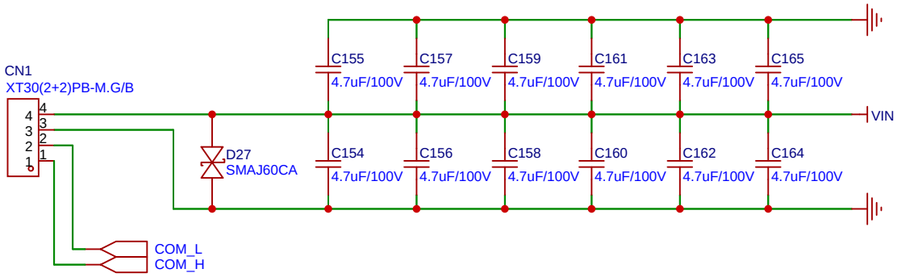
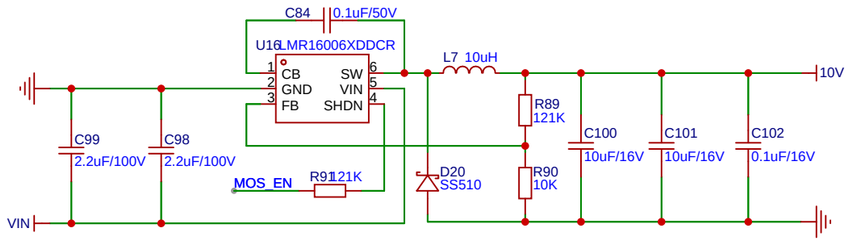


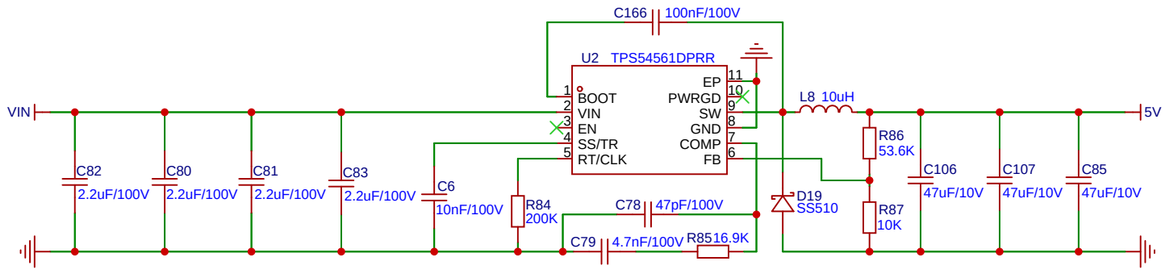
控制信号+电源滤波+TVS



Vout=(1+R7/R8)Vfb
Vout=10V Vfb=0.765V

R7=121K R8=10K

DC-DC 10V 栅极驱动供电



Fsw=92417/Rt^0.991
Fsw=500kHz

Rt=200k

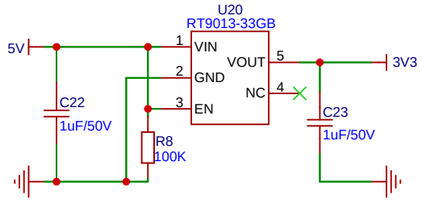
L=[Vout·(Vin-Vout)]/(Vin·Fsw·Imax·30%)
Vin=48V Vout=5V Fsw=500kHz Imax=3A

L=10uH

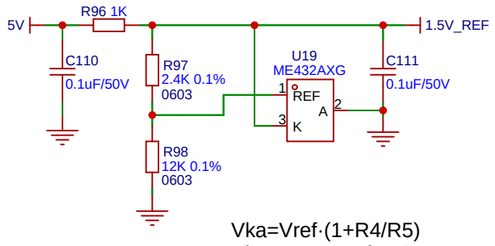
Vout=(1+R4/R5)Vref
Vout=5V Vref=0.8V

R4=53.6K R5=10K

DC-DC 5V



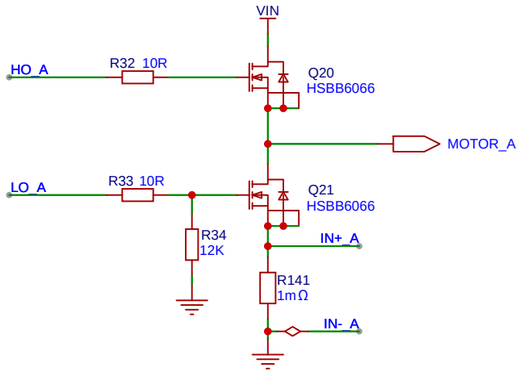
LDO 3V3



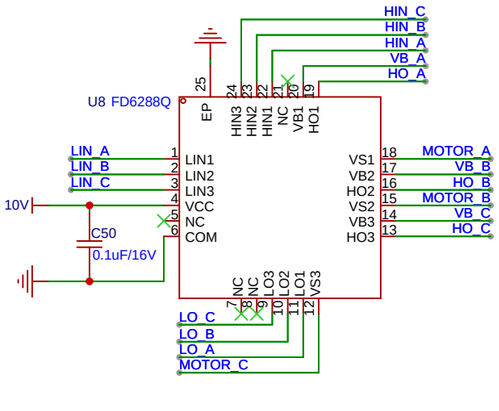
Vka=Vref·(1+R4/R5)
Vka=1.5V Vref=1.25V
R4=2.4K R5=12K

1.5V基准电压

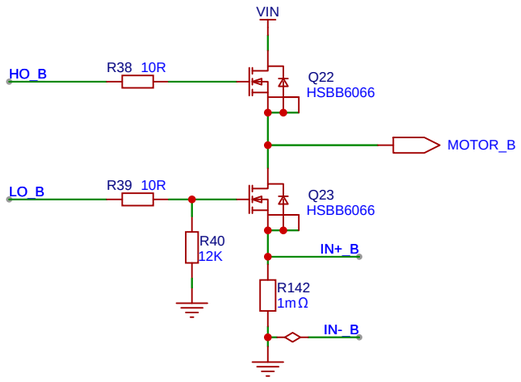
原理图	功率板	更新日期	2025-09-12
		创建日期	2025-09-01
图页	电源	物料编码	
绘制	SD-STL	RLD直线模组功率板_V0.1	
审阅			
		版本	尺寸
		V1.0	A3
嘉立创EDA		页 1 共 5	
		REACH	



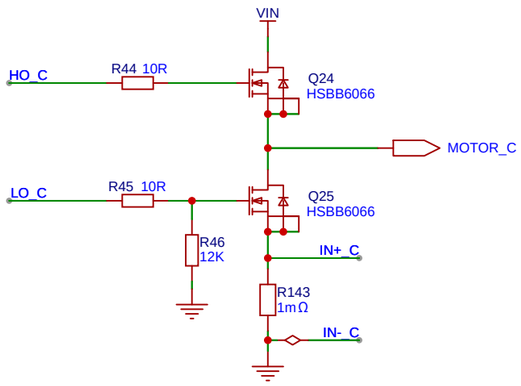
A(U)相逆变桥



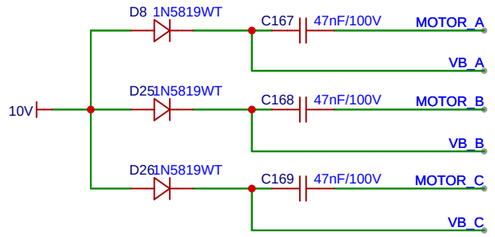
栅极驱动



B(V)相逆变桥



C(W)相逆变桥

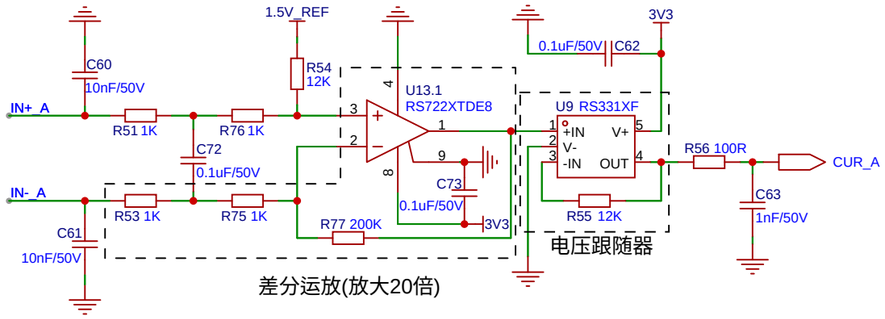


Cbs≥10·[\(Qg/\(Vcc-Vf\)]
Cbs=自举电容容值　　Qg=MOSFET栅极电荷
Vcc=栅极驱动供电电压　　Vf=自举二极管正向压降

Vcc=10V　Qg=33nC　Vf=0.6V
Cbs=35.1nF

电容自举升压

原理图	@Schematic Name : 功率板	更新日期	2025-09-04
		创建日期	2024-11-18
图页	驱动	物料编码	
绘制	SD-STL	RLD直线模组功率板_V0.1	
审阅			
		版本	尺寸	页 2 共 5
嘉立创EDA		V1.0	A3	Company : REACH TOP

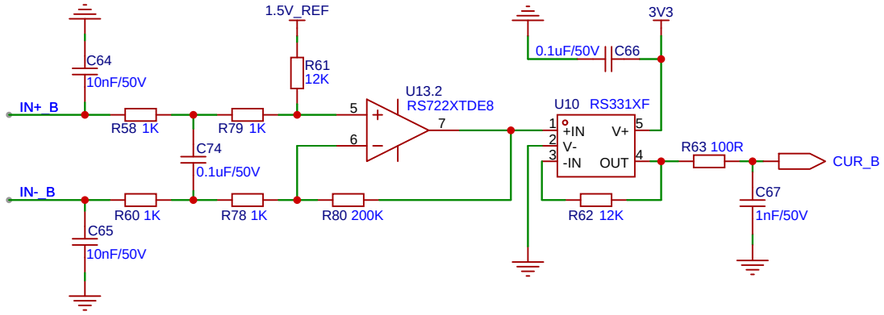


差分运放(放大20倍)

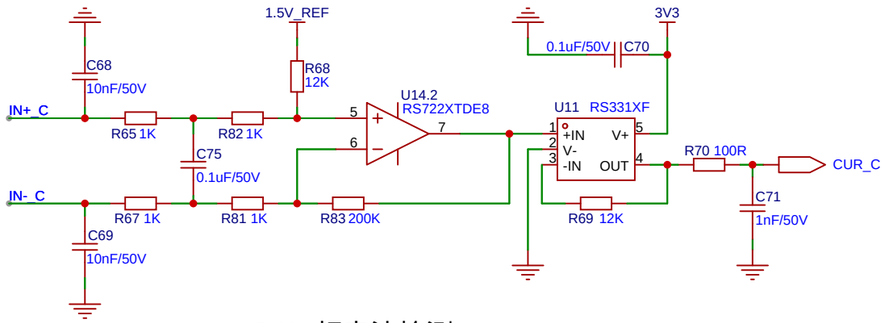
Vcur_A=Vref+(R0·Imax)[R77/(R53+R75)]
0V<Vcur_A<3.3V Vref=1.5V R0=1mR Imax=±12.5A

R53=1K R55=1K R77=200K

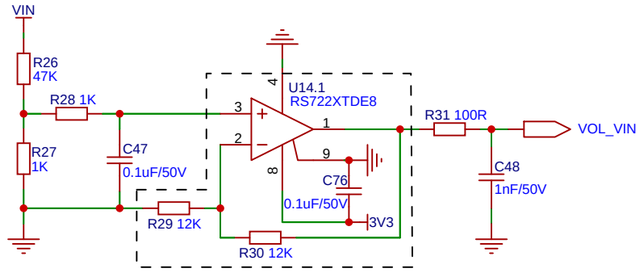
A(U)相电流检测



B(V)相电流检测



C(W)相电流检测



同向放大器(放大2倍)

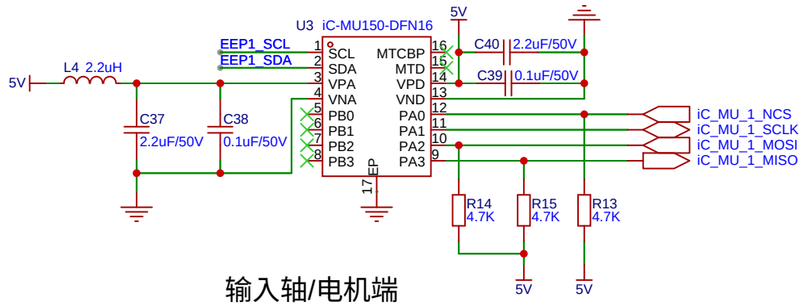
VOL_VIN=VIN/(R26+R27)·R27·(1+R30/R29)
0<VOL_VIN<3.3V VIN=48V

R26=47K R27=1K R29=12K R30=12K

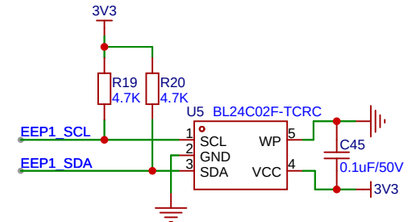
母线电压检测

原理图	功率板	更新日期	2025-09-12
		创建日期	2025-09-01
图页	传感器	物料编码	
绘制	SD-STL	RLD直线模组功率板_V0.1	
审阅			
		版本	尺寸
嘉立创EDA		V1.0	A3

REACH



输入轴/电机端



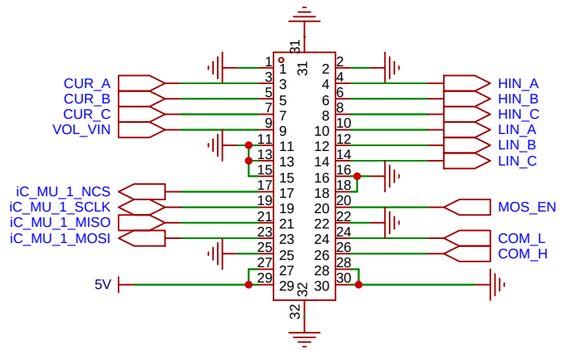
EEPROM1

原理图	功率板	更新日期	2025-09-04
		创建日期	2025-09-01
图页	外设	物料编码	
绘制	SD-STL	RLD直线模组功率板_V0.1	
审阅			
		版本	尺寸
		V1.0	A3

嘉立创EDA

REACH

CN5 HC-PBB12NB(5.0)-30DP-0.5V-03



功率板插座

原理图	功率板	更新日期	2025-09-04
		创建日期	2025-09-02
图页	连接器	物料编码	
绘制	SD-STL	RLD直线模组功率板_V0.1	
审阅			
		版本	尺寸	页 5 共 5
嘉立创EDA		V1.0	A3	REACH