

## {01 电源系统部分}

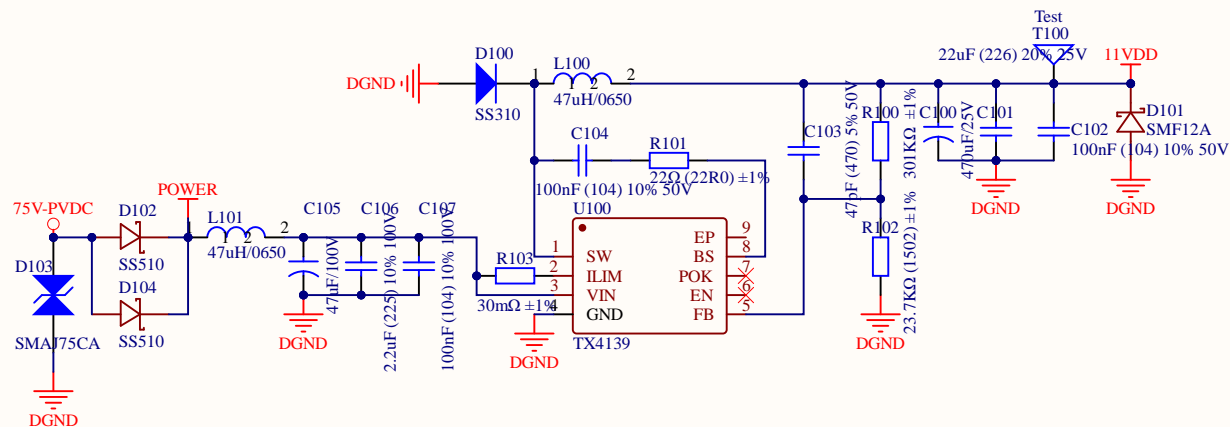
[输入电源 max 75VDC]

[输出: 11VDD @ 2000mA]

[输出: 5VDD @ 800mA]

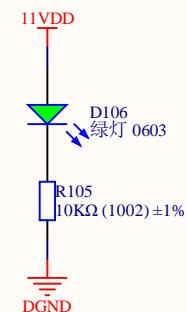
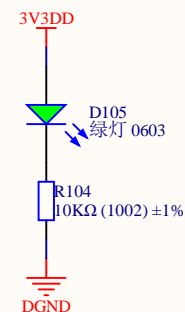
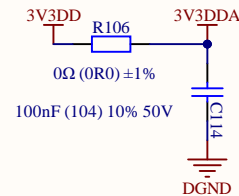
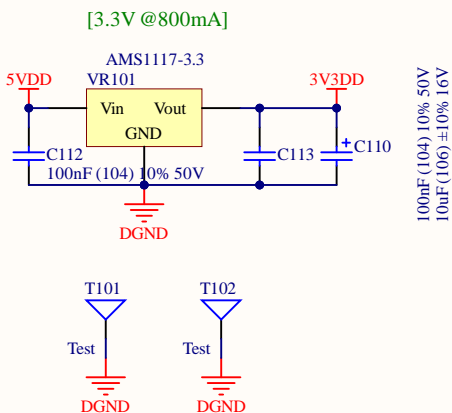
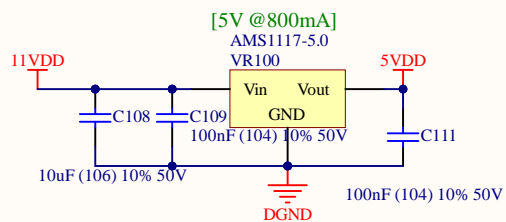
[输出: 3V3DD @ 800mA]

[MOS管GS极电阻最好加一下]



$$[V_{OUT} = V_{REF} * (R1 + R2) / R2]$$

[VREF\*=0.805V R1一般取300K]



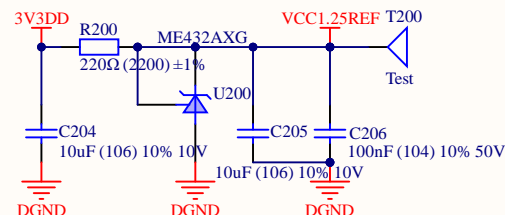
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# {02 三相电流传感调理部分}

[若采用稳压参考电源2.5V 选用CJ431]

[稳压参考电源1.25V 选用ME432]

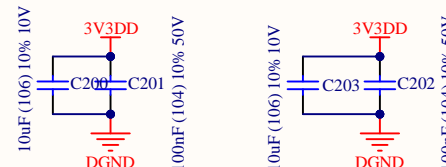
运放务必使用TP2412-SR,替换原有LMV358



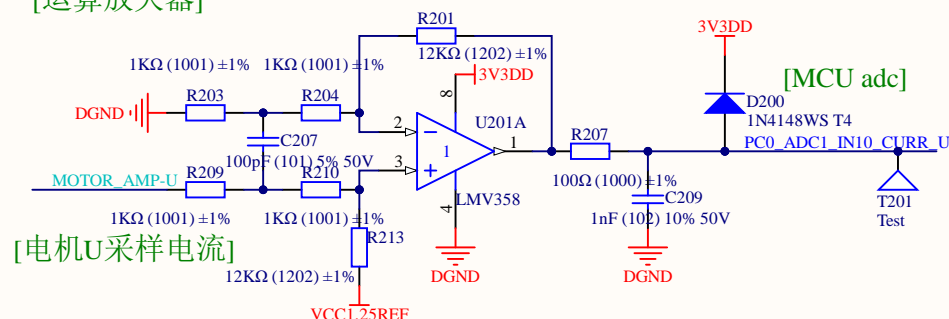
[放大增益Gain=12K/(1K+1K)=6]

[V=6\*0.02ohm\*Iout + 1.25V]

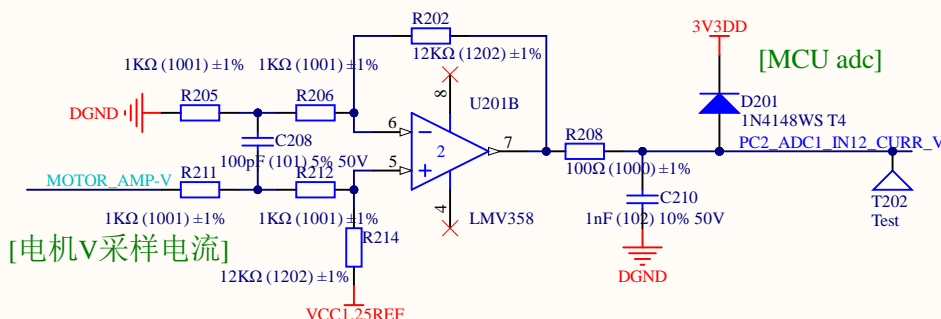
[2个LMV358供电滤波]



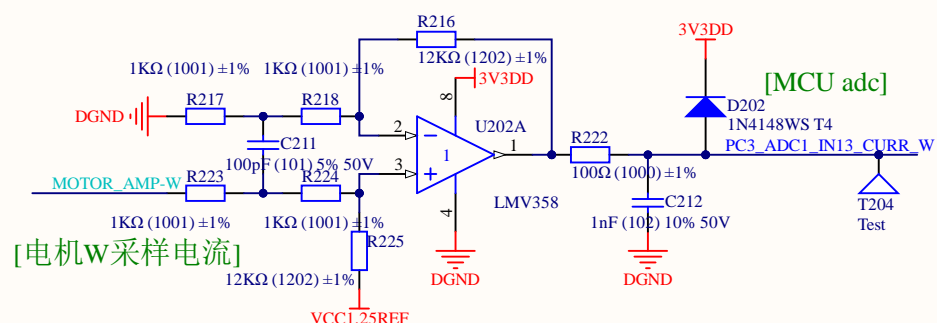
[运算放大器]



[电机U采样电流]



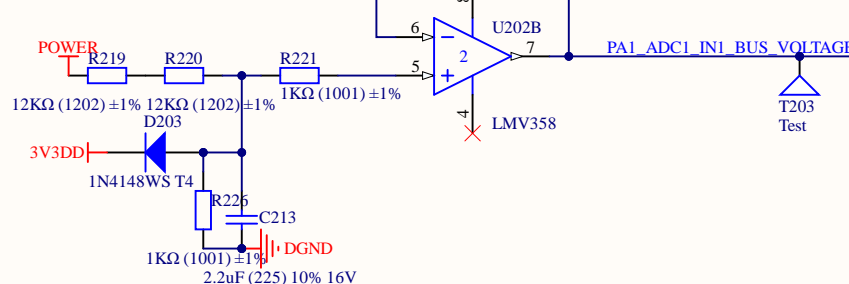
[电机V采样电流]



[电机W采样电流]

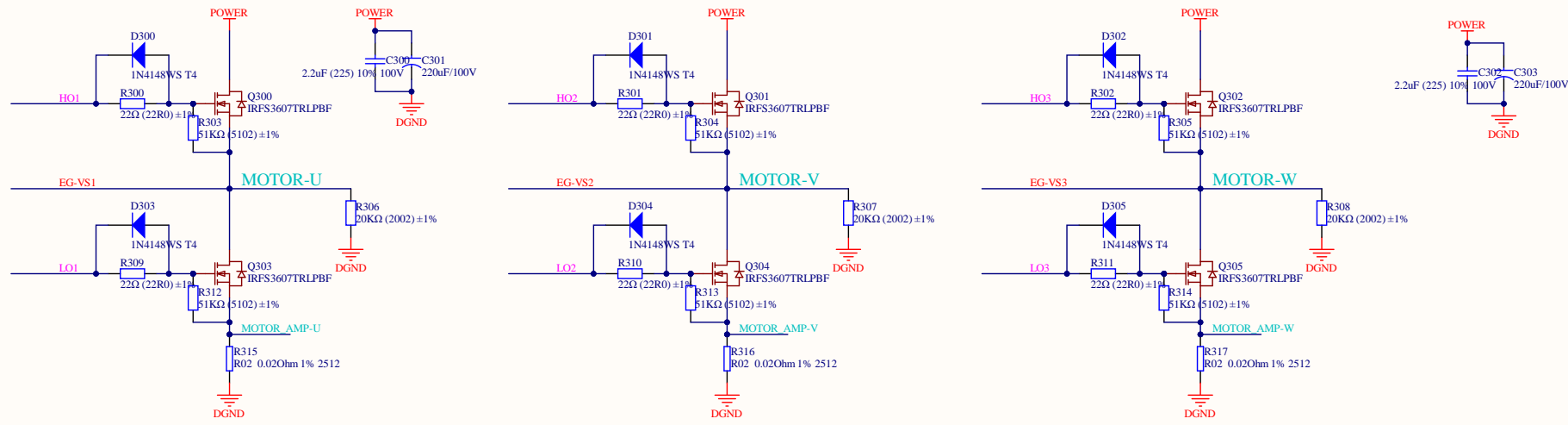
[电压总线采样]

[Vbud = Vadc\* 31]



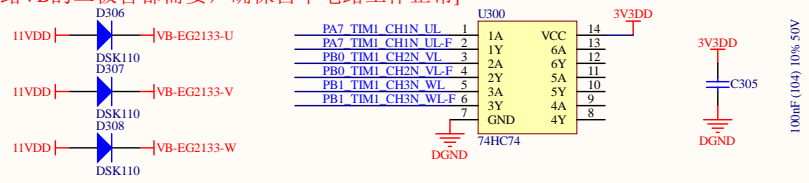
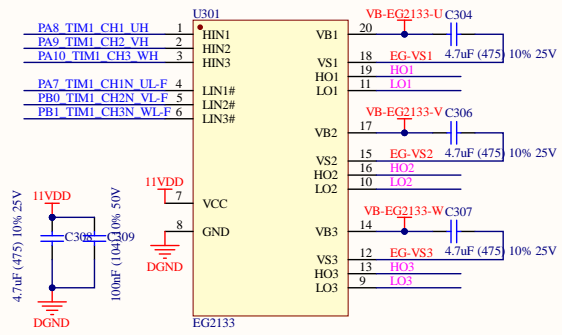
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{03 三相逆变电路}



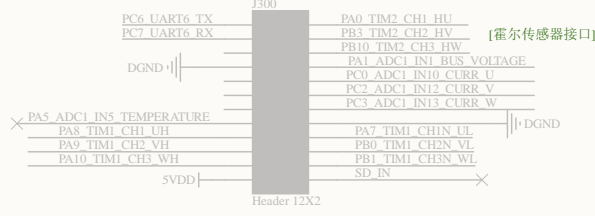
[MOS管GS极电阻最好加一下]

[每路VB的二极管都需要，确保自举电路工作正常]

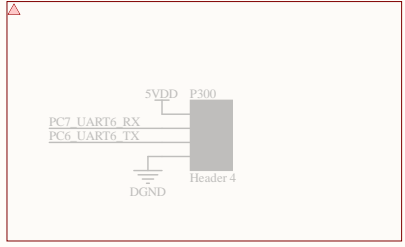
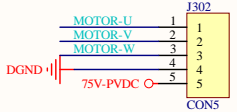


[EG2133的LIN脚是和正点驱动IRF2110是反相的]  
[为保证代码一致性，EG2133的LIN脚前需要加反相器]

[MCU连接接口]

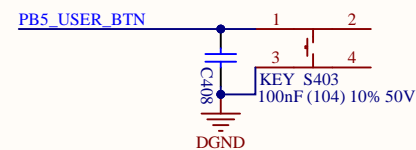
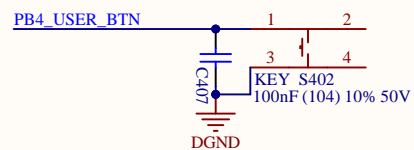
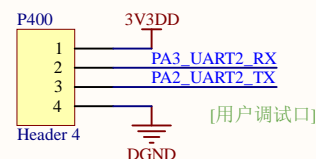
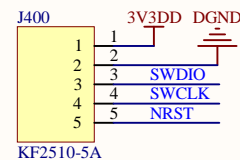
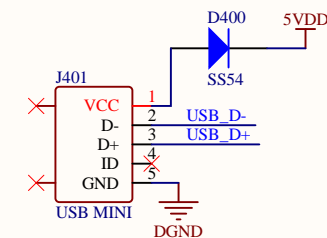
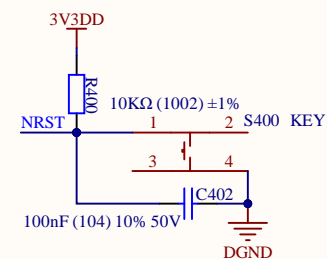
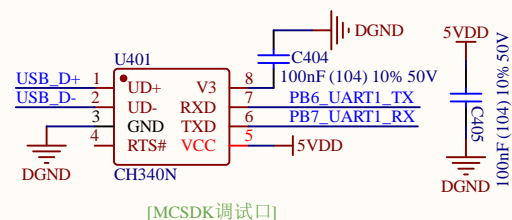
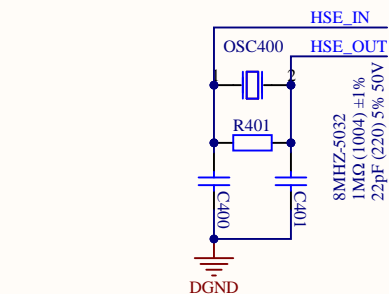
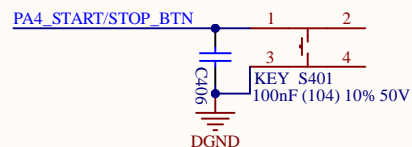
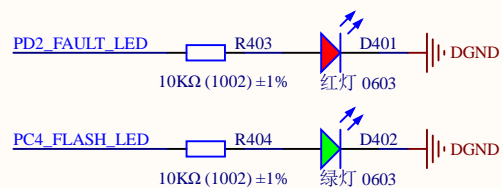
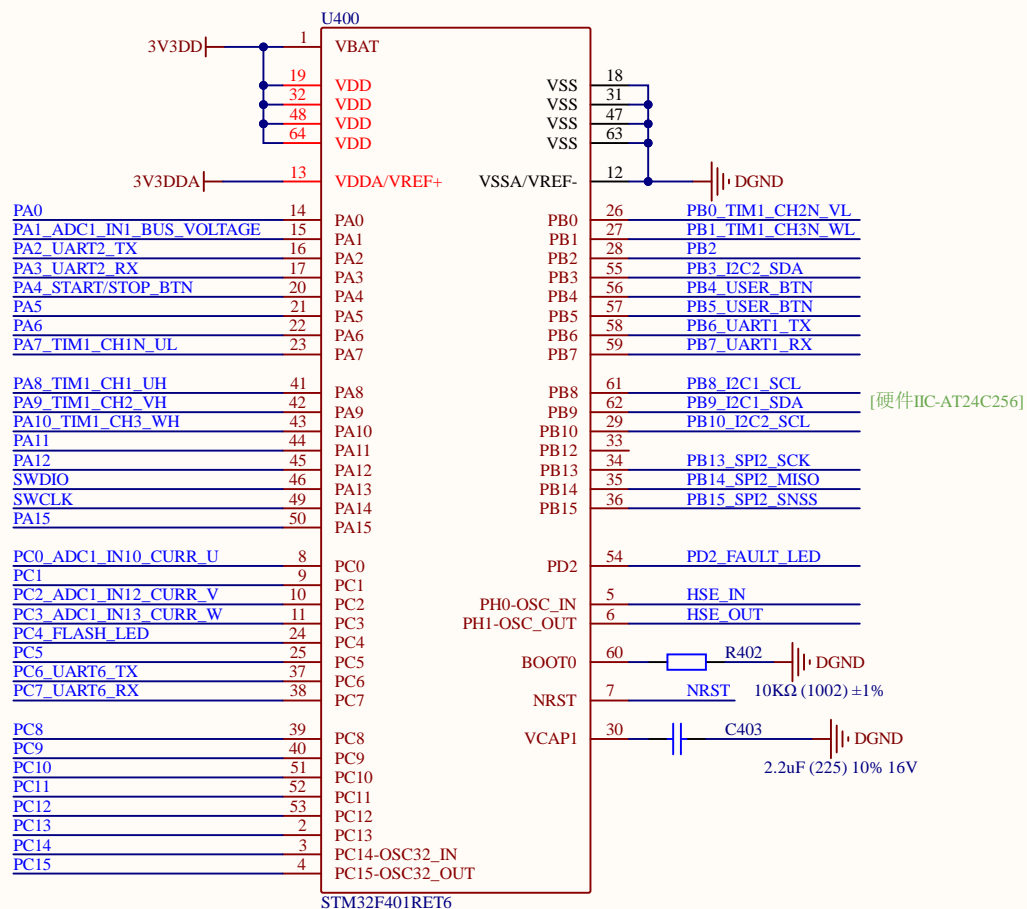


[进线电源 & 电机接口]



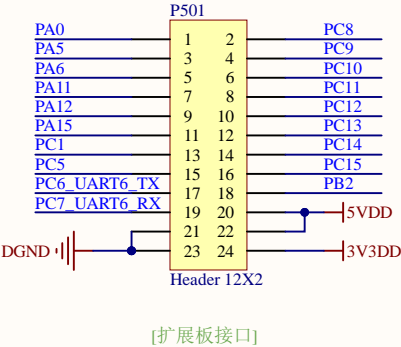
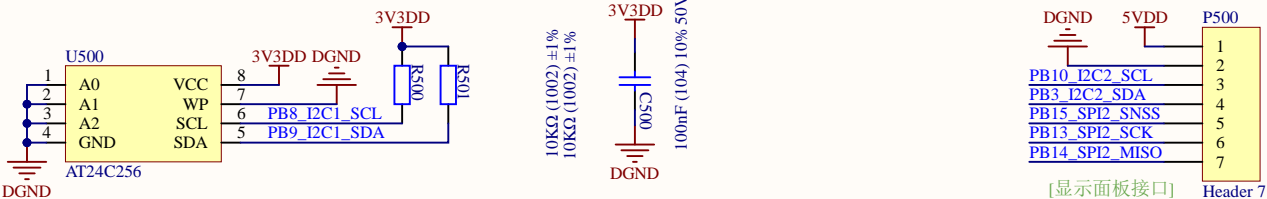
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{04 STM32F401RET6 @84MHZ}
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{05 Peripheral}



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Comment	Description	Designator	Footprint	LibRef	Quantity
470uF/25V		C100	47UF/100V	CapSMT220u_16V	1
22uF (226) 20% 25V	贴片电容	C101	LC-0805_C	0805 22uF (226) 20% 25V	1
100nF (104) 10% 50V	贴片电容	C102, C104, C109, C111, C112, C113, C114, C201, C202, C206, C305, C309	LC-0603_C	0603 100nF (104) 10% 50V	12
47pF (470) 5% 50V	贴片电容	C103	LC-0603_C	0603 47pF (470) 5% 50V	1
47uF/100V		C105	47UF/100V	CapSMT220u_16V	1
2.2uF (225) 10% 100V	贴片电容	C106, C300, C302	LC-1206_C	1206 2.2uF (225) 10% 50V	3
100nF (104) 10% 100V	贴片电容	C107	LC-1206_C	1206 100nF (104) 10% 50V	1
10uF (106) 10% 50V	贴片电容	C108	LC-1206_C	1206 10uF (106) 10% 50V	1
10uF (106) ±10% 16V	钽电容	C110	LC-CASE-A_3216	3216 10uF (106) 10% 16V	1
10uF (106) 10% 10V	贴片电容	C200, C203, C204, C205	LC-0603_C	0603 10uF (106) 10% 10V	4
100pF (101) 5% 50V	贴片电容	C207, C208, C211	LC-0603_C	0603 100pF (101) 5% 50V	3
1nF (102) 10% 50V	贴片电容	C209, C210, C212	LC-0603_C	0603 1nF (102) 10% 50V	3
2.2uF (225) 10% 16V	贴片电容	C213, C403	LC-0603_C	0603 2.2uF (225) 10% 16V	2
220uF/100V		C301, C303	220UF/100V	CapSMT220u_16V	2
4.7uF (475) 10% 25V	贴片电容	C304, C306, C307	LC-0805_C	0805 4.7uF (475) 10% 25V	3
4.7uF (475) 10% 25V	贴片电容	C308	LC-0603_C	0603 4.7uF (475) 10% 16V	1
22pF (220) 5% 50V	贴片电容	C400, C401	LC-0603_C	0603 22pF (220) 5% 50V	2
100nF (104) 10% 50V	贴片电容	C402, C404, C405, C406, C407, C408, C500	0603_C	0603 100nF (104) 10% 50V	7
SS310	二极管	D100	LC-SMA(DO-214AC)_S1	SMA(DO-214AC) SS54	1
SMF12A		D101	SMF12A - duplicate	SMF12A	1
SS510		D102, D104	SS510	SS510	2
SMAJ75CA	TVS	D103	LC-SMB(DO-214AA)_S1	SMB(DO-214AA) P6SMB6.8CA	1
绿灯 0603	发光二极管	D105, D106, D402	LC-0603_LED_S1	0603 绿灯	3
1N4148WS T4	二极管	D200, D201, D202, D203, D300, D301, D302, D303, D304, D305	LC-SOD-323	SOD-323 1N4148WS T4	10
DSK110	二极管	D306, D307, D308	DSK110	SMA(DO-214AC) SS54	3
SS54	二极管	D400	SMA(DO-214AC)_S1	SMA(DO-214AC) SS54	1
红灯 0603	发光二极管	D401	LC-0603_LED_S1	0603 红灯	1
CON5		J02	7.62-5P 端子	CON5	1
KF2510-5A		J400	KF2510-5A	KF2510-5A	1
USB MINI		J401	USB MINI	USB MINI	1
47uH/0650		L100, L101	0650 47uH	Inductor	2
80mHZ-5032		Q5C400	80mHZ-5032	80mHZ-5032	1
Header 4	Header, 4-Pin	P400	HDR1X4	Header 4	1
Header 7	Header, 7-Pin	P500	HDR1X7	Header 7	1
Header 12X2	Header, 12-Pin, Dual row	P501	HDR2X12	Header 12X2	1
IRFS3607TRLPBF		Q300, Q301, Q302, Q303, Q304, Q305	TO-263-2	IRFS3607TRLPBF	6
301KQ ±1%	贴片电阻	R100	LC-0603_R	0603 330KQ (3303) 1%	1
22Q (22R0) ±1%	贴片电阻	R101, R300, R301, R302, R309, R310, R311	LC-0603_R	0603 22Q (22R0) 1%	7
23.7KQ (1502) ±1%	贴片电阻	R102	LC-0603_R	0603 15KQ (1502) 1%	1
30mQ ±1%	贴片电阻	R103	LC-0603_R	0603 100KQ (1003) 1%	1
10KQ (1002) ±1%	贴片电阻	R104, R105, R402, R403, R404	LC-0603_R	0603 10KQ (1002) 1%	5
0Q (0R0) ±1%	贴片电阻	R106	LC-0603_R	0603 0Q (0R0) 1%	1
220Q (2200) ±1%	贴片电阻	R200	LC-0603_R	0603 220Q (2200) 1%	1
12KQ (1202) ±1%	贴片电阻	R201, R202, R213, R214, R216, R219, R220, R225	LC-0603_R	0603 12KQ (1202) 1%	8
1KQ (1001) ±1%	贴片电阻	R203, R204, R205, R206, R209, R210, R211, R212, R215, R217, R218, R221, R223, R224, R226	LC-0603_R	0603 1KQ (1001) 1%	15
100Q (1000) ±1%	贴片电阻	R207, R208, R222	LC-0603_R	0603 100Q (1000) 1%	3
51KQ (5102) ±1%	贴片电阻	R303, R304, R305, R312, R313, R314	LC-0603_R	0603 51KQ (5102) 1%	6
20KQ (2002) ±1%	贴片电阻	R306, R307, R308	LC-0603_R	0603 20KQ (2002) 1%	3
R02 0.020hm 1% 2512		R315, R316, R317	R2512	Res10K	3
10KQ (1002) ±1%	贴片电阻	R400, R500, R501	0603_R	0603 10KQ (1002) 1%	3
1MQ (1004) ±1%	贴片电阻	R401	LC-0603_R	0603 1MQ (1004) 1%	1
KEY	白色方块	S400, S401, S402, S403	KEY_WHITE	KEY	4
Test		T100, T101, T102, T200, T201, T202, T203, T204	Testpoint	TestPad	8
TX4139		U100	ESOP8	TX4139	1
ME432AXG	电压基准	U200	LC-SOT-23(SOT-23-3)	CJ431 0.5%431	1
LMV358	通用运放	U201, U202	TP2412-SR	LM358DR2G	2
74HC74		U300	SOIC-14	74HC14	1
EG2133		U301	TSSOP20	EG2133	1
STM32F401RET6		U400	STM32F401RET6	STM32F401RET6	1
CH340N		U401	CH340N	CH340N	1
AT24C256		U500	SOIC8	AT24C256	1
AMS1117-5.0	低压差线性稳压 (LDO)	VR100	LC-SOT-223	SOT-223 AMS1117-5.0	1
AMS1117-3.3	低压差线性稳压 (LDO)	VR101	LC-SOT-223	SOT-223 AMS1117-3.3	1