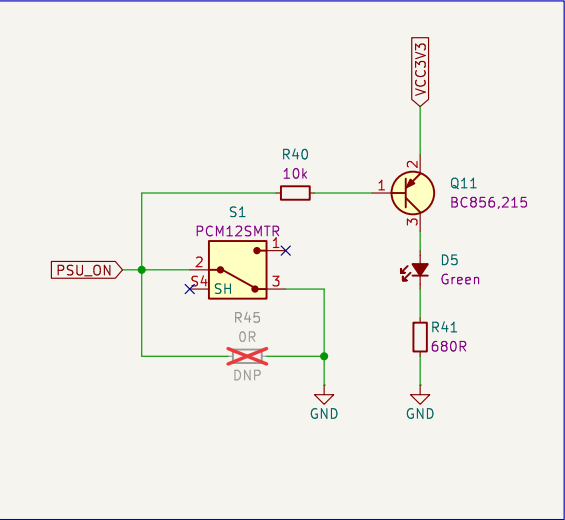
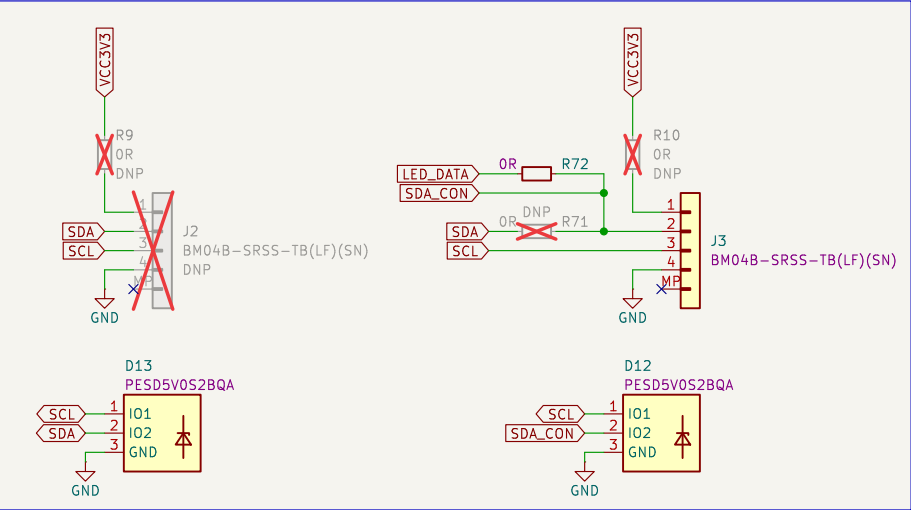


D1600E PSU Breakout Board

BOARD TO BOARD CONNECTION



File: ftdi-module.kicad_sch

Power Cycling & Current Measurement



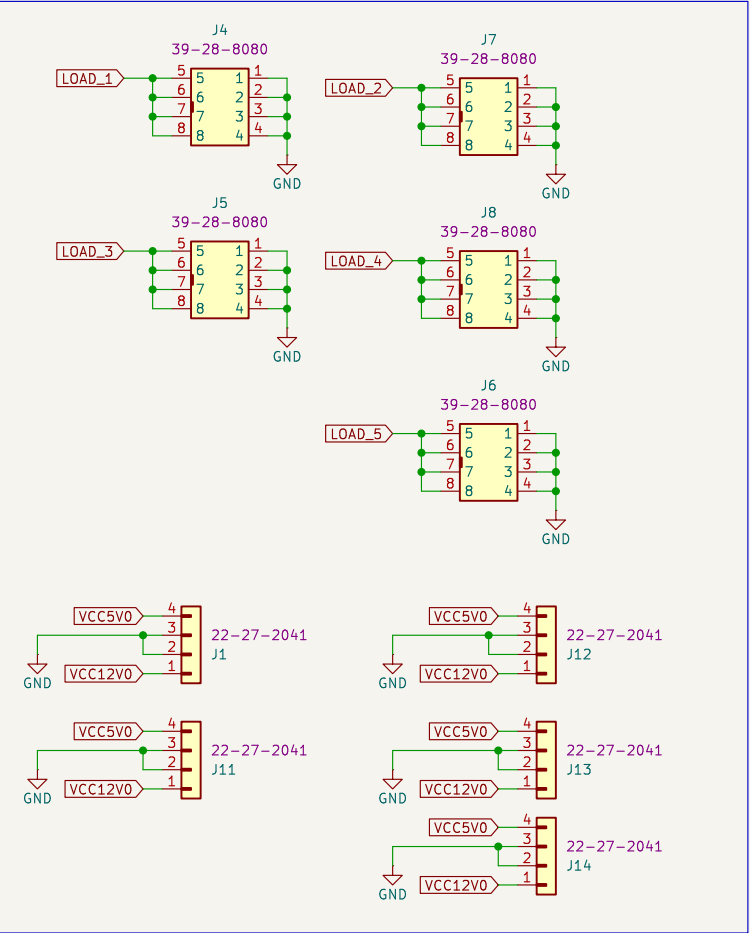
File: pow-cycl-curr-meas.kicad_sch

daughterboard-supply

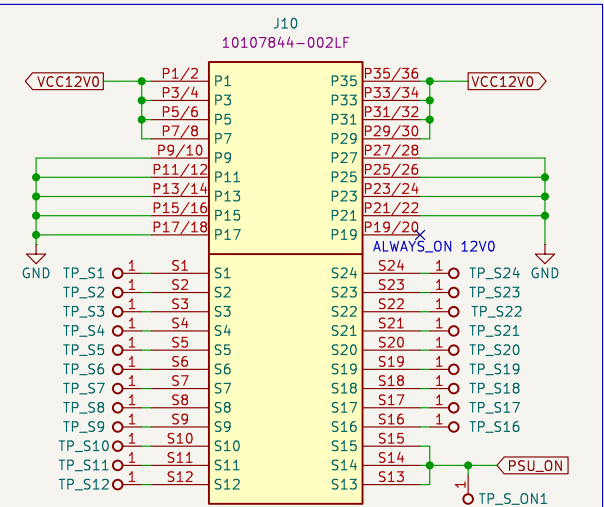


File: daughterboard-supply.kicad_sch

Output Connectors

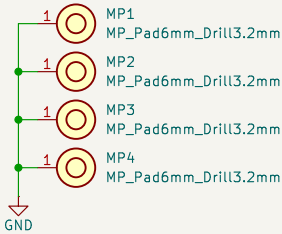
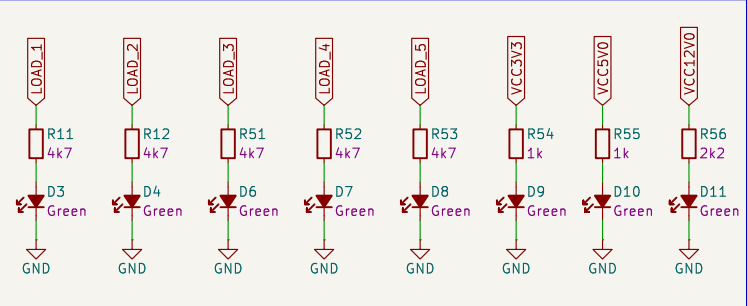


PSU connector




Note: Verify the PSU pinout before connecting the board


Power Indicators



Design variants		
Component	Master	Slave
R13	DNP	Populated
R14	Populated	DNP
R32	DNP	Populated
R33	Populated	DNP
R36	Populated	DNP
R37	Populated	DNP
R38	Populated	DNP
R39	Populated	DNP
R42	Populated	DNP
Y1	Populated	DNP
J1	Populated	DNP
U5	Populated	DNP



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Sheet: /
File: d1600e-psu-breakout-board.kicad_sch
Title: D1600E PSU Breakout Board

Size: A3

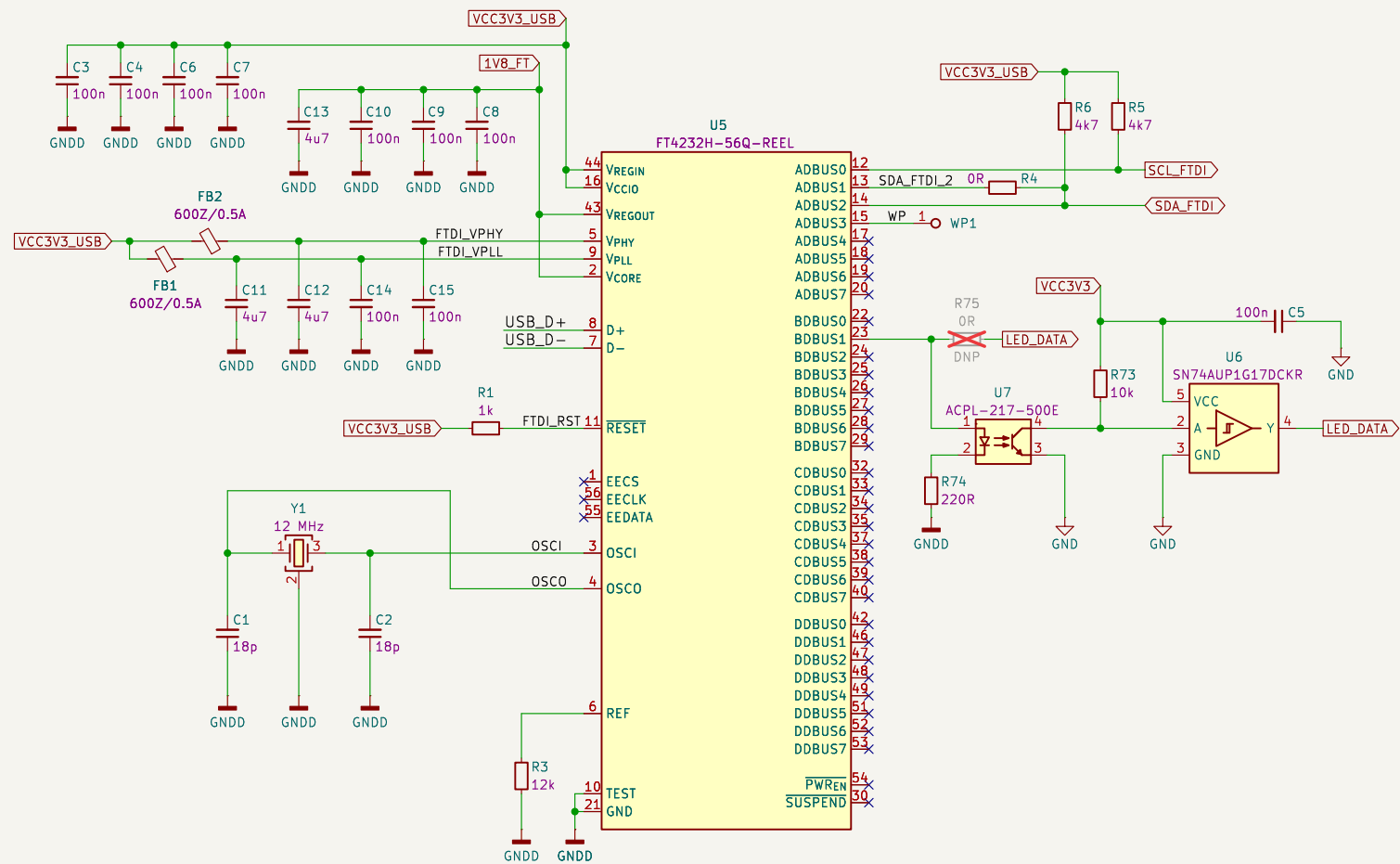
Date: 2023-10-18

Rev: 1.4.3:6de85

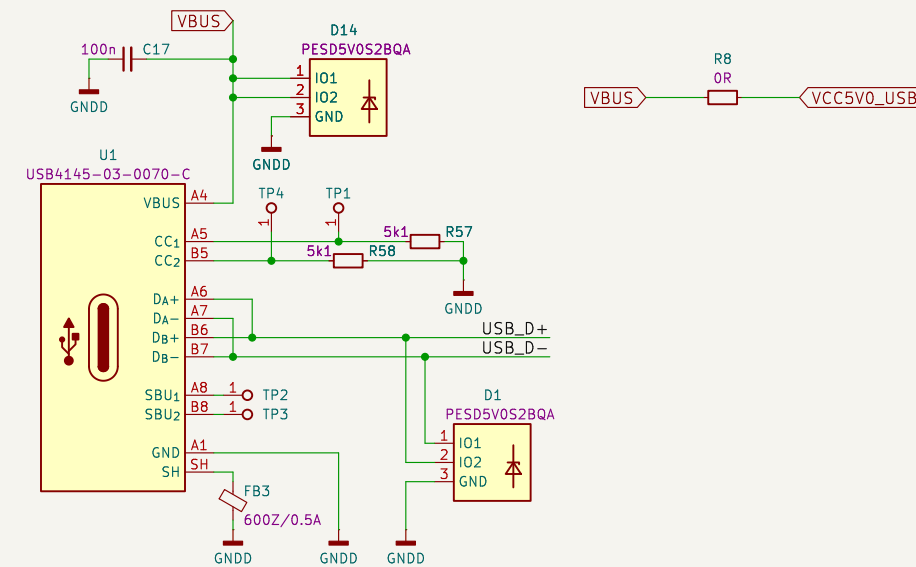
KiCad E.D.A. kicad-cli 7.0.11

Id: 1/9

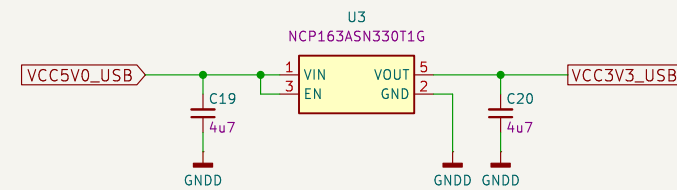
FTDI



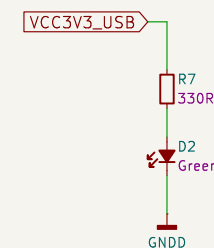
USB Connector



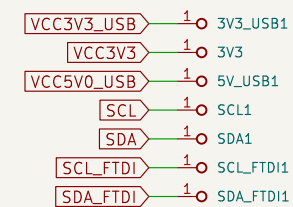
3V3 LDO



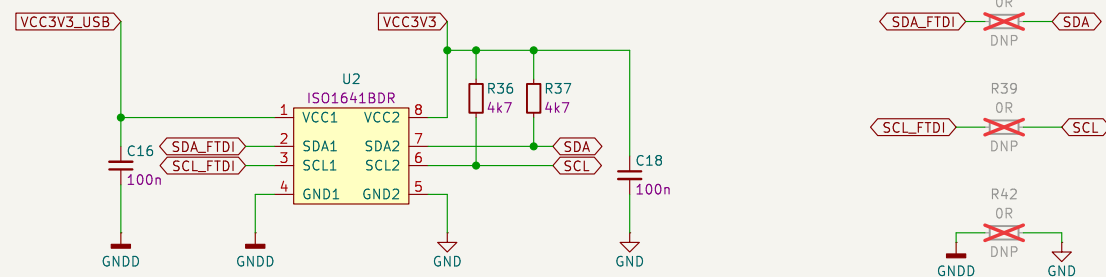
Power LED



Probes



I2C separation & protection



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Sheet: /FTDI/
File: ftdi-module.kicad_sch

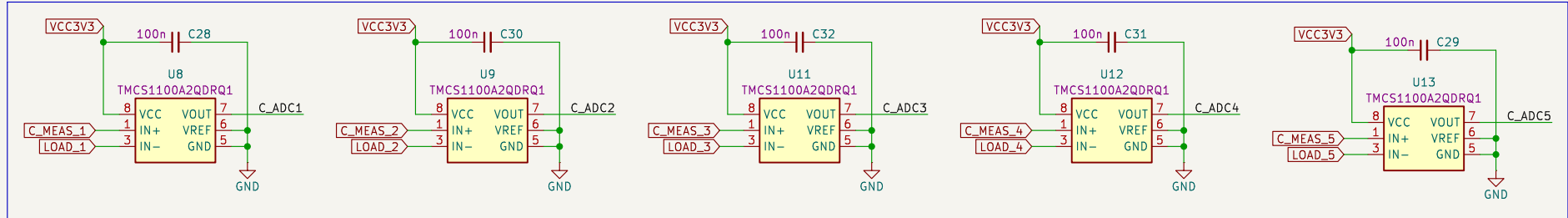
Title: D1600E PSU Breakout Board

Size: A3 Date: 2023-10-18
KiCad E.D.A. kicad-cli 7.0.11

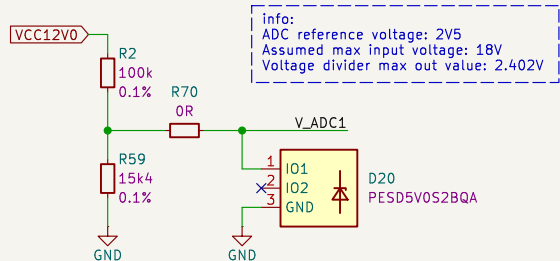
Rev: 1.4.3:6de85
Id: 2/9

Current Measurement

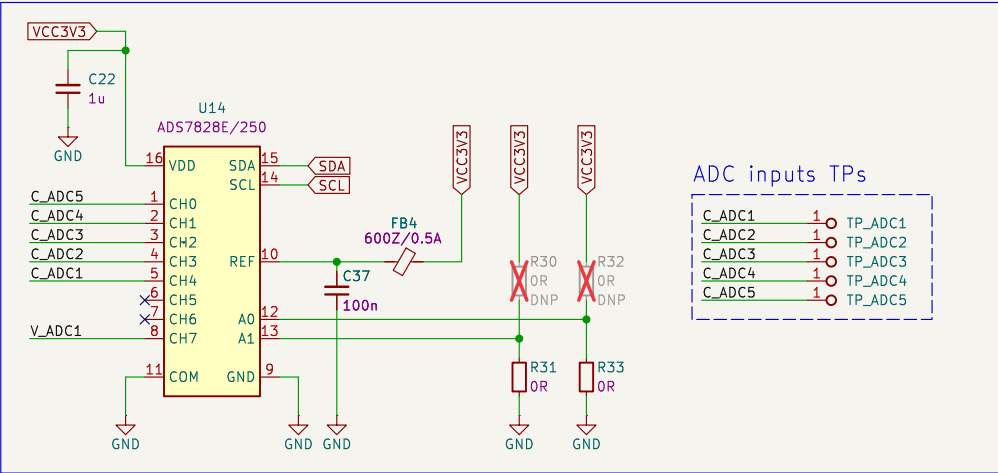
Hall-Effect current sensors



To perform more accurate measurement, the sensor can be replaced with *A3 part (MPN: TMCS1100A3-Q1). Note that it will result in measured currents range reduction (to up to 15.5A unidirect.).



ADC

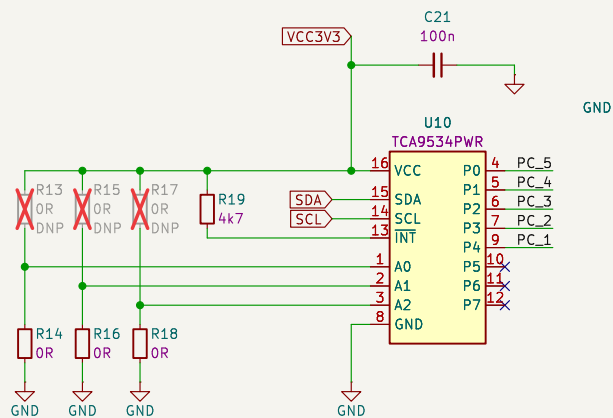


ADDRESS BYTE

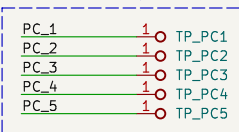
MSB	6	5	4	3	2	1	LSB
1	0	0	1	0	A1	A0	R/W

Power Cycling

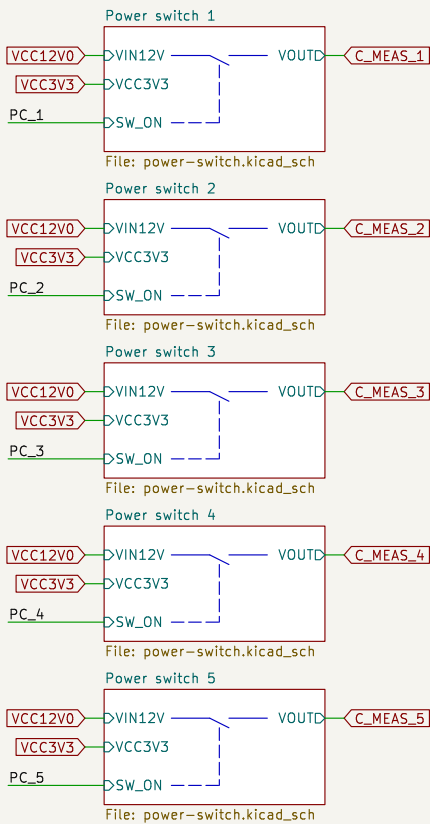
GPIO EXPANDER



Key transistors' polarization TPs



SWITCHING BLOCKS



Not used pins PX MUST be configured as outputs!

INPUTS			I ² C BUS SLAVE ADDRESS
A2	A1	A0	
L	L	L	32 (decimal), 20 (hexadecimal)
L	L	H	33 (decimal), 21 (hexadecimal)
L	H	L	34 (decimal), 22 (hexadecimal)
L	H	H	35 (decimal), 23 (hexadecimal)
H	L	L	36 (decimal), 24 (hexadecimal)
H	L	H	37 (decimal), 25 (hexadecimal)
H	H	L	38 (decimal), 26 (hexadecimal)
H	H	H	39 (decimal), 27 (hexadecimal)



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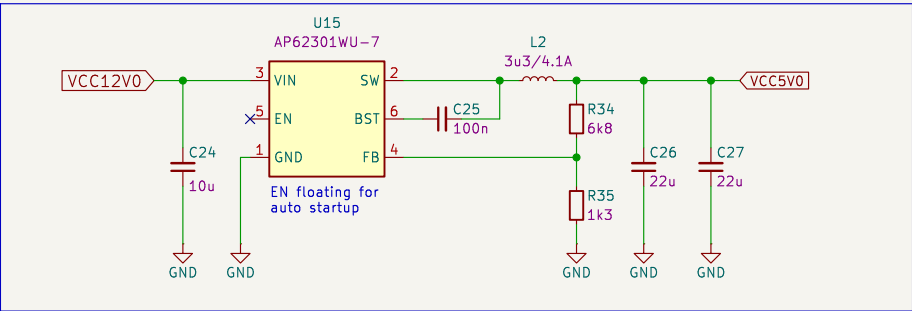
Sheet: /Power Cycling & Current Measurement/
File: pow-cycl-curr-meas.kicad_sch

Title: D1600E PSU Breakout Board

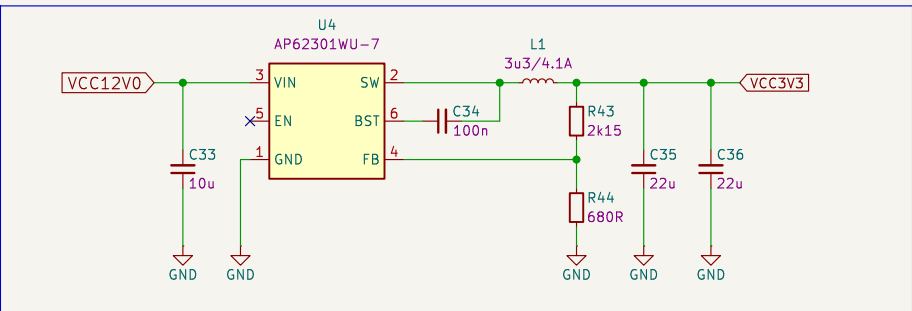
Size: A3 Date: 2023-10-18
KiCad E.D.A. kicad-cli 7.0.11

Rev: 1.4.3:6de85
Id: 3/9

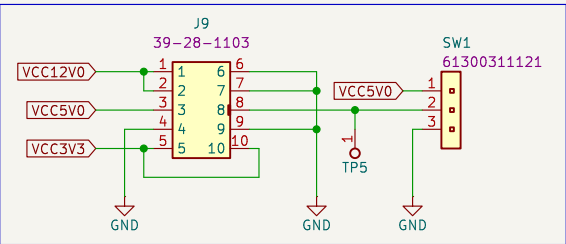
5V0 DC/DC Converter

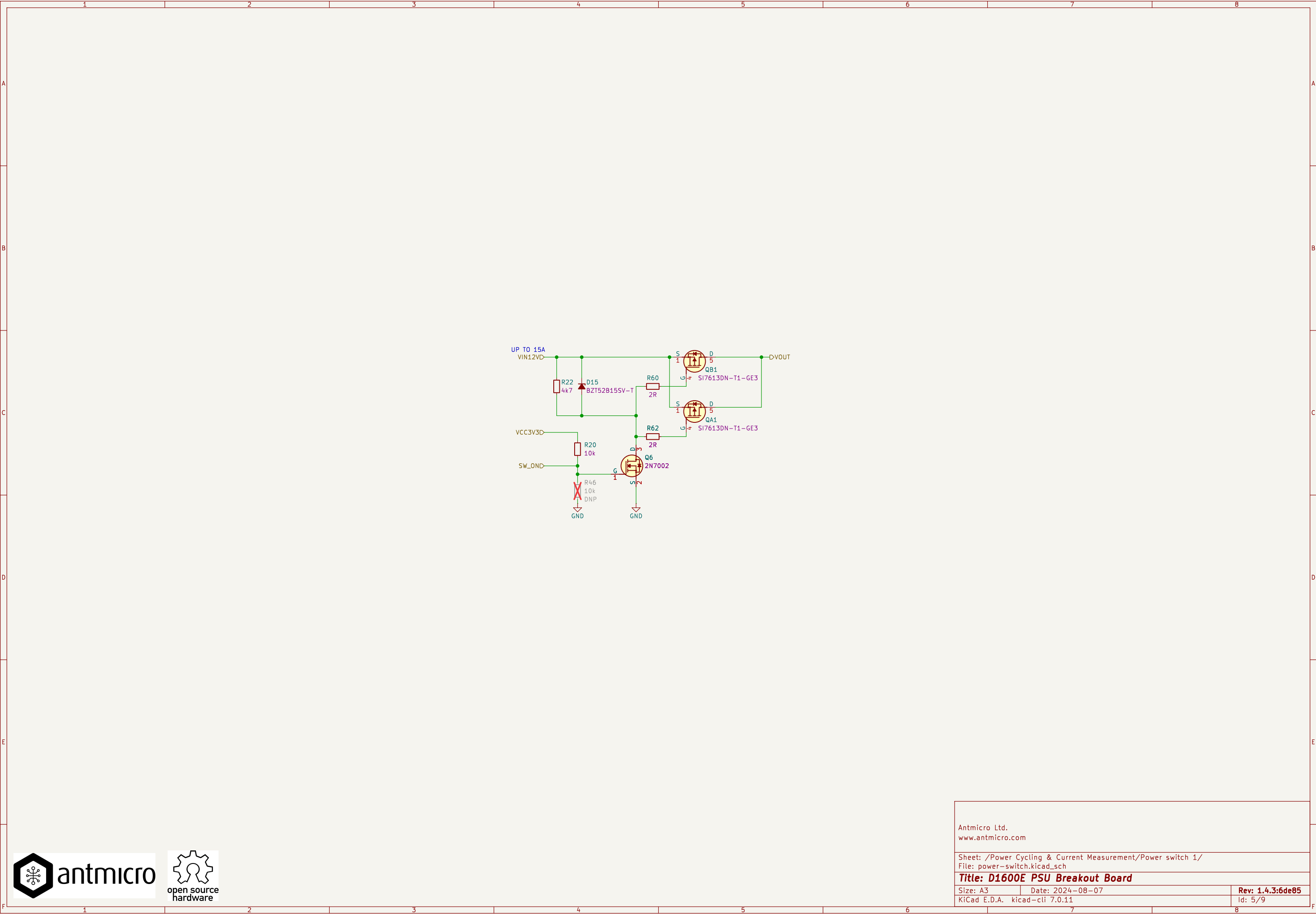


3V3 DC/DC Converter



Daughterboard power connector





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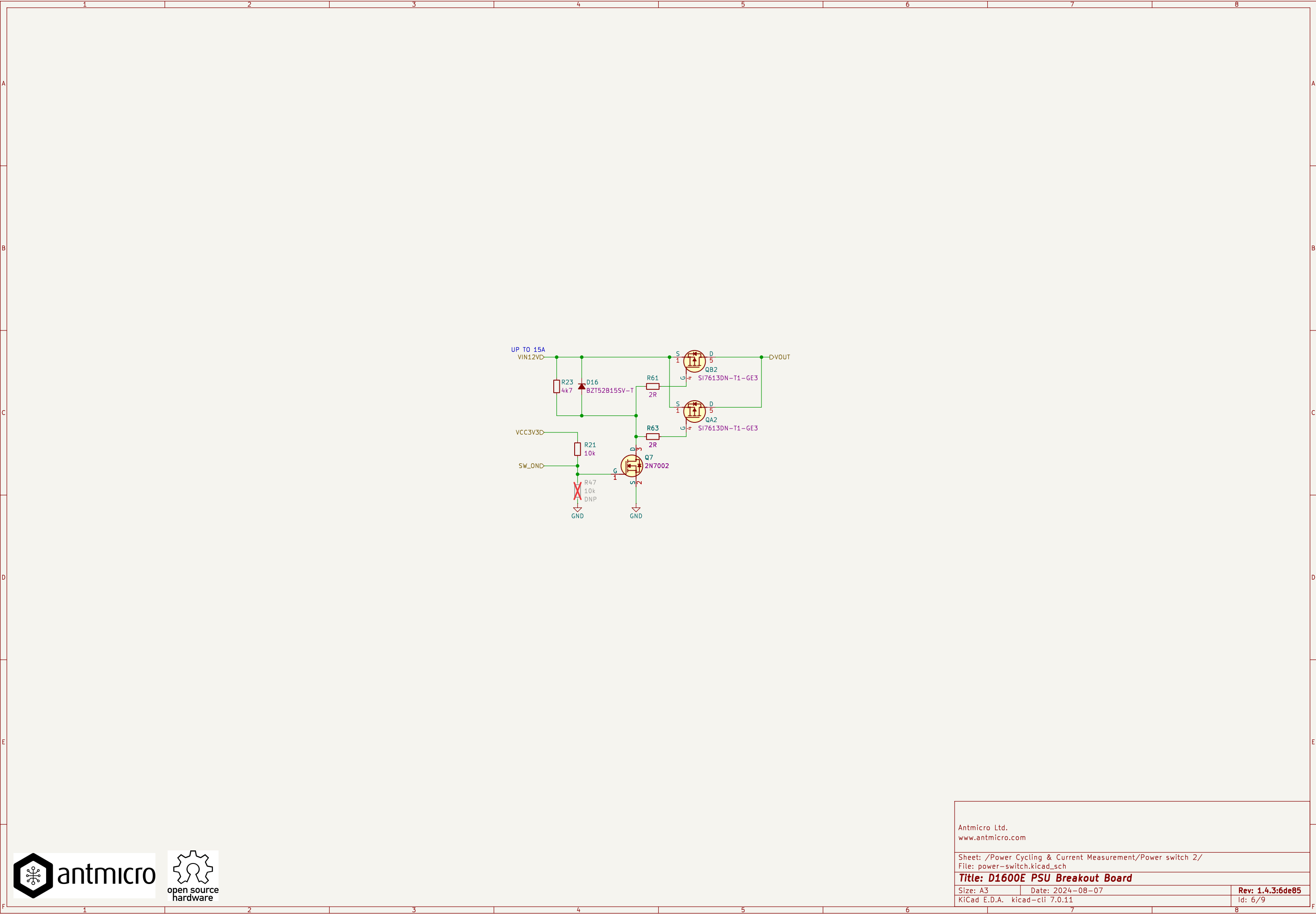
Sheet: /Power Cycling & Current Measurement/Power switch 1/
File: power-switch.kicad_sch

Title: D1600E PSU Breakout Board

Size: A3
KiCad E.D.A. kicad-cli 7.0.11

Date: 2024-08-07

Rev: 1.4.3:6de85
Id: 5/9



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Sheet: /Power Cycling & Current Measurement/Power switch 2/
File: power-switch.kicad_sch

Title: D1600E PSU Breakout Board

Size: A3
KiCad E.D.A. kicad-cli 7.0.11

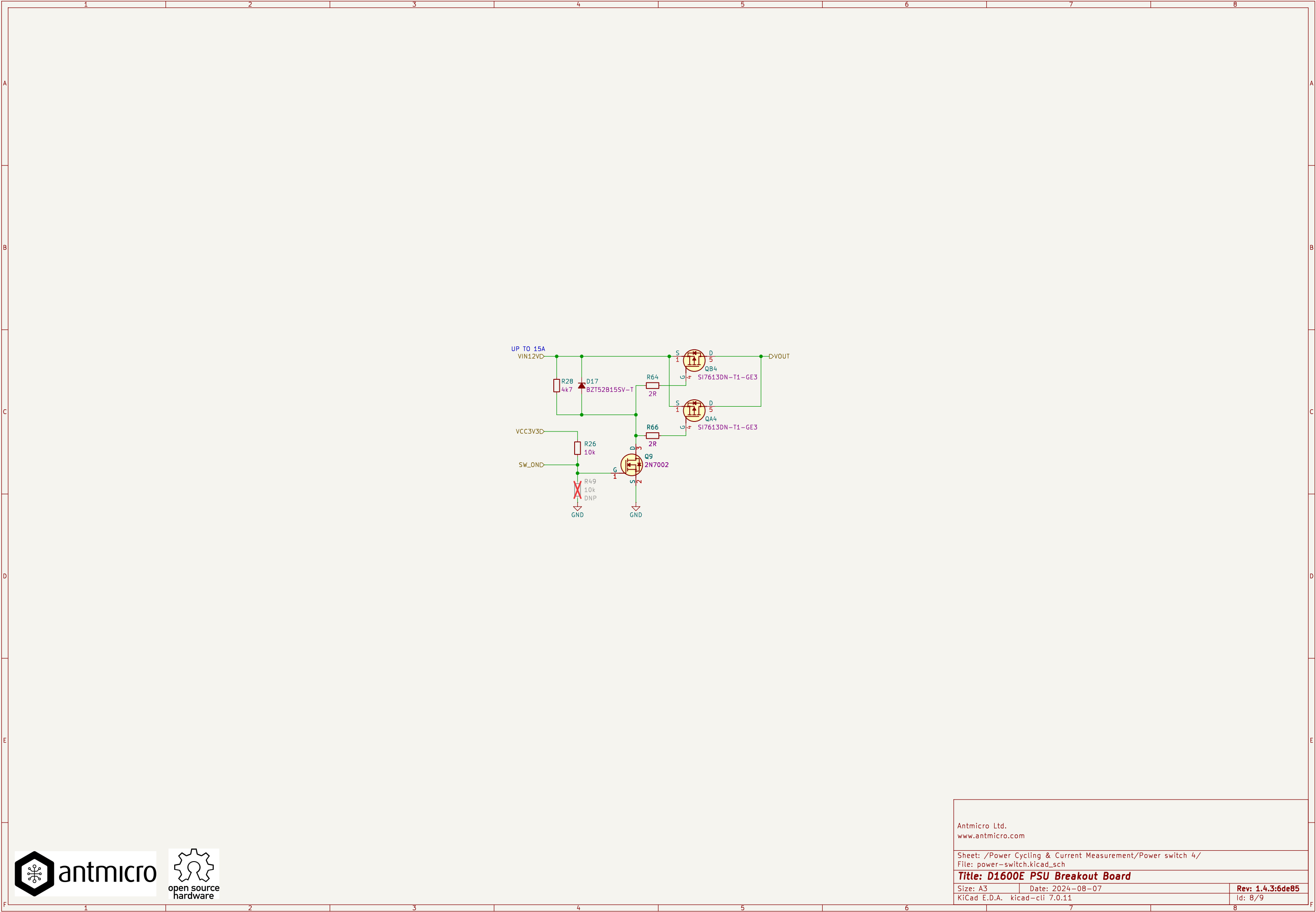
Date: 2024-08-07

Rev: 1.4.3:6de85

Id: 6/9



Size: A3	Date: 2024-08-07	Rev: 1.4.3:6de85
KiCad E.D.A. kicad-cli 7.0.11		Id: 7/9



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Sheet: /Power Cycling & Current Measurement/Power switch 4/
File: power-switch.kicad_sch

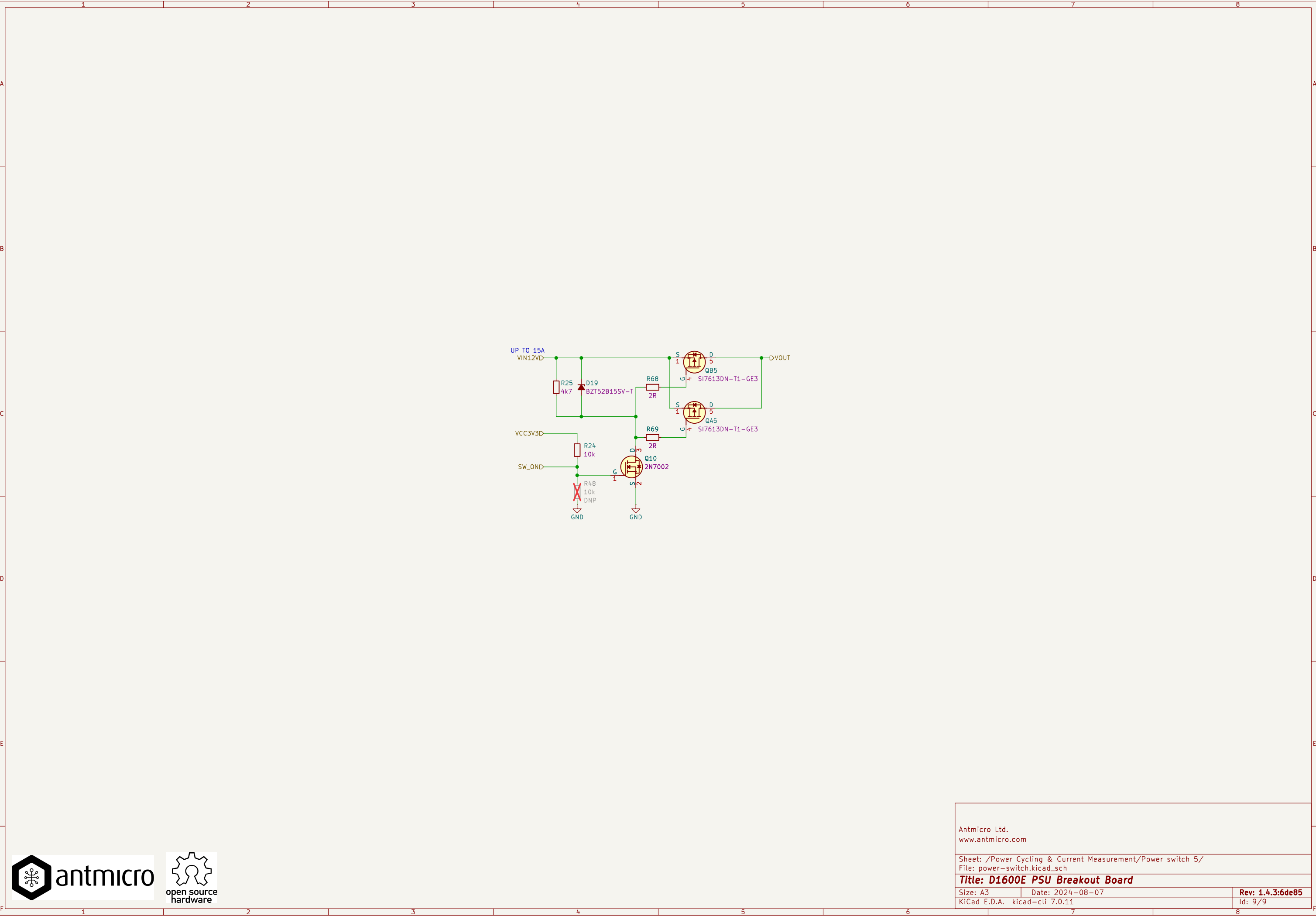
Title: D1600E PSU Breakout Board

Size: A3
KiCad E.D.A. kicad-cli 7.0.11

Date: 2024-08-07

Rev: 1.4.3:6de85

Id: 8/9



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Sheet: /Power Cycling & Current Measurement/Power switch 5/
File: power-switch.kicad_sch

Title: D1600E PSU Breakout Board

Size: A3
KiCad E.D.A. kicad-cli 7.0.11

Date: 2024-08-07

Rev: 1.4.3:6de85
Id: 9/9