

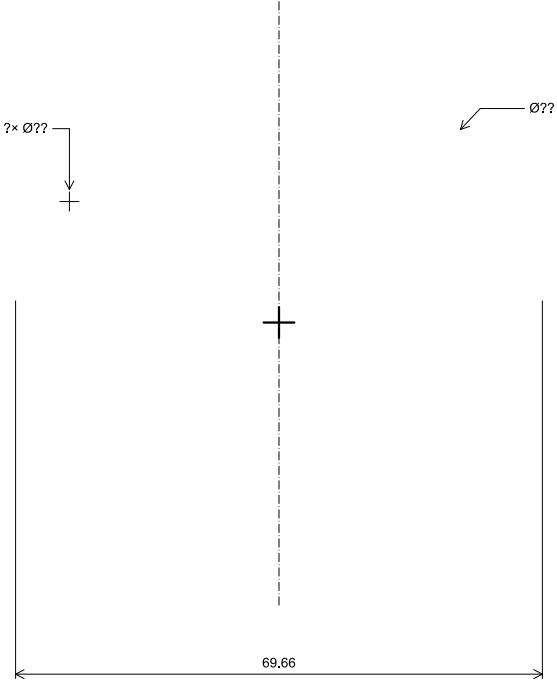
Balanced Solar Charger Fabrication Document

Layer Stack Legend

Material	Layer	Thickness	Dielectric	Type	Gerber
F,Paste				Paste Mask	
F,Silkscreen				Legend	GBR
F,Mask		0,02mm	Solder Resist	Solder Mask	GBR
Copper	L1 (Sig, PWR)	0,07mm (2,00oz)		Signal	GBR
Prepreg		0,1mm	FR4_7628	Dielectric	
Copper	L2 (GND)	0,035mm (1,00oz)		Plane	GBR
Core		1,21mm	FR4	Dielectric	
Copper	L3 (GND)	0,035mm (1,00oz)		Plane	GBR
Prepreg		0,1mm	FR4_7628	Dielectric	
Copper	L4 (Sig, PWR)	0,07mm (2,00oz)		Signal	GBR
B,Mask		0,02mm	Solder Resist	Solder Mask	GBR
B,Silkscreen			Direct Printing	Legend	GBR
B,Paste				Paste Mask	

Total thickness: 1,66mm
Note: external layer thicknesses are specified after plating

Top Fabrication (Scale 1:1)



Impedance Table

Transmission Line	Impedance [ohms]	Tolerance [ohms]	Layer	Trace Width [mm]	Gap [mm]	Ref. Layers
Edge-Coupled Coated Microstrip	100	±10 %	L1	0,2032	0,28	L2

FABRICATION NOTES (UNLESS OTHERWISE SPECIFIED)

- 1) FABRICATE PER IPC-6012A CLASS 2.
- 2) OUTLINE DEFINED IN SEPARATE GERBER FILE WITH "Edge_Cuts.GBR" SUFFIX.

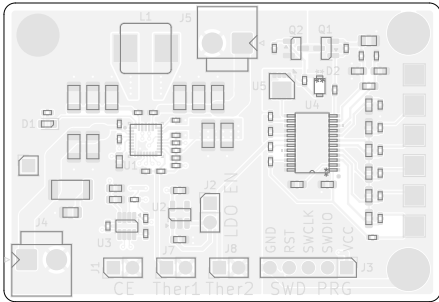
DIMENSIONS OF CIRCUMSIZED RECTANGLE SHOWN ON THIS DRAWING FOR REFERENCE ONLY.
- 3) SEE SEPARATE DRILL FILES WITH ".DRL" SUFFIX FOR HOLE LOCATIONS.

SELECTED HOLE LOCATIONS SHOWN ON THIS DRAWING FOR REFERENCE ONLY.
- 4) SURFACE FINISH: IMMERSION GOLD
- 5) SOLDERMASK ON BOTH SIDES OF THE BOARD SHALL BE LPI, COLOR BLACK.
- 6) SILK SCREEN LEGEND TO BE APPLIED PER LAYER STACKUP USING YELLOW NON-CONDUCTIVE EPOXY INK.
- 7) ALL VIAS ARE TENTED ON BOTH SIDES UNLESS SOLDERMASK OPENED IN GERBER.
- 8) VENDOR SHOULD FOLLOW ROHS COMPLIANT PROCESS AND Pb FREE FOR MANUFACTURING
- 9) PCB MATERIAL REQUIREMENTS:

A. FLAMMABILITY RATING MUST MEET OR EXCEED UL94V-0 REQUIREMENTS.
B. Tg 170 C OR EQUIVALENT.
C. EQUIVALENT MATERIAL SHALL BE RoHS COMPLIANT, HALOGEN FREE AND APPROVED BY ELECTRONIC-HANDYMAN.
- 10) DESIGN GEOMETRY MINIMUM FEATURE SIZES:

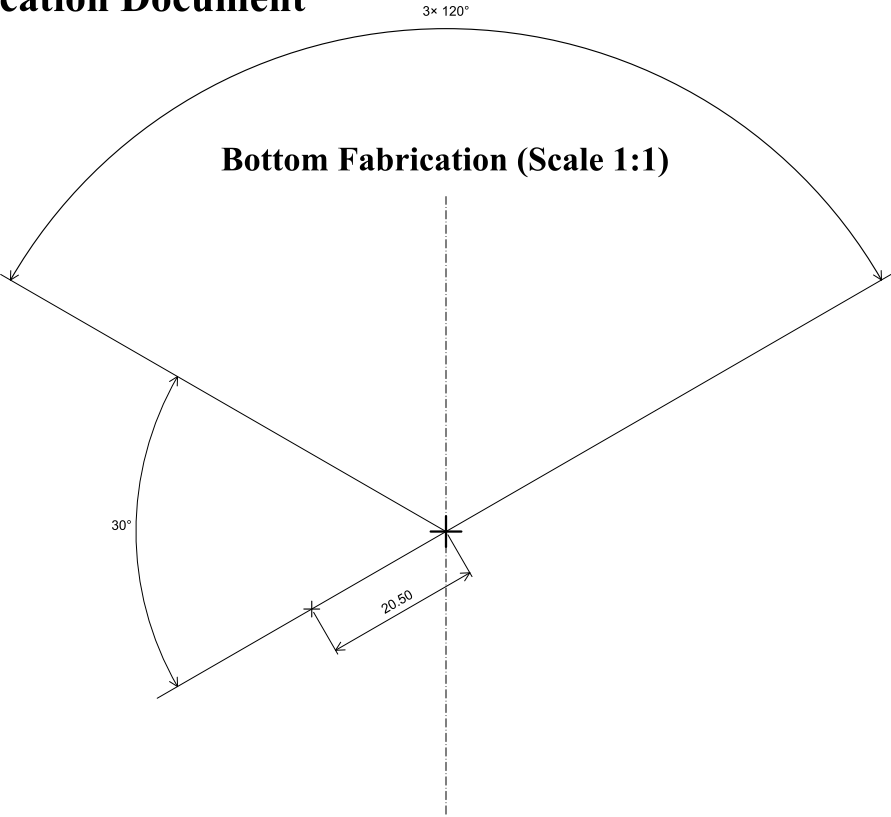
BOARD SIZE57,750 × 39,500 mm
BOARD THICKNESS1,660 mm
TRACE WIDTH0,160 mm
TRACE TO TRACE0,150 mm
MIN. HOLE (PTH)0,300 mm
MIN. HOLE (NPTH)N/A mm
ANNULAR RING0,125 mm
COPPER TO HOLE0,254 mm
COPPER TO EDGE1,000 mm
HOLE TO HOLE0,254 mm
- 11) REFER TO IMPEDANCE TABLE FOR IMPEDANCE CONTROL REQUIREMENTS.
- 12) CONFIRM SPACE WIDTHS AND SPACINGS.

All dimensions are in millimeters unless otherwise specified.



	Comments:	Company: Electronic-Handyman	Variant: CHECKED	Git Hash: cc66a28
	Sheet Title: Top Fabrication (Scale 1:1)	Board Name: Balanced Solar Charger	Project Name: Balanced Solar Charger	
	Sheet Path:	File Name: solar_smart_station.kicad_pcb	Designer: Nhan Duy Truong	Date: 2024-04-13
		Reviewer:	Size: A4	Revision: + (Unreleased)
			Sheet: 1 of 9	

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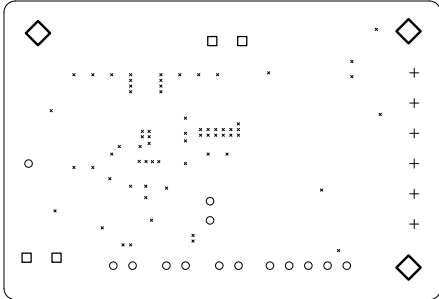
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	Sheet Title: Bottom Fabrication (Scale 1:1)	Board Name: Balanced Solar Charger		
	Sheet Path:	File Name: solar_smart_station.kicad_pcb	Designer: Nhan Duy Truong	Project Name: Balanced Solar Charger
			Date: 2024-04-13	Revision: + (Unreleased)
			Reviewer:	Size: A4
				Sheet: 2 of 9

Balanced Solar Charger Fabrication Document

Drill Table

Symbol	Count	Hole Size	Plated	Hole Shape	Drill Layer Pair	Hole Type
×	67	0,30mm (11,81mils)	PTH	Round	L1 (Sig, PWR) - L4 (Sig, PWR)	Via
○	14	1,00mm (39,37mils)	PTH	Round	L1 (Sig, PWR) - L4 (Sig, PWR)	Pad
+	6	1,20mm (47,24mils)	PTH	Round	L1 (Sig, PWR) - L4 (Sig, PWR)	Pad
□	4	1,70mm (66,93mils)	PTH	Round	L1 (Sig, PWR) - L4 (Sig, PWR)	Pad
◇	3	3,20mm (125,98mils)	PTH	Round	L1 (Sig, PWR) - L4 (Sig, PWR)	Pad
Total 94						

Drill Drawing L1 - L4 (Scale 1:1)



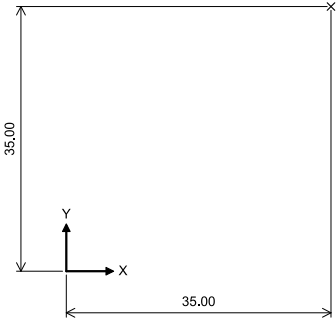
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	Sheet Title: Drill Drawing (L1 - L4)	Board Name: Balanced Solar Charger	Project Name: Balanced Solar Charger	
	Sheet Path:	File Name: solar_smart_station.kicad_pcb	Designer: Nhan Duy Truong	Date: 2024-04-13
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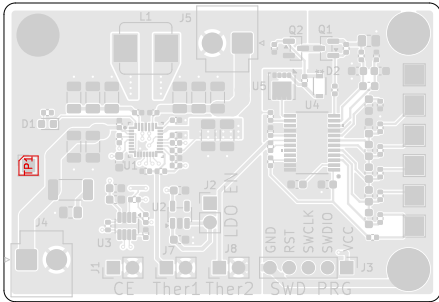
Top Test Points (Scale 1:1)

Ref.	Net	X [mm]	Y [mm]
TP1	QON	-31.00	-61.50

Ref.	Net	X [mm]	Y [mm]
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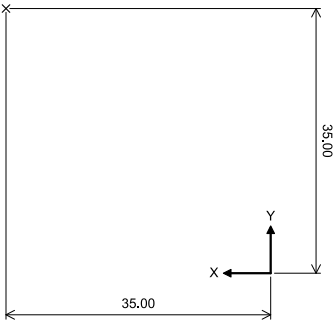


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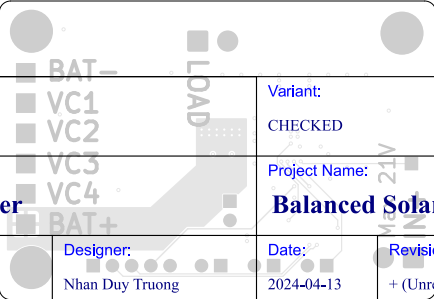
Bottom Test Points (Scale 1:1)

Ref.	Net	X [mm]	Y [mm]
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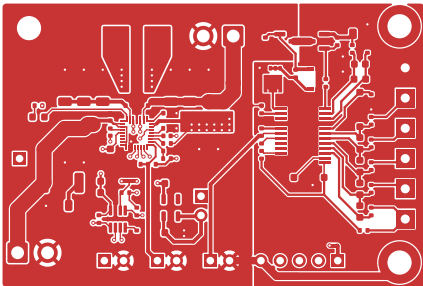
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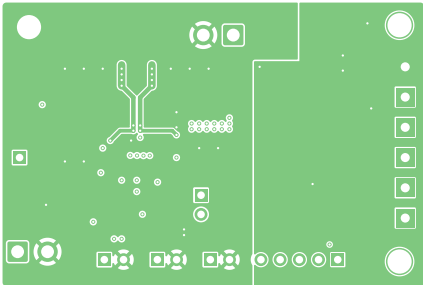
L1 (Sig, PWR) (Scale 1:1)



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	Sheet Title: L1 (Sig, PWR) (Scale 1:1)	File Name: solar_smart_station.kicad_pcb	Designer: Nhan Duy Truong	Date: 2024-04-13	Revision: + (Unreleased)
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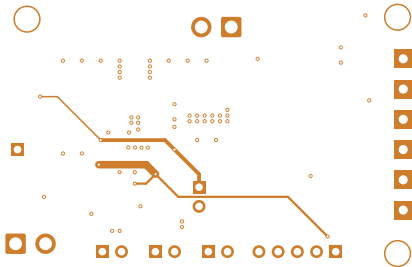
L2 (GND) (Scale 1:1)



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		Board Name: Balanced Solar Charger		Project Name: Balanced Solar Charger	
	Sheet Title: L2 (GND) (Scale 1:1)	File Name: solar_smart_station.kicad_pcb	Designer: Nhan Duy Truong	Date: 2024-04-13	Revision: + (Unreleased)
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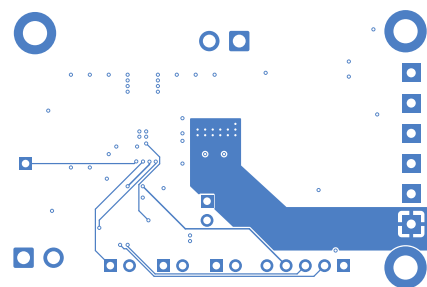
L3 (GND) (Scale 1:1)



	Comments:	Company: Electronic-Handyman		Variant: CHECKED	Git Hash: cc66a28
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L4 (Sig, PWR) (Scale 1:1)



	Comments:	Company: Electronic-Handyman		Variant: CHECKED	Git Hash: cc66a28
		Board Name: Balanced Solar Charger		Project Name: Balanced Solar Charger	
	Sheet Title: L4 (Sig, PWR) (Scale 1:1)	File Name: solar_smart_station.kicad_pcb	Designer: Nhan Duy Truong	Date: 2024-04-13	Revision: + (Unreleased)
	Sheet Path:		Reviewer:	Size: A4	Sheet: 9 of 9