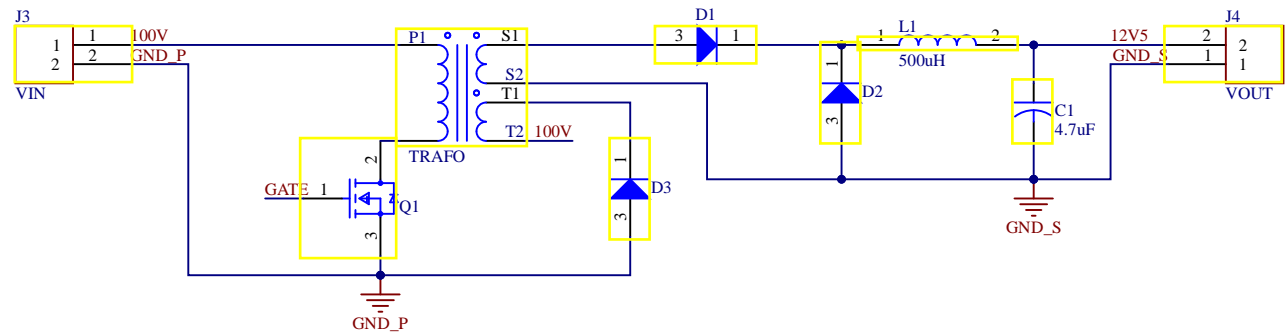


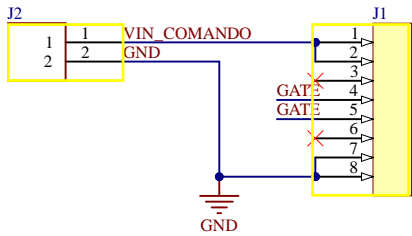
FORWARD CONVERTER



SPECIFICATIONS

Input: 100V  
Output: 12.5V  
  
Switch: IRQ740  
Diodes: MUR840  
Capacitor: 4.7 $\mu$ F @ 250V  
Inductor: 500 $\mu$ H  
Three-winding transformer

CONTROL CIRCUIT



PINOUT OF THE CONTROL CIRCUIT

Pins 1 and 2: VIN (input voltage)  
Pins 4 and 5: GATE (IRQ740)  
Pins 7 and 8: GND (primary side ground reference of the transformer)

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Project: *Forward\_Project.PrjPcb / [No Variations]*

Title: *Forward.SchDoc*

Designed by: *Rebecca Quintino Do Ó and Felipe Pastana*

Date: 05/07/2025

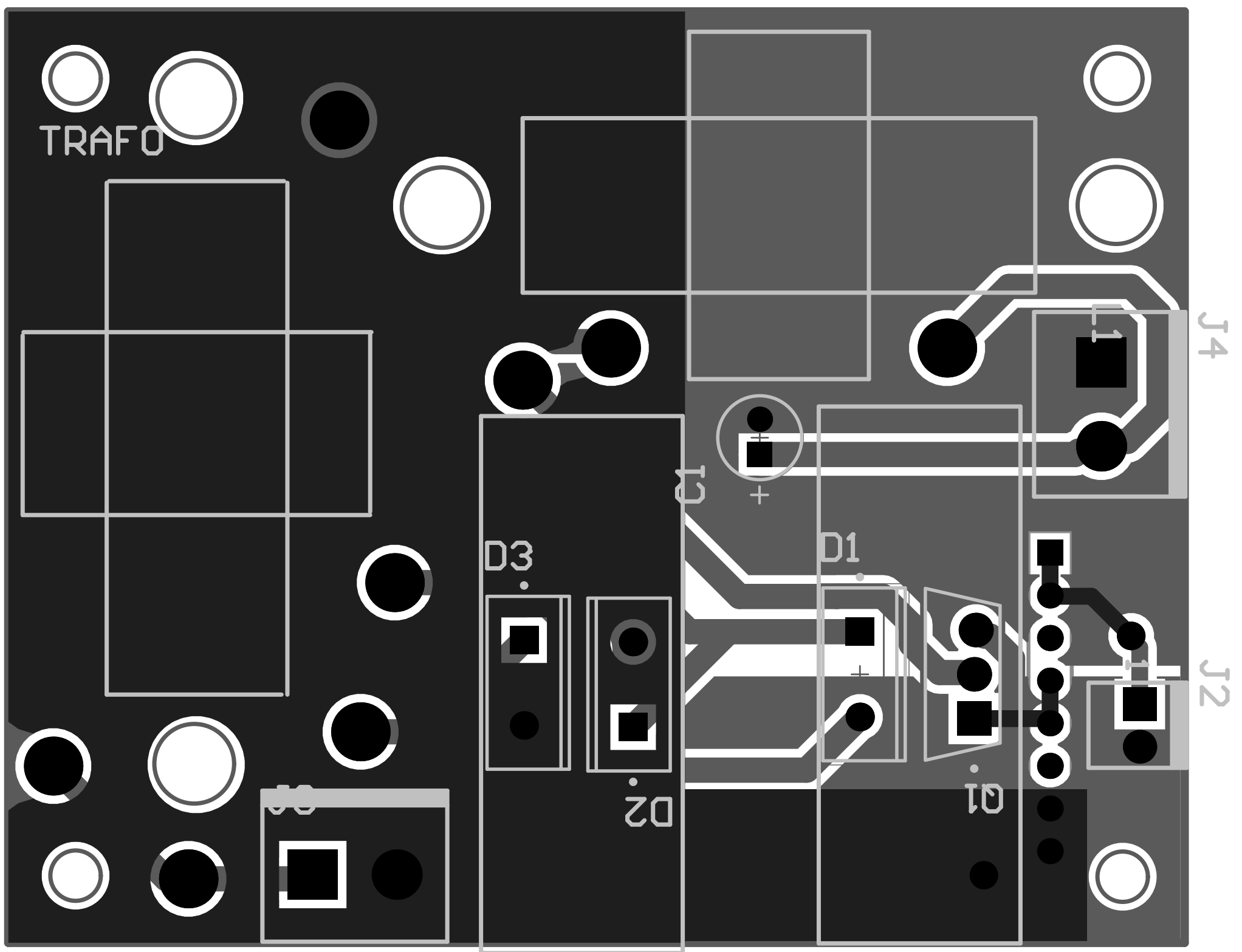
Revision: 0.1

Sheet 1 of 1

Size: A4

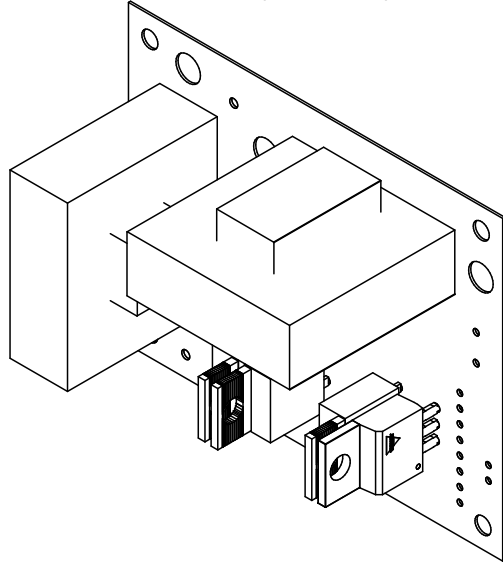


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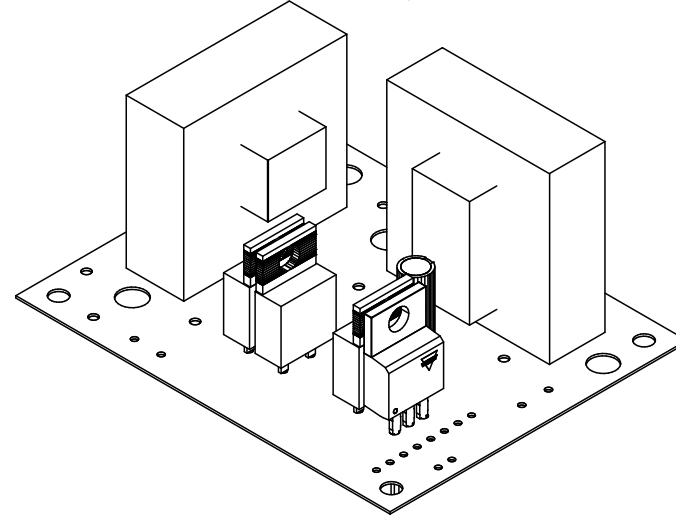


Line #	Designator	Name	Description	Quantity	Manufacturer 1	Manufacturer Part Number 1	Manufacturer Lifecycle 1	Supplier 1	Supplier Part Number 1	Supplier Unit Price 1	Supplier Subtotal 1
	C1	4.7uF	Electrolytic capacitor	1							
	D1, D2, D3	MUR840G	DIODE STANDARD 400V 8A TO2202	3							
	J1	header 8pin	Header 8pin	1							
	J2	Con_Molex_2_pin	Connector KK Male 180° 2 Pins	1							
	J3	VIN	Connector Borne KRE 2 Vias	1							
	J4	VOUT	Connector Borne KRE 2 Vias	1							
	L1	500uH	Indutor manufacture handmade	1							
	Q1	IRF740	MOSFET N-CH 400V 10A TO220AB	1							
	TRAFO	Three-winding transformer	Handmade three-winding transformer	1							

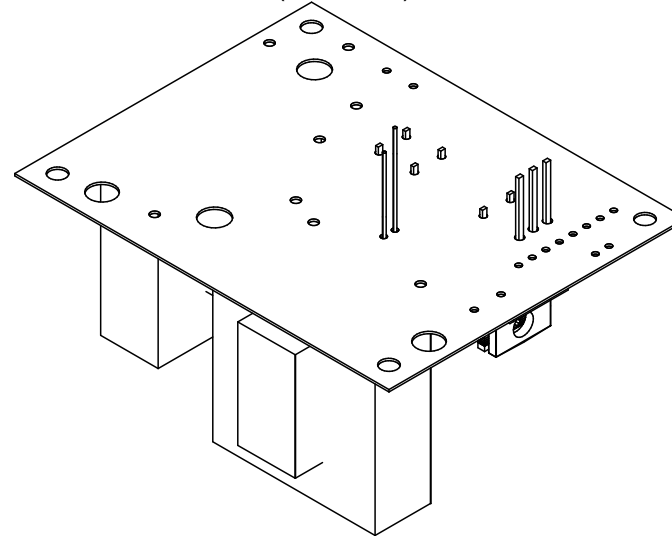
View from Top side (Scale 1:1)



View from Front side (Scale 1:1)



View from Back side (Scale 1:1)



## FORWARD CONVERTER Hardware

- Designed by: Felipe Pastana and Rebecca Quintino Do Ó  
- Reviewers: Telles Brunelli Lazzarin, Ícaro de Almeida Albuquerque and Josué Lopes Putzke

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Github repository: <https://github.com/rebeccaquintino/forward/>

Federal University of Santa Catarina

Project: Forward\_Project.PrjPcb

Title: Project info and board isometric views

Designed by: Rebecca Quintino Do Ó and Felipe Pastana

Date: 05/07/2025

Version: 0.1

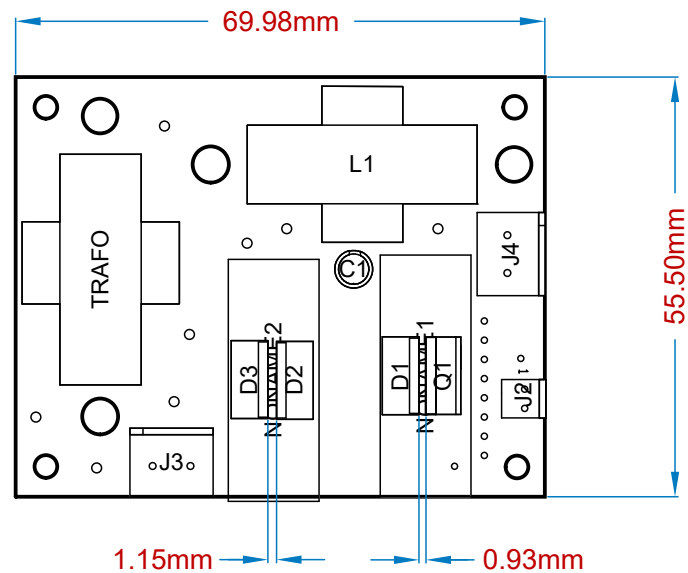
Sheet 1 of 3



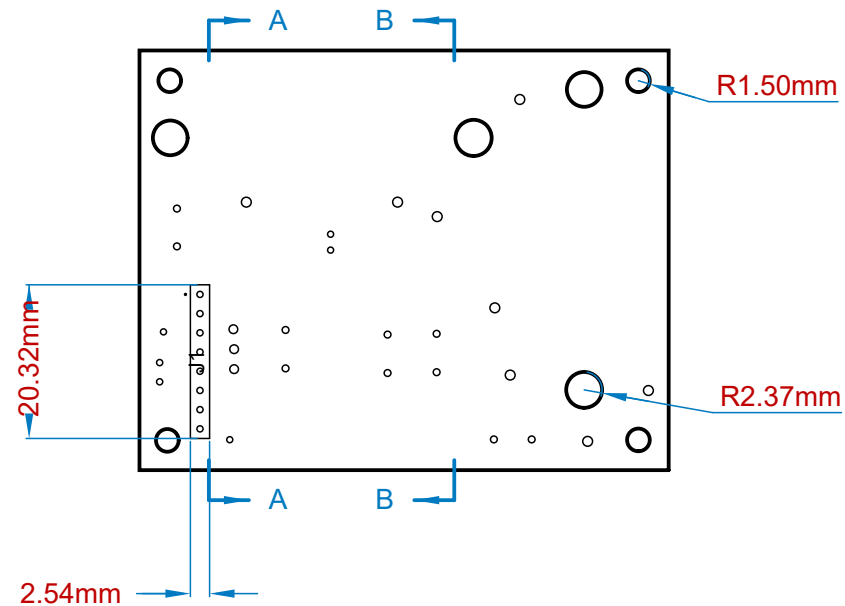
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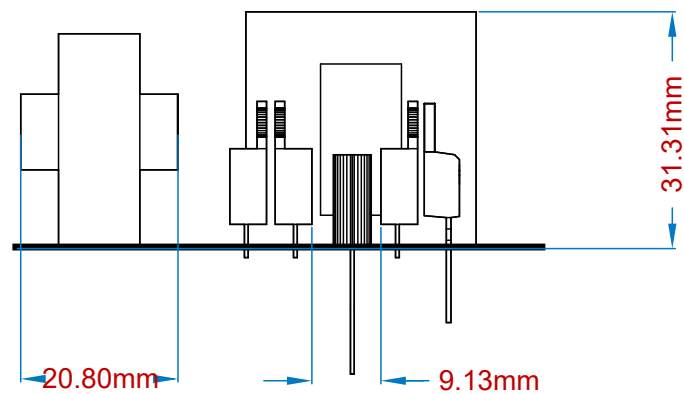
View from Top side (Scale 1:1)



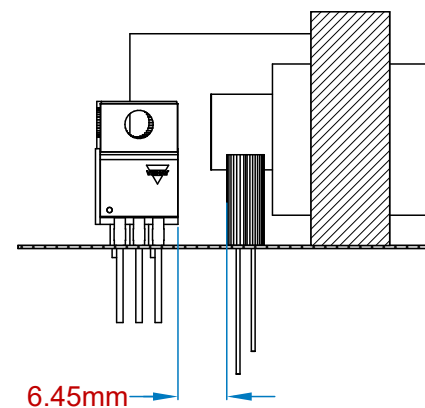
View from Bottom side (Scale 1:1)



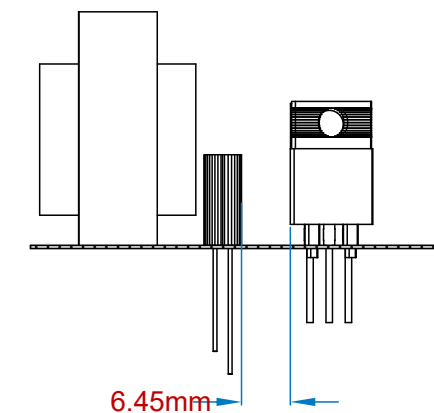
View from Front side (Scale 1:1)



SECTION A-A (Scale 1:1)



SECTION B-B (Scale 1:1)

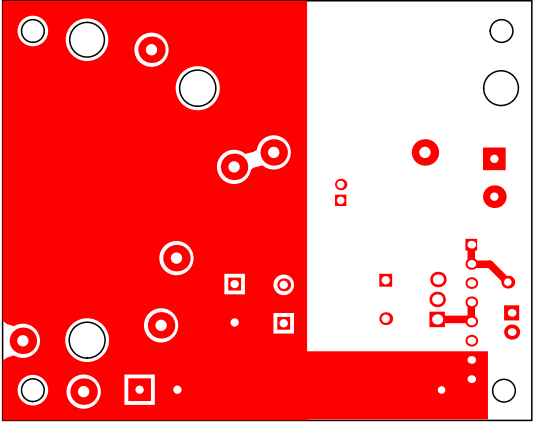


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Project: Forward_Project.PrjPcb		
Title: Project info and board isometric views		
Designed by: Rebecca Quintino Do Ó and Felipe Pastana		
Date: 05/07/2025	Version: 0.1	Sheet 2 of 3

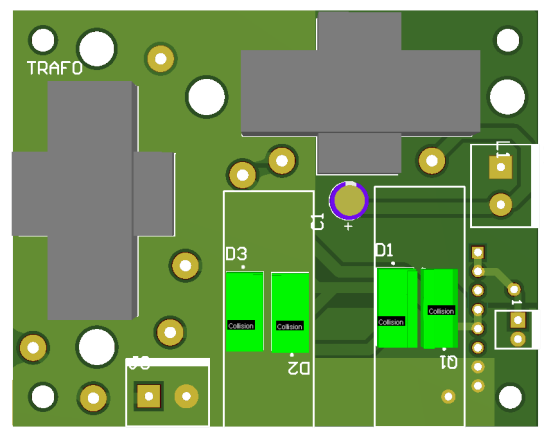


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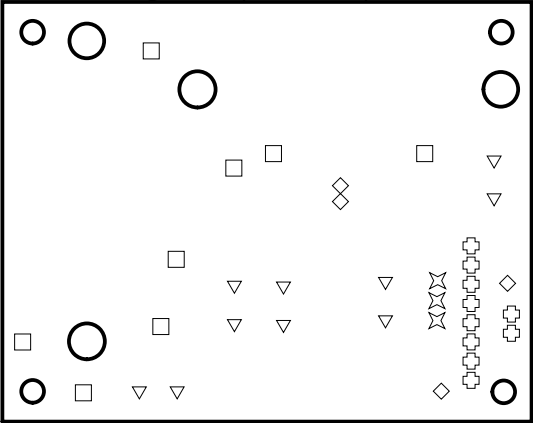
Top Layer (Scale 1:1)



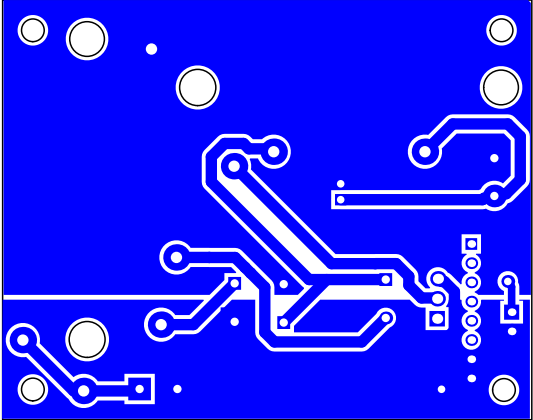
Realistic View from Top side



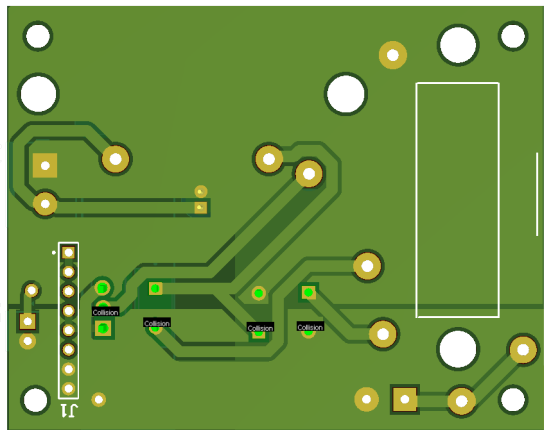
Drill Drawing View (Scale 1:1)



Bottom Layer (Scale 1:1)



Realistic View from Bottom side



Drill Table

Symbol	Count	Hole Size	Plated	Hole Tolerance
◇	4	1.00mm	Plated	
⊕	10	1.02mm	Plated	
▽	10	1.10mm	Plated	
✕	3	1.35mm	Plated	
□	8	1.50mm	Plated	
35 Total				

Federal University of Santa Catarina

Project: Forward\_Project.PrjPcb

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Version: 0.1

Sheet 3 of 3



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Sheet size: A4