

野火_无刷直流电机驱动模块_原理图_v1.0

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Title
野火_无刷直流电机驱动模块_原理图

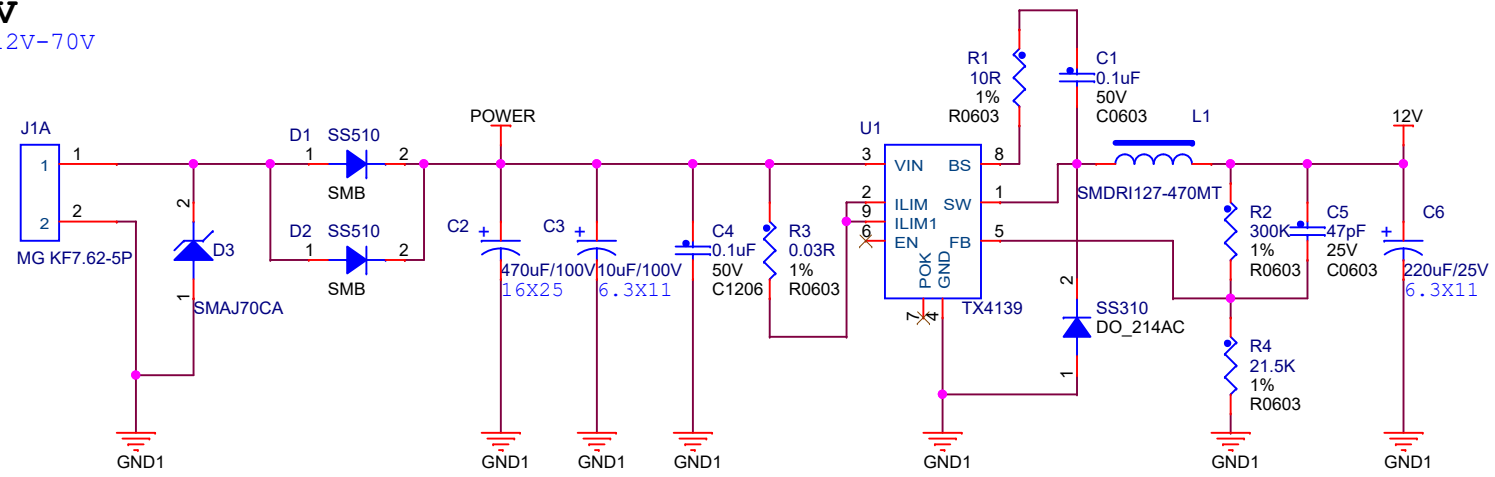
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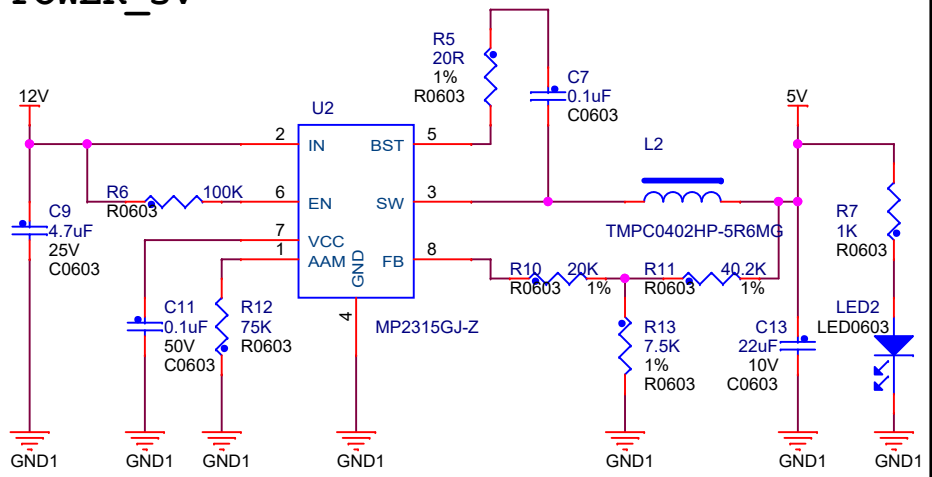
历史版本

版本号	日期	设计	描述
V0.1	2020-09-04	xgh	初始版本
V1.0	2021-06-02	zwc	更改隔离运放型号

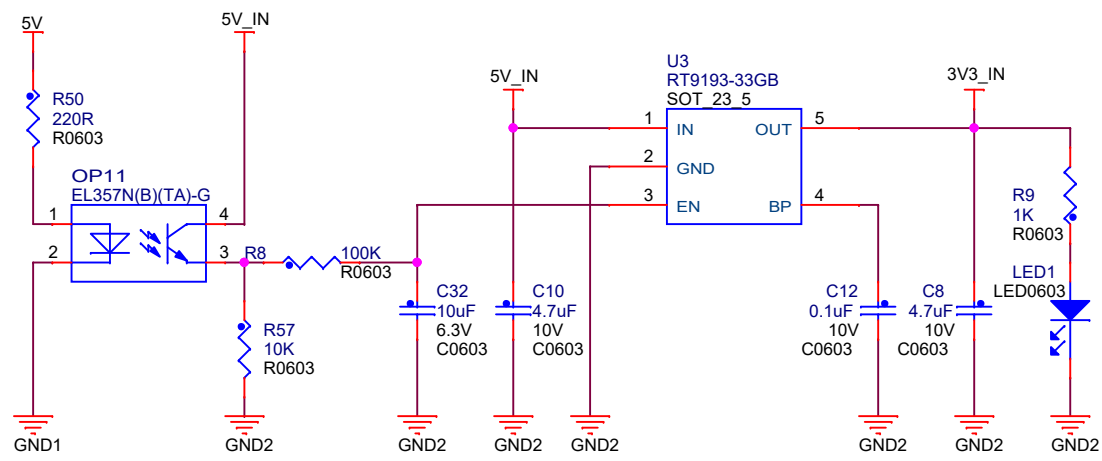
POWER_12V
输入电压范围12V-70V



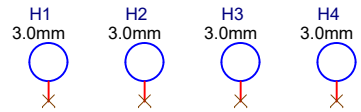
POWER_5V



POWER_3V3

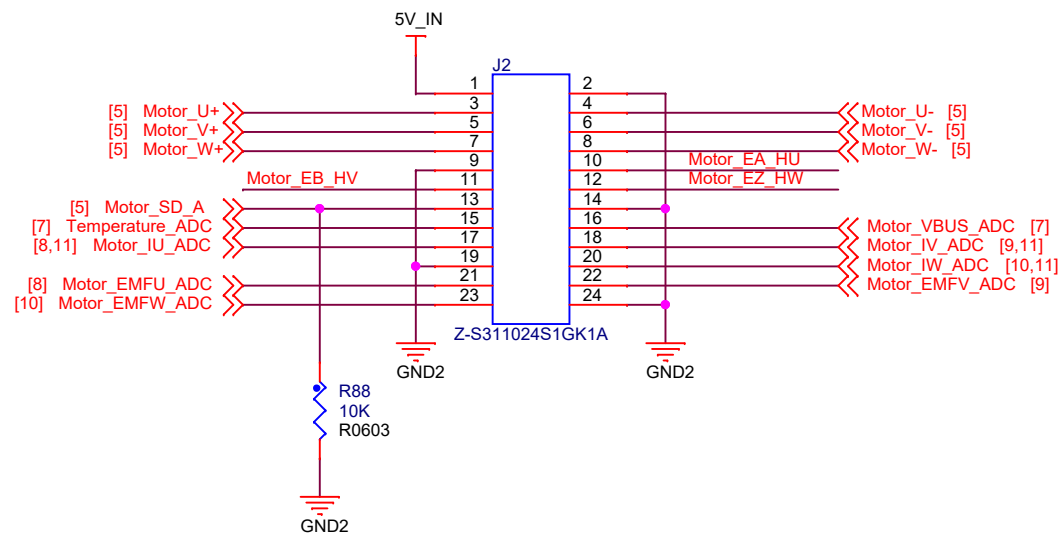


定位孔

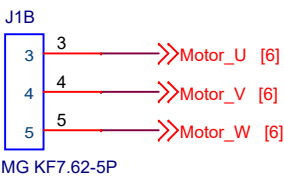


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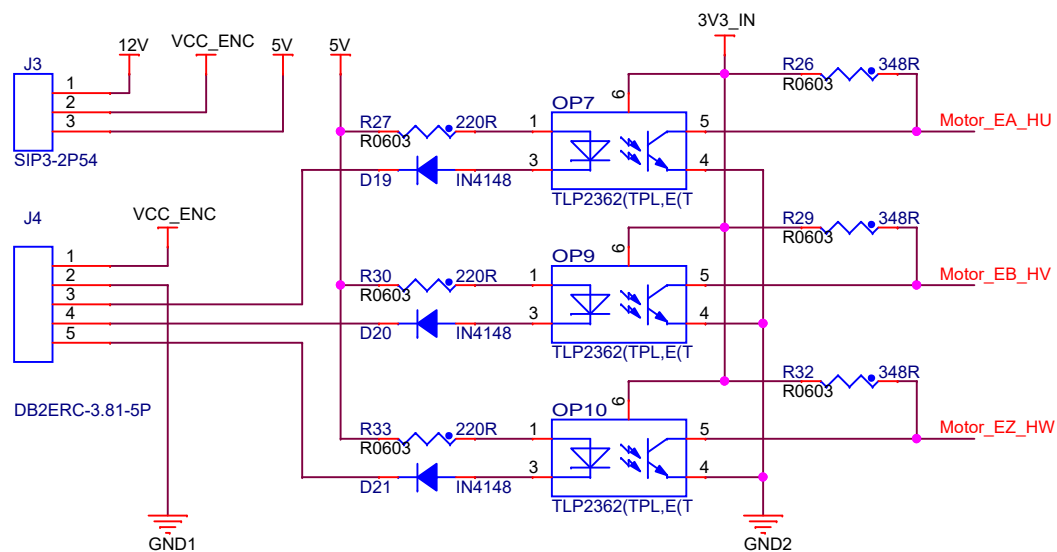
主板接口



电机接口



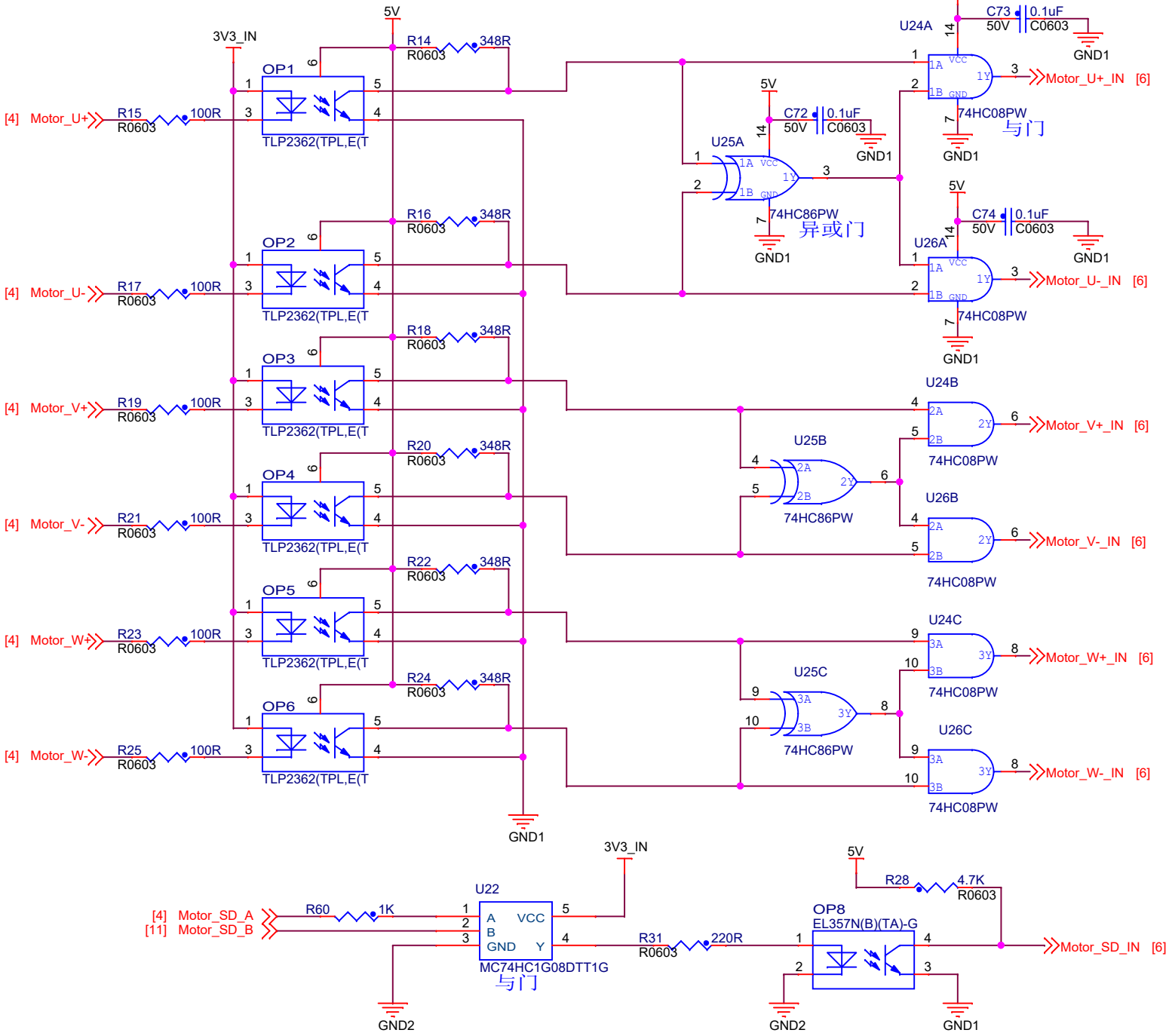
编码器接口



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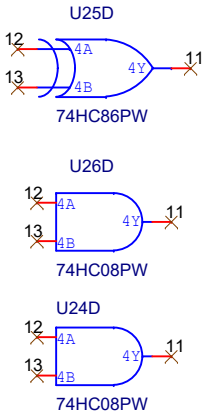
输入信号隔离



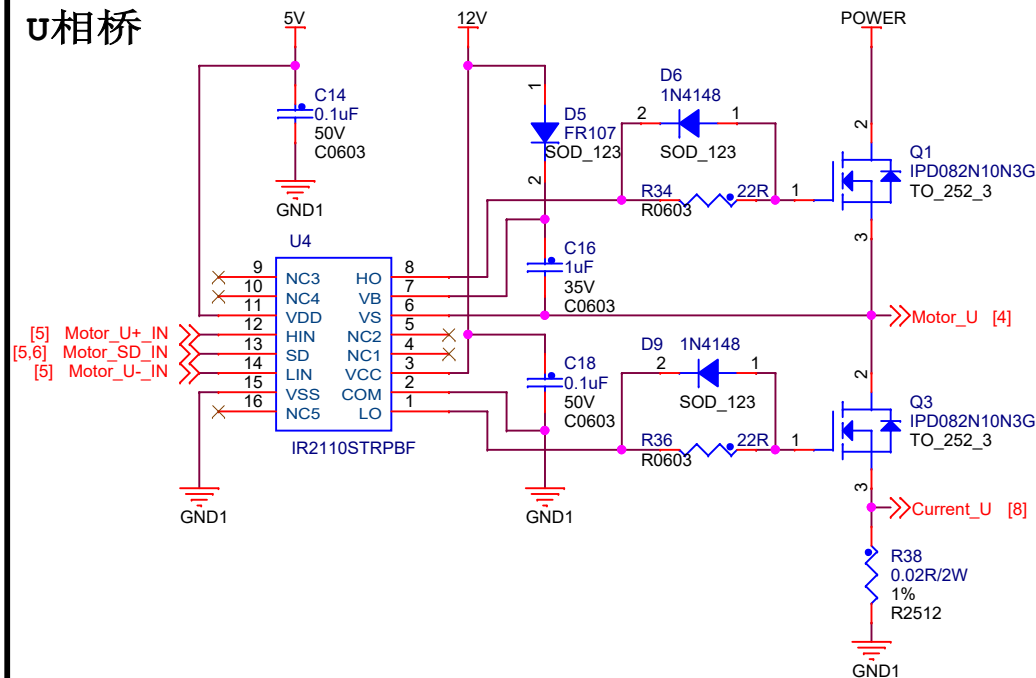
防烧管电路

防烧管电路真值表

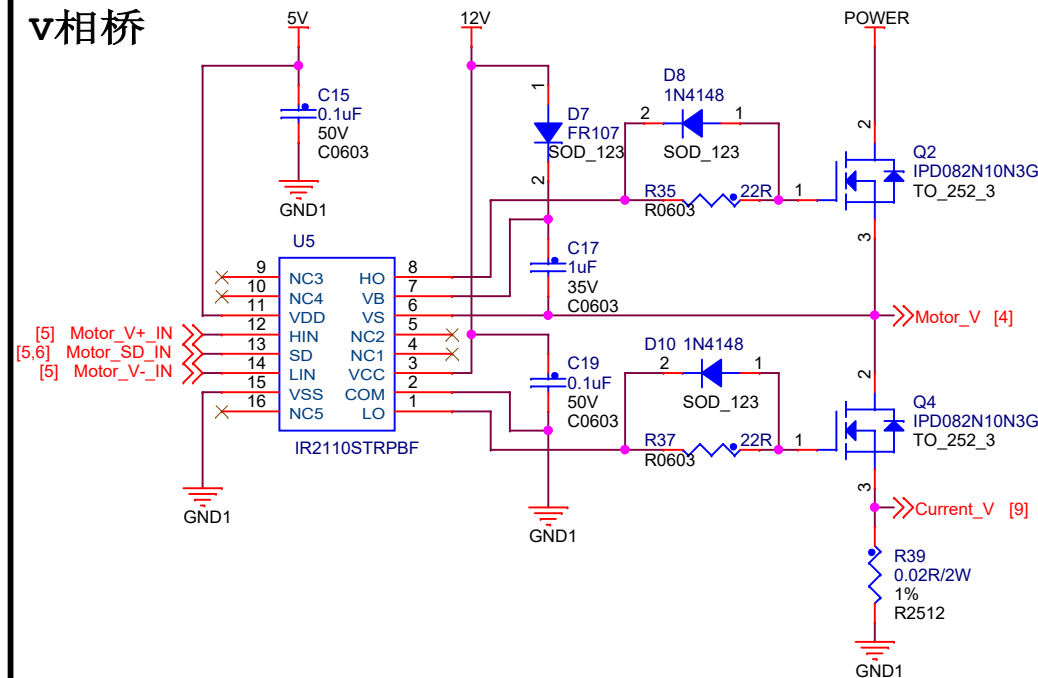
输入		输出	
Motor_U+	Motor_U-	Motor_U+_IN	Motor_U-_IN
H	H	L	L
H	L	H	L
L	H	L	H
L	L	L	L



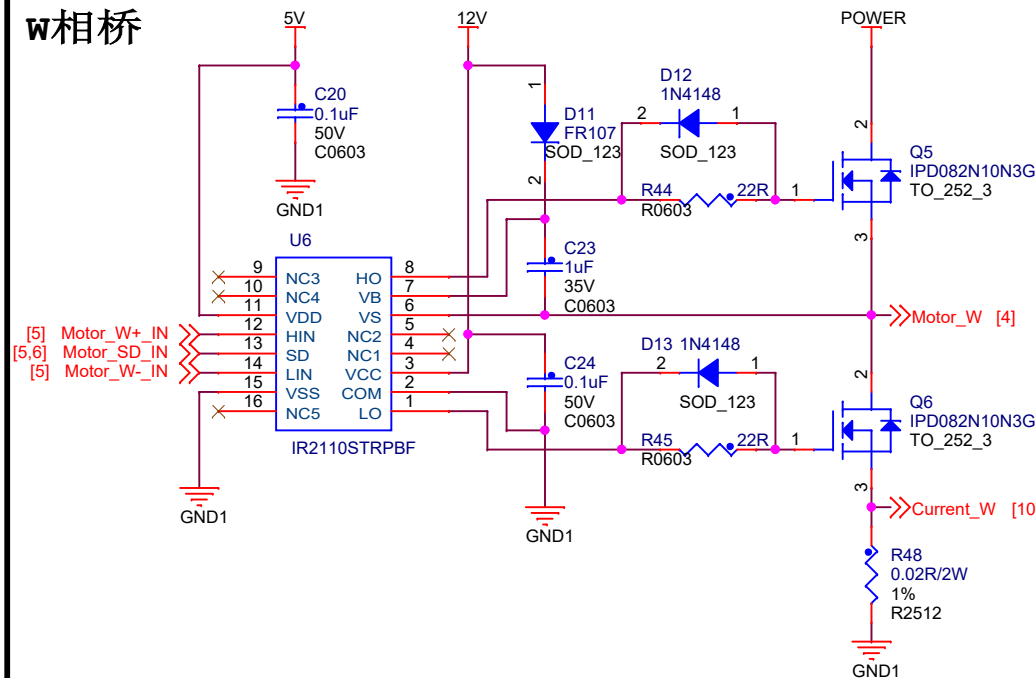
u相桥



v相桥

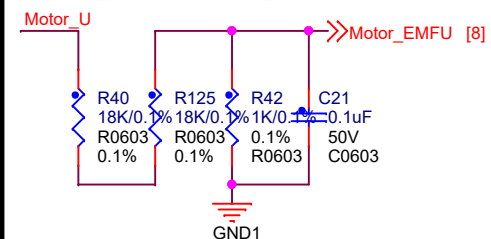


w相桥



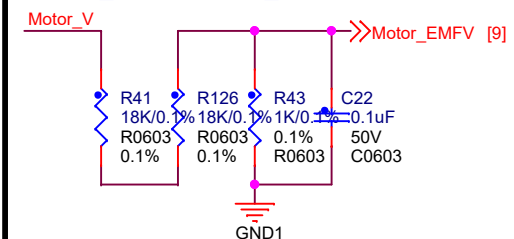
u相电动势

Motor_EMFU=Motor_U/37



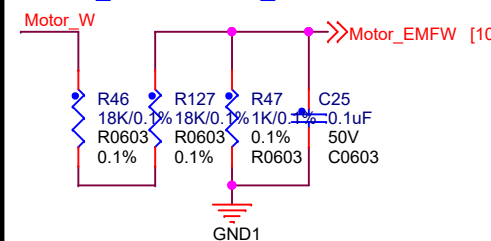
v相电动势

Motor_EMFV=Motor_V/37



w相电动势

Motor_EMFW=Motor_W/37



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Title

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Document Number

桥电路/电动势检测

Rev

V1.0

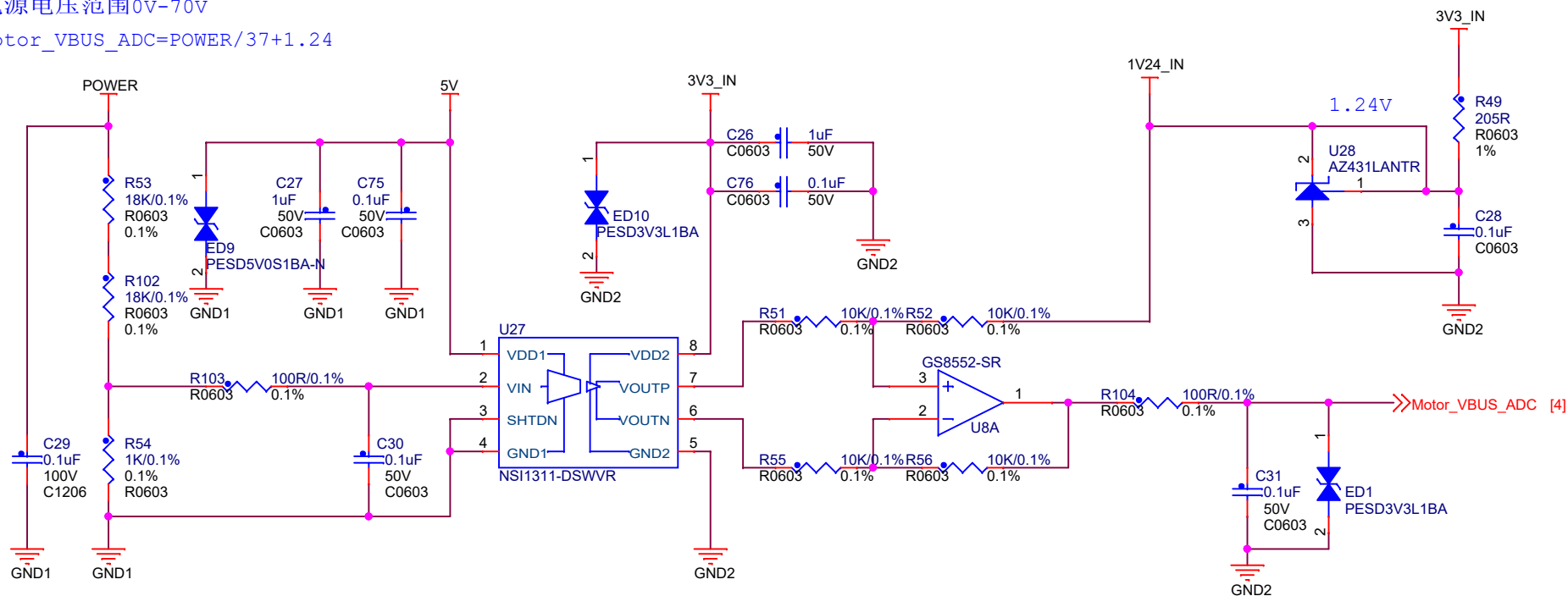
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电源电压检测隔离

电源电压范围0V~70V

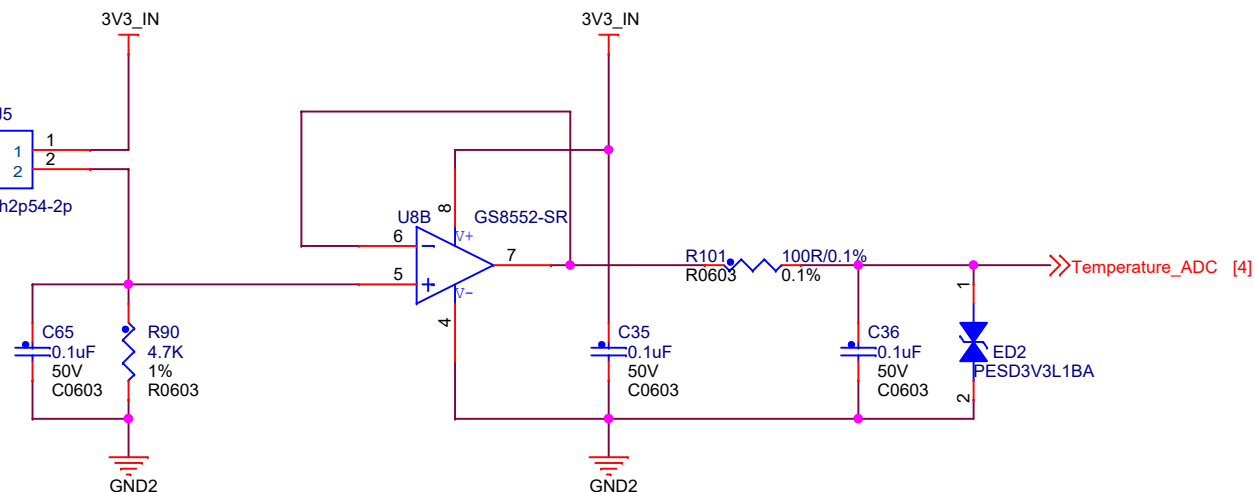
Motor_VBUS_ADC=POWER/37+1.24



温度检测

外接NTC

J5
1 2
xh2p54-2p



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野火_无刷直流电机驱动模块_原理图

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Document Number

总线电压检测隔离/温度检测

Rev

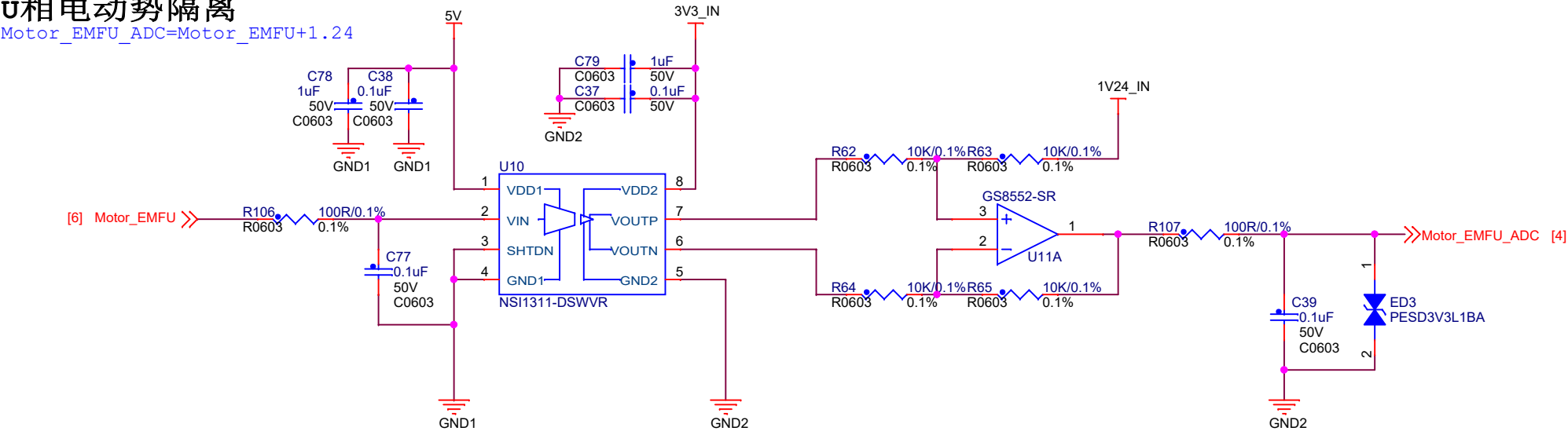
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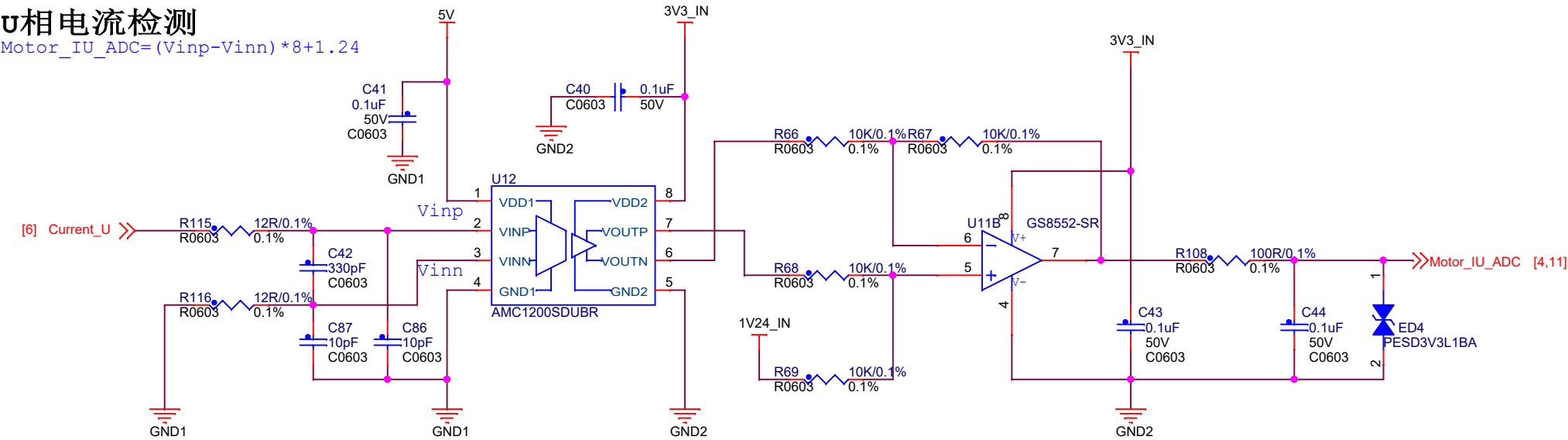
U相电动势隔离

$Motor_EMFU_ADC = Motor_EMFU + 1.24$



U相电流检测

$Motor_IU_ADC = (V_{inP} - V_{inN}) * 8 + 1.24$



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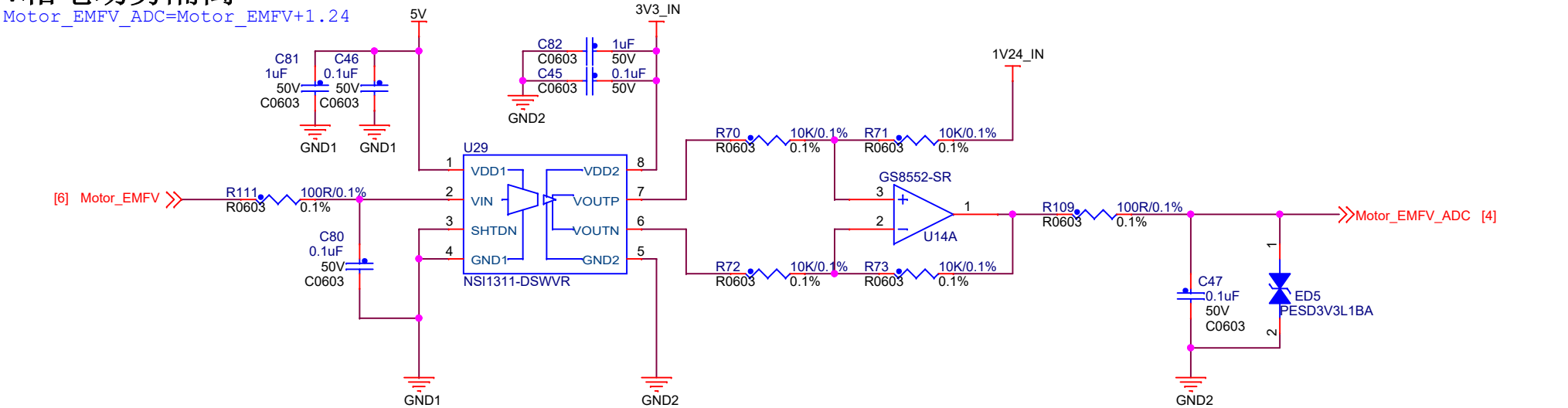
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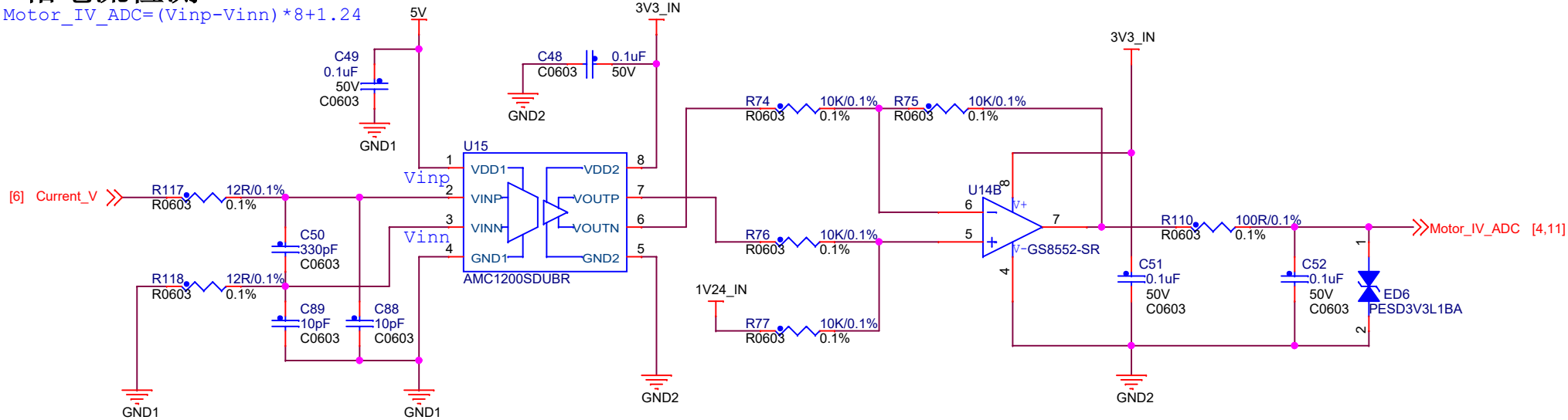
v相电动势隔离

$Motor_EMFV_ADC = Motor_EMFV + 1.24$



v相电流检测

$Motor_IV_ADC = (V_{inP} - V_{inN}) * 8 + 1.24$



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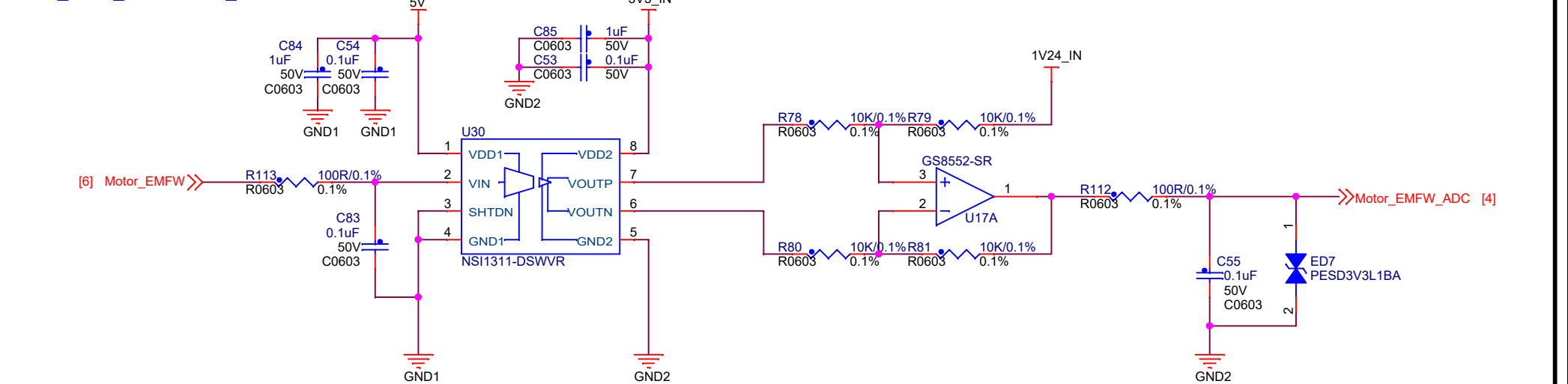
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A4	V相电压电流检测隔离	V1.0

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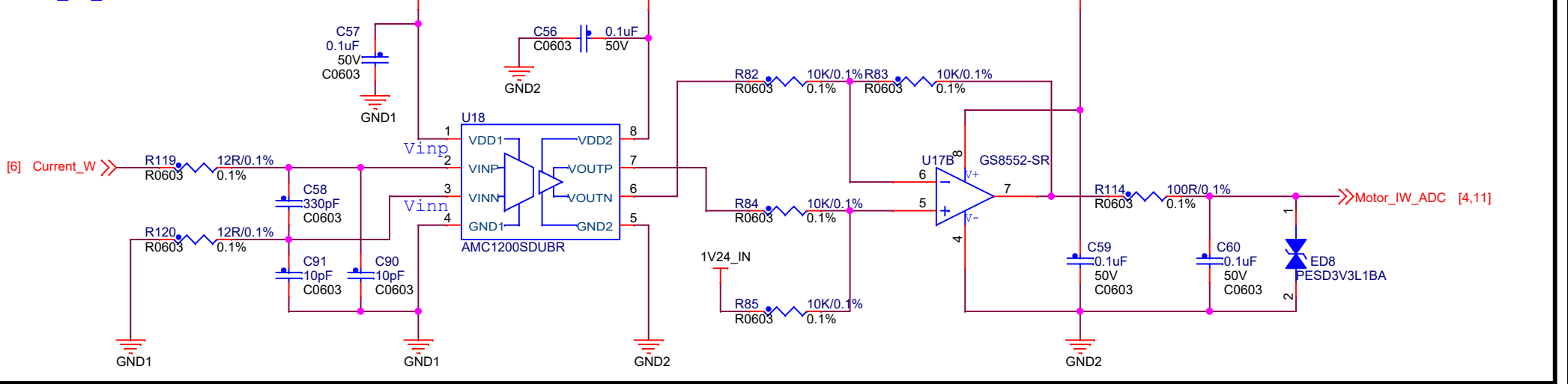
w相电动势隔离

$Motor_EMFW_ADC = Motor_EMFW + 1.24$



w相电流检测

$Motor_IW_ADC = (V_{inp} - V_{inn}) * 8 + 1.24$



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保护阈值10A

