

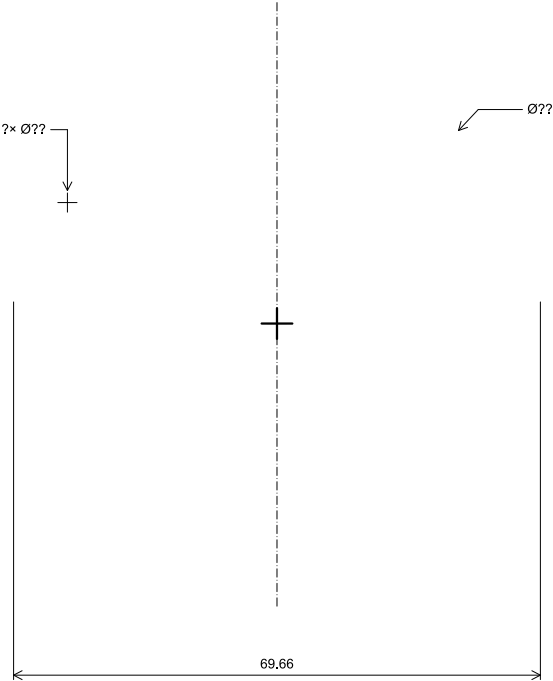
Balanced Solar Charger Fabrication Document

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				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

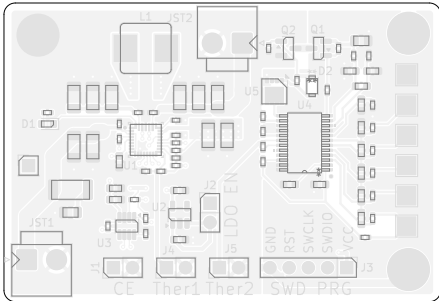
FABRICATION NOTES (UNLESS OTHERWISE SPECIFIED)

- 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:

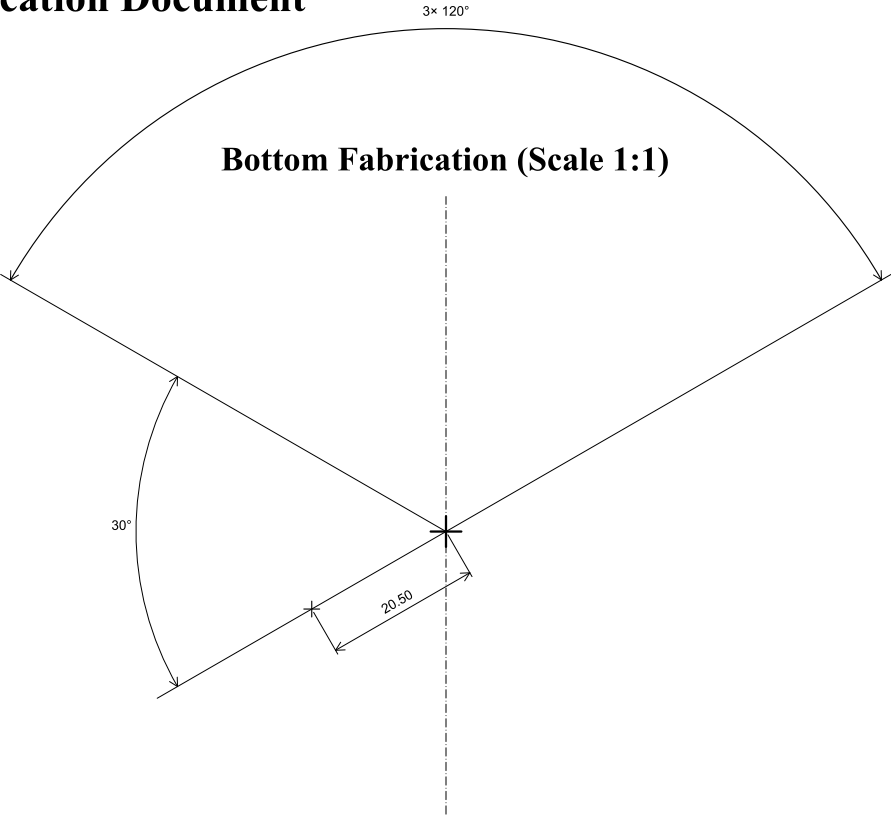
BOARD SIZE57,750 × 39,500 mm  
BOARD THICKNESS1,660 mm  
TRACE WIDTH0,160 mm  
TRACE TO TRACE0,150 mm  
MIN. HOLE (PTH)0,300 mm  
MIN. HOLE (NPTH)N/A mm  
ANNULAR RING0,125 mm  
COPPER TO HOLE0,254 mm  
COPPER TO EDGE1,000 mm  
HOLE TO HOLE0,254 mm
- 11) REFER TO IMPEDANCE TABLE FOR IMPEDANCE CONTROL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

All dimensions are in millimeters unless otherwise specified.



	Comments:	Company: Electronic-Handyman		Variant: CHECKED	Git Hash: f545d96
	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	Revision: + (Unreleased)
			Reviewer:	Size: A4	Sheet: 1 of 9

Balanced Solar Charger Fabrication Document



All dimensions are in millimeters unless otherwise specified.

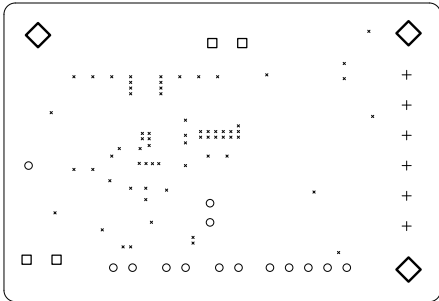
	Comments:	Company:	VC1		Variant:	Git Hash:
		Electronic-Handyman	VC2		CHECKED	f545d96
	Board Name:	Balanced Solar Charger	VC3	Project Name:	Balanced Solar Charger	
			VC4			
Sheet Title:	File Name:	Designer:	Date:	Revision:		
Bottom Fabrication (Scale 1:1)	solar_smart_station.kicad_pcb	Nhan Duy Truong	2024-04-13	+ (Unreleased)		
Sheet Path:		Reviewer:	Size:	Sheet:		
			A4	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)



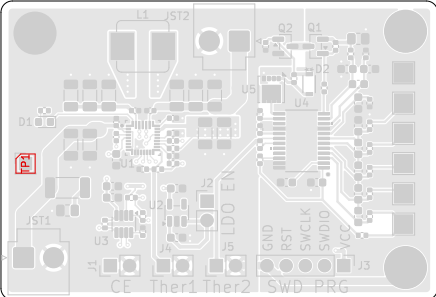
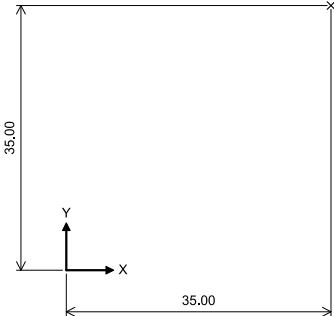
	Comments:	Company: Electronic-Handyman		Variant: CHECKED	Git Hash: f545d96
	Sheet Title: Drill Drawing (L1 - L4)	Board Name: Balanced Solar Charger		Project Name: Balanced Solar Charger	
	Sheet Path:	File Name: solar_smart_station.kicad_pcb	Designer: Nhan Duy Truong	Date: 2024-04-13	Revision: + (Unreleased)
			Reviewer:	Size: A4	Sheet: 3 of 9

# Balanced Solar Charger Fabrication Document

### Top Test Points (Scale 1:1)

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

Ref.	Net	X [mm]	Y [mm]
------	-----	--------	--------



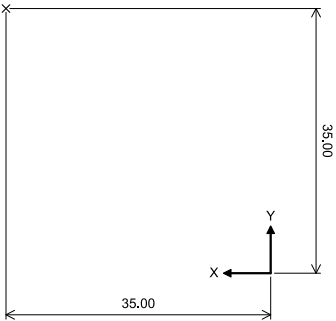
All dimensions are in millimeters unless otherwise specified.

	Comments:	Company: <b>Electronic-Handyman</b>		Variant: CHECKED	Git Hash: f545d96
		Board Name: <b>Balanced Solar Charger</b>		Project Name: <b>Balanced Solar Charger</b>	
	Sheet Title: Top Test Points (Scale 1:1)	File Name: solar_smart_station.kicad_pcb	Designer: Nhan Duy Truong	Date: 2024-04-13	Revision: + (Unreleased)
Sheet Path:			Reviewer:	Size: <b>A4</b>	Sheet: <b>4</b> of <b>9</b>

# Balanced Solar Charger Fabrication Document

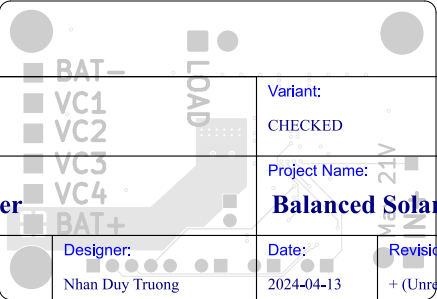
Bottom Test Points (Scale 1:1)

Ref.	Net	X [mm]	Y [mm]
------	-----	--------	--------



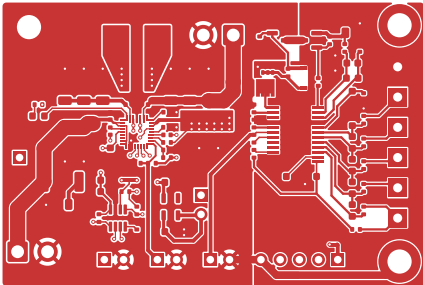
All dimensions are in millimeters unless otherwise specified.

	Comments:	Company: Electronic-Handyman	Variant: CHECKED	Git Hash: f545d96
		Board Name: Balanced Solar Charger		
	Sheet Title: Bottom Test Points (Scale 1:1)	File Name: solar_smart_station.kicad_pcb	Designer: Nhan Duy Truong	Date: 2024-04-13
	Sheet Path:	Reviewer:	Size: A4	Revision: + (Unreleased)
			5	of 9



# Balanced Solar Charger Fabrication Document

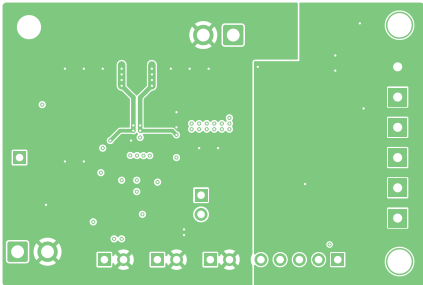
L1 (Sig, PWR) (Scale 1:1)



	Comments:	Company: Electronic-Handyman		Variant: CHECKED	Git Hash: f545d96
		Board Name: Balanced Solar Charger		Project Name: Balanced Solar Charger	
	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)
	Sheet Path:		Reviewer:	Size: A4	Sheet: 6 of 9

# Balanced Solar Charger Fabrication Document

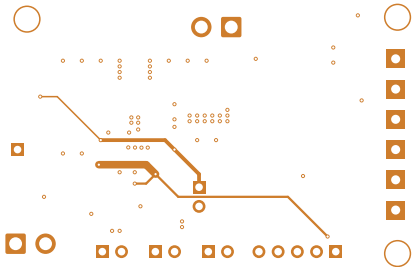
## L2 (GND) (Scale 1:1)



	Comments:	Company: Electronic-Handyman		Variant: CHECKED	Git Hash: f545d96
		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)
	Sheet Path:		Reviewer:	Size: A4	Sheet: 7 of 9

# Balanced Solar Charger Fabrication Document

## L3 (GND) (Scale 1:1)

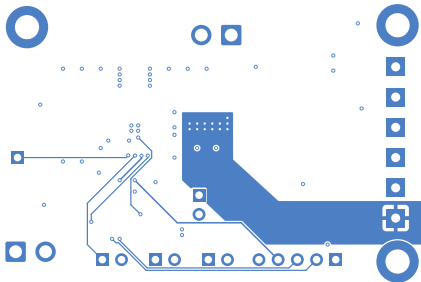


	Comments:	Company: Electronic-Handyman		Variant: CHECKED	Git Hash: f545d96
		Board Name: Balanced Solar Charger		Project Name: Balanced Solar Charger	
	Sheet Title: L3 (GND) (Scale 1:1)	File Name: solar_smart_station.kicad_pcb	Designer: Nhan Duy Truong	Date: 2024-04-13	Revision: + (Unreleased)
	Sheet Path:		Reviewer:	Size: A4	Sheet: 8 of 9



Balanced Solar Charger Fabrication Document

L4 (Sig, PWR) (Scale 1:1)



	Comments:	Company: Electronic-Handyman		Variant: CHECKED	Git Hash: f545d96
		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