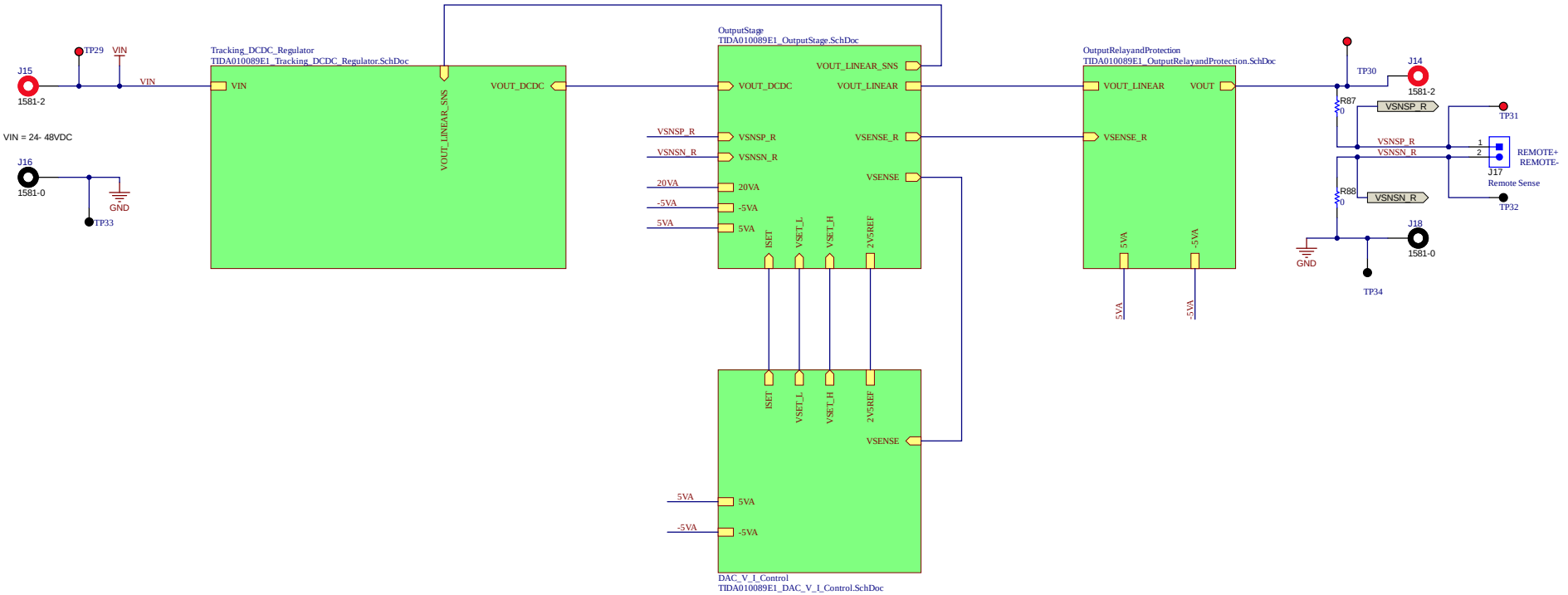

Specifications
Topology: Linear
Input Voltage: 24V to 48V
Output Voltage: 0V to 15V
Output Current: -8A to 8A
Current Load Regulation Error: ± 3mA or ± 0.02% of Full-Scale
Voltage Load Regulation Error: ± 3mV or ± 0.02% of Full-Scale

Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 12/29/2023
TID #: TIDA-010089	Project Title: 15V-8A 2 Quadrant Linear Power Supply	
Number: TIDA-010089 Rev: E1	Sheet Title:	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 1 of 7
Drawn By:	File: TIDA010089E1_TopLevelSheet.SchDoc	Size: B
Engineer: Shaury Anand	Contact: http://www.ti.com/support	

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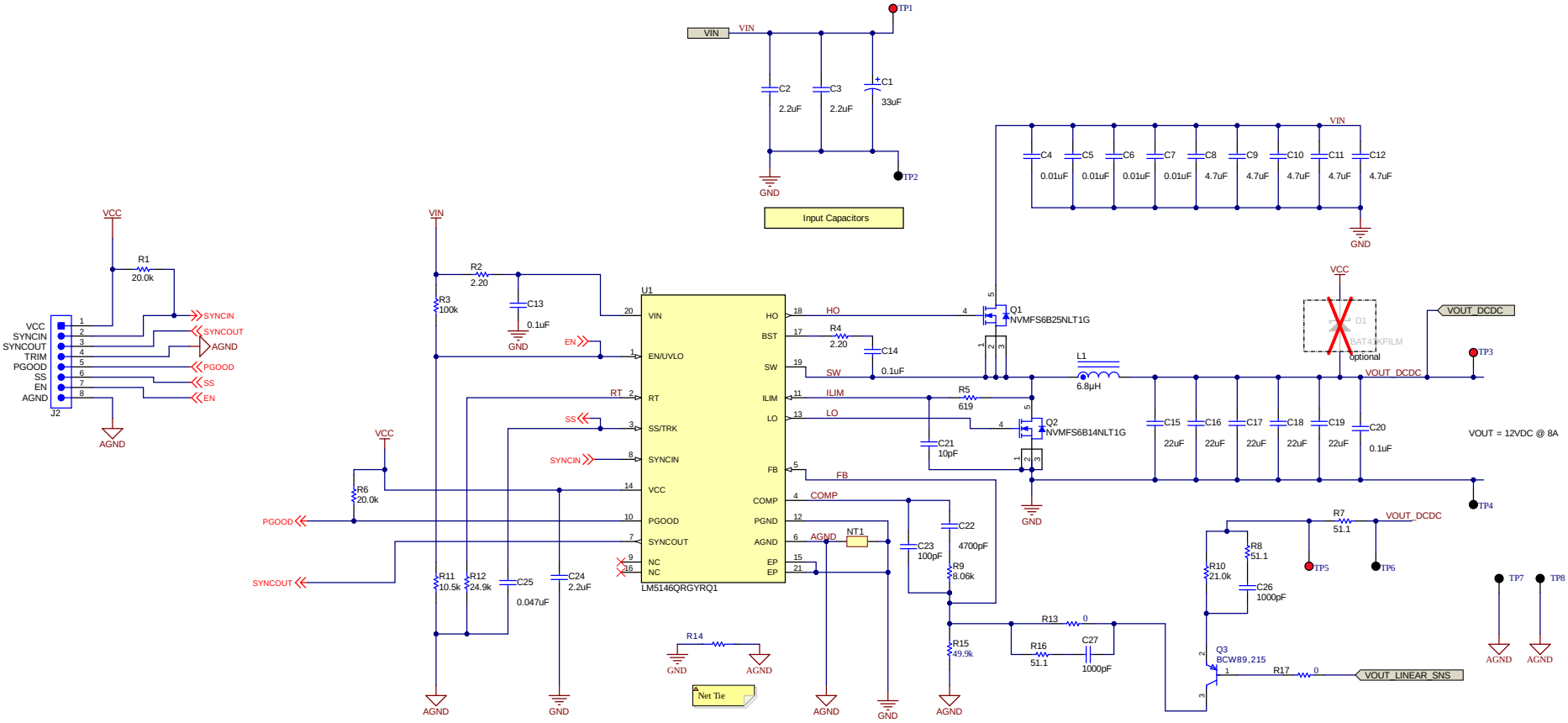
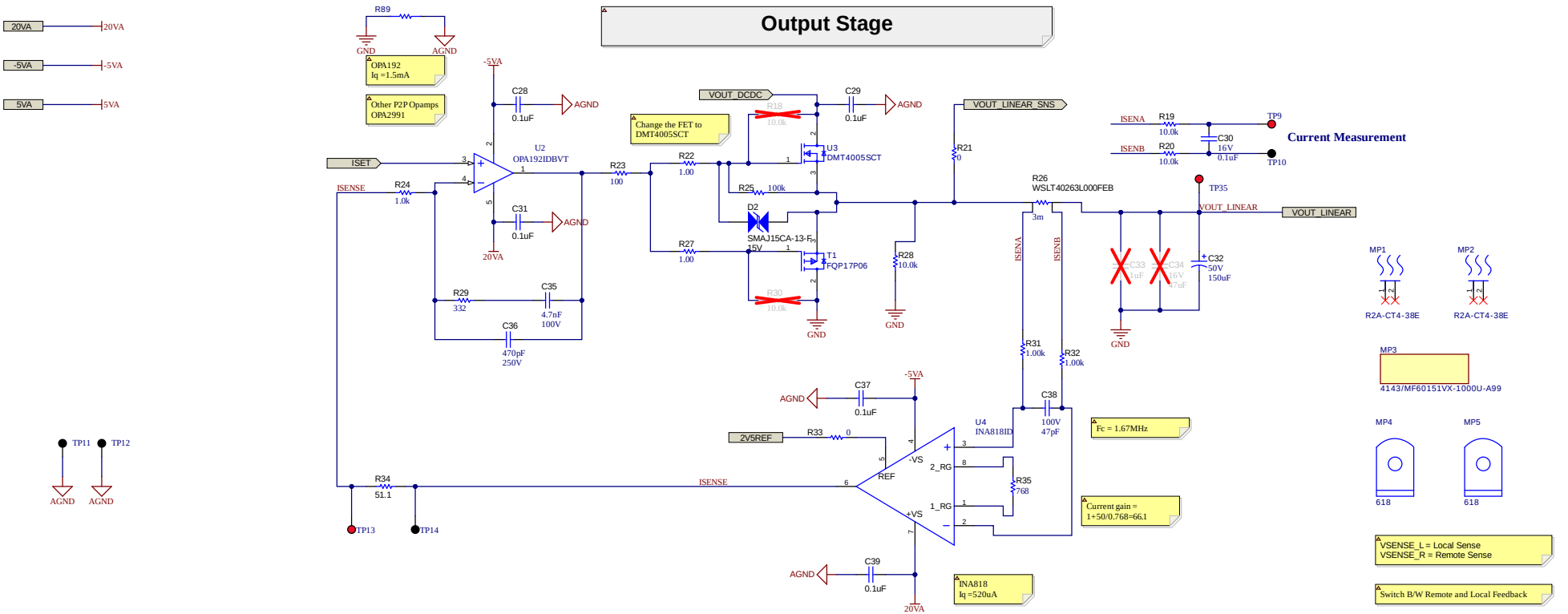
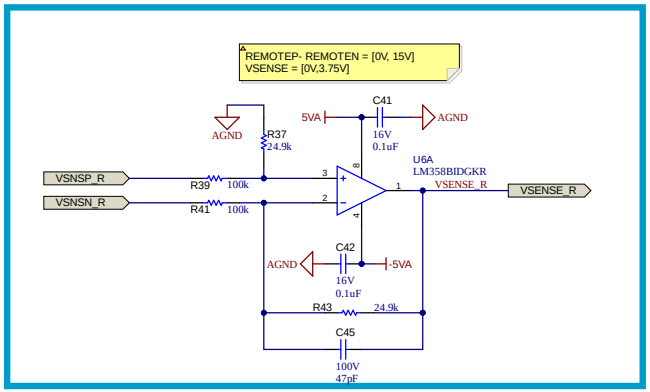
Tracking Power Supply

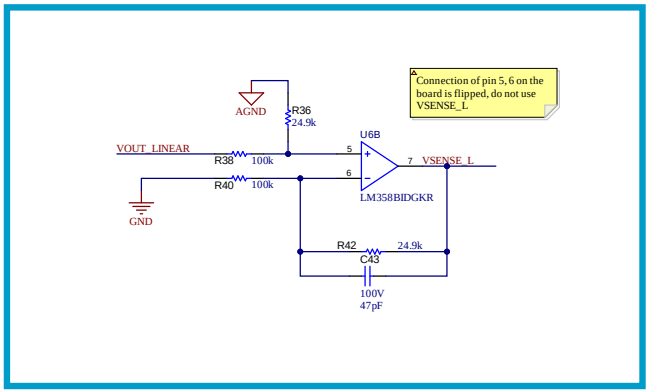


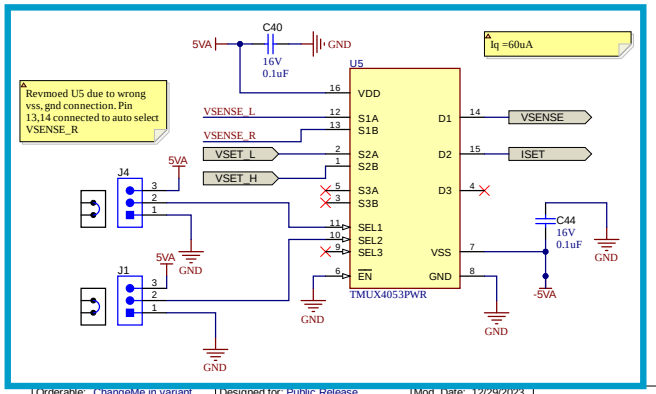
Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 8/30/2023
TID #: TIDA-010089	Project Title: 15V-8A 2 Quadrant Linear Power Supply	
Number: TIDA-010089 Rev: E1	Sheet Title: LM5146 BUCK SCHEMATIC DIAGRAM	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 2 of 7
Drawn By: K Nielson	File: TIDA010089E1_Tracking_DCDC_Regulator.SchDoc	Size: B
Engineer: Shaury Anand	Contact: http://www.ti.com/support	

Output Stage



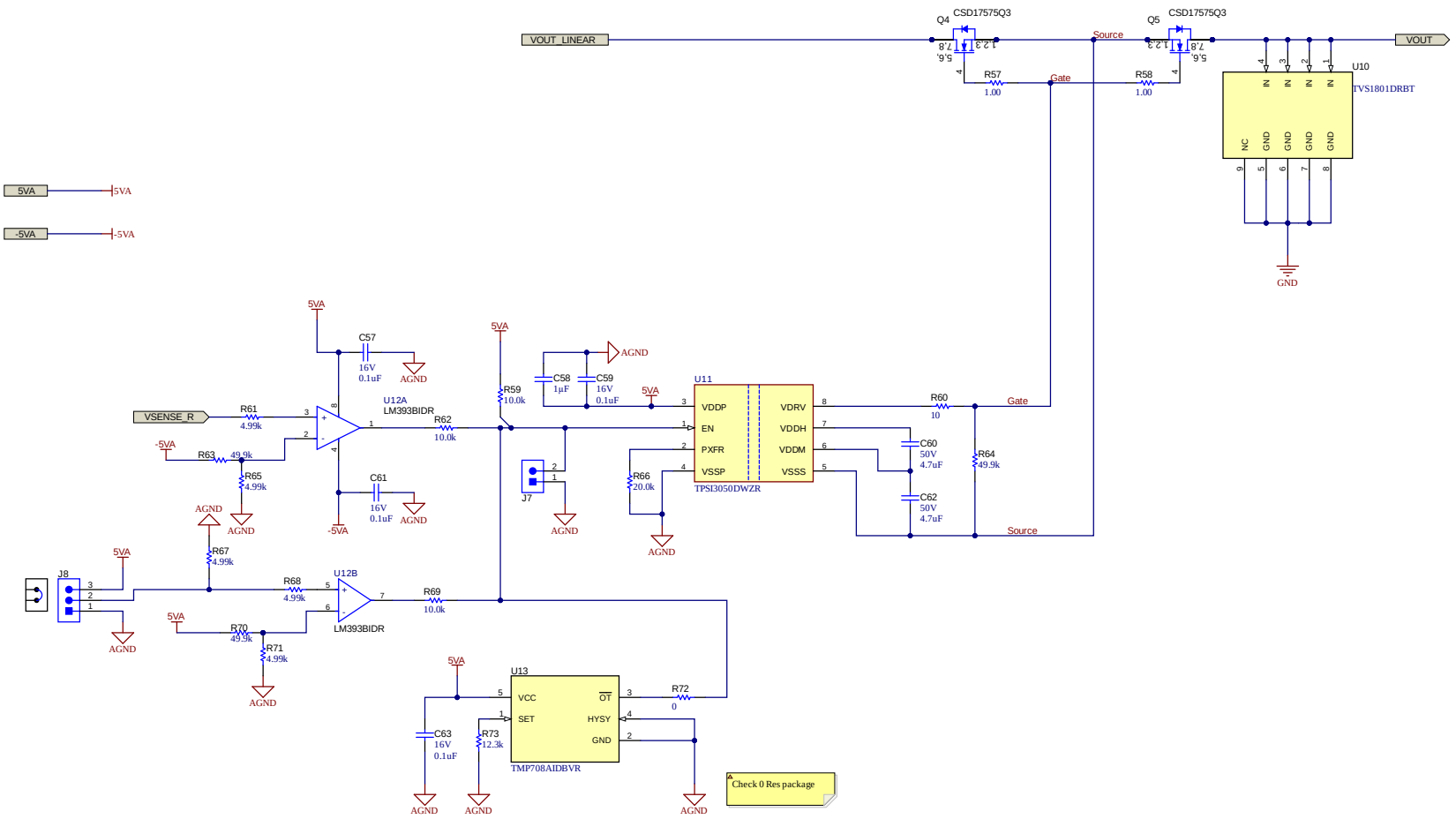






Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 12/29/2023
TID #: TIDA-010089	Project Title: 15V-8A 2 Quadrant Linear Power Supply	
Number: TIDA-010089 Rev: E1	Sheet Title:	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 3 of 7
Drawn By: Ethan Yu	File: TIDA010089E1_OutputStage.SchDoc	Size: B
Engineer: Shaury Anand	Contact: http://www.ti.com/support	

Battery Reverse Polarity Protection



Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 9/19/2023
TID #: TIDA-010089	Project Title: 15V-8A 2 Quadrant Linear Power Supply	
Number: TIDA-010089 Rev: E1	Sheet Title:	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 5 of 7
Drawn By:	File: TIDA010089E1_OutputRelayandProtection.SchDoc	Size: B
Engineer: Shaury Anand	Contact: http://www.ti.com/support	

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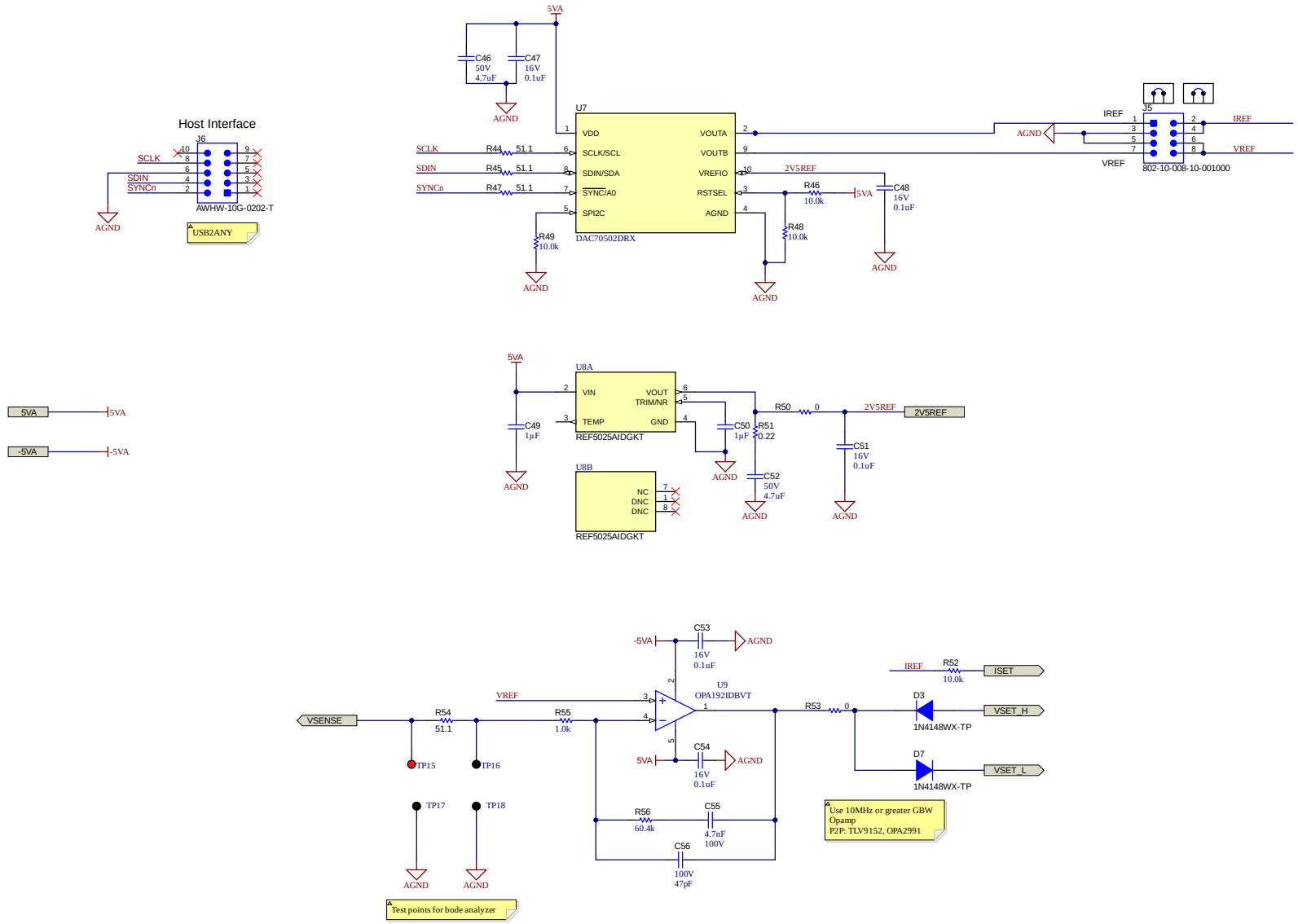

Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 12/29/2023
TID #: TIDA-010089	Project Title: 15V-8A 2 Quadrant Linear Power Supply	
Number: TIDA-010089 Rev: E1	Sheet Title:	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 4 of 7
Drawn By:	File: TIDA010089E1_DAC_V_I_Control.SchDoc	Size: B
Engineer: Shaury Anand	Contact: http://www.ti.com/support	

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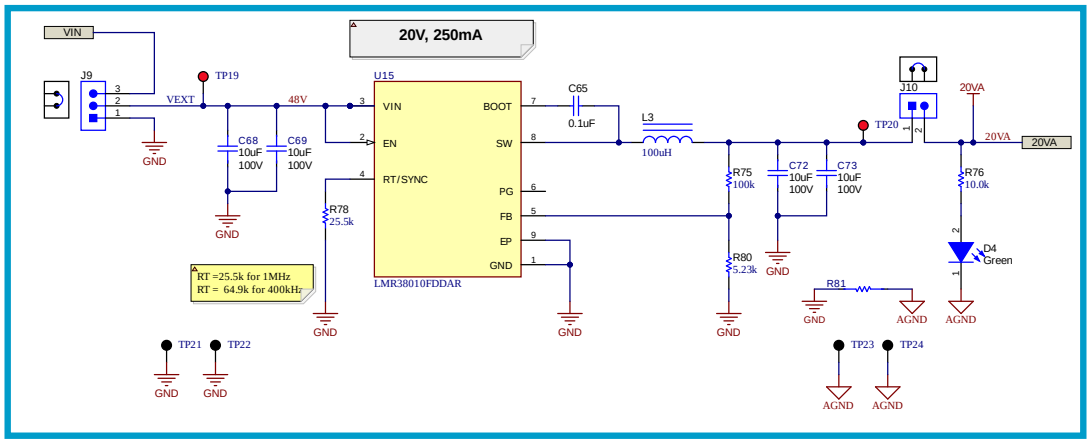
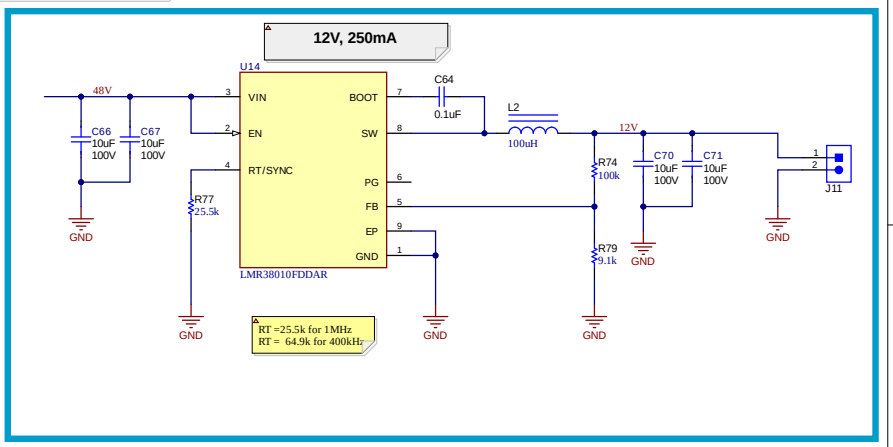
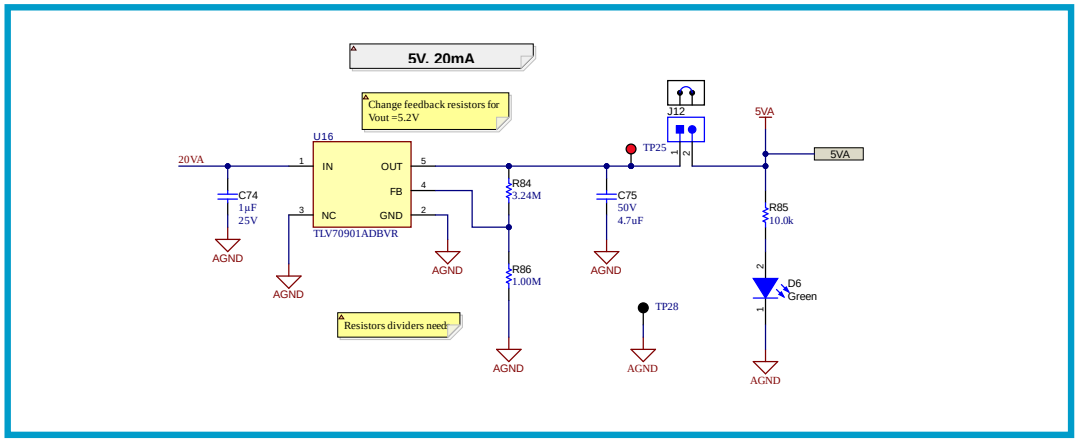
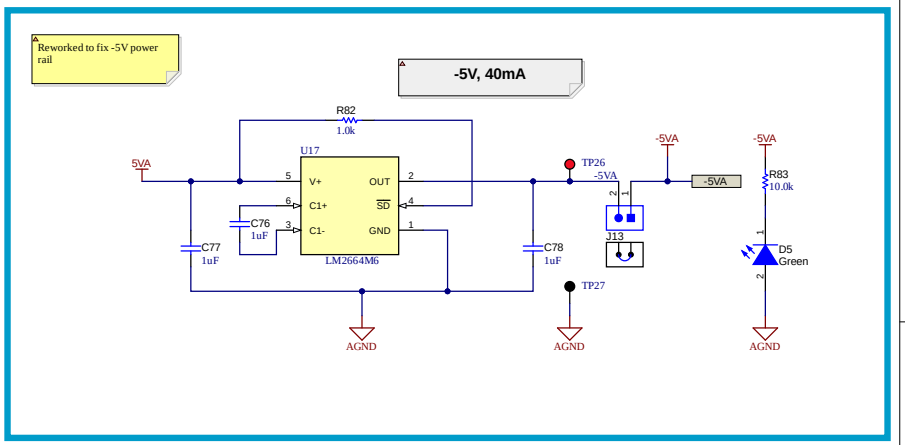
BIAS POWER









Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 12/18/2023
TID #: TIDA-010089	Project Title: 15V-8A 2 Quadrant Linear Power Supply	
Number: TIDA-010089 Rev: E1	Sheet Title:	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 6 of 7
Drawn By: Ethan Yu	File: TIDA010089E1_BiasPowerSupply.SchDoc	Size: B
Engineer: Shaury Anand	Contact: http://www.ti.com/support	

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H1 NY PMS 440 0025 PH

H2 NY PMS 440 0025 PH

H3 NY PMS 440 0025 PH

H4 NY PMS 440 0025 PH

H5 1902C

H6 1902C

H7 1902C

H8 1902C

H9 NY PMS 440 0063 PH

H10 NY PMS 440 0063 PH

H11 NY HN 440

H12 NY HN 440

FID1 FID2 FID3

PCB Number: TIDA-010089
PCB Rev: E1

PCB LOGO
Texas Instruments

CE Mark

PCB LOGO
FCC disclaimer

PCB LOGO
WEEE logo

LBL1
PCB Label
THT-14-423-10
Size: 0.65" x 0.20 "

ZZ1
Label Assembly Note
This Assembly Note is for PCB labels only

Variant/Label Table	
Variant	Label Text
001	ChangeMe!
002	ChangeMe!

ZZ2
Assembly Note
These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ3
Assembly Note
These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ4
Assembly Note
These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

Orderable: ChangeMe in variant		Designed for: Public Release	Mod. Date: 12/13/2023
TID #: TIDA-010089		Project Title: 15V-8A 2 Quadrant Linear Power Supply	
Number: TIDA-010089	Rev: E1	Sheet Title:	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 7 of 7
Drawn By: Ethan Yu		File: TIDA010089E1_Hardware.SchDoc	Size: B
Engineer: Shaury Anand		Contact: http://www.ti.com/support	

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PCB: VIEWED FROM TOP SIDE

LAYER NAME = [illegible]

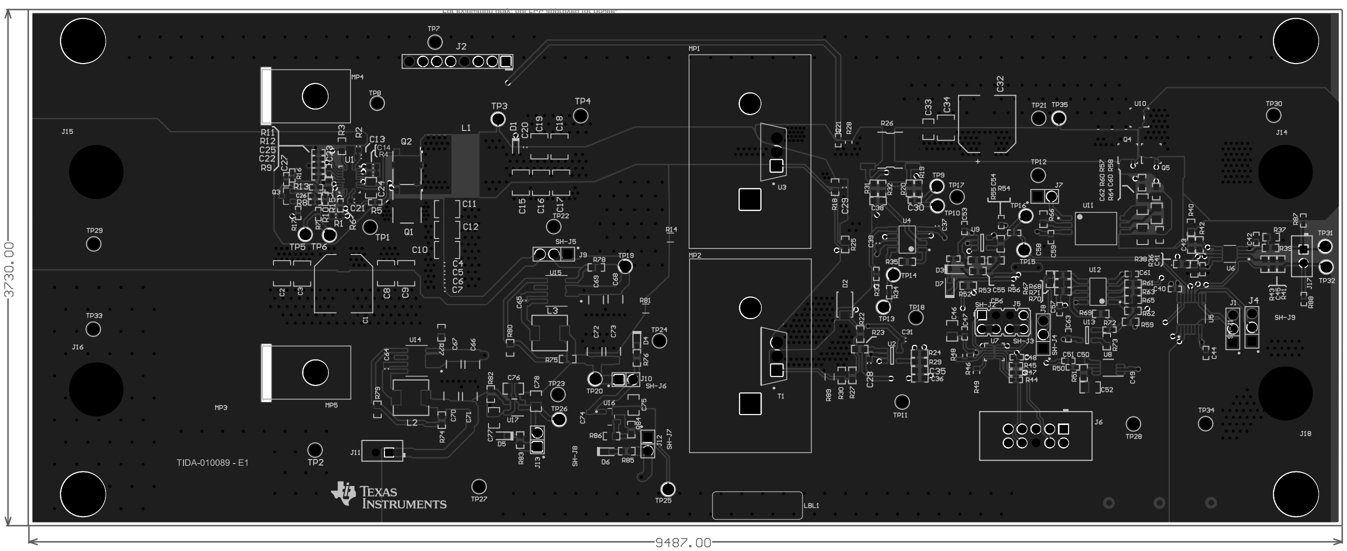
ZZ3 ■ These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ2 ■ These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ1 ■ Install label in silkscreened box after final wash. Text shall be 8 pt font. Text shall be per the Label Table in the PDF schematic.

ZZ4 ■ These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

Layer	Name	Material	Thickness	Constant	Board Layer Stack
	Top Overlay				
	Top Solder	Solder Resist	0.40mil	3.5	
1	Top Layer1		2.80mil		
	Dielectric1	FR-4	6.00mil	4.2	
2	Layer2(AGND)		2.80mil		
	Dielectric 3	FR4	38.00mil	4.2	
3	Layer3(PWR)		2.80mil		
	Dielectric 2	FR4	6.00mil	4.2	
4	Bottom Layer4		2.80mil		
	Bottom Solder	Solder Resist	0.40mil	3.5	
	Bottom Overlay				



DESIGN INFORMATION

MIN. TRACK WIDTH: 8 MIL
MIN. CLEARANCE: 0.2 mm
MIN. VIA PAD SIZE: 24 MIL
MINIMUM ANNULAR RING 0.05mm (2MIL) EXTERNAL PER IPC-D-275 CLASS 2 LEVEL C
REGISTRATION TOLERANCES: METAL +/- 5 MIL, HOLES +/- 3 MIL

MATERIAL: [ ] FR-408 [X] FR-4 High Tg [ ] OTHER
THICKNESS: [X] 62 MIL (1.6mm) +/-10% [ ] OTHER
TOLERANCE: [X] ANSI IPC-6012 TYPE 3 CLASS 2 [ ] OTHER +/-
BOW & TWIST: [X] ANSI IPC-6012 TYPE 3 CLASS 2 [ ] OTHER +/-
DRILLING:
REFERENCE: [X] AS SHOWN [X] NC_DRILL FILES
PTH MIN COPPER THICKNESS: [X] 1MIL [ ] OTHER
BOARD FINISH:
SILKSCREEN: [X] TOP [X] BOTTOM
SILKSCREEN COLOR: [X] WHITE [ ] OTHER
SOLDER RESIST COLOR: [X] GREEN [ ] BLUE [ ] OTHER
SURFACE FINISH: [X] IMMERSION GOLD (ENIG) [ ] ENEPIG [ ] IMM. TIN/SILVER OR EQUIV [ ] OTHER
ARRAY/PANEL: [ ] CUT AND TRIM PER MECH LAYER 1 [ ] N.C. ROUTE [X] V. SCORE
CERTIFICATION: MATERIALS AND WORKMANSHIP FOR ALL PCBS TO MEET OR EXCEED THE REQUIREMENTS OF:
[X] ANSI IPC-A-600F CLASS -> [ ] 1 [X] 2 [ ] 3
[X] UL 94V-0 [X] RoHS [ ] OTHER PER ORDER
ADDITIONAL REQUIREMENTS:
MICROSECTION: [ ] YES
BARE BOARD ELEC. TEST: [ ] NONE [X] REQUIRED [ ] PER ORDER
MANUFACTURER'S UL: [ ] RAIL [ ] METAL [X] SILK

TEXAS INSTRUMENTS

PROJECT TITLE: 15V-8A 2 Quadrant Linear Power Supply

DESIGNED FOR: Public Release

FILE NAME: TIDA010089E1.PcbDoc

ENGINEER: Shaury Anand

LAYOUT BY: Javid Huseynov

SCALE: 1.00

ALTIUM DESIGNER VERSION: 23.1.1.15

1000.00mil

COMPONENTS MARKED 'DNP' SHOULD NOT BE POPULATED

ASSEMBLY VARIANT: [No Variations]

ALL ARTWORK VIEWED FROM TOP SIDE | BOARD #: TIDA-010089 | REV: E1

Multilayer Composite Print | GENERATED: 1/3/2024 4:19:32 PM | TEXAS INSTRUMENTS

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