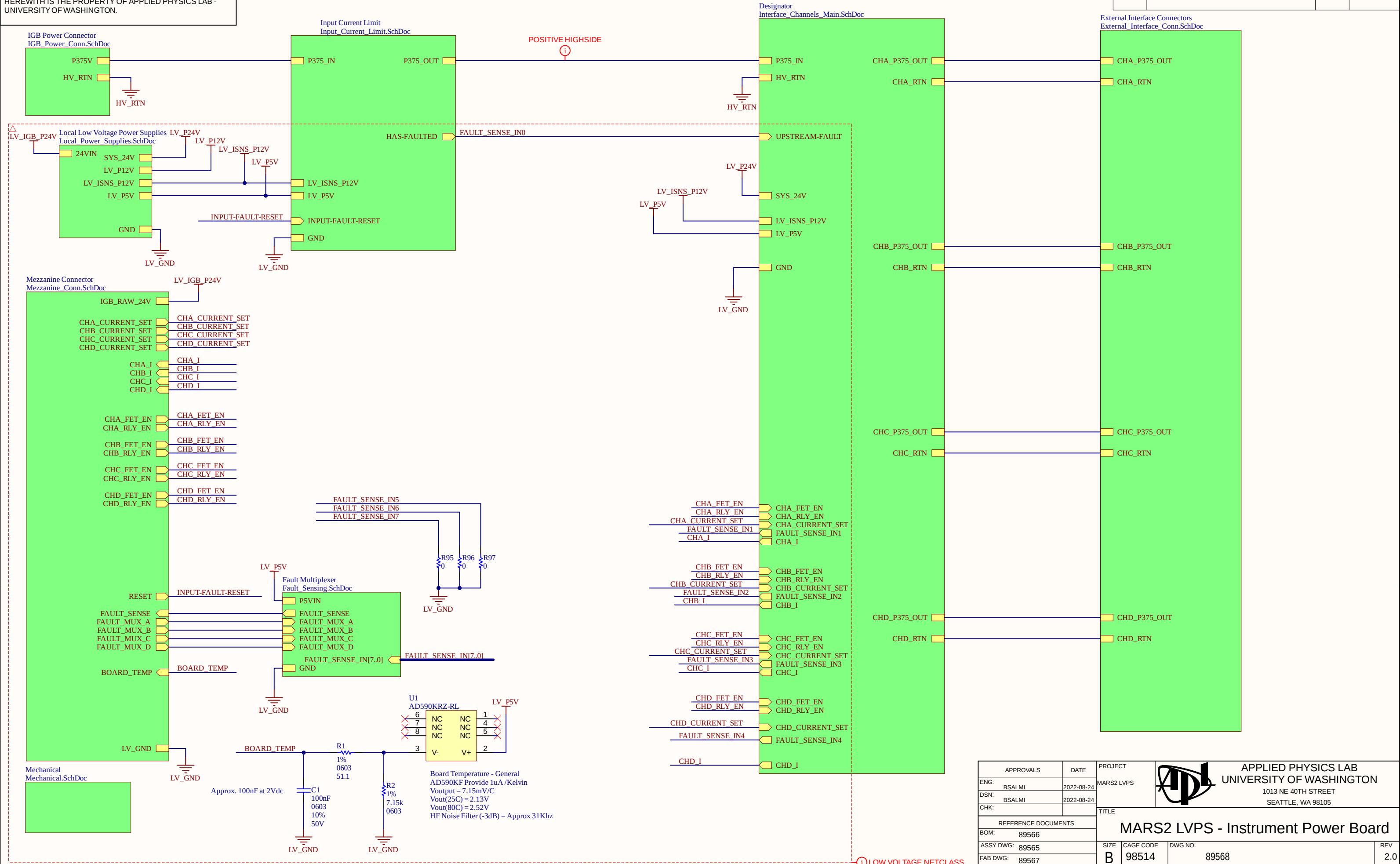


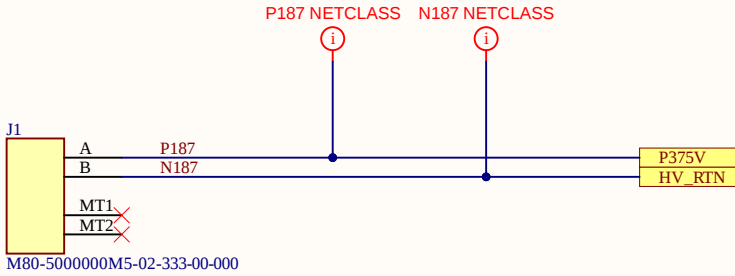
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REVISION	DESCRIPTION	DATE	APPROVED

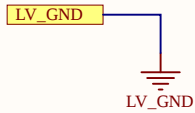
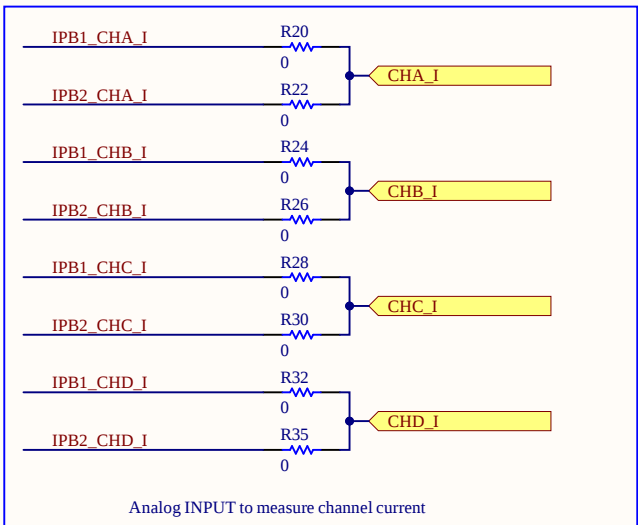
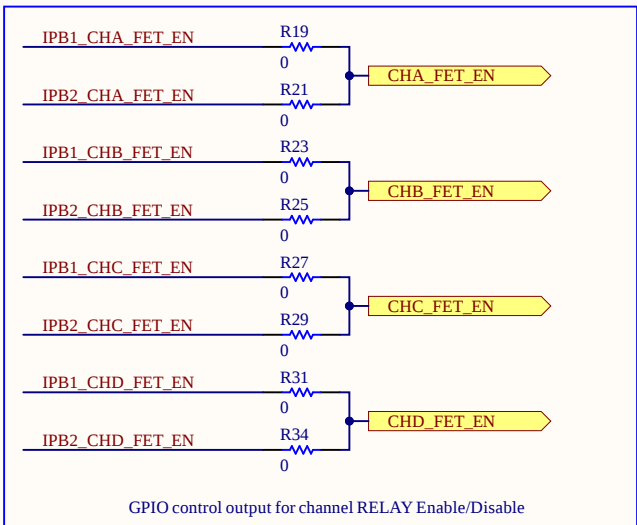
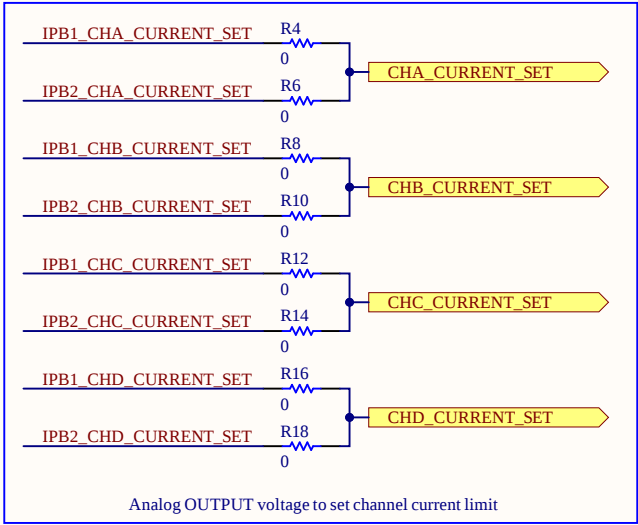
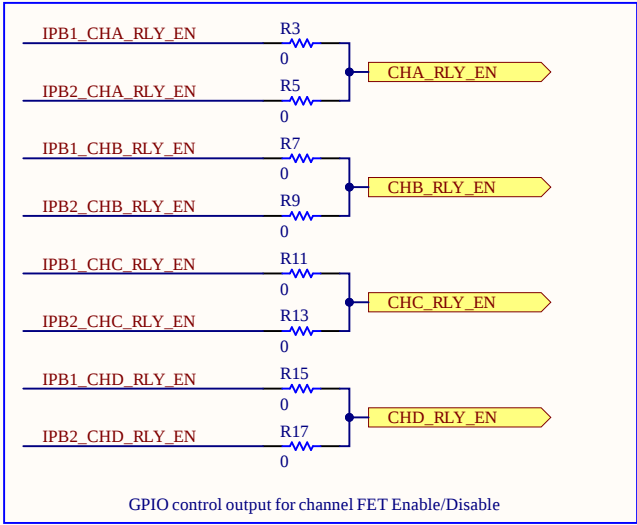
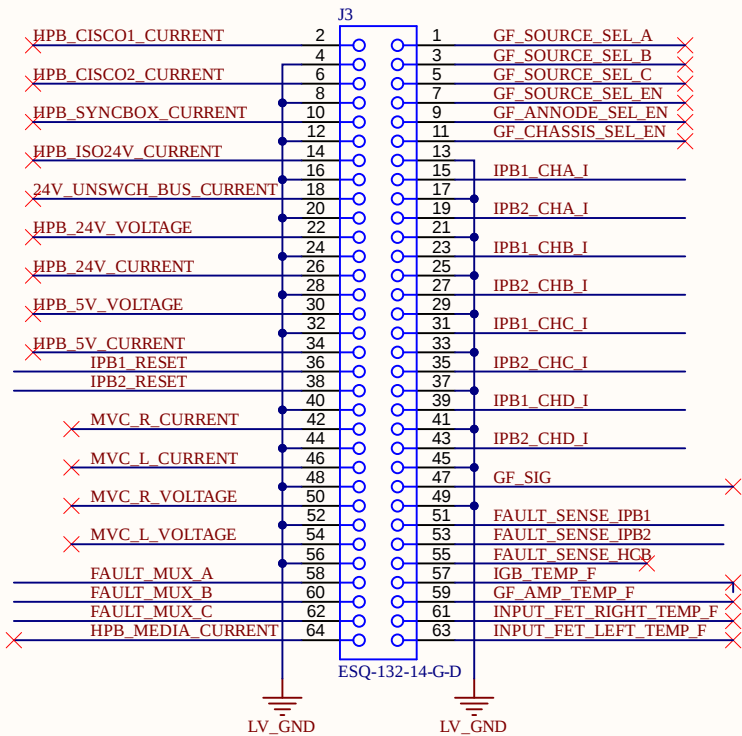
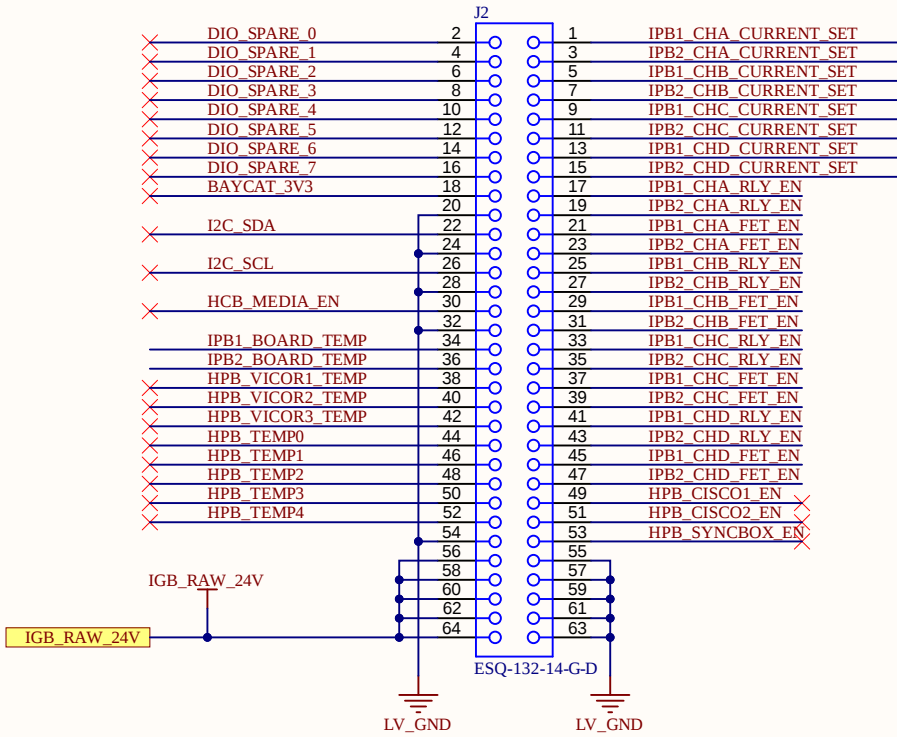
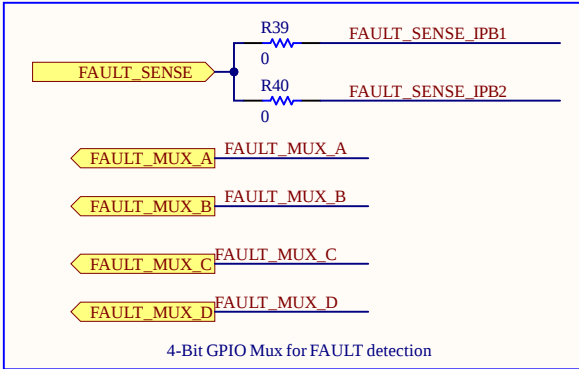
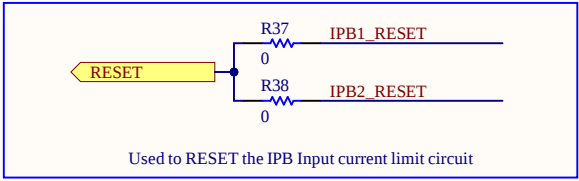
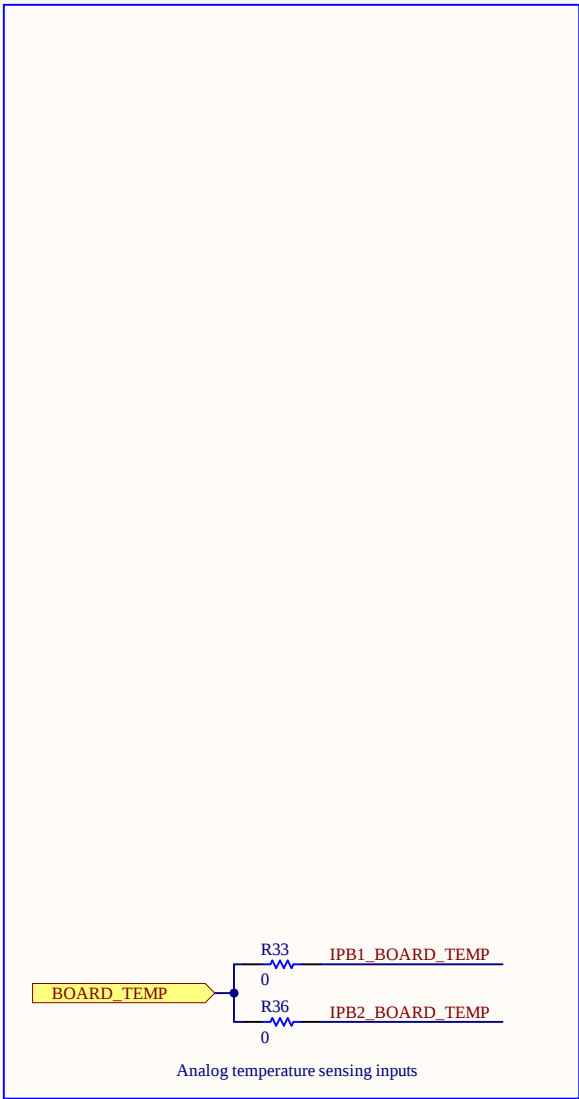


APPROVALS	DATE	PROJECT	APPLIED PHYSICS LAB UNIVERSITY OF WASHINGTON 1013 NE 40TH STREET SEATTLE, WA 98105	
ENG: BSALMI	2022-08-24	MARS2 LVPS		
DSN: BSALMI	2022-08-24	TITLE		
CHK:		MARS2 LVPS - Instrument Power Board		
REFERENCE DOCUMENTS		SIZE	CAGE CODE	DWG NO.
BOM: 89566		B	98514	89568
ASSY DWG: 89565		REV 2.0		
FAB DWG: 89567				
PCB DWG: 89564		FILE NAME Top.SchDoc		
		SHEET 1 OF 23		

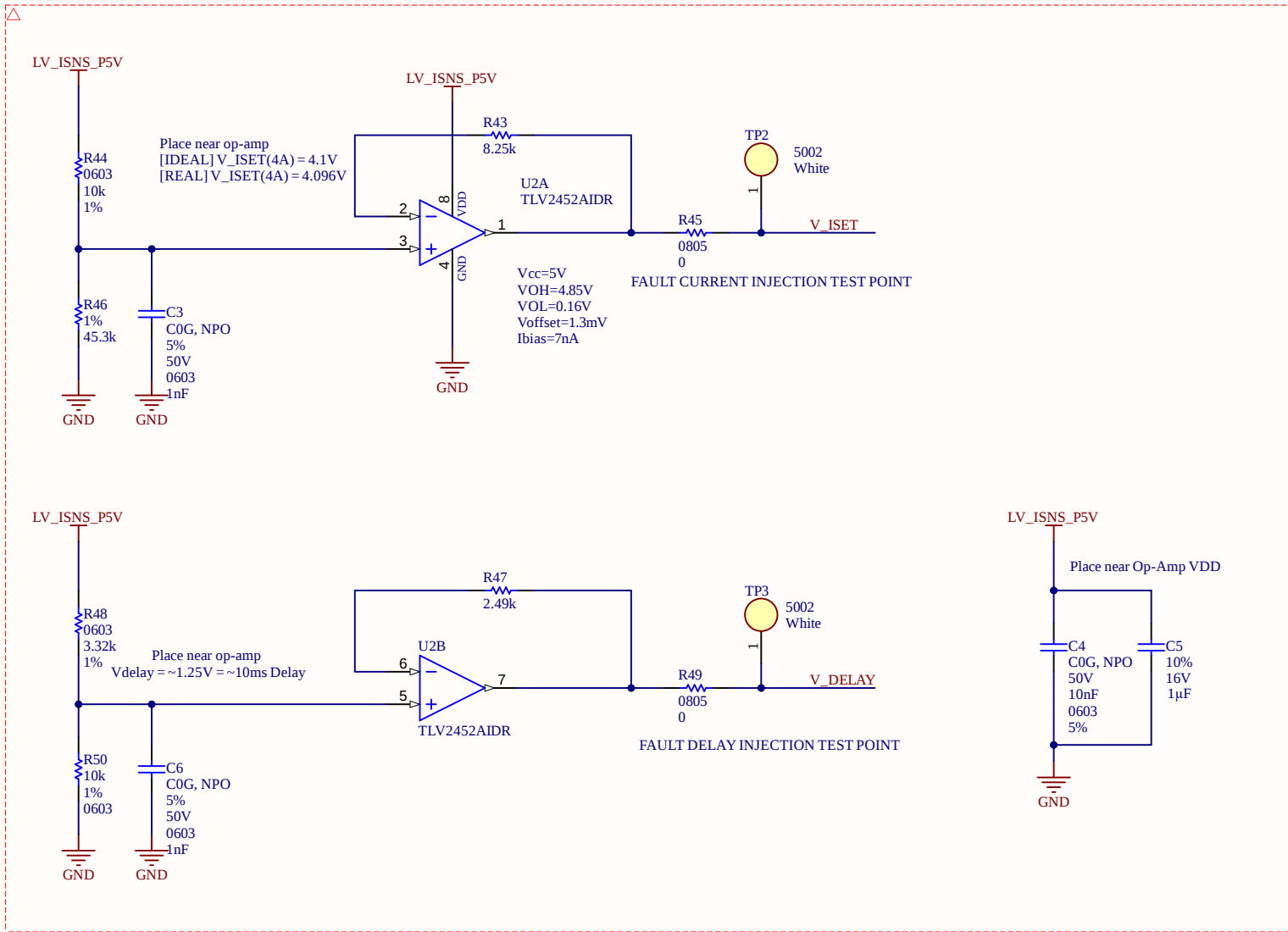
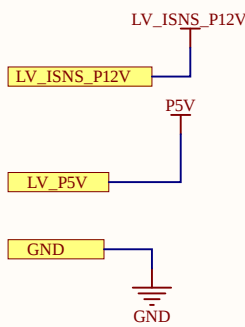
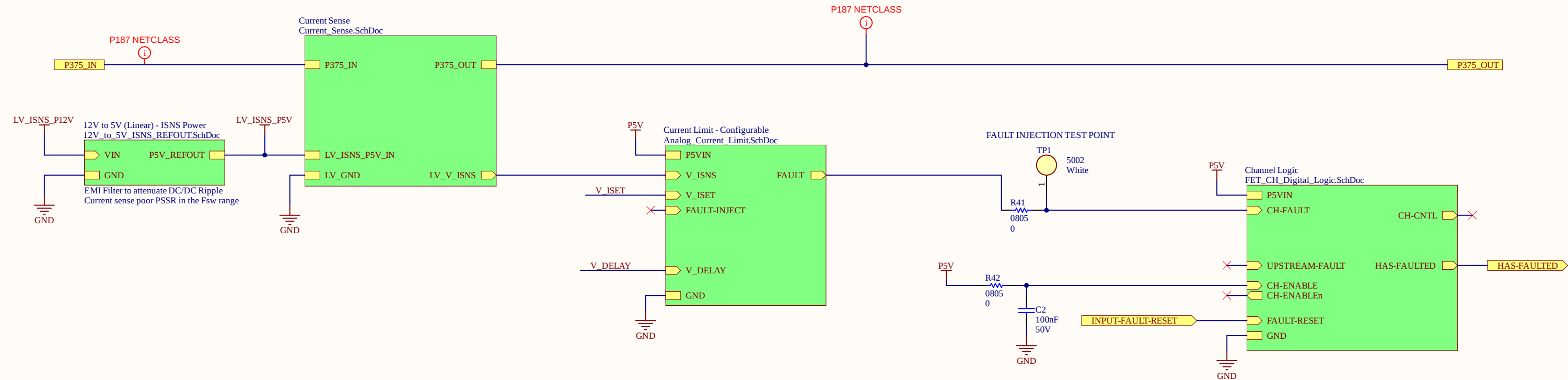
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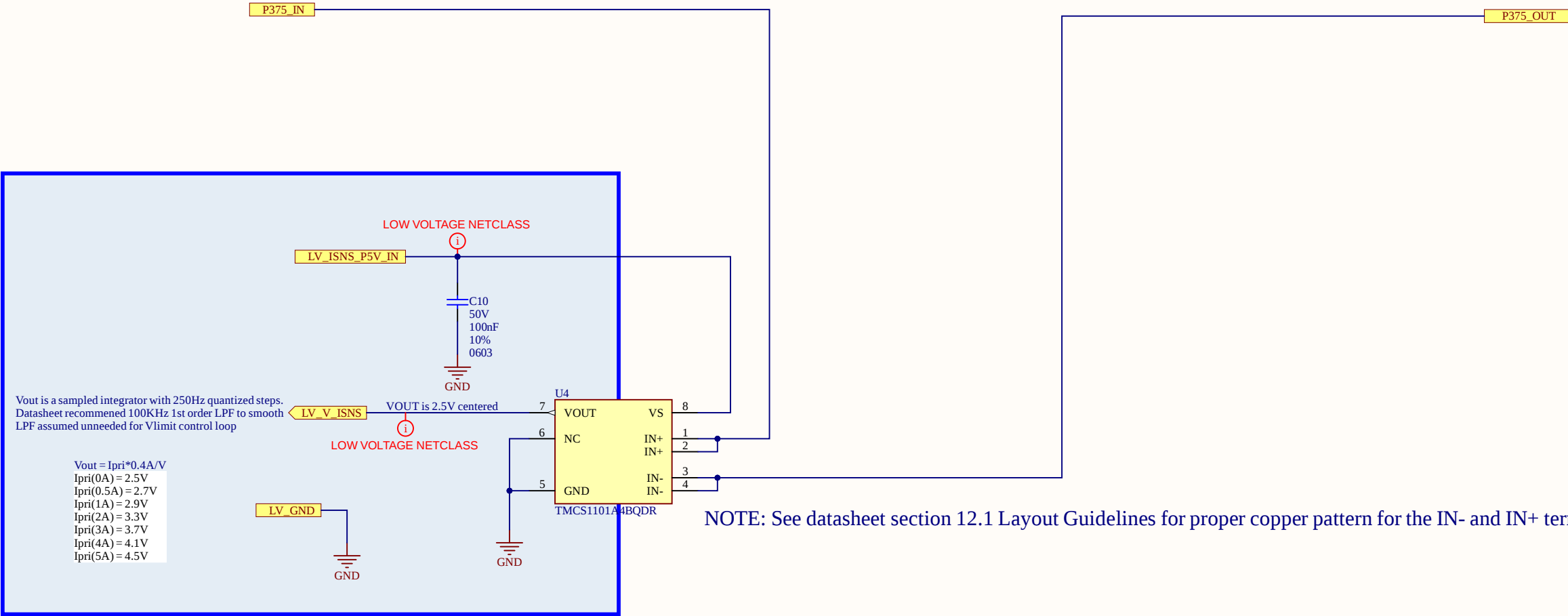


PROJECT				APPLIED PHYSICS LAB	
MARS2 LVPS				UNIVERSITY OF WASHINGTON	
				1013 NE 40TH STREET	
				SEATTLE, WA 98105	
TITLE					
MARS2 - IPB - IGB Power Conn					
SIZE	CAGE CODE	DWG NO.			REV
B	98514	89568			2.0
FILE NAME				SHEET	OF
IGB_Power_Conn.SchDoc				2	23



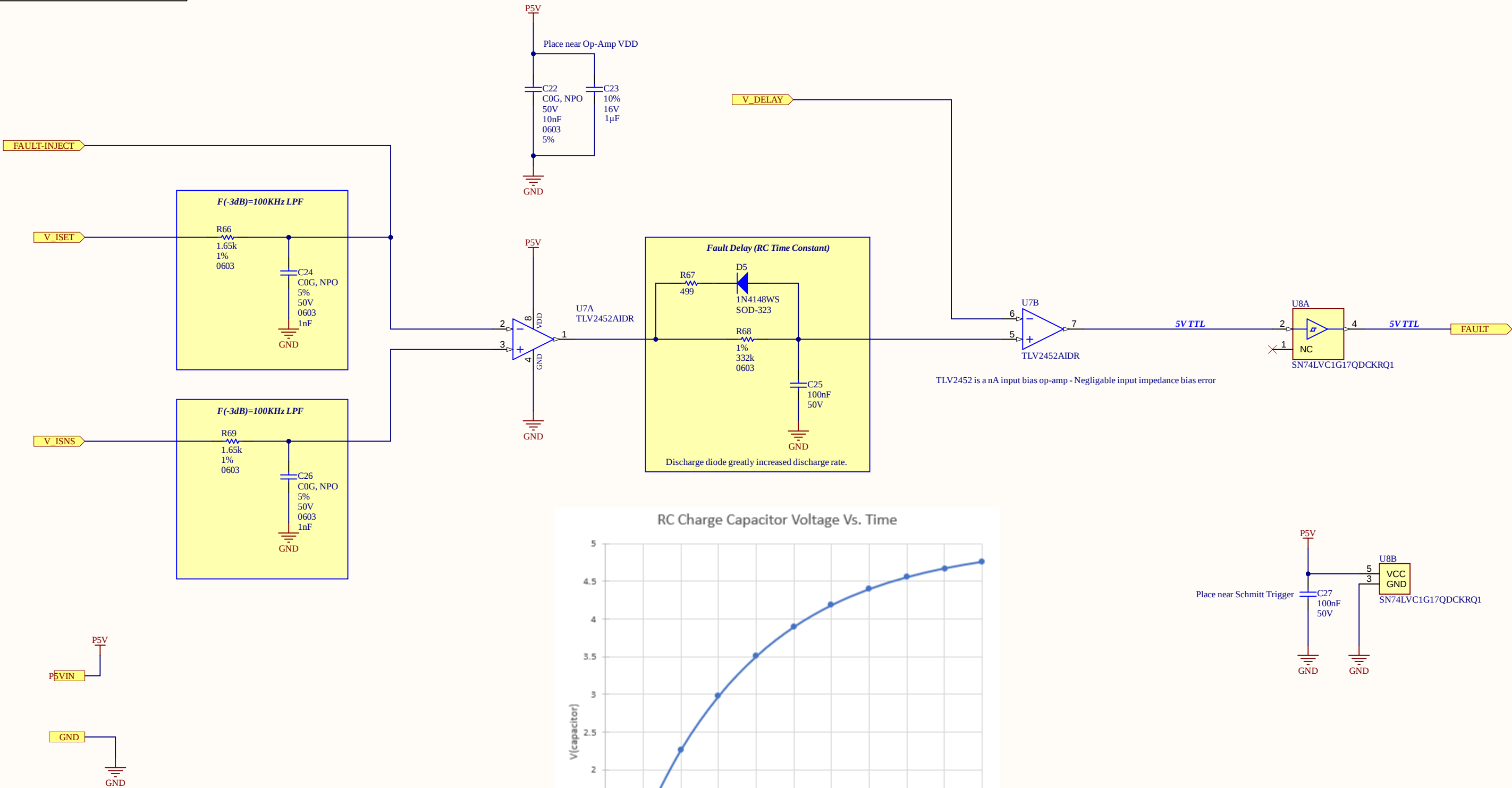
PROJECT	APPLIED PHYSICS LAB UNIVERSITY OF WASHINGTON 1013 NE 40TH STREET SEATTLE, WA 98105		
MARS2 LVPS			
TITLE	MARS2 - IPB - Mezzanine Connector		
SIZE	CAGE CODE	DWG NO.	REV
B	98514	89568	2.0
FILE NAME	Mezzanine_Conn.SchDoc		SHEET 3 OF 23

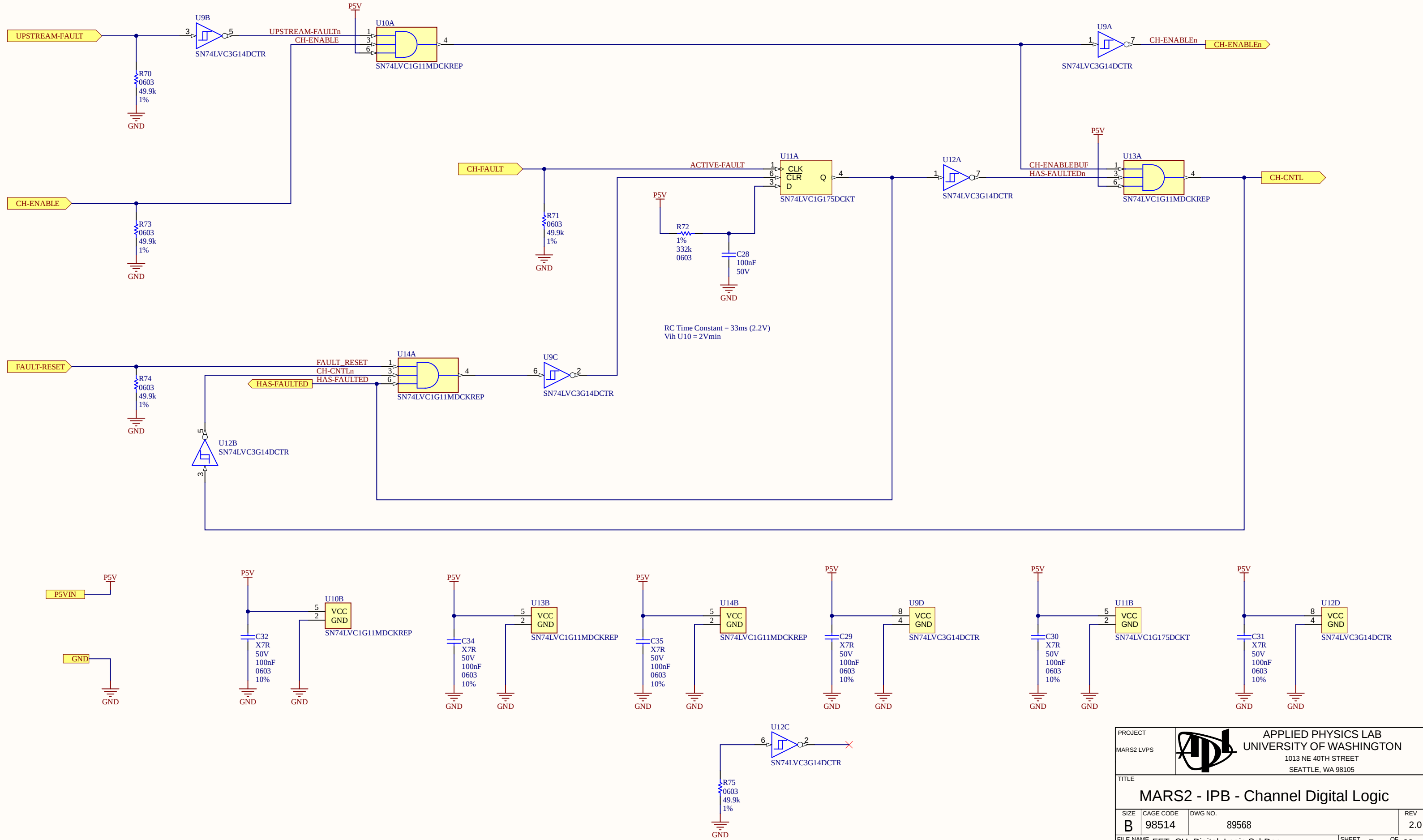


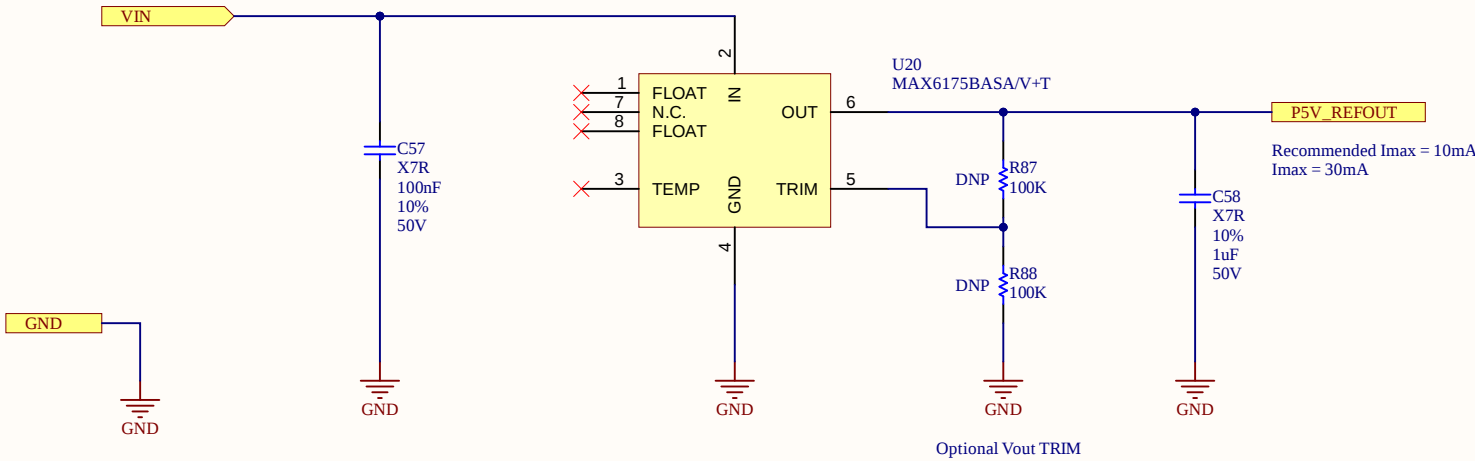


NOTE: See datasheet section 12.1 Layout Guidelines for proper copper pattern for the IN- and IN+ terminals.

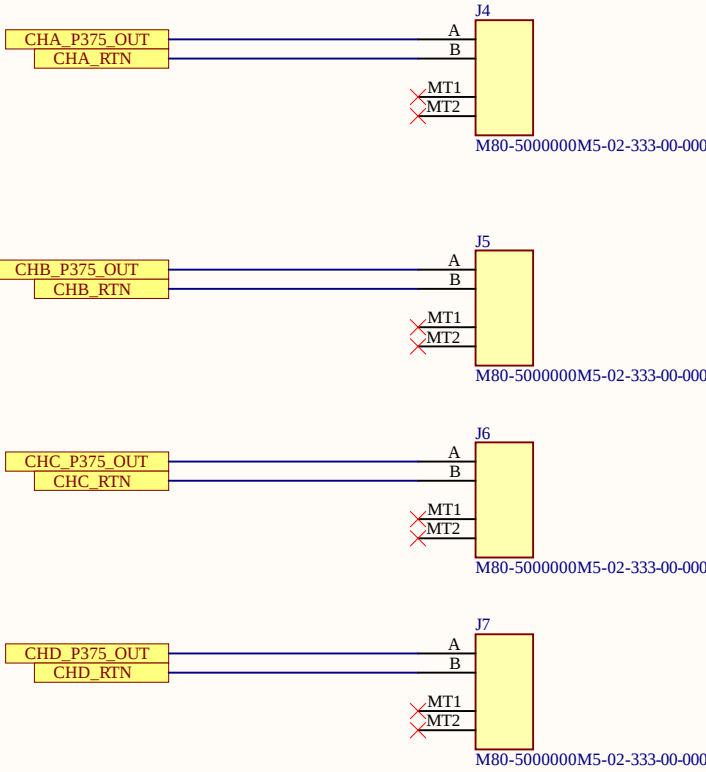
Isolated HALL Effect current sensor





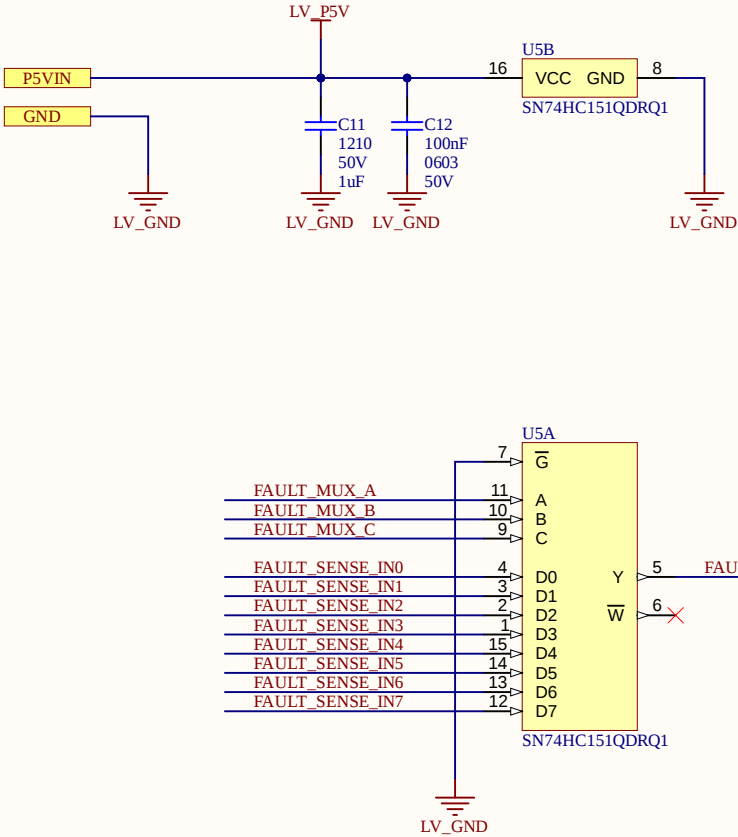
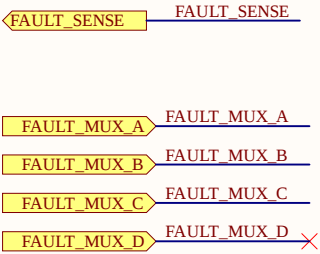


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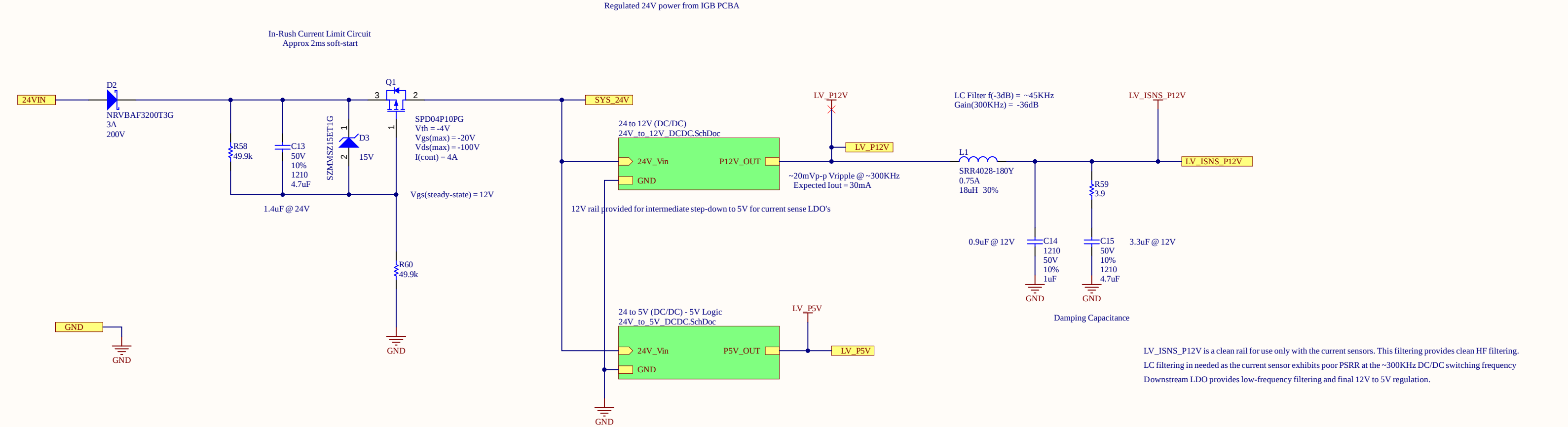


PROJECT MARS2 LVPS			APPLIED PHYSICS LAB UNIVERSITY OF WASHINGTON 1013 NE 40TH STREET SEATTLE, WA 98105		
TITLE MARS2 - IPB - Instrument Channel Conn					
SIZE B	CAGE CODE 98514	DWG NO. 89568			REV 2.0
FILE NAME External Interface_Conn.SchDoc				SHEET 9	OF 23

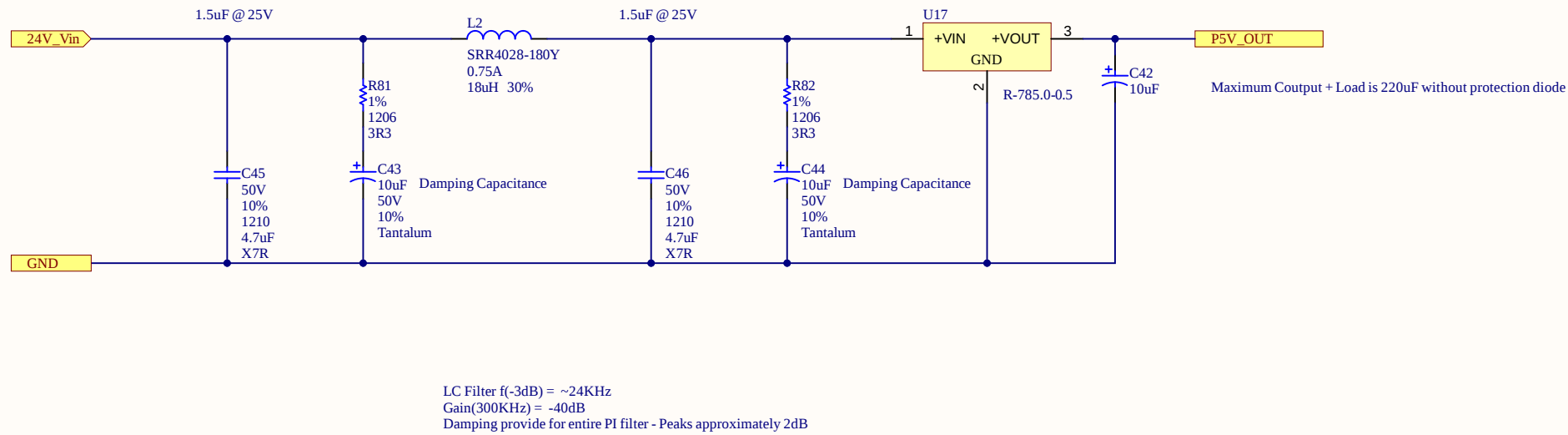
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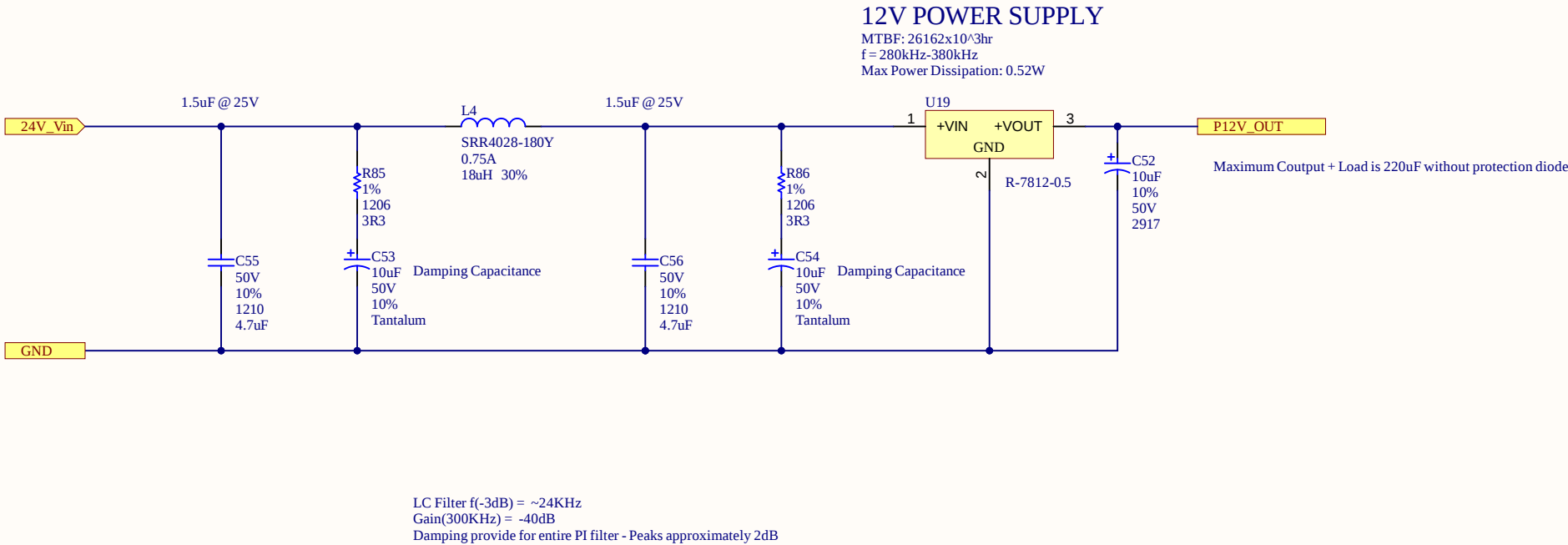
PROJECT		 APPLIED PHYSICS LAB UNIVERSITY OF WASHINGTON 1013 NE 40TH STREET SEATTLE, WA 98105		
MARS2 LVPS				
TITLE				
MARS2 - IPB - Fault Multiplexing				
SIZE	CAGE CODE	DWG NO.		REV
B	98514	89568		2.0
FILE NAME			SHEET	OF
Fault_Sensing.SchDoc			10	23



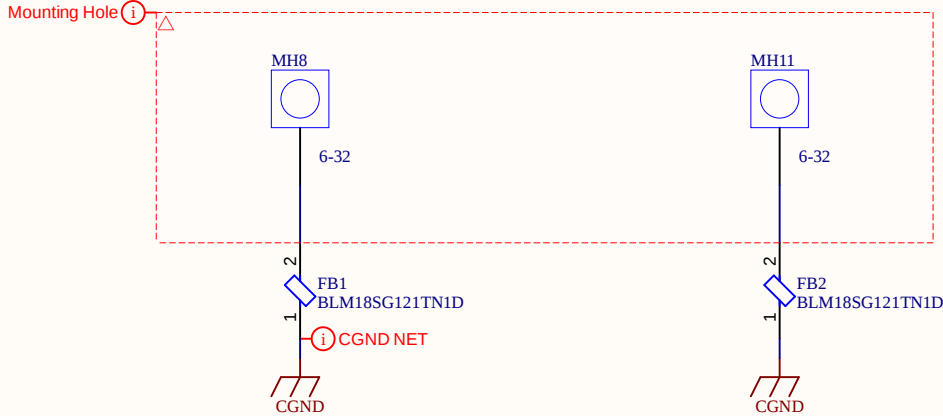
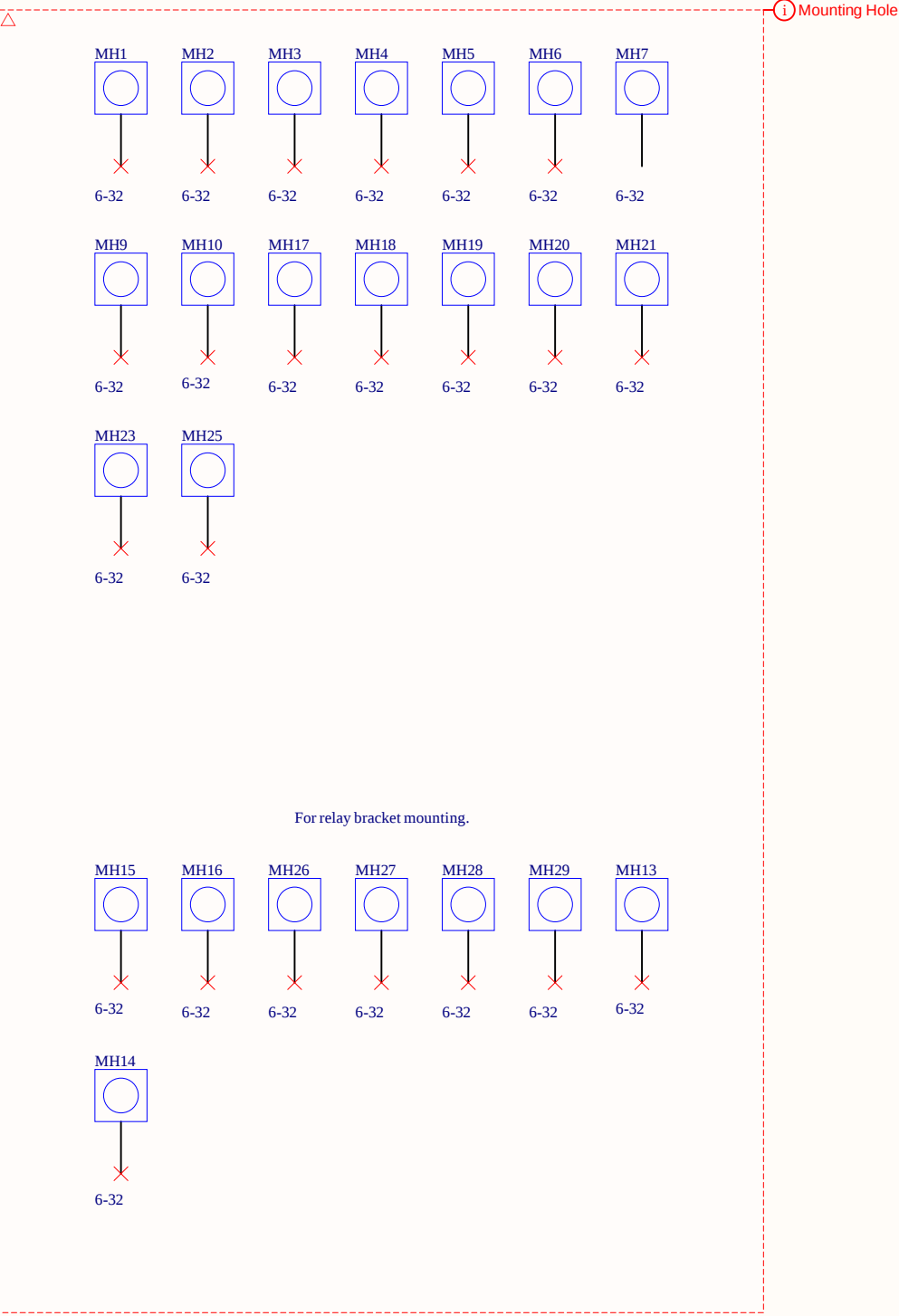
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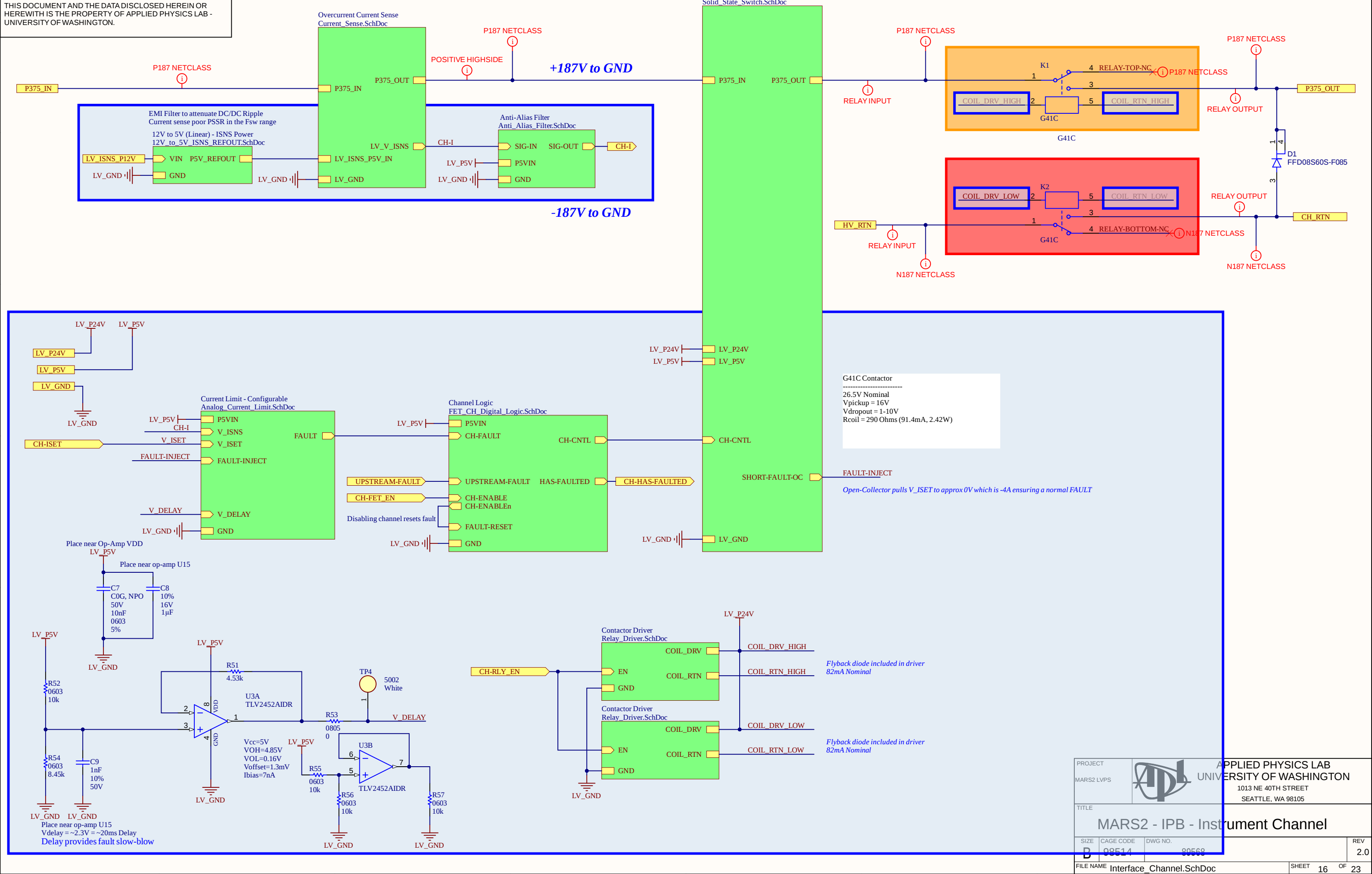


PROJECT				*
MARS2 LVPS				*
				*
				*
TITLE				
MARS2 - IPB - 24V to 5V DC/DC				
SIZE	CAGE CODE	DWG NO.		REV
B	98514	89568		2.0
FILE NAME			SHEET	OF
24V_to_5V_DCDC.SchDoc			12	23

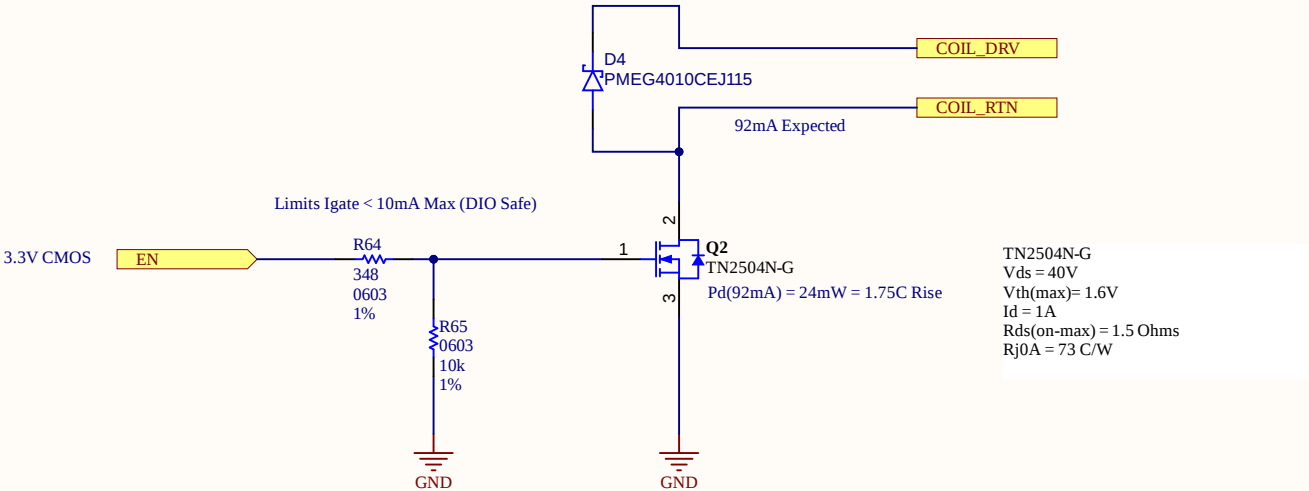
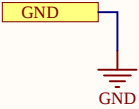


PROJECT			*
MARS2 LVPS			*
			*
			*
TITLE			
MARS2 - IPB - 24V to 12V DC/DC			
SIZE	CAGE CODE	DWG NO.	REV
B	98514	89568	2.0
FILE NAME 24V_to_12V_DCDC.SchDoc			SHEET 13 OF 23





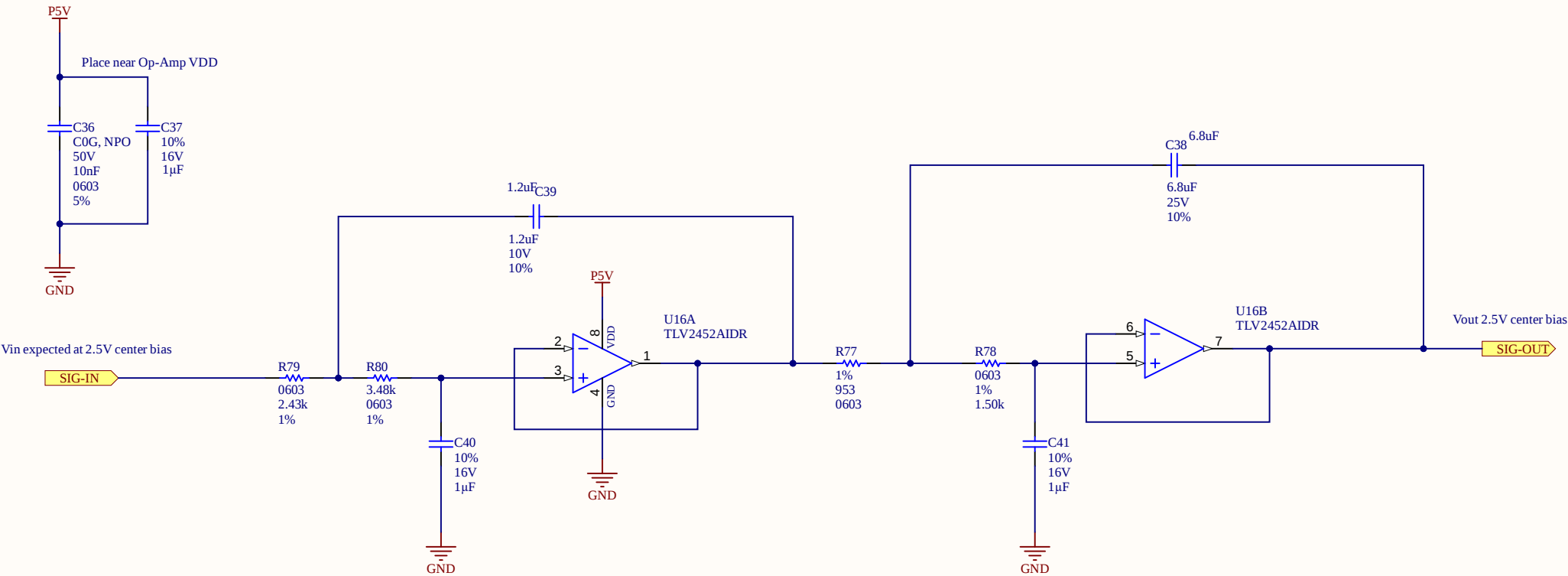
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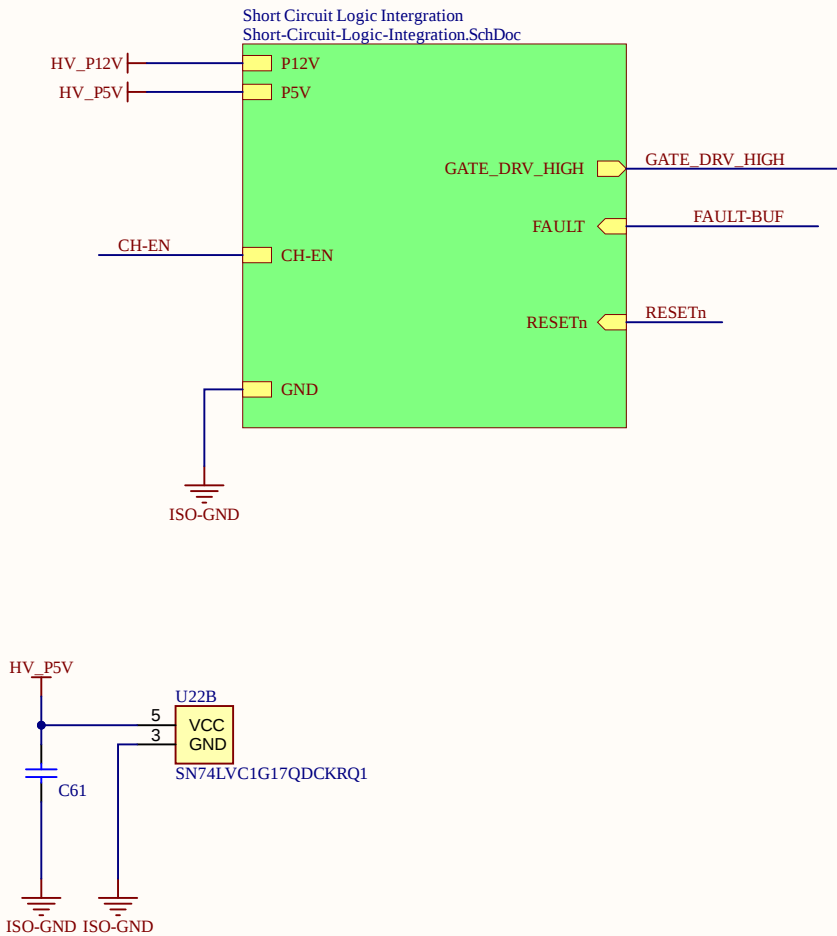
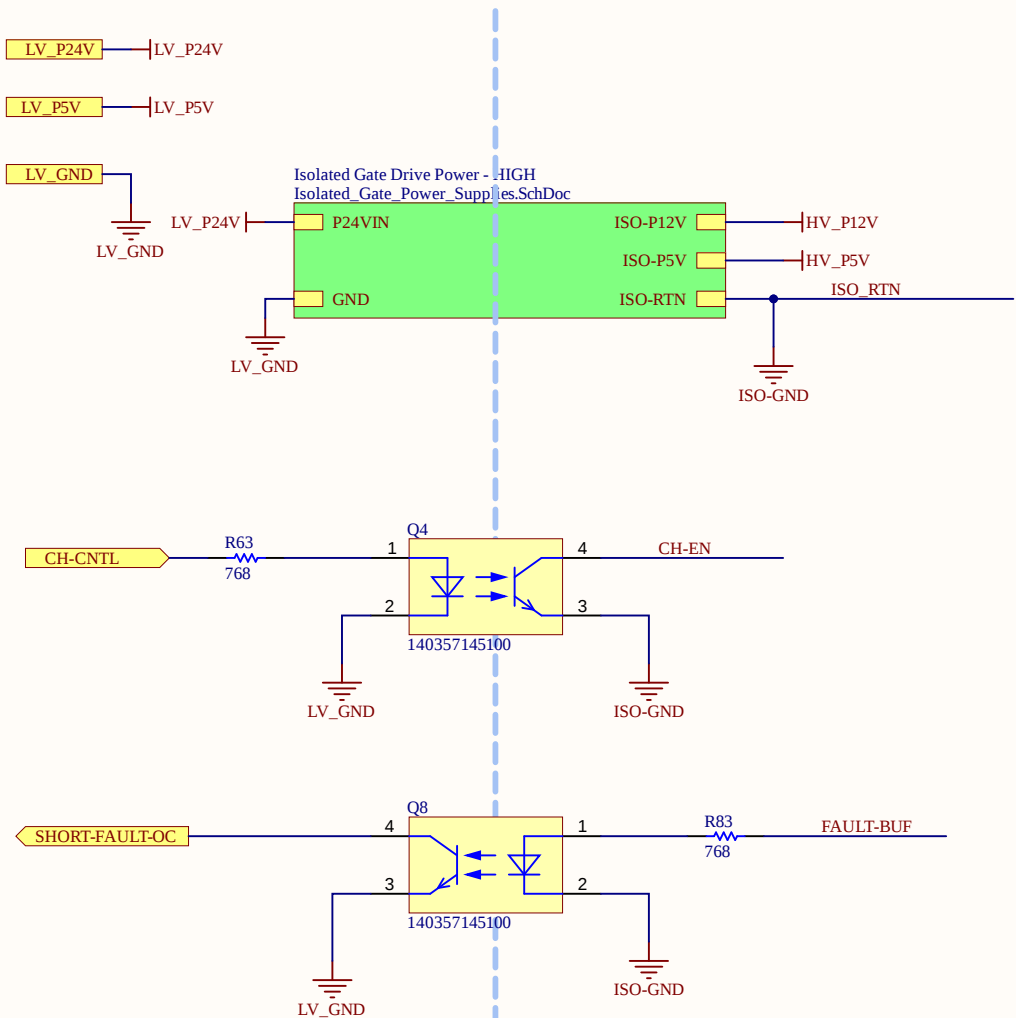
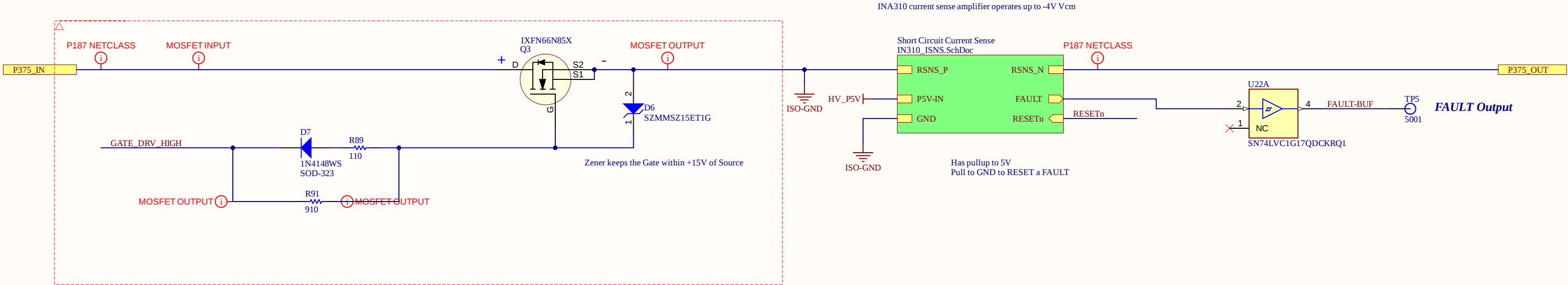


G41C Contactor

26.5V Nominal
Vpickup = 16V
Vdropout = 1-10V
Rcoil = 290 Ohms (91.4mA, 2.42W)

PROJECT				APPLIED PHYSICS LAB	
MARS2 LVPS				UNIVERSITY OF WASHINGTON	
				1013 NE 40TH STREET	
				SEATTLE, WA 98105	
TITLE					
MARS2 - IPB - Relay Driver					
SIZE	CAGE CODE	DWG NO.			REV
B	98514	89568			2.0
FILE NAME				SHEET	OF
Relay_Driver.SchDoc				17	23

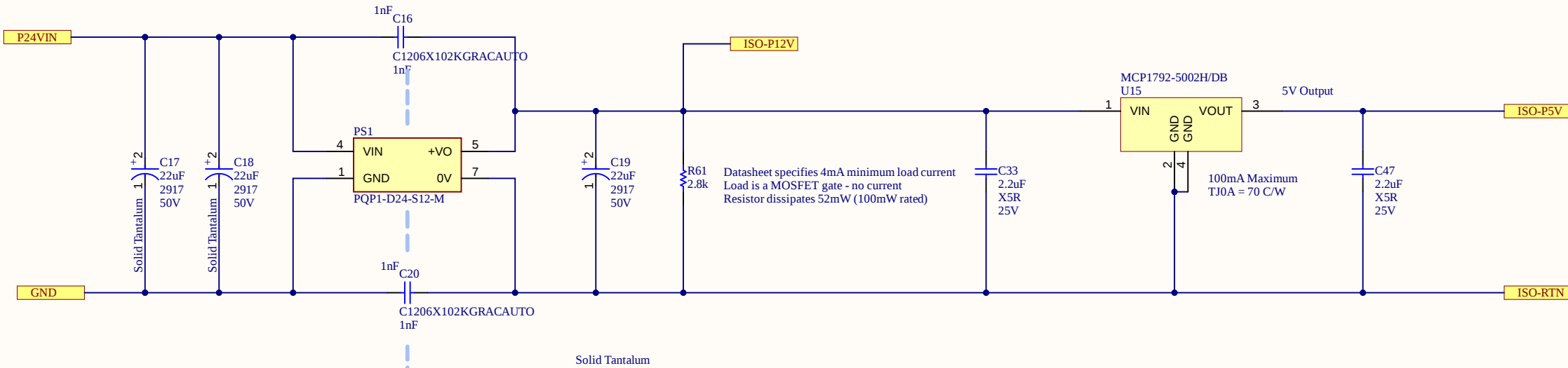


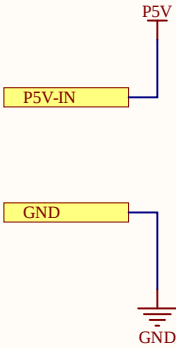


PROJECT MARS2 LVPS				APPLIED PHYSICS LAB UNIVERSITY OF WASHINGTON 1013 NE 40TH STREET SEATTLE, WA 98105	
TITLE MARS2 - IPB - HV Solid State Switches					
SIZE B	CAGE CODE 98514	DWG NO. 89568			REV 2.0
FILE NAME Solid_State_Switch.SchDoc				SHEET 19	OF 23

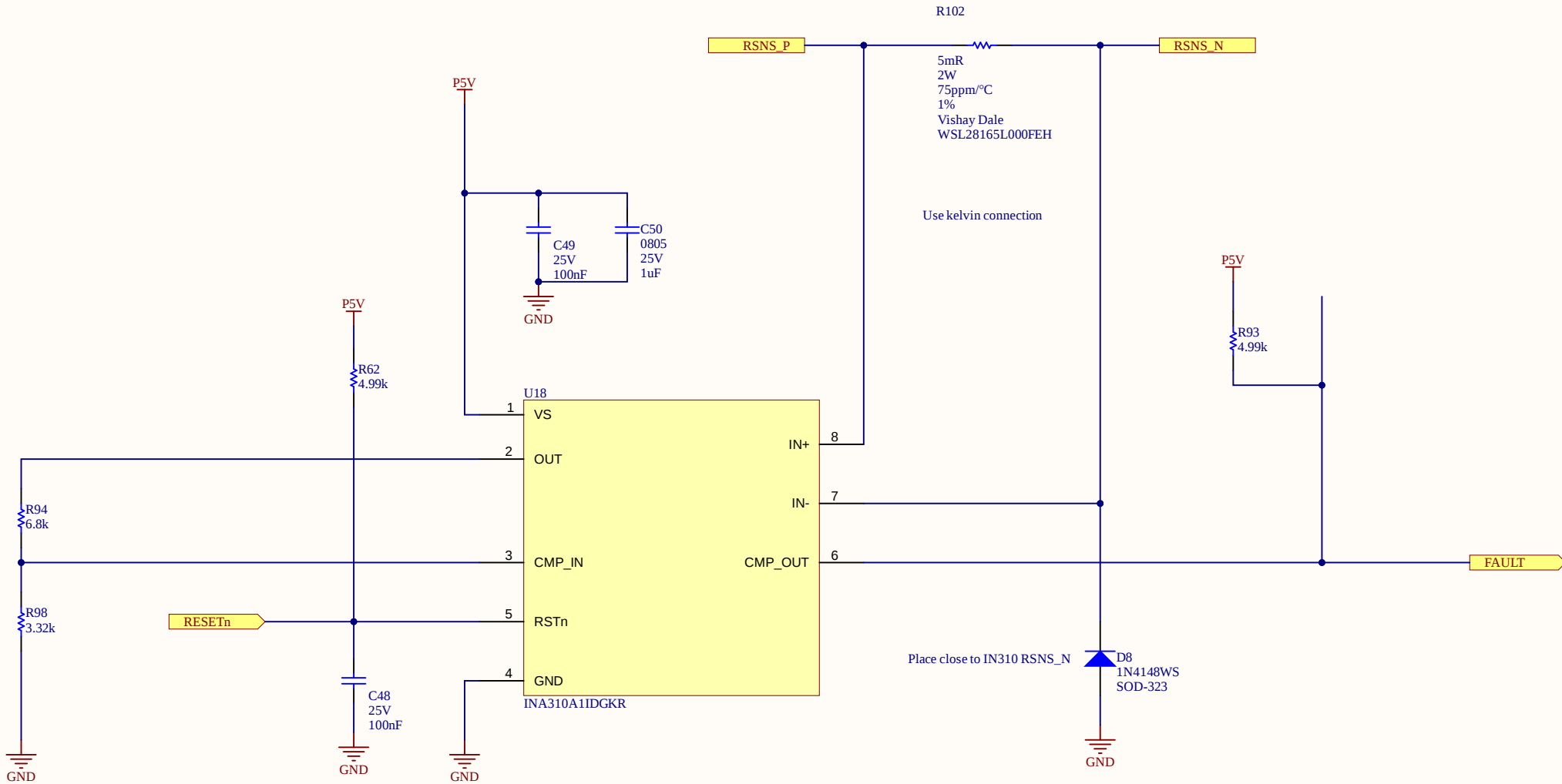
24V LOW VOLTAGE POWER DOMAIN

ISOLATED HIGH VOLTAGE FET DRIVER POWER DOMAIN



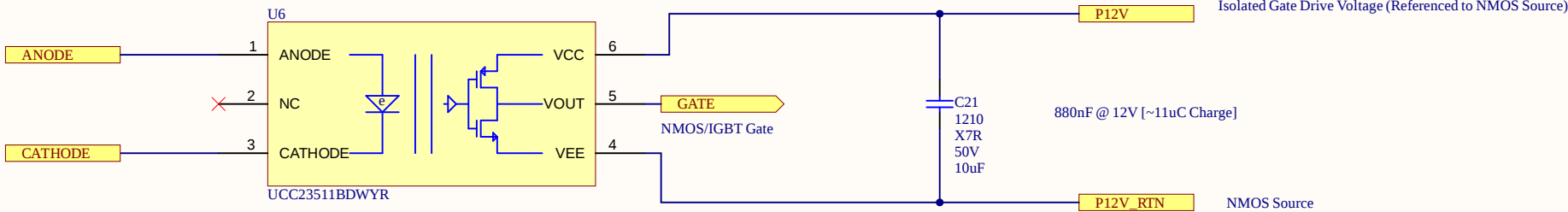


V_{cmp} = 0.6V
Threshold set to ~18A



PROJECT MARS2 LVPS			APPLIED PHYSICS LAB UNIVERSITY OF WASHINGTON 1013 NE 40TH STREET SEATTLE, WA 98105	
TITLE INA310 Latching Current Sense Amplifier				
SIZE B	CAGE CODE 98514	DWG NO. 89568		REV 2.0
FILE NAME IN310 ISNS.SchDoc			SHEET 21	OF 23

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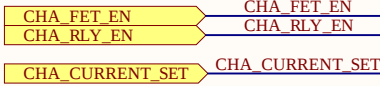
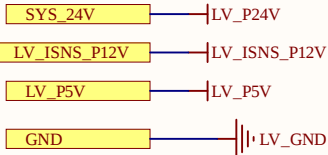


eDIdoe Ith = 7-16mA (Recommended 10mA)
VF = 1.8V to 2.4V at typ 2.1V (1.35mV/C)

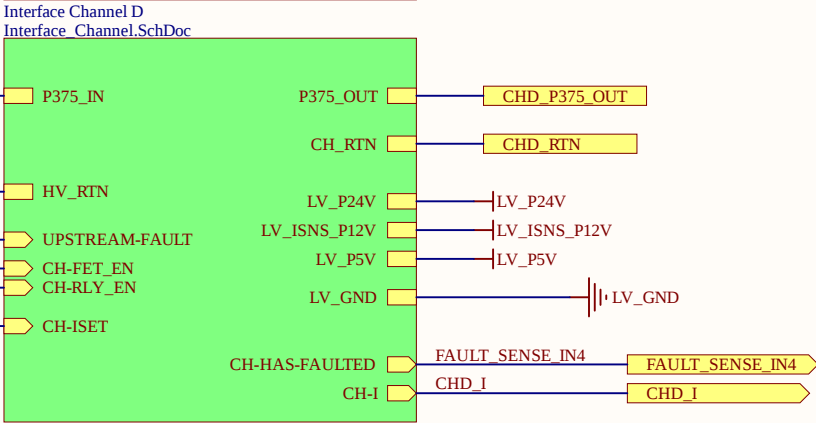
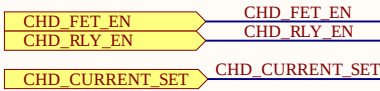
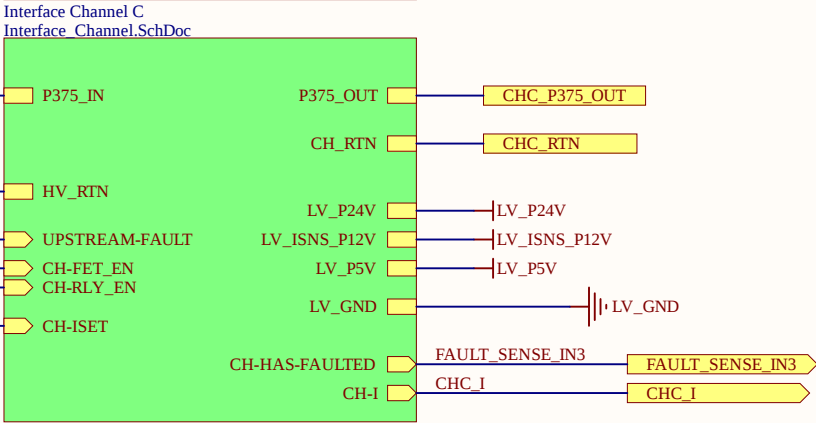
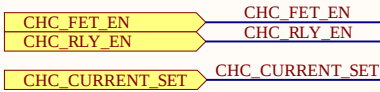
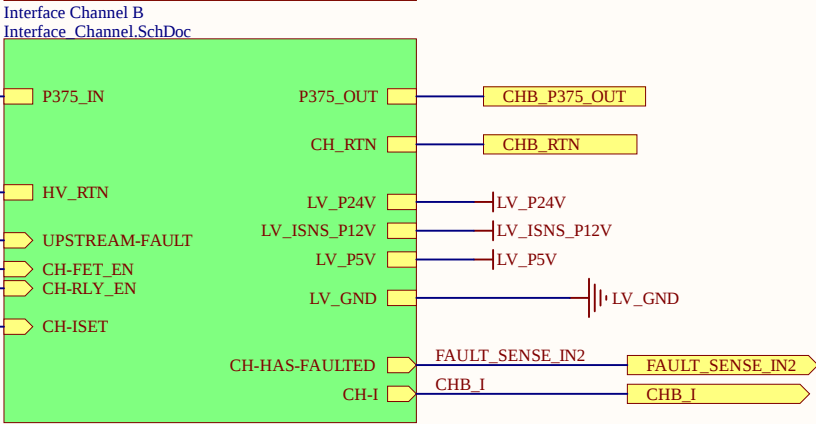
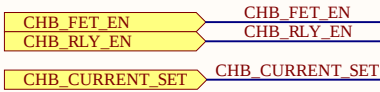
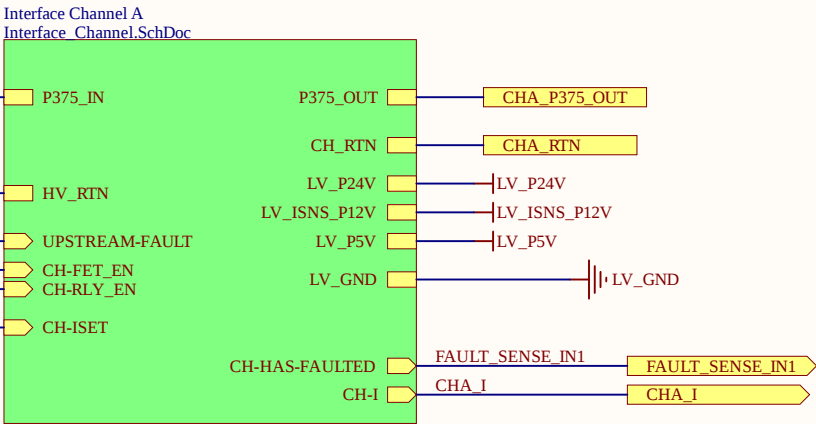
^A
Vf = 2.1V -> 102.2
Ohms for 11.7mA

If(Vf=1.8V) = 14.7mA
If(Vf=2.4V) = 8.8mA

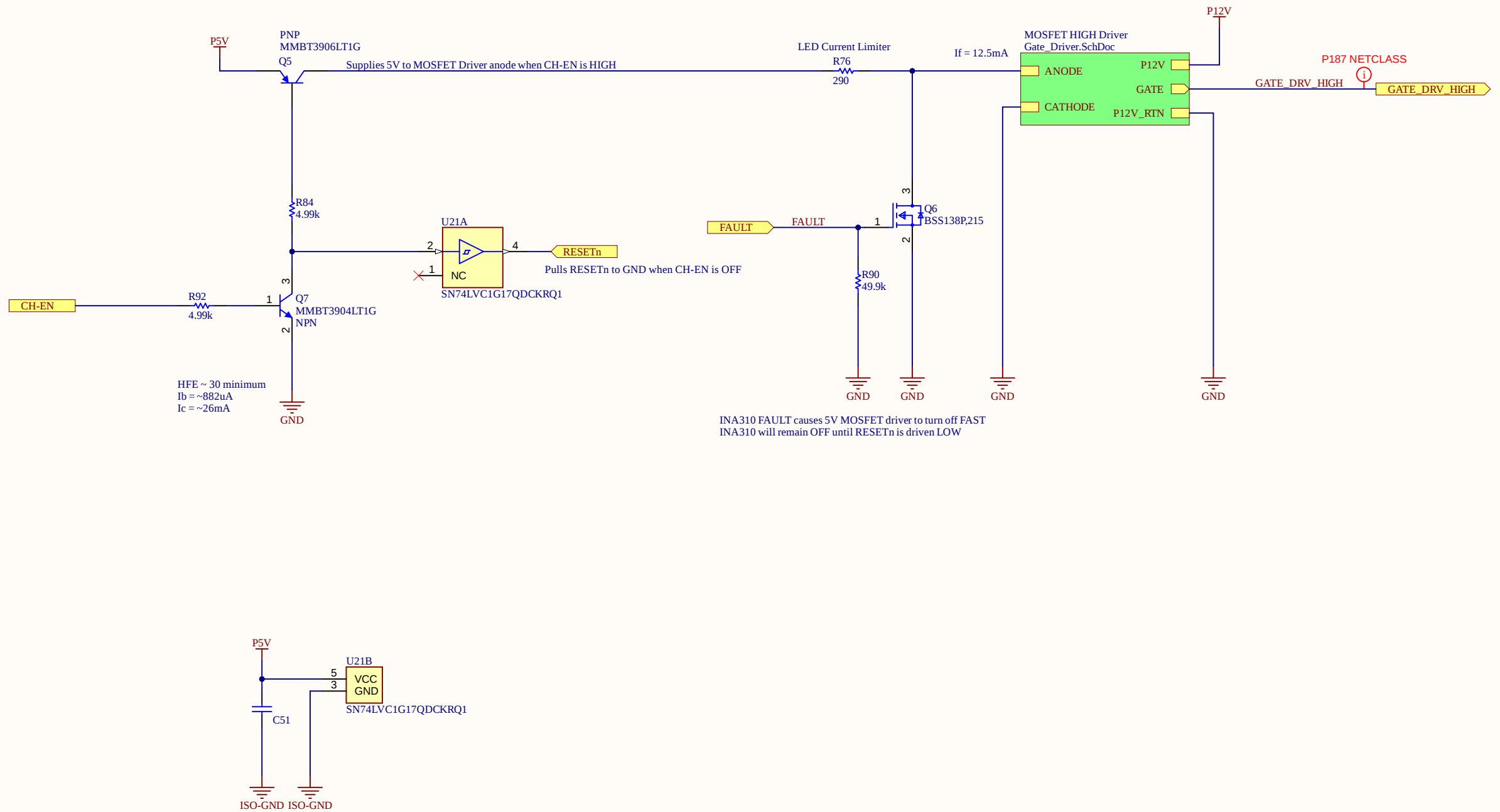
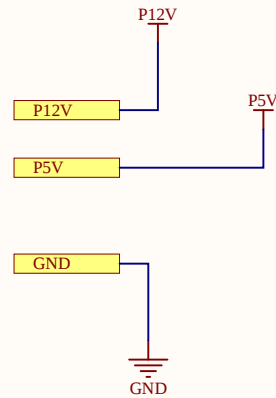
PROJECT		 APPLIED PHYSICS LAB UNIVERSITY OF WASHINGTON 1013 NE 40TH STREET SEATTLE, WA 98105	
MARS2 LVPS			
TITLE			
MARS2 - IPB - Isolated Gate Driver			
SIZE	CAGE CODE	DWG NO.	REV
B	98514	89568	2.0
FILE NAME		Gate_Driver.SchDoc	SHEET 23 OF 23



UPSTREAM-FAULT



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PROJECT MARS2 LVPS		 APPLIED PHYSICS LAB UNIVERSITY OF WASHINGTON 1013 NE 40TH STREET SEATTLE, WA 98105	
TITLE Short Circuit System Integration			
SIZE B	CAGE CODE 98514	DWG NO. 89568	REV 2.0
FILE NAME	Short-Circuit-Logic-Integration.SchDoc		SHEET * OF *