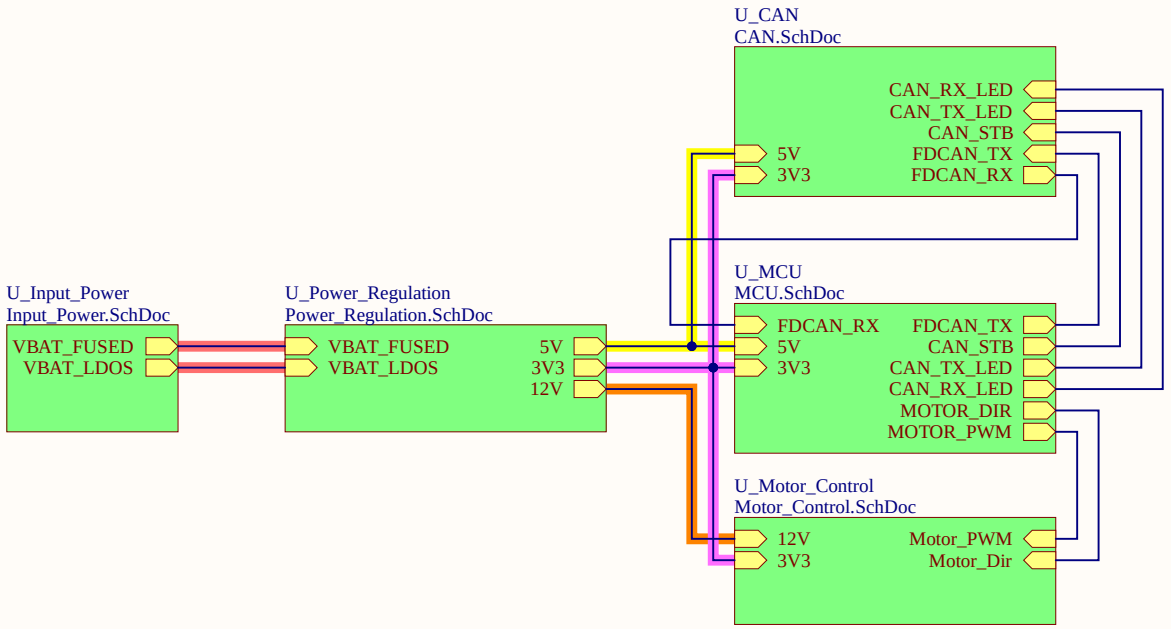
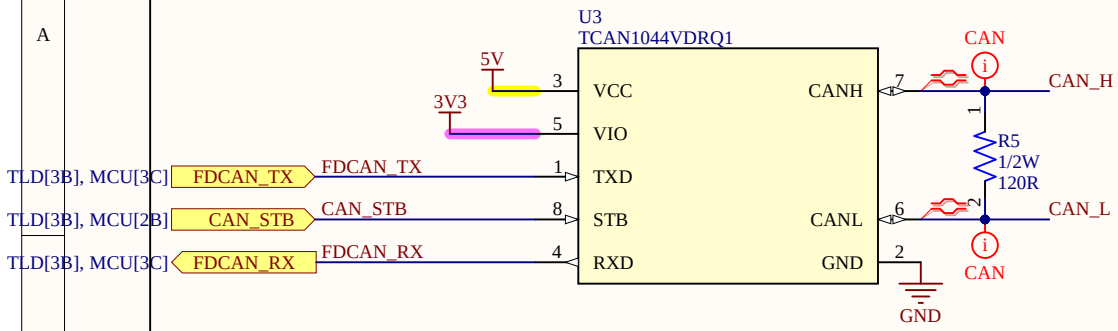
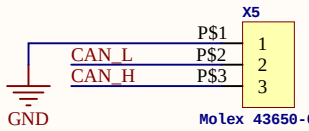

U_Input_Power
Input_Power.SchDoc
VBAT_FUSED
VBAT_LDOS
U_Power_Regulation
Power_Regulation.SchDoc
VBAT_FUSED
VBAT_LDOS
5V
3V3
12V
U_CAN
CAN.SchDoc
5V
3V3
CAN_RX_LED
CAN_TX_LED
CAN_STB
FDCAN_TX
FDCAN_RX
U_MCU
MCU.SchDoc
FDCAN_RX
5V
3V3
FDCAN_TX
CAN_STB
CAN_TX_LED
CAN_RX_LED
MOTOR_DIR
MOTOR_PWM
U_Motor_Control
Motor_Control.SchDoc
12V
3V3
Motor_PWM
Motor_Dir

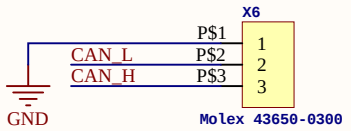
CAN TRANSCEIVER



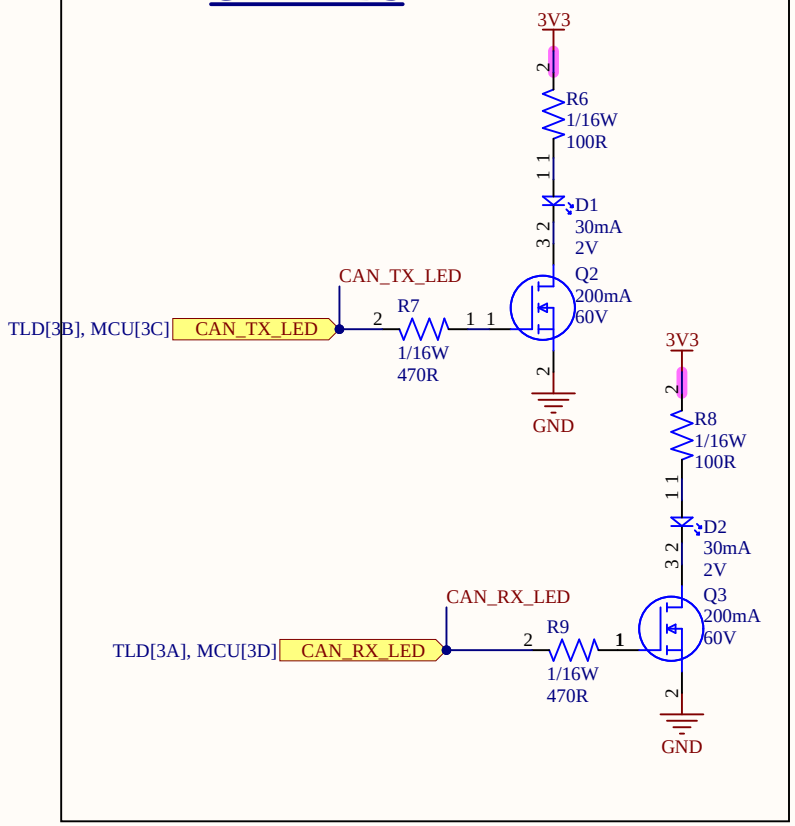
CAN_1



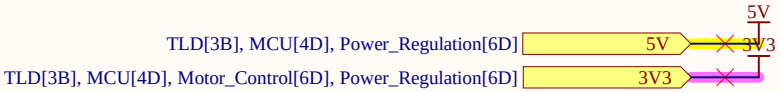
CAN_2



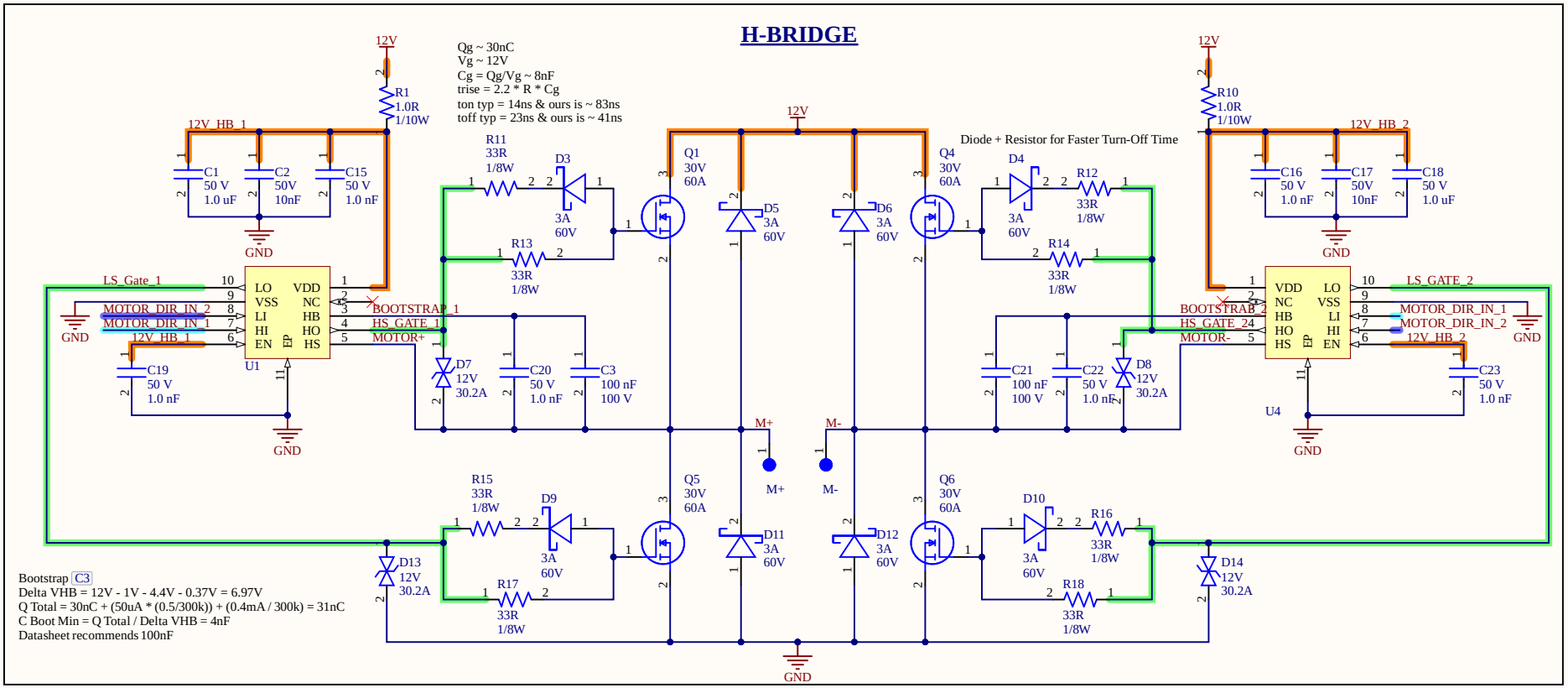
CAN LEDS



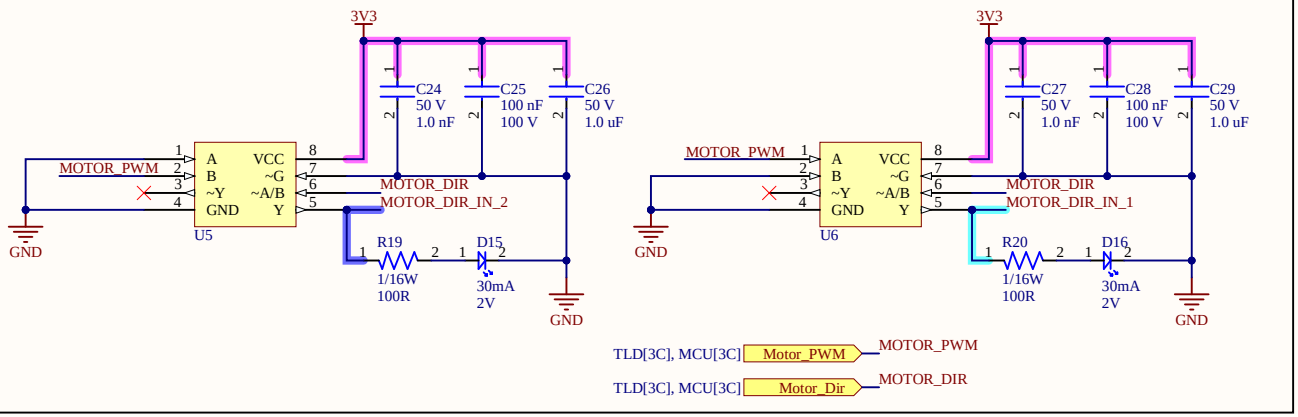
Pins		Type	Description
Name	No.		
TXD	1	Digital Input	CAN transmit data input
GND	2	GND	Ground connection
V_{CC}	3	Supply	5V supply voltage
RXD	4	Digital Output	CAN receive data output, tri-state when powered off
NC	5	—	No Connect (not internally connected); Devices without V_{IO}
V_{IO}		Supply	I/O supply voltage
CANL	6	Bus IO	Low-level CAN bus input/output line
CANH	7	Bus IO	High-level CAN bus input/output line
STB	8	Digital Input	Standby input for mode control, integrated pull up



H-BRIDGE

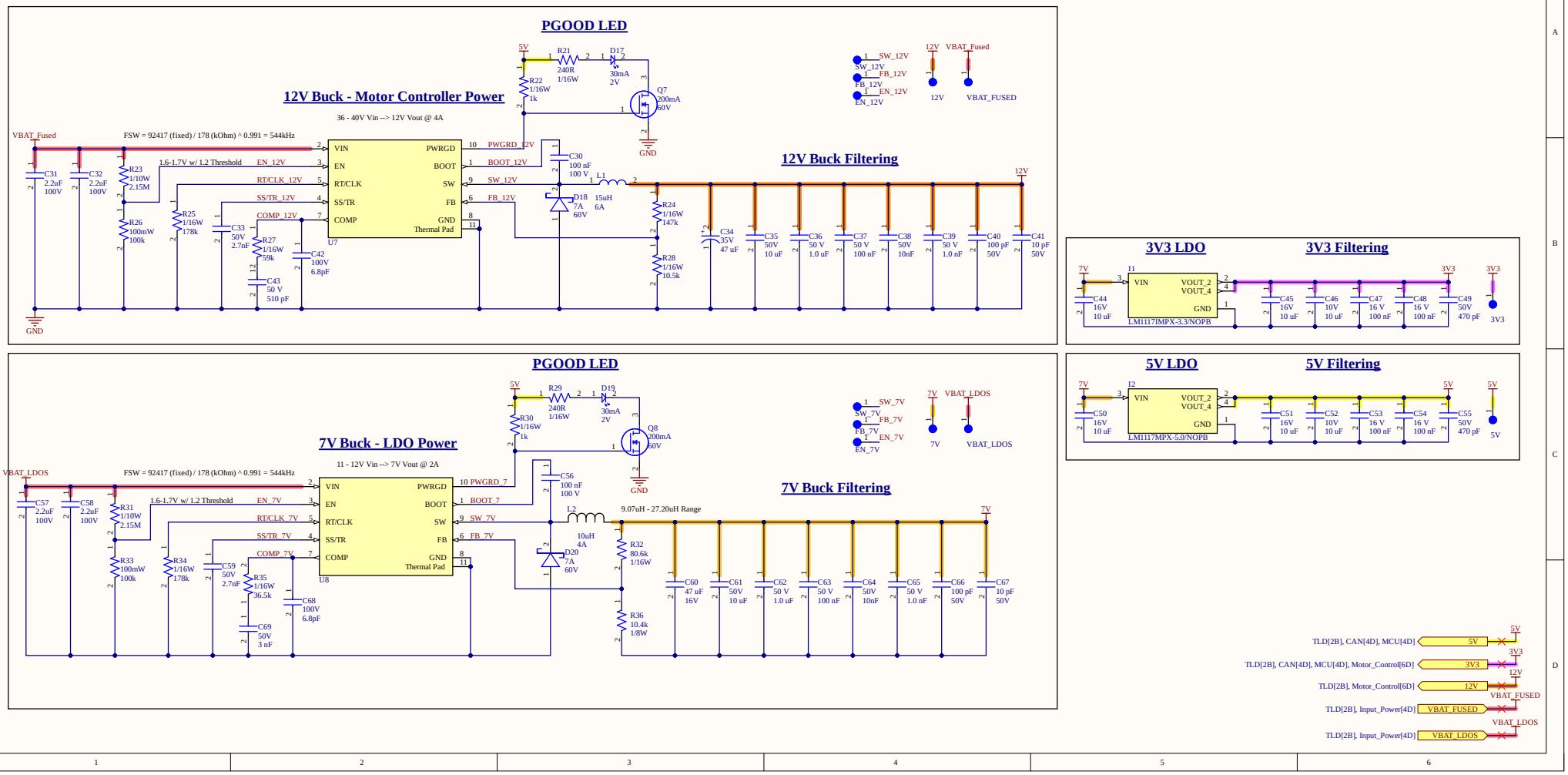


DIRECTION CONTROL

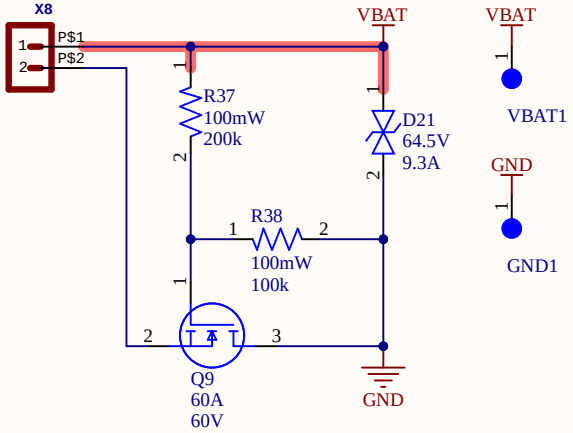


MOTOR OUTPUT CONNECTOR

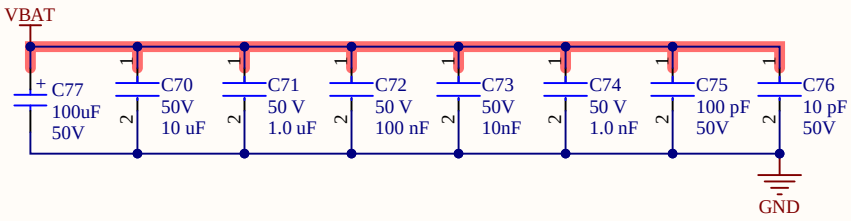
TLD[3C], Power_Regulation[6D] 12V
TLD[3C], CAN[4D], MCU[4D], Power_Regulation[6D] 3V3


PGOOD LED
12V Buck - Motor Controller Power
36 - 40V Vin --> 12V Vout @ 4A
FSW = 92417 (fixed) / 178 (kOhm) ^ 0.991 = 544kHz
1.6-1.7V w/ 1.2 Threshold
12V Buck Filtering
3V3 LDO
3V3 Filtering
LM1117IMPX-3.3/NOPB
PGOOD LED
7V Buck - LDO Power
11 - 12V Vin --> 7V Vout @ 2A
7V Buck Filtering
9.07uH - 27.20uH Range
5V LDO
5V Filtering
LM1117MPX-5.0/NOPB
TLD[2B], CAN[4D], MCU[4D]
TLD[2B], CAN[4D], MCU[4D], Motor_Control[6D]
TLD[2B], Motor_Control[6D]
TLD[2B], Input_Power[4D]
TLD[2B], Input_Power[4D]

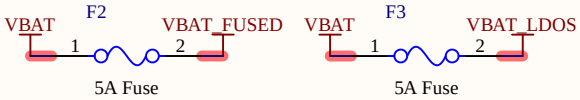
REVERSE POLARITY PROTECTION

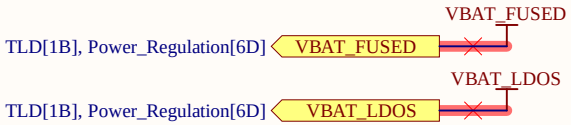


INPUT FILTERING

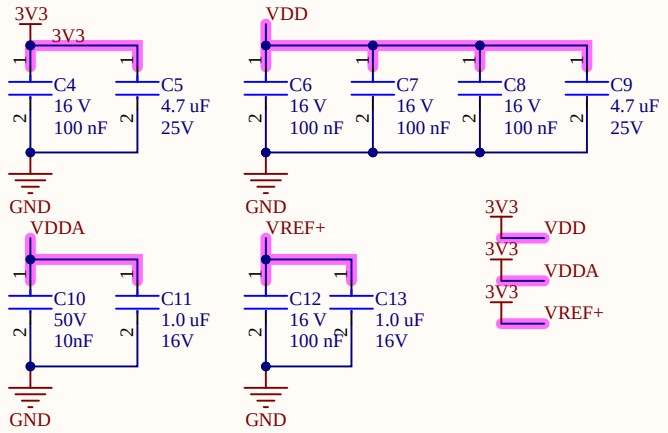


FUSES

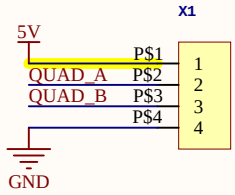




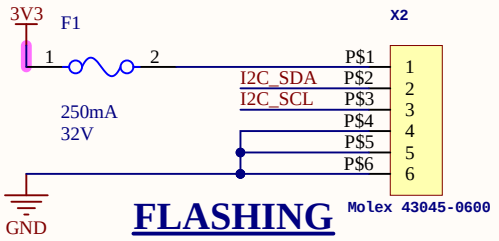
Power Filtering



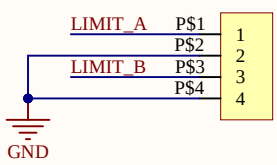
QUADRATURE ENCODER



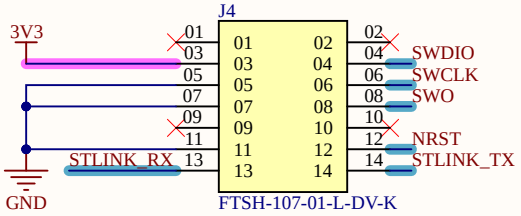
ABSOLUTE ENCODER I2C BUS



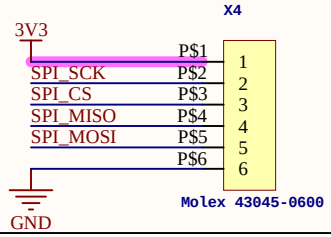
LIMIT SWITCH



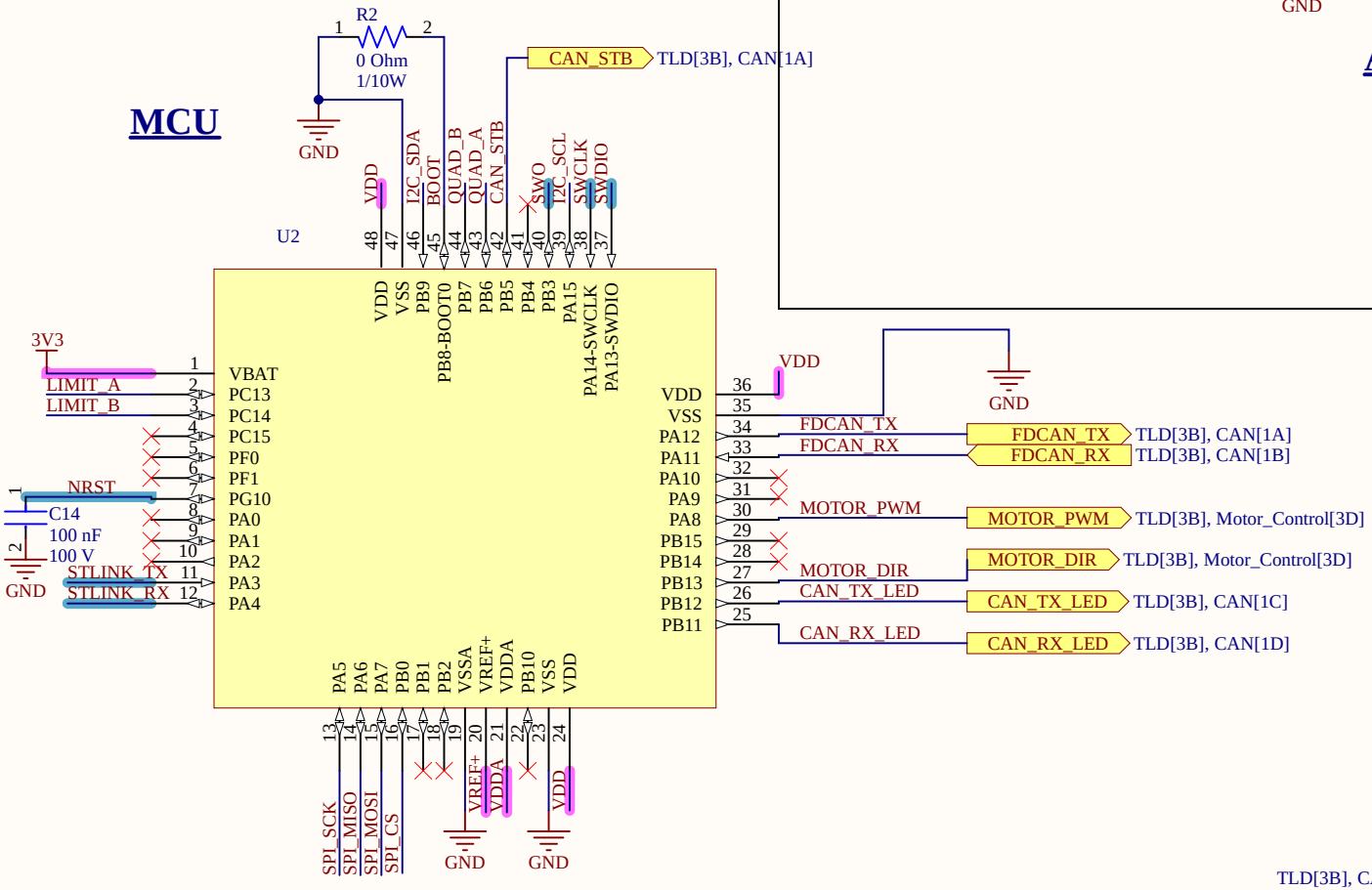
FLASHING



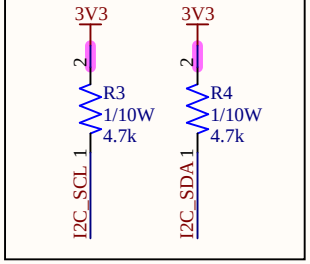
ABSOLUTE ENCODER



MCU



I2C PULL-UPS



TLD[3B], CAN[4D], Power_Regulation[6D] — 5V

TLD[3B], CAN[4D], Motor_Control[6D], Power_Regulation[6D] — 3V3

Comment	Description	Designator	Footprint	LibRef	Quantity
5003	Oranange PC Test Point, Miniature Phosphor Bronze Silver Plating Through Hole Mounting Type	5V0, 5V, 7V, 12V, 8N, 7V, 8N, 12V, FB_7V, FB_12V, GND1, M-, M+, SW-7V, SW-12V, VBAT1, VBAT_FUSED, VBAT_LDO5	TEST-POINT-0001	TEST-POINT-0001	16
CC0805KKX7R6BB105	CAPCER1UF50V;X7R;0805	C1, C18, C26, C29, C36, C62, C71	CAP-0805	CAP-1U-0001	7
GRM2195C1H103JA01D	CAPCER10000PF50V;C0G/NPO;0805	C2, C10, C17, C38, C64, C73	CAP-0805	CAP-10N-0001	6
CC0603KRX7R0BB104	CAPCER0.1UF100V;X7R;0603	C3, C14, C21, C25, C28, C30, C56	CAP-0603	CAP-100N-0001	7
CC0402KRX7R7BB104	CAPCER0.1UF16V;X7R;0402	C4, C5, C7, C8, C12, C47, C48, C53, C54	CAP-0402	CAP-0.1U-0001	9
CC0603KRX5R8BB475	CAPCER4.7UF25V;X5R;0603	C5, C9	CAP-0603	CAP-4.7U-0001	2
CC0603KRX7R7BB105	CAPCER1UF16V;X7R;0603	C11, C13	CAP-0603	CAP-1U-0002	2
CC0402KRX7R8BB102	CAPCER1000PF50V;X7R;0402	C15, C16, C19, C20, C22, C23, C24, C27, C39, C65, C74	CAP-0402	CAP-1N-0001	11
CC1206KKX7R0BB225	CAPCER2.2UF100V;X7R;1206	C31, C32, C57, C58	CAP-1206	CAP-2.2U-0001	4
GRM2165C1H272JA01D	CAPCER2700PF50V;C0G/NPO;0805	C33, C59	CAP-0805	CAP-2.7N-0001	2
EEH-ZC1V470P	CAP ALUMHYBRID 47UF;20%;35V;SMD	C34	CAP-Radial-SMD	CAP-47U-0002	1
CL32B106KBJNNNE	CAPCER10UF50V;X7R;1210	C35, C61, C70	CAP-1210	CAP-10U-0002	3
CC0805KRX7R6BB104	CAPCER0.1UF50V;X7R;0805	C37, C63, C72	CAP-0805	CAP-0.1U-0002	3
CC0402JRNPO9BN101	CAPCER100PF50V;C0G/NPO;0402	C40, C66, C75	CAP-0402	CAP-100P-0001	3
CC0402JRNPO9BN100	CAPCER10PF50V;C0G/NPO;0402	C41, C67, C76	CAP-0402	CAP-10P-0001	3
CC0603CRNPO0BN6R8	CAPCER6.8PF100V;C0G/NPO;0603	C42, C68	CAP-0603	CAP-6.8P-0001	2
0402N511J500CT	CAPCER510PF50V;C0G/NPO;0402	C43	CAP-0402	CAP-510P-0001	1
293D106X9016A2TE3	CAPTANT10UF10%;16V;1206	C44, C45, C50, C51	CAP-1206	CAP-10U-0004	4
CC0603KRX5R6BB106	CAPCER10UF10V;X5R;0603	C46, C52	CAP-0603	CAP-10U-0001	2
CC0805JRNPO9BN471	CAPCER470PF50V;C0G/NPO;0805	C49, C55	CAP-0805	CAP-470P-0001	2
C3225X7R1N109K250AC	CAPCER47UF16V;X5R;1210	C60	CAP-1210	CAP-47U-0003	1
GRM188R5C1H302JA01D	3000 pF;±5%;50V Ceramic Capacitor C0G, NP0 0603 (1608 Metric)	C69	CAP-0603	CAP-3N-0001	1
860040674004	100 µF;50 V;Aluminum Electrolytic Capacitors Radial, Can 7000 Hrs @ 105°C	C77	WCAP-ATUL_8X11.5[D4L]	CAP-100u-0001	1
BL-HHC36G-AV-TRB	LED YELLOW;CLEAR 0603 SMD	D1, D2, D15, D16, D17, D19	LED-0603	LED-0001	6
PMEG3030EP,115	DIODESCHOTTKY60V 3A;SOD128	D3, D4, D5, D8, D9, D10, D11, D12	DIO-SOD128	DIO-SCHOTTKY-0003	8
SMBJ12CA	TVSDIODE12VWM 19.9VCD214AA	D7, D8, D13, D14	DO-214AA(SMBJ)	DIO-TVS-0002	4
PDS760-13	DIODESCHOTTKY60V 7APOWERDI5	D18, D20	DO-POWERDI5	DIO-SCHOTTKY-0001	2
SMBJ40CA	TVSDIODE42VWM 64.5VCD214AA	D21	DO-214AA(SMBJ)	DIO-TVS-0001	1
0467.250NRHF	FUSEBRDMT250MA 32VAC;32VDC	F1	RES-0603	FUSE-0002	1
01550000M	FUSEBLOK CARTRIDGE;125V;10A SMD	F2, F3	FUSE-0001	FUSE-0001	2
LM1117MPX-3.3/NOPB	IC REG LIN 3.3V 800MA SOT223-4	I1	IC-SOT-223-4	IC_LDO_3V3_0001	1
LM1117MPX-5.0/NOPB	IC REG LINEAR 5V 800MA SOT223-4	I2	IC-SOT-223-4	IC_LDO_5V_0001	1
FTSH-107-01-L-DV-K	Connector Header Surface Mount 14 position 0.050" (1.27mm)	J4	SMTEC_FTSH-107-01-L-DV-K	CONN_Rashing-0001	1
CSAD1010-150M	SMD;MOLDING POWER;CHOKE	L1	IND-15U-0002	IND-15U-0002-NoJLC	1
IHLP2525CZER100M11	IHLP-2525CZ-11 10 20%;ERE3	L2	IND_IHLP_2525_CZ_MS	IND-10U-0002	1
CSD17575Q3	MOSFETN-CH 30V 60A;8VSON	Q1, Q4, Q5, Q6	IC-8VSONCLIP	NMOS-26A-0001	4
T2N7002AKLM	MOSFETN-CH 60V 200MA;SOT23	Q2, Q3, Q7, Q8	IC-SOT23-3	NMOS-200MA-0001	4
CSD18543Q3AT	MOSFETN-CH 60V 12A;60A;8VSON	Q9	IC-8VSONCLIP	NMOS-60A-0001	1
ERJ2GEJ8R0X	RES;SMD;1 OHM;5%;1/10W;0402	R1, R10	RES-0402	RES-1-0001	2
RESC1607J60N	0 Ohms Jumper Chip Resistor 0603 (1608 Metric) Moisture Resistant Thick Film	R2	RESC1607J60N	RES-0-0003	1
RC0603FR-0740K7L	RES;4.7K OHM;1%;1/10W;0603	R3, R4	RES-0603	RES-4.7k-0001	2
RC1210FR-07120RL	RES;120 OHM;1%;1/2W;1210	R5	RES-1210	RES-120-0001	1
RC0402FR-07100RL	RES;100 OHM;1%;1/16W;0402	R6, R8, R19, R20	RES-0402	RES-100-0001	4
RC0402FR-07470RL	RES;470 OHM;1%;1/16W;0402	R7, R9	RES-0402	RES-470-0001	2
RC0402FR-7W33RL	RES;33 OHM;1%;1/8W;0402	R11, R12, R13, R14, R15, R16, R17, R18	RES-0402	RES-33-0001	8
RC0402FR-07240RL	240R;0.063W;1%;0402 (1005 Metric) SMD	R21, R29	RES-0402	RES-240-0001	2
RC0402FR-071KL	RES;1K OHM;1%;1/16W;0402	R22, R30	RES-0402	RES-1k-0001	2
RC0603FR-072M15L	RES;SMD;2.15M OHM;1%;1/10W;0603	R23, R31	RES-0603	RES-2.15M-0001	2
RC0402FR-0714K7L	RES;147K OHM;1%;1/16W;0402	R24	RES-0402	RES-147k-0001	1
RT0D21783FTH	62.5mW Thick Film Resistors 50V ±100ppm/°C ±1% 178kΩ 0402 Chip Resistor - Surface Mount ROHS	R25, R34	RES-0402	RES-178k-0001	2
RC0603FR-07100KL	RES;SMD;100K OHM;1%;1/10W;0603	R26, R33, R38	RES-0603	RES-100k-0001	3
RC0402FR-0759KL	RES;59K OHM;1%;1/16W;0402	R27	RES-0402	RES-59k-0001	1
RC0402FR-0710K5L	RES;10.5K OHM;1%;1/16W;0402	R28	RES-0402	RES-10.5k-0001	1
RC0402FR-0780K6L	80.6 kOhms ±1% 0.063W, 1/16W Chip Resistor 0402 (1005 Metric) Moisture Resistant Thick Film	R32	RES-0402	RES-80.6k-0001	1
RC0402FR-0736K5L	36.5 kOhms ±1% 0.063W, 1/16W Chip Resistor 0402 (1005 Metric) Moisture Resistant Thick Film	R35	RES-0402	RES-36.5k-0001	1
RT0805BRD0710K4L	10.4 kOhms ±0.1% 0.125W, 1/8W Chip Resistor 0805 (2012 Metric) Thin Film	R36	RES-0805	RES-10.4k-0001	1
RC0603FR-07200KL	RES;SMD;200K OHM;1%;1/10W;0603	R37	RES-0603	RES-200k-0001	1
UCC27282DRCR	IC GATEDRVR HALF-BRIDGE;10VSON	U1, U4	IC-10VSON	IC-GTDR-0001	2
STM32G431CBT6	IC MCU;32BIT 128KB FLASH 48LQFP	U2	IC-LQFP48	IC-STM32G431CBT6	1
TCAN1044VDRQ1	IC TRANSCEIVER;1/1;8SOIC	U3	IC-8SOIC	IC-CAN-0001	1
SN74LVC2G157DCUR	Multiplexer 1 x 2:1 8-VSSOP	U5, U6	IC-8VSSOP	IC-MUX-0001	2
TPS54561DPRR	IC REG BLOCK ADJ 5A 10WSON	U7, U8	IC-10WSON	IC-BUCK-0001	2
Molex - Micro-Fit 3.0 Series connector, 3.00mm (0.118") pitch header, 4 positions.		X1, X3	43045-0400	HEADER_POS4_7430 4-0401	2
Molex-43045-0600	Molex 43045-0600	X2, X4	43045-0600	Micro-Fit Molex 6 Pin 2 Row Right Angle	2
Molex-43650-0300	Molex-43650-0300	X5, X6	43650-0300	Micro-Fit Molex 3 Pin Right Angle	2
Molex - Micro-Fit 3.0 Series connector, 3.00mm (0.118") pitch header, 2 positions.		X7, X8	43045-0200	HEADER_POS2_43045-0200	2