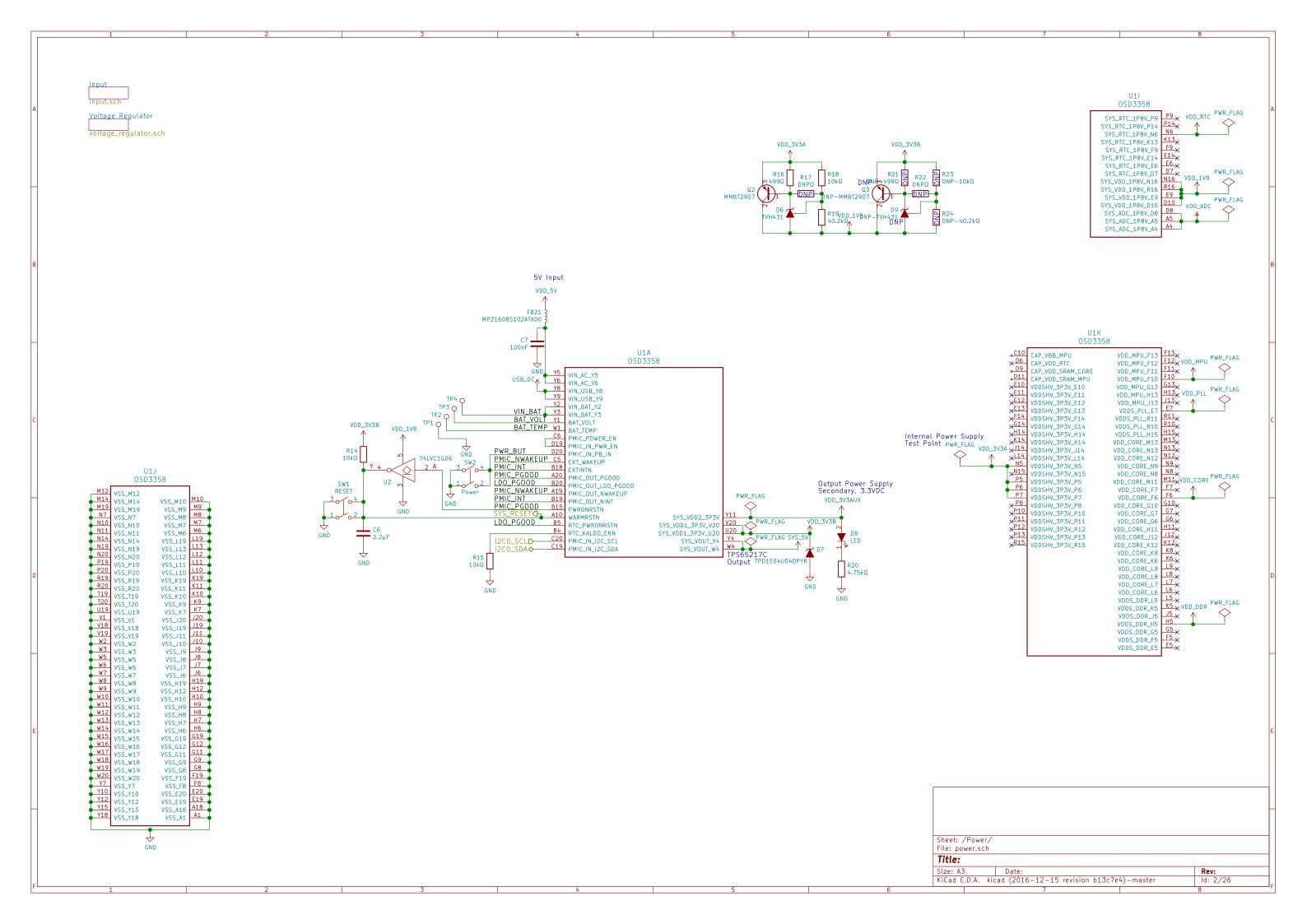
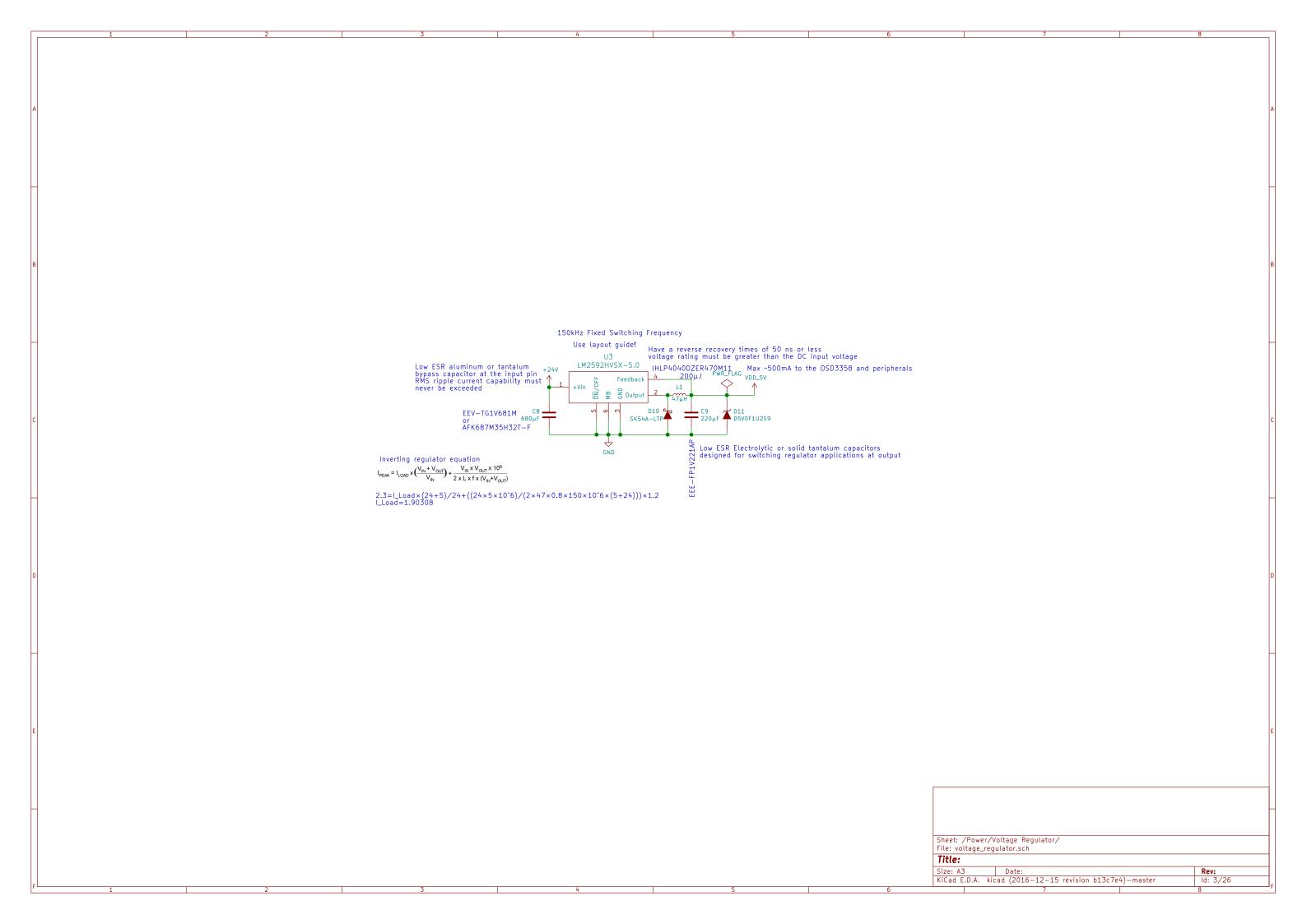


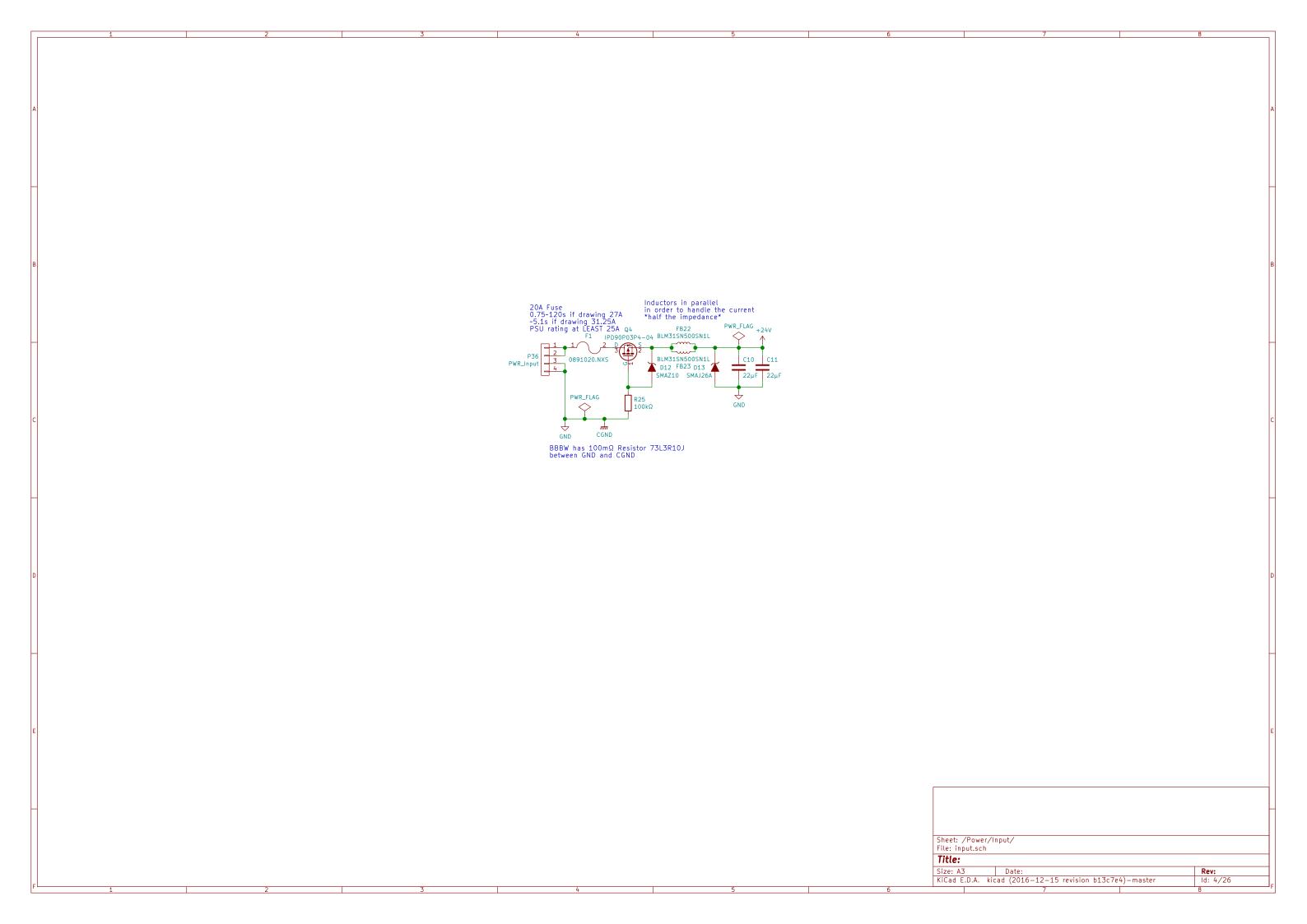
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 Date: 2017-03-17

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Unused

DILL OSD3358

B1 NC_B1 EXTL3B Y19.

B2 NC_B2 EXTL3A Y19.

B3 NC_B3 EXTL2B Y19.

C2 NC_C2 EXTL1A Y14.

C2 NC_C2 EXTL1B Y11.

NC_D1 NC_V10 U11.

D1 NC_D1 NC_V10 U11.

D2 NC_D2 NC_U11 U10.

D2 NC_D3 NC_P4 P3.

NC_D4 NC_P4 P3.

NC_D5 NC_P2 P2.

NC_D5 NC_P2 P2.

NC_D6 NC_P2 P2.

NC_D6 NC_P4 NC_N3 N2.

NC_D7 NC_D8 NC_N3 N3.

NC_E4 NC_N3 N2.

NC_E4 NC_N4 N3.

NC_E4 NC_N4 N3.

NC_E5 NC_D8 NC_N3 N2.

NC_E6 NC_D9 NC_N4 N3.

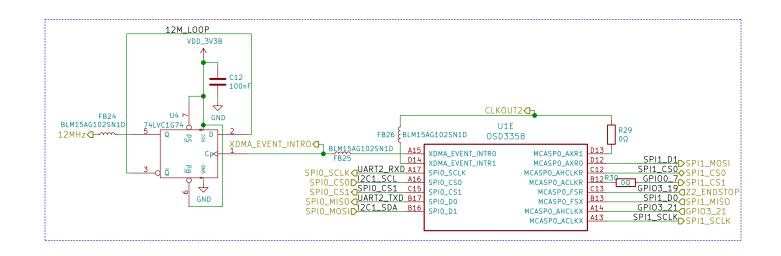
NC_E7 NC_N4 N3.

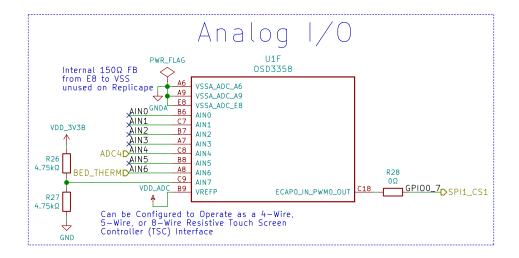
NC_E8 NC_N3 N2.

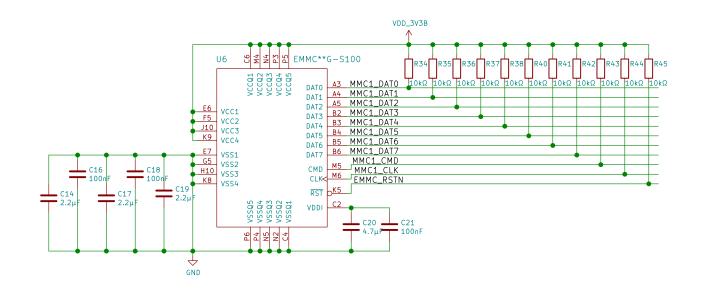
NC_E9 NC_M4 N4.

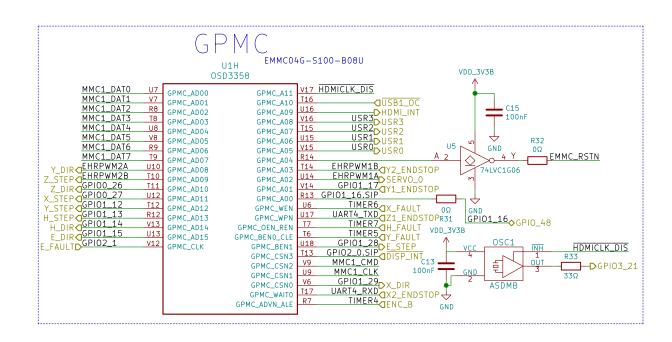
NC_E9 NC_M4 N6.

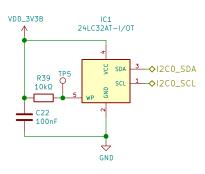
NC



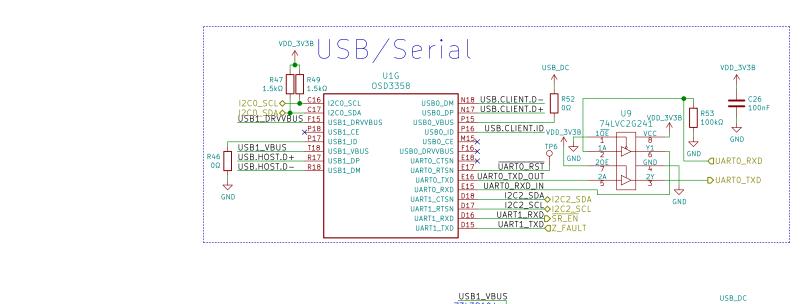


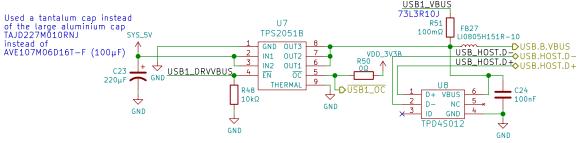


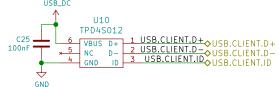




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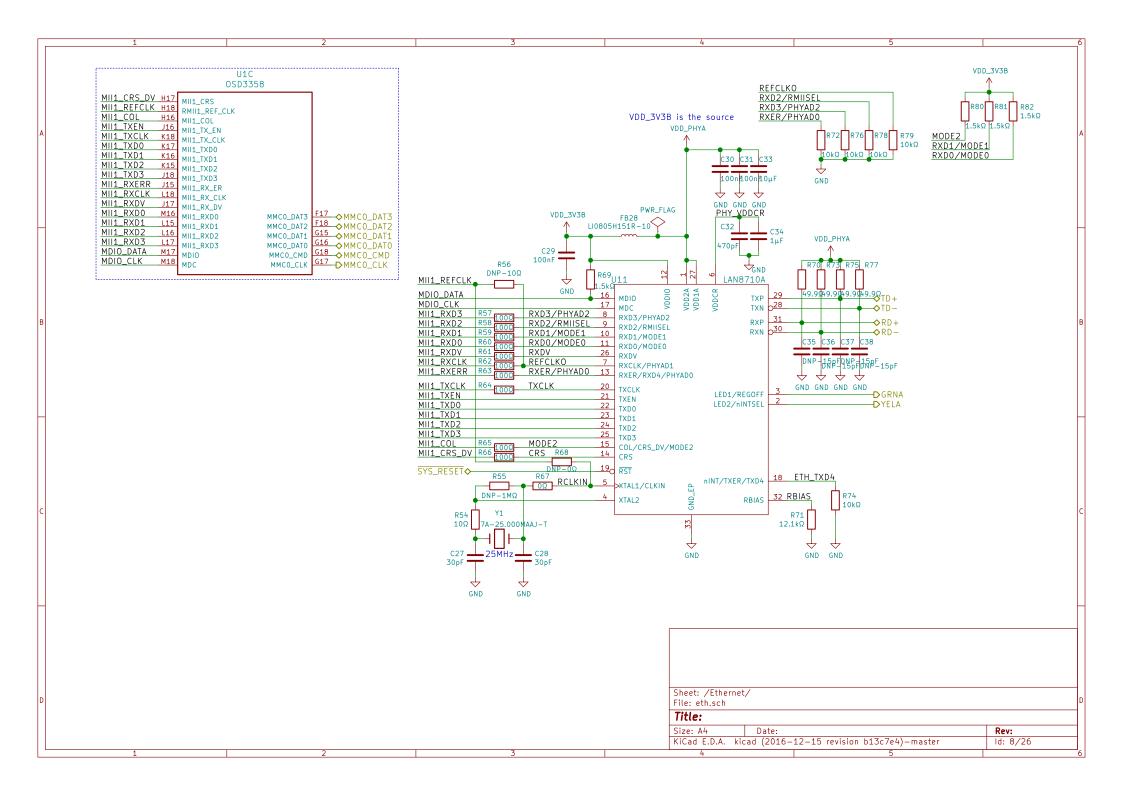


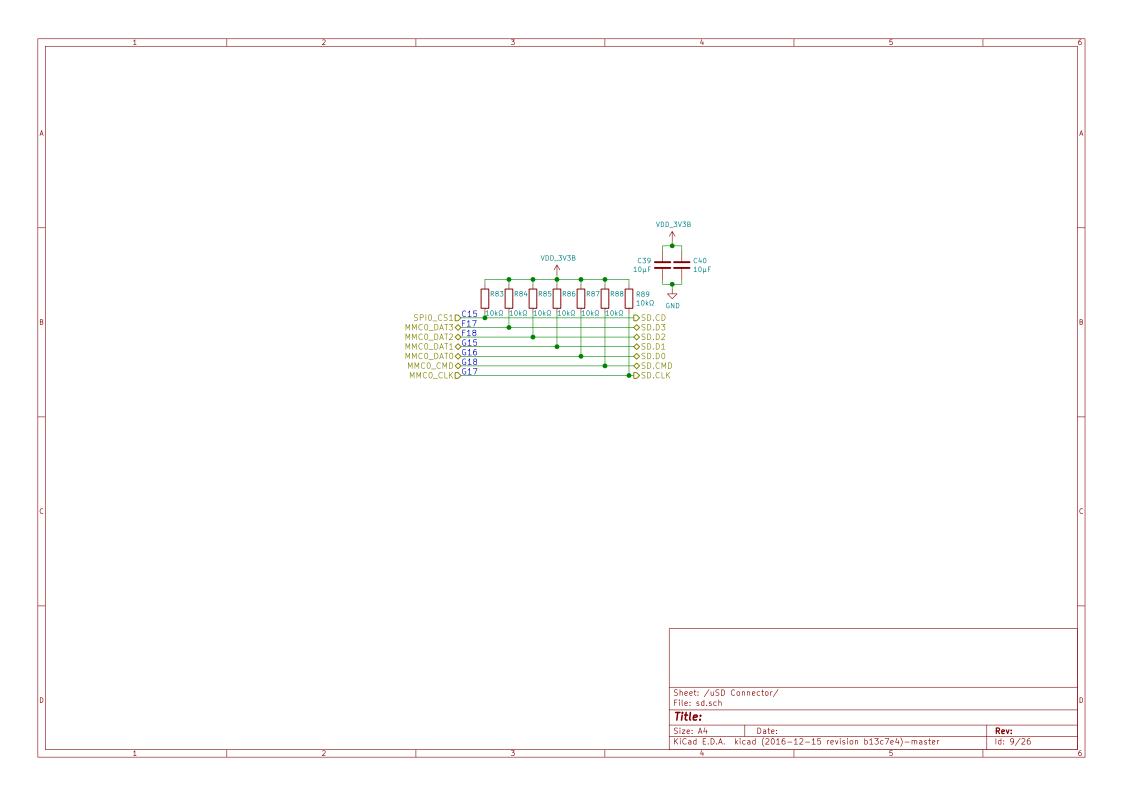


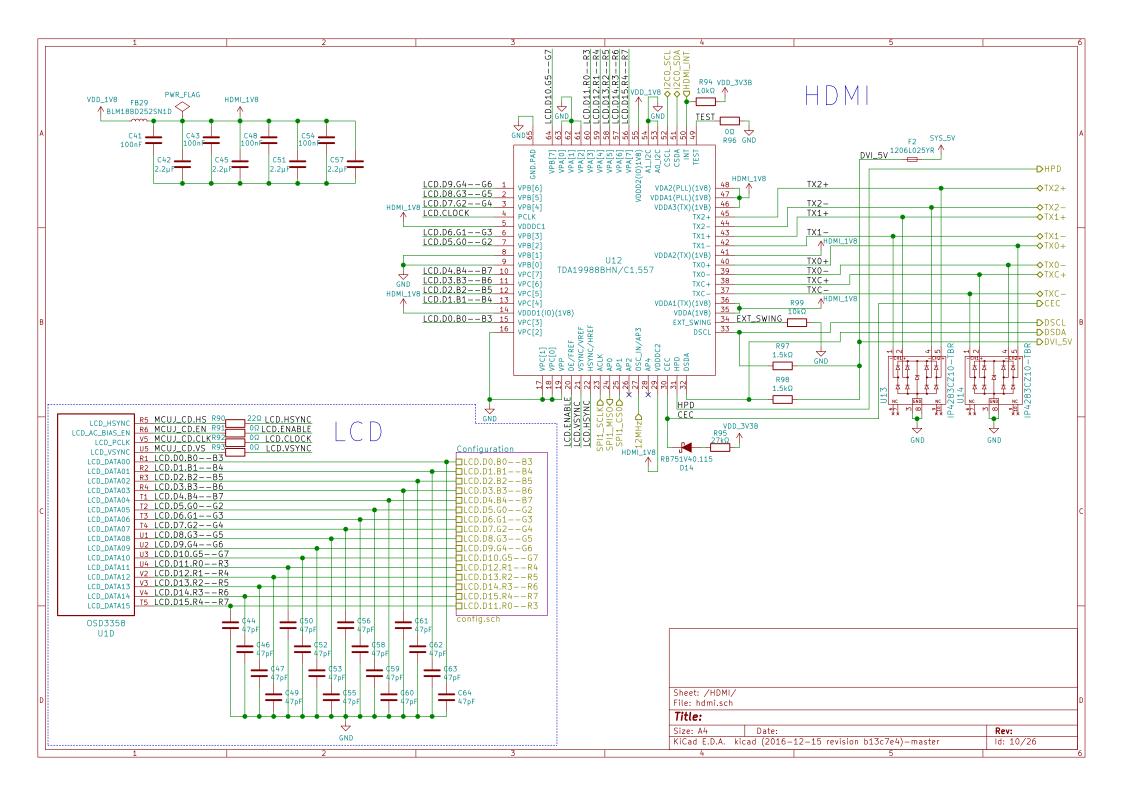
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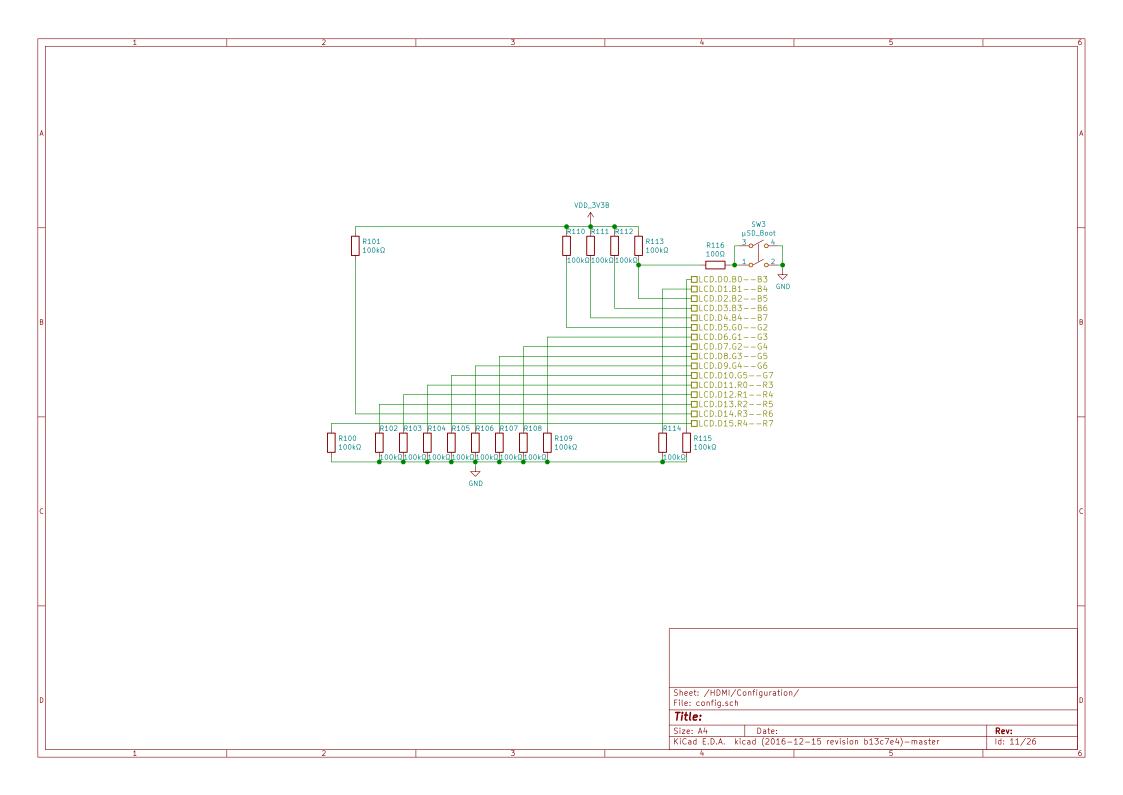
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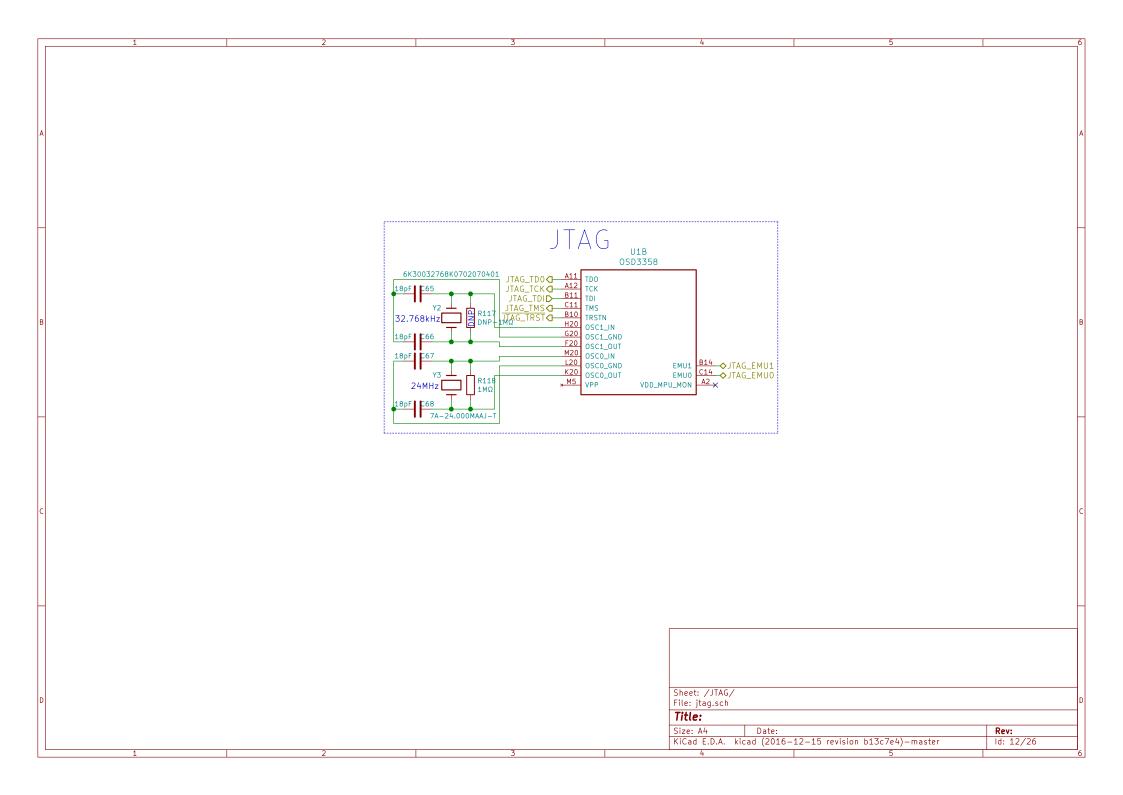
Date: Rev: KiCad E.D.A. kicad (2016-12-15 revision b13c7e4)-master ld: 7/26

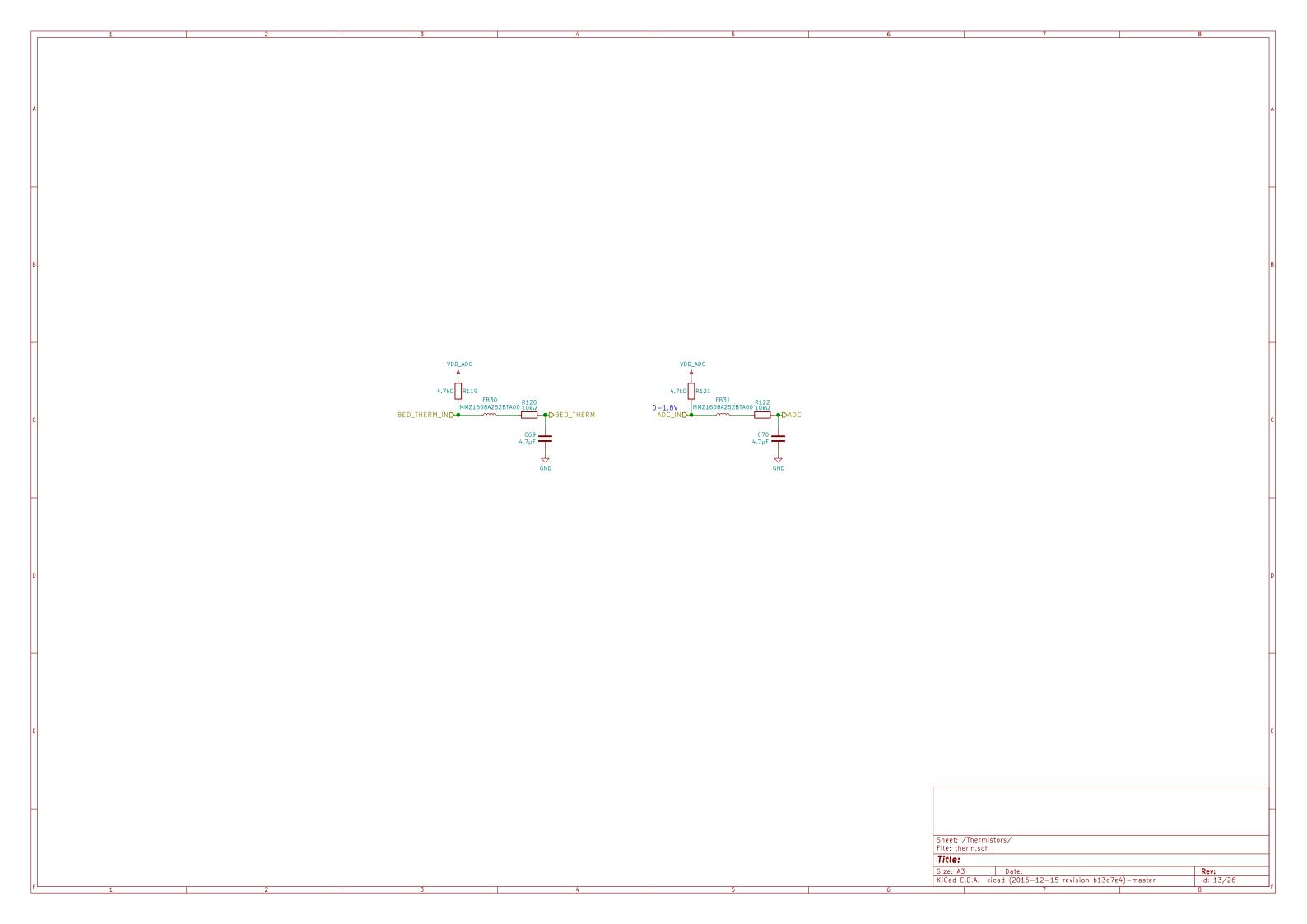


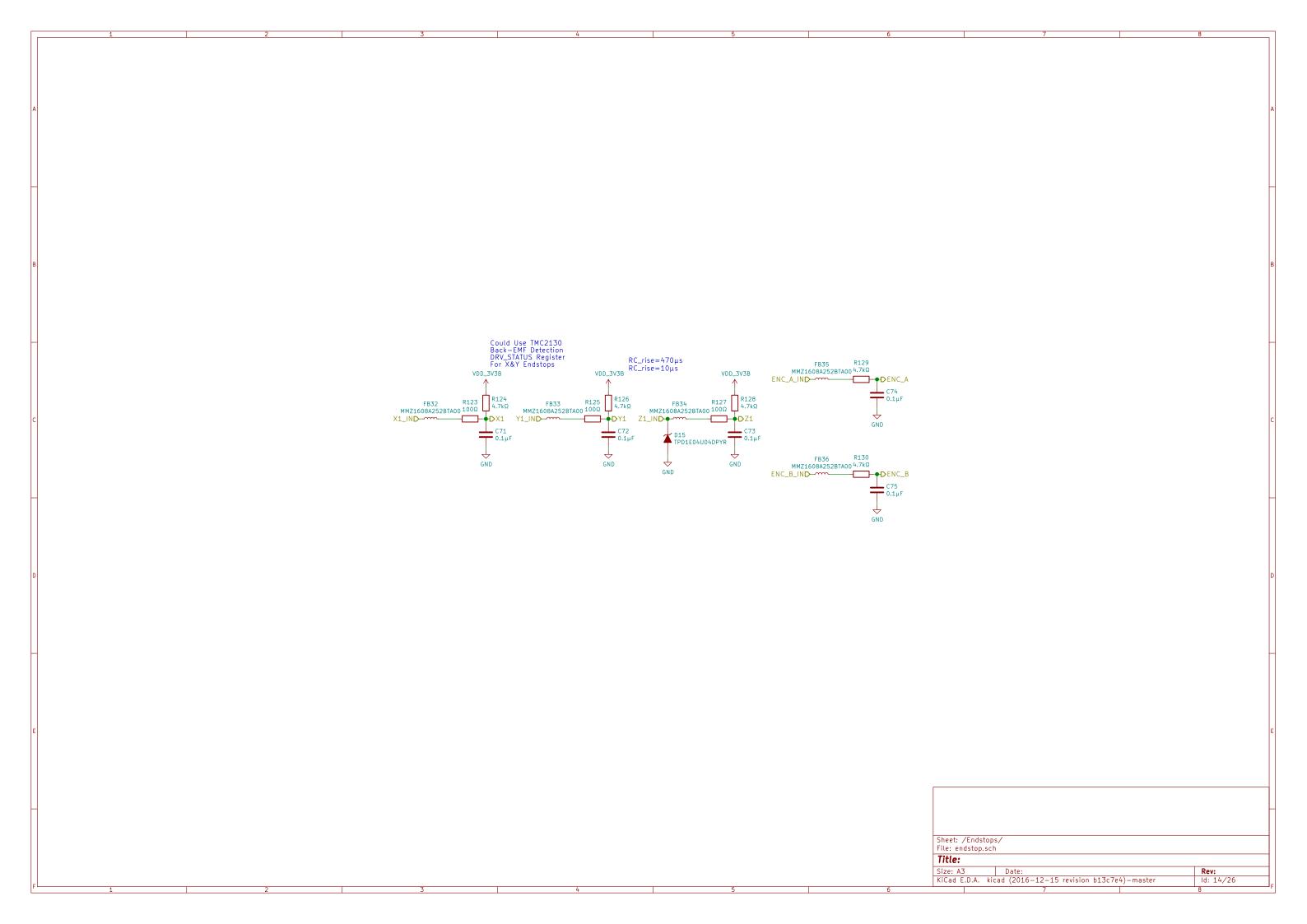


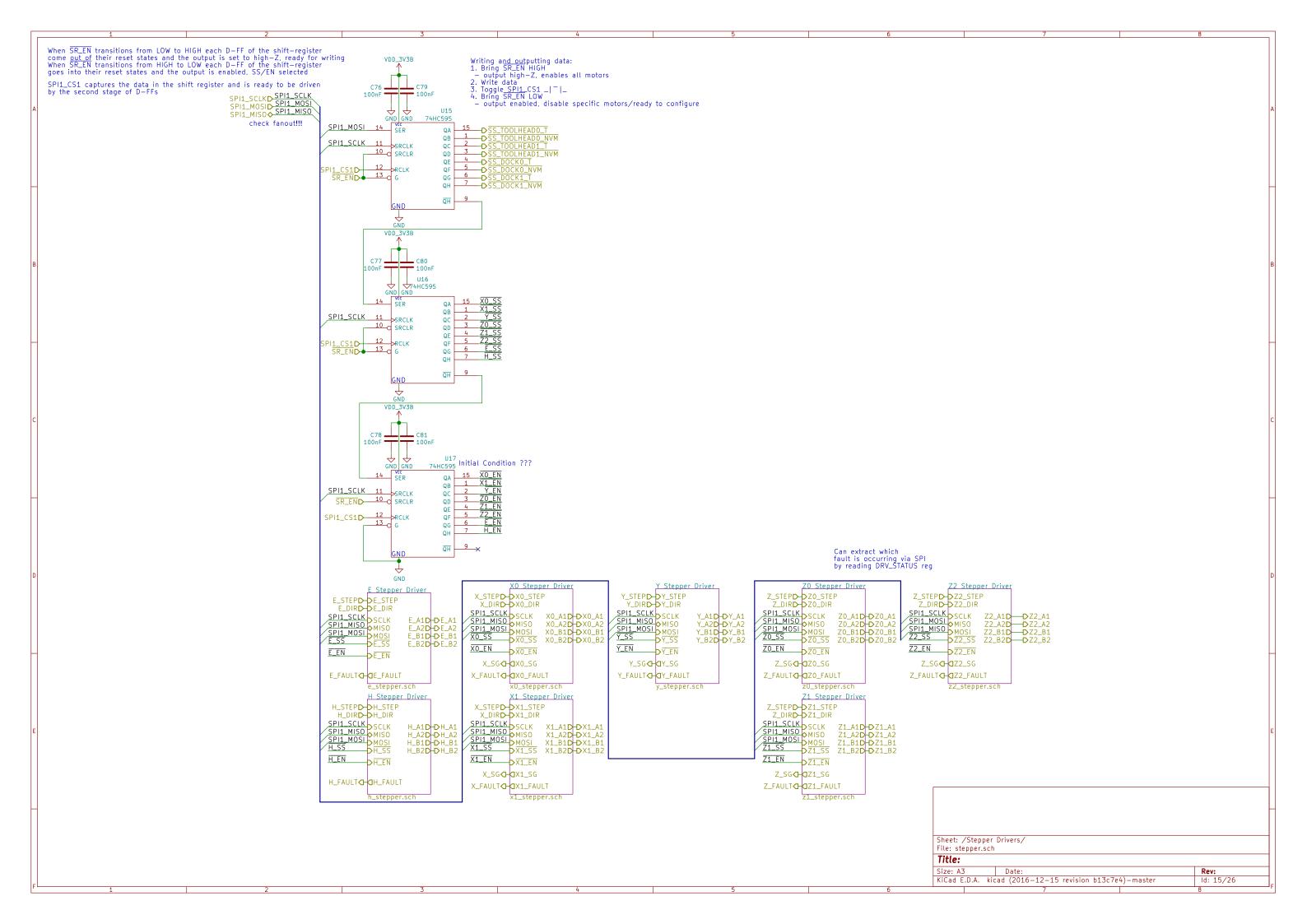






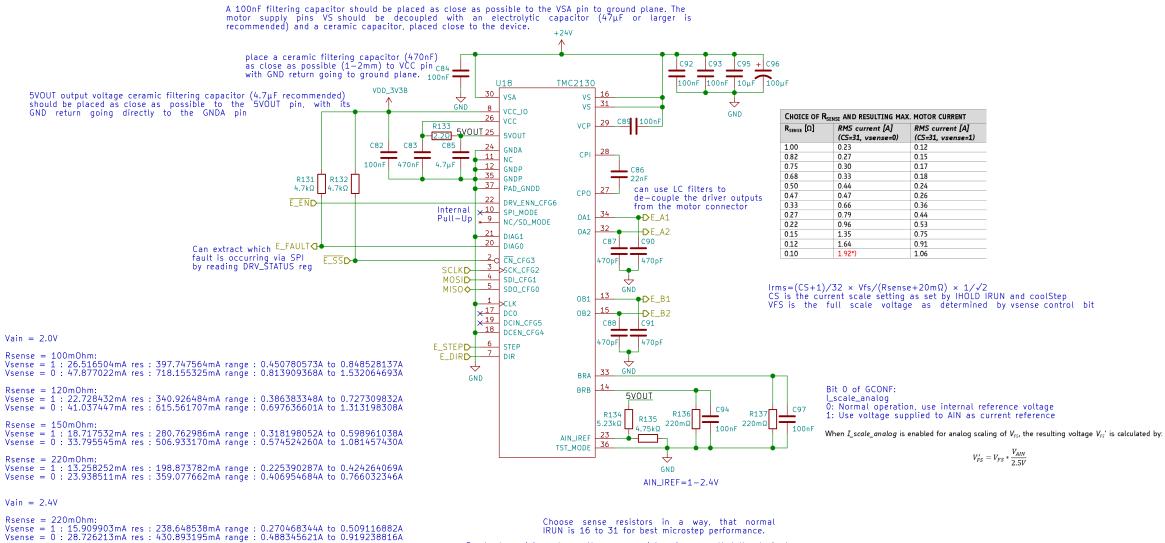






See Chapter 29 of the datasheet for layout

Place sense resistors and all filter capacitors as close as possible to the related IC pins. Use a solid common GND for all GND connections, also for sense resistor GND. Connect 5VOUT filtering capacitor directly to 5VOUT and GNDA pin. See layout hints for more details. Low ESR electrolytic capacitors are recommended for VS filtering.



Choose sense resistors in a way, that normal IRUN is 16 to 31 for best microstep performance.

For best precision, choose the sense resistors in a way that the desired maximum current is reached with AIN in the range 2V to $2.4\mathrm{V}$

Vain = 2.379759519V

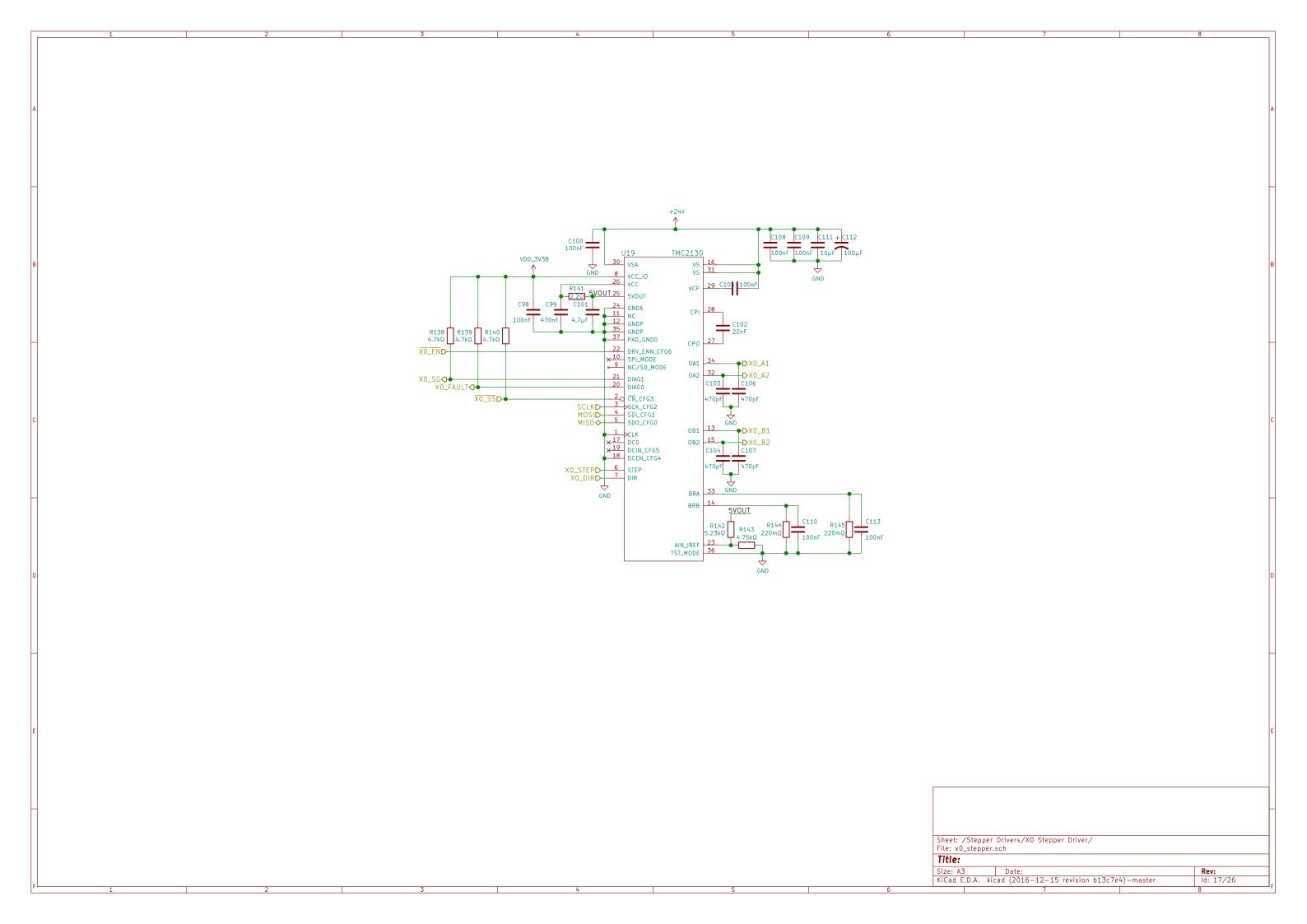
Rsense = 220m0hm: Vsense = 1 : 15.775726mA res : 236.635888mA range : 0.26818734A to 0.504823228A Vsense = 0 : 28.483949mA res : 427.259243mA range : 0.484227141A to 0.911486384A

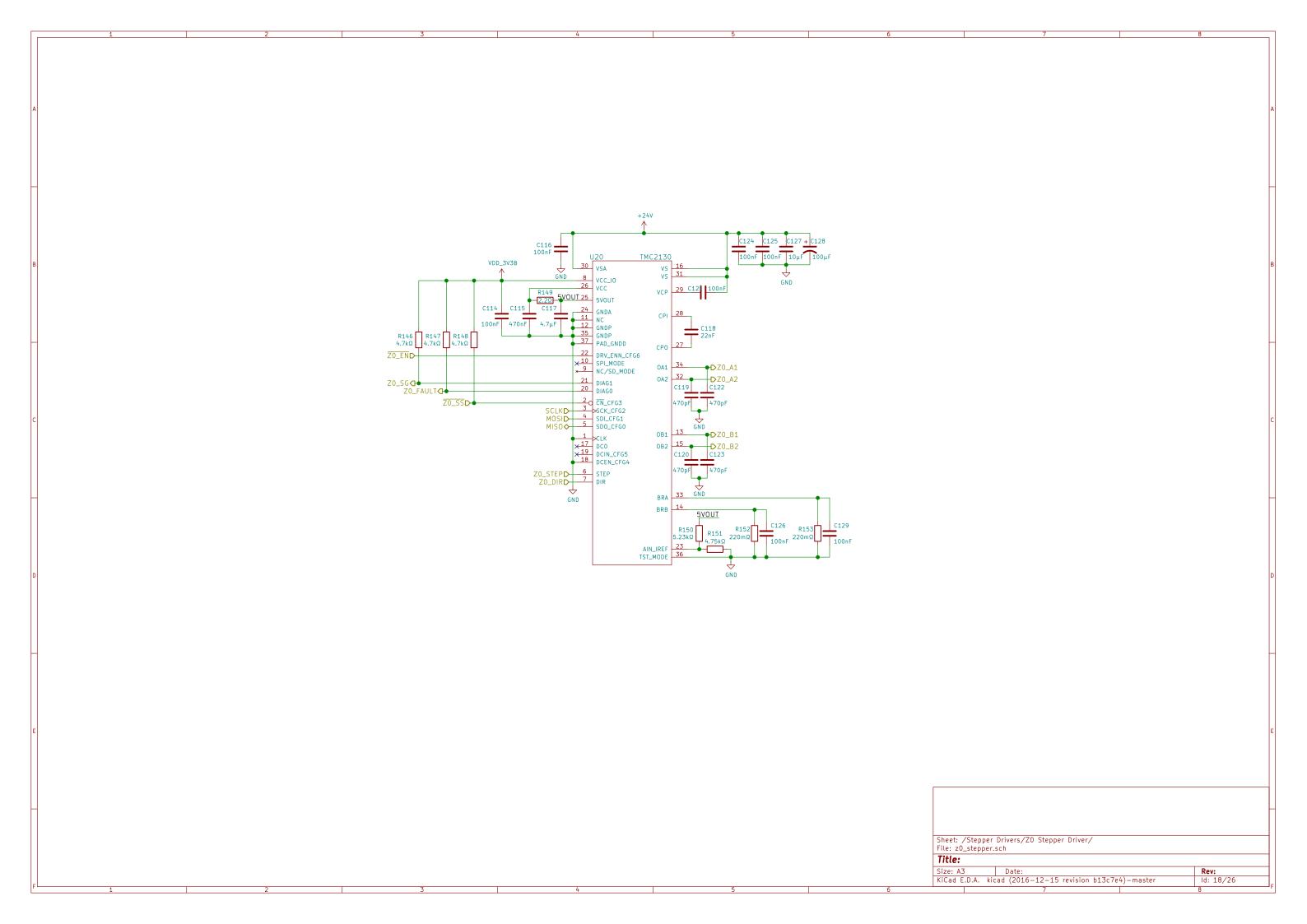
Sense input tolerance / motor current full scale tolerance -using internal reference	Icon	I_scale_analog=0, vsense=0	-5	+5	%
Sense input tolerance / motor current full scale tolerance -using external reference voltage	Icon	I_scale_analog=1, V _{AIN} =2V, vsense=0 Vain = 2.379759	-2 519V	+2	%

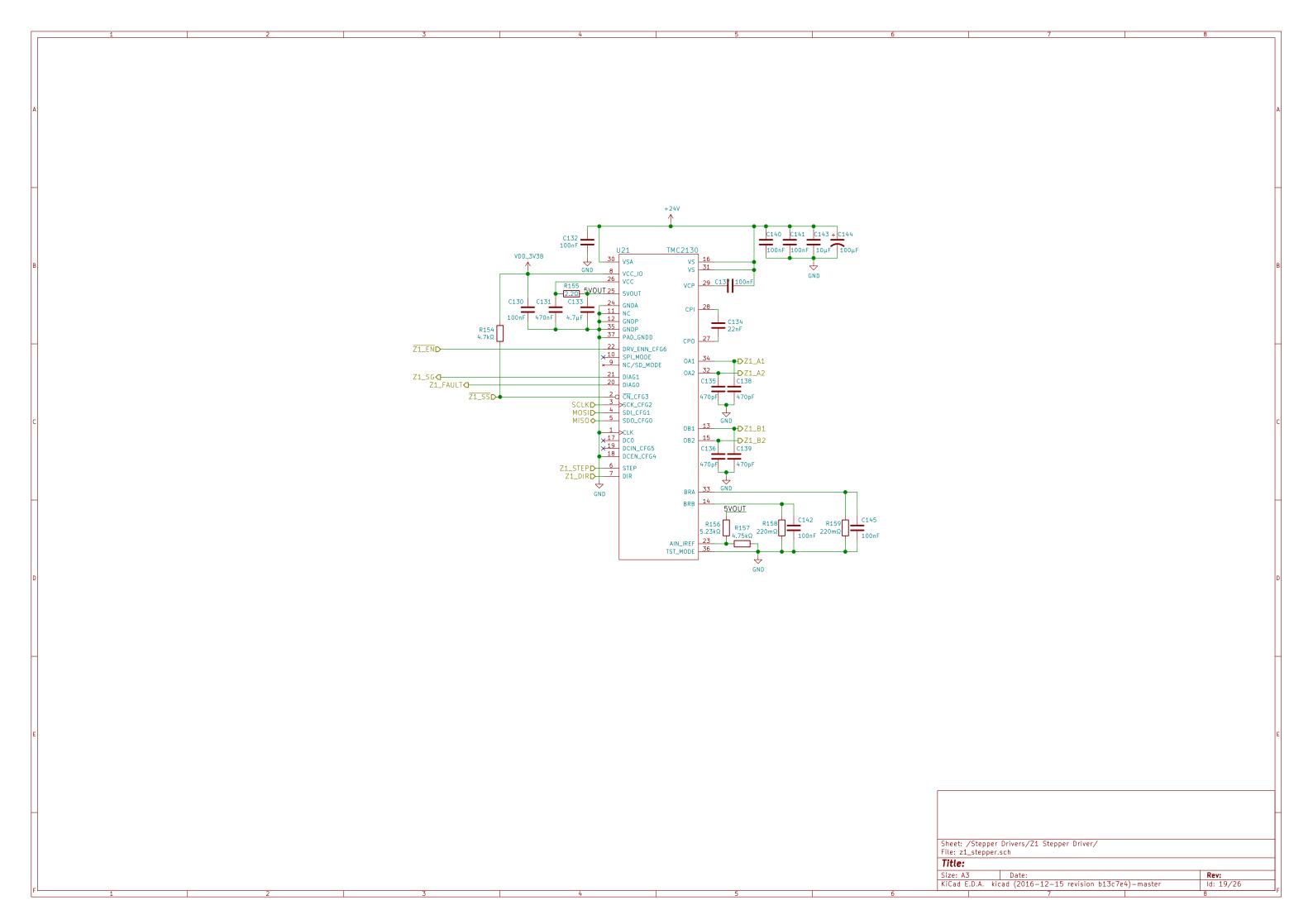
The sense resistor voltage range can be selected by the vsense bit in CHOPCONF. The low sensitivity setting (high sense resistor voltage, vsense=0) brings *best and most robust current regulation*, while high sensitivity (low sense resistor voltage, vsense=1) reduces power dissipation in the sense resistor. The high sensitivity setting reduces the power dissipation in the sense resistor by nearly half.

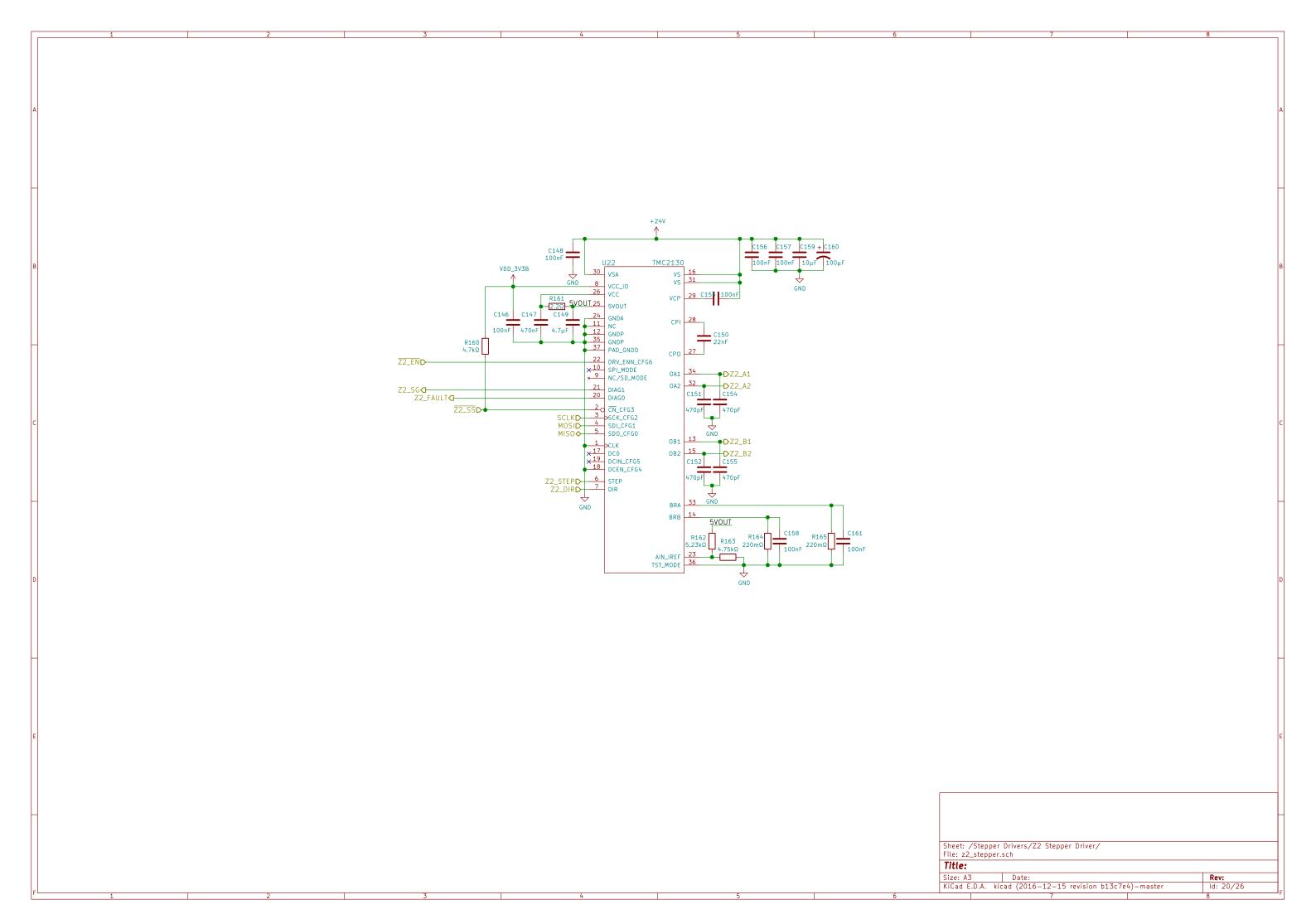
vsense	Allows control of the sense resistor voltage range	0	V _{FS} = 0.32 V	Vsrtl=325mV
	for full scale current.	1	V _{FS} = 0.18 V	

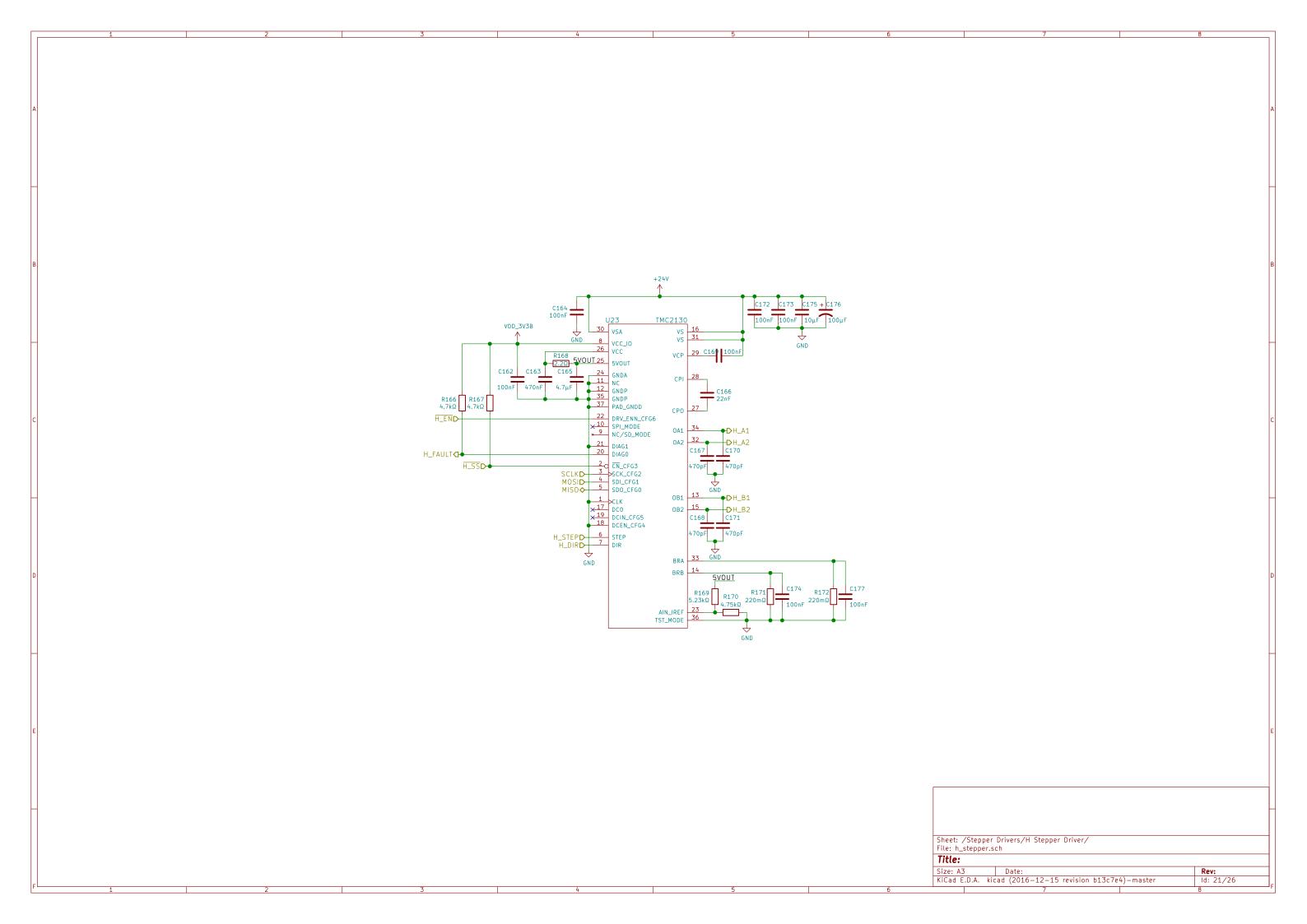
Sheet: /Stepper Drivers/E Stepper Driver/ File: e_stepper.sch Title: Size: A3 Date: KiCad E.D.A. kicad (2016–12–15 revision b13c7e4)-master ld: 16/26

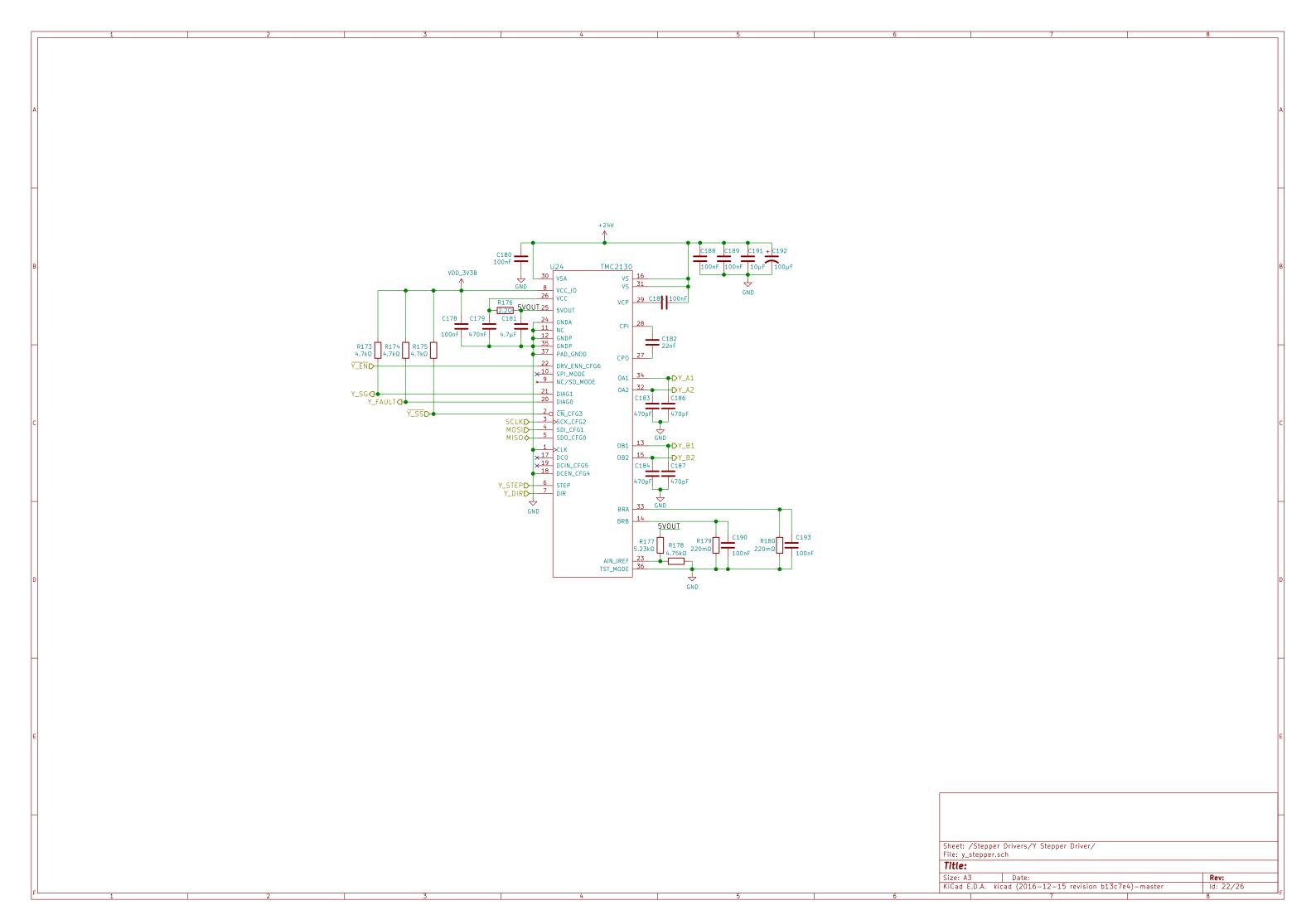


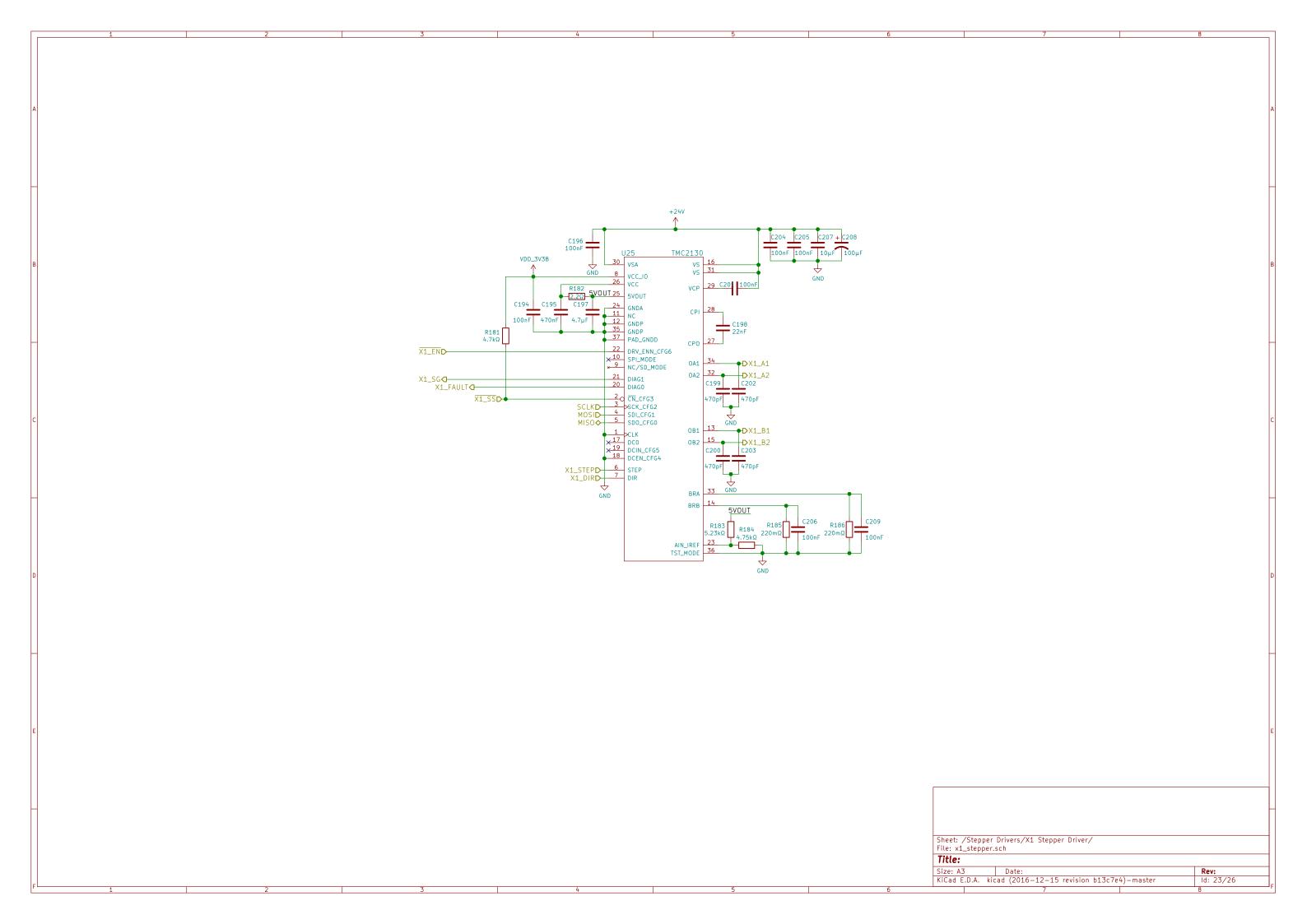


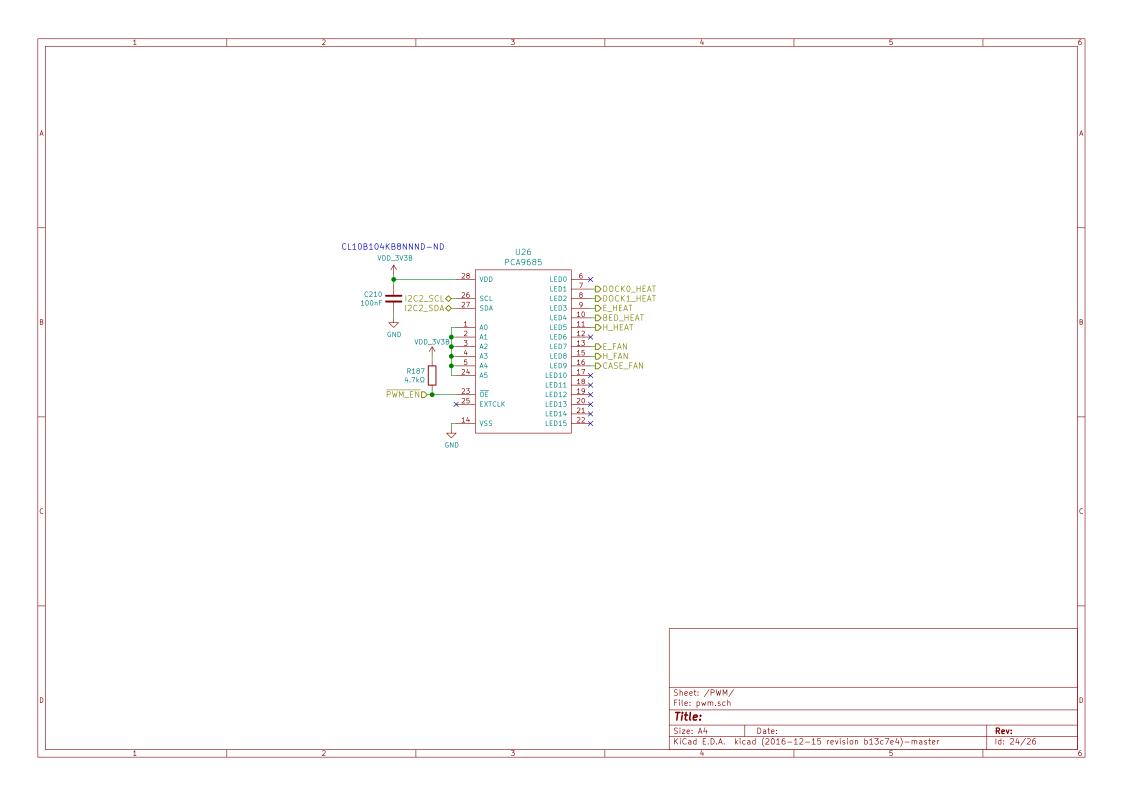


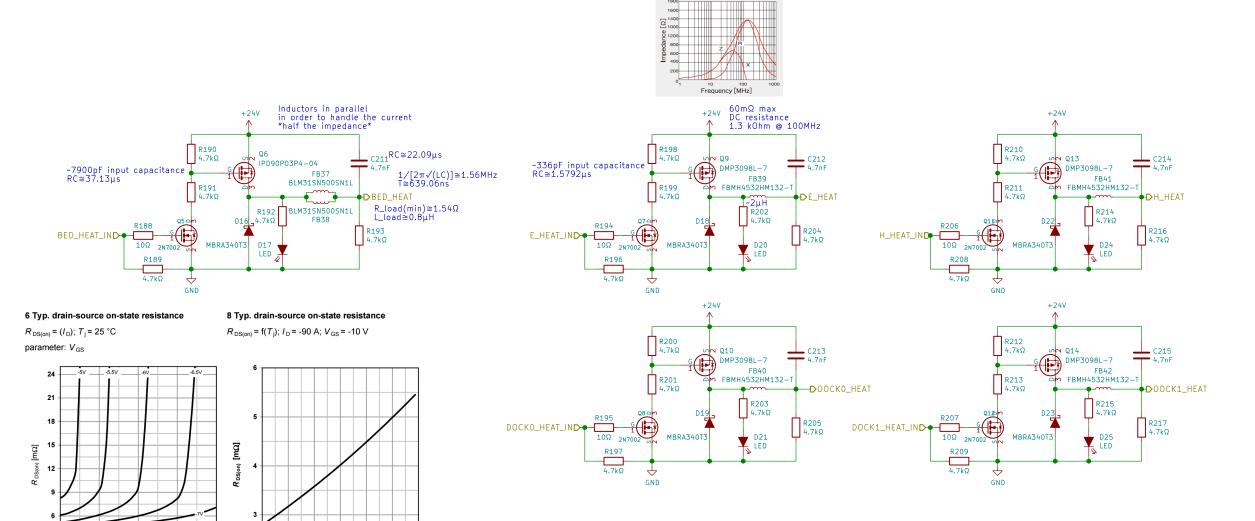












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60 100 140 180

T , [°C]

180

-/ _D [A]

270

-60 -20 20

