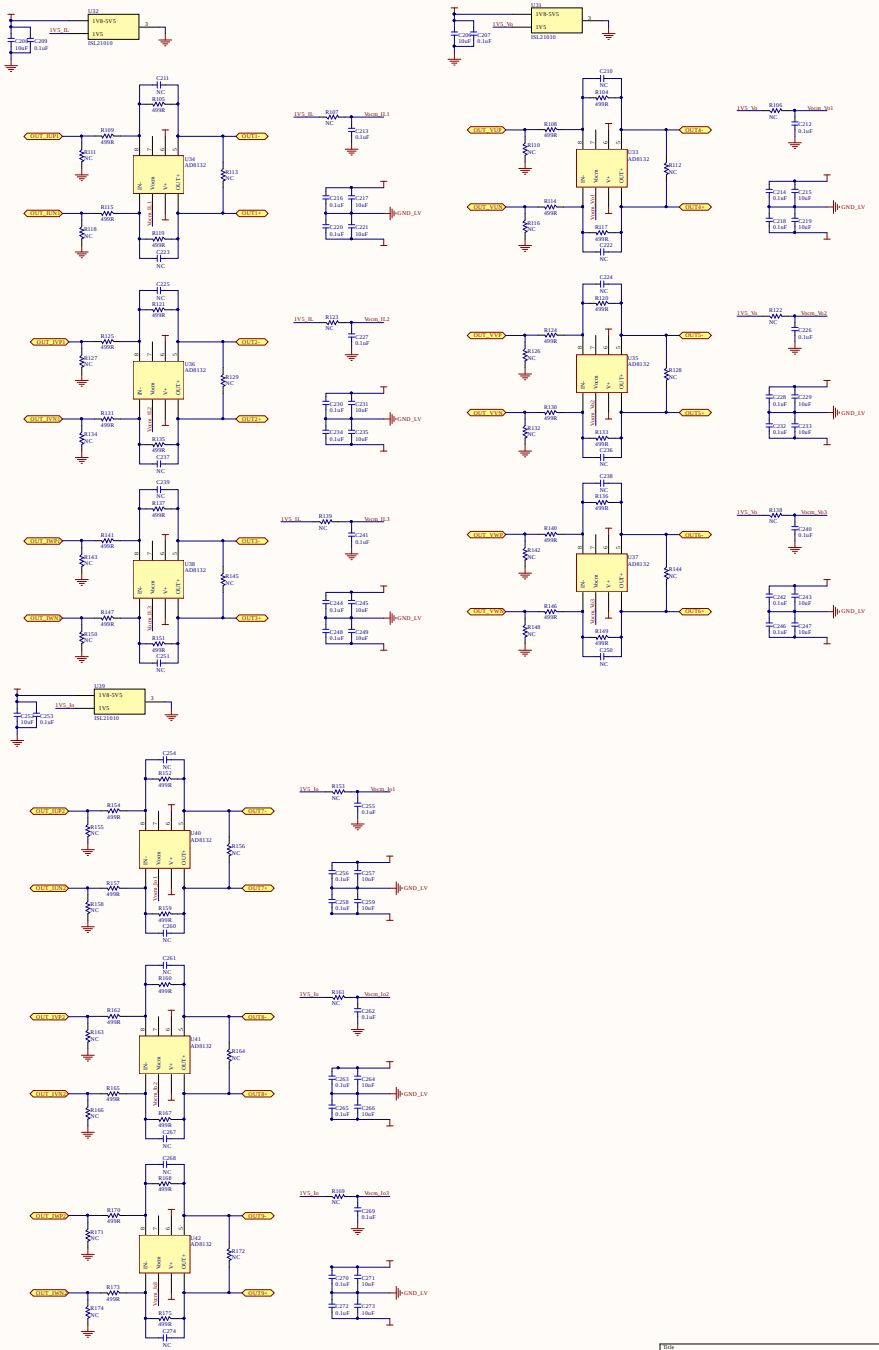
Current sensing:

gain = 0.02*8*1000/499
I_pk = 1.5/gain = 9.375A

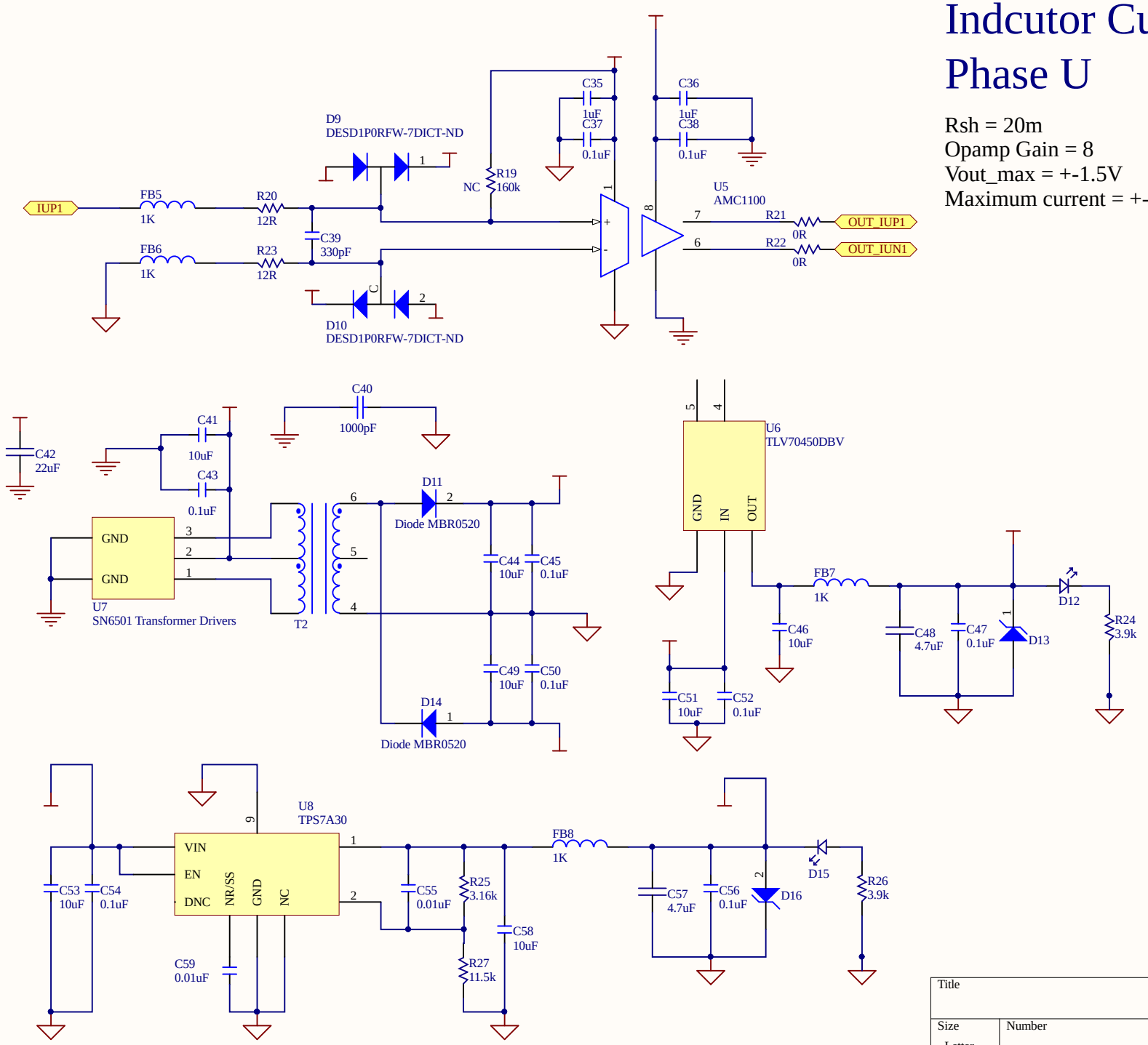
Voltage sensing:

gain = 1.0/(332+1.0)*8*1 = 0.02402
V_pk = 1.5/gain = 62.447



Indcutor Current Sensors Phase U

Rsh = 20m
Opamp Gain = 8
Vout_max = +-1.5V
Maximum current = +- 9.375A



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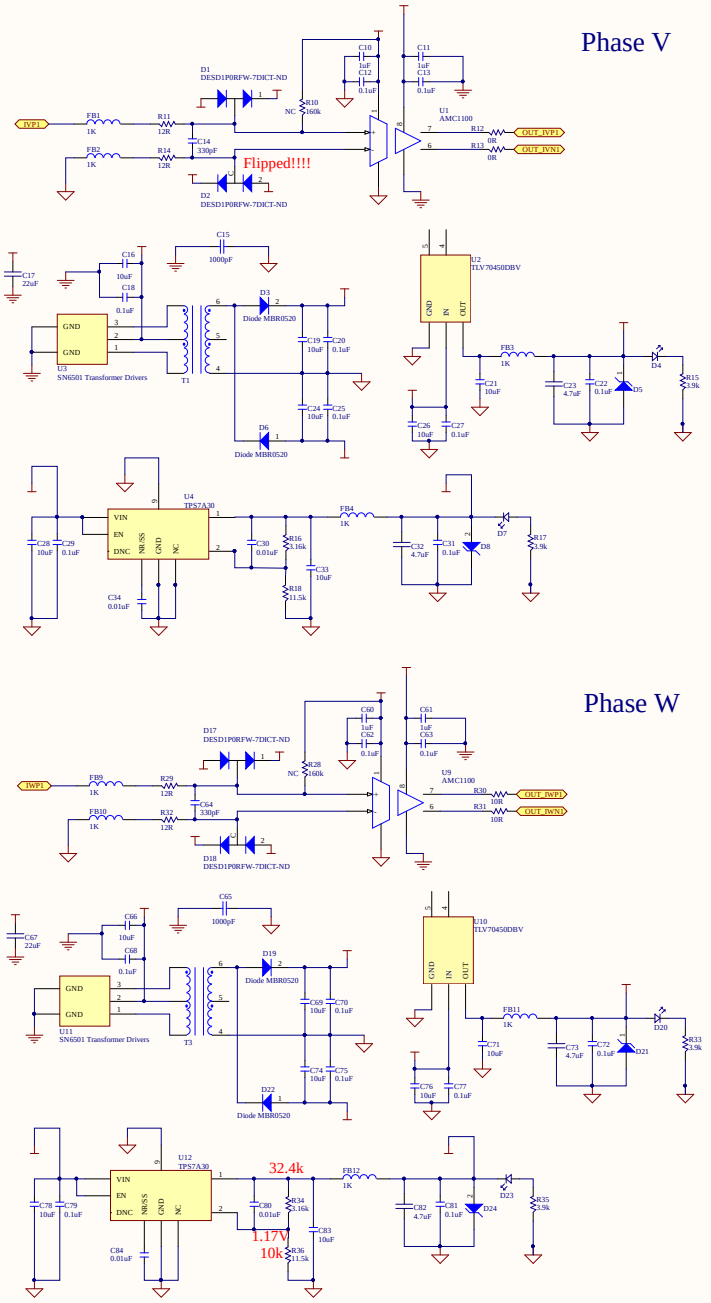
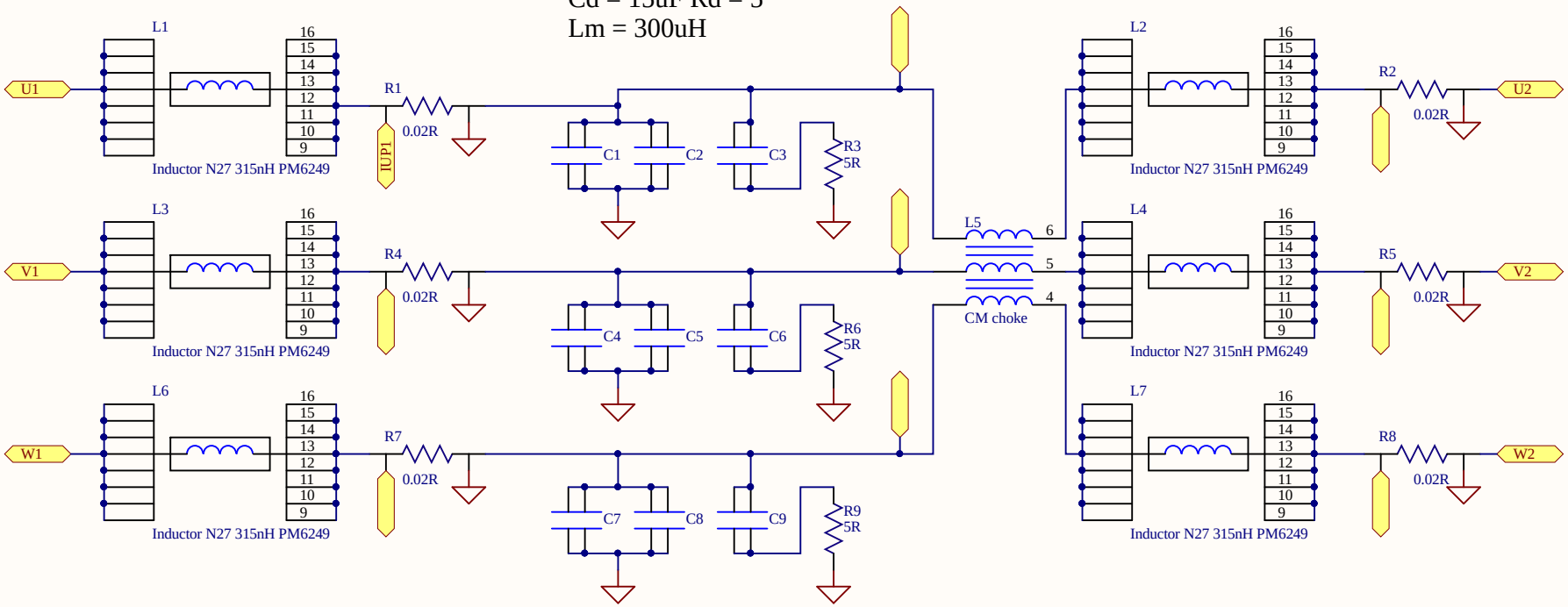
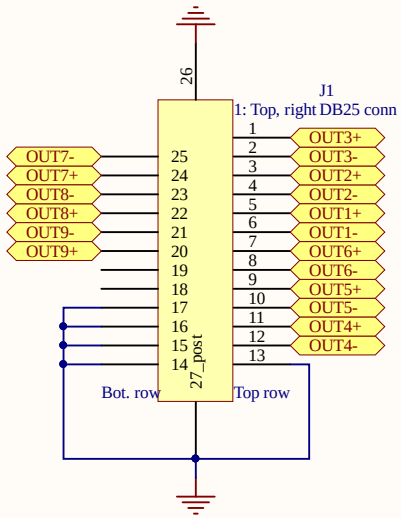
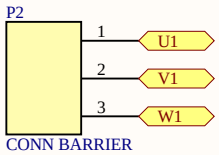

Phase V
Flipped!!!!
Phase W
32.4k
1.17V
10k

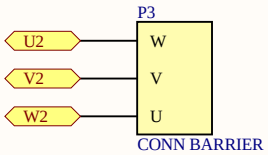
LCL Filter

Lf = 750uH
Cf = 30uF
Cd = 15uF Rd = 5
Lm = 300uH









Bugs:
1. Caps are too wide and they wont fit.
2. Inductor boobins are too big should keep some spaces between them and shunt resistance.
3. Mechnical holes for mounting
4. Texting for output currents

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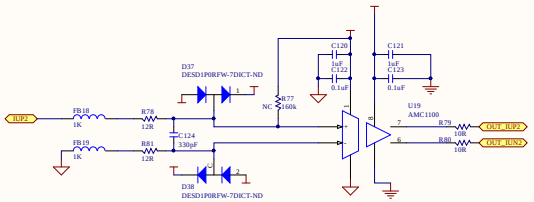
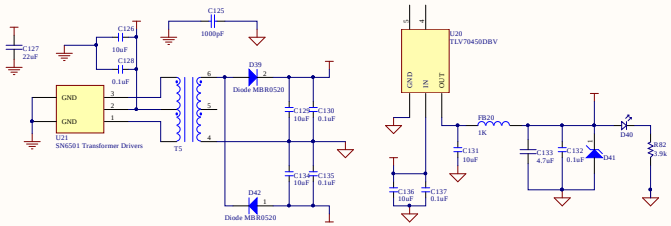
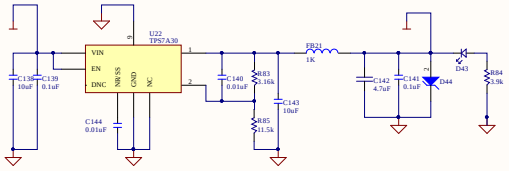
Output Current Sensors

Phase U

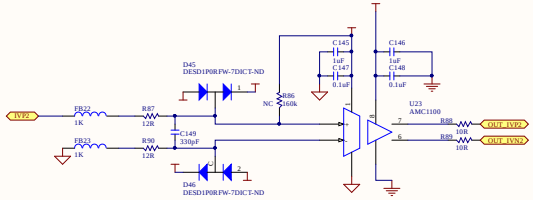
Rsh = 20m
Opamp Gain = 8
Vout_max = +-1.5V
Maximum current = +- 9.375A

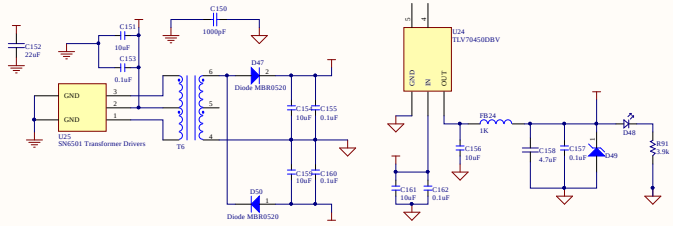


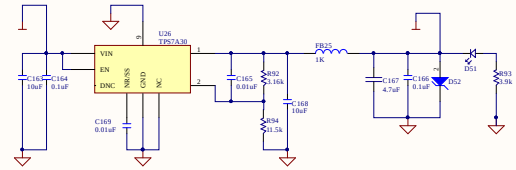




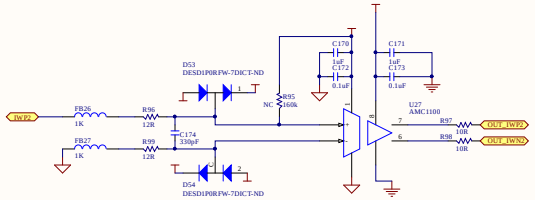
Phase V

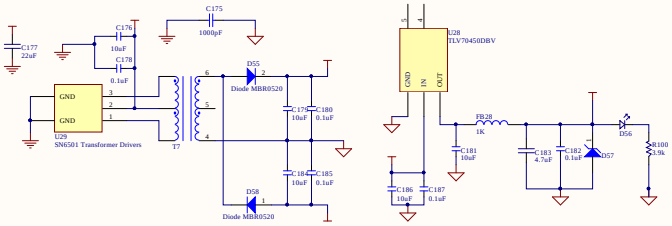


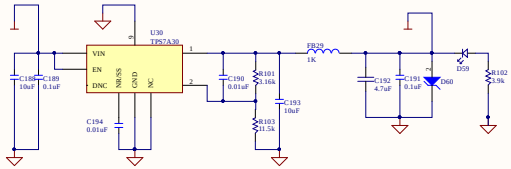




Phase W







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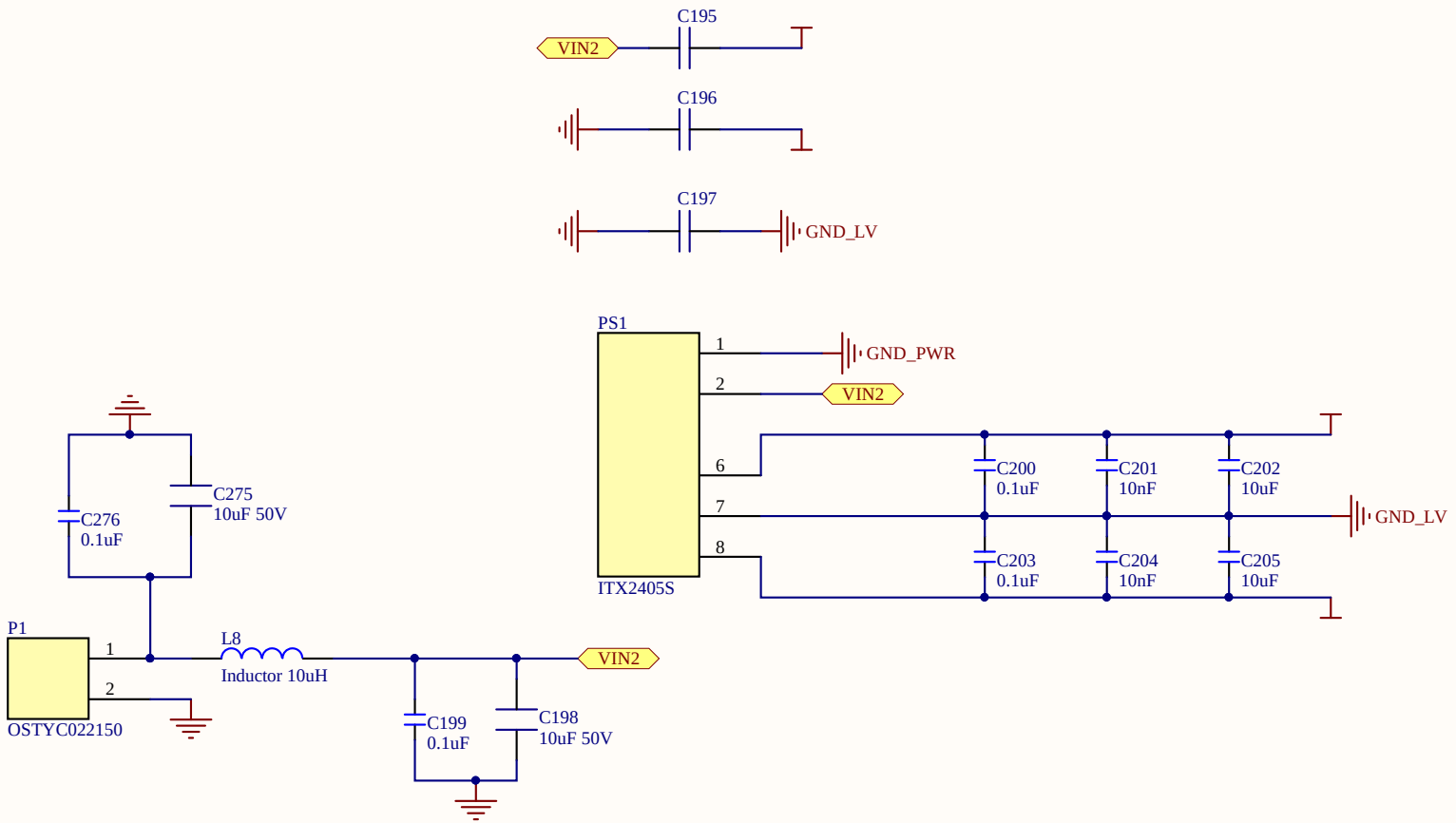

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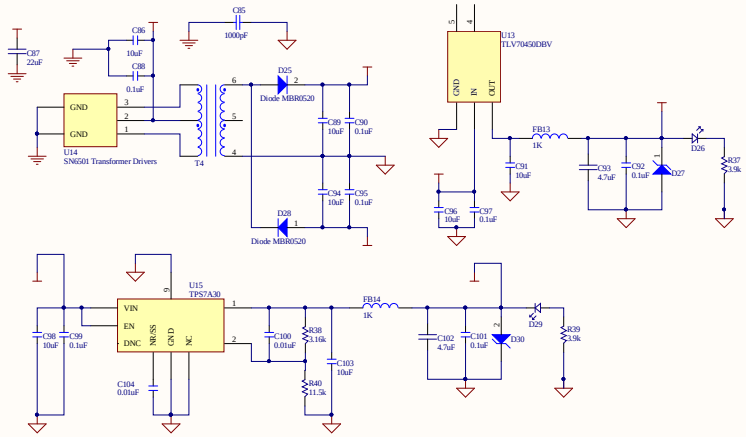
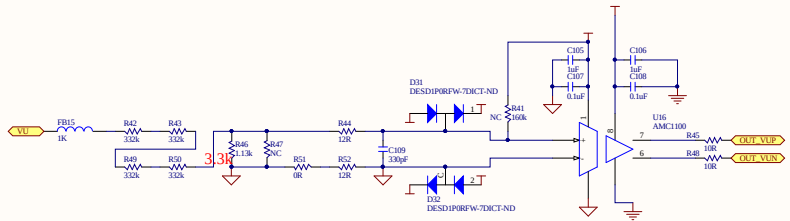
File: C:\Users\..\Power Supply.SchDoc		Drawn By:

Dual Power Supply

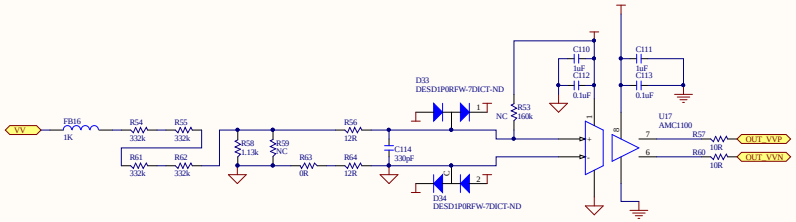


Voltage Sensors Phase U

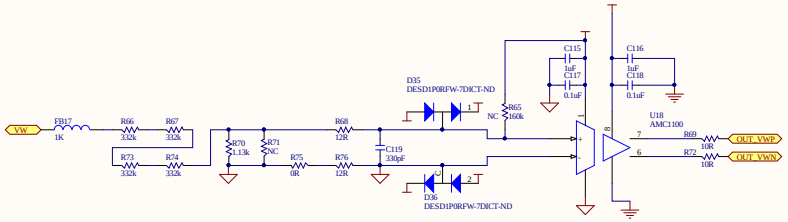


Res gain = 8.502e-4
Opamp Gain = 8
Vout_max = +-1.5V
Maximum Voltage= +- 220.5

Voltage Sensors Phase V



Voltage Sensors Phase W



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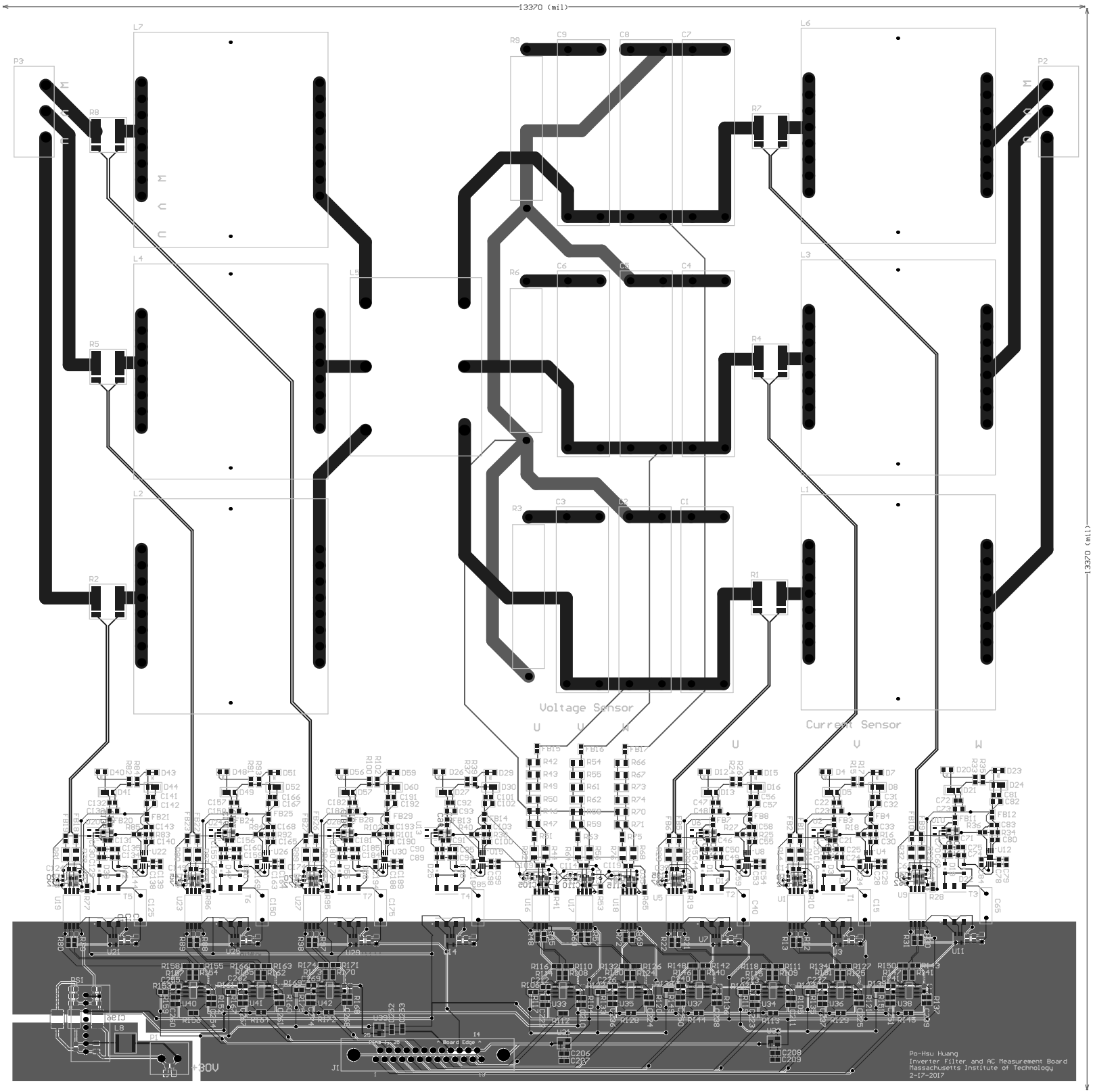
13370 (mil)
13370 (mil)
Voltage Sensor
Current Sensor
U
V
W
Po-Hsu Huang
Inverter Filter and AC Measurement Board
Massachusetts Institute of Technology
2-17-2017