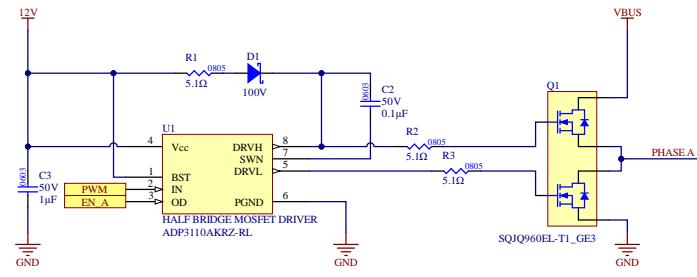
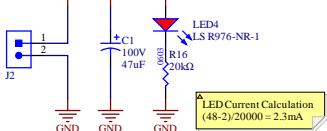
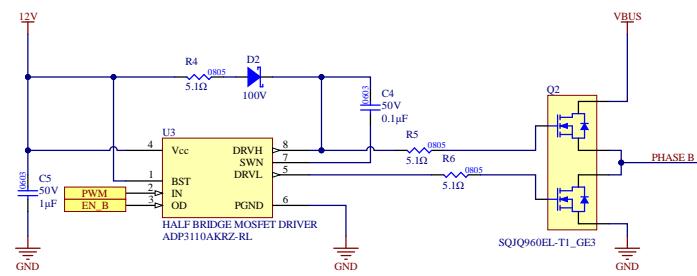


3 PHASE GATE DRIVER

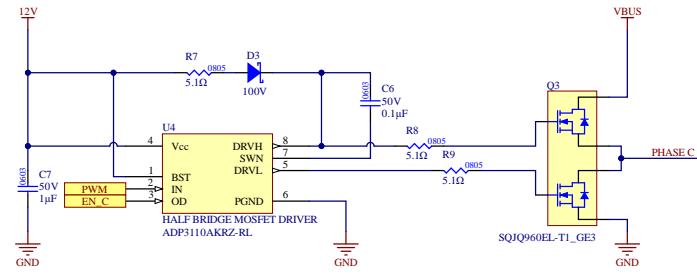
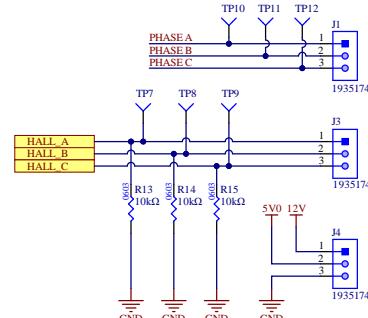
A POWER INPUTS



Calculations found at:
https://docs.google.com/spreadsheets/d/1YqJc6bek55Om3A9Kw0FF9QSSnCC_hskKuQEEMzXgjQ/edit#gid=0

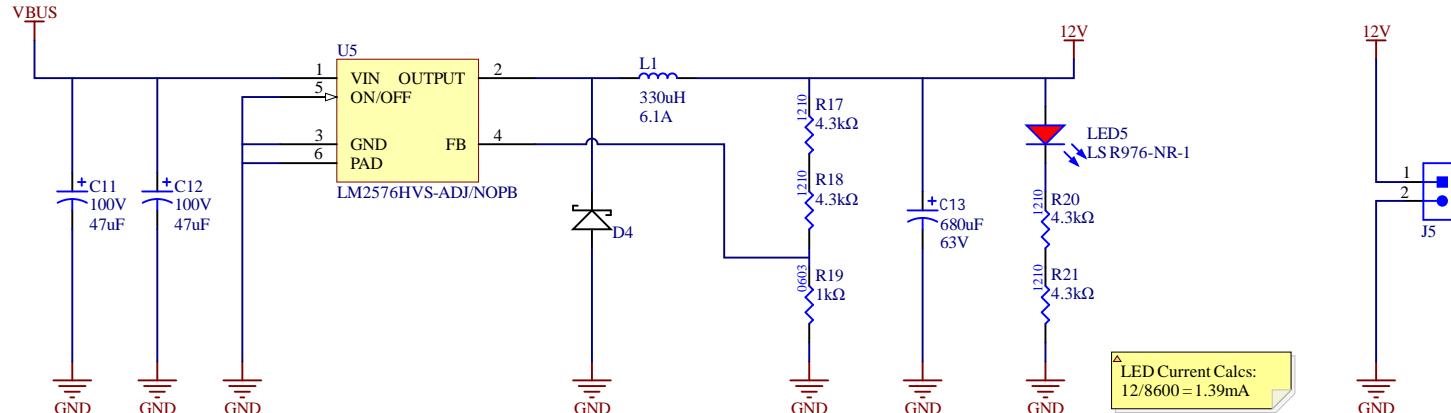


MOTOR OUTPUTS



UW ROBOTICS TEAM	University of Waterloo Robotics Team 200 University Ave W Waterloo, Ontario, Canada N2L3G1	REV 1.0
PROJECT	BLDC Gate Driver Breakout.PnjPcb,[No Variations]	
DOCUMENT	Main.SchDoc	MODIFIED 10/18/2021
ENGINEER	SAHIL KALE	REVIEWER KYLE HONG
		SHEET 1 OF 4

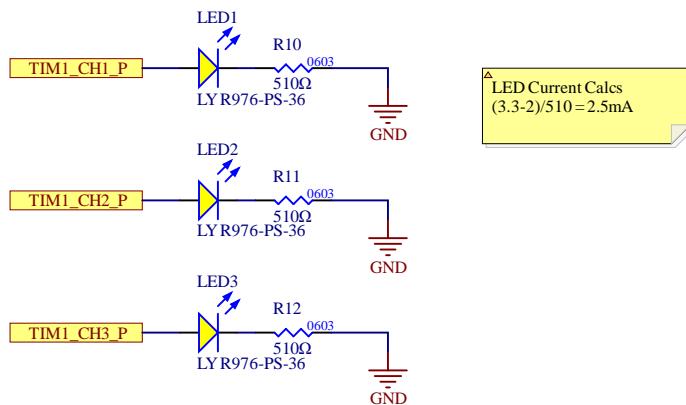
24-12V BUCK



		University of Waterloo Robotics Team 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV 1.0
PROJECT BLDC Gate Driver Breakout.PjrPcb, [No Variations]			
DOCUMENT Buck.SchDoc		MODIFIED 9/12/2021	
ENGINEER SAHIL KALE	REVIEWER KYLE HONG	SHEET 2 OF 4	

LED

Diagnostic Phase PWM LED's



		University of Waterloo Robotics Team 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV 1.0
PROJECT BLDC Gate Driver Breakout.PnjPcb, [No Variations]			
DOCUMENT LEDs.SchDoc		MODIFIED 8/31/2021	
ENGINEER SAHIL KALE	REVIEWER KYLE HONG	SHEET	3 OF 4

MCU

A

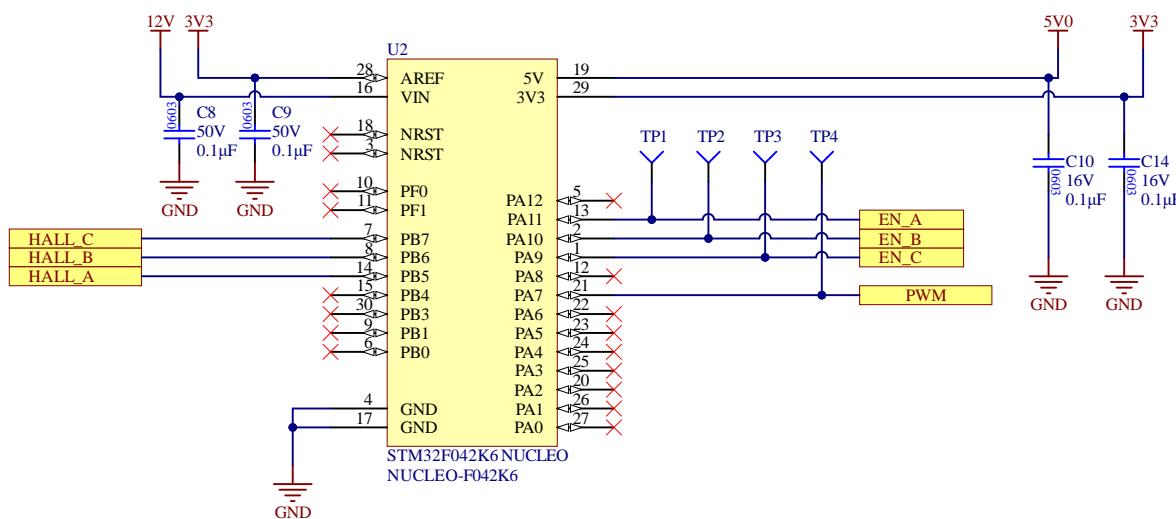
A

B

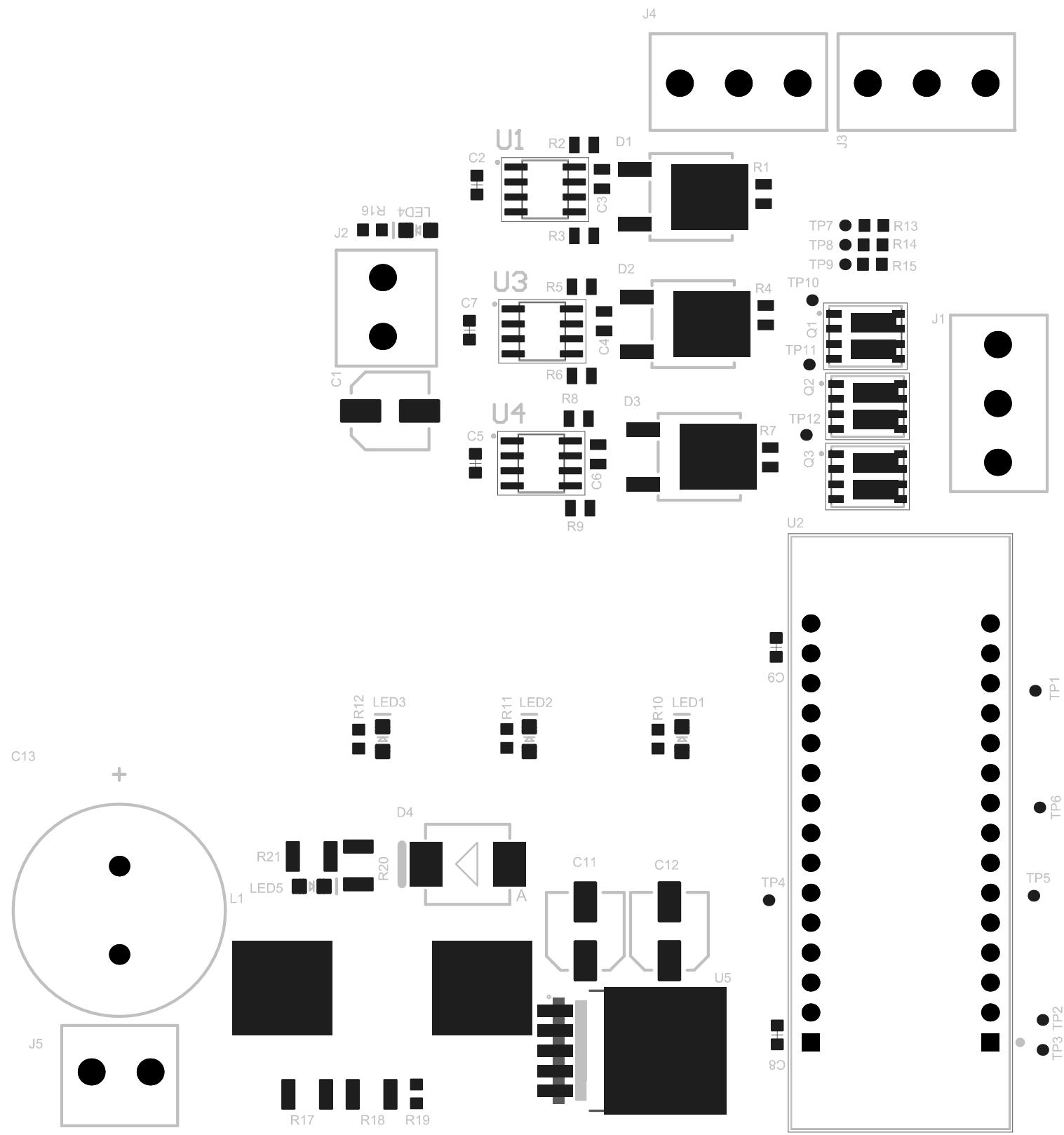
B

C

C



ROBOTICS TEAM		University of Waterloo Robotics Team 200 University Ave W Waterloo, Ontario, Canada N2L 3G1	REV 1.0
PROJECT BLDC Gate Driver Breakout.PriPcb, [No Variations]			
DOCUMENT MCU.SchDoc		MODIFIED 10/18/2021	
ENGINEER SAHIL KALE	REVIEWER KYLE HONG	SHEET 4 OF 4	



Comment	Description	Designator	Footprint	LibRef	Quantity
CAP_47uF_100V_ALUM	Aluminum Electrolytic Capacitor, Polarized, Aluminum (wet), 100V, 20% +Tol, 20% - Tol, 47uF, Surface Mount, 5454	C1, C11, C12	RADIAL_CORNELL_D	CAP_47uF_100V_ALUM	3
CAP_0.1uF_50V_0603	CAP CER 0.1UF 50V X7R 0603	C2, C4, C6, C8, C9	CAP0603	CAP_0.1uF_50V_0603	5
CAP_1uF_50V_0603	CAP CER 1UF 50V X6S 0603	C3, C5, C7	CAP0603	CAP_1uF_50V_0603	3
CAP_0.1uF_16V_0603	CAP CER 0.1UF 16V X7R 0603	C10, C14	CAP0603	CAP_0.1uF_16V_0603	2
CAP_680uF_63V_ALUM	CAP ALUM 680UF 20% 63V RADIAL	C13	ELXZ630ELL681MM20S	CAP_680uF_63V_ALUM	1
DIO_SCHOTTKY_100V_5.5A	DIODE SCHOTTKY 100V 5.5A DPAK	D1, D2, D3	D-PAK	DIO_SCHOTTKY_100V_5.5A	3
DIO_SCHOTTKY_20V_3A	DIODE SCHOTTKY 20V 3A SMC	D4	SS32	DIO_SCHOTTKY_20V_3A	1
CON_3POS_SCREW_TE_RM	TERM BLK 3POS SIDE ENTRY 5MM	J1, J3, J4	1935174	CON_3POS_SCREW_TE_RM	3
CON_2POS_SCREW_TE_RM	TERM BLK 2POS SIDE ENTRY 5MM	J2, J5	1935161	CON_2POS_SCREW_TE_RM	2
IND_330uH_6.1A	General Purpose Inductor	L1	74437529203331	IND_330uH_6.1A	1
LED_YELLOW	LED YELLOW DIFFUSED 0805 SMD	LED1, LED2, LED3	LED_0805_YELLOW	LED_YELLOW	3
LED_RED	LED RED DIFFUSED 0805 SMD	LED4, LED5	LED_0805_RED	LED_RED	2
NMOS_2CH_60V_63A	MOSFET 2 N-CH 60V POWERPAK8X8	Q1, Q2, Q3	PowerPAK 8 x 8 Dual	NMOS_2CH_60V_63A	3
RES_5.1Ω_0805_5%	RES 5.1 OHM 5% 1/8W 0805	R1, R2, R3, R4, R5, R6, R7, R8, R9	RES0805	RES_5.1Ω_0805_5%	9
RES_510Ω_0603_5%	RES 510 OHM 5% 1/10W 0603	R10, R11, R12	RES0603	RES_510Ω_0603_5%	3
RES_10kΩ_0603_5%	RES 10K OHM 5% 1/10W 0603	R13, R14, R15	RES0603	RES_10kΩ_0603_5%	3
RES_20kΩ_0603_1%	RES 20K OHM 1% 1/10W 0603	R16	RES0603	RES_20kΩ_0603_1%	1
RES_4.3kΩ_1210_5%	RES 4.3K OHM 5% 1/2W 1210	R17, R18, R20, R21	RES1210	RES_4.3kΩ_1210_5%	4
RES_1kΩ_0603_5%	RES 1K OHM 5% 1/10W 0603	R19	RES0603	RES_1kΩ_0603_5%	1
HALF BRIDGE MOSFET DRIVER	Half Bridge Based MOSFET Driver, PDS08	U1, U3, U4	8-SOIC_M	IC_HALFBRIDGEDRV_A_DP3110AKRZ	3
STM32F042K6 NUCLEO	STM32 Nucleo-32 development board with STM32F042K6 MCU, supports Arduino connectivity	U2	NUCLEO-F042K6	STM32F042K6-NUCLEO	1
BUCK_ADJ_4_57_V	Switching Regulator, Voltage-mode, 7.5A, 63kHz Switching Freq-Max, BiPolar, PSS05	U5	D2PAK-5	BUCK_ADJ_4_57_V	1