

1

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A

A

B

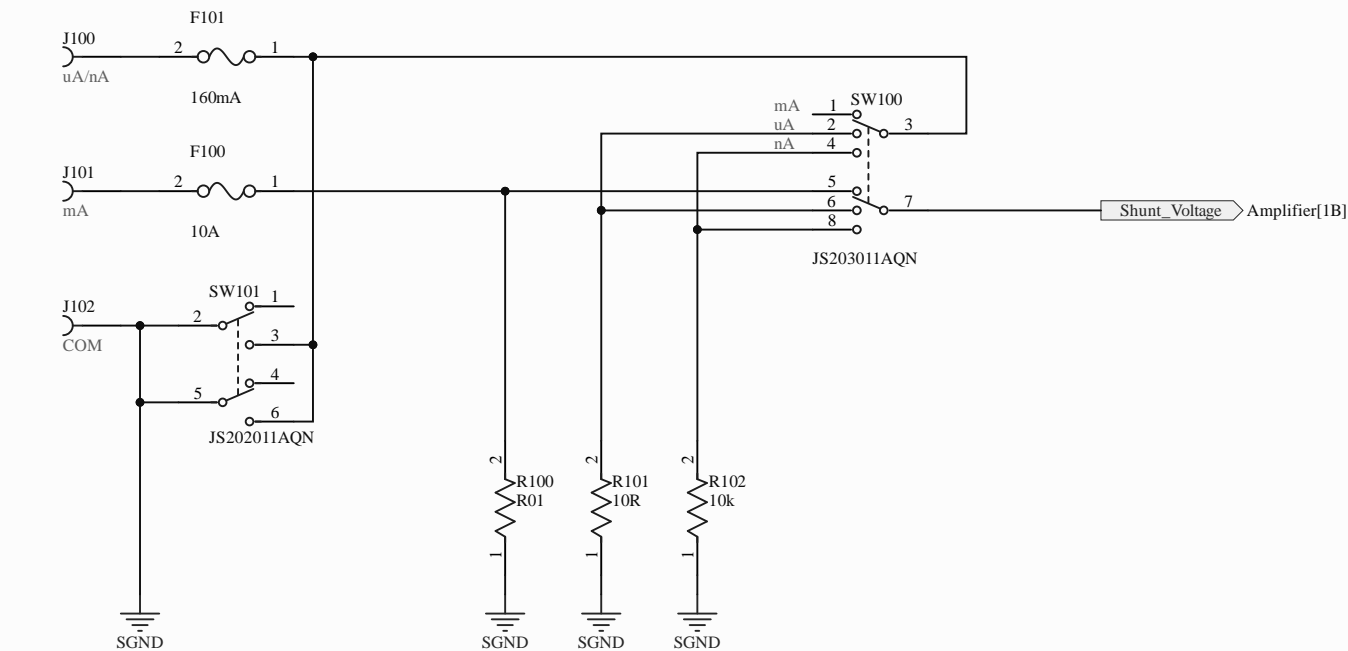
B

C

C

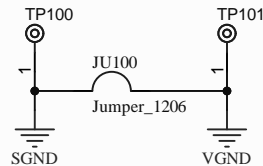
D

D



R100, F100 Close to J101 and J100

Connection from SW100 to R100, R101 and R102 close to resistor leads



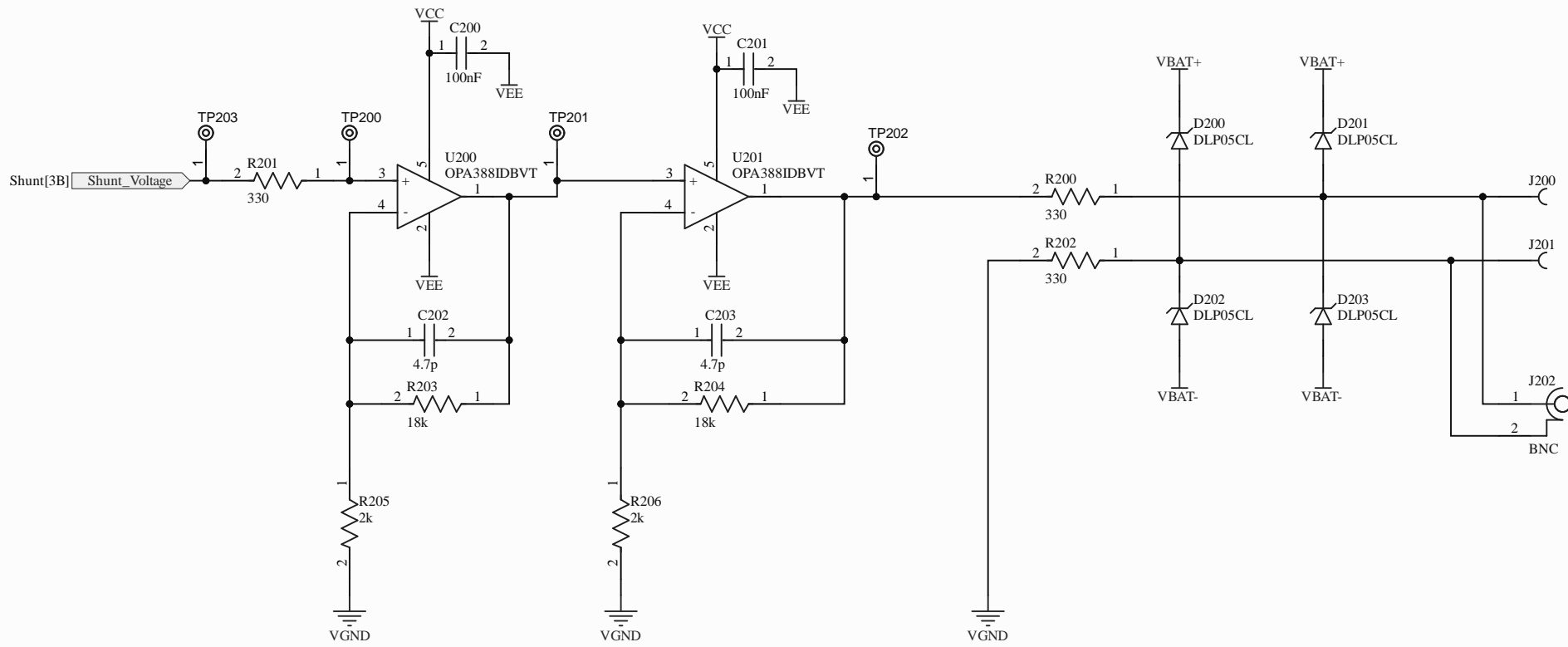
Title		Validated	
lvCurrent - Shunt resistors			
Size	Number	Revision	
A4	ESH-01-01-23	C	
Date:	5.14.2023	Sheet of	LVCURRENT.PRJPCB
File:	C:\Users\...\Shunt.SchDoc	Drawn By:	Pawel Koszalka

1

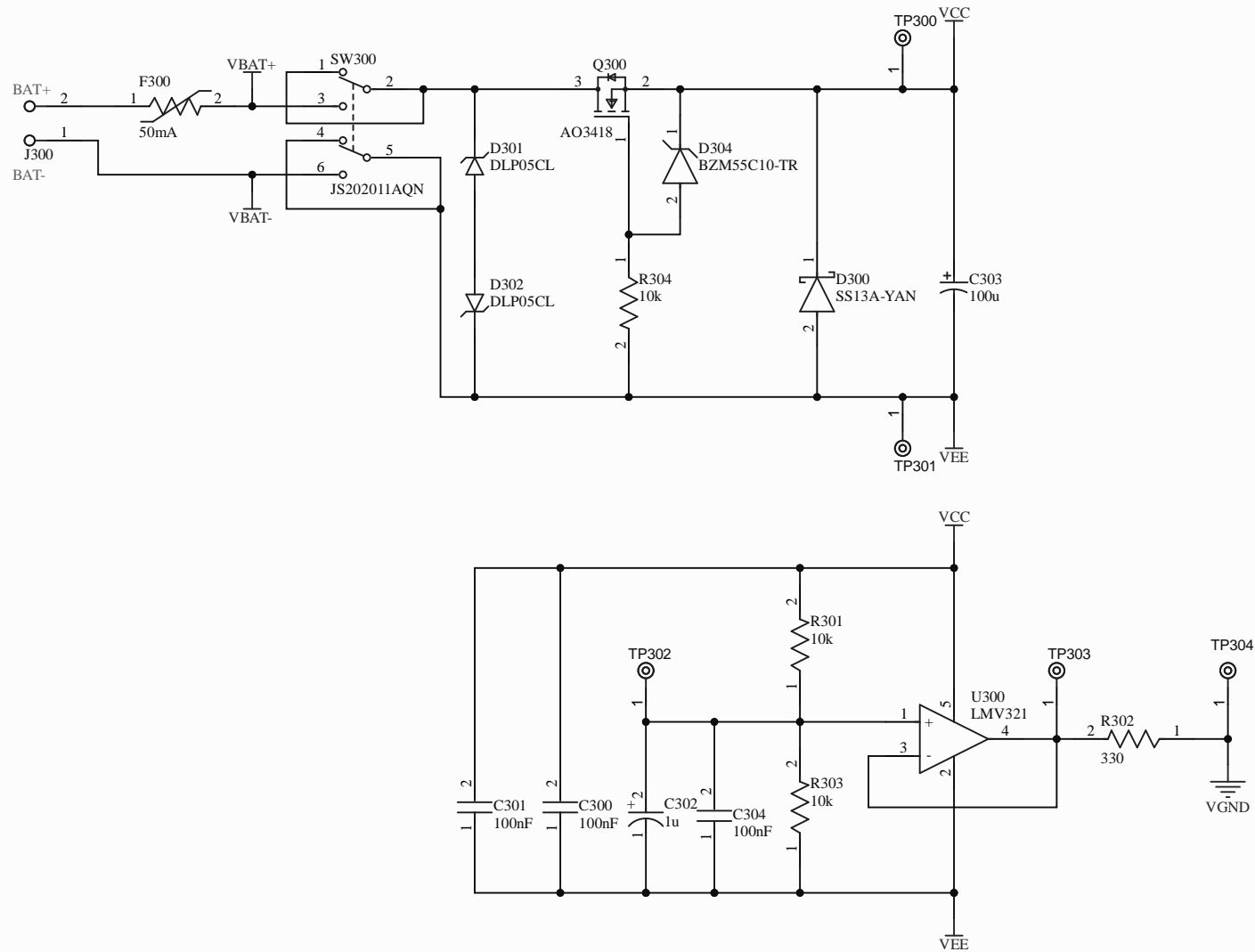
2

3

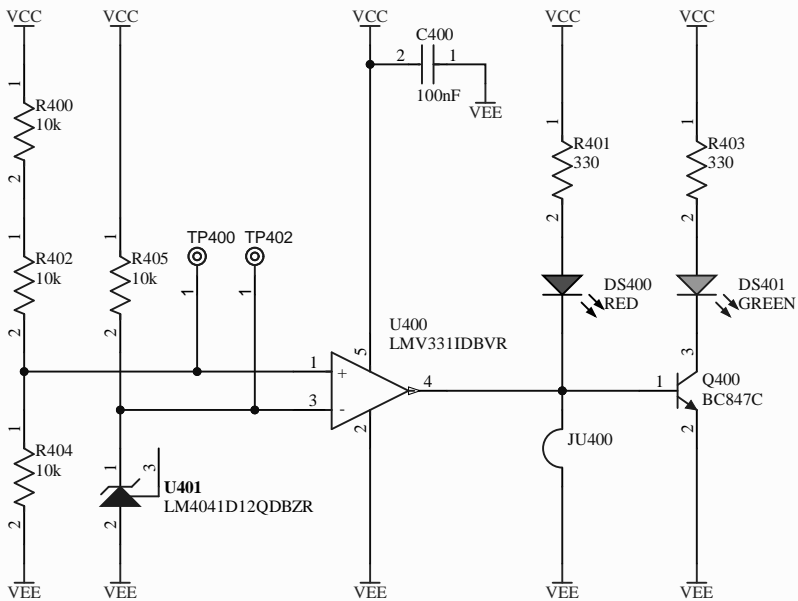
4



Title		lvSensor - Amplifier		Validated
Size	Number	Revision		
A4	ESH-01-02-23	C		
Date:	5.14.2023	Sheet of	LVCurrent.PrjPcb	
File:	C:\Users\...\Amplifier.SchDoc	Drawn By:	Pawel Koszalka	



Title			Validated
lvSensor - Power Supply			
Size	Number	Revision	
A4	ESH-01-03-23	C	
Date:	5.14.2023	Sheet of	LVCurent.PrjPcb
File:	C:\Users\...\PowerSupply.SchDoc	Drawn By:	Pawel Koszalka



Title			
lvSensor - SelfCheck Circuit			
Size	Number	Revision	
A4	ESH-01-05-23	C	
Date:	5.14.2023	Sheet of	LVCURRENT.PrjPcb
File:	C:\Users\...\SelfTestCircuit.SchDoc	Drawn By:	*

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D

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C

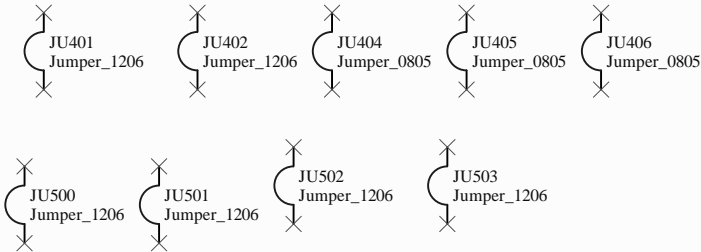
B

B

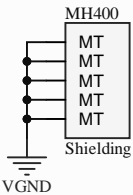
A

A

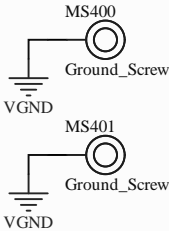
Jumpers used for routing



Shields



Mounting Holes



Title		lvCurrent - Mechanical		Validated
Size	Number	Revision		
A4	ESH-01-04-23	C		
Date:	5.14.2023	Sheet of	LVCurrent.PrjPcb	
File:	C:\Users\...\Mechanical.SchDoc	Drawn By:	Pawel Koszalka	

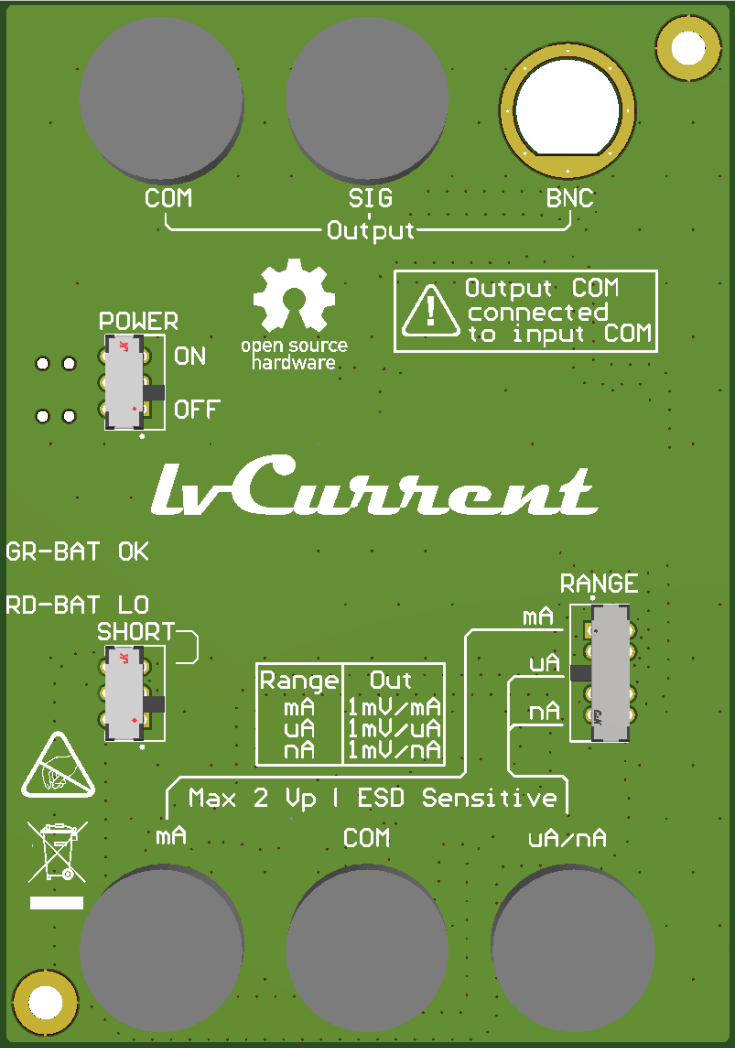
4

3

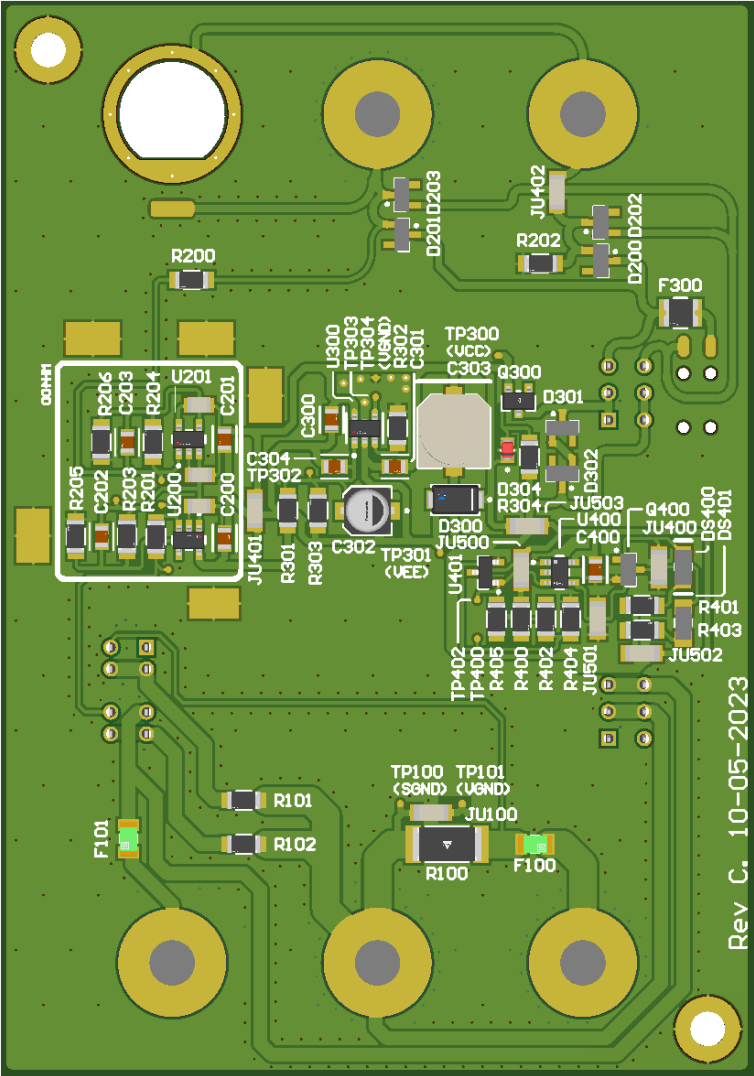
2

1

Realistic View

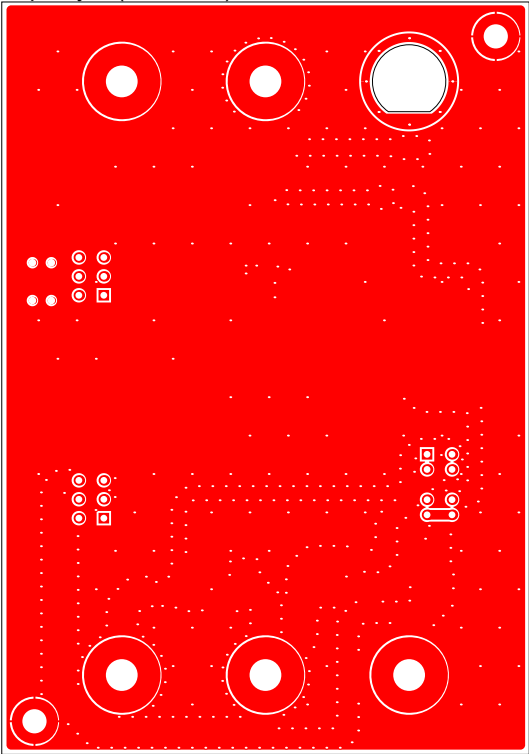


Realistic View

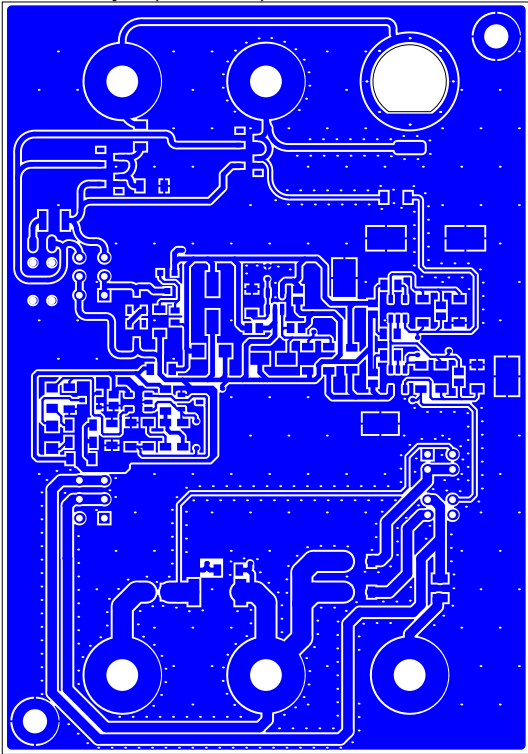


IvCurrent - Realistic board view

Top Layer (Scale 1:1)

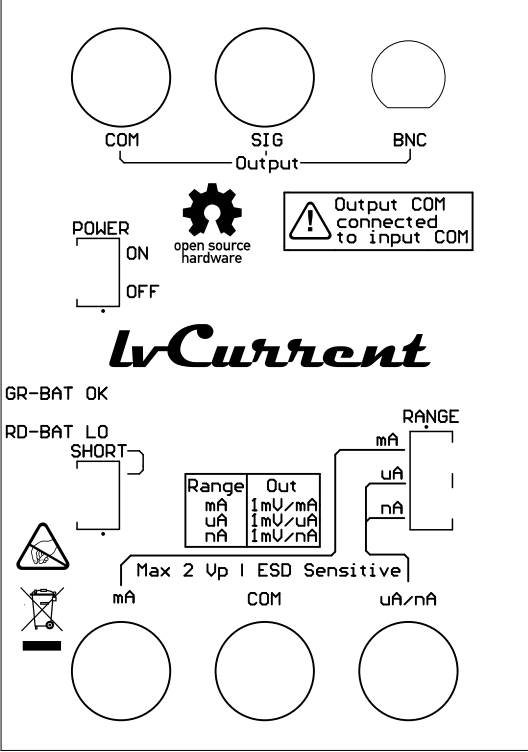


Bottom Layer (Scale 1:1)

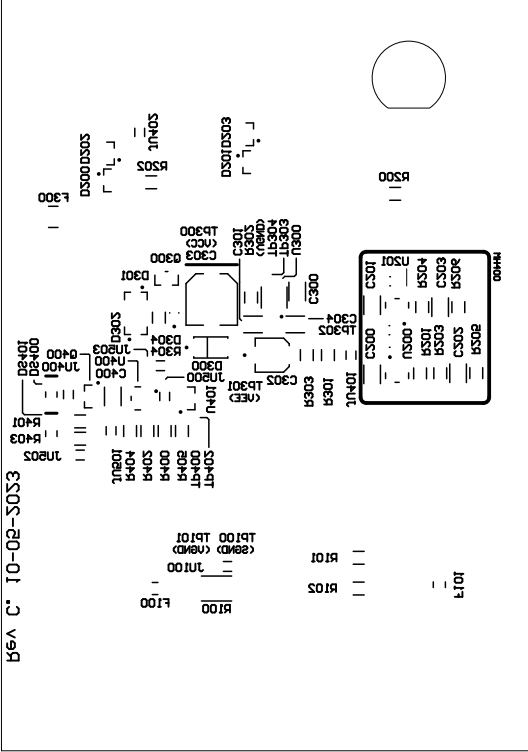


lvCurrent - Top, Bottom Layer		
A4	13-05-2023	EFB-01-02-23

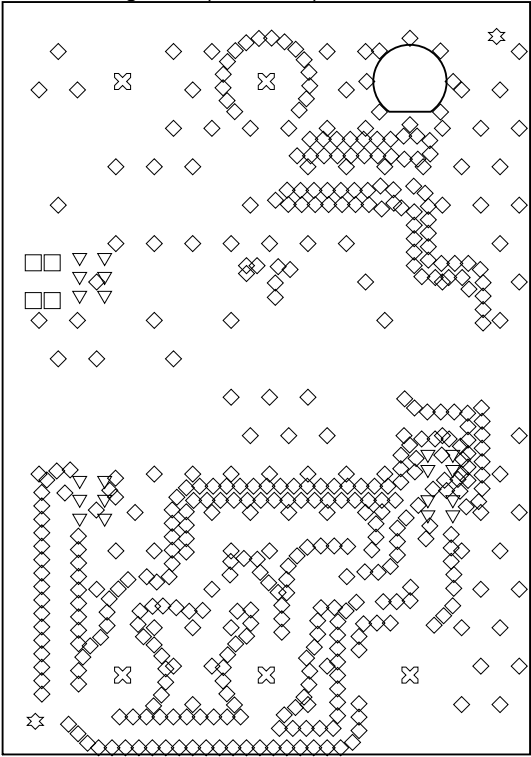
Top Overlay (Scale 1:1)



Bottom Overlay (Scale 1:1)



Drill Drawing View (Scale 1:1)



Drill Table

Symbol	Count	Hole Size	Plated	Hole Tolerance
◇	465	0mm	Plated	
▽	20	1mm	Plated	
□	4	1mm	Plated	
☆	2	3mm	Non-Plated	
⊗	5	4mm	Plated	
496 Total				

A

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C

D

E

F

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2

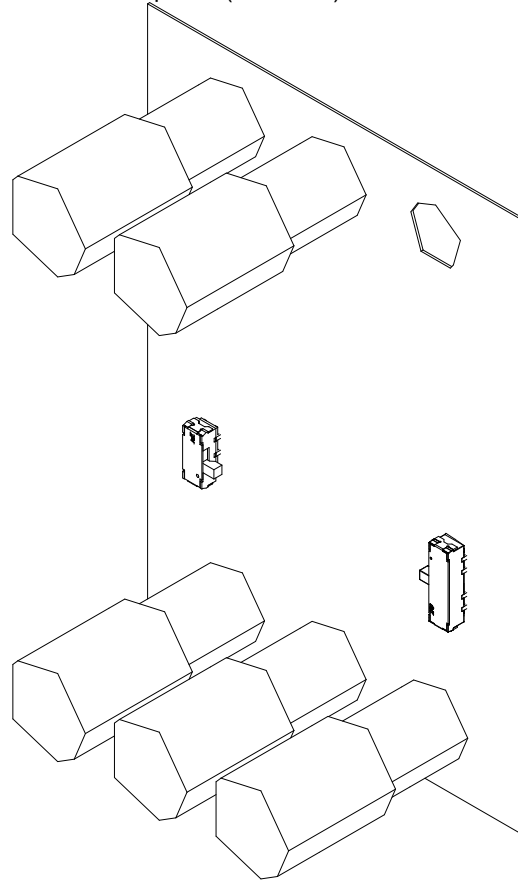
3

3

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4

View from Top side (Scale 1:1)



IvCurrent - Isometric view

A4

13-05-2023

EFB-01-06-23

A

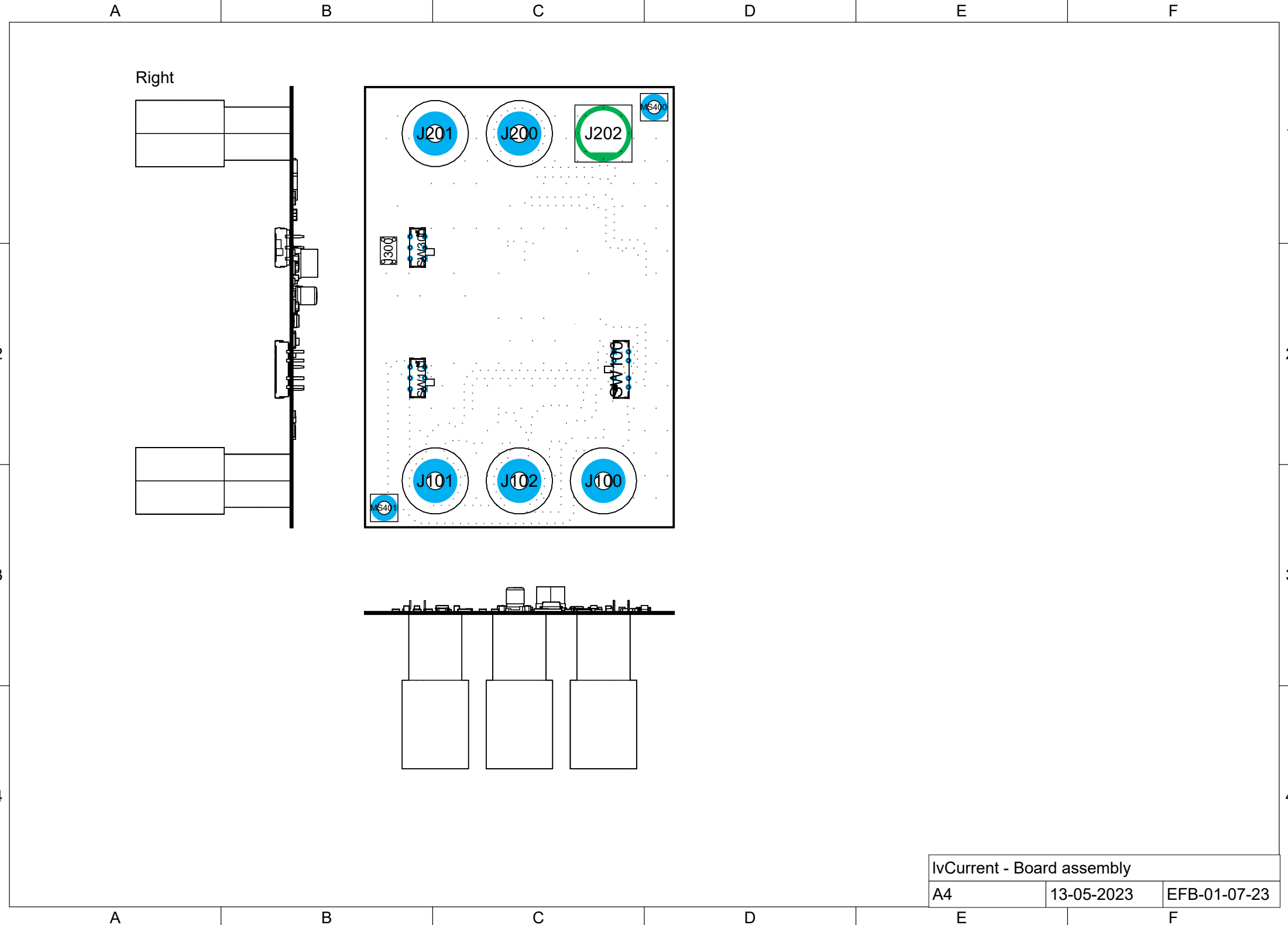
B

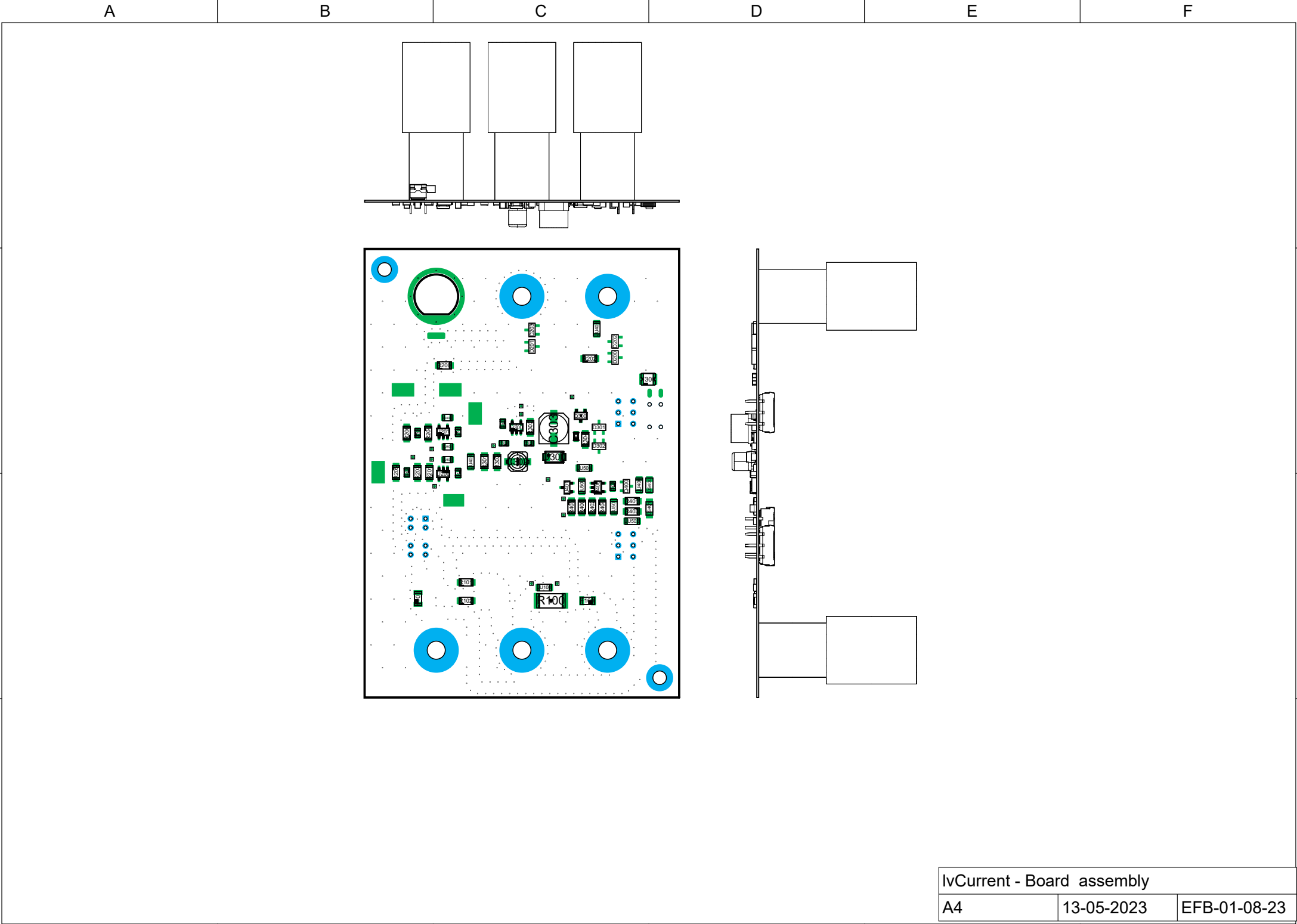
C

D

E

F





lvCurrent - Board assembly		
A4	13-05-2023	EFB-01-08-23

Comment	Description	Designator	Footprint	LibRef	Quantity
100nF	CC0805KPX7R9104 0805 Capacitor	C200, C201, C300, C301, C304, C400	FP-GRM21B-0_15- IPC_C	CMP-2007-03541-2	6
4.7p	Chip Multilayer Ceramic Capacitors for General Purpose, 0805, 10uF, X5R, 15%, 10%, 25V	C202, C203	FP-GRM21B-0_15- IPC_C	CMP-2007-03541-2	2
1u	CAP ALUM 1UF 20% 50V SMD	C302	FP-SB-MFG	CMP-05427-000070-1	1
100u	Aluminum Electrolytic Capacitor, 100 uF, +/- 20%, 16 V, 2-Pin SMD (Size Code D), -40 to 105 degC, RoHS, Tape and Reel	C303	PNSC-HA-V-D_V	CMP-2000-06219-2	1
DLP05CL		D200, D201, D202, D203, D301, D302	DLP05CL	DLP05CL	6
SS13A-YAN	SMA ShocItky	D300	FP-95400-MFG	CMP-02539-000001-1	1
BZM55C10-TR	DIODE ZENER 10V 500MW MICROMELF	D304	FP-6_560-5007_01-4- MFG	CMP-02541-000004-1	1
RED	LED Red, 65 mW, -40 to 85 degC, 2-Pin SMD, RoHS, Tape and Reel	DS400	LUMX-SML- LX1206LC_V	CMP-2000-07123-1	1
GREEN	LED Green, 75 mW, 30 mA, -30 to 85 degC, 2- Pin SMD, RoHS, Tape and Reel	DS401	DIAL-597-3311- 407F_V	CMP-2000-05651-1	1
10A	0501010.WR 1206	F100	FP-3413_0330_22- MFG	CMP-26293-000001-1	1
160mA	3413.0008.11 1206 Ultra fast fuse	F101	FP-3413_0330_22- MFG	CMP-26293-000001-1	1
50mA	SM005-60 1210 PTC fuse	F300	FP-1210L-MFG	CMP-08606-000032-1	1
D-3230		J100, J101	BananaConnector_4 mm_Long	BananaConnector_4_ Long	2
D-3231		J102	BananaConnector_4 mm_Long	BananaConnector_4_ Long	1
BananaConnector_4_ Long		J200, J201	BananaConnector_4 mm_Long	BananaConnector_4_ Long	2
BNC		J202	BNC_Routed_Hole	BNC	1
Wire_solder_2		J300	WireSolder	Wire_solder_2	1
Jumper_1206		JU100, JU400, JU401, JU402, JU500, JU501, JU502, JU503	Jumper_1206	Jumper_1206	8
Jumper_0805		JU404, JU405, JU406	JUMPER_0805	Jumper_0805	3
Shielding		MS400	Shielding_1720	Shielding_can_1720	1
Ground_Screw		MS400, MS401	Shielding_Screw	Ground_Screw	2
AQ3418	MOSFET N-CH 30V 3.8A SOT23	O300	FP-SOT23-MFG	CMP-83955-000005-1	1
BC847C	NPN Silicon AF Transistor, 45 V VCEO, 100 mA IC, SOT23, Reel, Green	O400	INF-SOT23_L	CMP-1177-00037-1	1
R01	WW25RR010FTL 1206 Resistor	R100	FP-CRCW2512-e3- MFG	CMP-02407-004199-1	1
10R	AR1206-10R-0.1% 1206 Resistor	R101	FP-RC1206-MFG	CMP-2100-03681-2	1
10k	AR1206-10K-0.1% 1206 precision reistor, WR12X3300FTL 1206 Resistors	R102, R301, R303, R304, R400, R402, R404, R405	FP-RC1206-MFG	CMP-2100-03681-2	8
330	WR12X3300FTL 1206 Resistors	R200, R201, R202, R302, R401, R403	FP-RC1206-MFG	CMP-2100-03681-2	6
18k	AR1206-18K-0.1% 1206 Resistor	R203, R204	FP-RC1206-MFG	CMP-2100-03681-2	2
2k	AR1206-2K-0.1% 1206 Resistor	R205, R206	FP-RC1206-MFG	CMP-2100-03681-2	2
JS203011AQN	SWITCH SLIDE DP3T 300MA 6V	SW100	FP-JS203011AQN- MFG	CMP-10038-000017-1	1
JS202011AQN	SWITCH SLIDE DPDT 300MA 6V	SW101, SW300	FP-JS202011AQN- MFG	CMP-10038-000021-1	2
OPA388IDBVT	IC OPAMP ZER-DRIFT 1CIRC SOT23-5	U200, U201	FP-DBV0005A-MFG	CMP-04895-000311-1	2
LMV321	IC OPAMP GP 1 CIRCUIT SOT23-5	U300	FP-DBV0005A-IPC_B	CMP-04895-000202-1	1
LMV331DBVR	IC GP LV COMP ARATOR SOT- 23-5	U400	FP-DBV0005A-MFG	CMP-04896-000030-1	1
LM4041D12QDBZR	Precision Micropower Shunt Voltage Reference, 1.0% accuracy, 1.225 V, 15 ppm / degC, 12 mA, -40 to 125 degC, 3-pin SOT-23 (DBZ), Green (RoHS & no Sb/Bi)	U401	DBZ0003A_N	CMP-0366-00795-2	1

Design Rules Verification Report

Filename : C:\Users\Public\Documents\Altium\LVCurrent\Main.PcbDoc

Warnings 2
Rule Violations 0

Warnings	
Unplated multi-layer pad(s) detected	2
Total	2

Rule Violations	
Clearance Constraint (Gap=0.254mm) (All),(All)	0
Short-Circuit Constraint (Allowed=No) (All),(All)	0
Un-Routed Net Constraint (All)	0
Modified Polygon (Allow modified: No), (Allow shelved: No)	0
Width Constraint (Min=0.254mm) (Max=4.572mm) (Preferred=0.305mm) (All)	0
Power Plane Connect Rule(Relief Connect)(Expansion=0.508mm) (Conductor Width=0.254mm) (Air Gap=0.254mm)	0
Hole Size Constraint (Min=0.025mm) (Max=6.3mm) (All)	0
Hole To Hole Clearance (Gap=0.54mm) (All),(All)	0
Minimum Solder Mask Sliver (Gap=0.254mm) (All),(All)	0
Silk To Solder Mask (Clearance=0.05mm) (IsPad),(All)	0
Silk to Silk (Clearance=0.254mm) (All),(All)	0
Net Antennae (Tolerance=0mm) (All)	0
Height Constraint (Min=0mm) (Max=50mm) (Preferred=12.7mm) (All)	0
Total	0

Unplated multi-layer pad(s) detected	
Pad MS400-1(65.332mm,94.956mm) on Multi-Layer on Net VGND	
Pad MS401-1(4.332mm,4.384mm) on Multi-Layer on Net VGND	

Electrical Rules Check Report

Class	Document	Message
Warning	Amplifier.SchDoc	Off grid Port Shunt_Voltage at 1060.803mil,4900mil