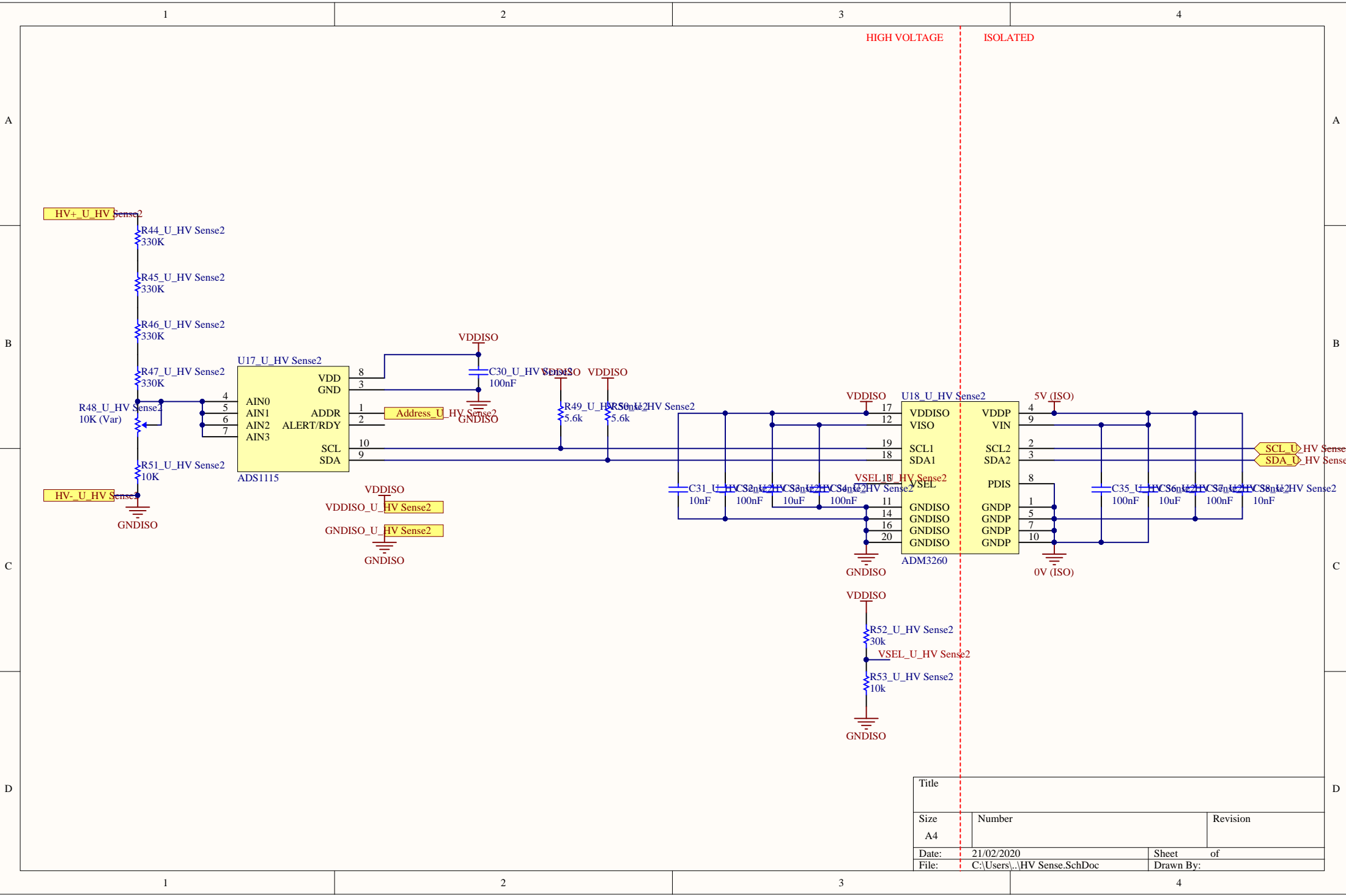
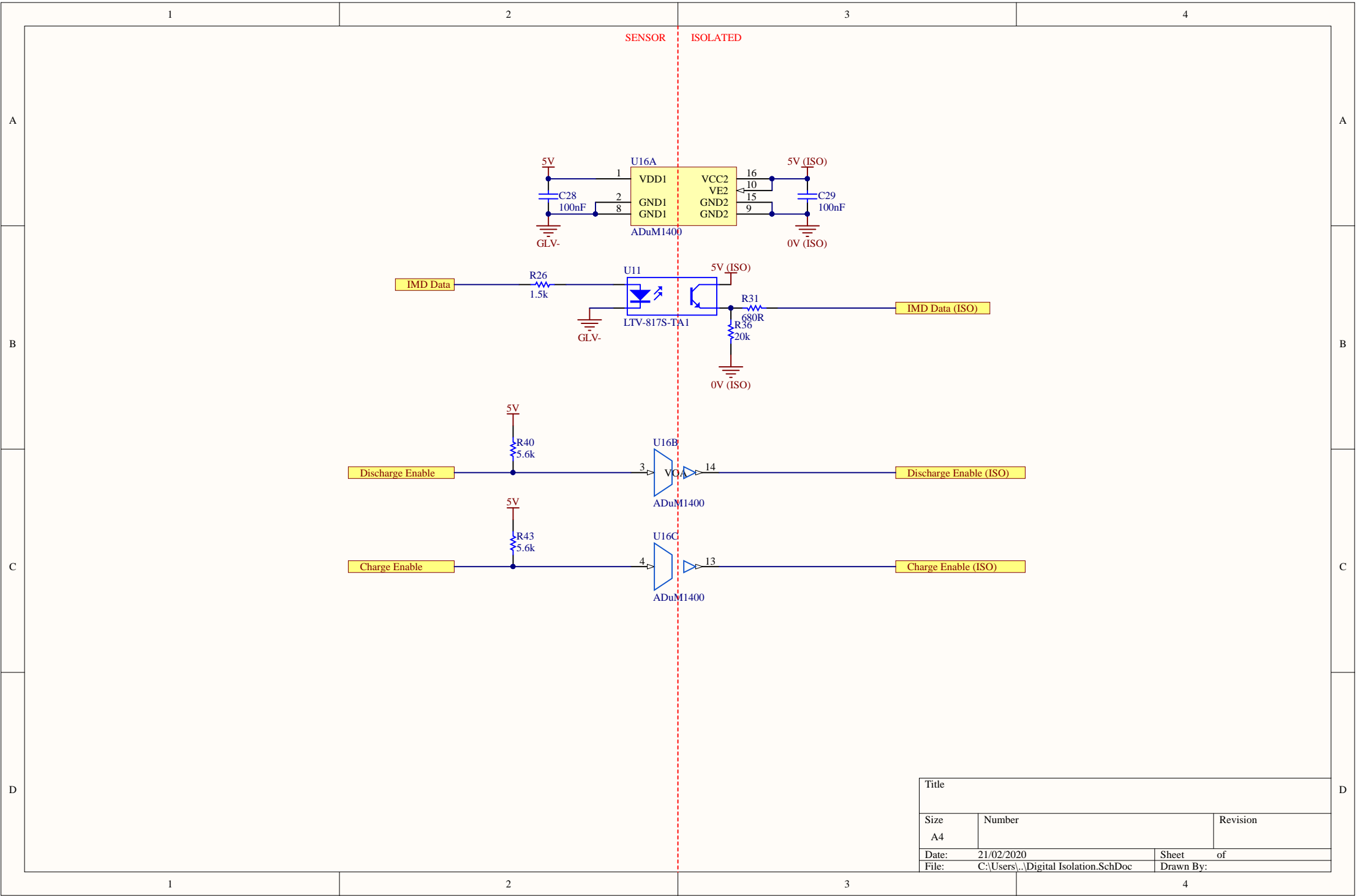


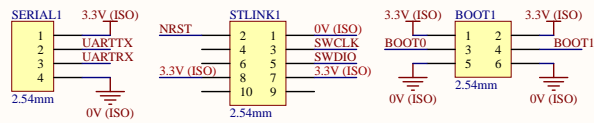
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Size	Number	Revision
A4		
Date:	21/02/2020	Sheet of
File:	C:\Users\...\HV Sense.SchDoc	Drawn By:



Title		
Size	Number	Revision
A4		
Date:	21/02/2020	Sheet of
File:	C:\Users\...\HV Sense.SchDoc	Drawn By:



A



Instructions to Use PLATFORMIO & STLINK platformio.ini

```
[env:genericSTM32F103R8]
platform = ststm32
board = genericSTM32F103C8
framework = arduino
upload_protocol = stlink
```

BOOT JUMPER POSITIONS

	BOOT1	BOOT0
User Flash	X	0
System (Bootloader)	0	1
Embedded SRAM	1	1

ST-LINK

For all operations, use the select the bootloader, then reset the device.

Example Code

```
#include "Arduino.h"

#define LED_BUILTIN PC13
USBSerial usb;

void setup()
{
  pinMode(LED_BUILTIN, OUTPUT);
  Serial.begin(9600);
  usb.begin(9600);
}

void loop()
{
  digitalWrite(LED_BUILTIN, HIGH);
  Serial.println("Serial LED OFF");
  usb.println("usb LED OFF");

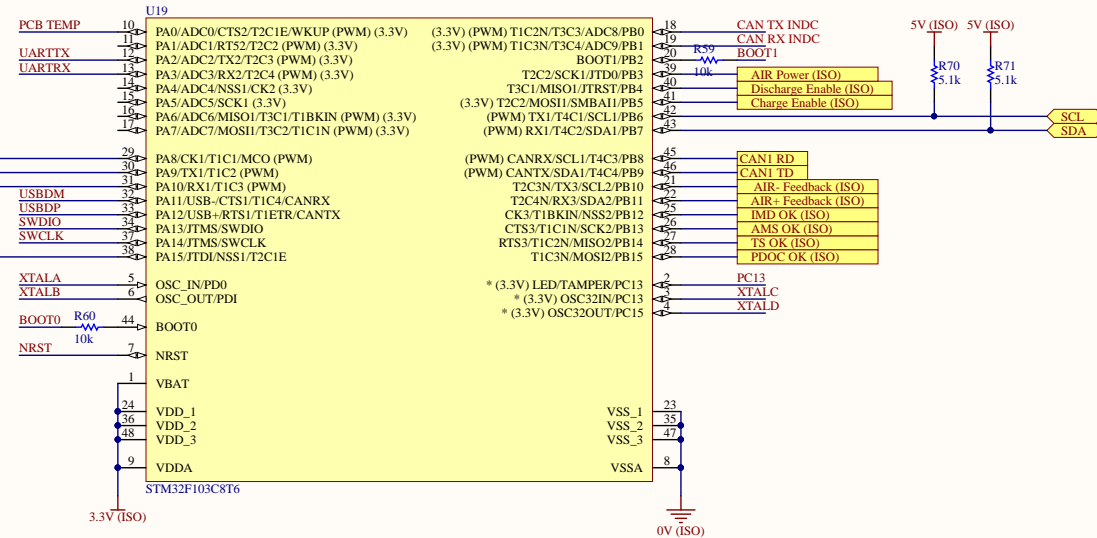
  delay(1000);

  digitalWrite(LED_BUILTIN, LOW);
  Serial.println("Serial LED ON");
  usb.println("usb LED ON");

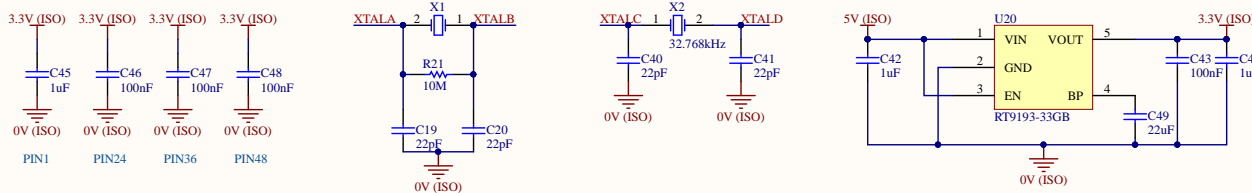
  delay(1000);
}
```

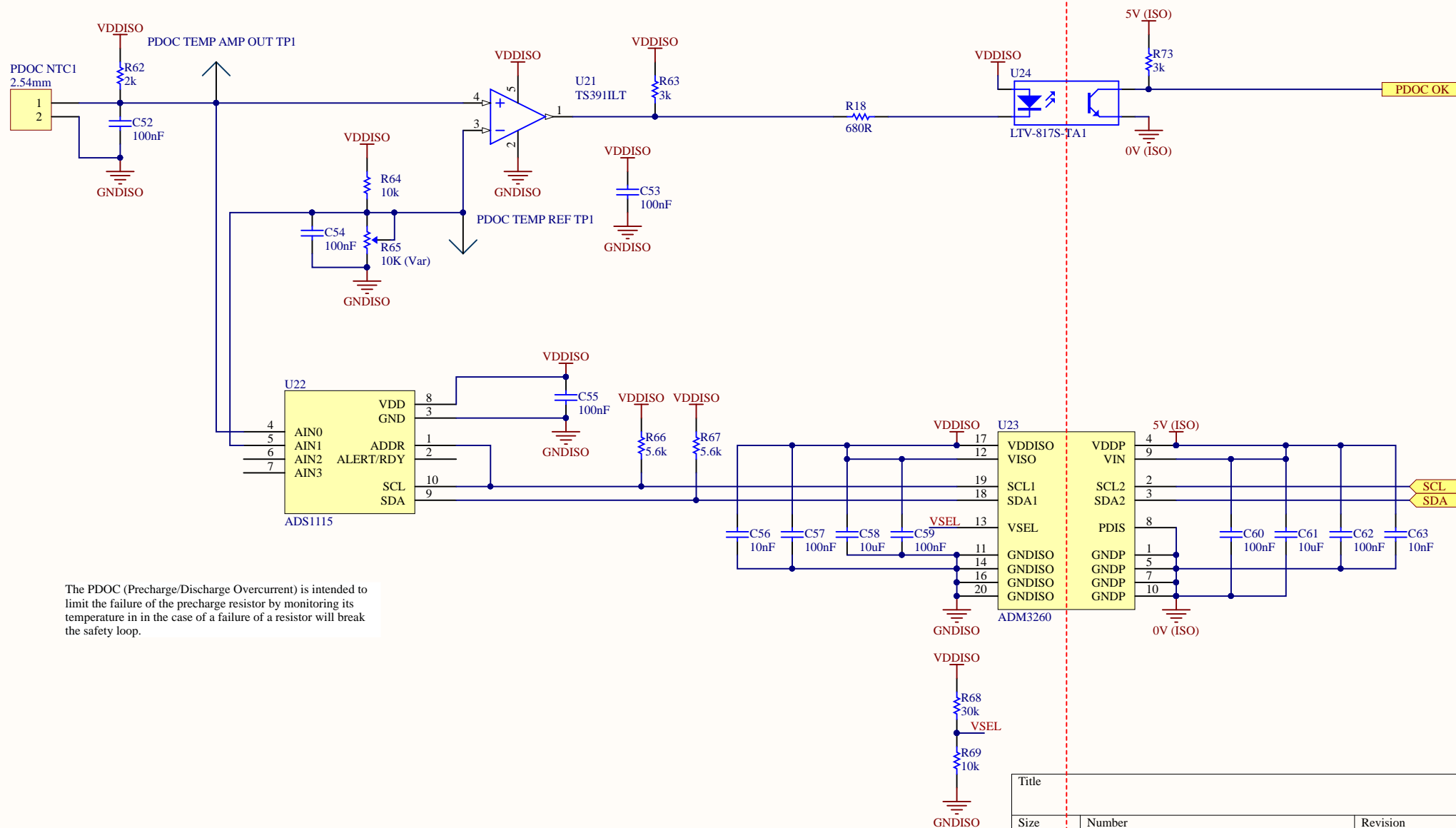
<https://www.shorinotes.com/2017/06/how-to-use-platformio-to-develop-for.html>
<https://www.onetransistor.eu/2018/09/stm32-bluepill-dev-mbed-platformio-vscode.html>

C



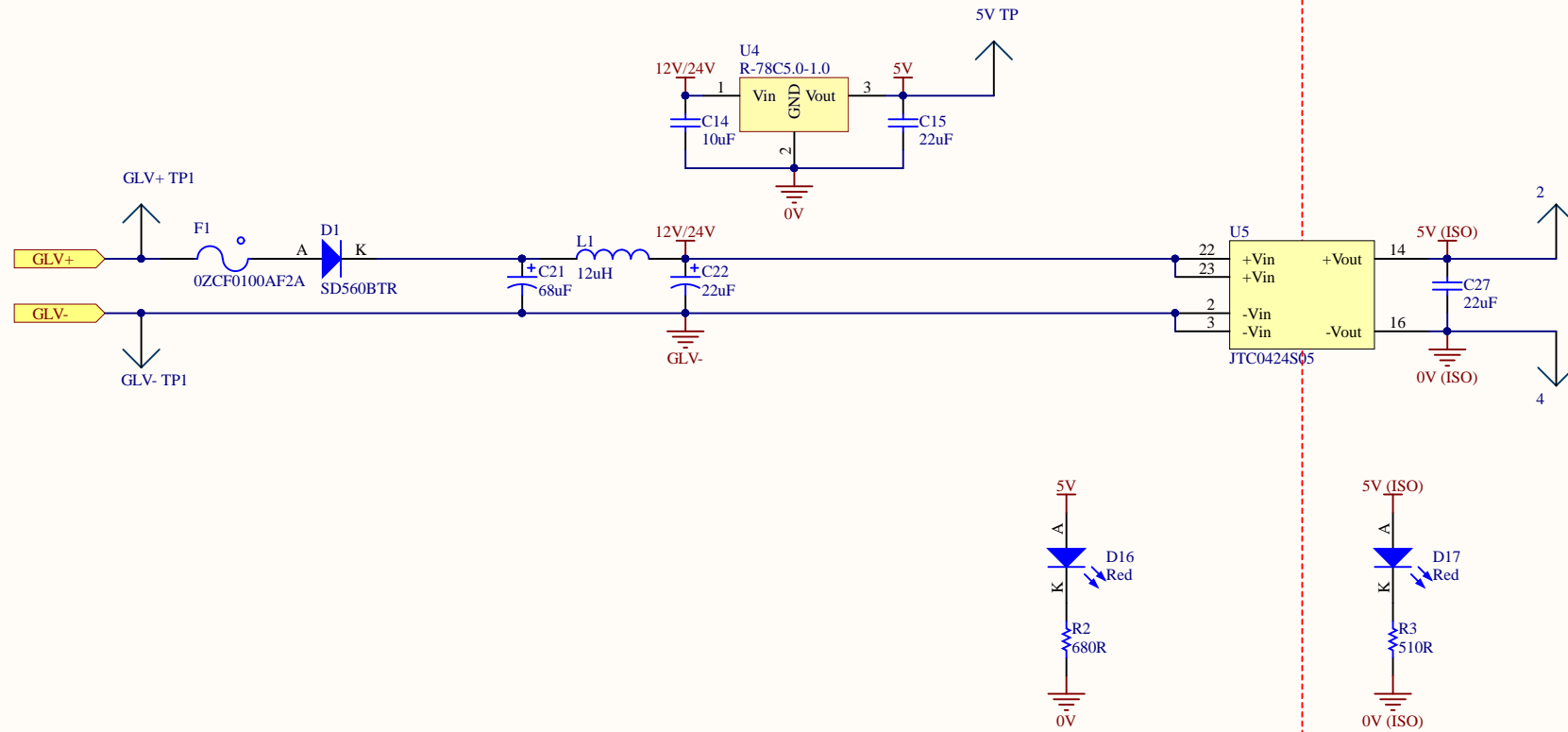
D



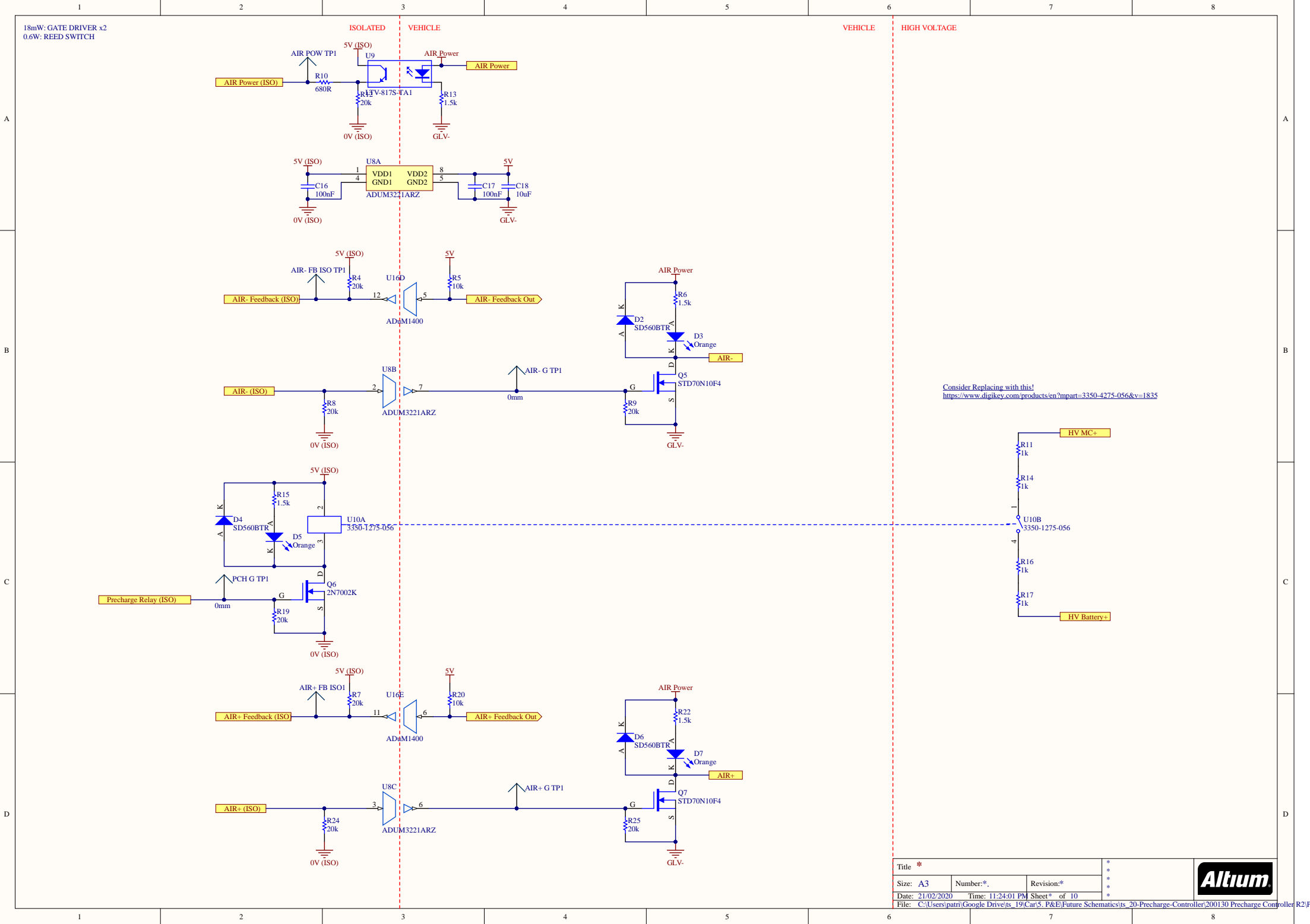


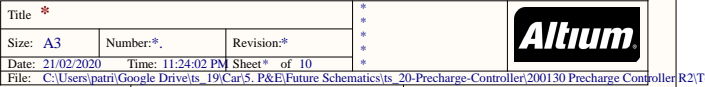
The PDOC (Precharge/Discharge Overcurrent) is intended to limit the failure of the precharge resistor by monitoring its temperature in in the case of a failure of a resistor will break the safety loop.

Title			
Size A4	Number		Revision
Date:	21/02/2020	Sheet	of
File:	C:\Users\...\PDOC.SchDoc	Drawn By:	



Title		
Size	Number	Revision
A4		
Date:	21/02/2020	Sheet of
File:	C:\Users\...\Power Supply.SchDoc	Drawn By:





PD0C TEMP AMP OUT TP1

PD0C TEMP REF TP1

U12n92

U14

U15

U16

U17

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Comment	Description	Designator	Footprint	LibRef	Quantity
0mm		2, 4, 5V TP, AIR-FB	SMD Test Point	SMD Test Point	
2.54mm		AMS Bypass1, IMD	TH 2.54mm Header	TH 2.54mm Header	
2.54mm		BOOT1	TH 2.54mm Header	TH 2.54mm Header	
10nF		C1, C4	1206	GCM3195C2A103JA1	
100nF		C2, C3, C6, C8, C16	0805	GCM21BR71E104KA	
10uF		C5, C7, C14, C18, C	0805	GRM21BR6YA106KE	
22pF		C9, C19, C20, C40, C	0805	GCM21B5C1H220JA1	
100pF		C10, C11, C12, C13	0805	GCM21B5C1H101JA1	
22uF		C15, C27	1206	CC1206MKX5R7B22	
68uF		C21	2924	TAJV686K035RNJ	
22uF		C22	2924	TAJV226K050RNJ	
10nF		C31_U_HV Sense1,	0805	GCM21BR71H103KA	
1uF		C42, C44, C45	0805	GCM21BR71A105KA	
22uF		C49	0805	GRM21BR61A226ME	
Blue	LED BLUE CLEAR 20	CAN RX INDC1, CAN	0805 LED	SML-MN2BCTT86C	
56R		CAN TERM RT, CAN	0805	RC0805FR0756RL	
SD560BTR	1.2V_F 600V 5A SMB	D1, D2, D4, D6, D8,	SMB Diode	SD560BTR	
Orange	Orange LED Indication	D3, D5, D7	0805 LED	SML-211DIT86	
Green	Green LED Indication	D9, D11, D13, D15	0805 LED	SML-2110FT86	
Red	Red LED Indication -	D16, D17, D18, D19	0805 LED	SML-210LTT86	
OZCF0100AF2A	PTC RESET FUSE 60	F1	2920	OZCF0100AF2A	
39300020		HV BATTERY-, HV	39300020	39300020	
39300080		IMD INTERFACE	39300080	39300080	
V23105A5475A201	5V DPDT Relay 3A 2	K1, K2, K3, K4	TI 2-DIL	V23105A5475A201	
12uH		L1	1812	RLS-126	
10K (NTC) (B25/85 3430K)		PCB NTC1	0805	NTC S0805E3103FLT	
2.54mm		PDOC NTC1	TH 2.54mm Header	TH 2.54mm Header	
39300240		PRIMARY INTERFACE	39300240	39300240	
2N7002K	60V 380mA, NFET N	Q1, Q2, Q3, Q4, Q6	SOT-343_N	2N7002K	
STD70N10F4	N-C channel 100V 60	Q5, Q7	SOT-343_N	STD70N10F4	
0R		R1	0805	RC0805FR070RL	
680R		R2, R10, R18, R27, R	0805	RC0805FR07680RL	
510R		R3, R55, R56	0805	RC0805FR07510RL	
20k		R4, R7, R8, R9, R12,	0805	RC0805FR0720KL	
10k		R5, R20, R53_U_HV	0805	RC0805FR0710KL	
1.5k		R6, R13, R15, R22, R	0805	RC0805FR071K5L	
1k		R11, R14, R16, R17	BT0-263	PWR263S-35-100UJ	
10M		R21	0805	RC0805FR0710ML	
5.6k		R40, R43, R49_U_HV	0805	RC0805FR075K6L	
330K		R44_U_HV Sense1,	JB 0204	MMA02040C3303FB3	
10K (Var)		R48_U_HV Sense1,	JB 3296	3296W-1-103LF	
10K		R51_U_HV Sense1,	JB 0204	MMA02040C1002FB3	
30k		R52_U_HV Sense1,	0805	RC0805FR0730KL	
2k		R62	0805	RC0805FR072KL	
3k		R63, R73	0805	RC0805FR073KL	
5.1k		R70, R71	0805	RC0805FR075K1L	
2.54mm		SERIAL1	TH 2.54mm Header	TH 2.54mm Header	
2.54mm		STLINK1	TH 2.54mm Header	TH 2.54mm Header	
ADM3053	Isolated CAN Transp	U1	AD SO IC-W 20	ADM3053	
B82787C0104H002	100uH @ 100kHz 2 L	U2	TDK 4-PC Pad	B82787C0104H002	
NUP2105L	Dual Line C A N Bus P	U3	ON SOT-23 BJT	NUP2105L	
R-78C5.0-1.0	CONV DC/DC 1A 5V	U4	RECOM 3-SIP	R-78C5.0-1.0	
JTC0424S05	DC DC CONVERTER	U5	24-DIP Module, 7 Le	JTC0424S05	
ADUM3221ARZ	4A Gate Driver Magt	U8	AD 8SOIC	ADUM3221ARZ	
LTV-817S-TA1	35V 50ma Optocoupl	U9, U11, U14, U15,	ON 4SMD	LTV-817S-TA1	
3350-1275-056	RELAY REED HV SP	U10	CI SPST	3350-1275-056	
ADuM1400	General Purpose Dig	U16	AD 16SOIC	ADuM1400	
ADS1115	16-Bit Analog-to-Dig	U17_U_HV Sense1	TL101/SSOP	ADS1115	