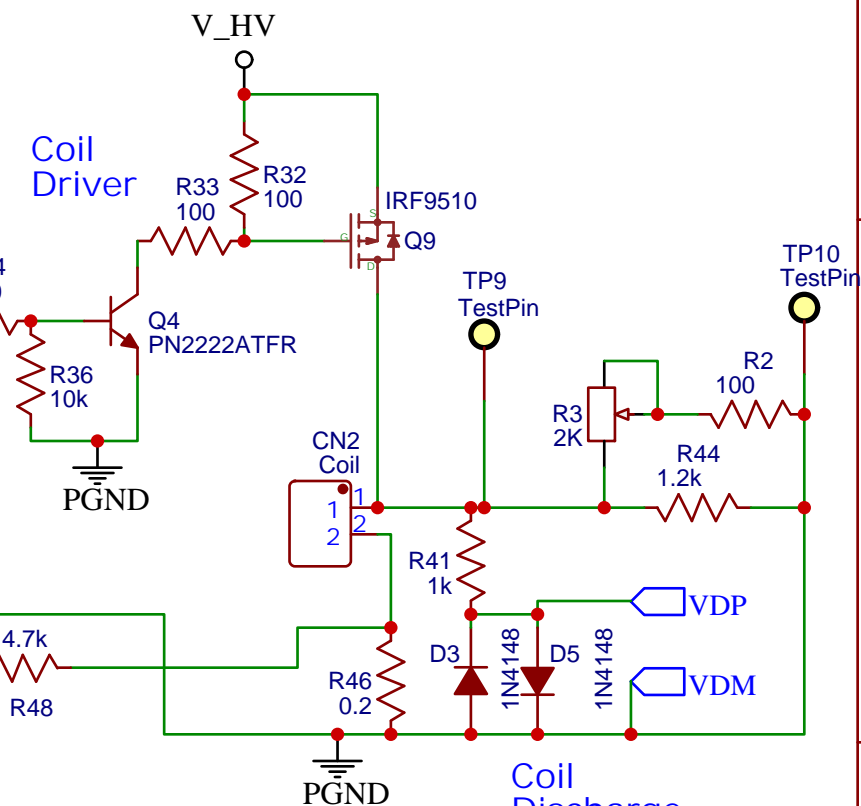


1N4148 forward voltage maxes about 1V.
1st gain stage = 2X
2nd gain stage = 3X
VdioAmp = Vref + (VDP-VDM)x6

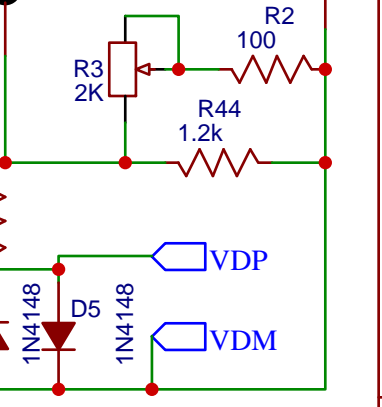
Coil Current Sensing



Coil Driver



Coil Discharge



TITLE: Metal Detector
Input Power, Coil Power and Analog

REV: 2.0



Company: John Clymer

Sheet: 2/2

Date: 2022-12-31 Drawn By: stimeymn