

1

2

3

4

A

B

C

D

History

Date (d/m/y)	Version	Note
02/12/2019	0.1	Draft version
04/12/2019	0.2	- Add resistors for CTs - Add 1.8V power for CTs - Add buffer ICs for MCU - Replace single transistors by darlington transistors array. - Fixbug
07/12/2019	0.3	- Add LED signal for relay - Change CTs - Add feedback signals from AC ports - Add WAKE-UP pin for 3G module
09/12/2019	0.4	- Add Buzzer - Add PCB document - Fixbug
12/12/2019	0.5	[x] Thêm chân nạp cho STM32 [x] Chính số cho nguồn 3G (R1,R2) hoặc recommend cái nào thì tô đậm [x] Thêm test point cho mấy chỗ nguồn 12v, 3v3, 1v8 [x] Đèn led blink trạng thái chân B2 [x] Sim 5320 cũng ra hàng rào hoặc test point uart để test
24/12/2019	0.6	- Add PCB layout
29/12/2019	0.7	- Fix bug
27/02/2020	1.0	-
25/05/2020	2.0	- Pre-mass production (20 pcs)
12/03/2021	2.1	- Keep CTs 1 to 8 is 5A the same, the others change to 10A - Add wifi modules ESP-01 and ESP-05. Just use only one, the other for backup. - Bigger screw hole for more easy assembly - Fix the transformer footprint

Title eBox_Notes			NPN Lab
Size: A4	Number:1	Revision:	
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File: eBox_Notes.SchDoc			

1

2

3

4

Header

CT1
12V
CT0

V_REF
12V

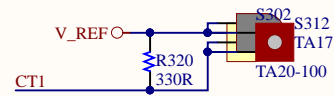
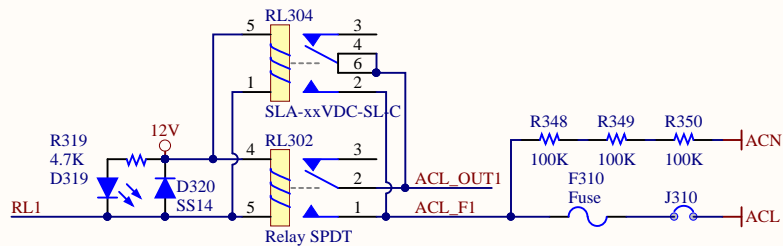
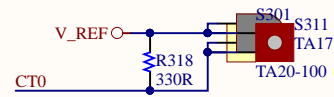
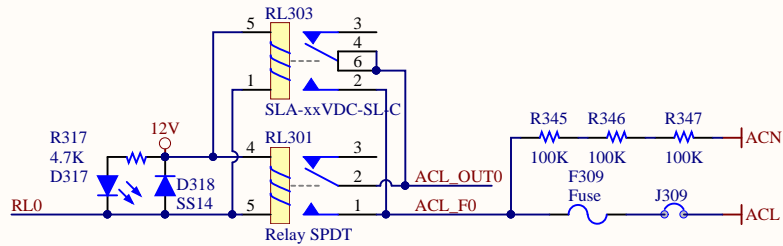
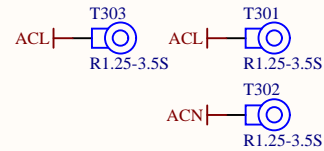
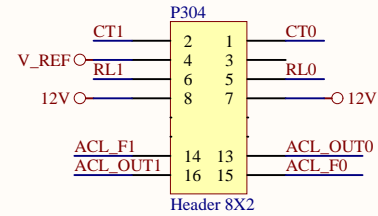
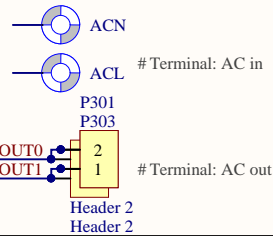
RL0 # Input: relay control
RL1

ADC_OUT8 # Output: CT ADC out
ADC_OUT9

ACL_OUT0
ACL_F0
ACL_F1
ACL_OUT1

ACL_OUT0 # Output: Check AC output (fuse/relay fault)
ACL_OUT1

Terminal



Title **eBox_Peripherals**

Size: A4

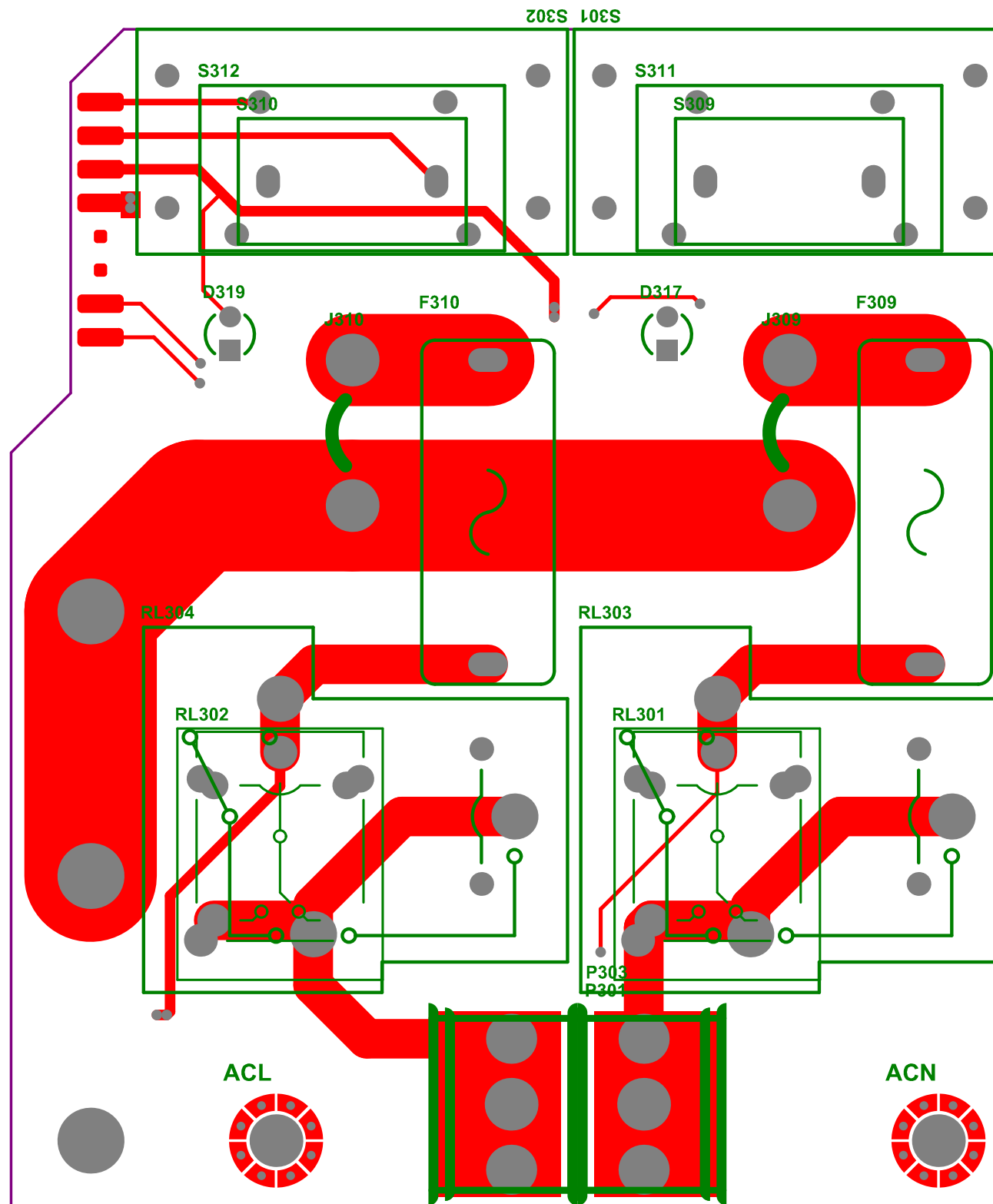
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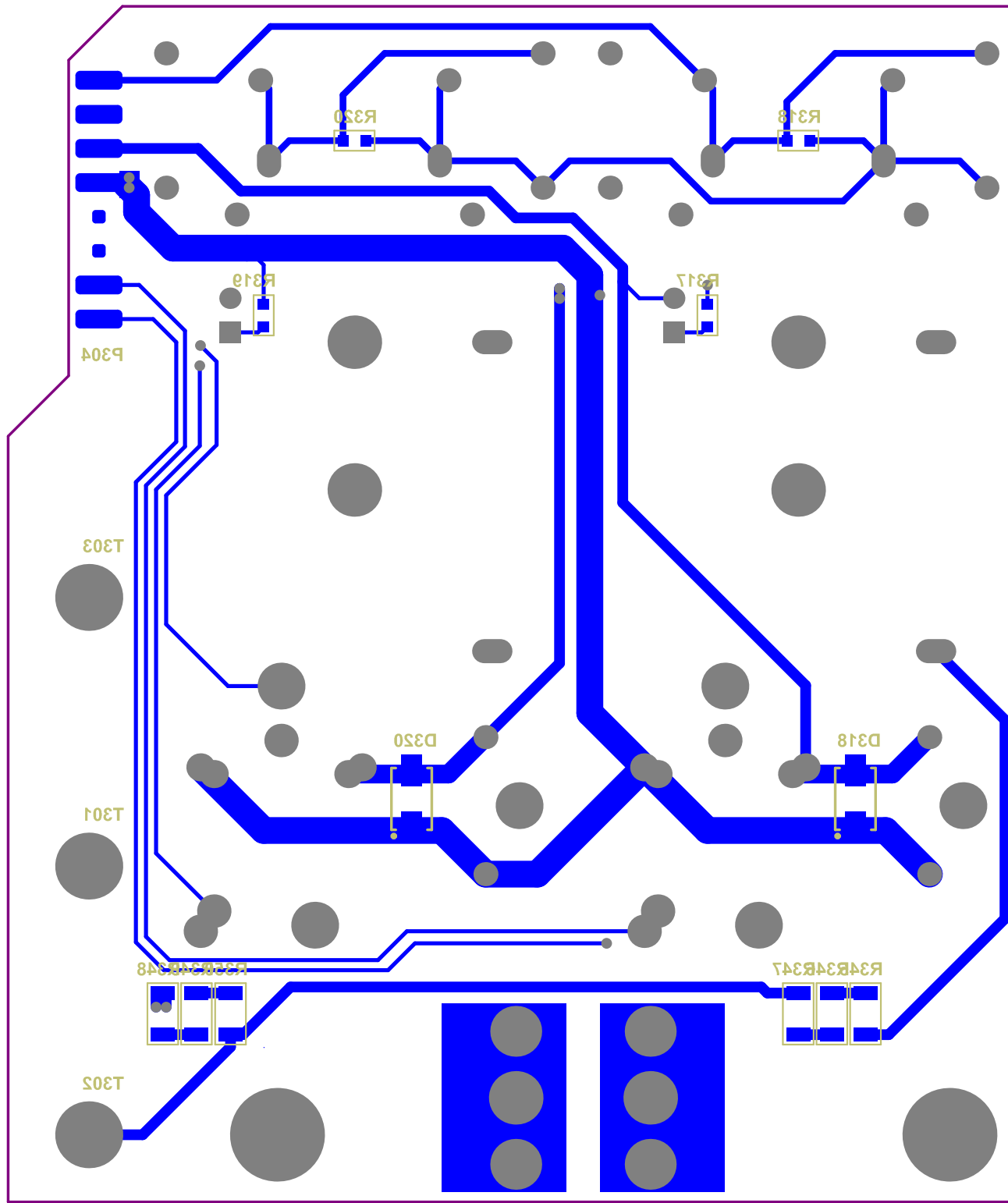
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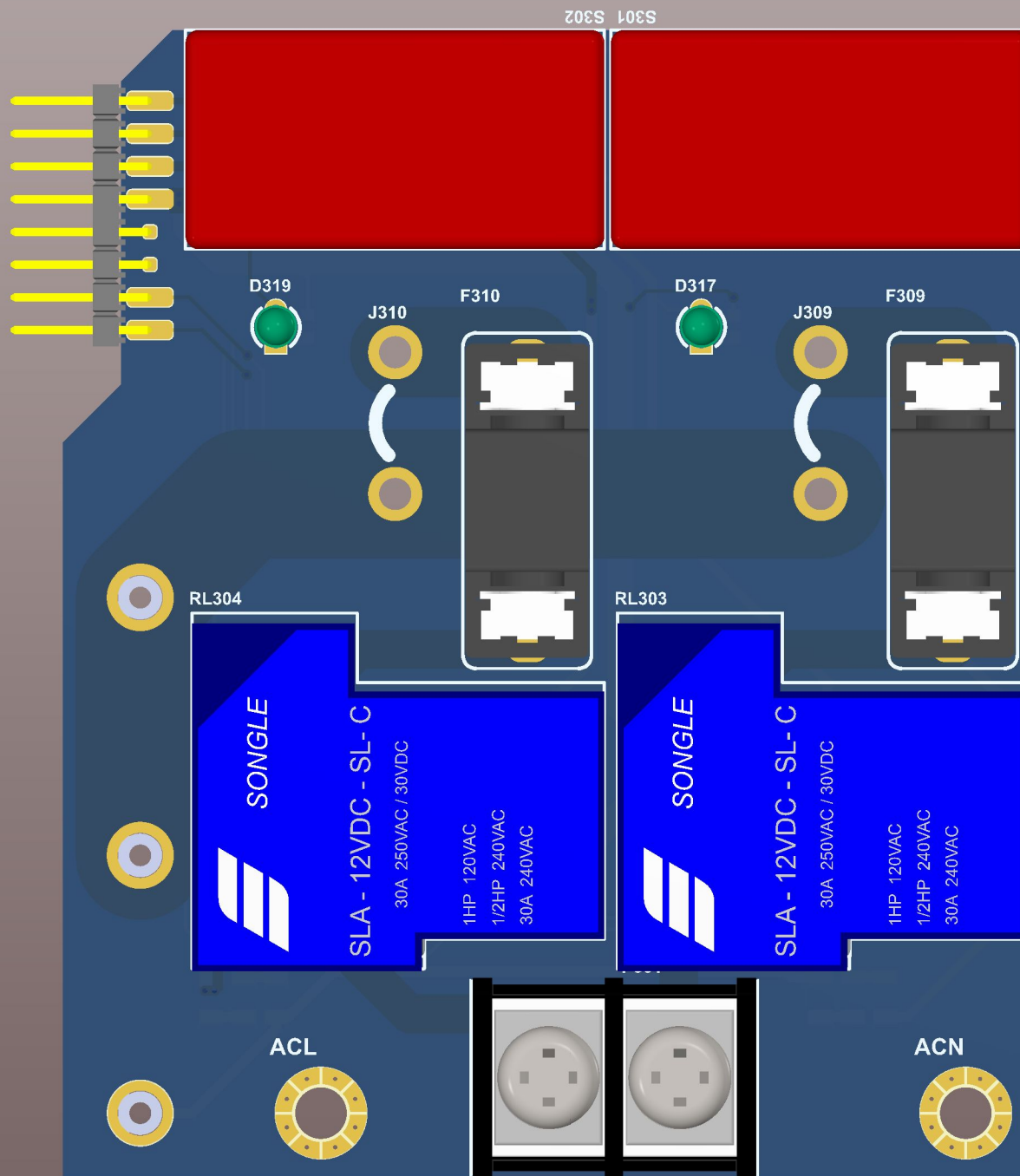
Date: 19/12/2021 Time: 10:06:47 PM Sheet 4 of 9

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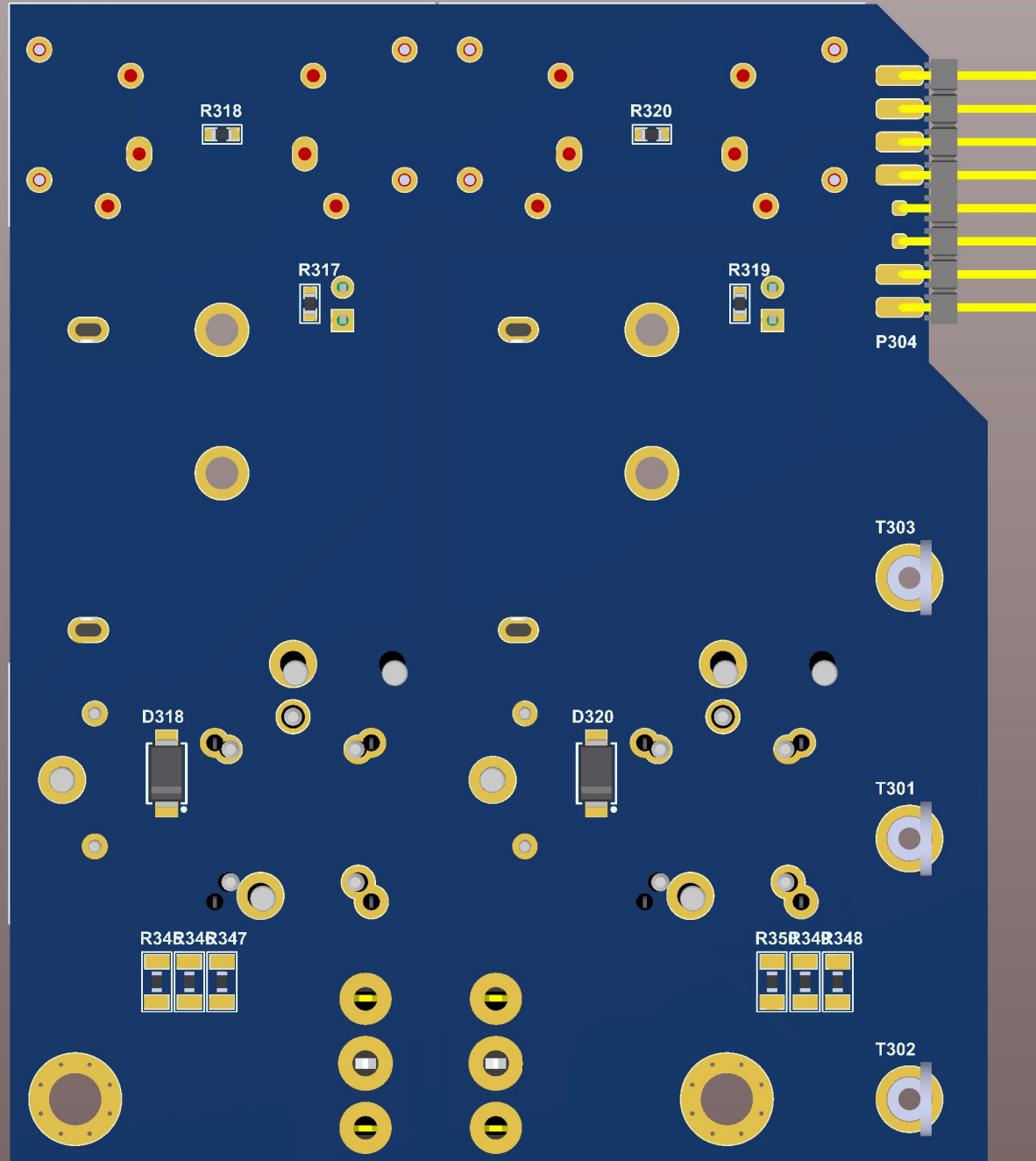
NPNLab

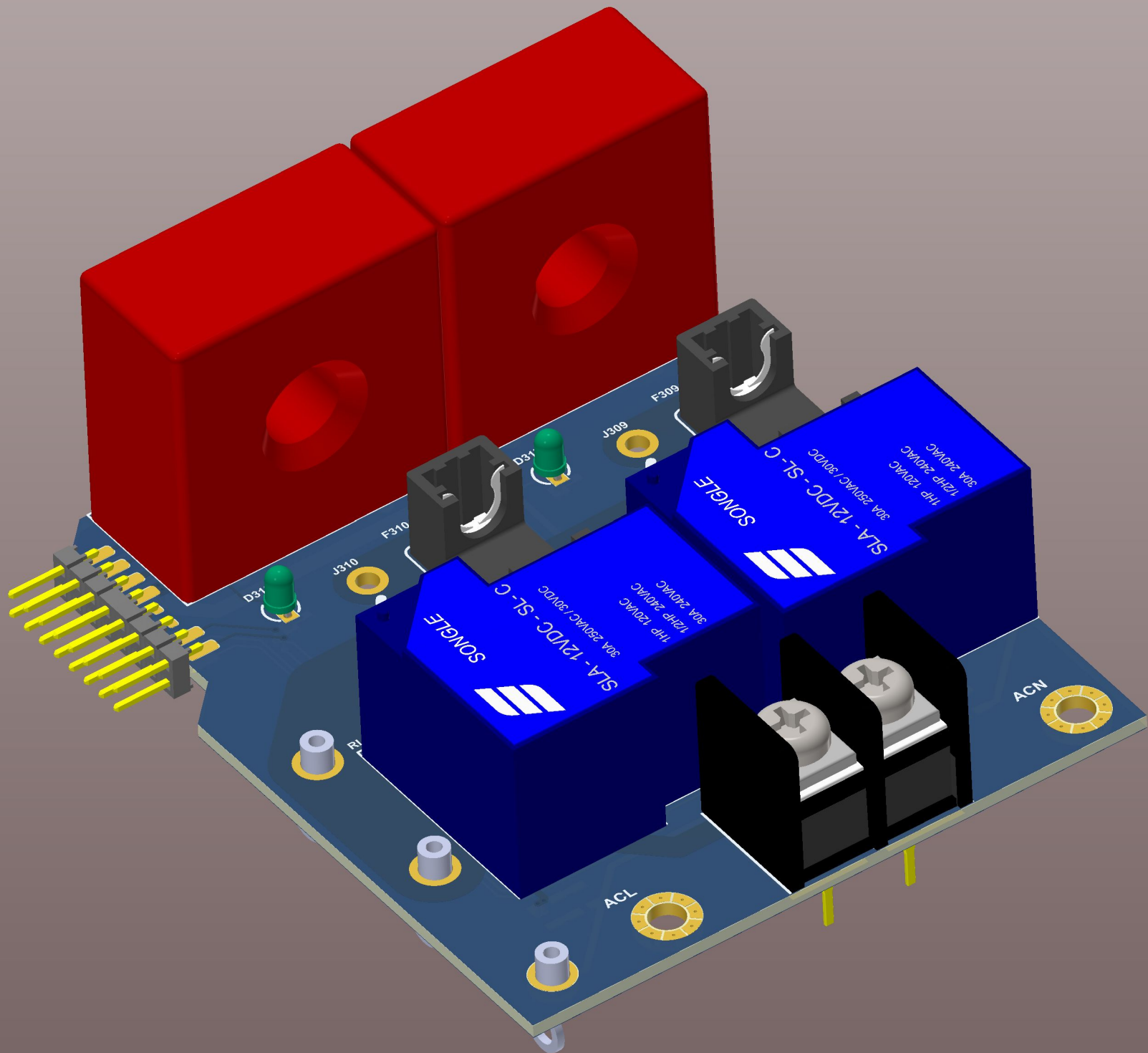


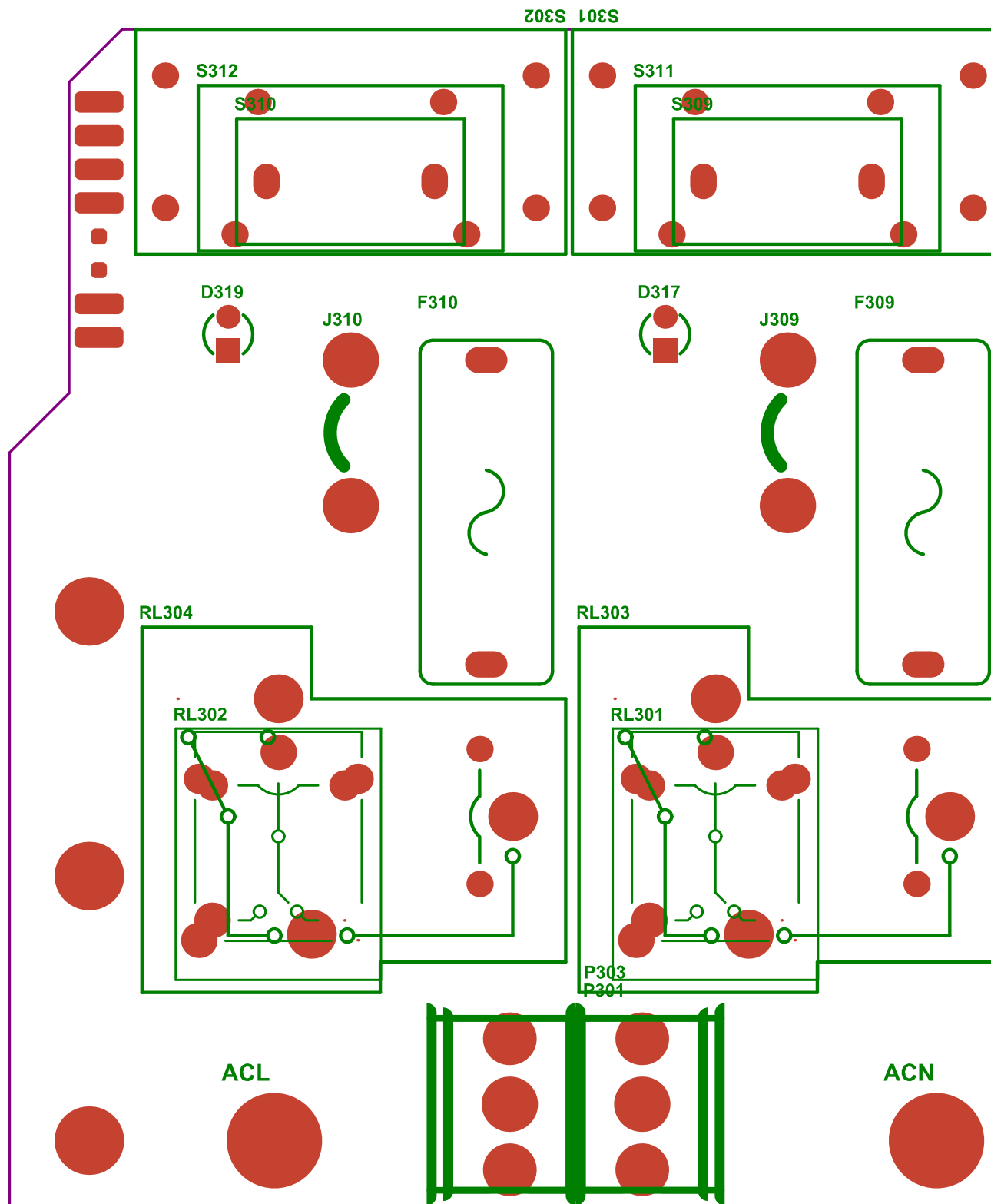


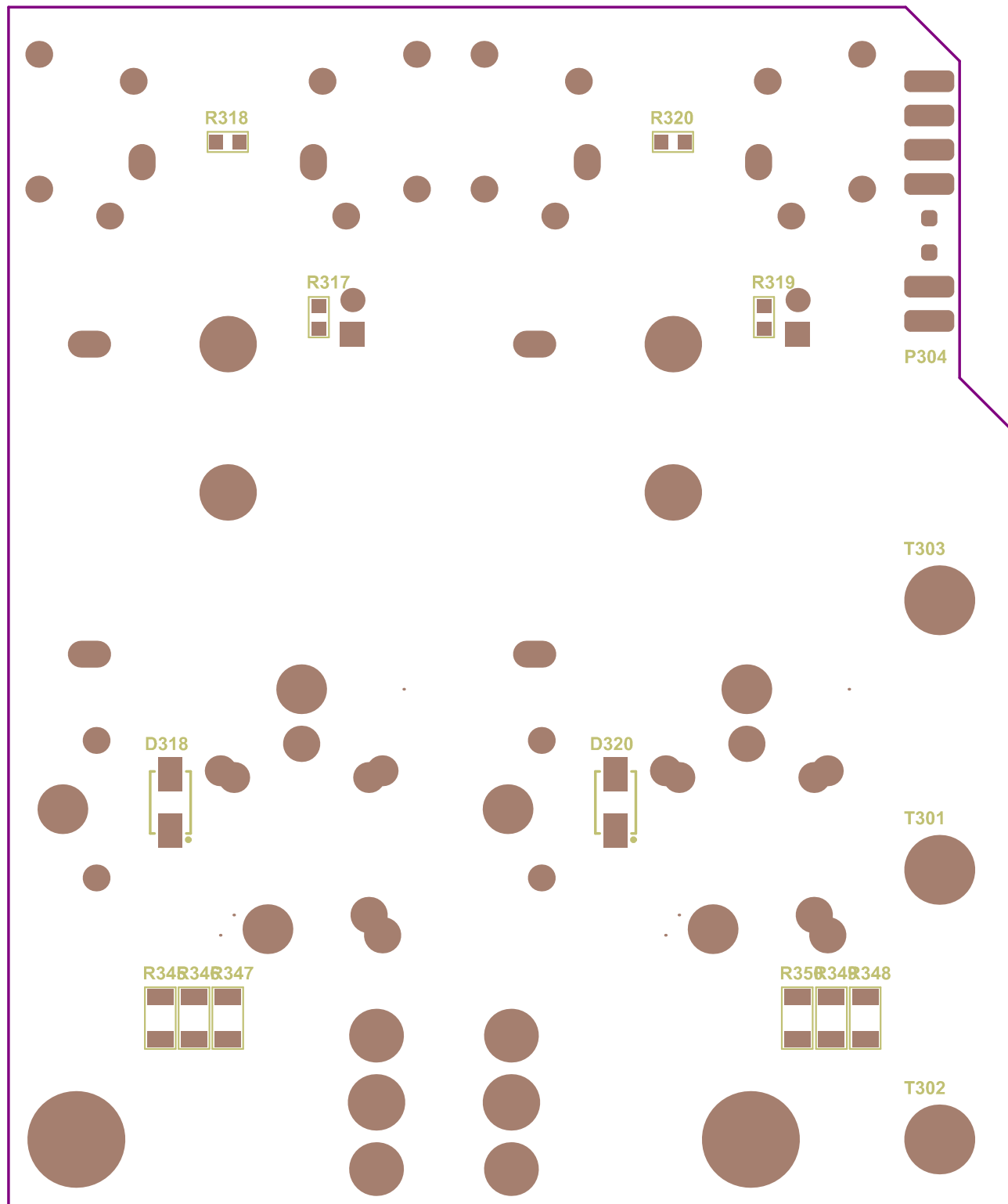


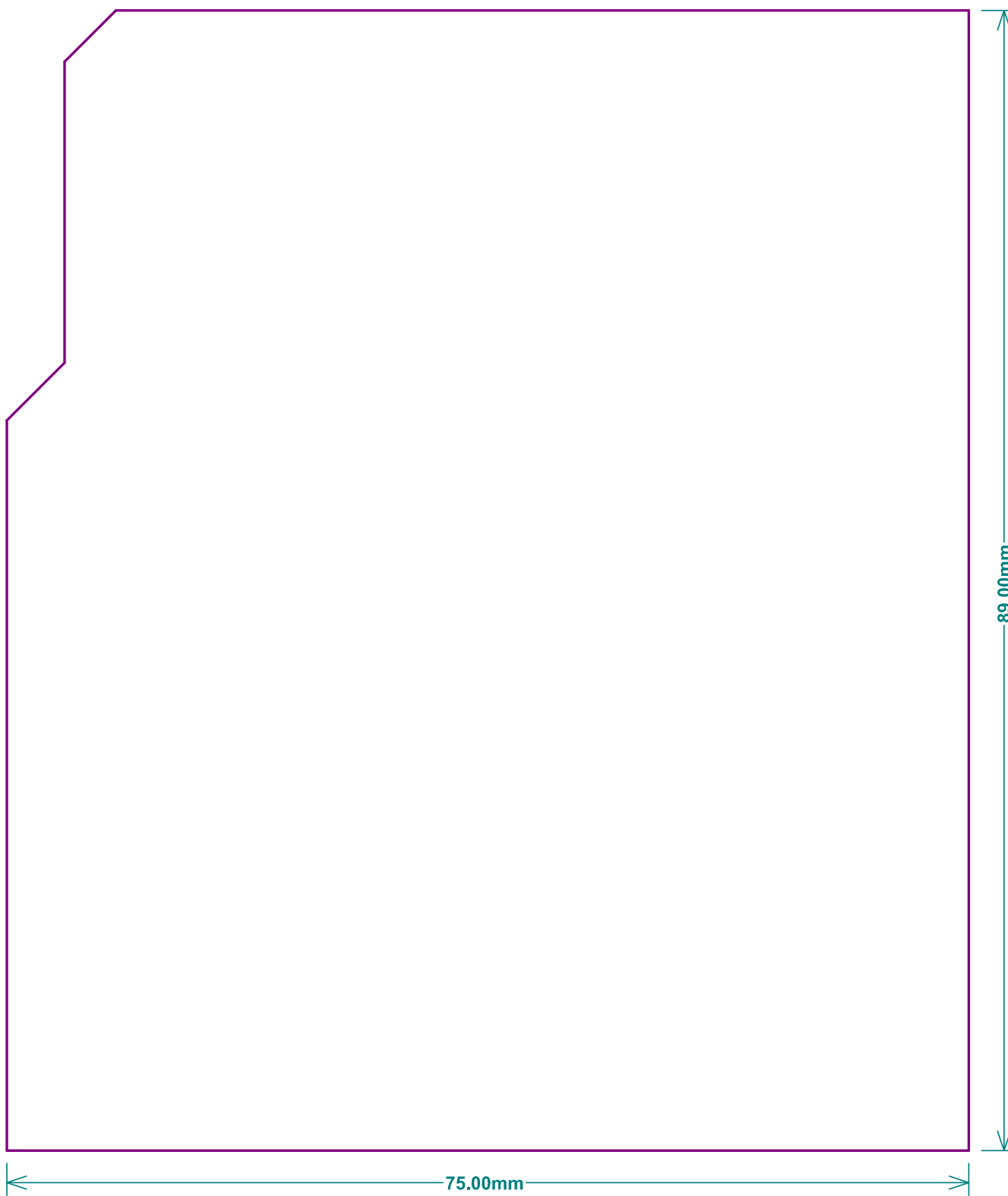
2304 2305











75.00mm

89.00mm