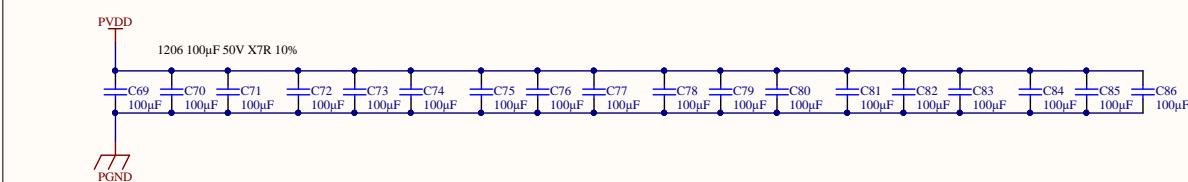
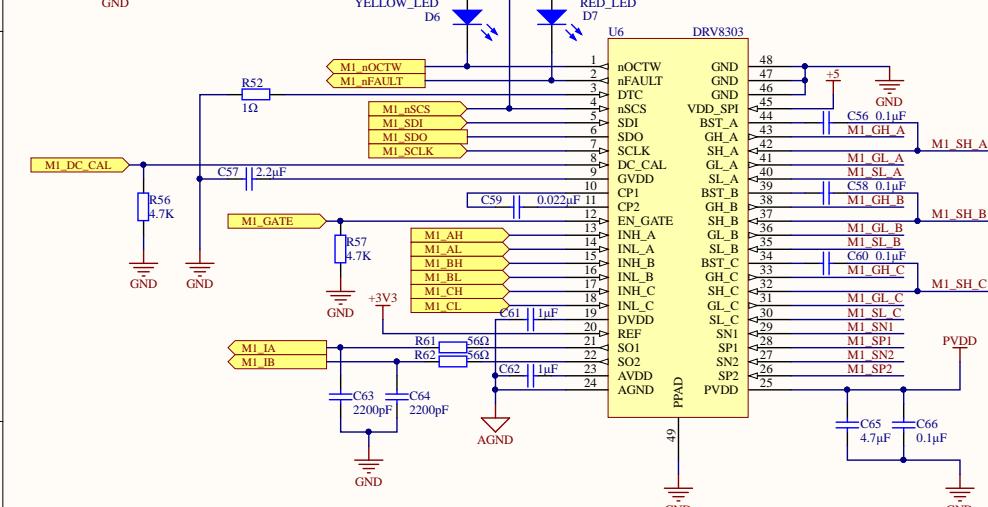
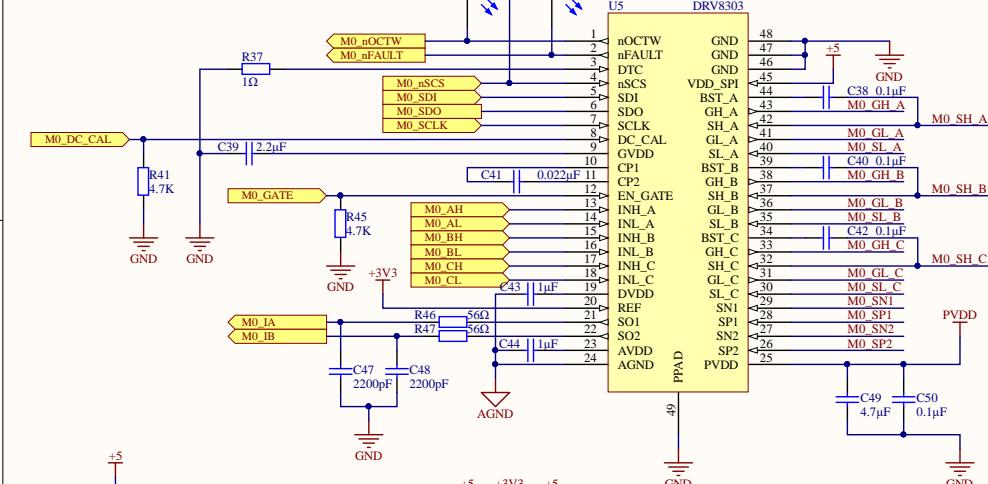
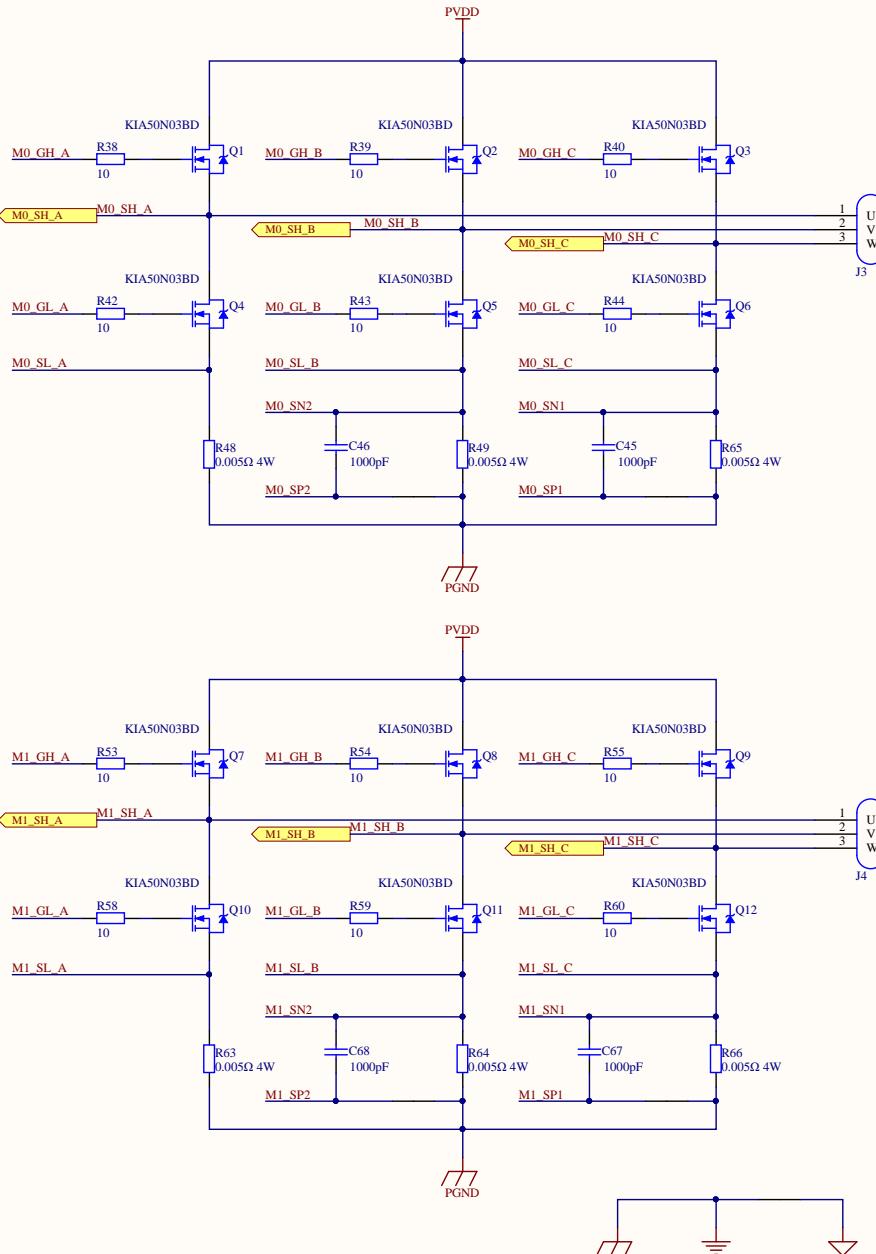


## 双路三相驱动控制电路



## 双路三相全桥驱动电路

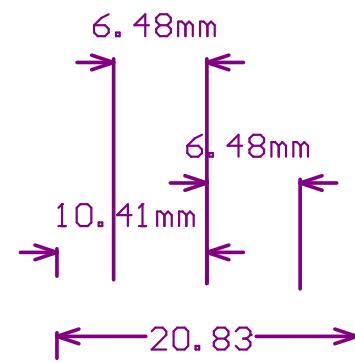
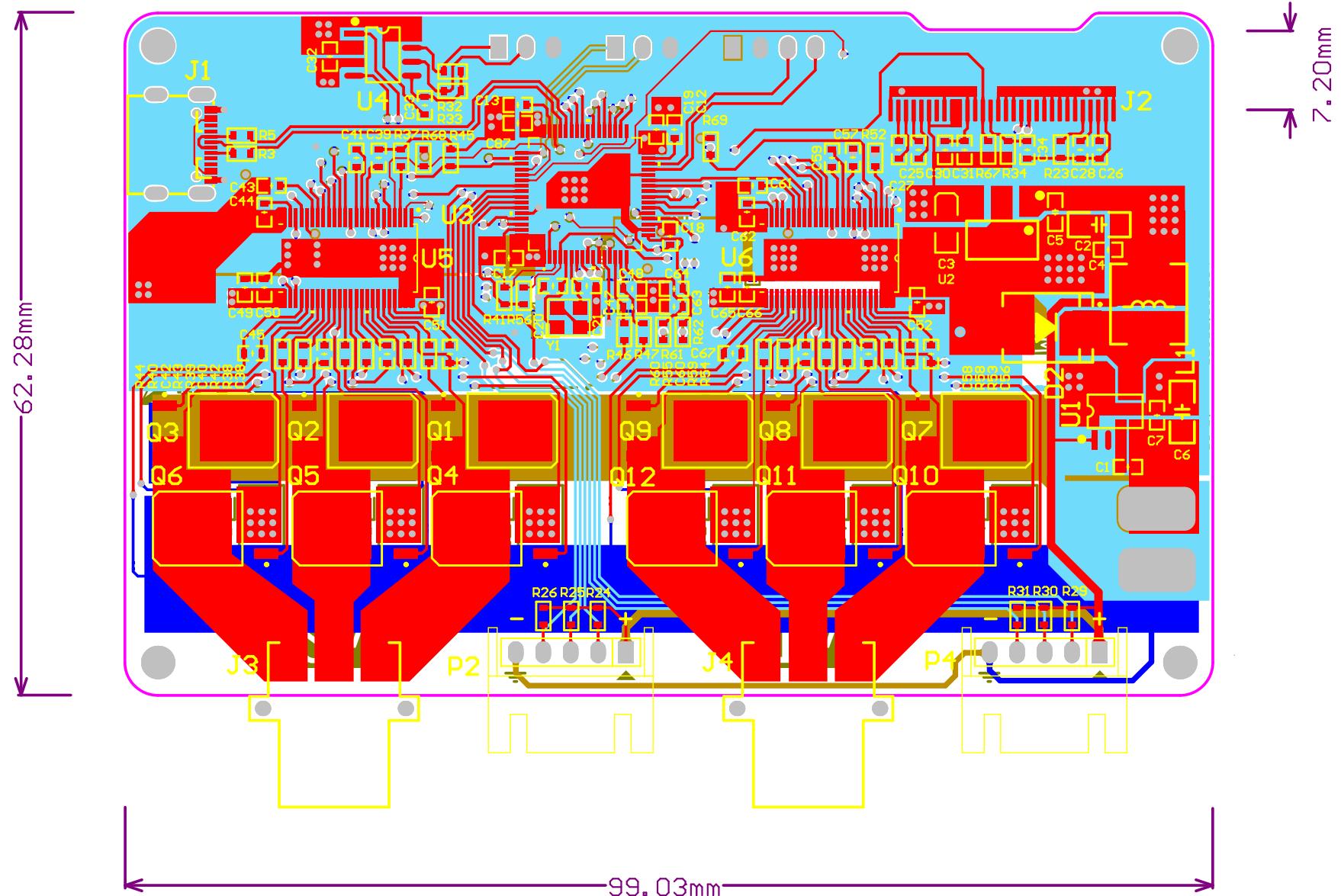


## 无刷电机控制器驱动电路

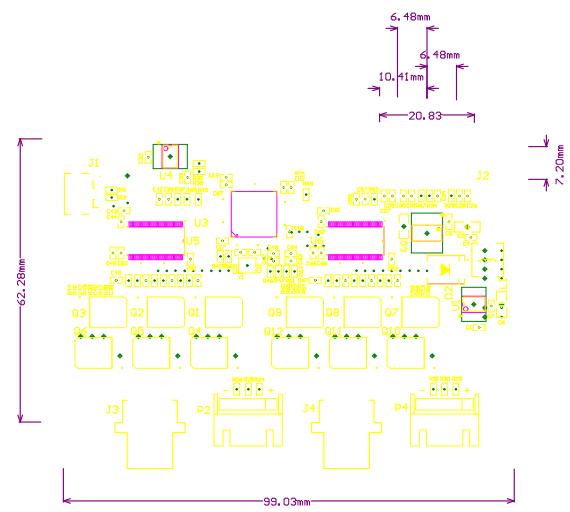
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Date: 2021/12/8	Time: 13:21:07	Sheet 2 of 2	Engineer: LuHeQiu
File: FOC_Driver.SchDoc	Contact: luheqiu@mail.luheqiu.com		
			https://www.luheqiu.com

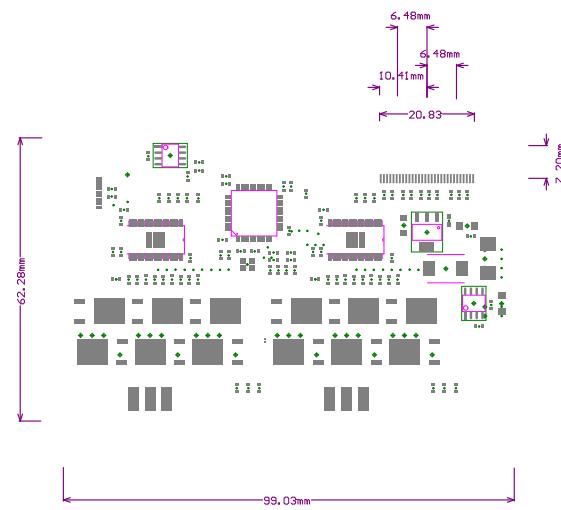


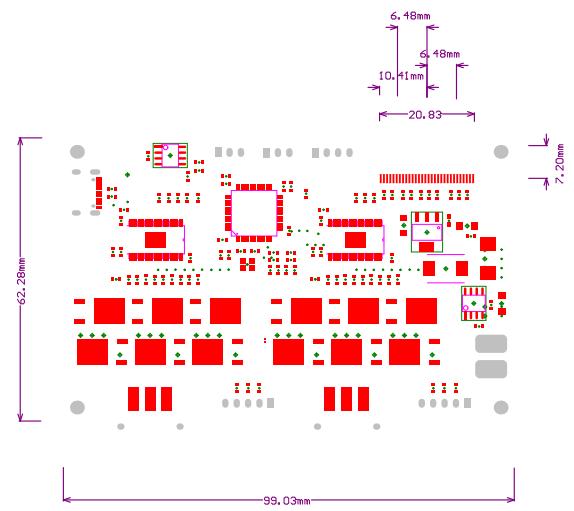
创想工坊

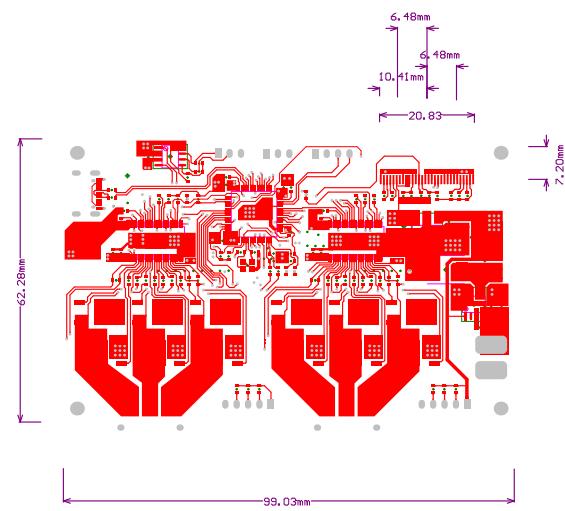


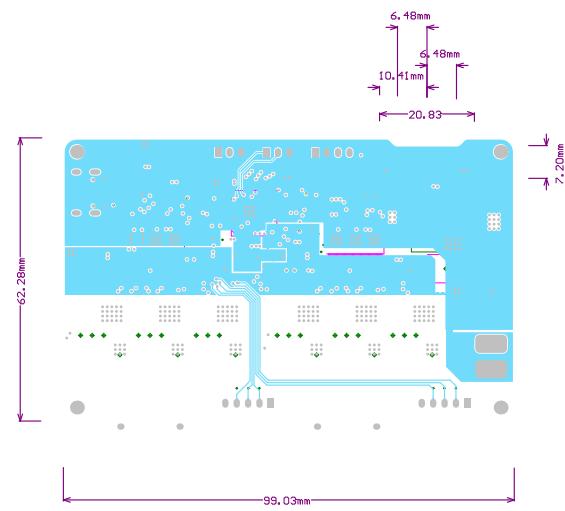
Comment	Value	Designator	Quantity	Footprint	LibRef	Description
Cap	1µF	C1, C4, C7, C30, C43, C44, C61, C62	8	C 0603_L	Cap	Capacitor
Cap Pol1	100µF	C2	1	C 1206_M	Cap Pol1	Polarized Capacitor (Radial)
Cap Pol1	22µF	C3	1	CD A(3216)	Cap Pol1	Polarized Capacitor (Radial)
Cap	10µF	C5	1	C 0603_M	Cap	Capacitor
Cap Pol1	47µF	C6	1	C 1206_M	Cap Pol1	Polarized Capacitor (Radial)
Cap	100nF	C8, C15, C17, C18, C19, C32, C51, C52, C87	9	C 0603_L	Cap	Capacitor
Cap	0.01µF	C9	1	C 0603_L	Cap	Capacitor
Cap	0.1µF	C10, C11, C14, C16, C22, C23, C24, C29, C38, C40, C42, C50, C56, C58, C60, C66	16	C 0603_L	Cap	Capacitor
Cap	2.2µF	C12, C13, C26, C39, C57	5	C 0603_L	Cap	Capacitor
Cap	20pF	C20, C21	2	C 0603_L	Cap	Capacitor
Cap	4.7µF 16V X7R	C25	1	C 0603_L	Cap	Capacitor
Cap	1µF 16V X5R	C27	1	C 0603_L	Cap	Capacitor
Cap	4.7µF	C28, C34, C49, C65	4	C 0603_L	Cap	Capacitor
Cap	1µF 16V	C31	1	C 0603_L	Cap	Capacitor
Cap	47nF	C33	1	C 0603_L	Cap	Capacitor
Cap	0.022µF	C41, C59	2	C 0603_L	Cap	Capacitor
Cap	1000pF	C45, C46, C67, C68	4	C 0603_L	Cap	Capacitor
Cap	2200pF	C47, C48, C63, C64	4	C 0603_L	Cap	Capacitor
Cap	100µF	C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86	18	C 1206_M	Cap	Capacitor
BLUE_LED		D1	1	LED 0603B	LED2	Typical RED, GREEN, YELLOW, AMBER GaAs LED
SS56		D2	1	SMC	Diode BAS70	Silicon AF Schottky Diode for High-Speed Switching
GREEN_LED		D3	1	LED 0603G	LED2	Typical RED, GREEN, YELLOW, AMBER GaAs LED
YELLOW_LED		D4, D6	2	LED 0603Y	LED2	Typical RED, GREEN, YELLOW, AMBER GaAs LED
RED_LED		D5, D7	2	LED 0603R	LED2	Typical RED, GREEN, YELLOW, AMBER GaAs LED
USB-C		J1	1	USB-C-SMD_TYPE-C-USB-5	USB-C/S	USB-C型母接口
OLED 128*64		J2	1	OLED 0.96" 128x64	Header 30	Header_30-Pin
三相连接器-插座		J3, J4	2	MR30PW-M	三相连接器-插座	
Inductor	47µH/3A	L1	1	L-SMD-0630	Inductor	Inductor
USART		P1	1	SIPA04	Header 4	Header_4-Pin
M0_Encoder		P2	1	SIPB05	Header 5	Header_5-Pin
CAN		P3	1	SIPA03	Header 3	Header_3-Pin
M1_Encoder		P4	1	SIPB05	Header 5	Header_5-Pin
STLINK		P5	1	SIPA03	Header 3	Header_3-Pin
KIA50N03BD		Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12	12	TO252 - 3	N-MOSFET	
Res2	1K	R1, R35, R36, R50, R51	5	R 0603_L	Res2	Resistor
Res2	12K	R2	1	R 0603_L	Res2	Resistor
Res2	22Ω	R3, R5	2	R 0603_L	Res2	Resistor
Res2	4.7K	R4, R24, R25, R26, R29, R30, R31, R41, R45, R56, R57, R68, R69	13	R 0603_L	Res2	Resistor
Res2	43K	R6, R9, R13, R15, R19, R21, R27	7	R 0603_L	Res2	Resistor
Res2	3.3Ω	R7	1	R 0603_L	Res2	Resistor
Res2	3.9K	R8, R11, R14, R16, R20, R22, R28	7	R 0603_L	Res2	Resistor
Res2	0Ω	R10, R12	2	R 0603_L	Res2	Resistor
Res2	010KΩ	R23	1	R 0603_L	Res2	Resistor
Res2	60Ω	R32, R33	2	R 0603_L	Res2	Resistor
Res2	4.7KΩ	R34, R67	2	R 0603_L	Res2	Resistor
Res2	1Ω	R37, R52	2	R 0603_L	Res2	Resistor
Res2	10	R38, R39, R40, R42, R43, R44, R53, R54, R55, R58, R59, R60	12	R 0603_L	Res2	Resistor
Res2	56Ω	R46, R47, R61, R62	4	R 0603_L	Res2	Resistor
Res2	0.005Ω 4W	R48, R49, R63, R64, R65, R66	6	R 2512_M	Res2	Resistor
SW-PB		S1	1	TWS SMD-6*6*5	SW-PB	Switch
XL2011		U1	1	SOP8_N	XL2011	5V/2.1A DC-DC Buck 电源芯片(<50V)
CJT1117-3.3		U2	1	SOT223_N	Volt Reg	Voltage Regulator
STM32F405RG76		U3	1	LOFP64-10x10mm	STM32F405RG76	No Description Available
TJA1040		U4	1	SOP8_N	TJA1040	CAN收发器
DRV8303		U5, U6	2	DCA48_4P42X3P48	DRV8303	THREE PHASE PRE-DRIVER WITH DUAL CURRENT SHUNT AMPLIFIERS, DCA0048A
8MHz		Y1	1	OSC 3225-4P	XTAL	Crystal Oscillator

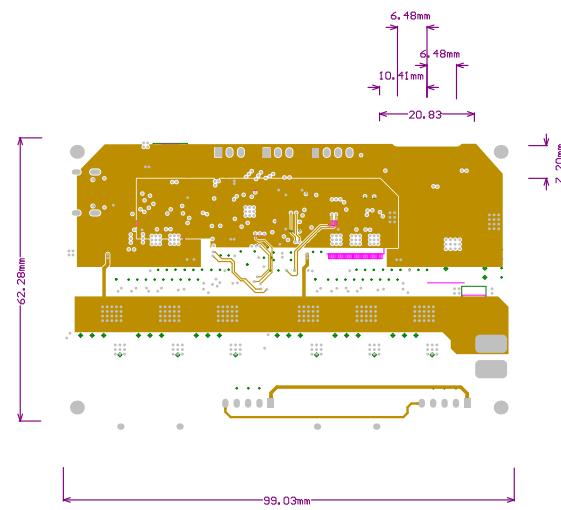


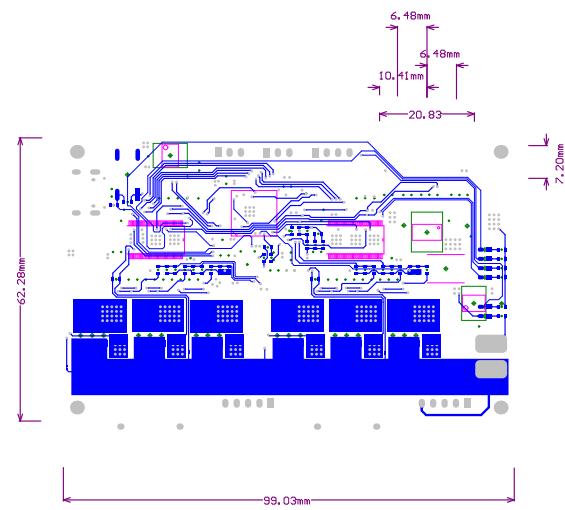


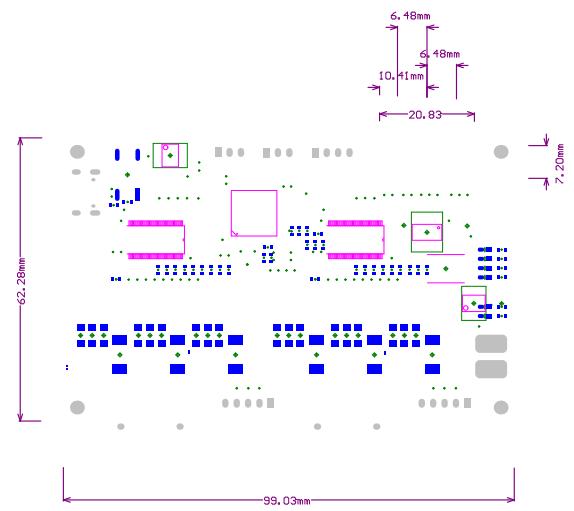


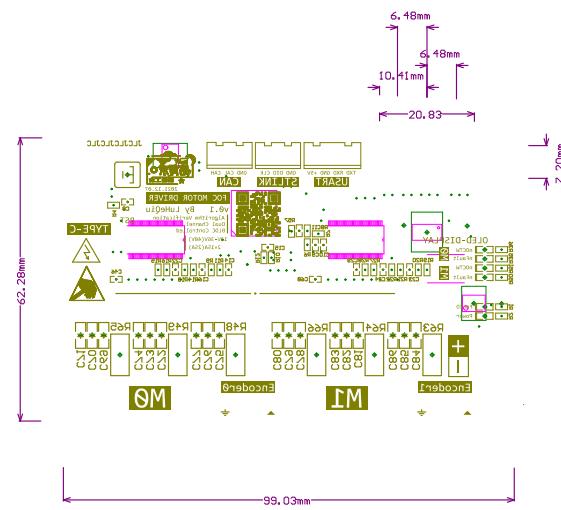


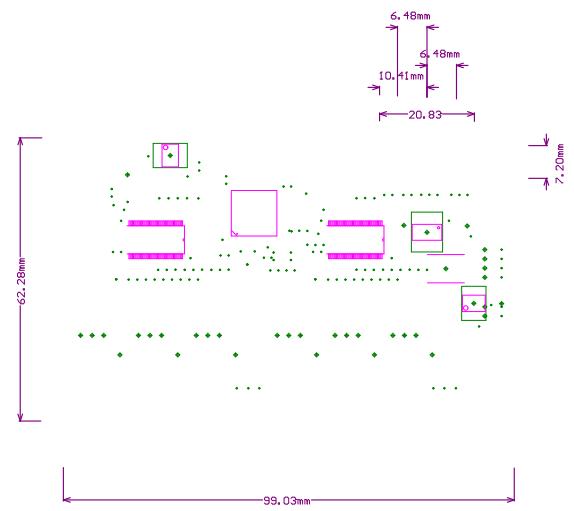


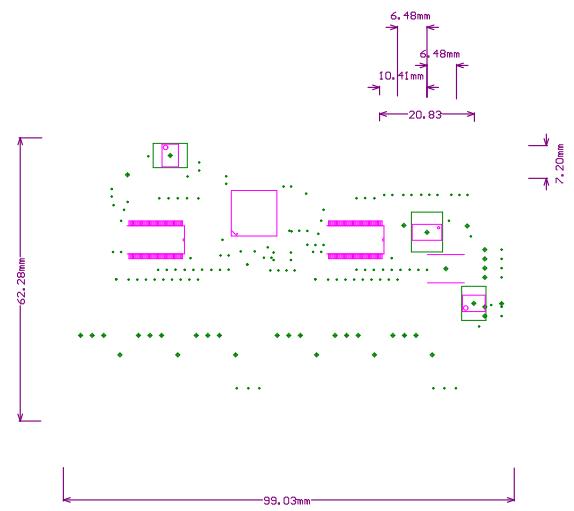


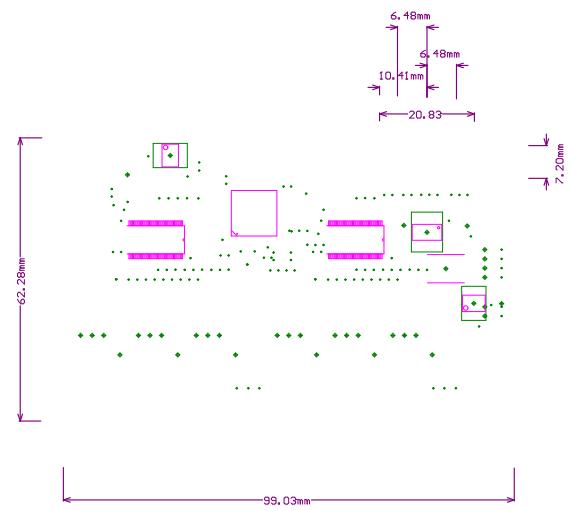


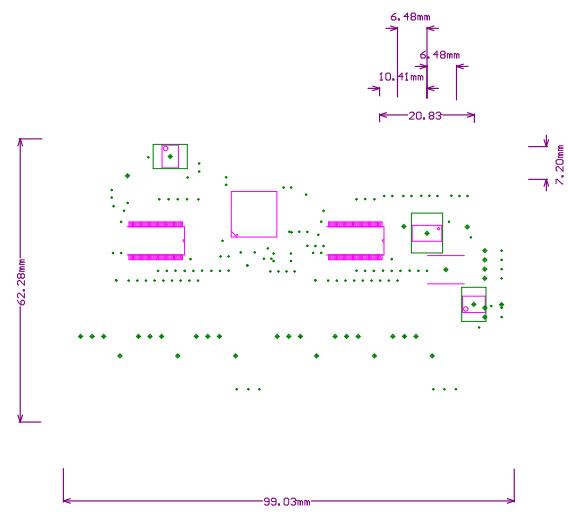


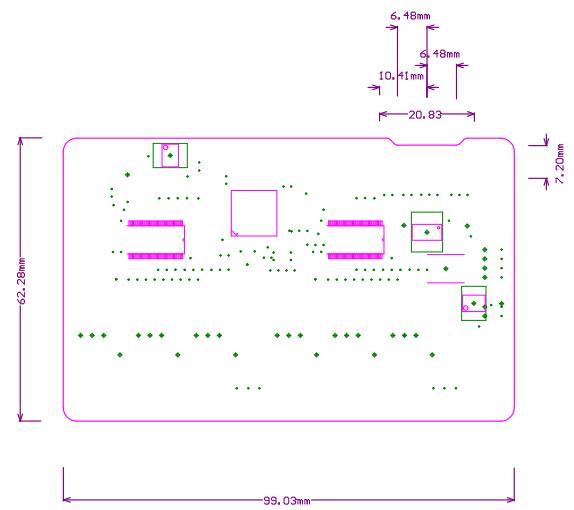


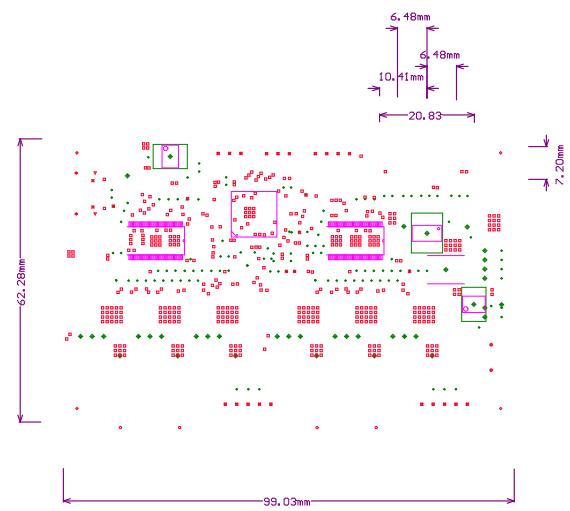












Symbol	Count	Hole Size	Plated	Hole Type	Drill Layer Pair	Via/Pad	Pad Shape	Template	Description	Hole Tolerance (+)	Hole Tolerance (-)	Hole Length	Routed Path Length
▽	2	27.56mil (0.700mm)	PTH	Slot	Top Layer - Bottom Layer	Pad	Rounded	(Mixed)				70.87mil (1.800mm)	43.31mil (1.100mm)
✖	2	29.53mil (0.750mm)	NPTH	Round	Top Layer - Bottom Layer	Pad	Rounded	c75hn75				-	-
❖	2	31.50mil (0.800mm)	PTH	Slot	Top Layer - Bottom Layer	Pad	Rounded	(Mixed)				62.99mil (1.600mm)	31.50mil (0.800mm)
○	2	102.36mil (2.600mm)	PTH	Slot	Top Layer - Bottom Layer	Pad	Rounded Rectangle	r700_400h260_450r50				177.17mil (4.500mm)	74.80mil (1.900mm)
○	4	43.31mil (1.100mm)	PTH	Round	Top Layer - Bottom Layer	Pad	Rounded	c140h110				-	-
◊	4	120.08mil (3.050mm)	PTH	Round	Top Layer - Bottom Layer	Pad	Rounded	(Mixed)				-	-
✖	20	39.32mil (1.000mm)	PTH	Round	Top Layer - Bottom Layer	Pad	Rounded	c305h305m305				-	-
□	454	15.00mil (0.381mm)	PTH	Round	Top Layer - Bottom Layer	Via	Rounded	(Mixed)				-	-
490 Total													

Slot definitions : Routed Path Length = Calculated from tool start centre position to tool end centre position.  
Hole Length = Routed Path Length + Tool Size = Slot length as defined in the PCB layout

