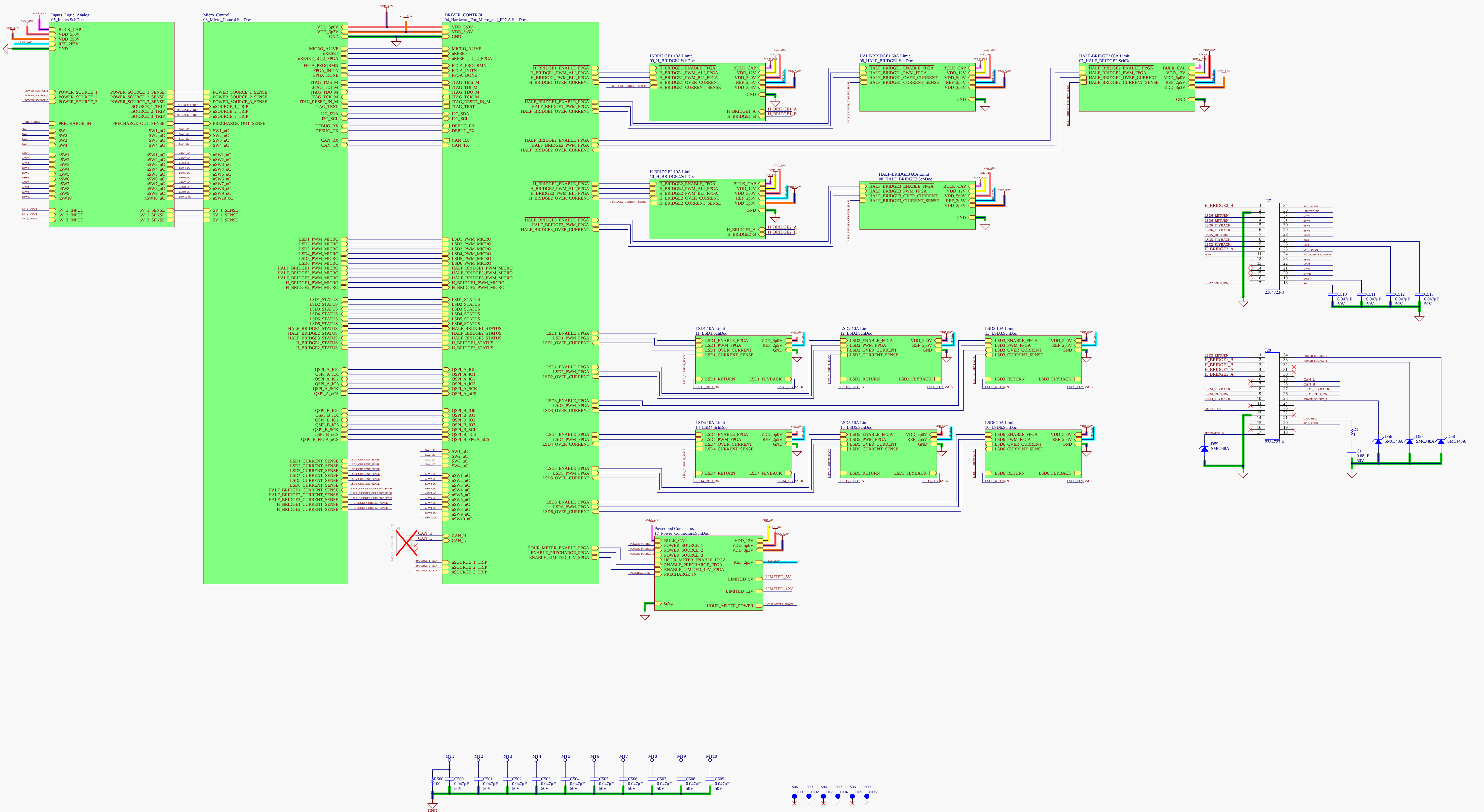


SATURN SERIES TBR3206 MACHINE CONTROLLER

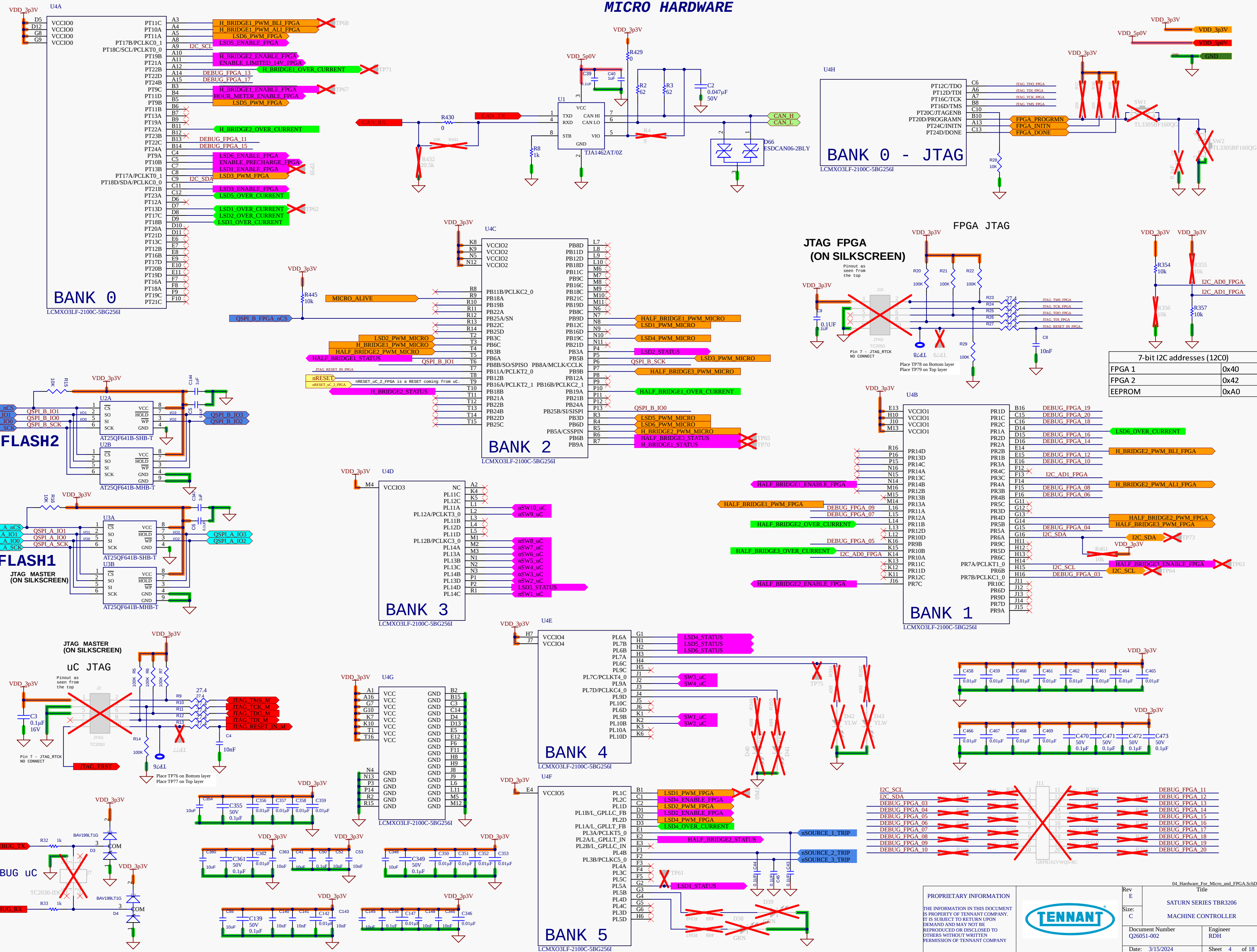
Changelog:
REV D:
Updated name and title of documents to reflect new component name.
Page 3 -
I2C Bus Pullup Correction: R405 R406 -> 2.74k. Fixed pullup strength for acceptable logic levels.
FPGA Programming Pin Correction: R126 R127 R128 -> 100k. Decreased strength of FPGA programming pins to account for FPGA pull-ups during programming.
HW Revision Bit Resistors updated to 3 // 0x011
Page 9 -
H-Bridge 1 Current Sense Fix: R211 -> 3mOhm. Resolved scenario where overcurrent conditions on H-Bridge 1 could damage uC.
Page 17-
Precharge timing correction: C475 -> 4.7uF, R436 R439 -> 23.7k. Reduced rate of precharge to meet 1.5A requirement.

PCB ○ Q25099-002

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MICRO HARDWARE



A

A

B

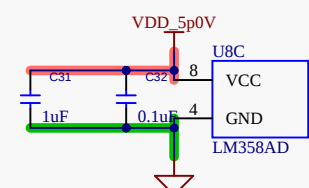
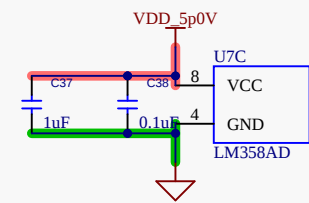
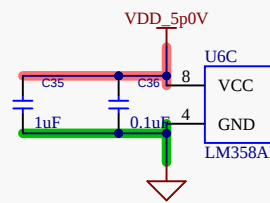
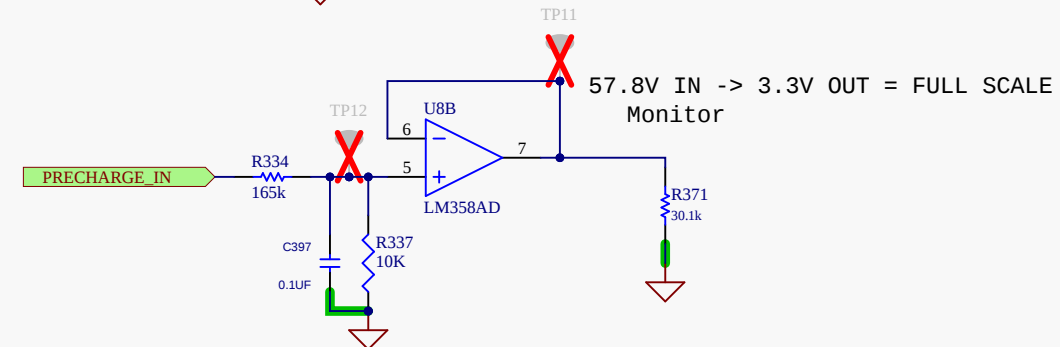
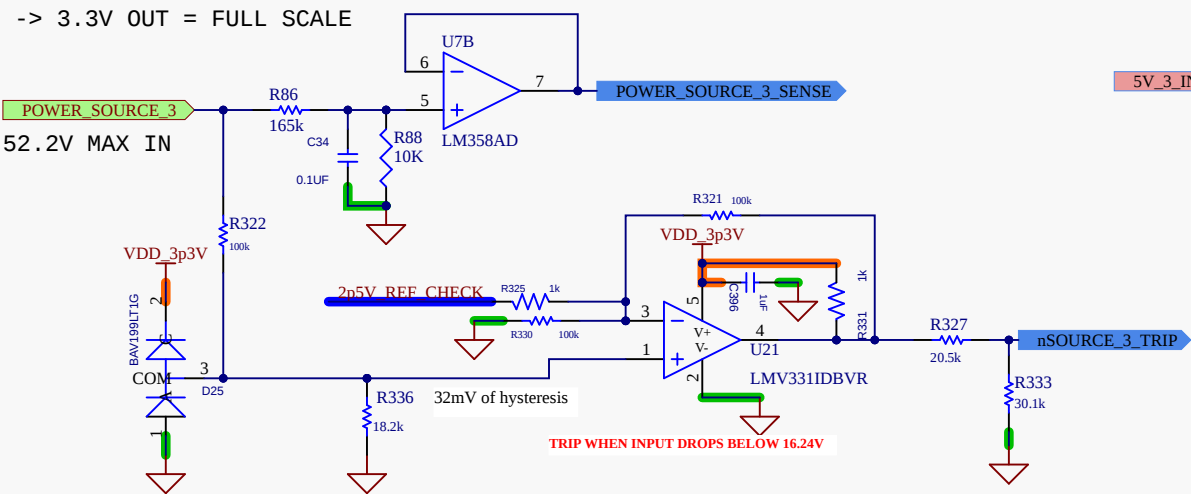
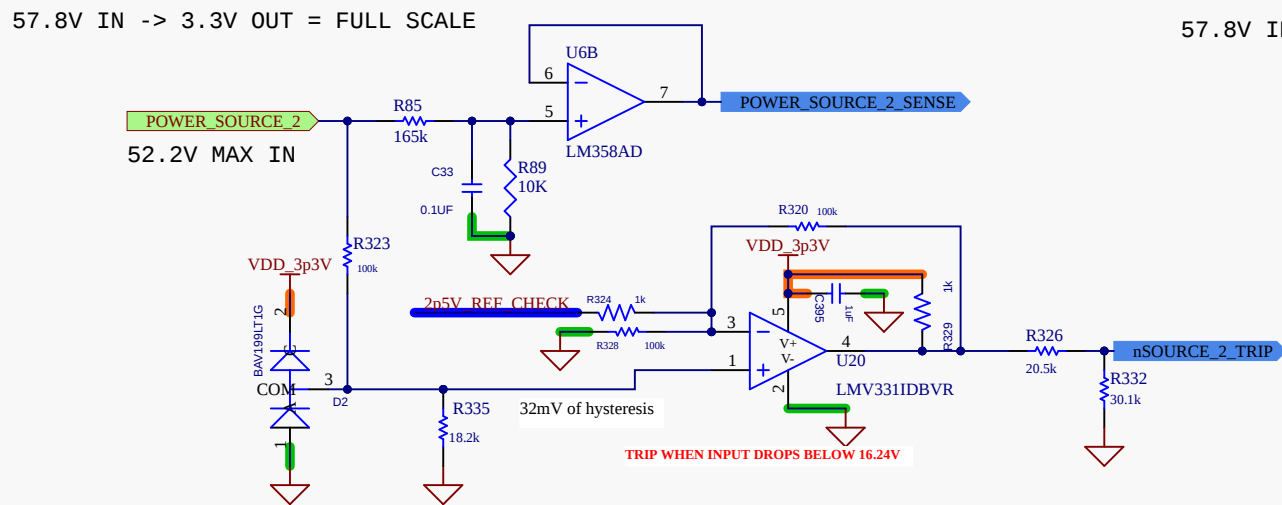
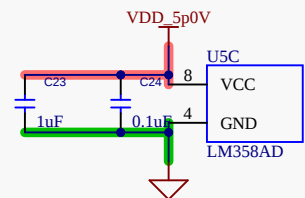
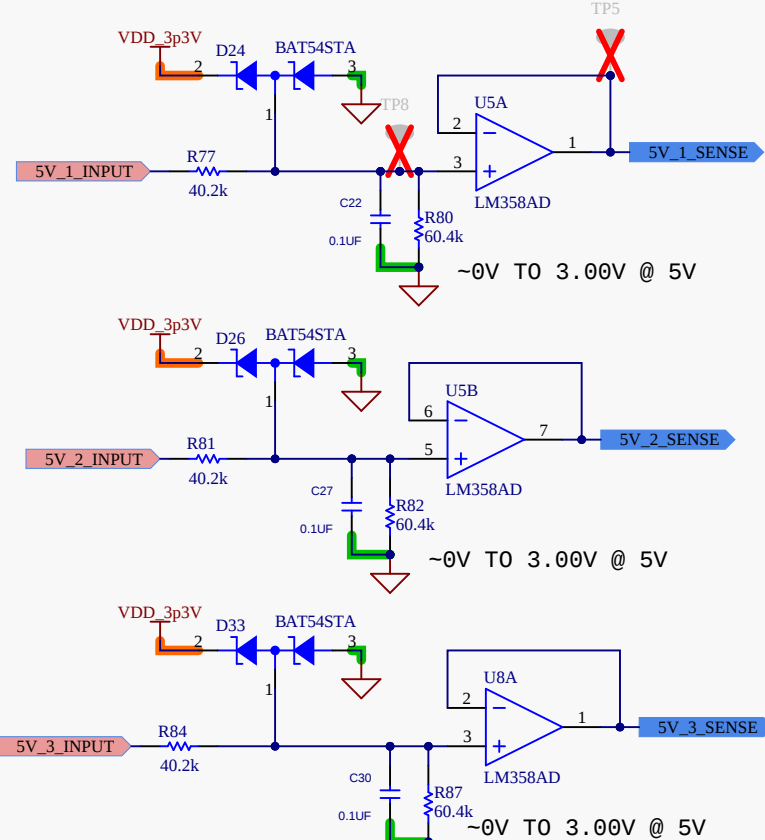
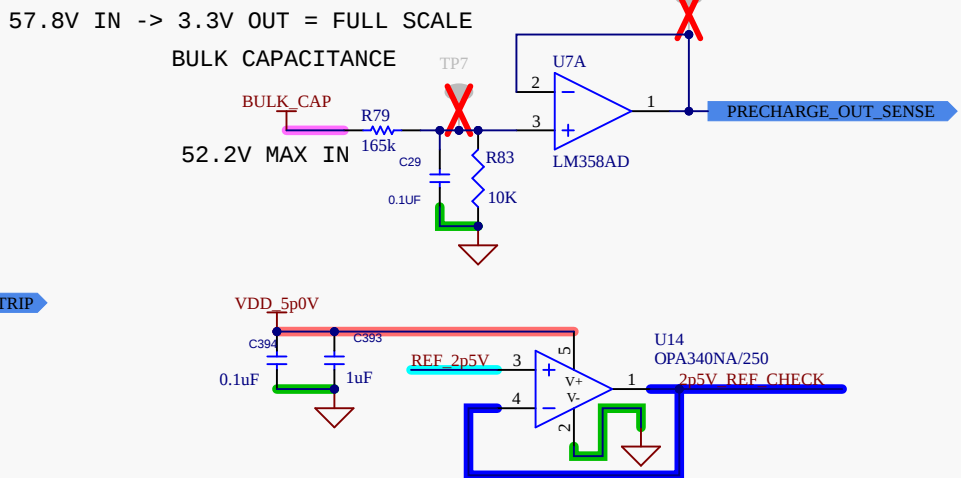
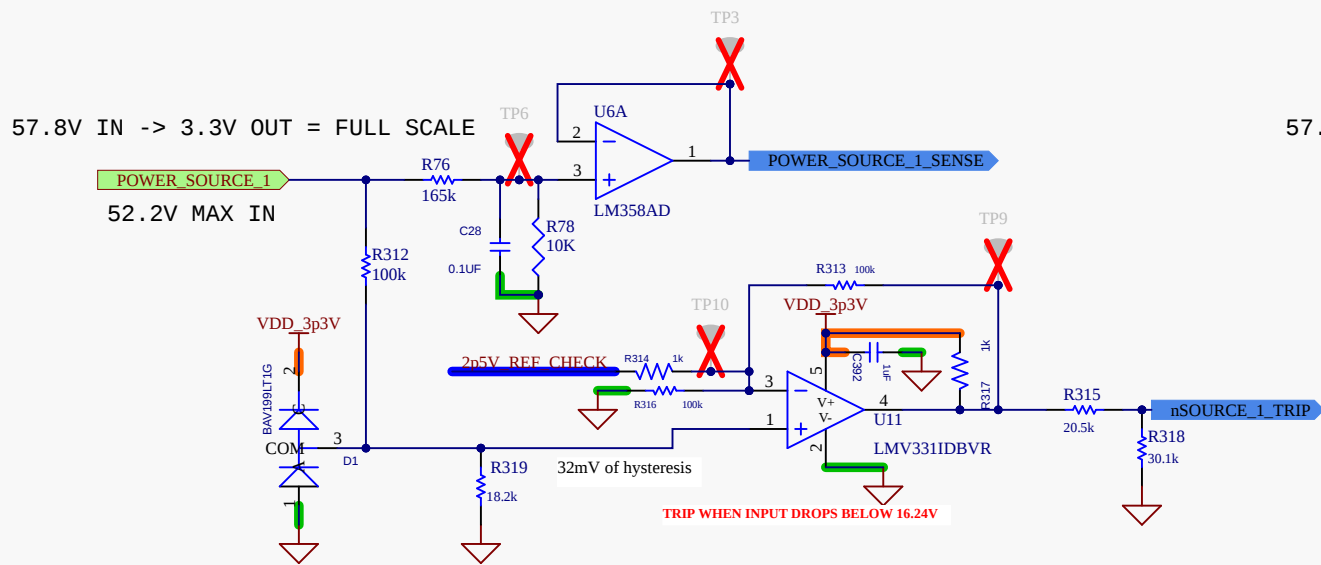
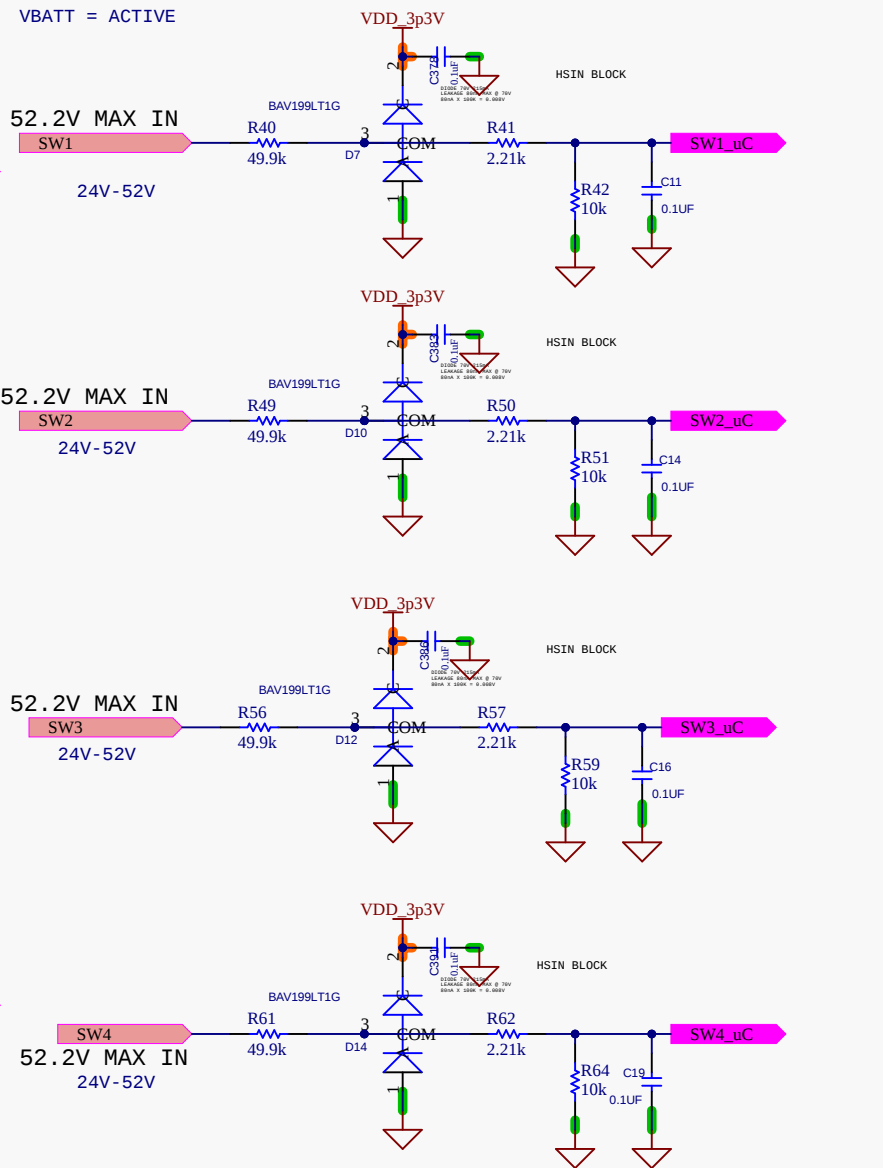
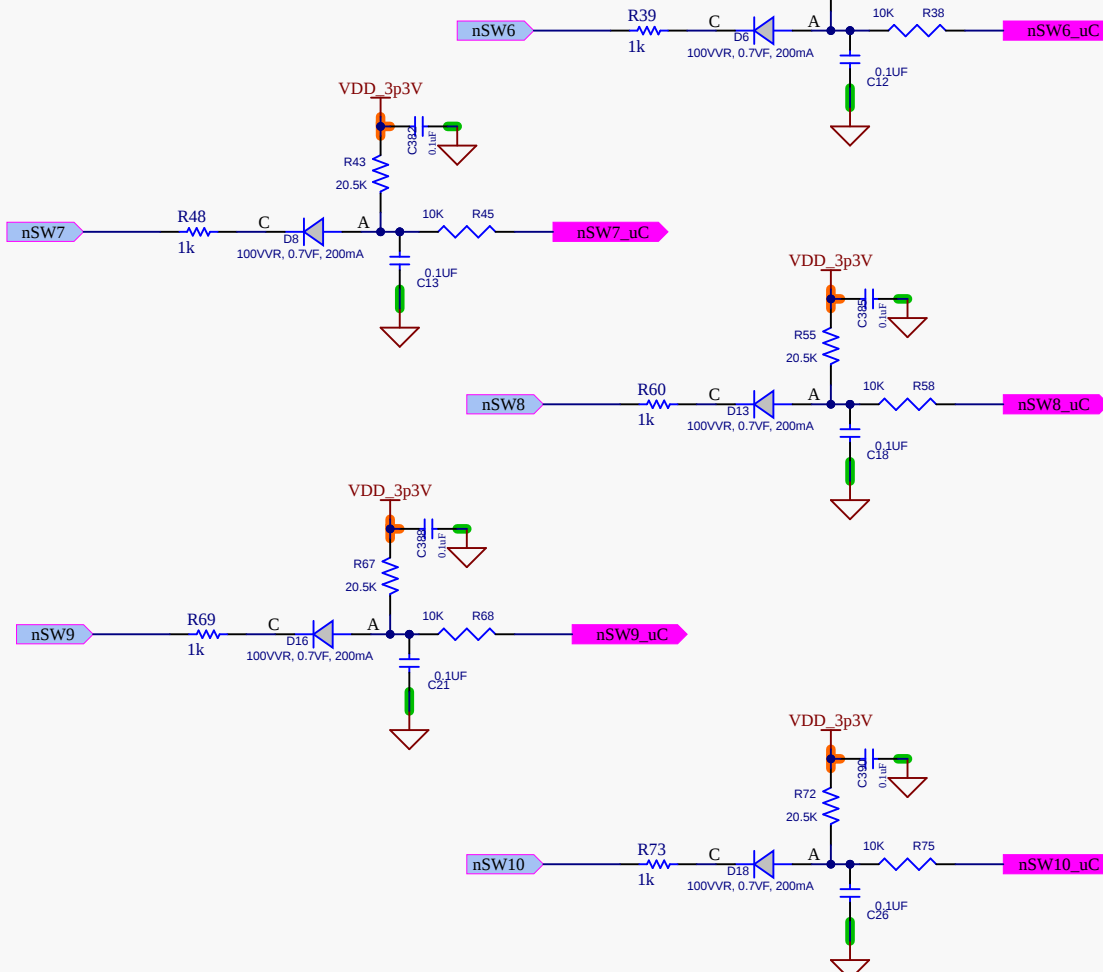
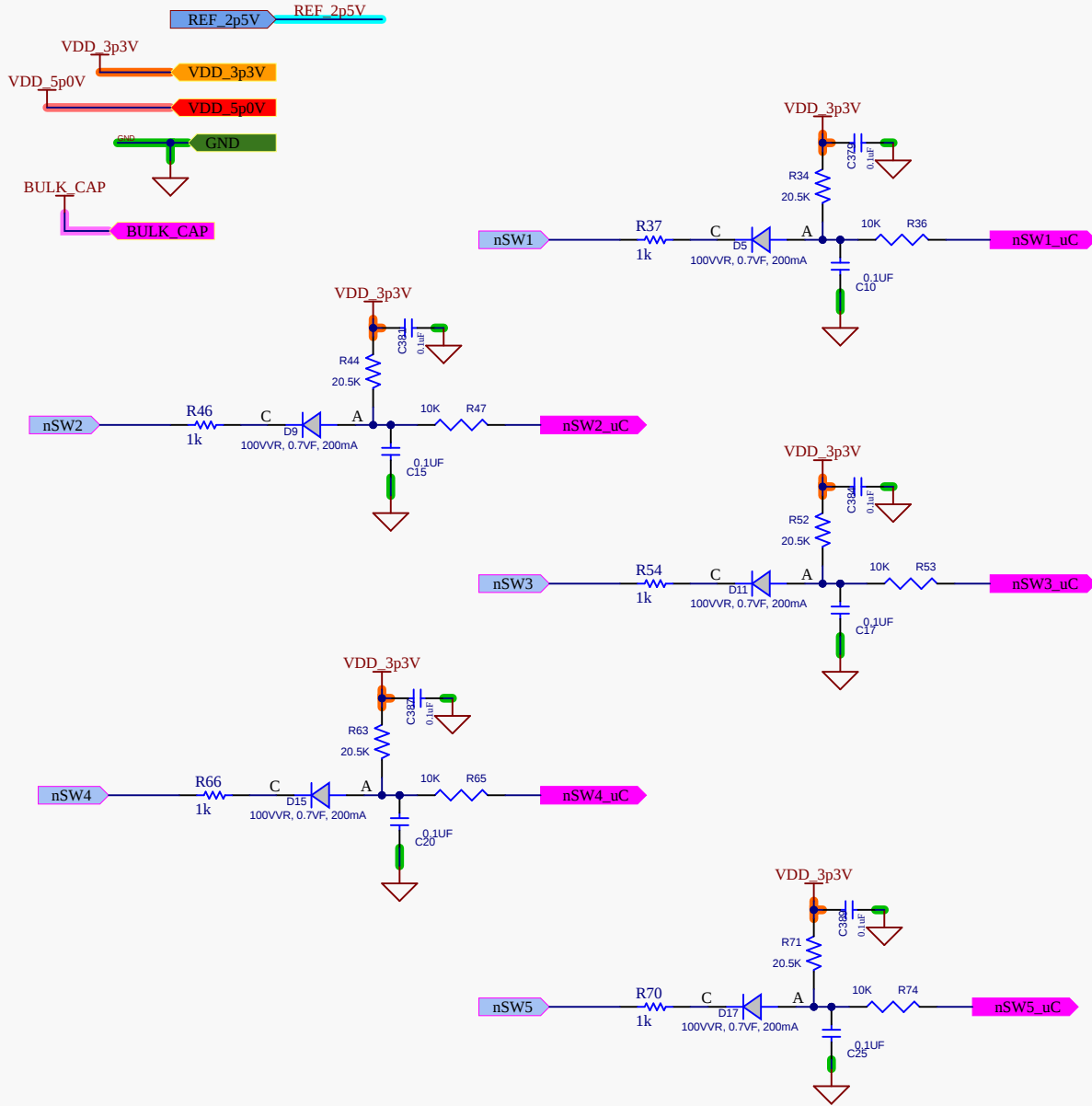
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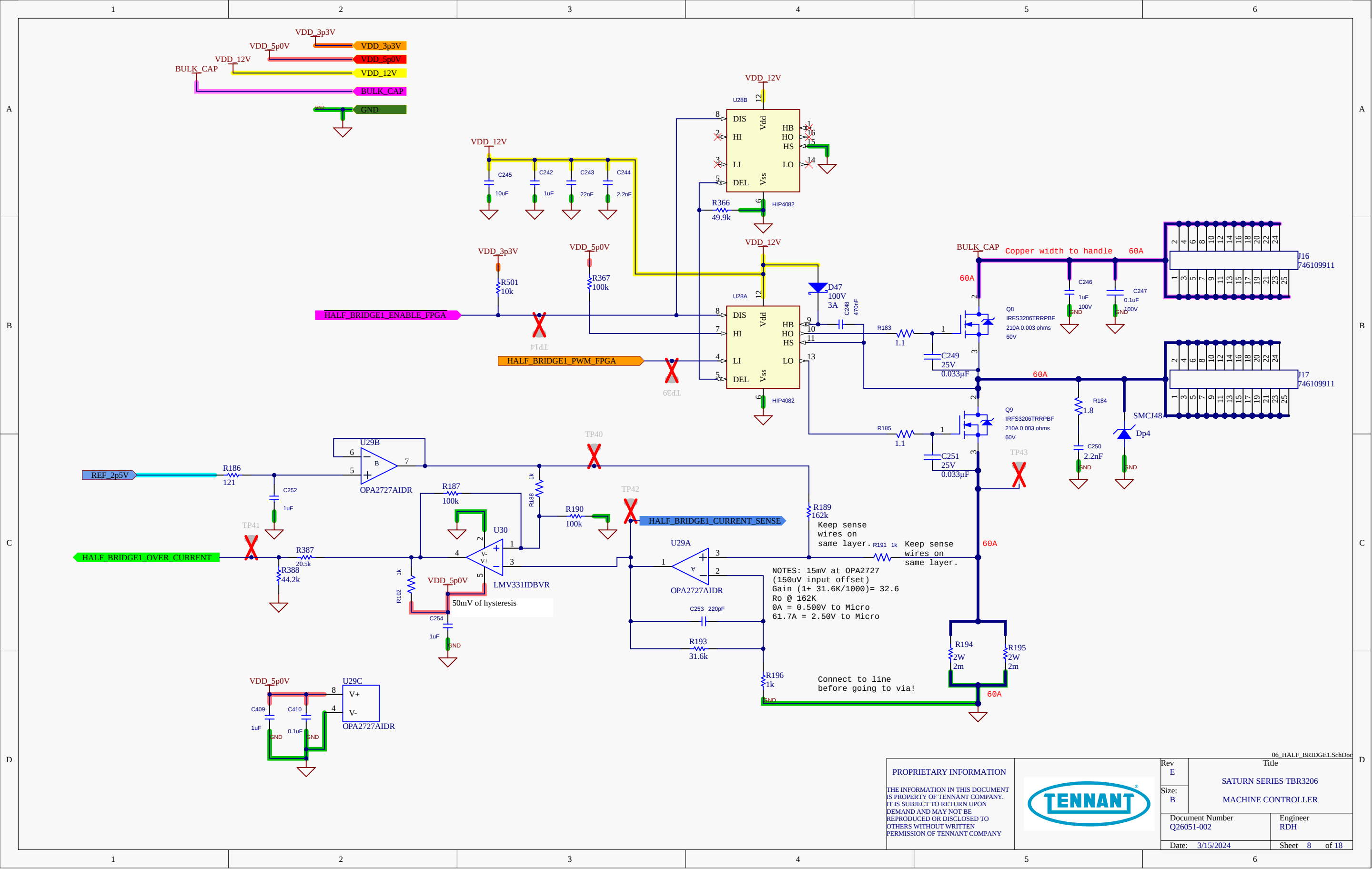
C

C

D

D





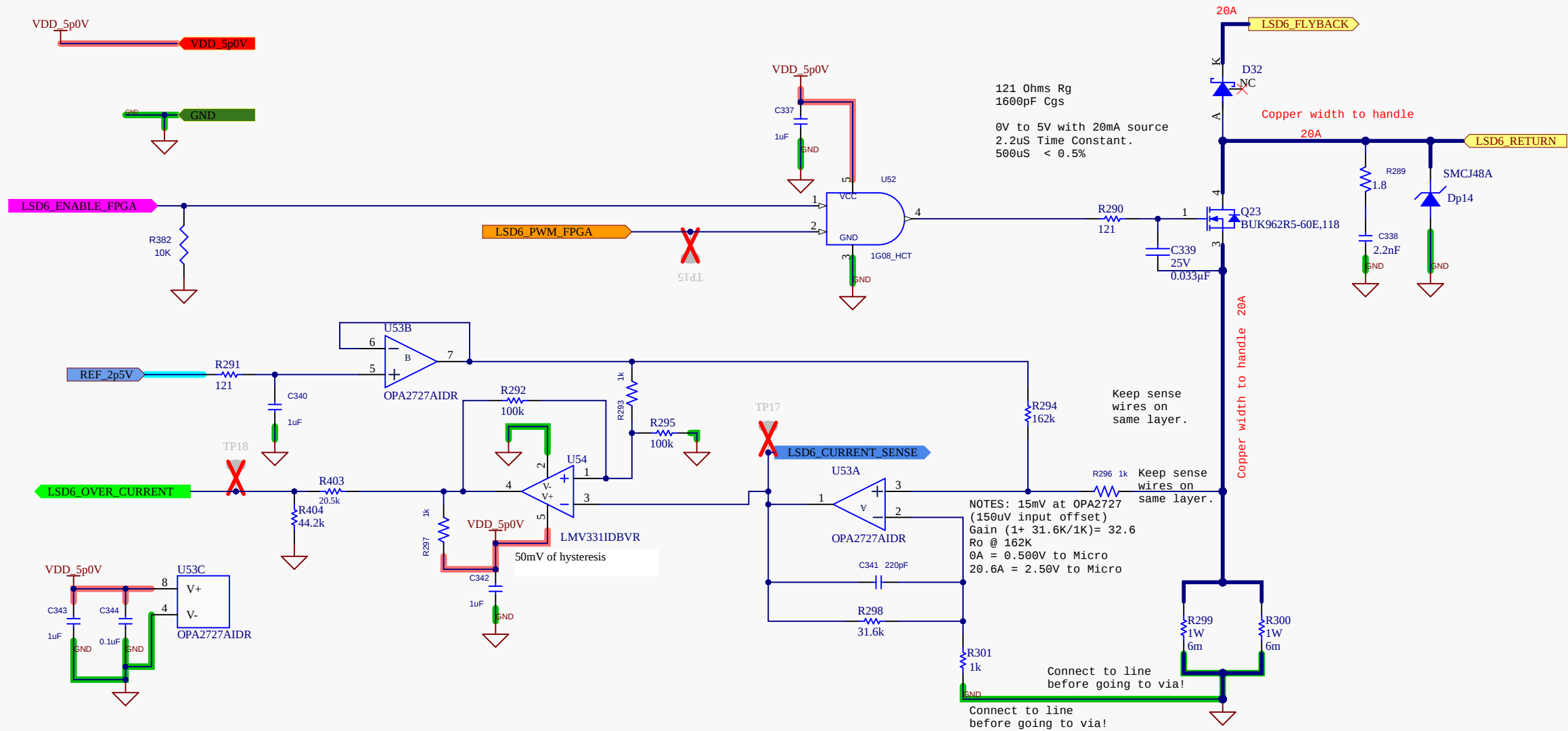
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20A

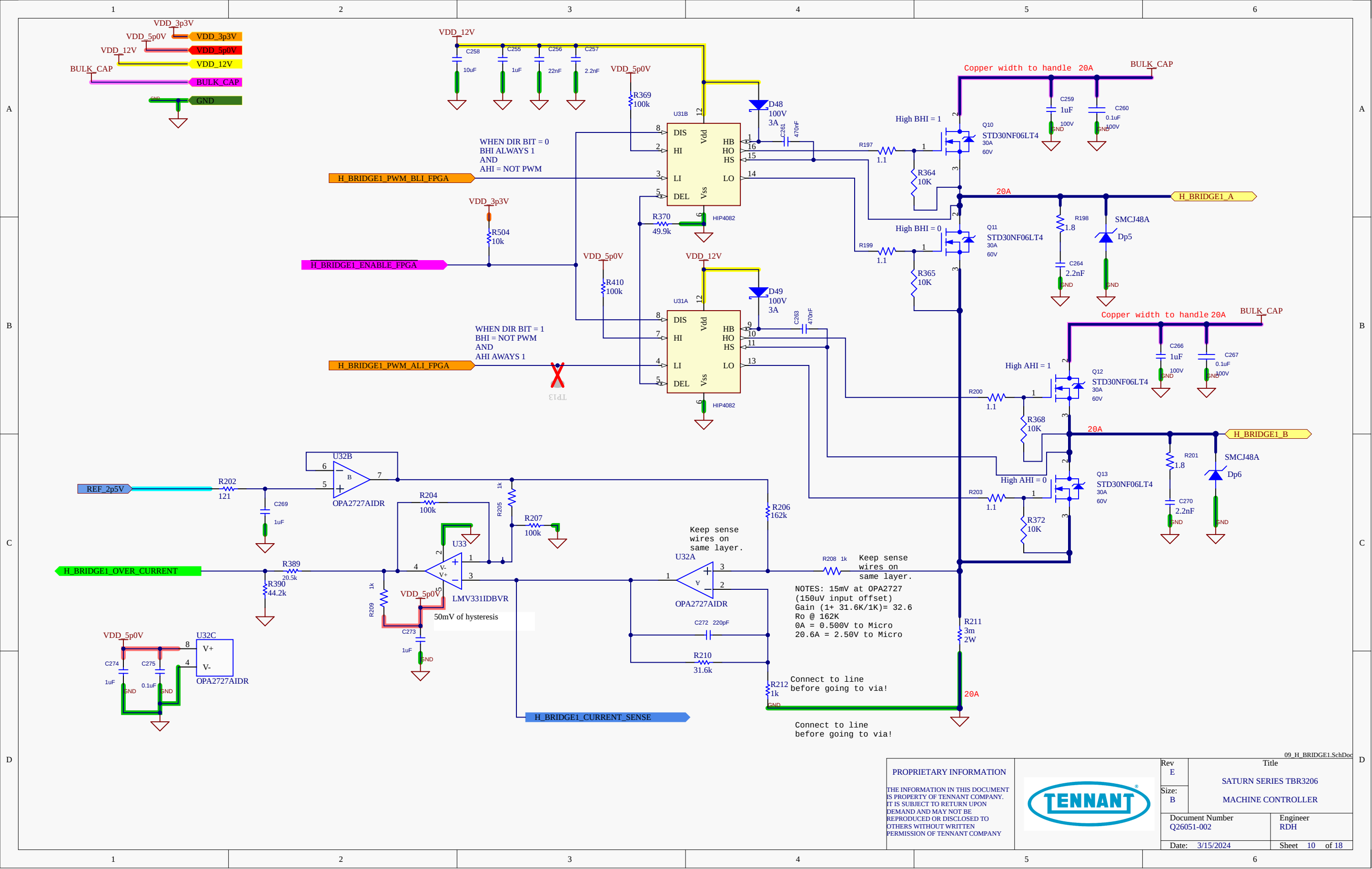


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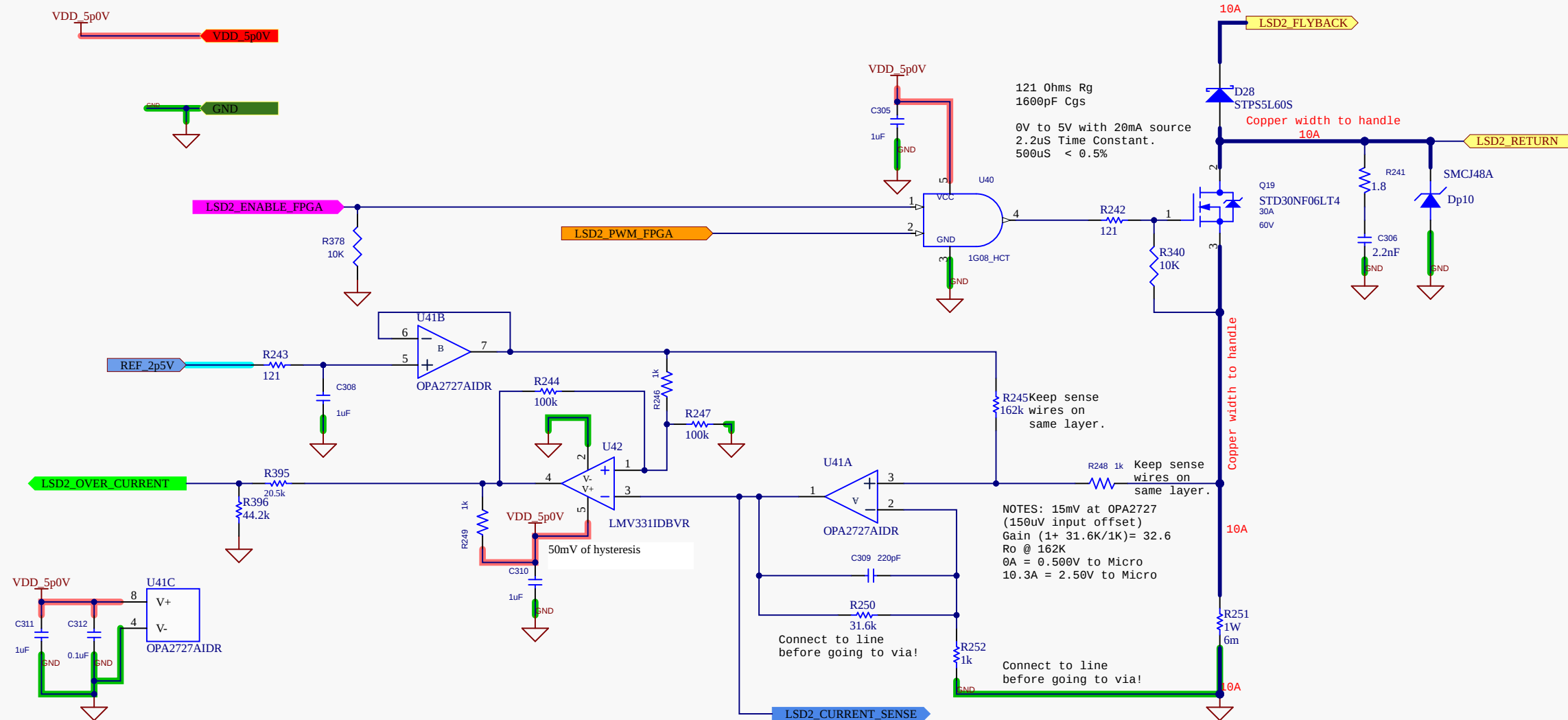
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10A



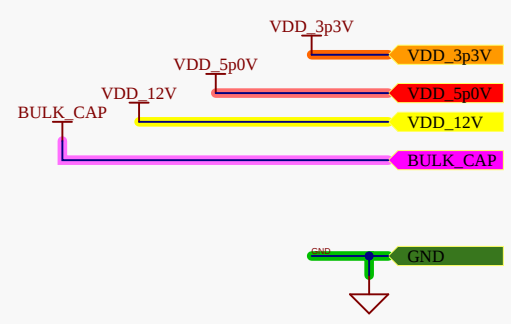
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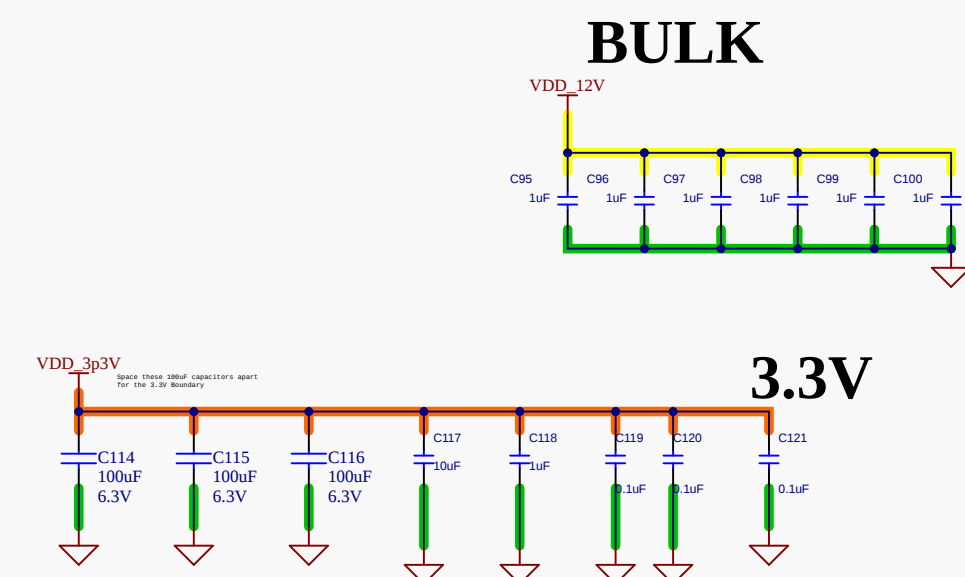
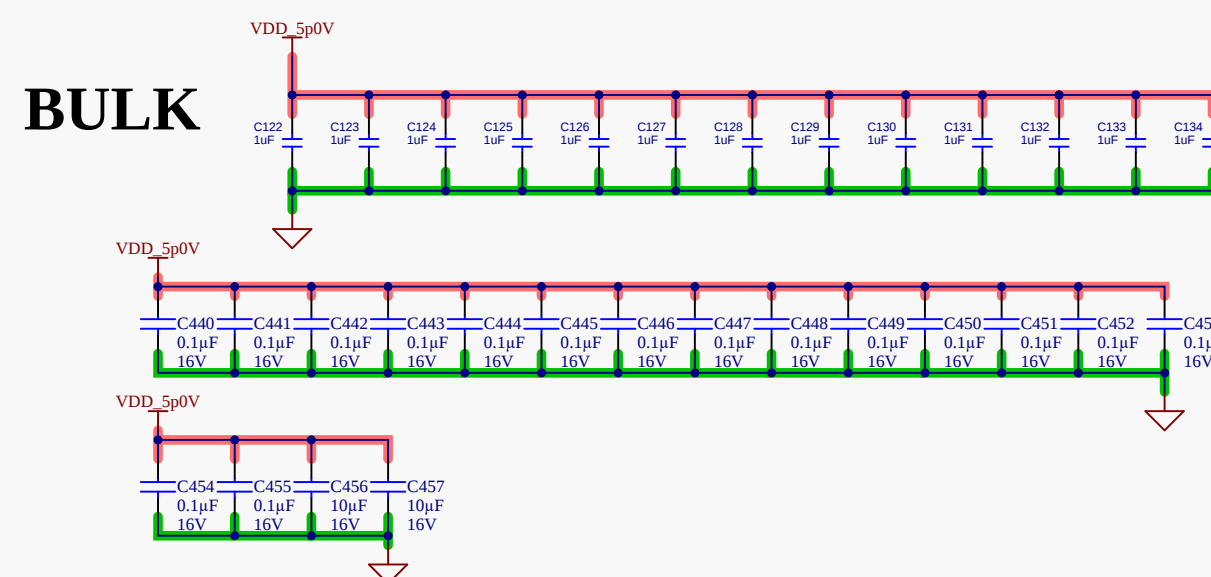
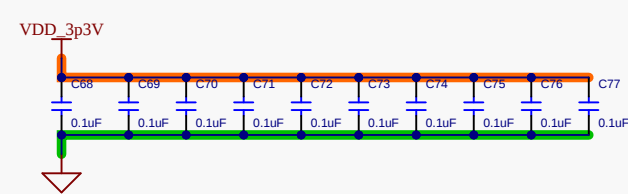
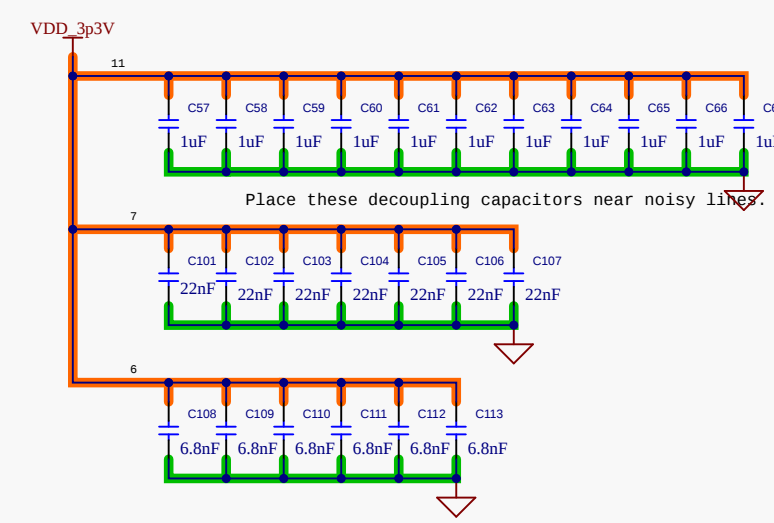
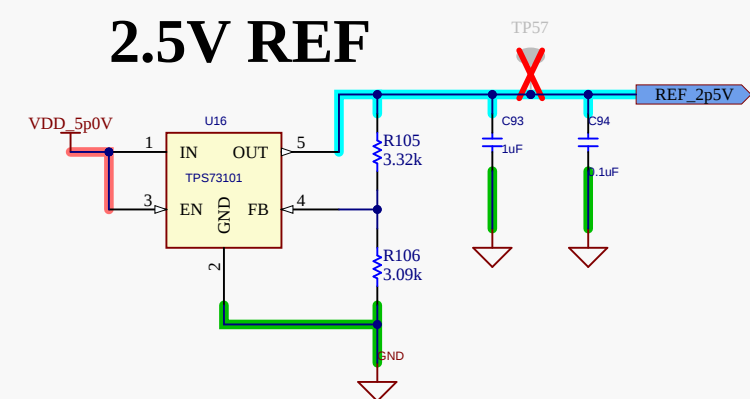
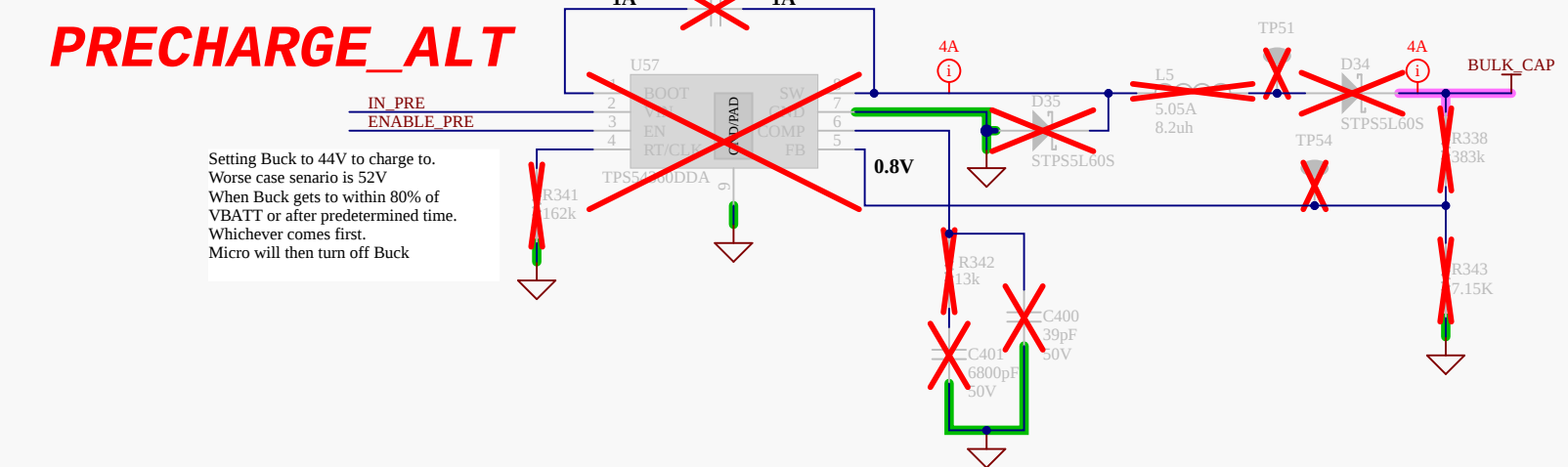
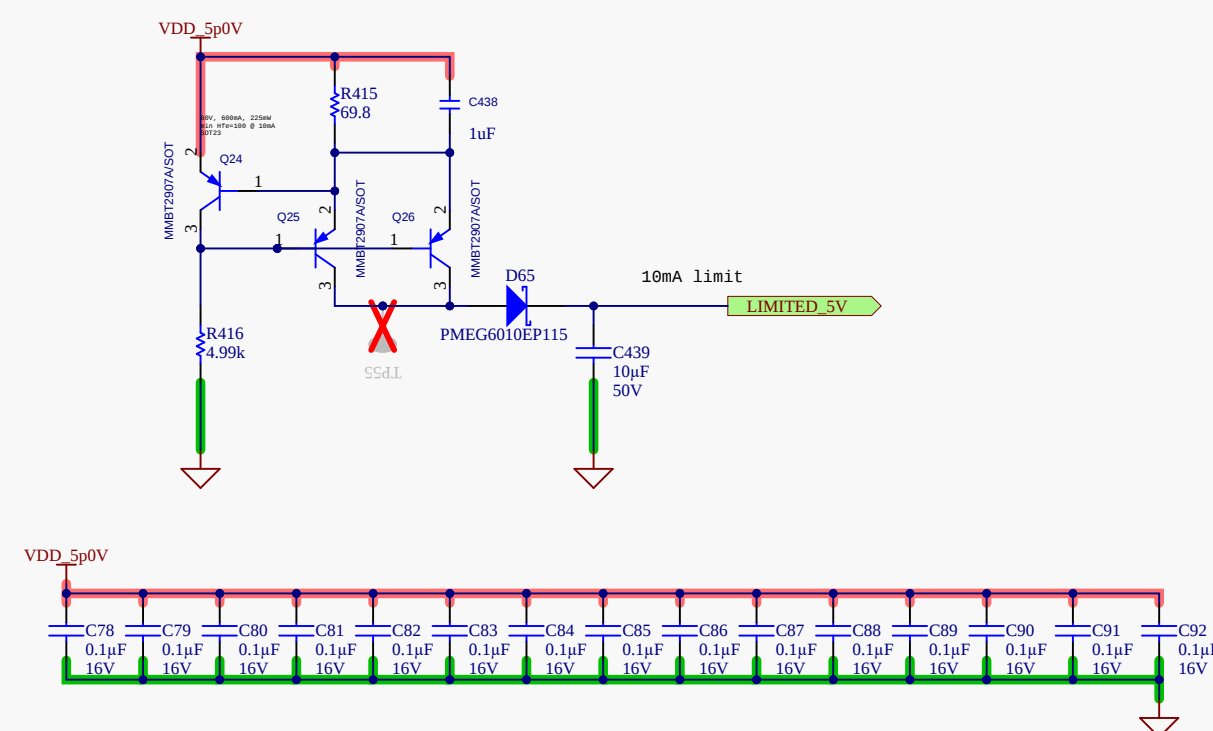
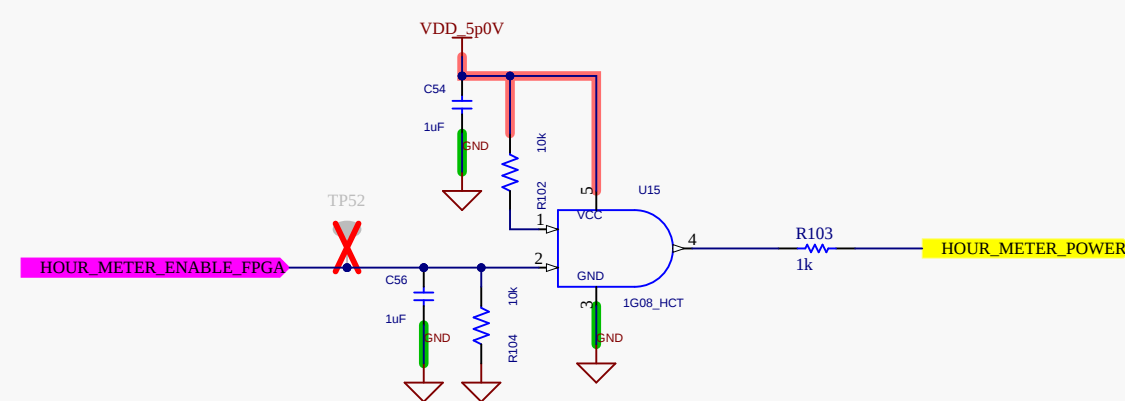
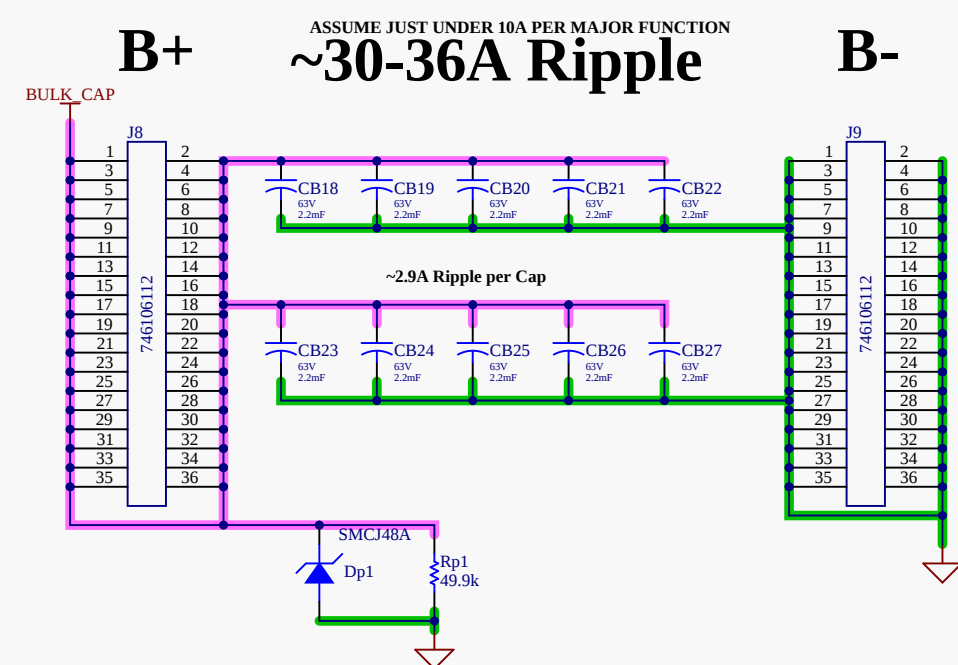
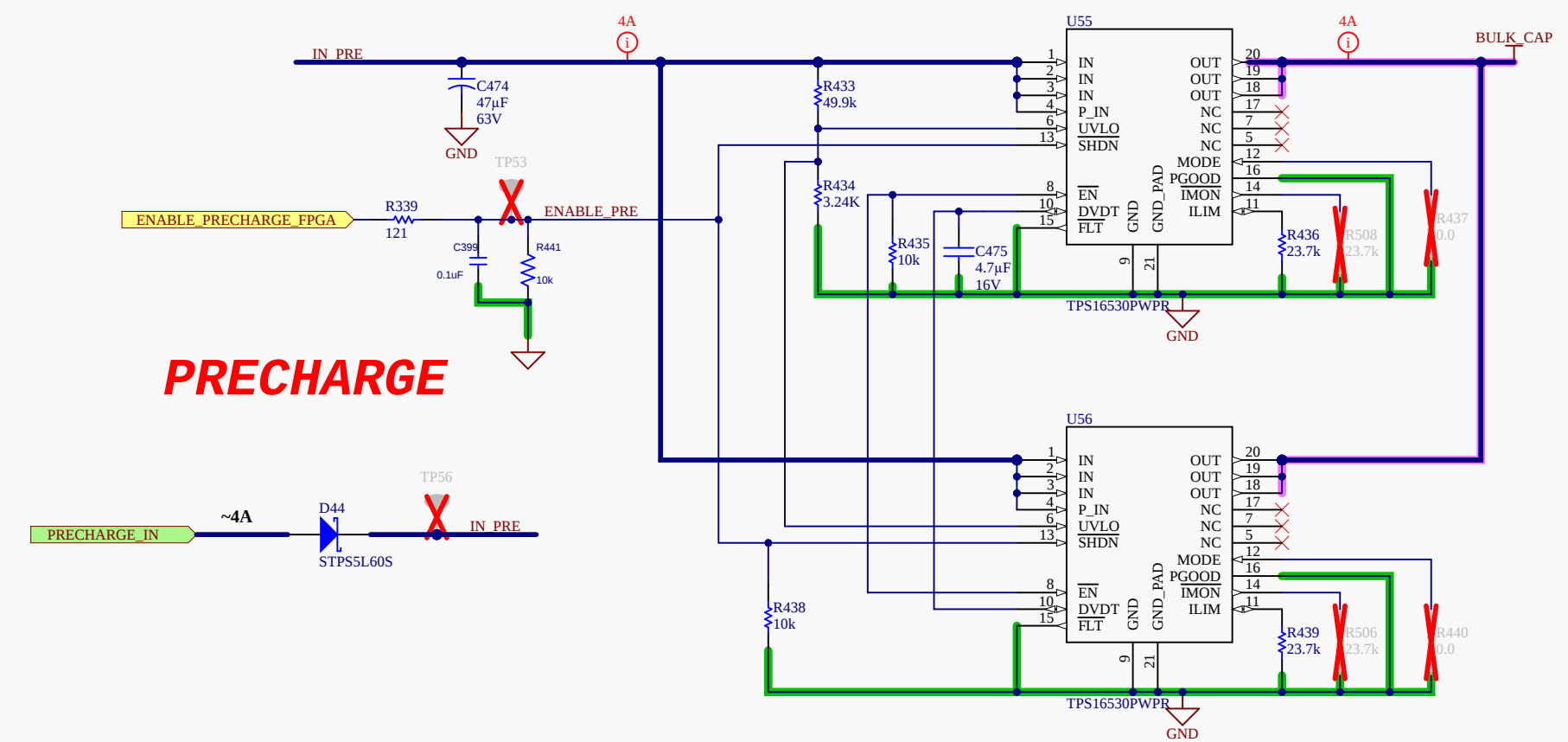
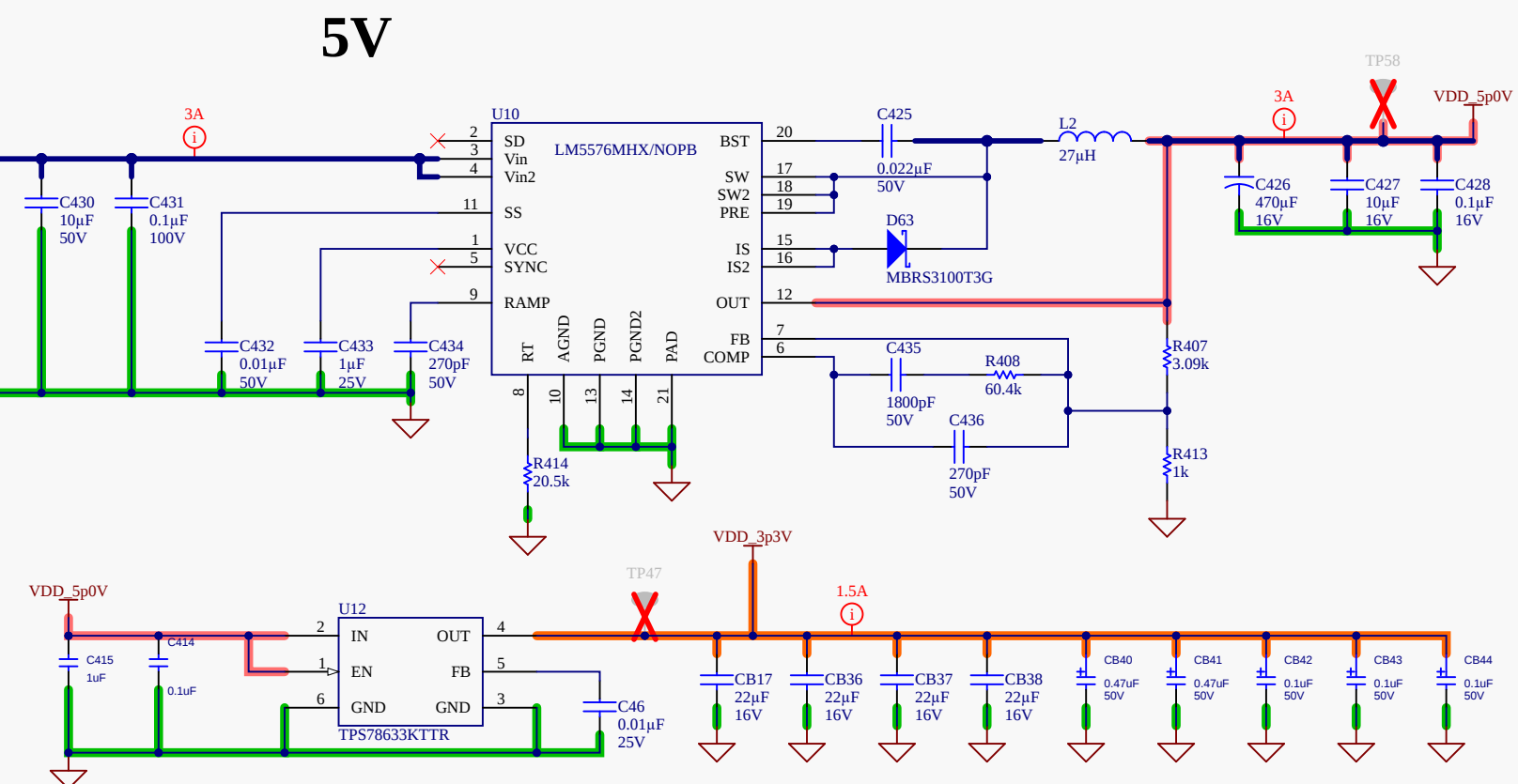
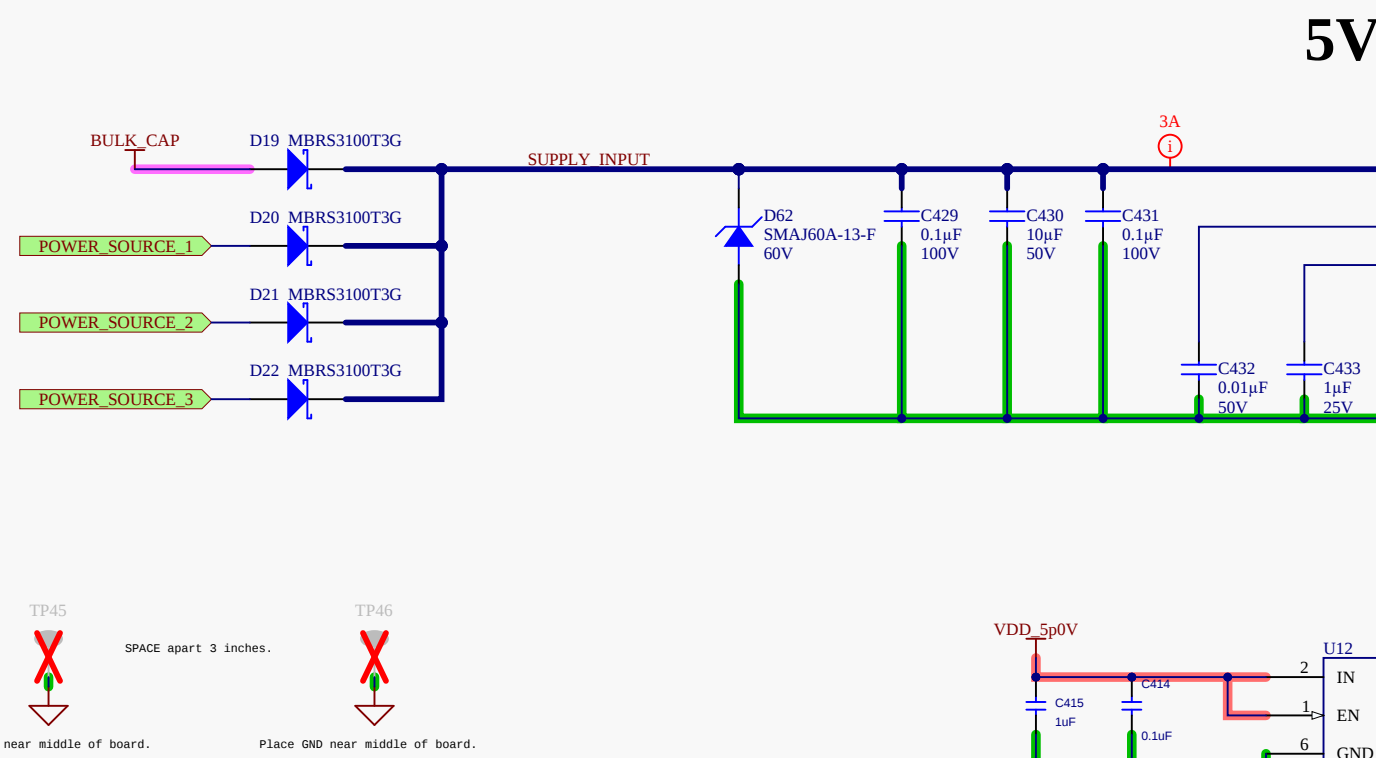
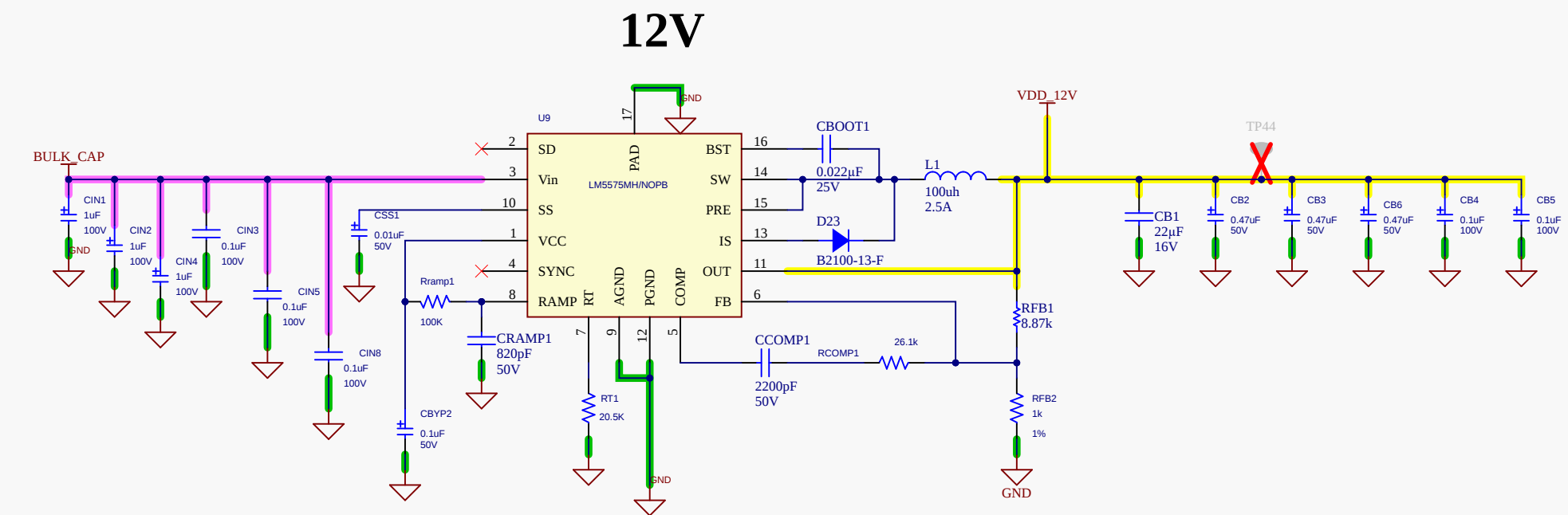


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POWER INPUT
52.2V MAX.
+36V/+24/+12 NOMINAL
+6V MIN





C469
C472
C464
C461

C468
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C464
C461

TP28

TP26

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FABRICATION NOTES:

1. MATERIAL SELECTION AND COPPER WEIGHT: SEE Q25099-002_STACKUP.PDF
MINIMUM CTI RATING OF 175, 0.062 +/- 0.005 THICK. MATERIAL PER IPC-4101
SOLDERABLE SURFACES TO BE ENIG (ELECTROLESS NICKEL IMMERSION GOLD) FINISH.
2. SOLDER RESIST: THE USE OF SOLDER RESIST COATING SHALL BE IN
ACCORDANCE WITH THE REQUIREMENTS OF IPC-SM-840. ALL SOLDERABLE
SURFACES ARE TO BE FREE OF SOLDER RESIST. COLOR - GREEN.
USE LIQUID PHOTOIMAGEABLE RESIST. MATTE FINISH.
3. SILKSCREEN: USE WHITE NON-CONDUCTIVE INK. ALL COMPONENT AND
TESTPOINT LANDS ARE TO BE FREE OF INK.
PLACE UL 94V-0 RATING ON SOLDER SIDE IN SILKSCREEN ONLY.
4. MANUFACTURER'S IDENTIFICATION: ADD IN ETCH OR TO SILKSCREEN.
5. ELECTRICAL BARE BOARD TEST REQUIRED.
6. DRILL SIZES ARE FINISHED SIZES AFTER PLATING.
7. FABRICATE TO MEET EU RoHS DIRECTIVE.
8. PCB MUST HAVE UL 94V-0 AND CTI RATING MARKED ON ONE SIDE.
9. MAX WARP AND TWIST NOT TO EXCEED 0.010 PER LINEAR INCH.
10. MIN ANNULAR RING: 0.003. MIN PLATED HOLE WALL THICKNESS 0.001.
11. DIMENSIONAL TOL: XX +/- 0.010. XXX +/- 0.005.
12. FABRICATE IN ACCORDANCE WITH IPC-600 OR IPC-6012 LATEST REVISION. CLASS 2.
13. COPPER THEIVING OF THE SIGNAL LAYERS IS NOT ALLOWED.
14. PCB FABRICATOR IS ALLOWED TO ADJUST PARAMETERS TO ACHIEVE REQUIRED TRACE IMPEDANCE +/-10%.
15. BOARD THICKNESS, COPPER WEIGHT AND IMPEDANCE REQUIREMENTS: SEE Q25099-002_STACKUP.PDF
16. VIPPO TECHNOLOGY REQUIRED - ALL VIAS TO BE TYPE VII NON-CONDUCTIVE EPOXY FILLED AND PLATED OVER.

Symbol	Count	Hole Size	Plated	Hole Tolerance (+)	Hole Tolerance (-)
⊠	104	8.00mil (0.203mm)	PTH	3.00mil (0.076mm)	8.00mil (0.203mm)
◇	589	10.00mil (0.254mm)	PTH	3.00mil (0.076mm)	10.00mil (0.254mm)
▣	2757	12.00mil (0.305mm)	PTH		
○	105	12.00mil (0.305mm)	PTH	3.00mil (0.076mm)	12.00mil (0.305mm)
⊕	9	39.00mil (0.991mm)	NPTH	3.00mil (0.076mm)	3.00mil (0.076mm)
▽	20	40.00mil (1.016mm)	PTH	3.00mil (0.076mm)	3.00mil (0.076mm)
□	222	58.00mil (1.473mm)	PTH		
✕	68	60.00mil (1.524mm)	PTH		
✕	12	93.00mil (2.362mm)	NPTH	3.00mil (0.076mm)	3.00mil (0.076mm)
◎	4	149.61mil (3.800mm)	NPTH		
▽	10	196.85mil (5.000mm)	PTH	3.00mil (0.076mm)	12.00mil (0.305mm)
	3900 Total				

