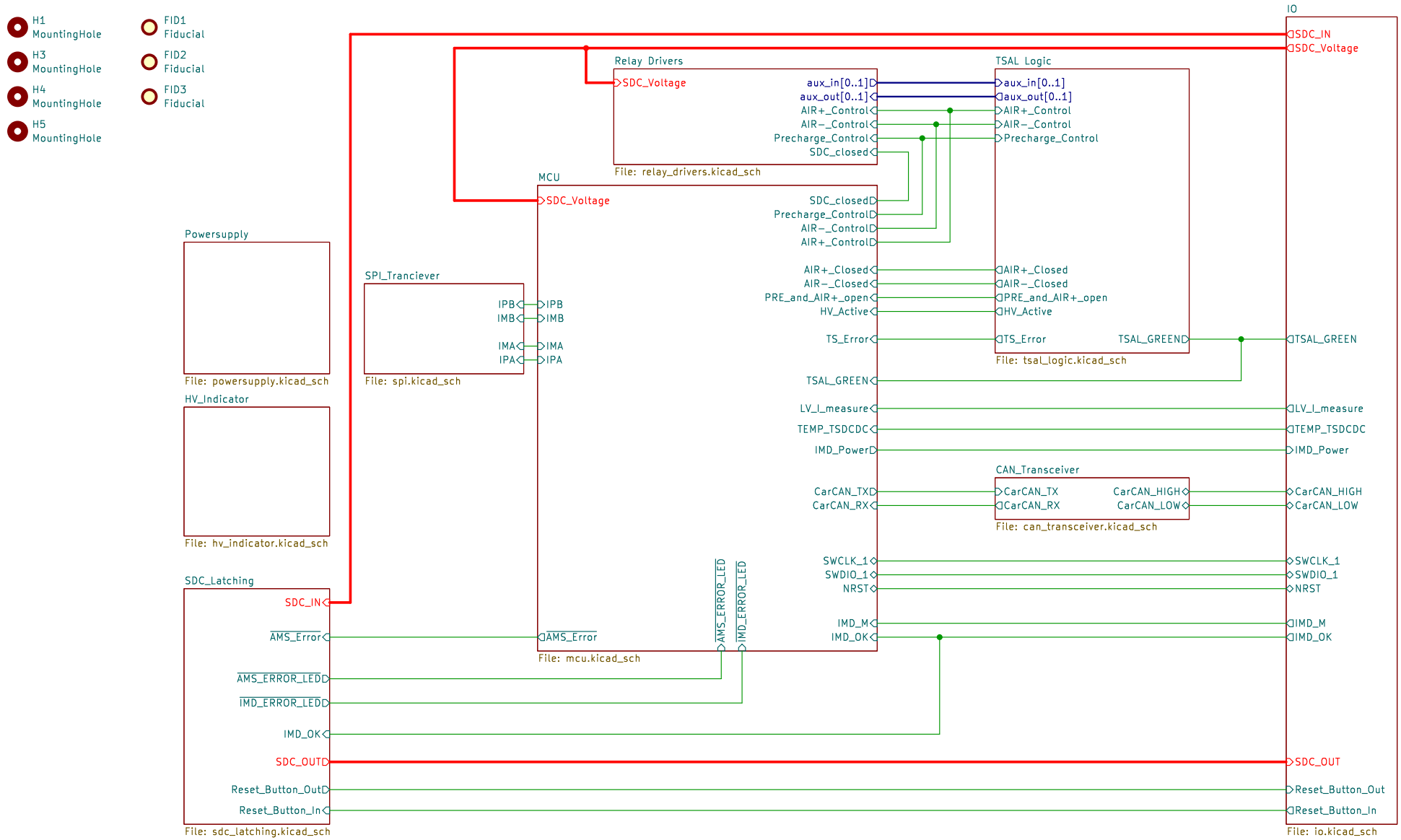


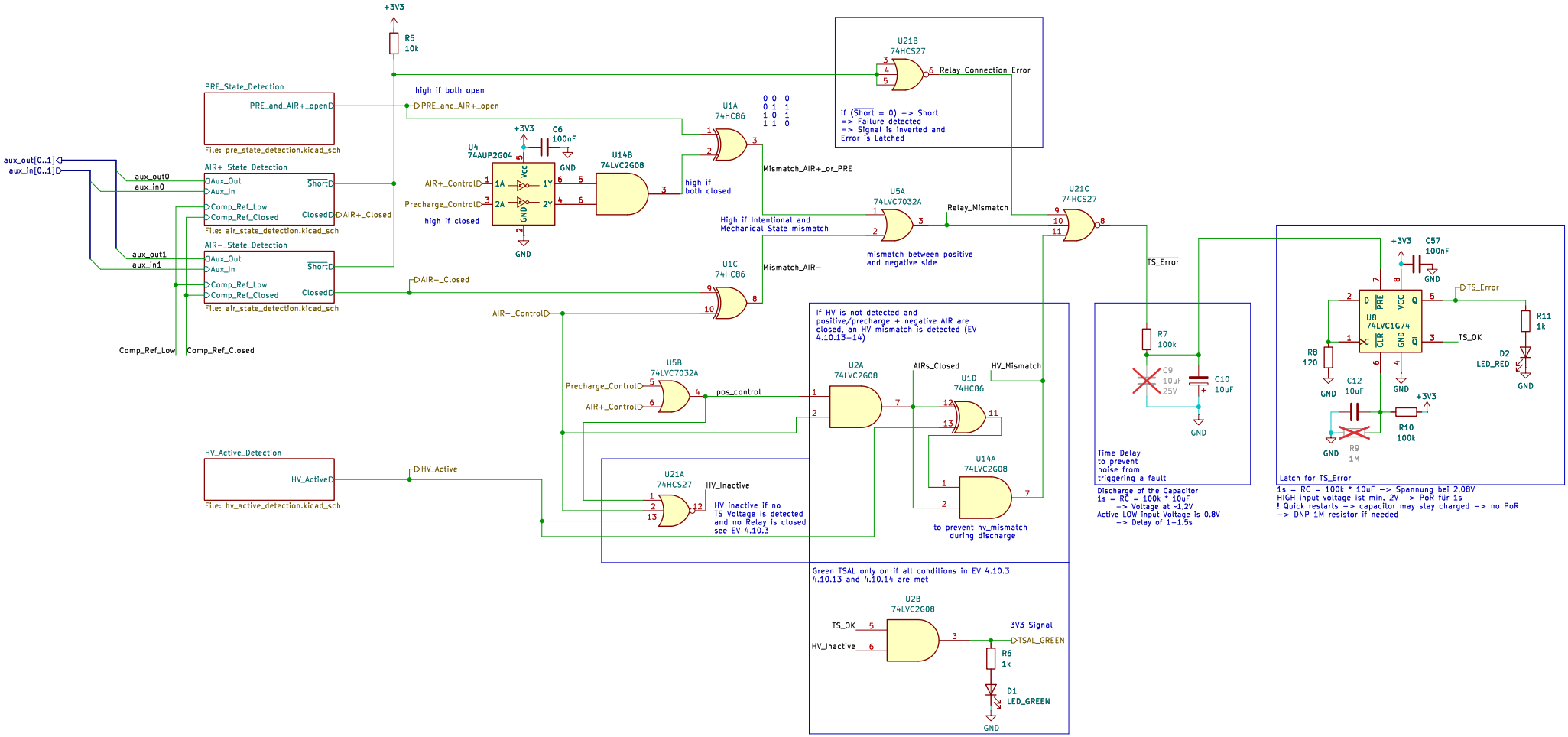
FT25 V2 or FT26:

TSAL Sheet:
- schaltung im Dischargefall (U14A) vereinfachen

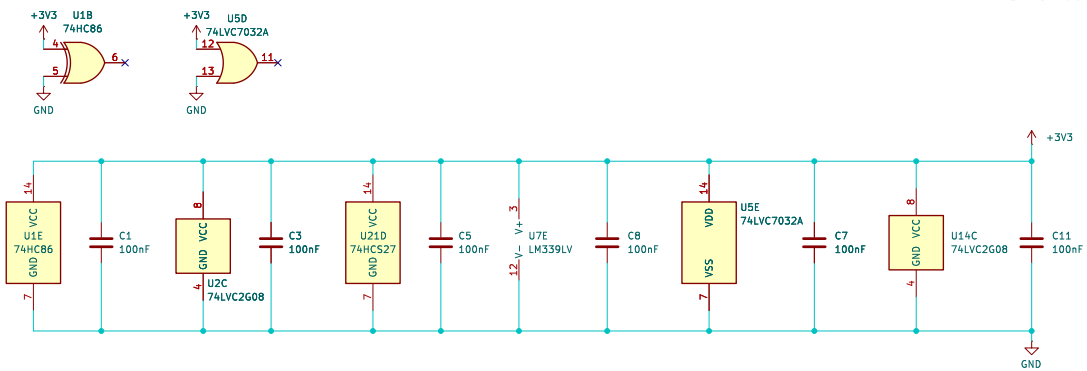
- "Bei U5B hast du ja schon PC_ctl OR AIR+_ctl, das müsste man nur noch invertieren. Zum invertieren könnte man auch einfach das übrige U1B benutzen (XOR(a,1) == NOT(a)). Aber besser natürlich den Pull umdrehen und einfach zwei "closed" Signale vergleichen. " – Oskar

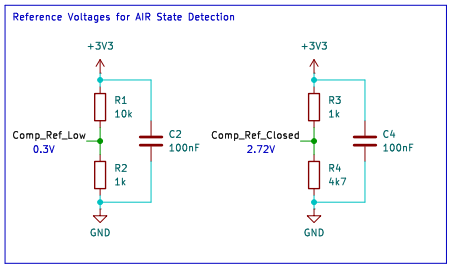
FASTTUBE

Title: AMS Master Rootsheet	**Rev: V1**
	Date: 2025-03-09
Project: Master_FT25	Exp. Date: 2025-04-27
Author: Lene Marquardt	Size: A4 | Page: 1/15

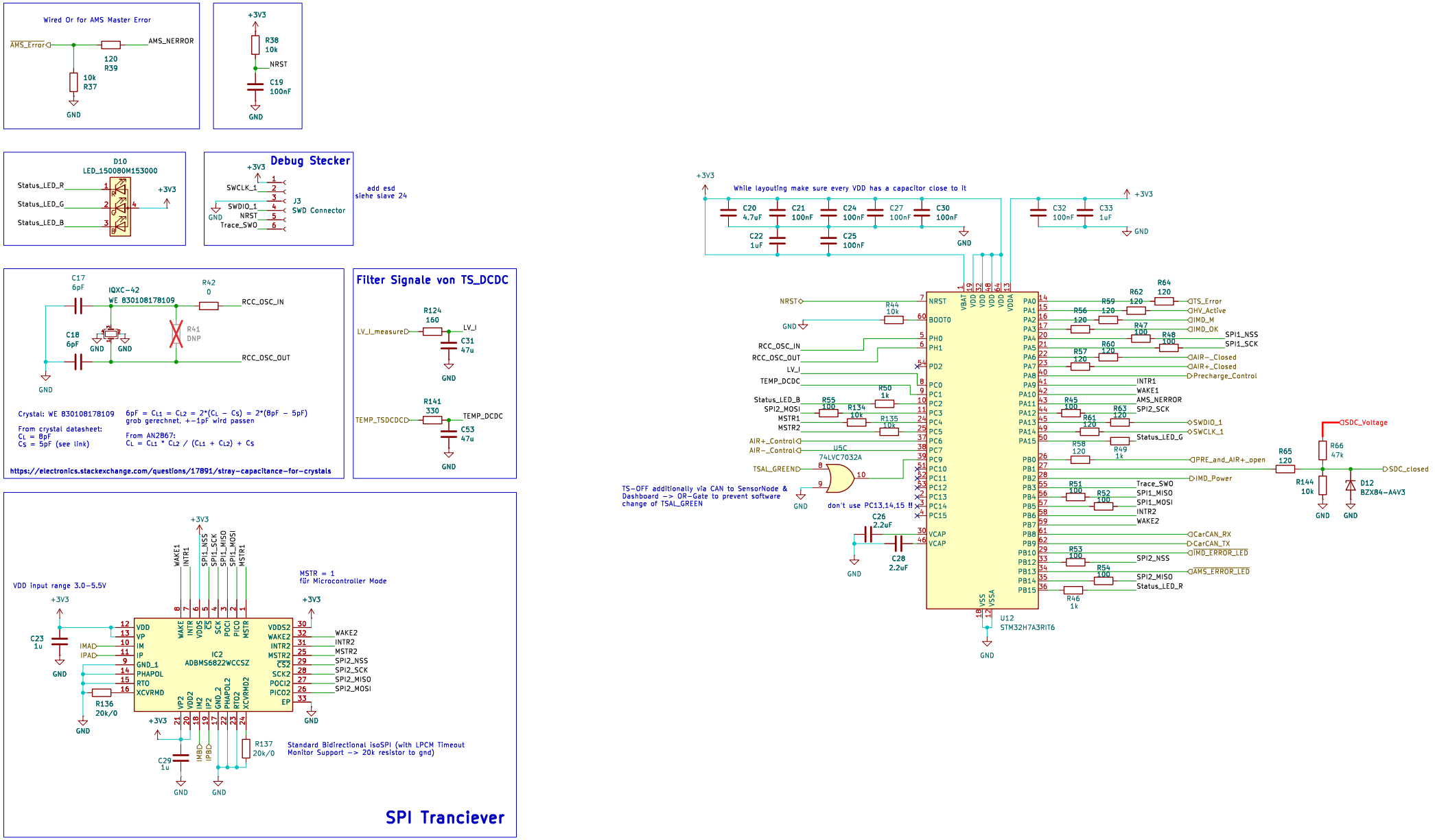


TSAL_GREEN signal leads dashboard
and to the TSAL driver board

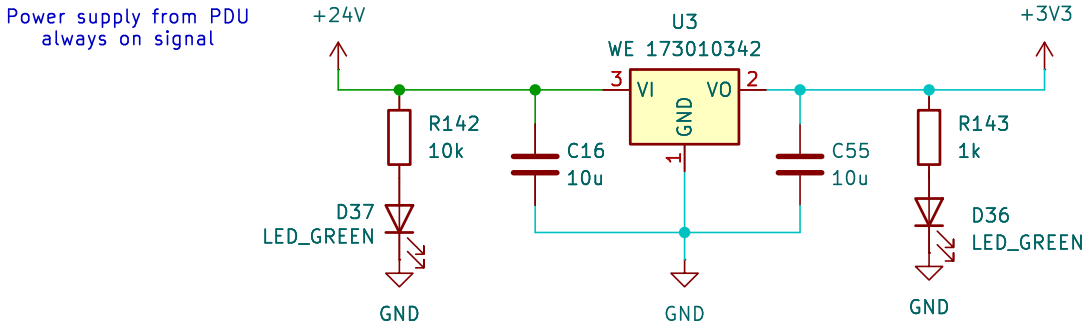




FASTTUBE	
Title: TSAL Logic	Rev: V1
	Date: 2025-03-09
Project: Master_FT25	Exp. Date: 2025-04-27
Author: Lene Marquardt	Size: A3 | Page: 2/15

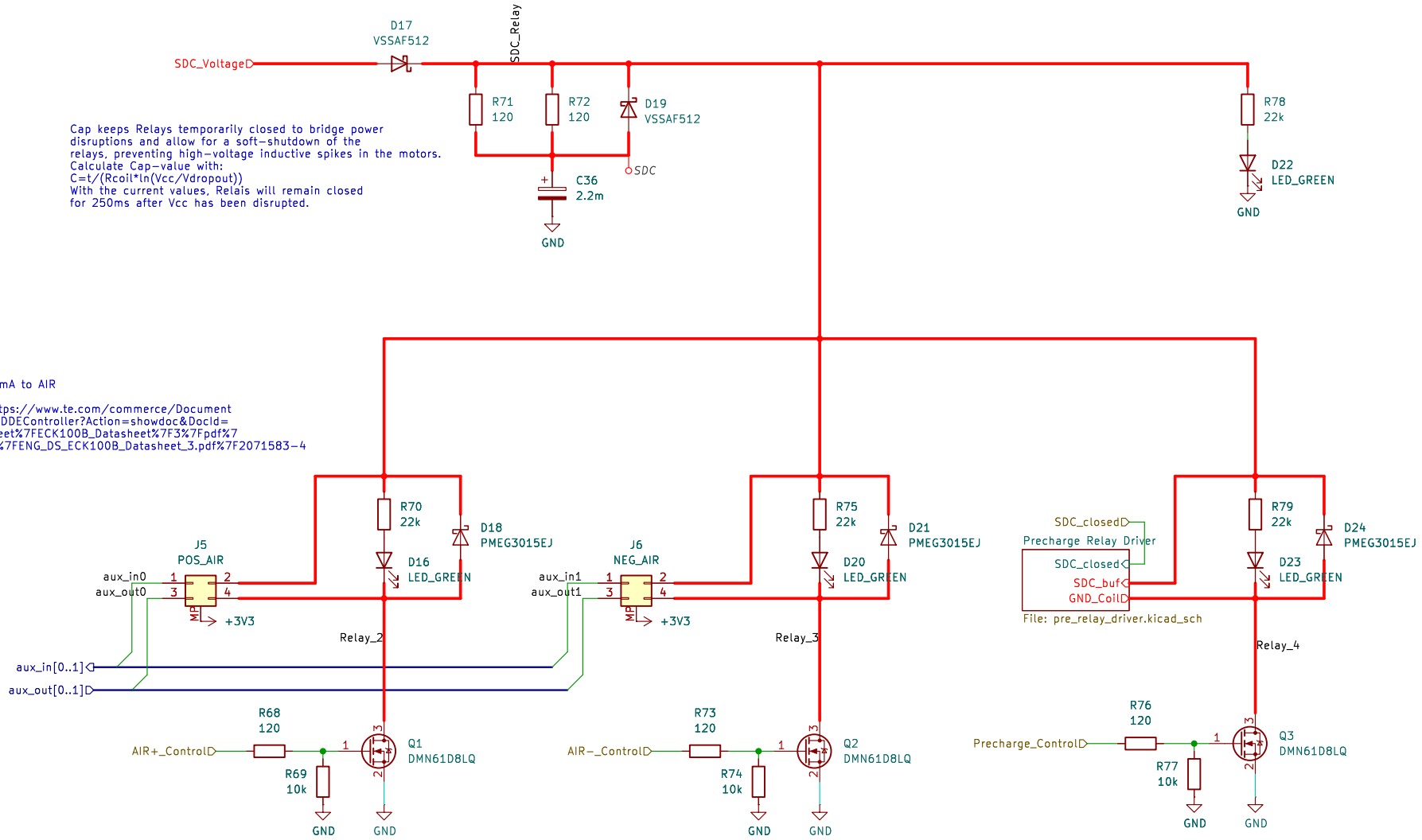


FASTTUBE	
Title: Microcontroller	Rev: V1
	Date: 2025-03-09
Project: Master_FT25	Exp. Date: 2025-04-27
Author: Lene Marquardt	Size: A3 | Page: 7/15



FASTTUBE

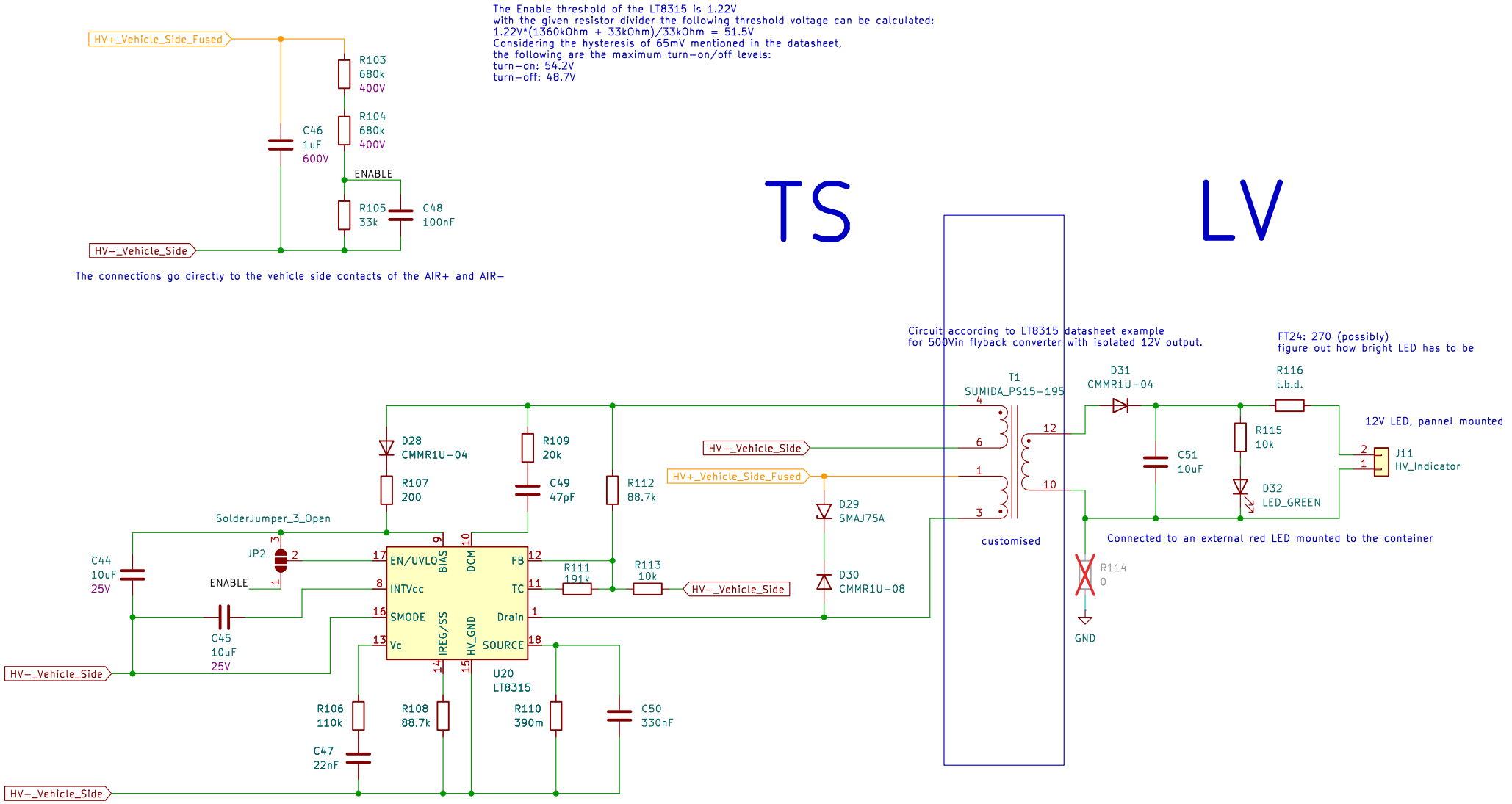
Title: Powersupply	**Rev: V1**
	Date: 2025-03-09
Project: Master_FT25	Exp. Date: 2025-04-27
Author: Lene Marquardt	Size: A5 | Page: 8/15



FASTTUBE

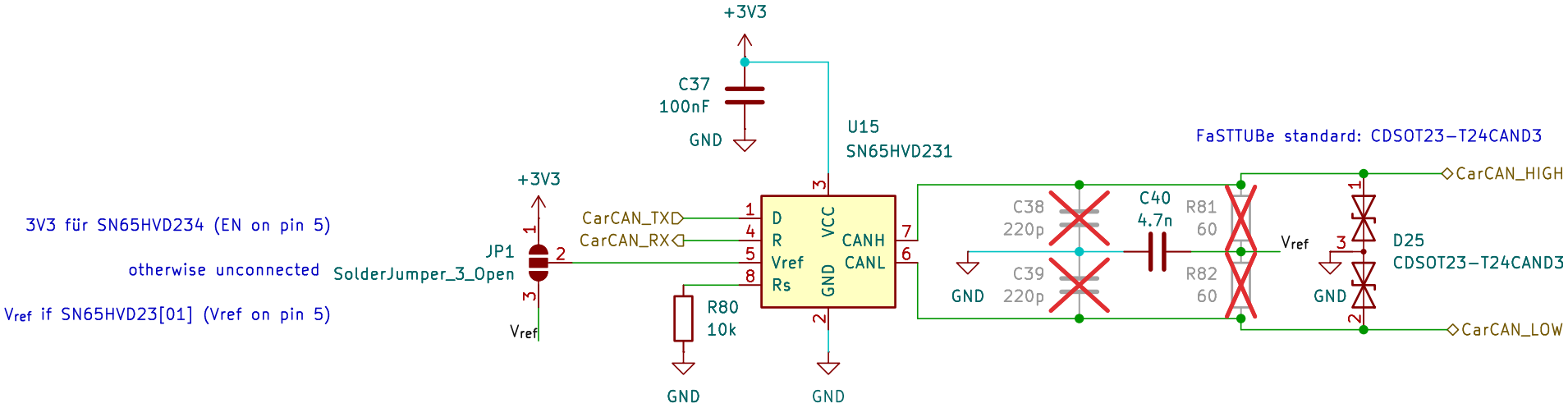
Title: Relay Drivers	**Rev: V1**
	Date: 2025-03-09
Project: Master_FT25	Exp. Date: 2025-04-27
Author: Lene Marquardt	Size: A4 | Page: 9/15

HV Indicator nicht verändert, wie FT24



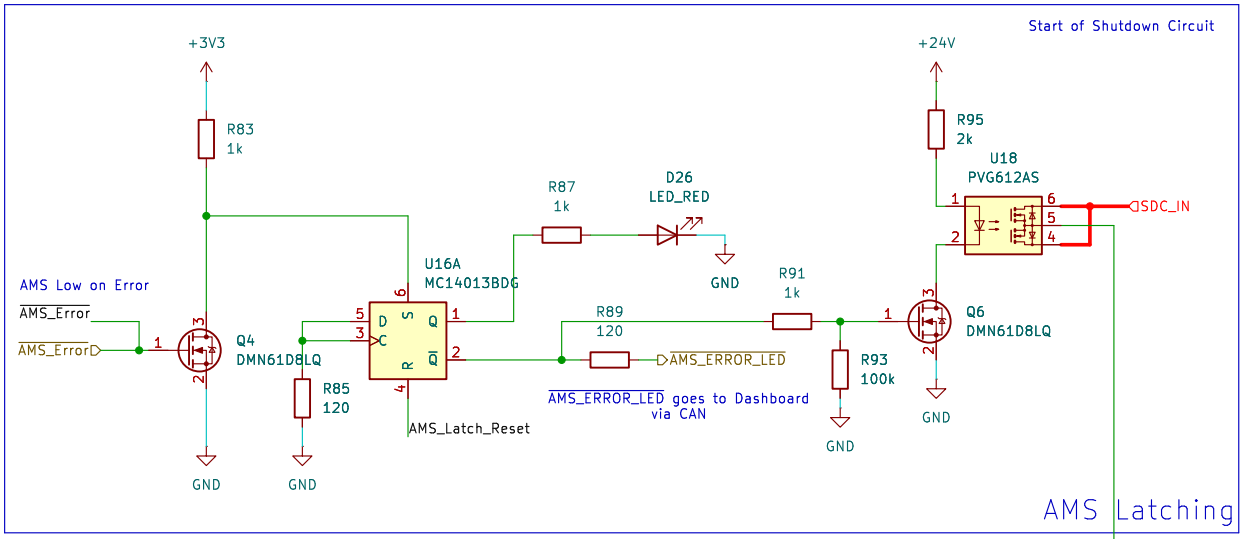
FASTTUBE

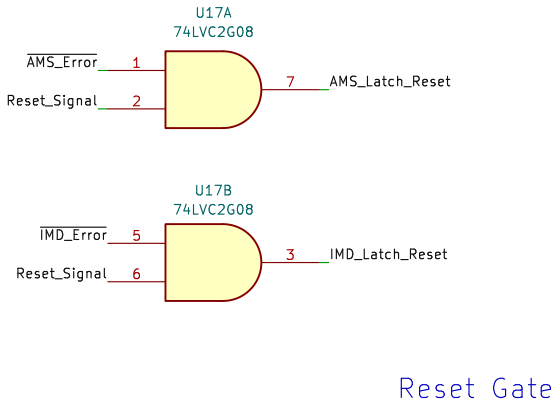
Title: HV Indicator Driver	**Rev: V1**
	Date: 2025-03-09
Project: Master_FT25	Exp. Date: 2025-04-27
Author: Lene Marquardt	Size: A4 | Page: 11/15

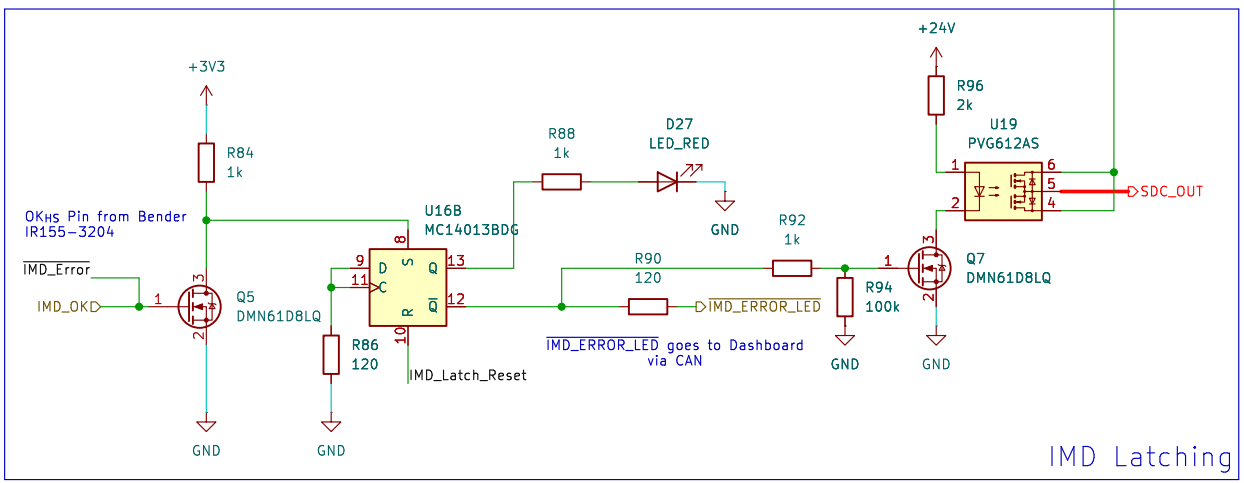


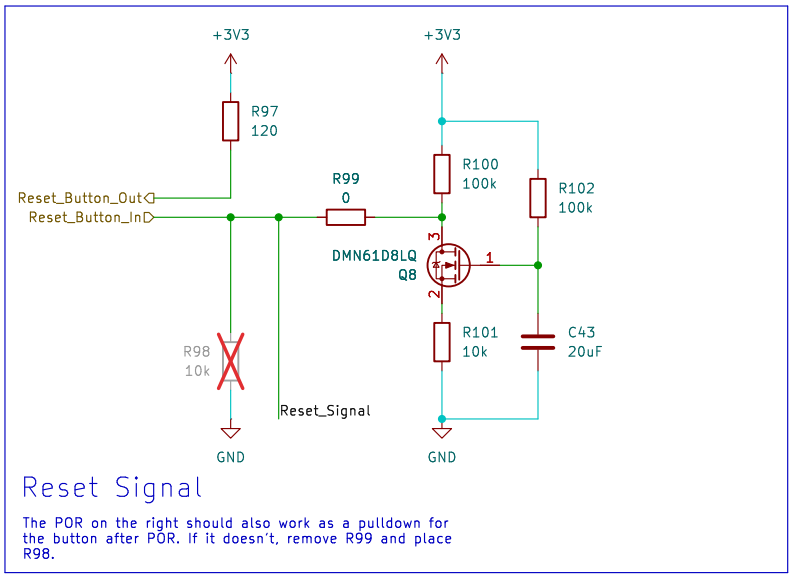
FASTTUBE

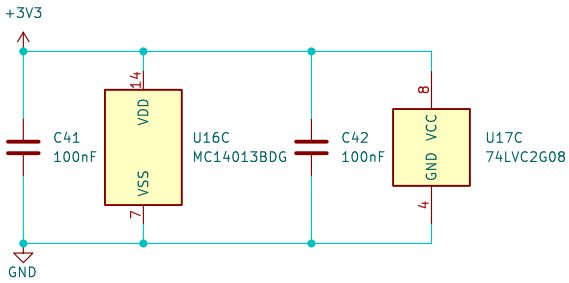
Title: CAN Transciever	**Rev: V1**
	Date: 2025-03-09
Project: Master_FT25	Exp. Date: 2025-04-27
Author: Lene Marquardt	Size: A5 | Page: 11/15





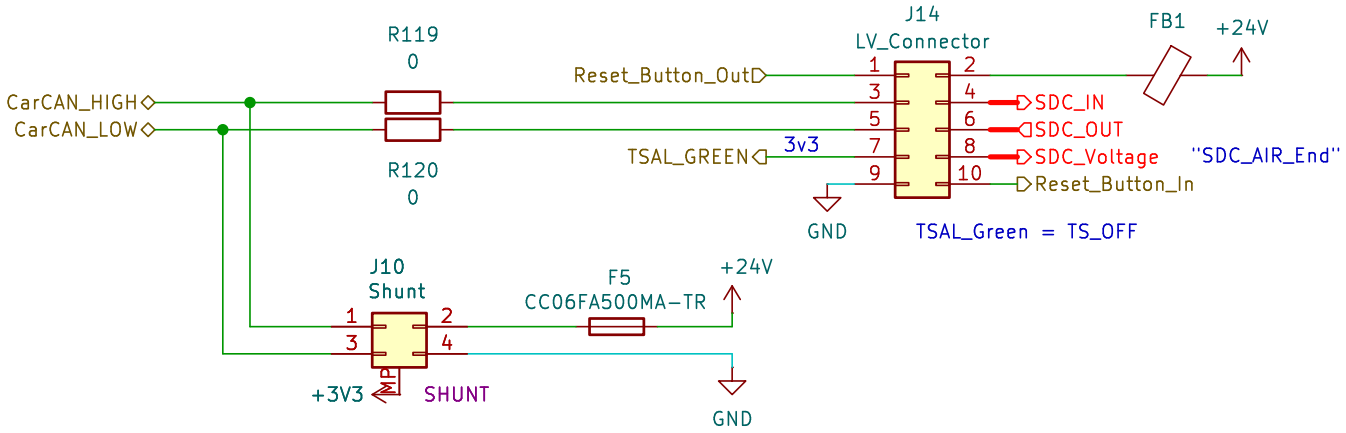






FASTTUBE

Title: SDC Latching Circuit	**Rev: V1**
	Date: 2025-03-09
Project: Master_FT25	Exp. Date: 2025-04-27
Author: Lene Marquardt	Size: A4 | Page: 12/15

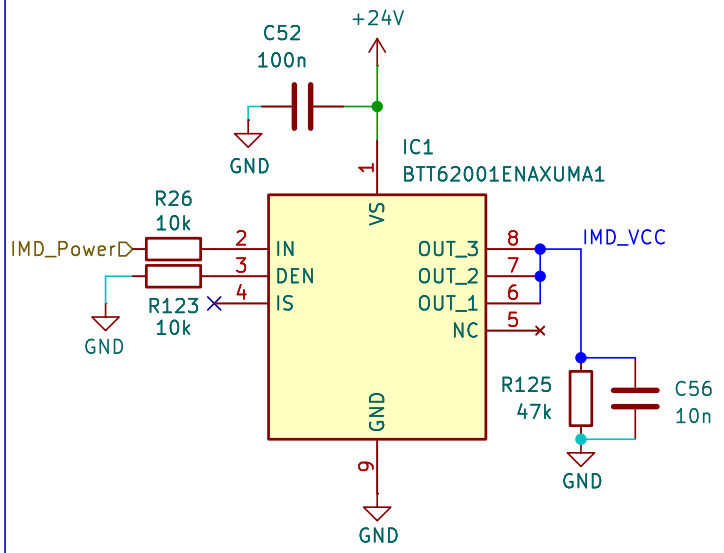


SHUNT:
IVT-S-300-U3-I-CAN1-12/24
max. 80mA

Datasheet
https://www.isabellenhuetteusa.com/wp-content/uploads/2022/07/Datasheet-IVT-S-V1.03.pdf

Main Connector

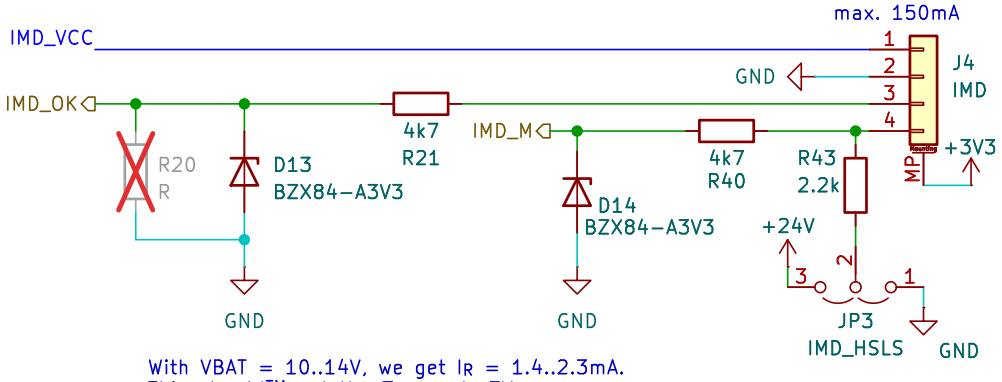
IMD Supply



IMD – Datasheet

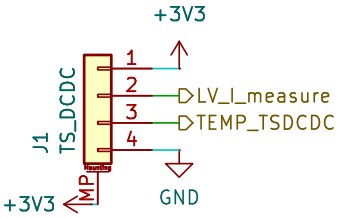
https://www.bender.de/fileadmin/content/Products/d/e/IR155-32xx-V004_D00115_D_XXEN.pdf

IMD Connector

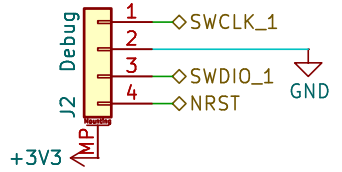


With VBAT = 10..14V, we get I_R = 1.4..2.3mA.
This should™ put the Zener at ~3V.

Connect to GND for -3204
Connect to +24V for -3203



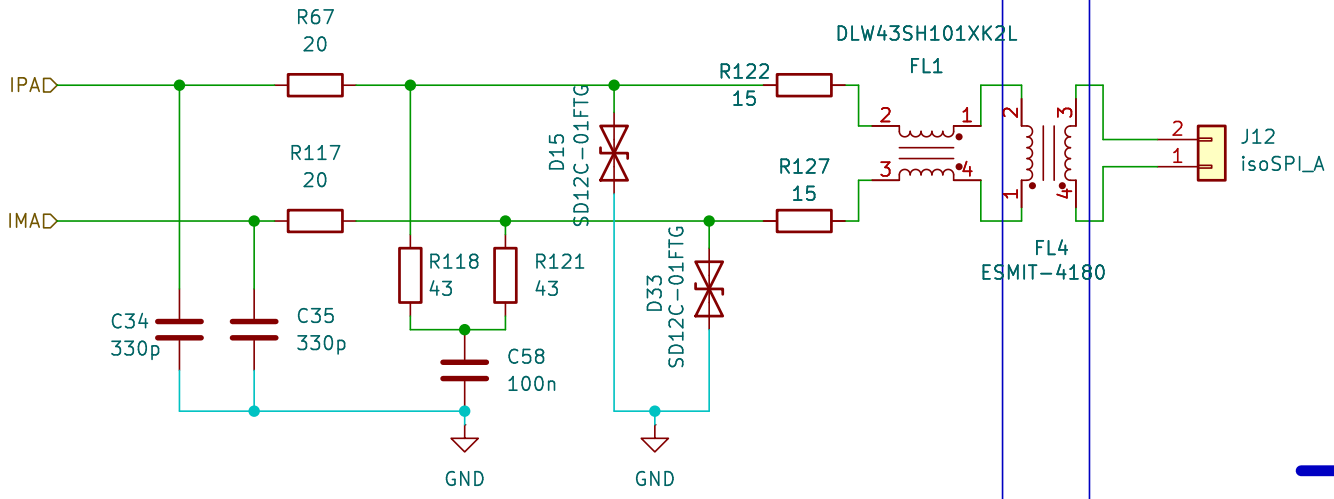
TSDCDC Connector



Debug Connector

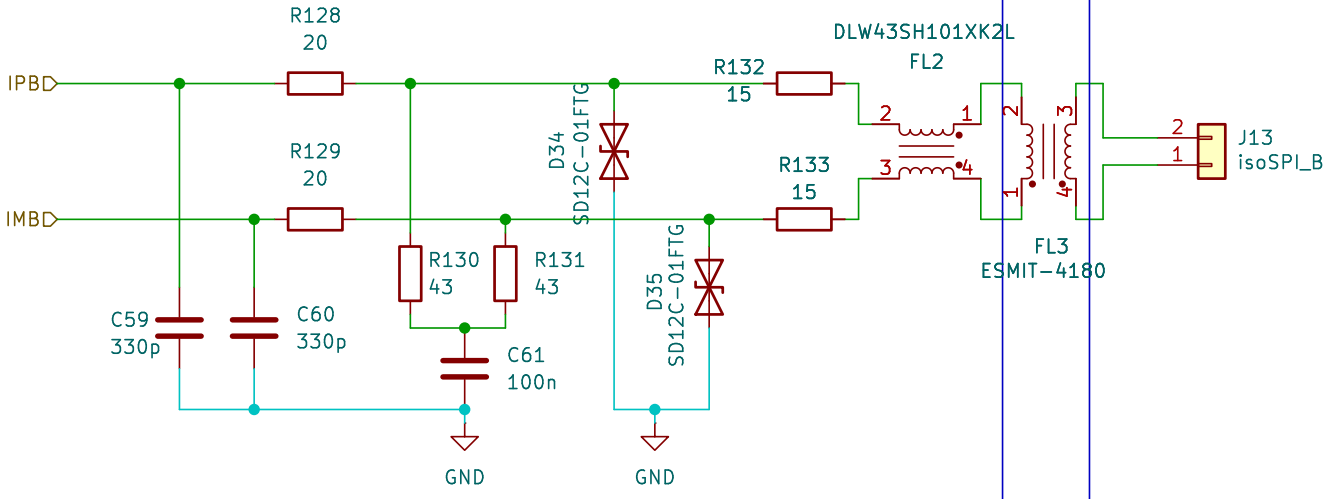
FASTTUBE

Title: Input/Output	**Rev: V1**
	Date: 2025-03-09
Project: Master_FT25	Exp. Date: 2025-04-27
Author: Lene Marquardt	Size: A5 | Page: 13/15



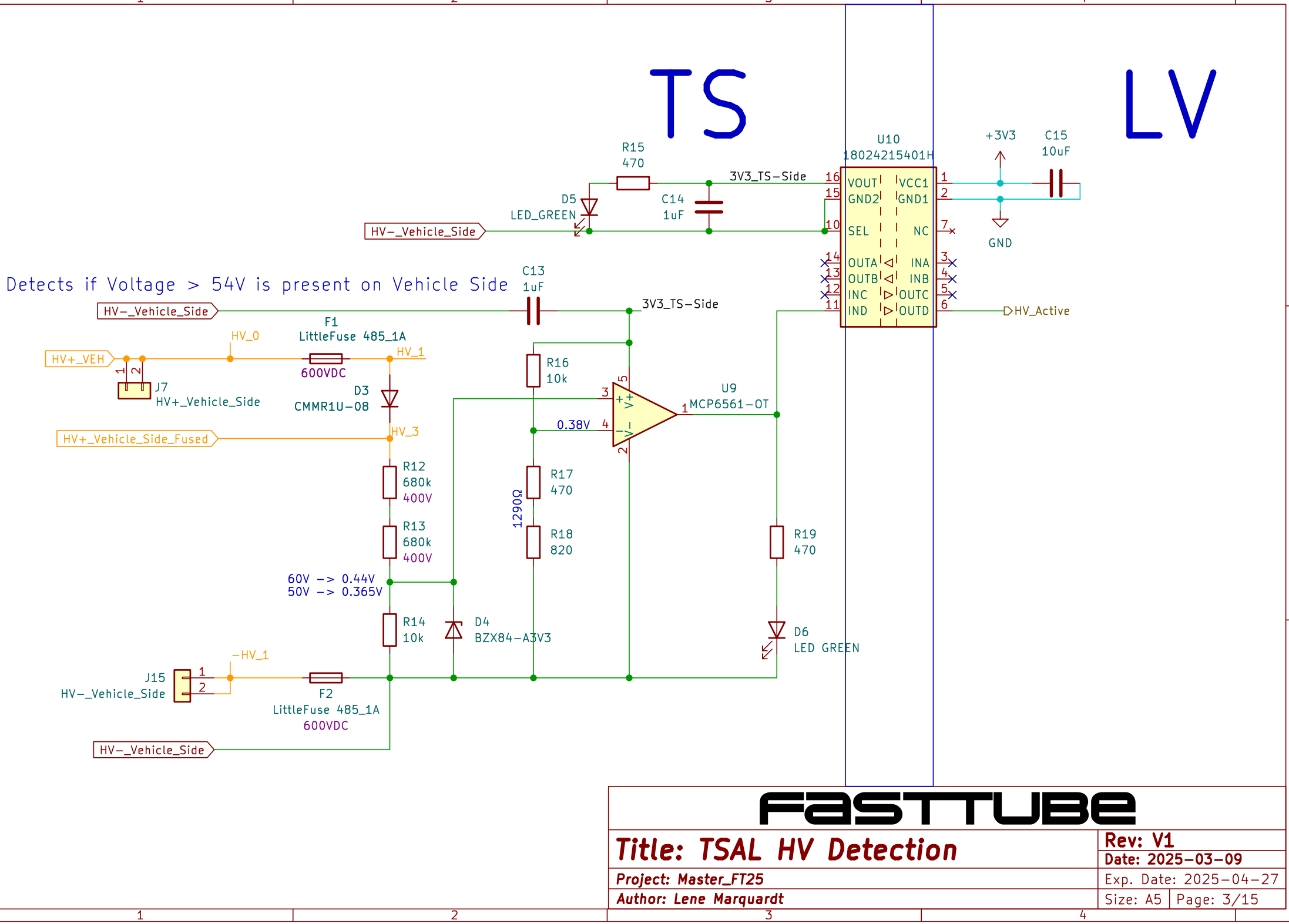
LV

TS



FASTTUBE

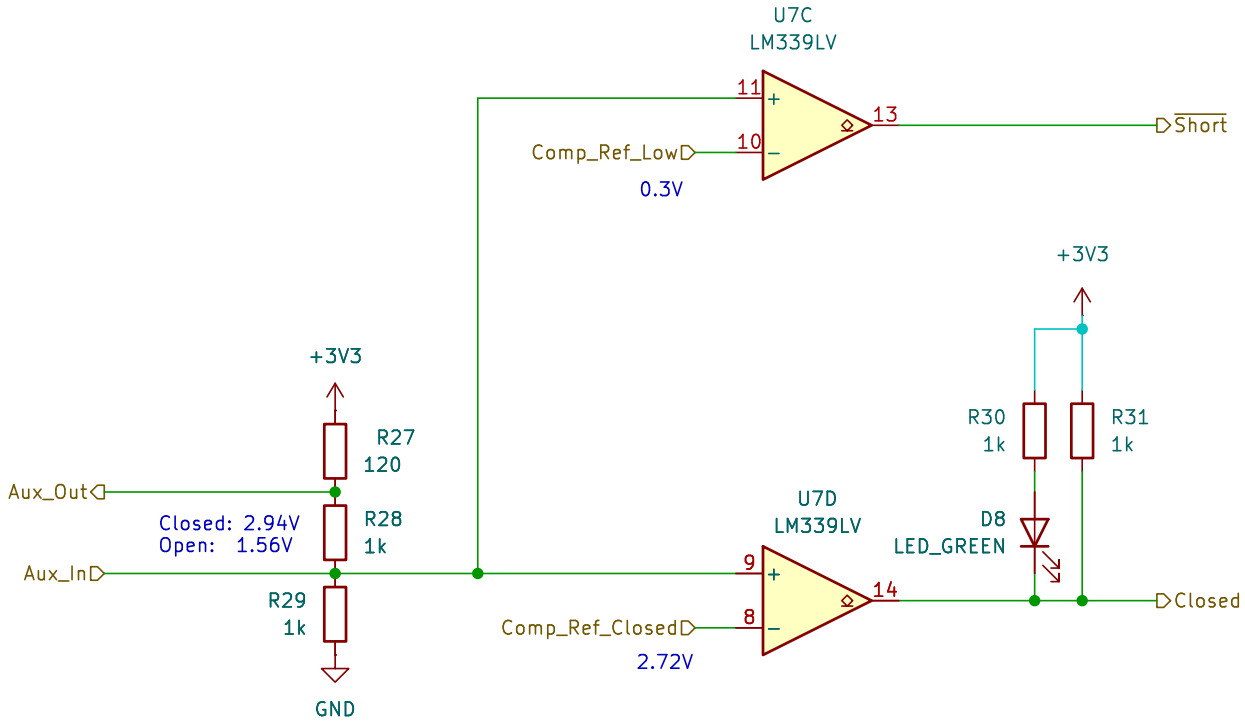
Title: Isolated SPI Transciever	**Rev: V1**
	Date: 2025-03-09
Project: Master_FT25	Exp. Date: 2025-04-27
Author: Lene Marquardt	Size: A5 | Page: 14/15



FASTTUBE

Title: TSAL HV Detection	**Rev: V1**
	Date: 2025-03-09
Project: Master_FT25	Exp. Date: 2025-04-27
Author: Lene Marquardt	Size: A5 | Page: 3/15

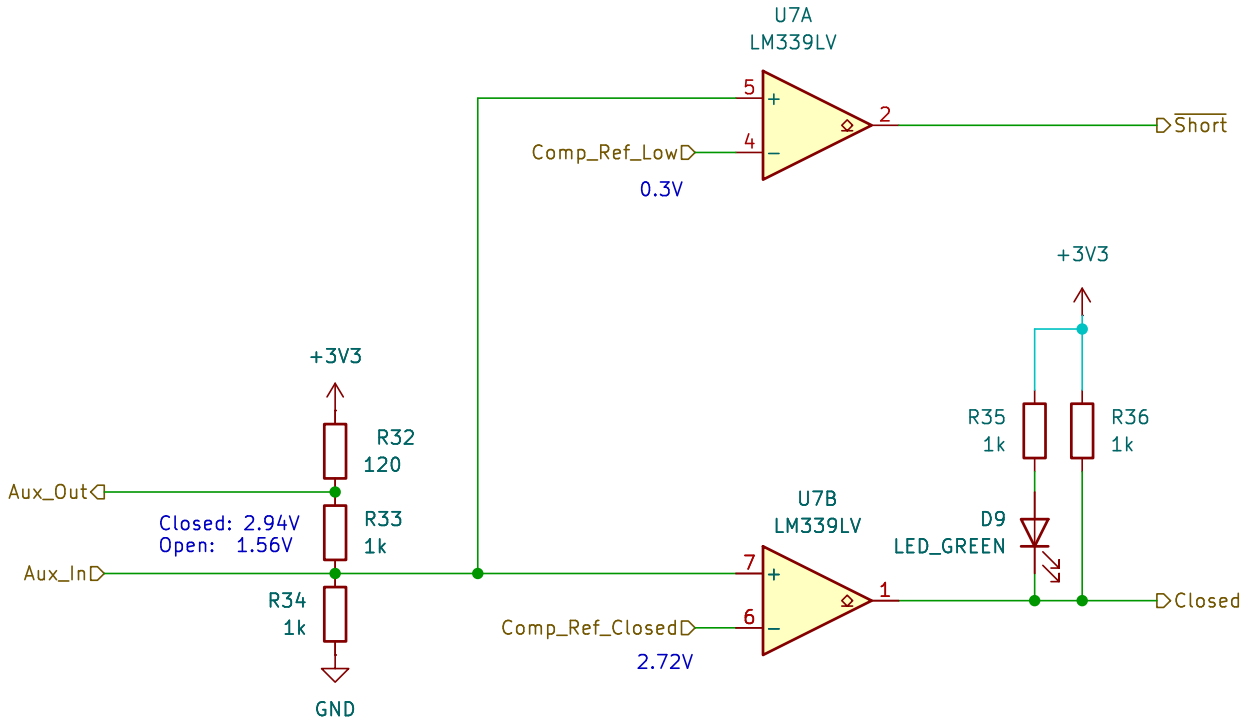
Accumulator TSAL – Relay state detection



FASTTUBE

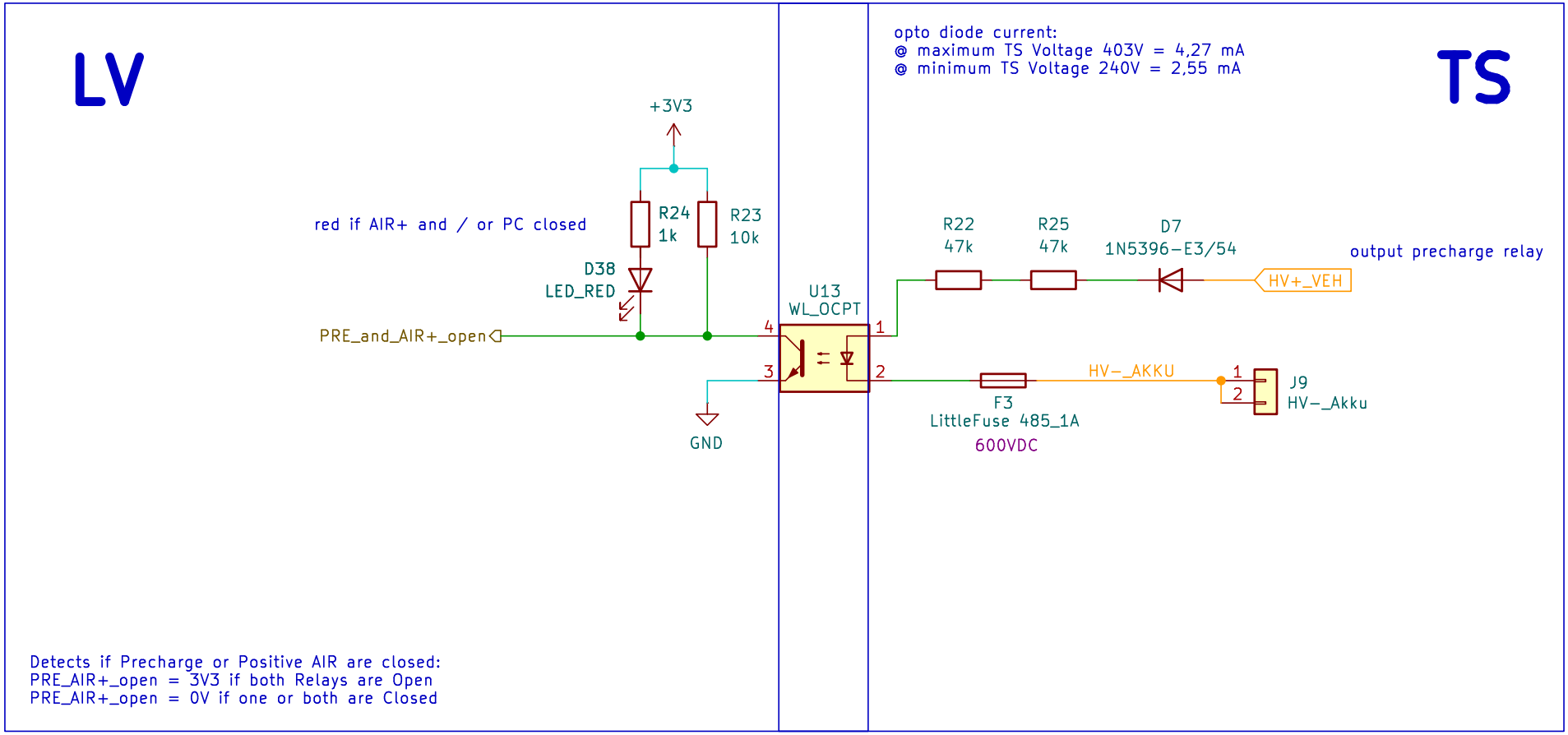
Title: AIR Relay State Detection	Rev: V1
	Date: 2025-03-09
Project: Master_FT25	Exp. Date: 2025-04-27
Author: Lene Marquardt	Size: A5 | Page: 4/15

Accumulator TSAL – Relay state detection



FASTTUBE

Title: AIR Relay State Detection	**Rev: V1**
	Date: 2025-03-09
Project: Master_FT25	Exp. Date: 2025-04-27
Author: Lene Marquardt	Size: A5 | Page: 5/15



FASTTUBE

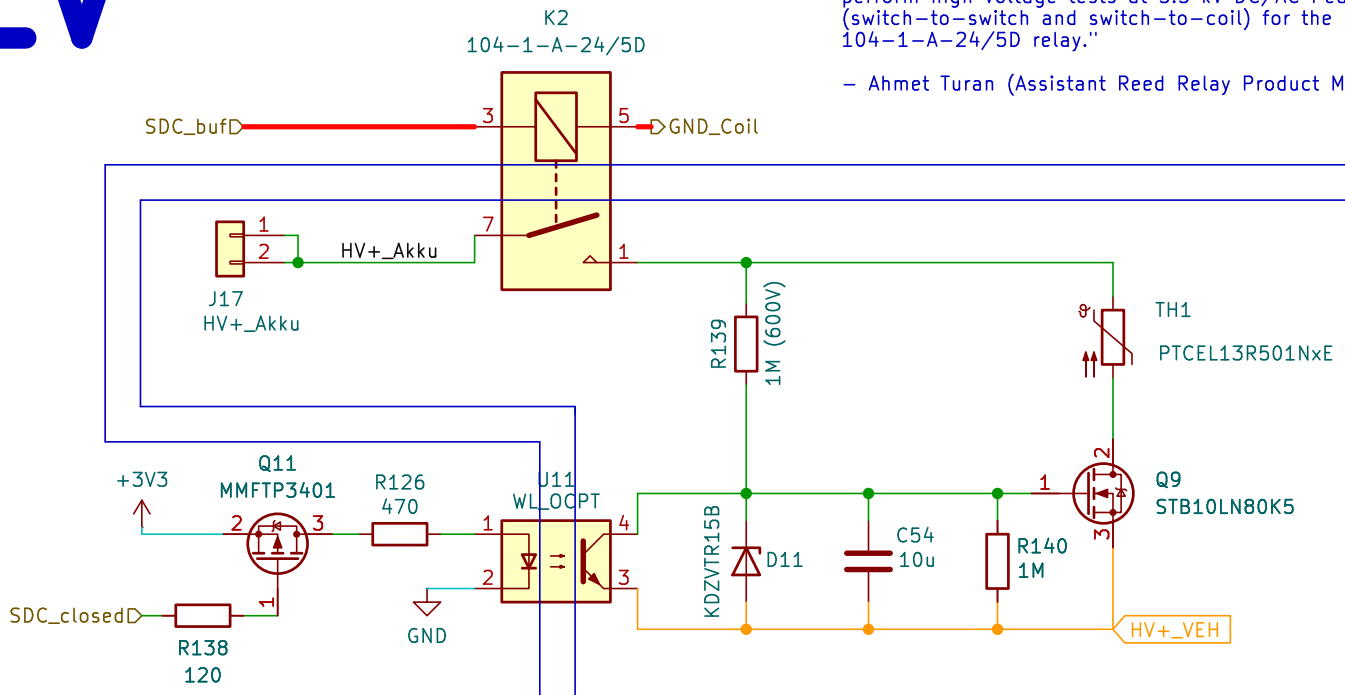
Title: Precharge State Detection	**Rev: V1**
	Date: 2025-03-09
Project: Master_FT25	Exp. Date: 2025-04-27
Author: Lene Marquardt	Size: A5 | Page: 6/15

LV

TS–LV isolation via relay pn distance (10.16mm)

"Regarding your questions about our testing process, we perform high voltage tests at 5.5 kV DC/AC Peak (switch–to–switch and switch–to–coil) for the 104–1–A–24/5D relay."

– Ahmet Turan (Assistant Reed Relay Product Manager)



TS

FASTTUBE

Title: Precharge Relay Driver	**Rev: V1**
	Date: 2025–03–09
Project: Master_FT25	Exp. Date: 2025–04–27
Author: Lene Marquardt	Size: A5 | Page: 10/15