EE 322: ANALOG & MIXED SIGNAL CIRCUITS

INDIAN INSTITUTE OF TECHNOLOGY, GANDHINAGAR

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Project Report: PCB Design Submission

Submitted by,

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Schematic Diagram:

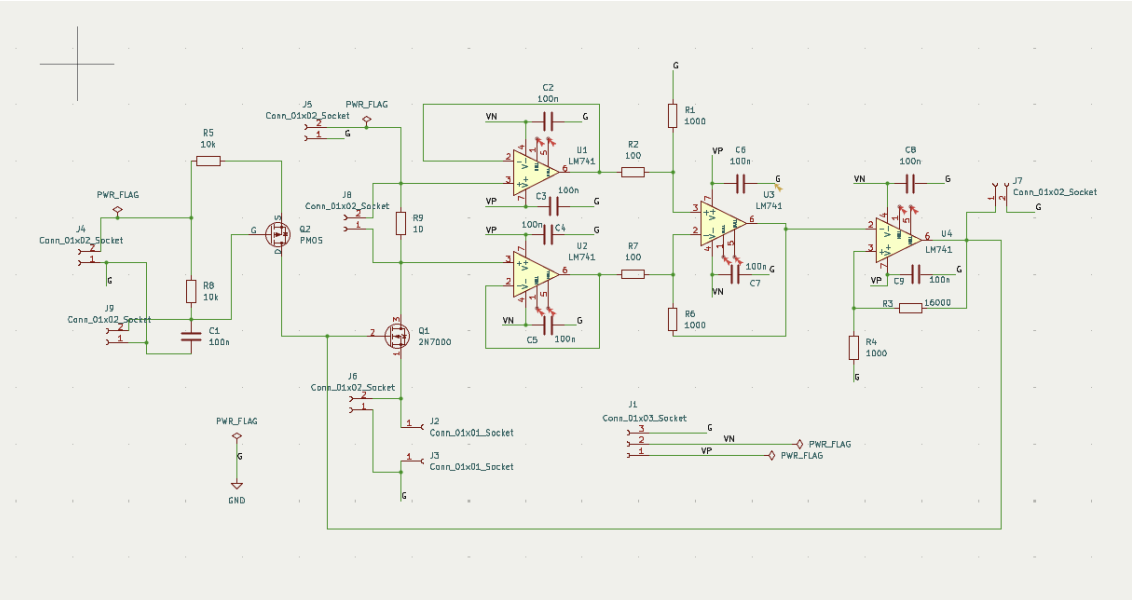


Figure 1 – Schematic Diagram of the Circuit

Simulation:

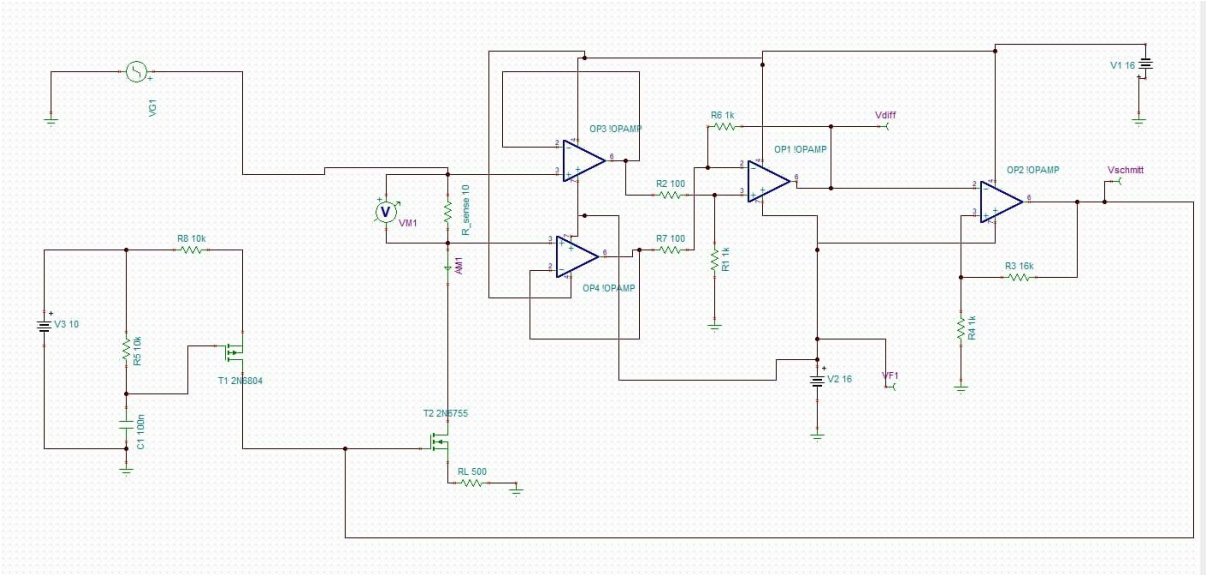


Figure 2 (a) – TINA Schematic

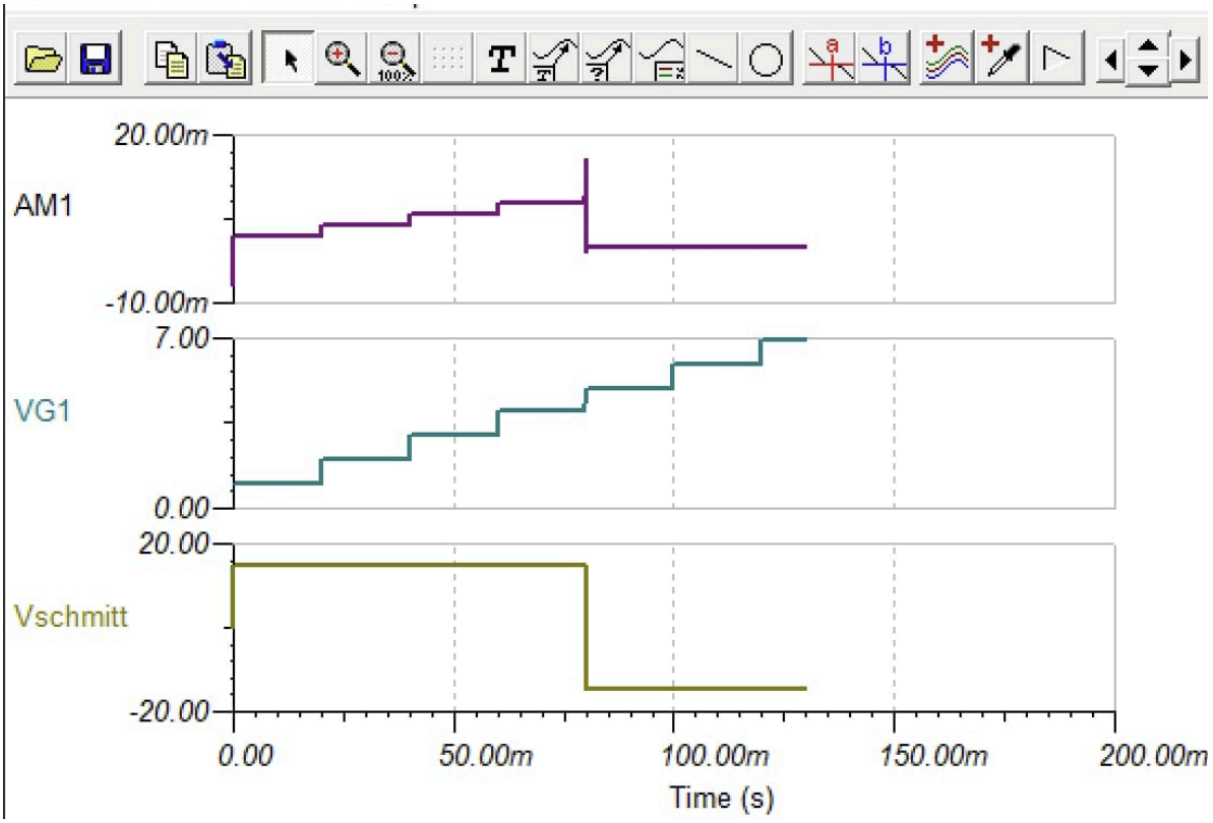


Fig 2 (b) - Simulation Results

Footprints:

Symbol : Footprint Assignments

1	C1	100n	Capacitor_THT:C_Disc_D7.5mm_W5.0mm_P7.50mm
2	C2	100n	Capacitor_THT:C_Disc_D7.5mm_W5.0mm_P7.50mm
3	C3	100n	Capacitor_THT:C_Disc_D7.5mm_W5.0mm_P7.50mm
4	C4	100n	Capacitor_THT:C_Disc_D7.5mm_W5.0mm_P7.50mm
5	C5	100n	Capacitor_THT:C_Disc_D7.5mm_W5.0mm_P7.50mm
6	C6	100n	Capacitor_THT:C_Disc_D7.5mm_W5.0mm_P7.50mm
7	C7	100n	Capacitor_THT:C_Disc_D7.5mm_W5.0mm_P7.50mm
8	C8	100n	Capacitor_THT:C_Disc_D7.5mm_W5.0mm_P7.50mm
9	C9	100n	Capacitor_THT:C_Disc_D7.5mm_W5.0mm_P7.50mm
10	J1	Conn_01x03_Socket	Connector_PinSocket_2.54mm:PinSocket_1x03_P2.54mm_Vertical
11	J2	Conn_01x01_Socket	Connector_PinSocket_2.54mm:PinSocket_1x01_P2.54mm_Vertical
12	J3	Conn_01x01_Socket	Connector_PinSocket_2.54mm:PinSocket_1x01_P2.54mm_Vertical
13	J4	Conn_01x02_Socket	Connector_PinSocket_2.54mm:PinSocket_1x02_P2.54mm_Vertical
14	J5	Conn_01x02_Socket	Connector_PinSocket_2.54mm:PinSocket_1x02_P2.54mm_Vertical
15	J6	Conn_01x02_Socket	Connector_PinSocket_2.54mm:PinSocket_1x02_P2.54mm_Vertical
16	J7	Conn_01x02_Socket	Connector_PinSocket_2.54mm:PinSocket_1x02_P2.54mm_Vertical
17	J8	Conn_01x02_Socket	Connector_PinSocket_2.54mm:PinSocket_1x02_P2.54mm_Vertical
18	J9	Conn_01x02_Socket	Connector_PinSocket_2.54mm:PinSocket_1x02_P2.54mm_Vertical
19	Q1	2N7000	Package_TO_SOT_THT:TO-92_Inline
20	Q2	PMOS	Package_TO_SOT_THT:TO-39-3
21	R1	1000	Resistor_THT:R_Axial_DIN0309_L9.0mm_D3.2mm_P12.70mm_Horizontal
22	R2	100	Resistor_THT:R_Axial_DIN0309_L9.0mm_D3.2mm_P12.70mm_Horizontal
23	R3	16000	Resistor_THT:R_Axial_DIN0309_L9.0mm_D3.2mm_P12.70mm_Horizontal
24	R4	1000	Resistor_THT:R_Axial_DIN0309_L9.0mm_D3.2mm_P12.70mm_Horizontal
25	R5	10k	Resistor_THT:R_Axial_DIN0309_L9.0mm_D3.2mm_P12.70mm_Horizontal
26	R6	1000	Resistor_THT:R_Axial_DIN0309_L9.0mm_D3.2mm_P12.70mm_Horizontal
27	R7	100	Resistor_THT:R_Axial_DIN0309_L9.0mm_D3.2mm_P12.70mm_Horizontal
28	R8	10k	Resistor_THT:R_Axial_DIN0309_L9.0mm_D3.2mm_P12.70mm_Horizontal
29	R9	10	Resistor_THT:R_Axial_DIN0309_L9.0mm_D3.2mm_P12.70mm_Horizontal
30	U1	LM741	Package_DIP:DIP-8_W7.62mm

Figure 3 (a) - Footprint Assignment table

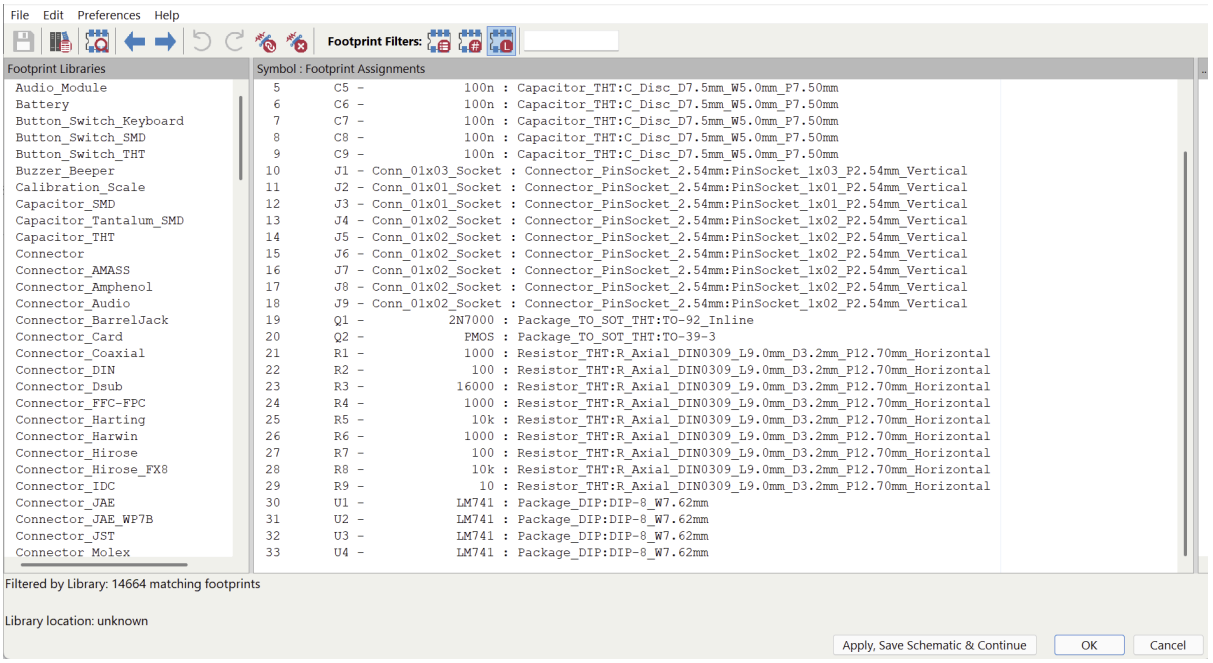


Figure 3 (b) - Footprint Assignment table

Electrical Rules Checker:

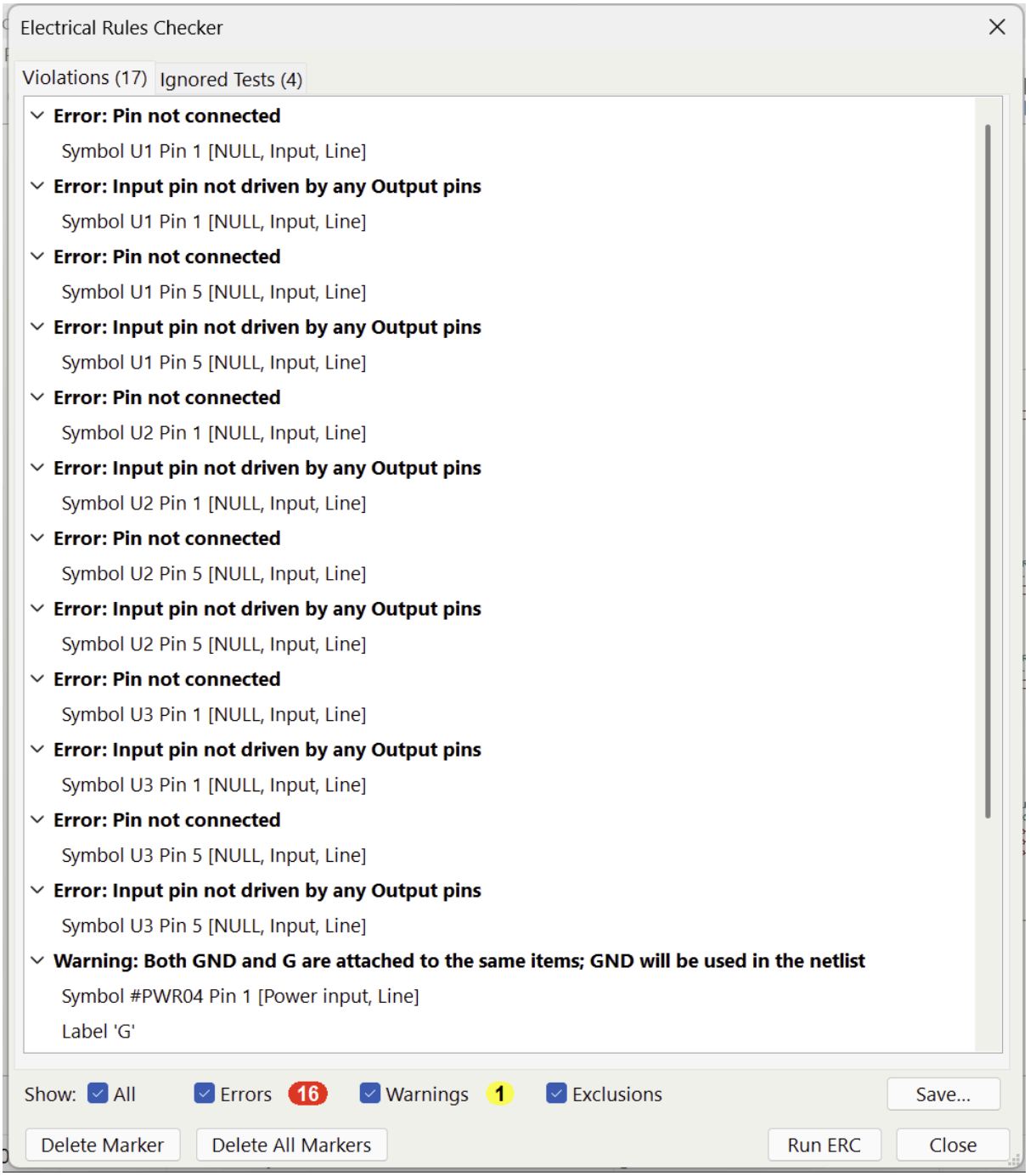


Figure 4 (a) - Electrical Rules Checker

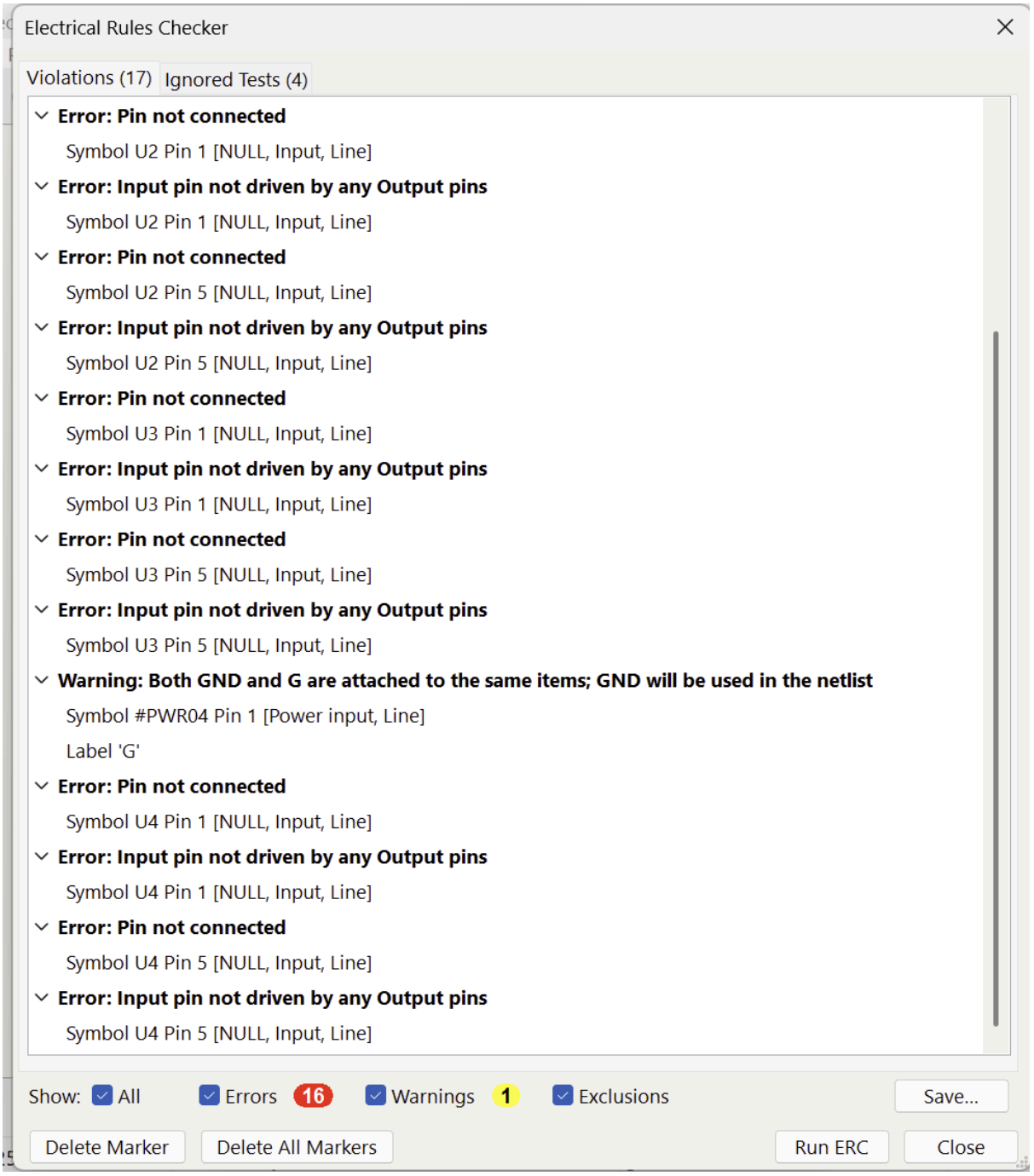


Figure 4 (b) - Electrical Rules Checker

Layout Screenshot:

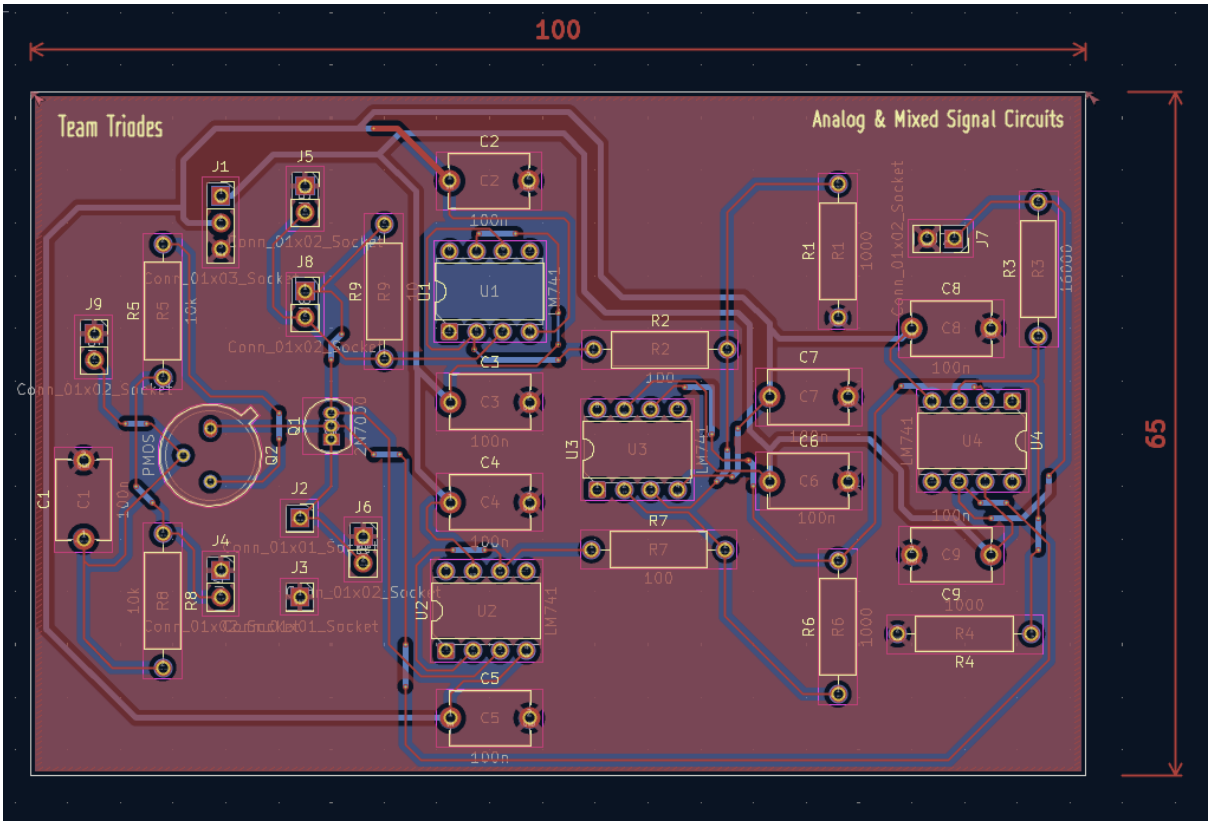


Figure 5 - PCB Layout

The size of the layout is 100 mm x 65 mm.

Design Rules Checker:

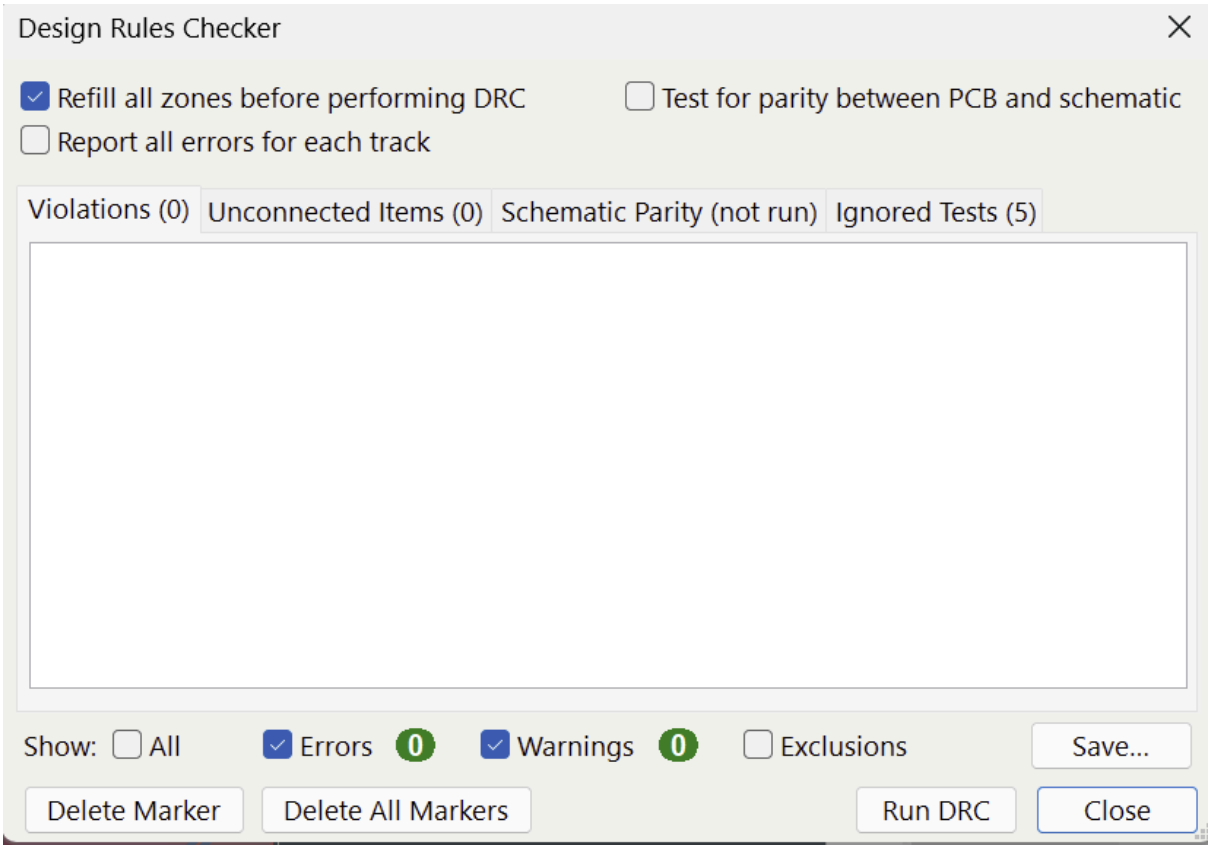


Figure 6 - Design Rules Checker

3D rendering:

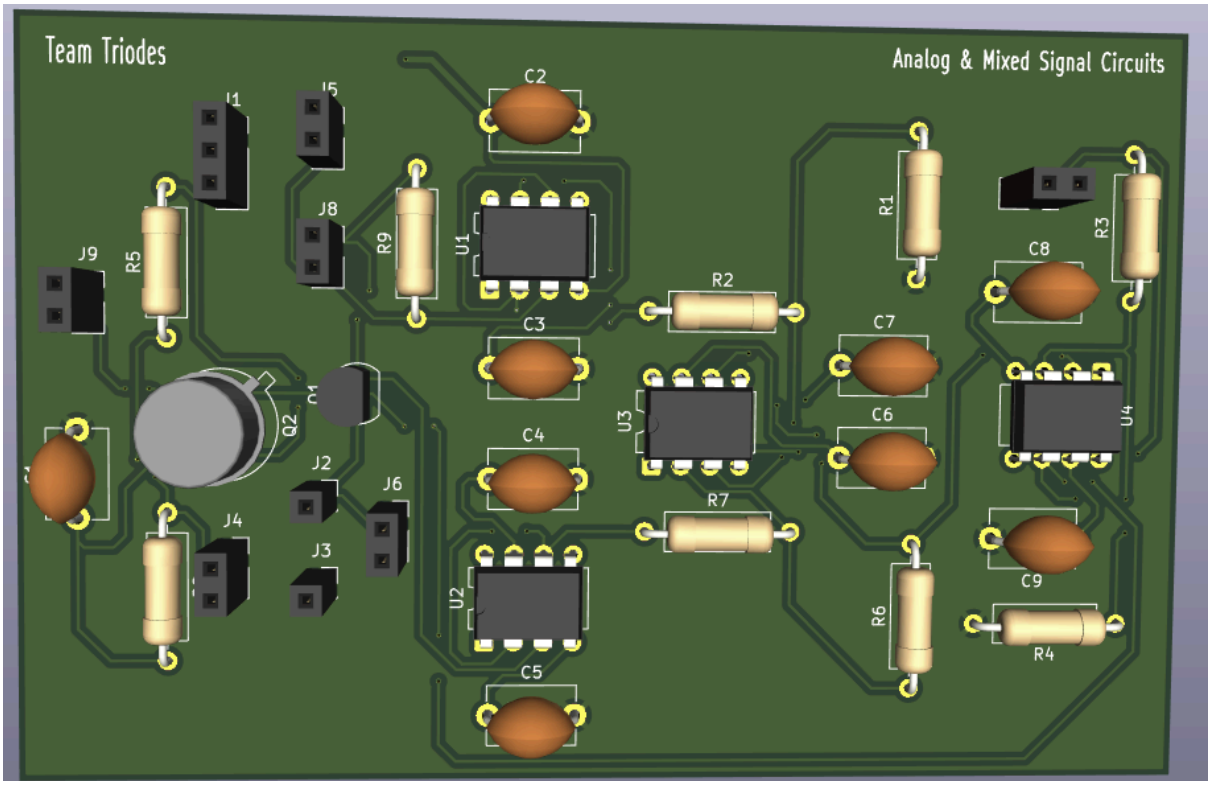


Figure 7 (a) - 3D View

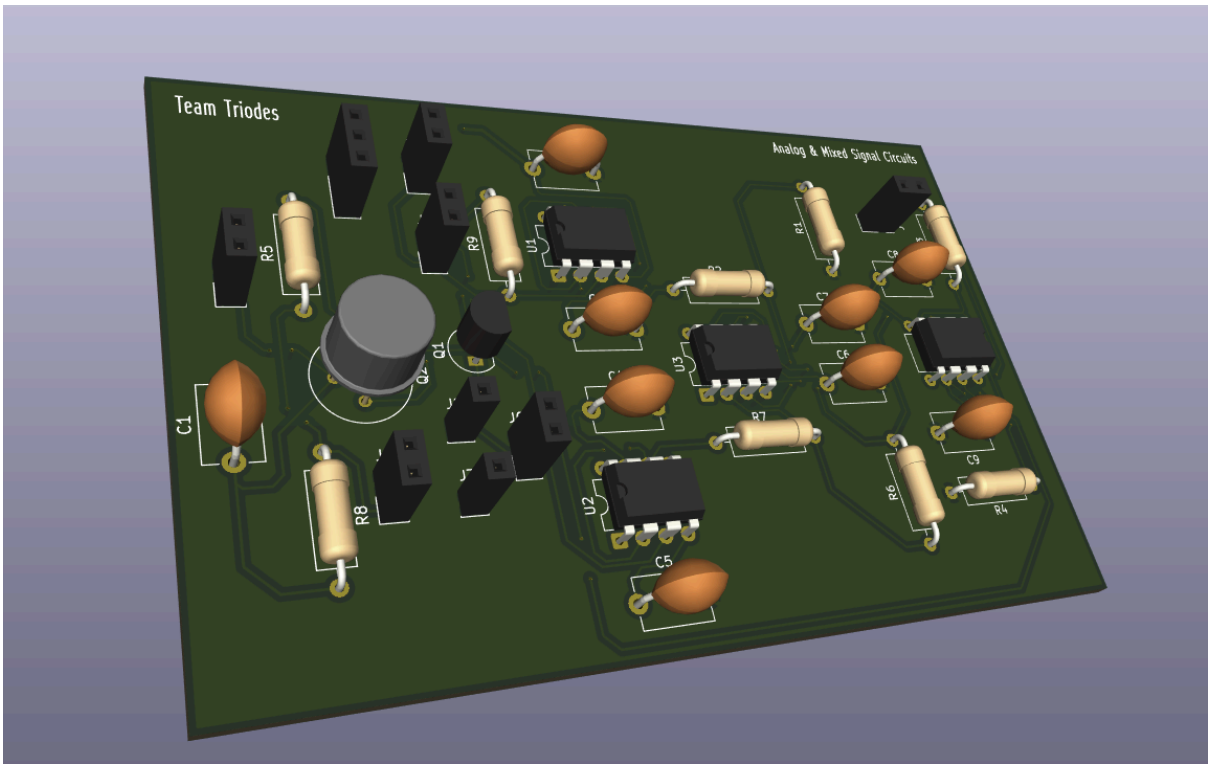
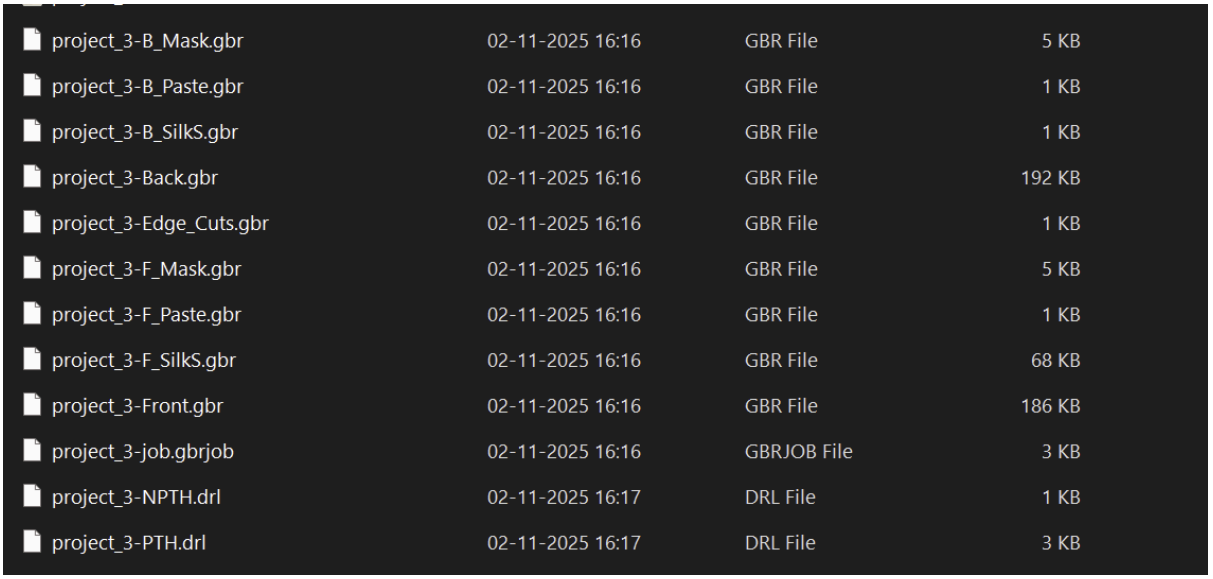


Figure 7 (b) - 3D View

Gerber Files Screenshot



project_3-B_Mask.gbr	02-11-2025 16:16	GBR File	5 KB
project_3-B_Paste.gbr	02-11-2025 16:16	GBR File	1 KB
project_3-B_SilkS.gbr	02-11-2025 16:16	GBR File	1 KB
project_3-Back.gbr	02-11-2025 16:16	GBR File	192 KB
project_3-Edge_Cuts.gbr	02-11-2025 16:16	GBR File	1 KB
project_3-F_Mask.gbr	02-11-2025 16:16	GBR File	5 KB
project_3-F_Paste.gbr	02-11-2025 16:16	GBR File	1 KB
project_3-F_SilkS.gbr	02-11-2025 16:16	GBR File	68 KB
project_3-Front.gbr	02-11-2025 16:16	GBR File	186 KB
project_3-job.gbrjob	02-11-2025 16:16	GBRJOB File	3 KB
project_3-NPTH.drl	02-11-2025 16:17	DRL File	1 KB
project_3-PTH.drl	02-11-2025 16:17	DRL File	3 KB

Fig. 8 - Gerber Files Screenshot

Zip Gerber files uploaded on the lioncircuits.com:

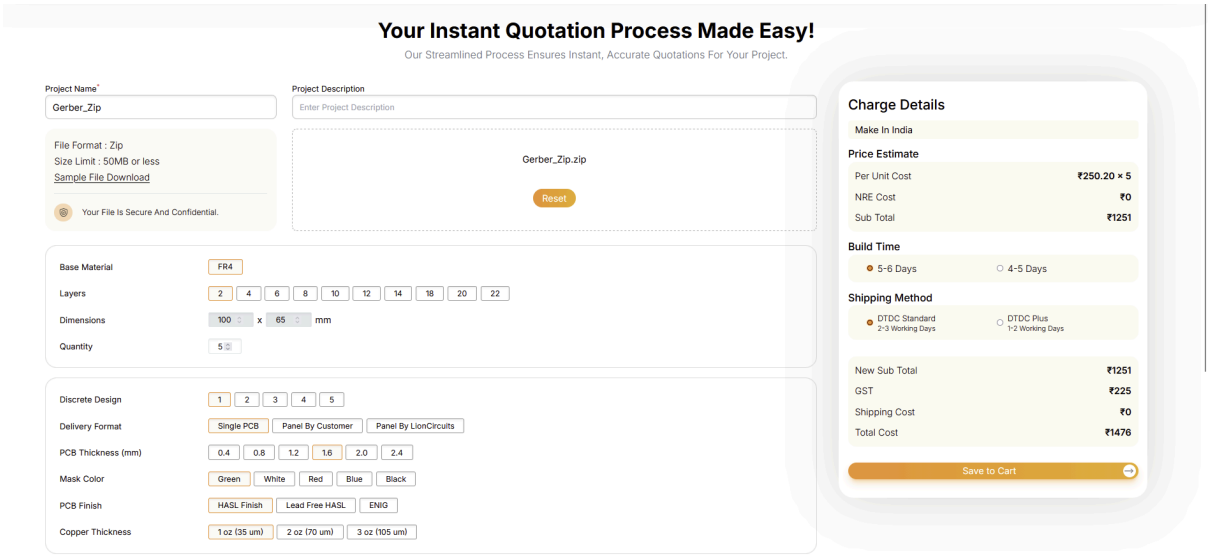


Figure 9 - zip Gerber file uploaded on lioncircuits.com

Price in INR: Rs. 1476 for 5 units.