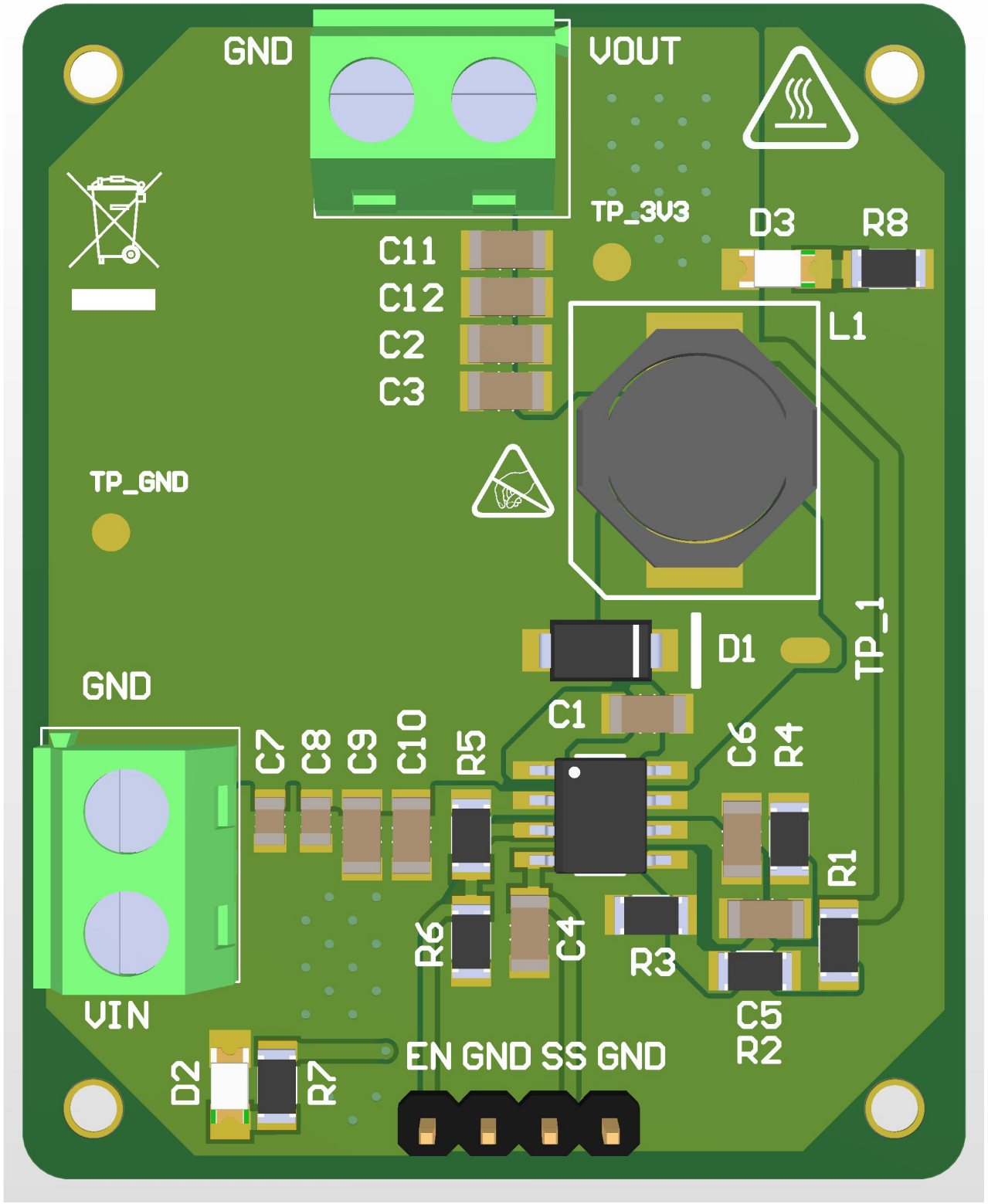
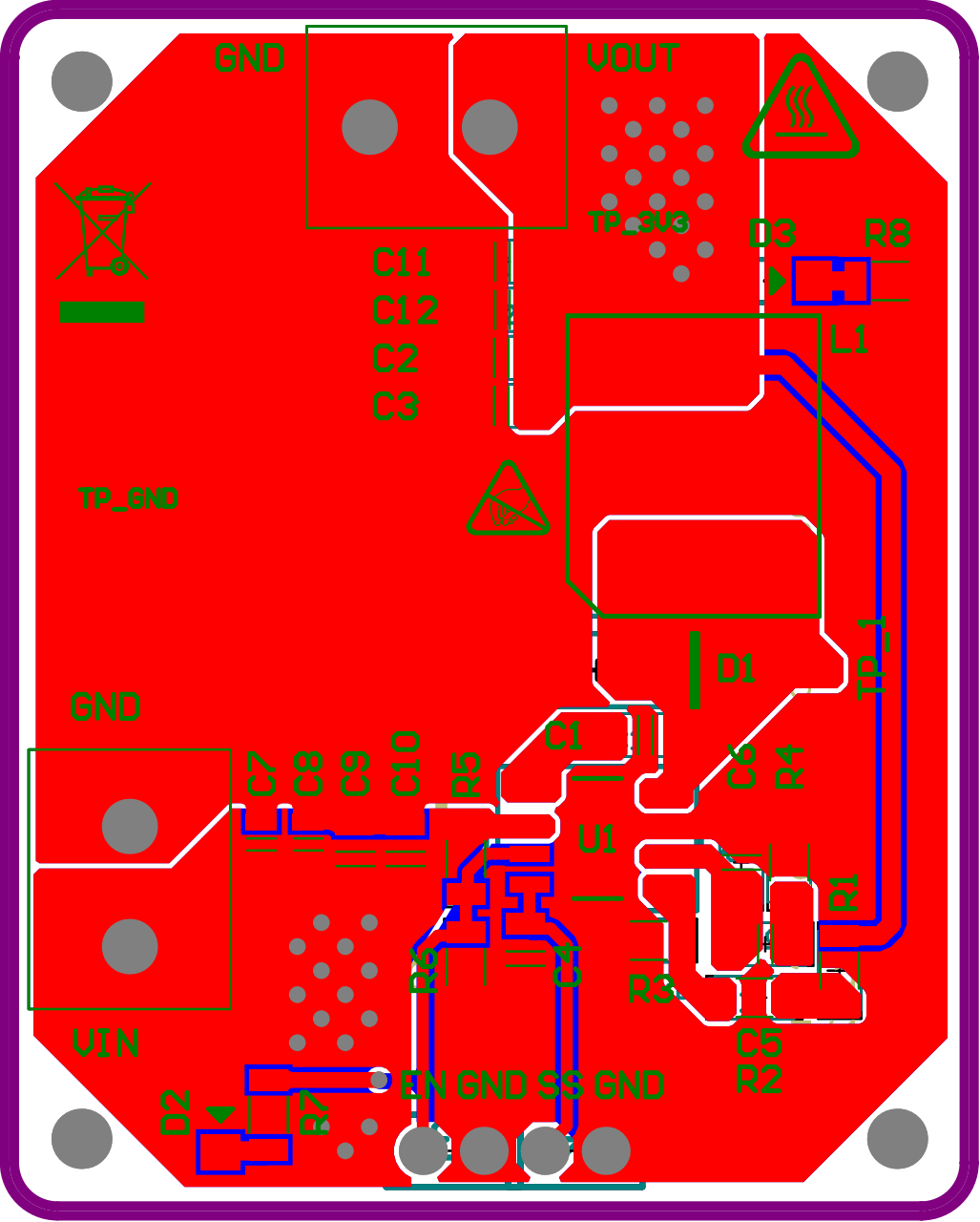
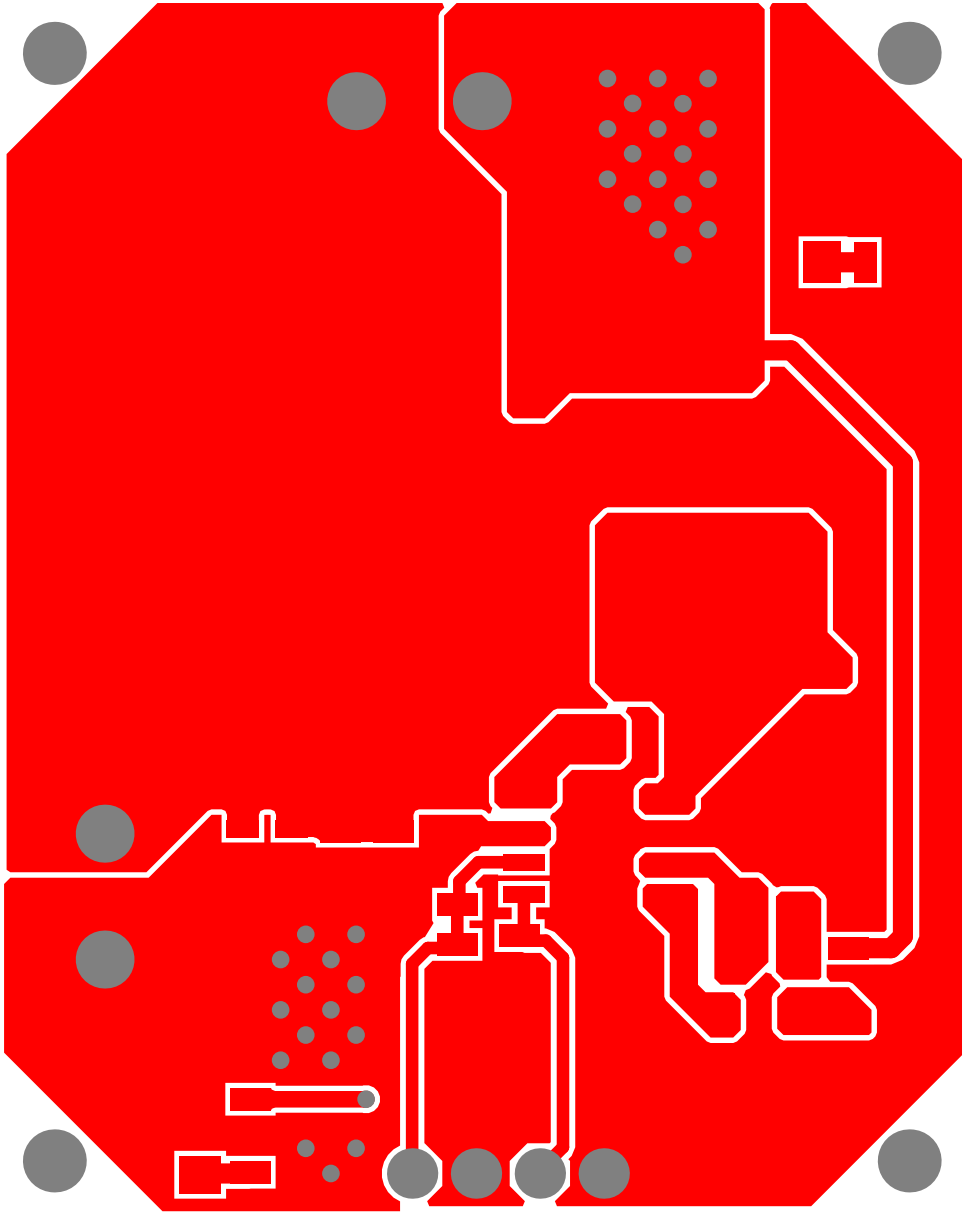
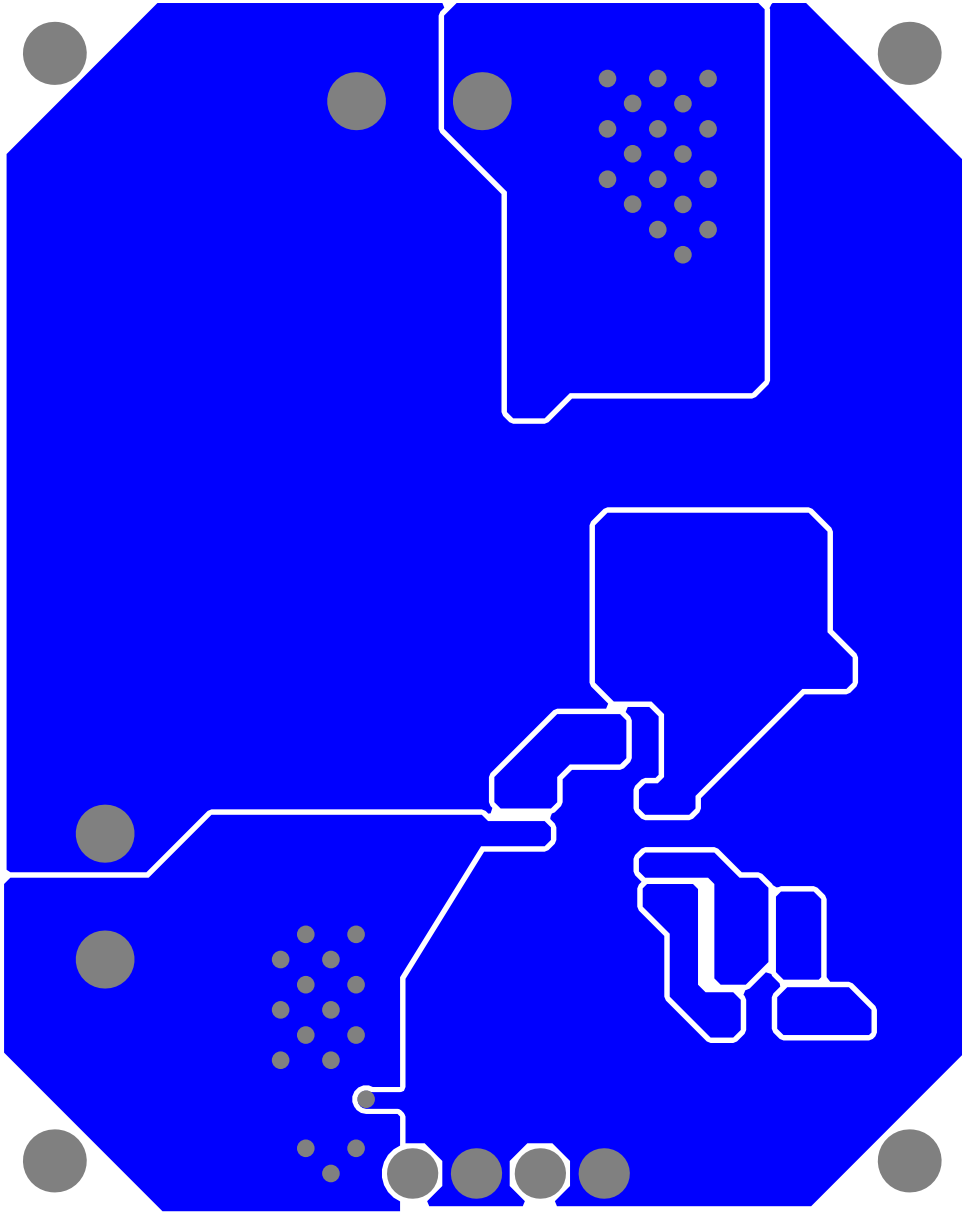
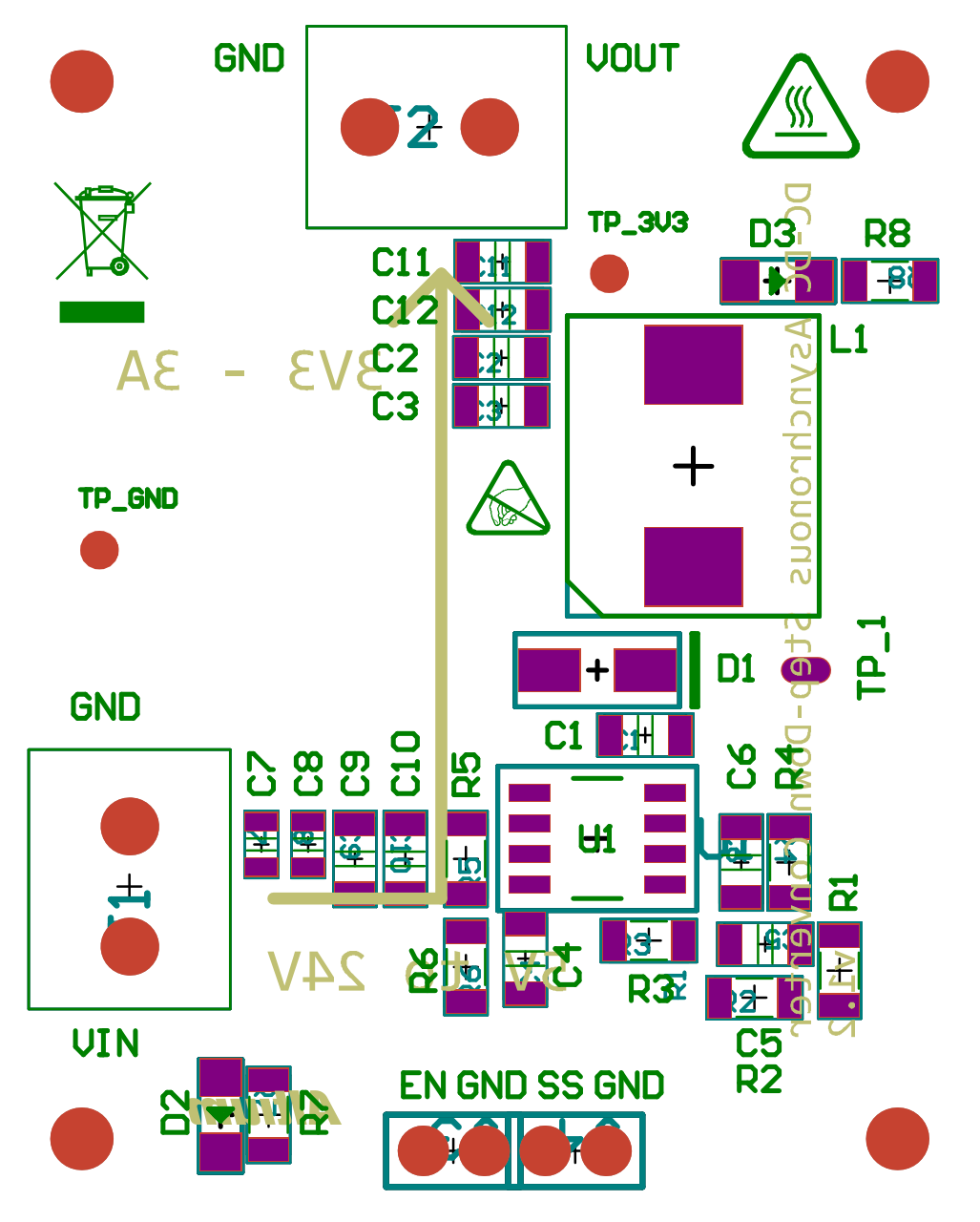
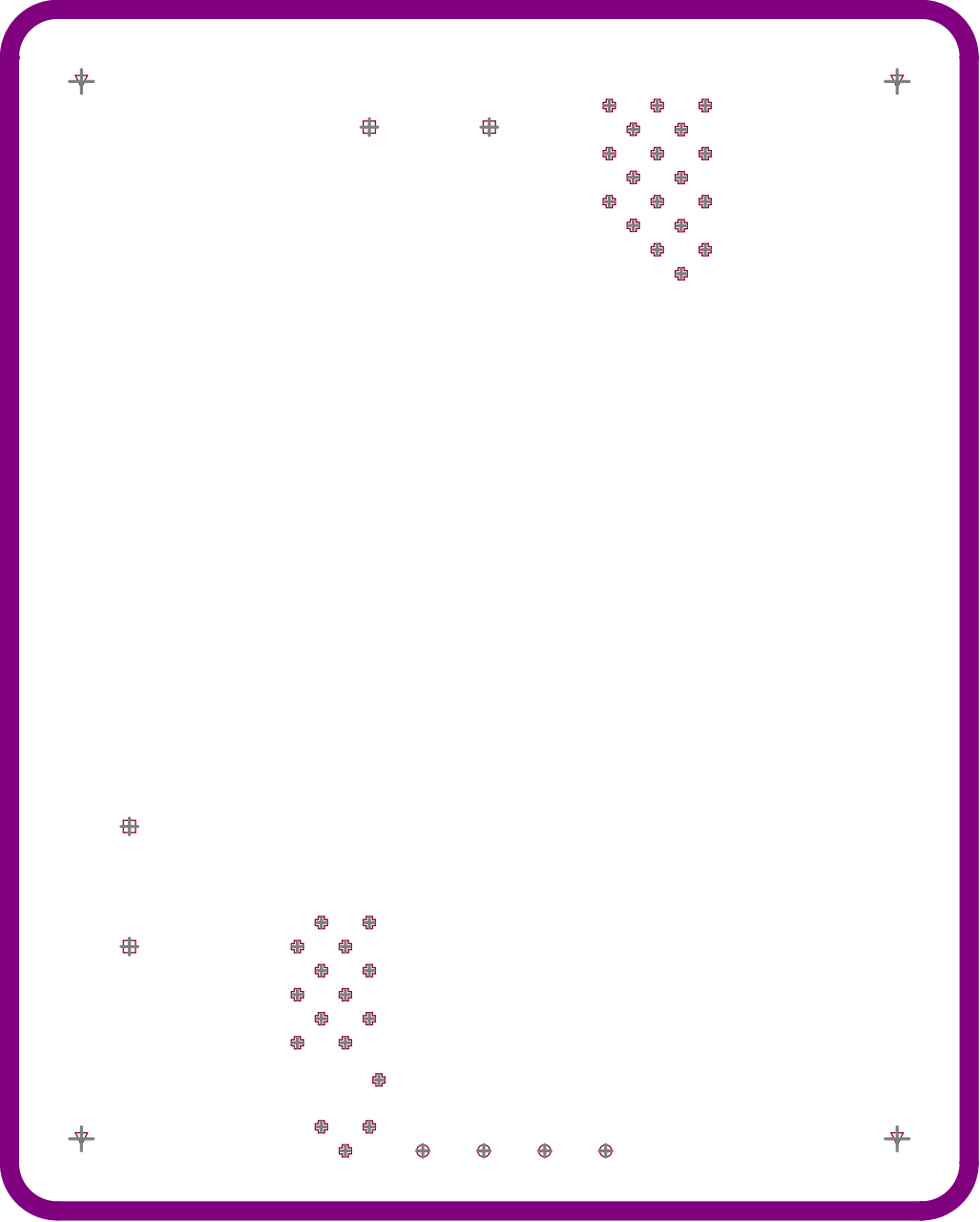

GND
VOUT
TP_3V3
D3
R8
C11
C12
C2
C3
L1
TP_GND
D1
TP_1
GND
C1
C7
C8
C9
C10
R5
C6
R4
R1
R6
C4
R3
C5
R2
VIN
D2
R7
EN GND SS GND


GND
VOUT
TP_3V3
C11
C12
C2
C3
D3
R8
L1
TP_GND
D1
R7
GND
C7
C8
C9
C10
R5
C1
C6
R4
U1
R1
R6
C
R3
C5
R2
VIN
EN GND SS GND
D2
R4






GND
VOUT
TP_3V3
D3
R8
C11
C12
C2
C3
L1
TP_GND
D1
TP_1
GND
C1
C7
C8
C9
C10
R5
C6
R4
R1
R6
C4
R3
C5
R2
VIN
D2
R7
EN GND SS GND



İÇİNDEKİLER / CONTENTS

REVİZYON / REVISION

Sayfa Nu. Page No	Tarih Date	Açıklama / Description
1-3	02.10.2024	First Publish v1.0
1-3	01.08.2025	Revision v1.1

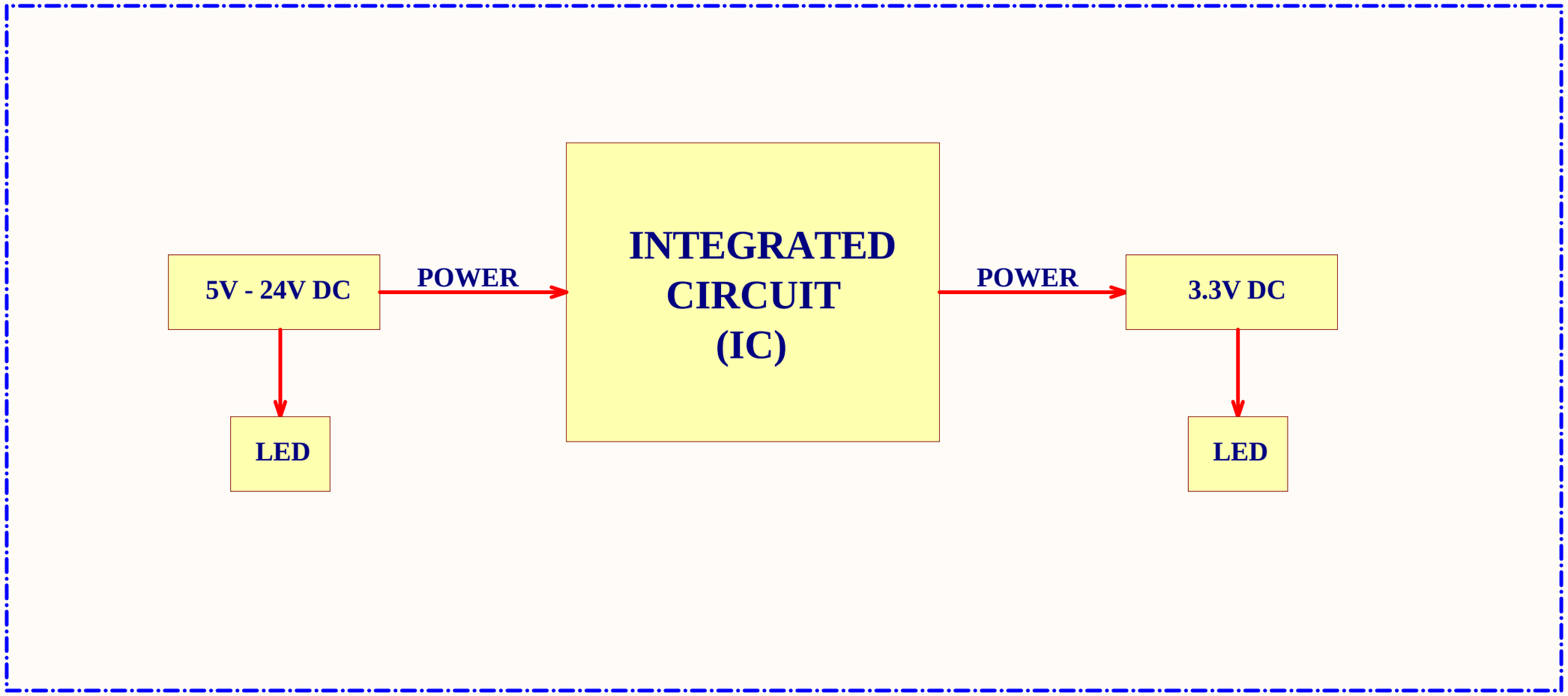
ÜRETİM NOTLARI / PRODUCTION NOTES

	Açıklama / Description
Kart Özellikleri Board Features	This board's main aim is to achieve DC/DC conversion. This project completed by using Asynchrous Step-Down Converter topology. Swithing Frequency is selected as default 570kHz. Conncetions made by terminal blocks. Power Leds and Test Points are available.
Üretim Çıktıları Gerber Files	
Ekler Attachments	

İLETİŞİM / CONTACT

DOSYA ADI / FILE NAME	Cover.SchDoc
TANIM / DESCRIPTION	24V Input, 3V3 3A Output, Step-Down DC-DC Converter
HAZIRLAYAN / PREPARED BY	Aslı Kurt
YAYIN TARİHİ / REL. DATE	18.10.2024
BOYUT / SIZE	A3
SAYFA / SHEET	1 / 3

Aslı Kurt



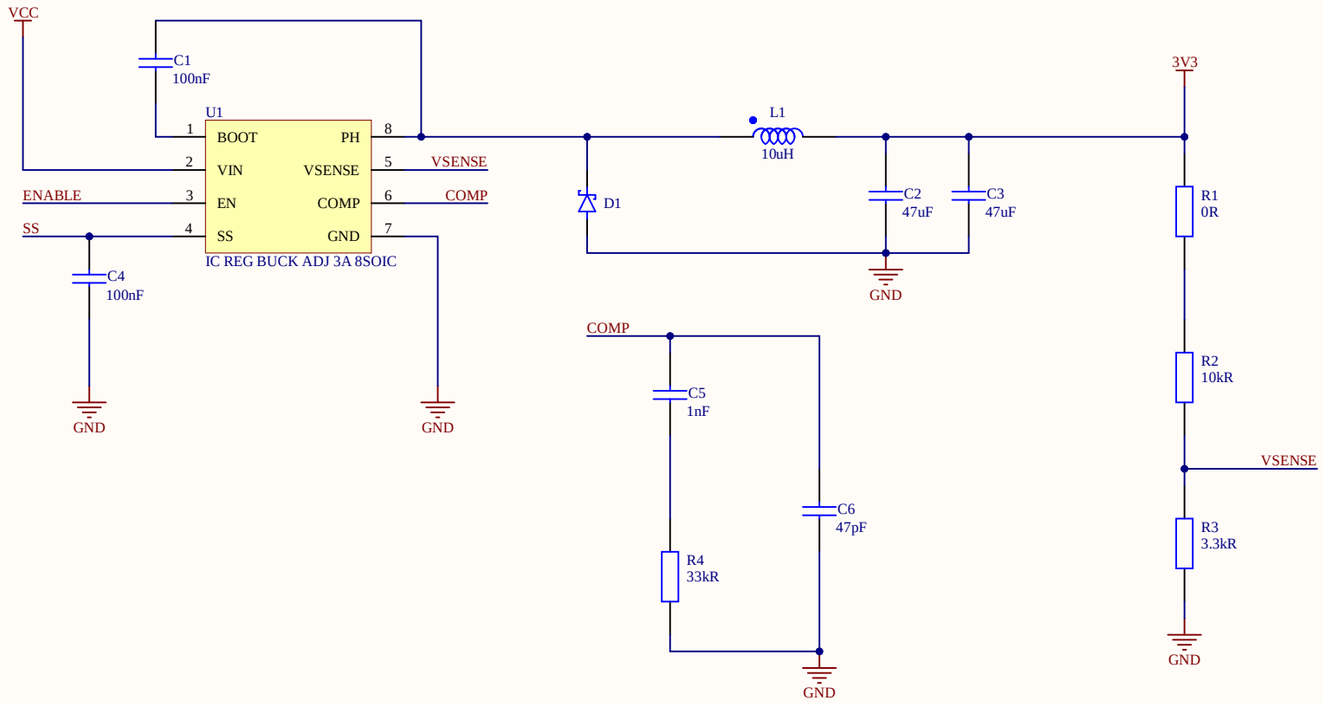
COMPONENTS:

-CAP CER 0.1UF 50V X7R1206
-CAP CER 0.1UF 50V X7R 1206
-CAP CER 4.7UF 25V X5R 1206
-CAP CER 1nF 1206
-CAP CER 47PF 50V C0G/NPO 1206
-CAP CER 4.7uF 10% 0805
-CAP CER 10nF 1206
-Res Thick Film 1206 0 Ohm 5 Molded SMD Paper T/R
-RES 10K OHM 5% 1/4W 1206
-RES 3.3K OHM 5% 1/4W 1206
-SMD Chip Resistor, 33 kOhm, ±1%, 250 mW, 1206 [3216 Metric], Thick Film, General Purpose
-RES 100K OHM 5% 1/4W 1206
-RES 47K OHM 5% 1/4W 1206

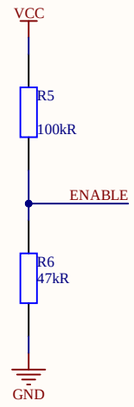
-Rectifier Diode Schottky 40V 3A 2-Pin SMA T/R
-Connector, Terminal Block; Wire Receptacle; 2 Pos.; 16 30 AWG, 0.197 in. CL; Std
-10uH 10X10 4.8A SMD Güç Bobini SR1004
-3.5V to 28V Input, 3A, 570kHz Step-Down Converter with Eco-mode 8-SOIC-40 to 150

DOSYA ADI / FILE NAME BlockDiagram.SchDoc	TANIM / DESCRIPTION 24V Input, 3V3 3A Output, Step-Down DC-DC Converter
Aslı Kurt	HAZIRLAYAN / PREPARED BY Aslı Kurt
	YAYIN TARİHİ / REL. DATE 18.10.2024
	BOYUT / SIZE A3
	SAYFA / SHEET 2 / 3

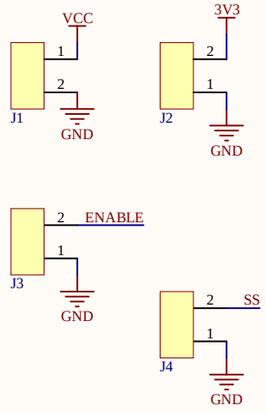
BUCK CONVERTER



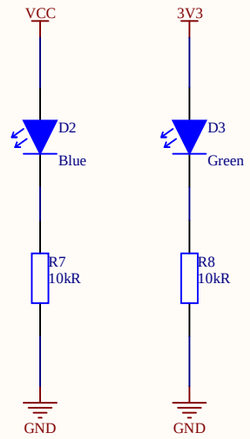
VOLTAGE DIVIDER



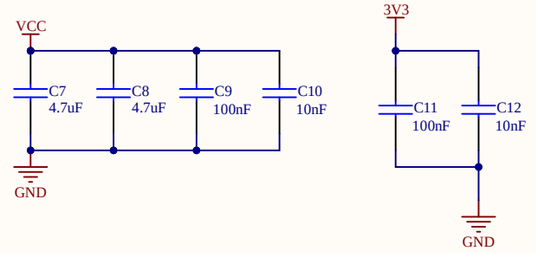
TERMINALS



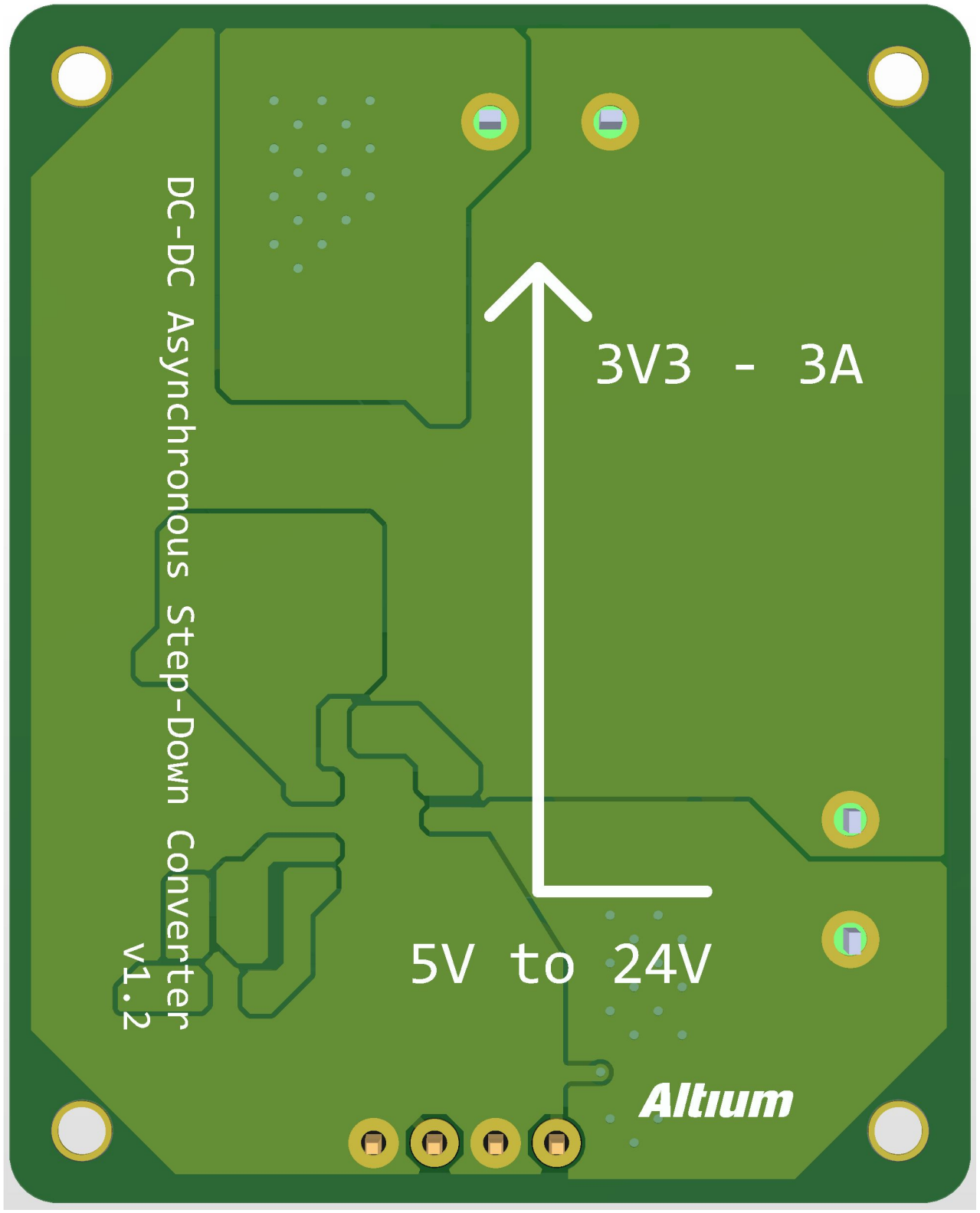
POWER LEDS

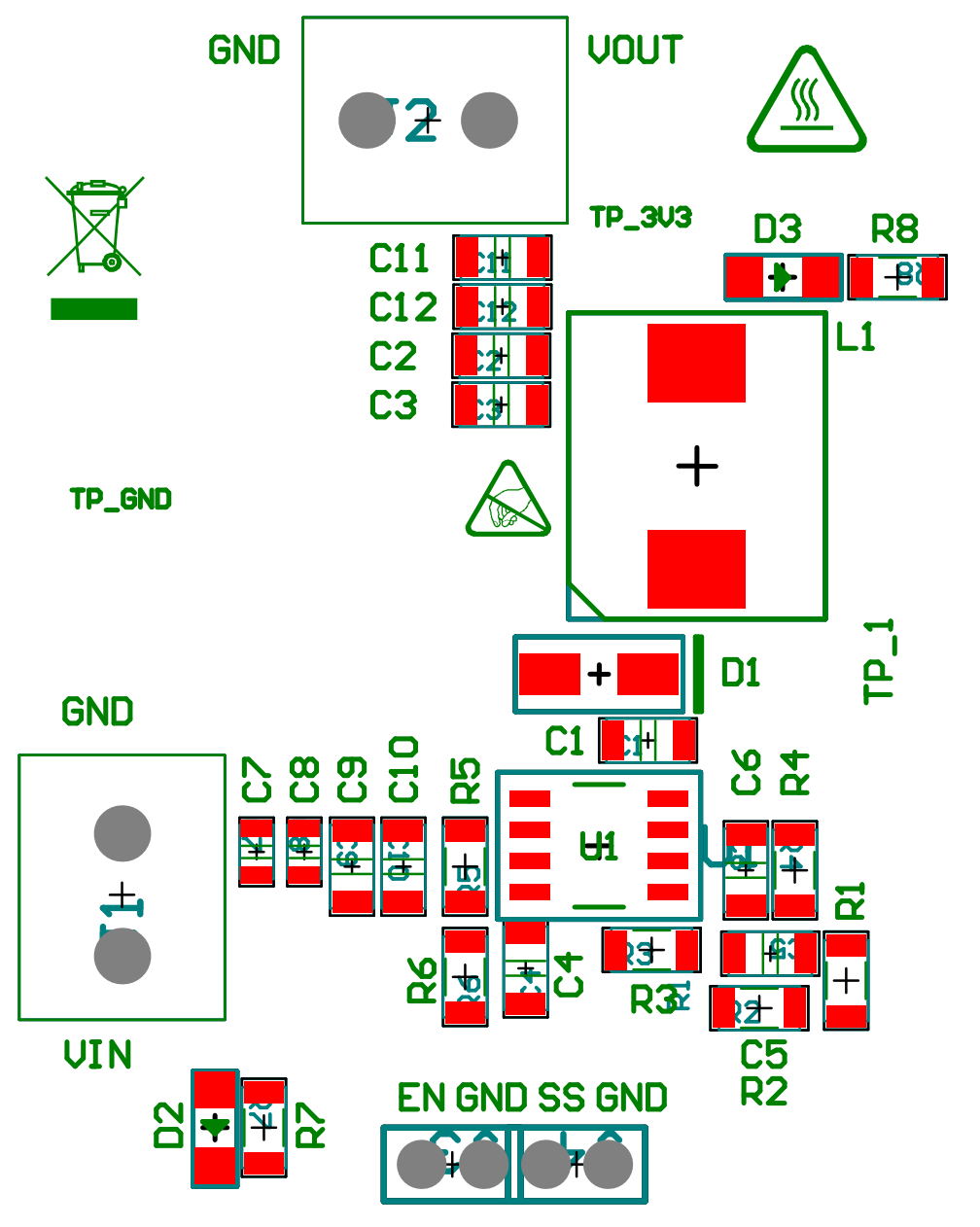


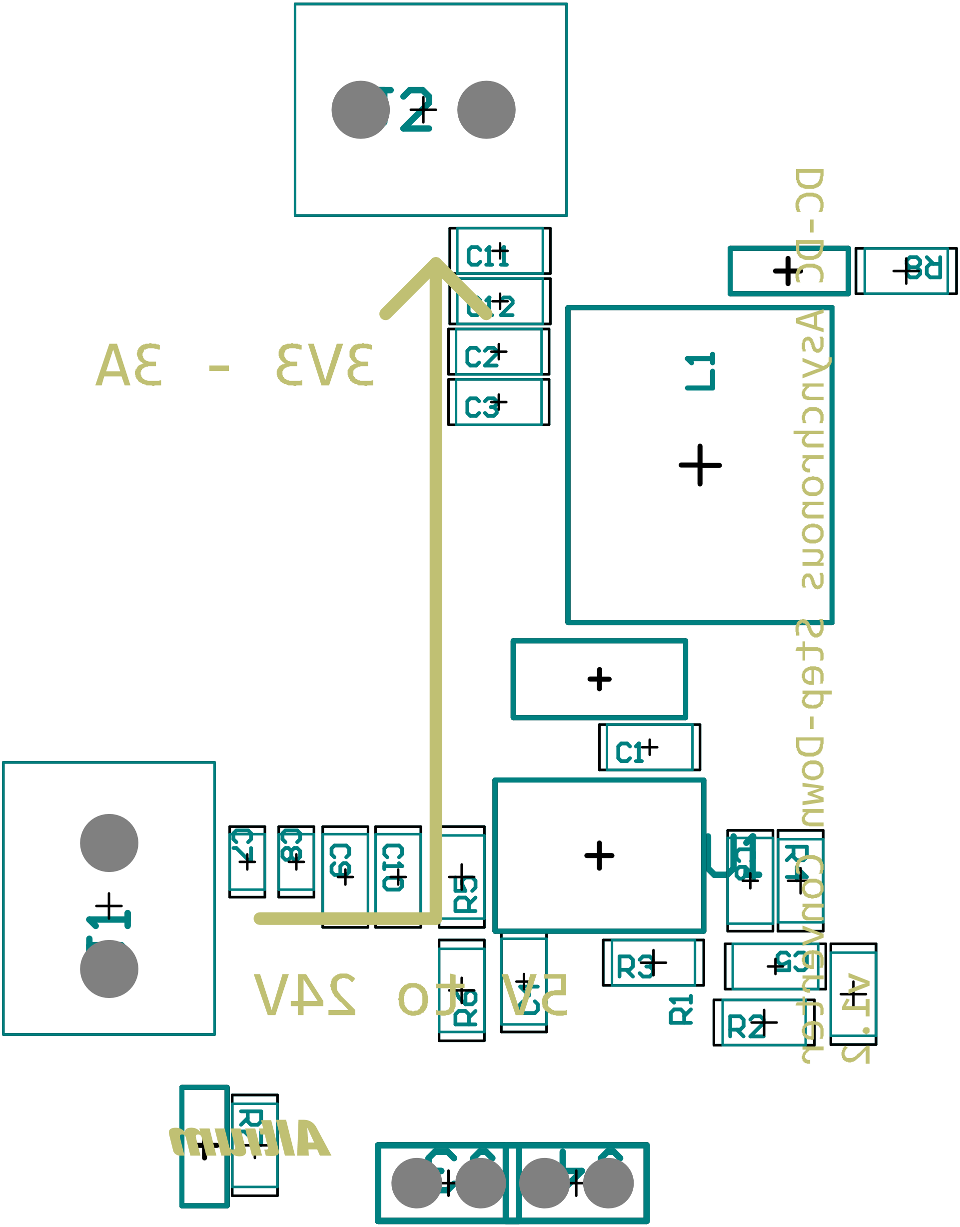
DECOUPLING CAPACITORS



DOSYA ADI / FILE NAME: PowerConnections.SchDoc	TANIM / DESCRIPTION: 24V Input, 3V3 3A Output, Step-Down DC-DC Converter
Aslı Kurt	HAZIRLAYAN / PREPARED BY: Aslı Kurt
	YAYIN TARİHİ / REL. DATE: 18.10.2024 · BOYUT / SIZE: A3 · SAYFA / SHEET: 3 / 3


DC-DC Asynchronous Step-Down Converter
v1.2
3V3 - 3A
5V to 24V
Altium


GND
VOUT
J2
TP_3V3
D3
R8
C11
C12
C2
C3
L1
TP_GND
D1
TP_1
GND
C1
C7
C8
C9
C10
R5
U1
C6
R4
R1
R6
C4
R3
C5
R2
VIN
D2
R7
EN GND SS GND


3V3 - 3A
5V to 24V
DC-DC Asynchronous Step-Down Converter
L1
C11
C2
C3
C1
R3
R2

J2
C11
C12
C2
C3
L1
R8
C1
J1
C7
C8
C9
C10
R5
R4
C6
R6
C4
R3
C5
R1
R2
R7
J3
J4

J2
C11
C12
C2
C3
R8
L1
C1
J1
C7
C8
C9
C10
R5
R4
C5
R6
C4
R3
C6
R1
R2
R7
J3
J4

Comment	Description	Designator	Footprint	LibRef	Quantity
C1206C104J5RAC7800	CAP CER 0.1UF 50V X7R 1206	C1, C4, C9, C11	CAP_1206	CAP CER 100nF 1206	4
GMC31X5R476M25NT	CAP CER 47UF 25V X5R 1206	C2, C3	CAP_1206	CAP CER 47uF 1206	2
C3216C0G2J102J085AA	CAP CER 1nF 1206	C5	CAP_1206	CAP CER 1nF 1206	1
C1206C470J5GAC7800	CAP CER 47PF 50V C0G/NP0 1206	C6	CAP_1206	CAP CER 47pF 1206	1
CL21A475KAQNNNE	CAP CER 4.7uF %10 0805	C7, C8	CAP_0805	CAP CER 4.7uF 0805	2
C3216C0G2J103J160AA	CAP CER 10nF 1206	C10, C12	CAP_1206	CAP CER 10nF 1206	2
B340AE-13	Rectifier Diode Schottky 40V 3A 2-Pin SMA T/R	D1	SMA	B340A	1
150120BS75000	Led, Blue, 470 Nm, 3.2 V, 30 Ma, 145 Mcd Rohs Compliant: Yes | Wurth Elektronik 150120BS75000	D2	LED_BLUE_1206	LED BLUE 1206	1
150120GS75000	WL-SMCW SMT Mono-Color Chip LED Waterclear	D3	LED_GREEN_1206	LED GREEN 1206	1
282836-2	Connector, Terminal Block; Wire Receptacle; 2 Pos.; 16-30 AWG; 0.197 in. CL; Sid	J1, J2	TERMINAL	2x1 TERMINAL 5mm	2
2x1 Male Header 2.54mm		J3, J4	2x1 Male Header 2.54mm	2x1 Male Header 2.54mm	2
SRI1004	10uH 10X10 4.8A - SMD Güç Bobini - SRI1004	L1	IND_1010	IND 10uH	1
PMR18EZPJ000	Res Thick Film 1206 0 Ohm 5% Molded SMD Paper T/R	R1	RES_1206	RES 0 OHM 1206	1
RC1206JR-0710KL	RES 10K OHM 5% 1/4W 1206	R2, R7, R8	RES_1206	RES 10K OHM 1206, RES 10K OHM 1206 1/4W	3
RC1206JR-073K3L	RES 3.3K OHM 5% 1/4W 1206	R3	RES_1206	RES 3K3 OHM 1206	1
RES 33K OHM 5% 1/4W 1206	SMD Chip Resistor, 33 kOhm, ï¿½5%, 250 mW, 1206 [3216 Metric], Thick Film, General Purpose	R4	RES_1206	RES 33K OHM 1206	1
RC1206JR-07100KL	SMD Chip Resistor, 100 kOhm, ï¿½5%, 250 mW, 1206 [3216 Metric], Thick Film, General Purpose	R5	RES_1206	RES 100K OHM 1206 1/4W	1
RES 47K OHM 5% 1/4W 1206	SMD Chip Resistor, 47 kOhm, ï¿½5%, 250 mW, 1206 [3216 Metric], Thick Film, General Purpose	R6	RES_1206	RES 47K OHM 1206 1/4W	1
IC REG BUCK ADJ 3A 8SOIC	3.5V to 28V Input, 3A, 570kHz Step-Down Converter with Eco-mode 8-SOIC -40 to 150	U1	SOIC8_PAD	TPS54331DR	1

Design Rules Verification Report

Filename : C:\Users\aslik\Desktop\Hardware Design\Project Files\Finished\Buck_Converte

Warnings 0
Rule Violations 0

Warnings	
Total	0

Rule Violations	
Clearance Constraint (Gap=0.2mm) (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=0.16mm) (Max=50mm) (Preferred=10mm) (All)	0
Power Plane Connect Rule(Direct Connect)(Expansion=0.508mm) (Conductor Width=0.254mm) (Air Gap=0.254mm)	0
Minimum Annular Ring (Minimum=0.15mm) (All)	0
Hole Size Constraint (Min=0.15mm) (Max=6.3mm) (All)	0
Hole To Hole Clearance (Gap=0.254mm) (All),(All)	0
Minimum Solder Mask Sliver (Gap=0.254mm) (All),(All)	0
Silk To Solder Mask (Clearance=0.2mm) (IsPad),(All)	0
Silk to Silk (Clearance=0.3mm) (All),(All)	0
Net Antennae (Tolerance=0mm) (All)	0
Height Constraint (Min=0mm) (Max=25.4mm) (Prefered=12.7mm) (All)	0
Total	0