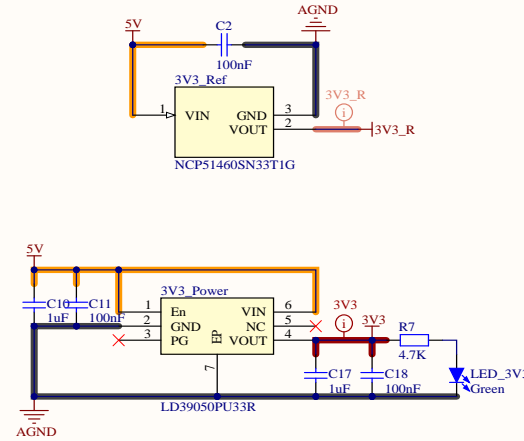
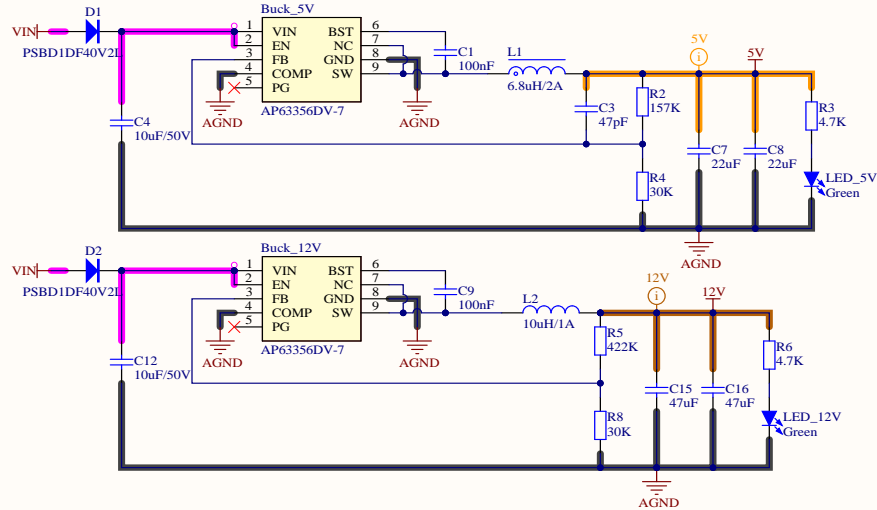
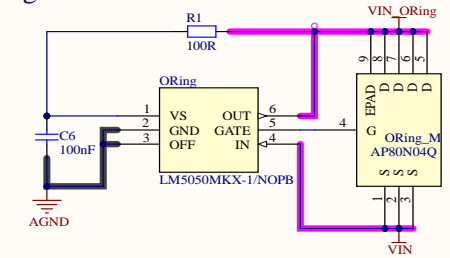


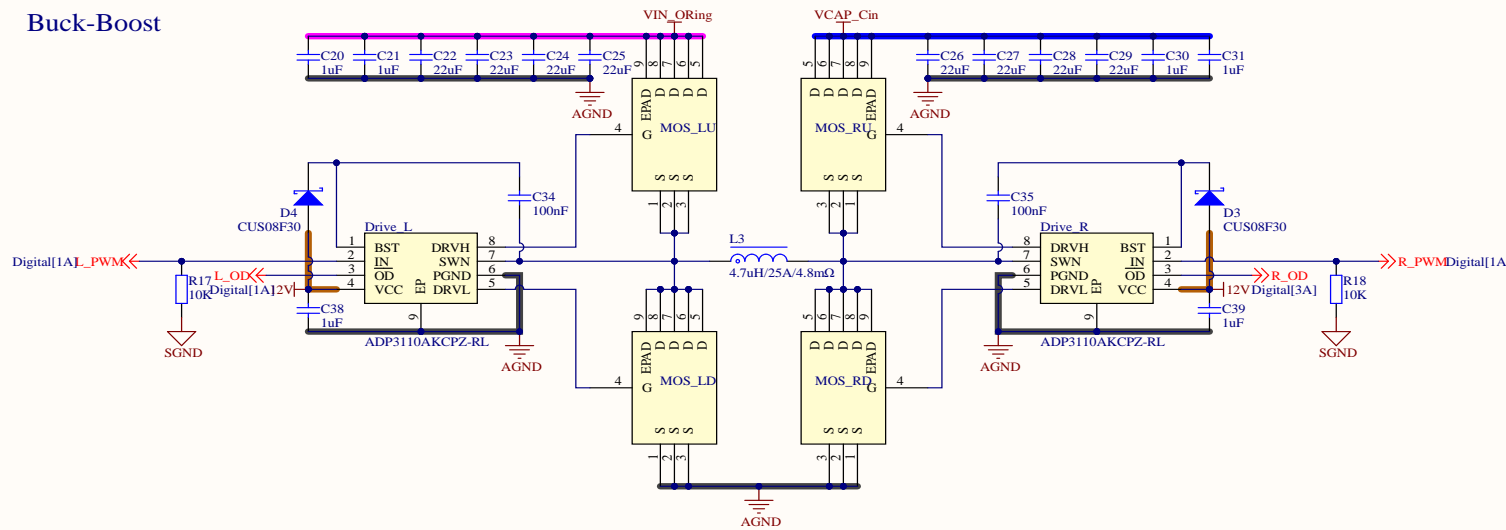
Power Control



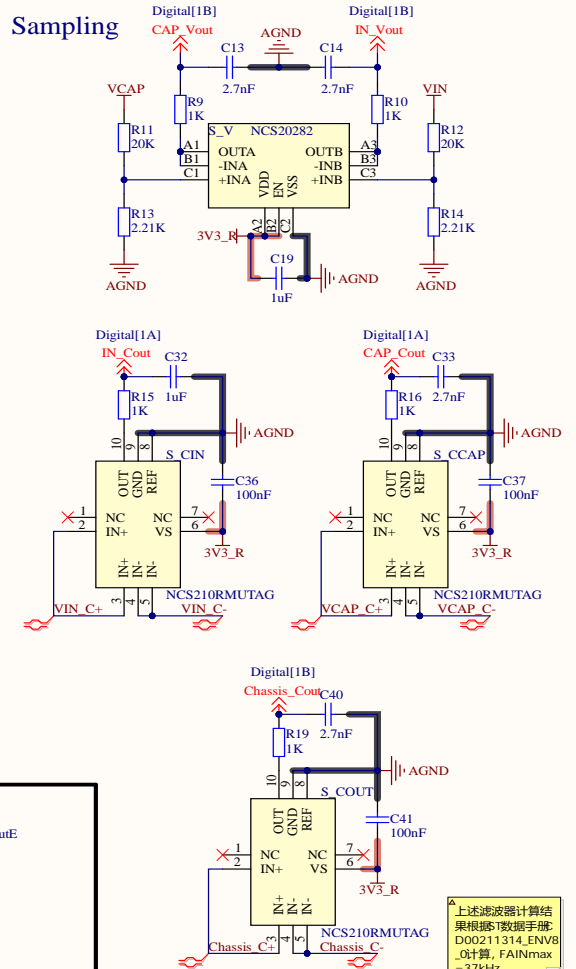
ORing



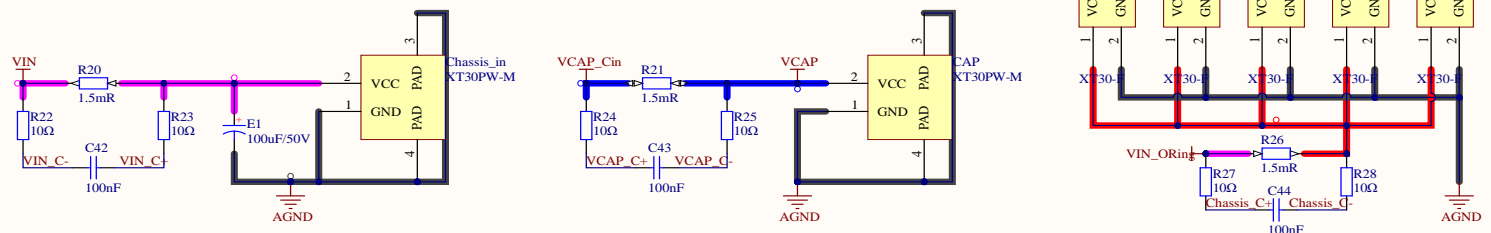
Buck-Boost



Sampling



Power Connector

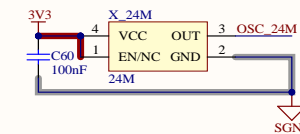
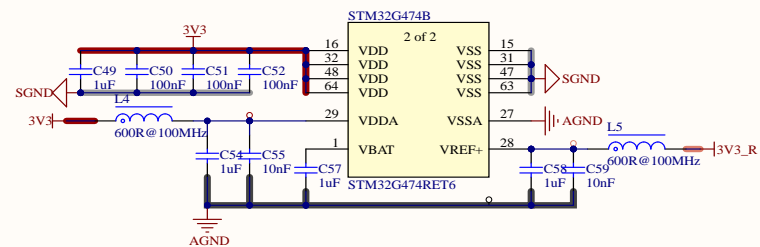


Ultra_CAP_Power		
Size	Number	Revision
A3	Sirius_P	V1.0
Date:	4-29-2023	Sheet of
File:	D:\Altium Documents\Power.SchDoc	Drawn By: Sirius

上述滤波器计算结果
根据数据手册
D00211314_ENVB
计算, FAInmax
= 37kHz

STM32G474A

STM32G474RET6



M3A M3B M3C M3D

M3 M3 M3 M3

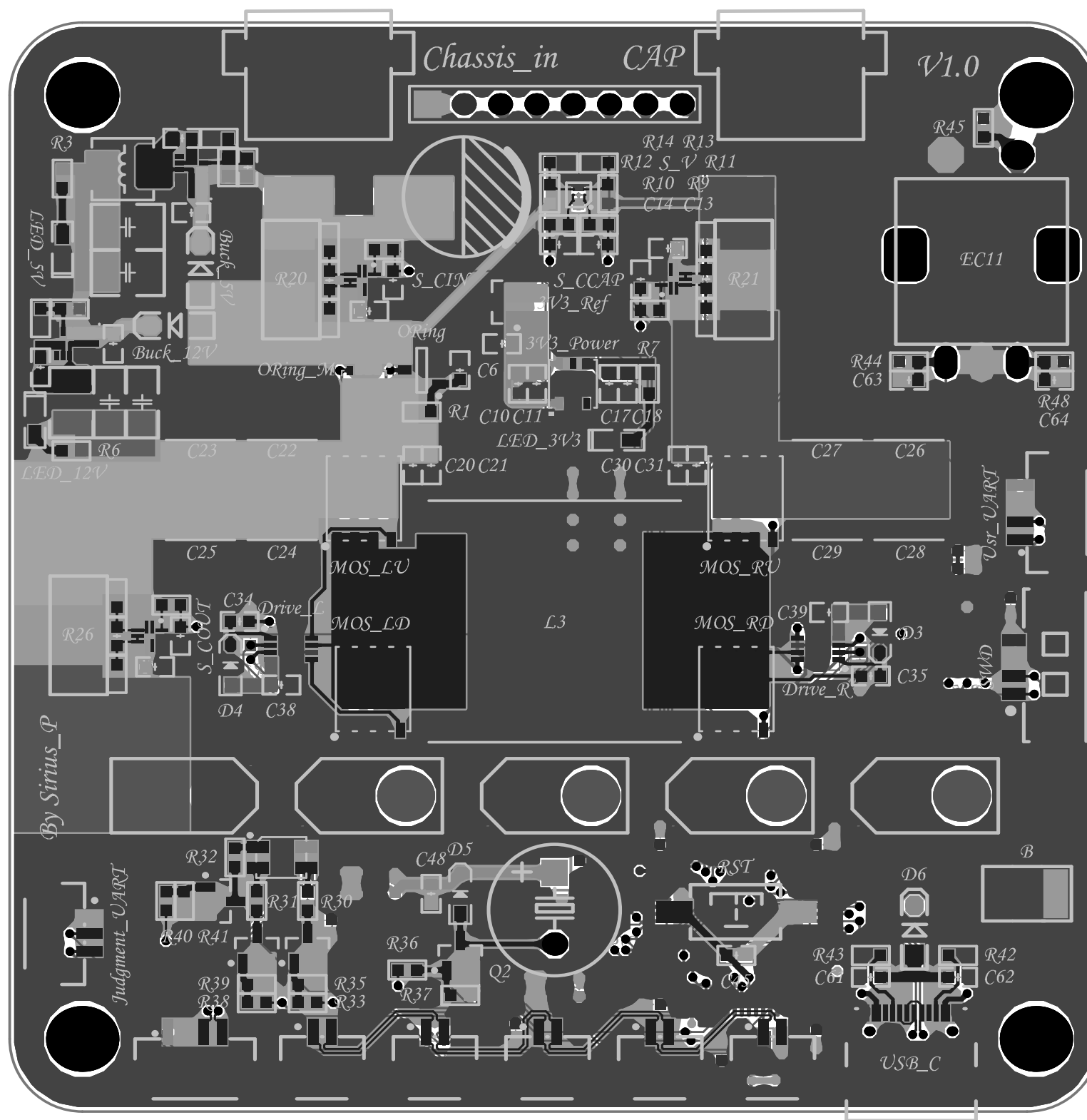
The schematic diagram illustrates the LED driver circuit. It features four RGB channels, each consisting of a MOSFET (Q1, Q2, Q3, Q4) and a diode (D1, D2, D3, D4). The MOSFETs are driven by RGB signals (RGB_B, RGB_G, RGB_R) through resistors R33, R38, and R40 respectively. The diodes are connected to the MOSFET drains. A common cathode LED array (LED RGB-3528) is connected to ground. A 5V supply feeds the LEDs through a resistor R30. A separate section shows a buzzer (LS) driven by a transistor (Q2) from a 5V supply via a resistor R36 and a capacitor C48.

The top diagram, labeled 'CAN swA', shows the CAN1 interface. It features a 5V supply connected to CAN1_TX (pin 1) and CAN1_RX (pin 4) through a 100nF capacitor (C46). The CAN controller IC (TJA1441ATK/02) has its TXD (pin 2) and RXD (pin 3) pins connected to the 5V supply. The CANH (pin 6) and CANL (pin 7) pins are connected to a 120Ω termination resistor (R29) which is also connected to a 3V3 signal. The VIO (pin 5) pin is connected to the 3V3 signal. The GND (pin 8) pin is connected to SGND. A 100nF capacitor (C47) is connected between the 3V3 signal and SGND.

The bottom diagram, labeled 'CAN swB', shows the CAN2 interface. It features a 5V supply connected to CAN2_TX (pin 1) and CAN2_RX (pin 4) through a 100nF capacitor (C53). The CAN controller IC (TJA1441ATK/02) has its TXD (pin 2) and RXD (pin 3) pins connected to the 5V supply. The CANH (pin 6) and CANL (pin 7) pins are connected to a 120Ω termination resistor (R34) which is also connected to a 3V3 signal. The VIO (pin 5) pin is connected to the 3V3 signal. The GND (pin 8) pin is connected to SGND. A 100nF capacitor (C56) is connected between the 3V3 signal and SGND.

[illegible]

Title			Ultra_CAP_Digital		
Size	Number			Revision	
A3	Sirius_P			V1.0	
Date:	4-29-2023		Sheet of		
File:	D:\Altium Documents\...\DigitalSch		Drawn By: Sirius		



Comment	Description	Designator	Footprint	LibRef	Quantity
LD39050PU33R	LDO-3V3/500mA	3V3_Power	SON_DFN6_3X3.5 M-L	LD39050PU33R	1
NCPS1460SN33T16	标准电压源3V3	3V3_Ref	SOT23	NCPS1460SN33T16	1
660R@1000Hz/44dB	电感		R1812_L	FB	1
AP63356DV-7	Switching Voltage Regulators DCDC Conv HV Buck V- DFN3020-13 T&R 3K 3.8V TO 32V INPUT, 3.5A LOW I SYNCHRONOUS BUCK WITH ENHANCED EMI REDUCTION	Buck_5V_Buck_12V	AP63356DV7	AP63356DV-7	2
100nf	贴片电容,VDD滤波 电容	C1, C2, C6, C9, C11 C18, C34, C35, C36 C37, C41, C42, C43 C44, C45, C46, C47 C50, C51, C52, C53 C56, C60, C61, C63 C64, C66	C0603_L	C	27
47nf	贴片电容	C3	C0603_L	C	1
10nf/50V	贴片电容	C4, C12	C0603_L	C	2
22uF	贴片电容	C7, C8	C1210_L	C	2
1uF	贴片电容	C10, C17, C19, C20 C21, C30, C31, C32 C38, C39, C49, C54 C57, C58, C62	C0603_L	C	15
2.2uF	贴片电容	C13, C14, C33, C40	C0603_L	C	4
47uF	贴片电容	C15, C16	C1206_L	C	2
22uF	贴片电容	C22, C23, C24, C25 C26, C27, C28, C29	C	C	8
10uF	贴片电容	C48	C0603_L	C	1
10nf	贴片电容,VDDIO滤波 电容	C55, C59, C65	C0603_L	C	3
2.2uF	VDD滤波电容	C67	C0603_L	C	1
TJA1441ATK/0Z	CAN电平转换芯片	CAN_swA, CAN_swB	SONASP300X300X 00-9N-D	TJA1441ATK/0Z	2
HDR-1X2	2P连接器	CANA1, CANA2, CANA3, CANA4, CANA5	CONN-SMD_2P- P1_25_JUSHUO_GH 25-S02DCA-00	Header 2	5
HDR-1X4	4P连接器	CANB, Usrc_UART	CONN-SMD_4P- P1_27_GH125- S04DCA-00	Header 4	2
XT30PW-M		CAP, Chassis_in	CONN- TH_XT30PW-M	XT30PW-M	2
XT30-F		Chassis_outA, Chassis_outB, Chassis_outC, Chassis_outD, Chassis_outE	XT30-F	XT30-F	5
PS8D10E40V2L	肖特基二极管	D1, D2, D6	SOD-123	1N5822	3
CUS08F30	肖特基二极管	D3, D4	SOD-323	1N5819	2
1N4148	肖基二极管	D5	SOD-323	1N4148	1
ADP3110AKCPZ-R	ON SEMICONDUCTOR ADP3110AKCPZ-R - MOSFET Driver, High Side And Low Side, 4.6V-13.2V Supply, 1A Out, 20A Daisy, DFN-4	Drive_L, Drive_R	SON50P300X300X 00-9N	ADP3110AKCPZ-R	2
100uF/50V	铝电解电容	E1	CT 3.5"8"-R	C5	1
EC11	数字开关编码器	EC11	EC11	EC11	1
ICM-42605	Accelerometer, Gyroscope, 6-Axis Sensor (A+C, I3C), SPI Output	GYRO	PQFN50P300X250 97-14N - duplicate	ICM-42605	1
HDR-1X8	8P连接器	IPS	HDR254_M-LI-8P	Header 8	1
HDR-1X3	3P连接器	Judgment_UART	CONN-SMD_3P- P1_25_JUSHUO_GH 25-S03DCA-00	Header 3	1
68uH/2A	一体成型电感	L1	L-30M-0420	L-Molding Choke	1
10uH/1A	贴片小功率电感	L2	L1210	L	1
4.7uH/25A/4.8mΩ	一体成型电感	L3	INDPM176169X70 N	L-Molding Choke	1
600R@1000Hz	电感	L4, L5	R0603_L	FB	2
RGB-3528	3528三基色LED	LED	LED 3528-4Pin	LED-RGB 3528	1
Green	贴片LED	LED_3V3, LED_5V, LED_12V	LEDO603_G	LED-SMD	3
DC5V	蜂鸣器	L5	BEEP 5x9x5.5	BEEP	1
M3	铜柱孔	M3A, M3B, M3C, M3D	M3 125X200	M3	4
HYG025NO6LS1C2	NMOS 60V/170A	MOS_LD, MOS_LU, MOS_RD, MOS_RU	PDFN5*6-BI	HYG025NO6LS1C2	4
LM5050MX-1/NOFB	理想二极管控制器	ORing	SOT23-6	LM5050MX-1/NOFB	1
AP80N04Q	Trans MOSFET N- CH 40V 40A 8-Pin PDFN EP 170	ORing_M	TDFN33-8	AP80N04Q	1
SI2302	N沟道 20V/6A	Q1, Q3, Q4	SOT23-3N	AQ3400	3
SS8050	集电极放大-NPN型	Q2	SOT23-3N	8050-SMD	1
100R	贴片电阻	R1	R0603_L	R	1
151K	贴片电阻	R2	R0603_L	R	1
4.7K	贴片电阻	R3, R6, R7	R0603_L	R	3
30K	贴片电阻	R4, R8	R0603_L	R	2
422K	贴片电阻	R5	R0603_L	R	1
1K	贴片电阻	R9, R10, R15, R16, R19, R33, R38, R40	R0603_L	R	6
20K	贴片电阻	R11, R12	R0603_L	R	2
2.21K	贴片电阻	R13, R14	R0603_L	R	2
10K	贴片电阻	R17, R18, R35, R37 R39, R41, R44, R45	R0603_L	R	9
15mR	贴片电阻	R48	R2512_L	R	3
10Q	贴片电阻	R20, R21, R26	R2512_L	R	3
120Q	贴片电阻	R22, R23, R24, R25 R27, R28	R0603_L	R	6
3.3K	贴片电阻	R29, R34	R0603_L	R	2
5.6K	贴片电阻	R30	R0603_L	R	1
2K	贴片电阻	R31	R0603_L	R	1
510Q	贴片电阻	R32	R0603_L	R	1
510Q	贴片电阻	R36	R0603_L	R	1
5.1K	贴片电阻	R42, R43	R0603_L	R	2
220R	贴片电阻	R46, R47, R49, R50	R0603_L	R	4
346uS	电阻精度误差	R5T	SW-SMD-24*5	SW 346	1
NCS210RMUTAG	CURRENT SENSE AMP G=200	S_CCAP, S_CIN, S_COUT	GFN40P140X180X 0-10N	NCS210RMUTAG	3
NCS20282	7 MHz, 125 A Low Power Operational Amplifier	S_V	BGA9C40P3X3,125 122X62	NCS20282	1
STM32G474RE16	MCU	STM32G474	LOFP64-10*10	STM32G474RE16	1
HDR-1X4	4P连接器	SWD	MX1.25-WS-4P	Header 4	1
TYPE-C 2.0 -16P	USB2.0 Type-C 16Pin 母座	USB_C	USB-C-SMD_16P	USB2.0_Type- C_16Pin	1
24M	4脚有源晶振(振荡 器)	X_24M	OSC-2025-4P	XTAL-ACT-4P	1