

The schematics is for KiCad demonstration and educational purpose only.  
Correctness and function of the circuit is not guaranteed.

Sheet: /Magnetics and Rectifier/  
File: Magnetics and Rectifier.kicad\_sch

**Title: Magnetics and Rectifier**

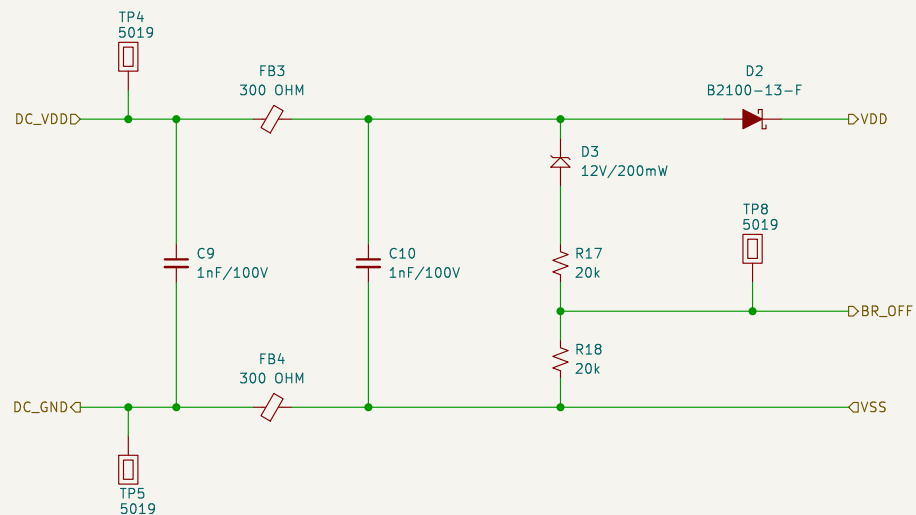
Size: A4

Date:

**Rev: V1.0**

KiCad E.D.A. 9.0.3

Id: 2/6



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Sheet: /DC Input Filter/  
File: DC Input Filter.kicad\_sch

**Title: DC Input Filter**

Size: A4 Date:

KiCad E.D.A. 9.0.3

**Rev: V1.0**

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**PD Class Jumper Setup**

CLSA		CLSB						PD Class	Power at PD
CN2	CN3	CN4	CN5	CN6	CN7	CN8			
ON	OFF	ON	OFF	OFF	OFF	OFF	3	6.49 – 12.95W	
OFF	ON	OFF	ON	OFF	OFF	OFF	4	12.95 – 25.5W	
OFF	ON	OFF	OFF	ON	OFF	OFF	5	25.5 – 40W	
OFF	ON	OFF	OFF	OFF	ON	OFF	6	40 – 51W	
OFF	ON	OFF	OFF	OFF	OFF	ON	7	51 – 62W	
OFF	ON	ON	OFF	OFF	OFF	OFF	8	62 – 71W	

VDD VDD VDD  
R30 21k R31 21k R32 21k  
D4 APT2012SGC D5 APT2012SGC D6 APT2012SGC  
TP6 5019 TP1 5019 C12 68uF/100V  
U3 TPS2372-4RGWR  
R19 24.9k R29 49.9k  
MPS\_DUTY MPS\_DUTY  
TPL TPH BT PG  
AUTCLS AMPCTL IRSHDL\_EN  
REF NC NC NC  
VSS VSS ETH RTN RTN  
RTN  
TP7 5019  
CN10 CN11 CN12  
R20 90.9 R21 63.4 R22 90.9 R27 63.4 R25 1.21k R24 249 R23 140 R26 1k R28 49.9k  
CN2 CN3 CN4 CN5 CN6 CN7 CN8 CN9  
VSS VSS VSS  
R33 60.4k  
C11 0.1uF/100V  
VDD VSS

**CN10**

ON	Autoclass enabled
OFF	Autoclass disabled

**CN11**

ON	Inrush delay disabled
OFF	Inrush delay enabled

**CN12**

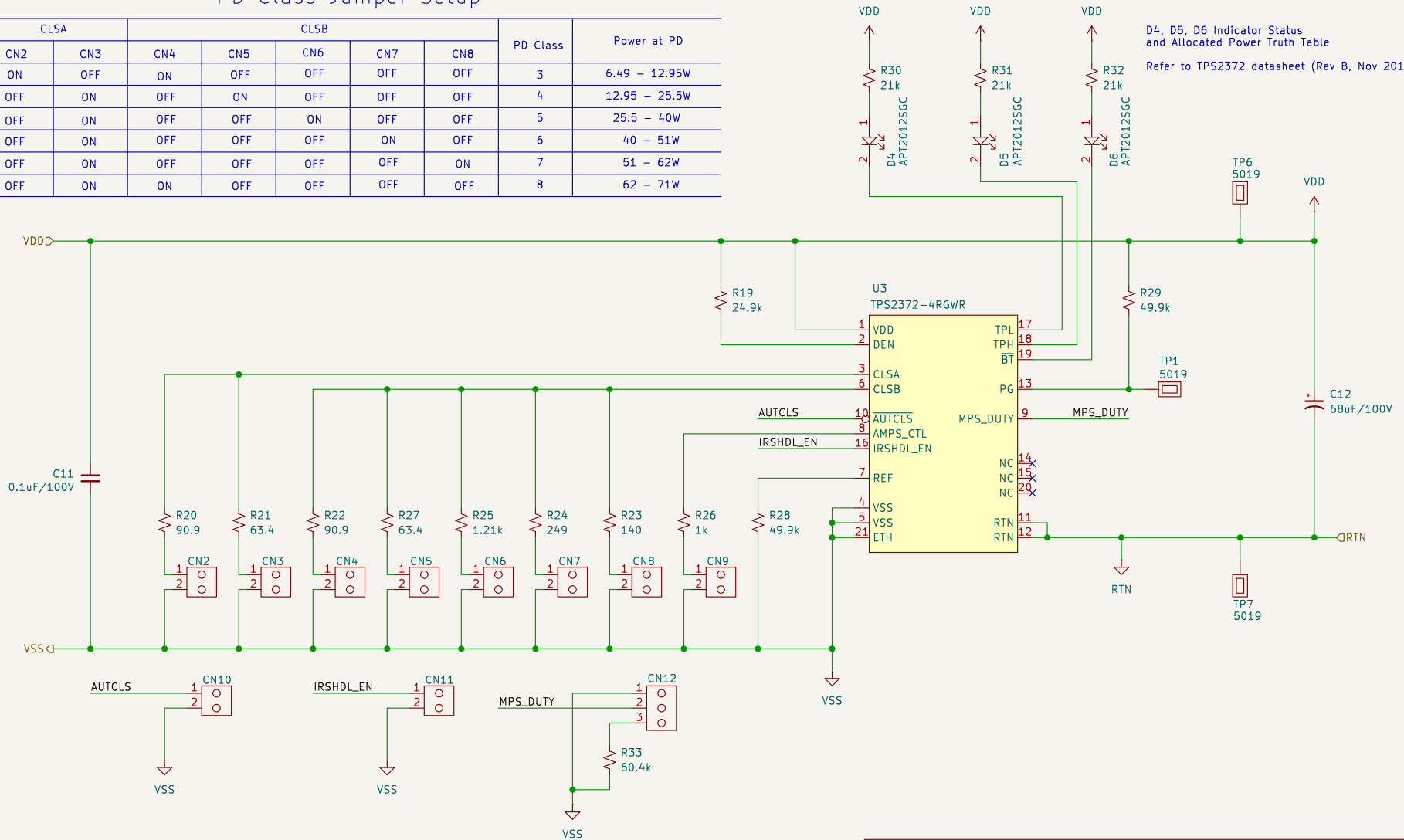
1–2	MPS duty = 12.5%
OFF	MPS duty = 5.4%
2–3	MPS duty = 8.1%

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Sheet: /PoE PD Controller/  
File: PoE PD Controller.kicad\_sch  
**Title: PoE PD Controller**  
Size: A4 Date:  
KiCad E.D.A. 9.0.3 Rev: V1.0 Id: 4/6

CLSA		CLSB					PD Class	Power at PD
CN2	CN3	CN4	CN5	CN6	CN7	CN8		
ON	OFF	ON	OFF	OFF	OFF	OFF	3	6.49 – 12.95W
OFF	ON	OFF	ON	OFF	OFF	OFF	4	12.95 – 25.5W
OFF	ON	OFF	OFF	ON	OFF	OFF	5	25.5 – 40W
OFF	ON	OFF	OFF	OFF	ON	OFF	6	40 – 51W
OFF	ON	OFF	OFF	OFF	OFF	ON	7	51 – 62W
OFF	ON	ON	OFF	OFF	OFF	OFF	8	62 – 71W



CN10	
ON	Autoclass enabled
OFF	Autoclass disabled

CN11	
ON	Inrush delay disabled
OFF	Inrush delay enabled

CN12	
1-2	MPS duty = 12.5%
OFF	MPS duty = 5.4%
2-3	MPS duty = 8.1%

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Size: A4	
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Date	Revision	Description
4-MAY-2025	1.0	Initial Release. Based on reference design of TPS2372 and LM5156H.



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Sheet: /Revision History/  
File: Revision History.kicad\_sch

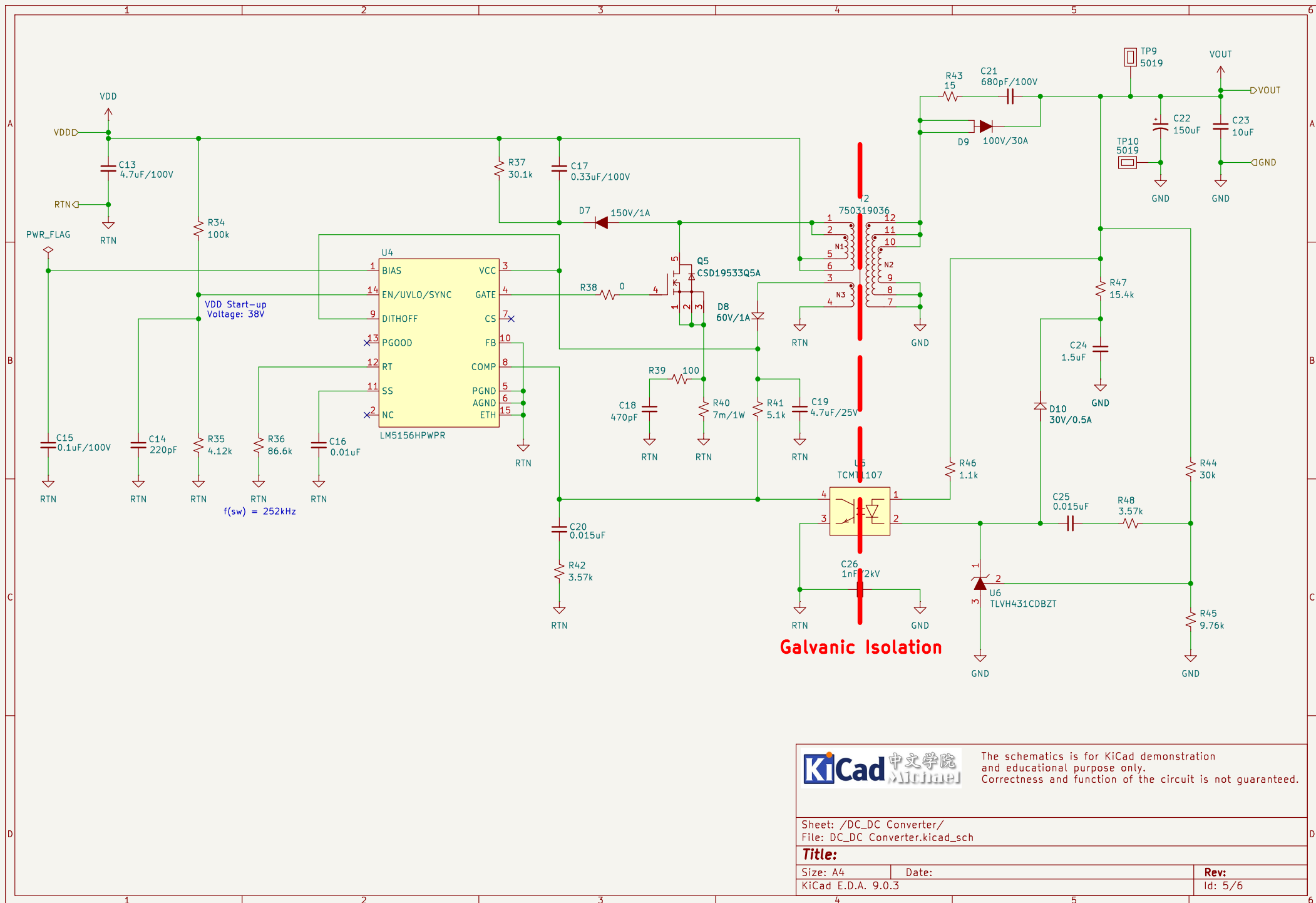
**Title:**

Size: A4	
KiCad E.D.A. 9.0.3	

Date:

Rev: 1.0

Id: 6/6



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Sheet: /DC\_DC Converter/  
File: DC\_DC Converter.kicad\_sch

**Title:**

Size: A4 Date:

KiCad E.D.A. 9.0.3

**Rev:**

Id: 5/6