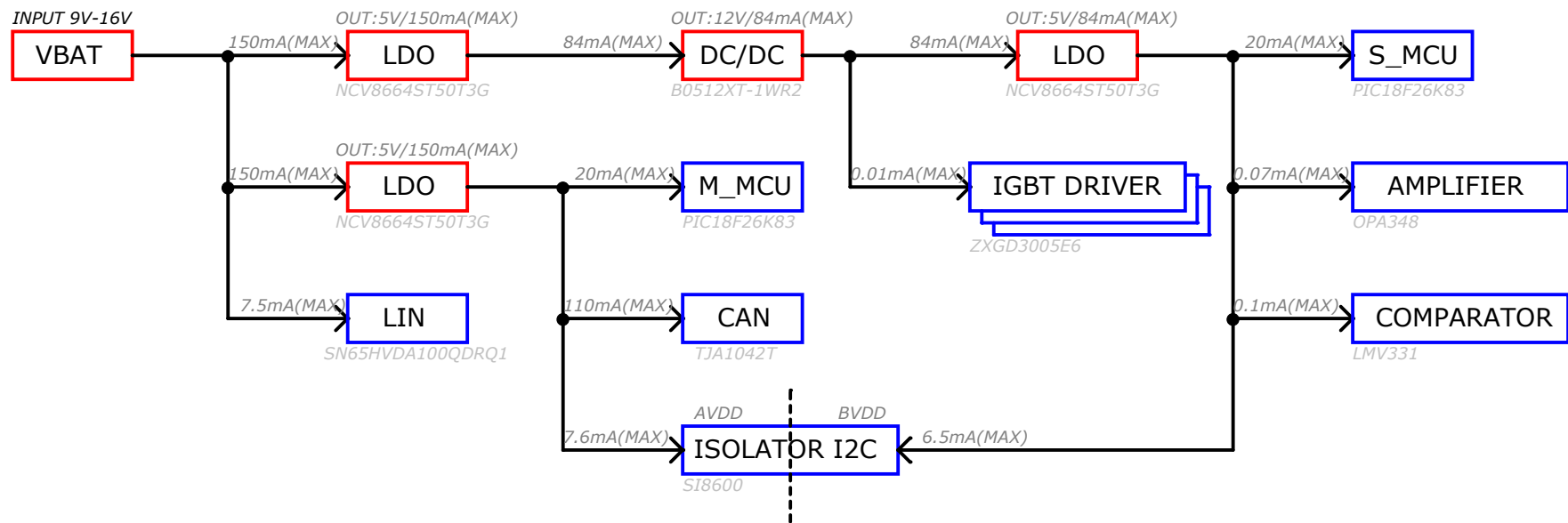


Title <Title>			
Size A3	Document Number <Doc>		Rev V3.0
Date:	Monday, June 08, 2020	Sheet	1 of 7

# 2 POWER PLANE



# 3 HISTORY

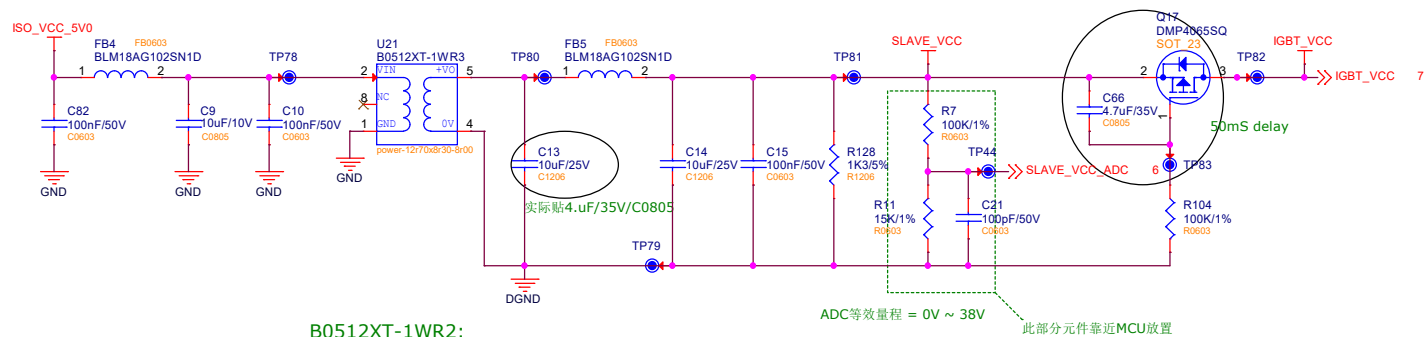
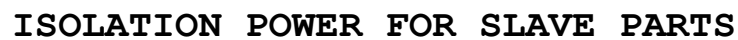
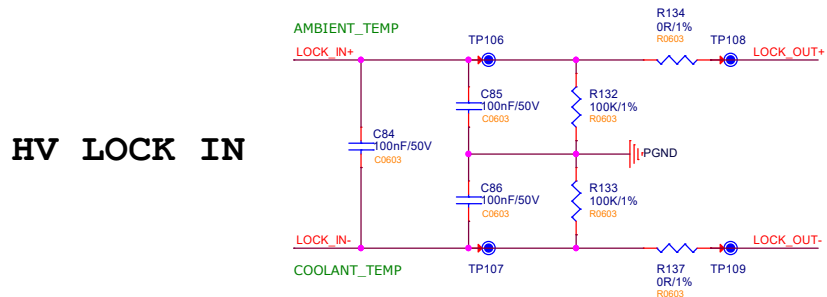
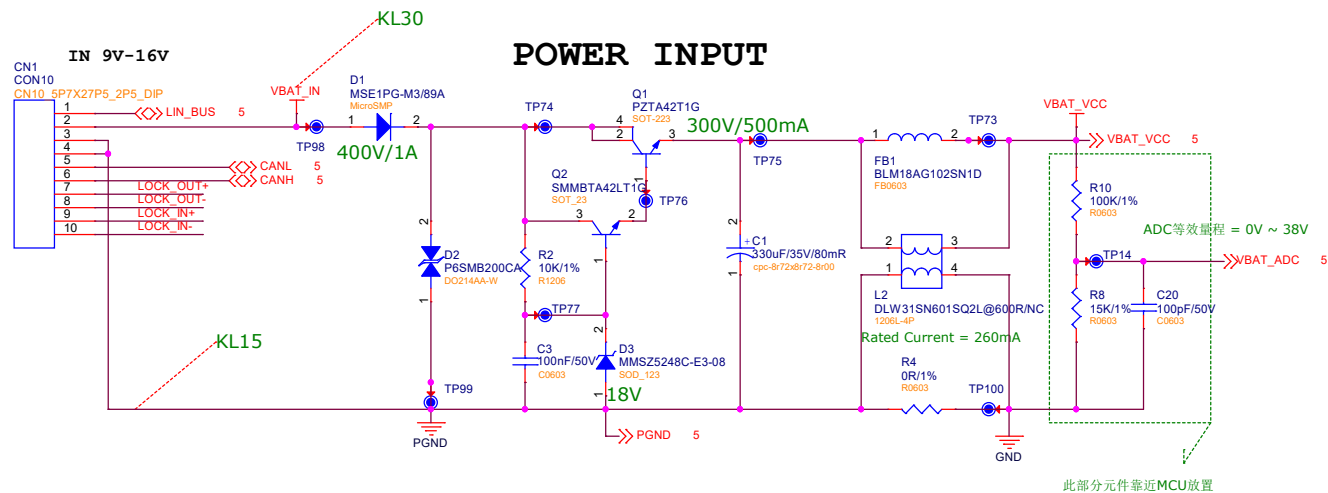
PHU\_MB\_SCH\_V0.1 [yangxutao 2019/09/09]

PHU\_MB\_SCH\_V3.0 [yangxutao 2020/06/05]

- 1.Q5、Q7和Q9需要连接至Q11、Q13和Q15的GATE极，以防止产生保护时短路IGBT\_VCC； [P7]
- 2.信号IGBT\_PWM0/IGBT\_PWM1/IGBT\_PWM2需要增加限流电阻R138、R139、R140 1K/5%，以防止产生保护时短路VDD\_5V0； [P7]
- 3.Q10、Q12、Q14、Q16、Q17、Q18物料由BSS84更换为DMP4065SQ，新物料符合AEC-Q100认证： [P4,P7]
- 4.增加板上NTC温度传感器R143，连接至U7单片机的6脚，以测量IGBT的温度； [P6]
- 5.删除外部温度传感器电路： [P4,P5]
- 6.Q2型号KST42MTF已经停产，更换物料为SMMBTA42LT1G，封装和参数一致替代料： [P4]
- 7.U21物料由B0512XT-1WR2更换为B0512XT-1WR3，V0.1版本中实际贴片物料型号为B0512XT-1WR3，B0512XT-1WR3为最新版本，旧版本已经采购不到物料； [P4]
- 8.主MCU和从MCU的调试接口信号增加ESD二极管D16、D17、D18、D19、D20和D21，以防止调试时静电损坏MCU； [P5,P6]
- 9.删除D7和D13二极管，因此二极管与MCU不能实现快速放电，会使MCU无法烧录程序； [P5,P6]
- 10.NC掉MCU的复位电容C27和C40，以防止MCU不能上电复位。Microship规格书要求烧录器调试时使用复位电容，调试完后NC掉； [P5,P6]

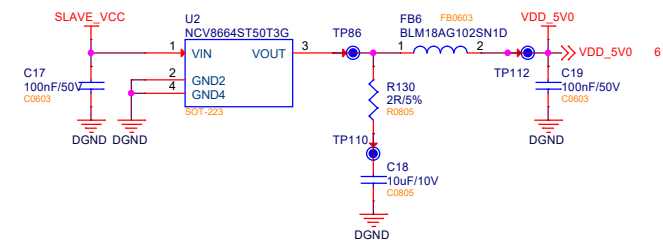
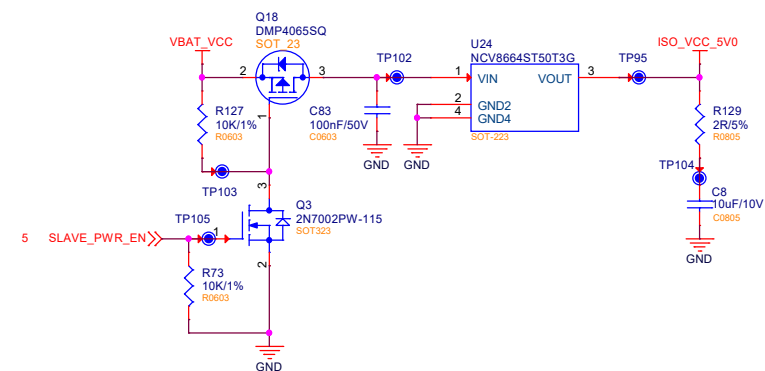
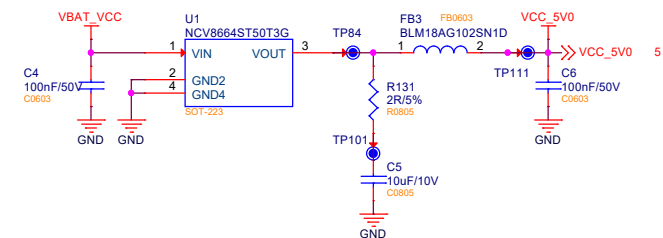
Title		<Title>	
Size	Document Number		Rev
A3	<Doc>		V0.2
Date:	Monday, June 08, 2020		Sheet 3 of 7

## 4 POWER



B0512XT-1WR2:

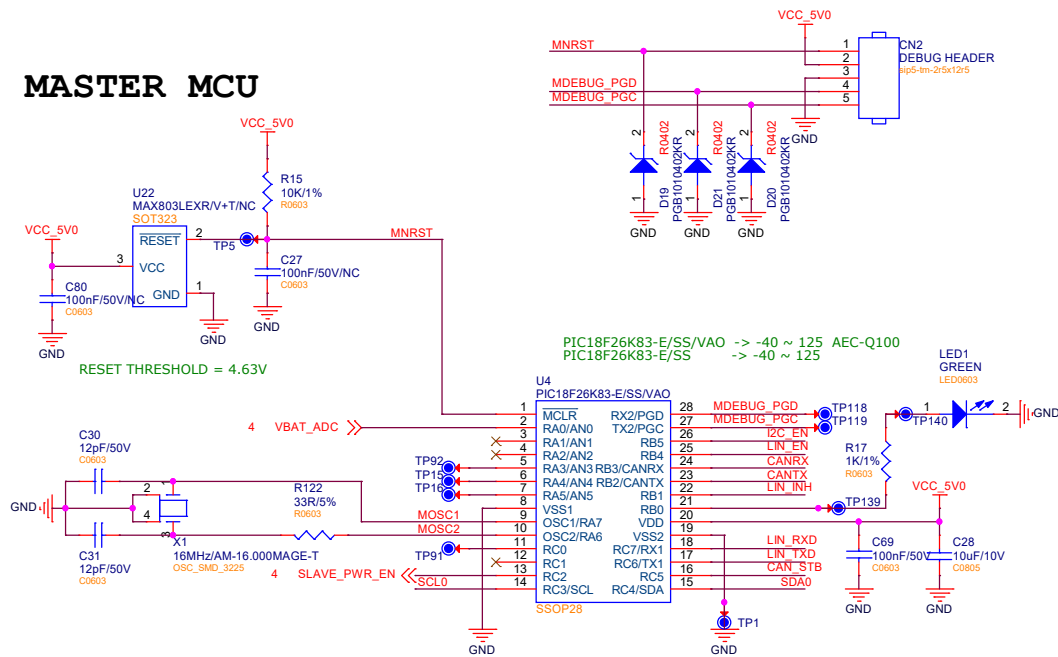
Input Voltage: 4.5V~5.5V  
Output Voltage: 11.1V(Min) / 13.2V(Max)  
Output Current: 9mA(Min) / 84mA(Max)



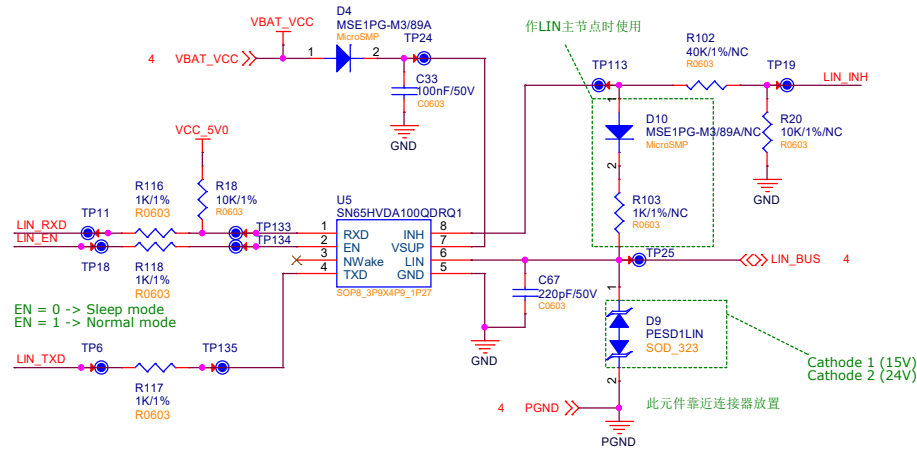
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Date:	Wednesday, June 10, 2020	Sheet	4 of 7

## 5 MASTER MCU & CAN & LIN

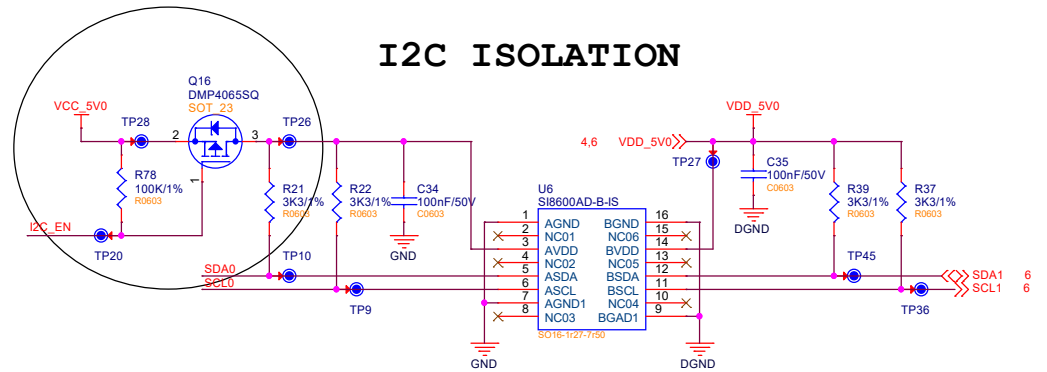
## MASTER MCU



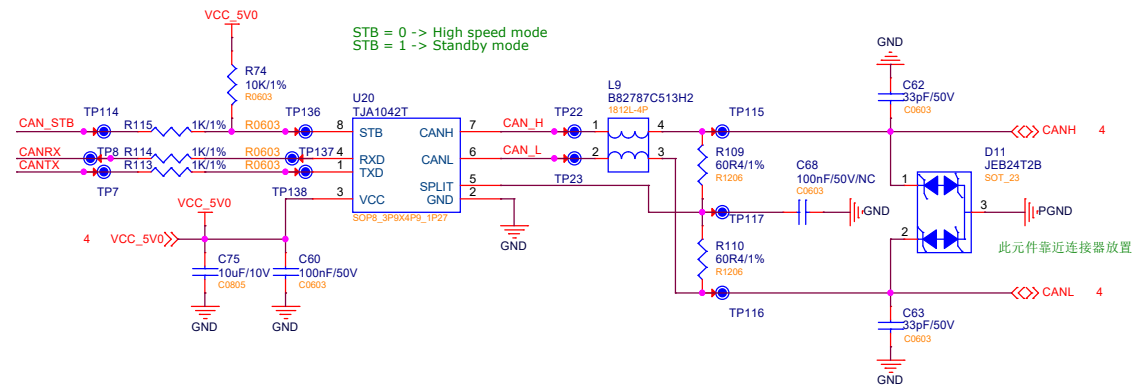
## LIN-BUS



## I2C ISOLATION



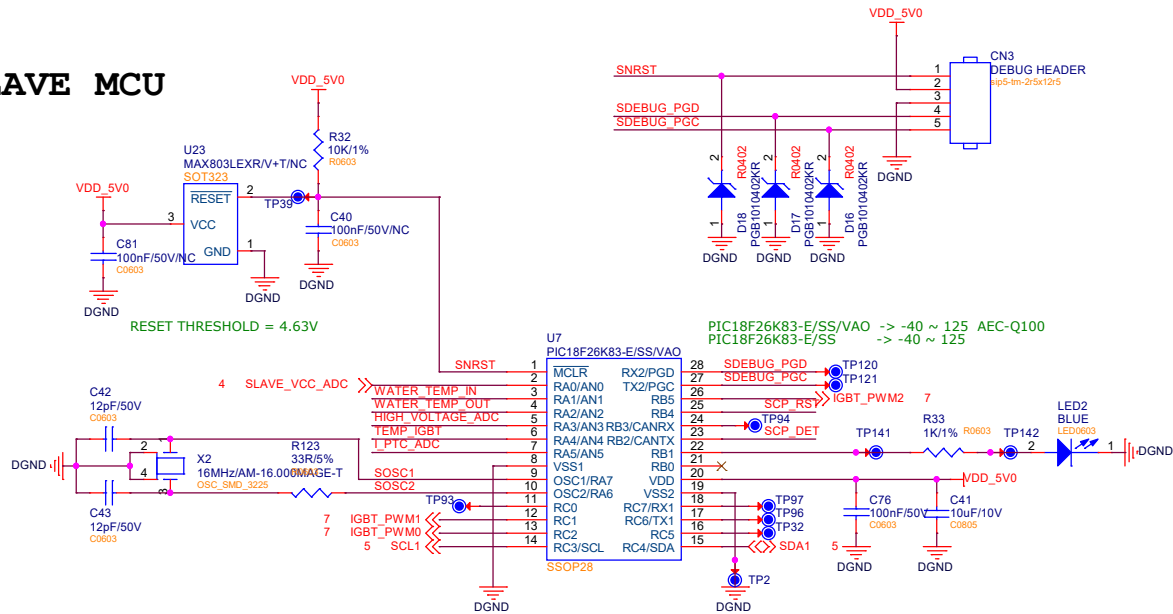
## CAN-BUS



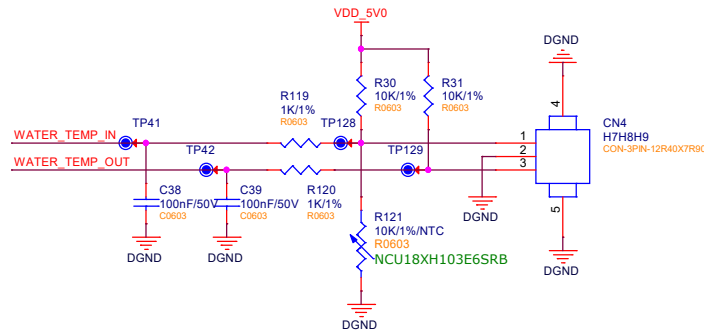
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Date:	Monday, July 06, 2020	Sheet	5 of 7

# 6 SLAVE MCU & PROTECT

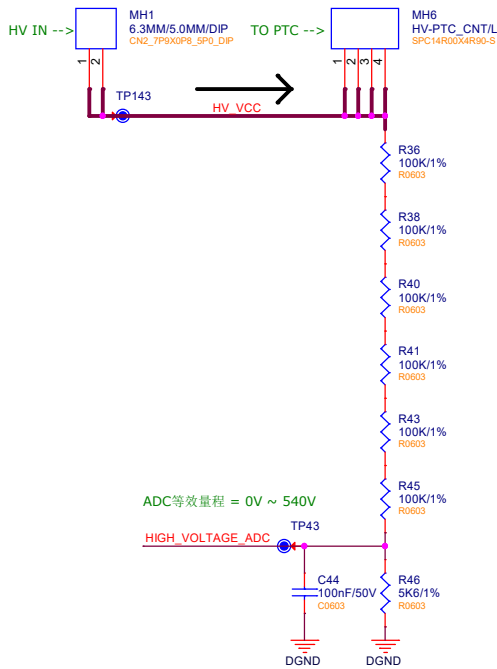
## SLAVE MCU



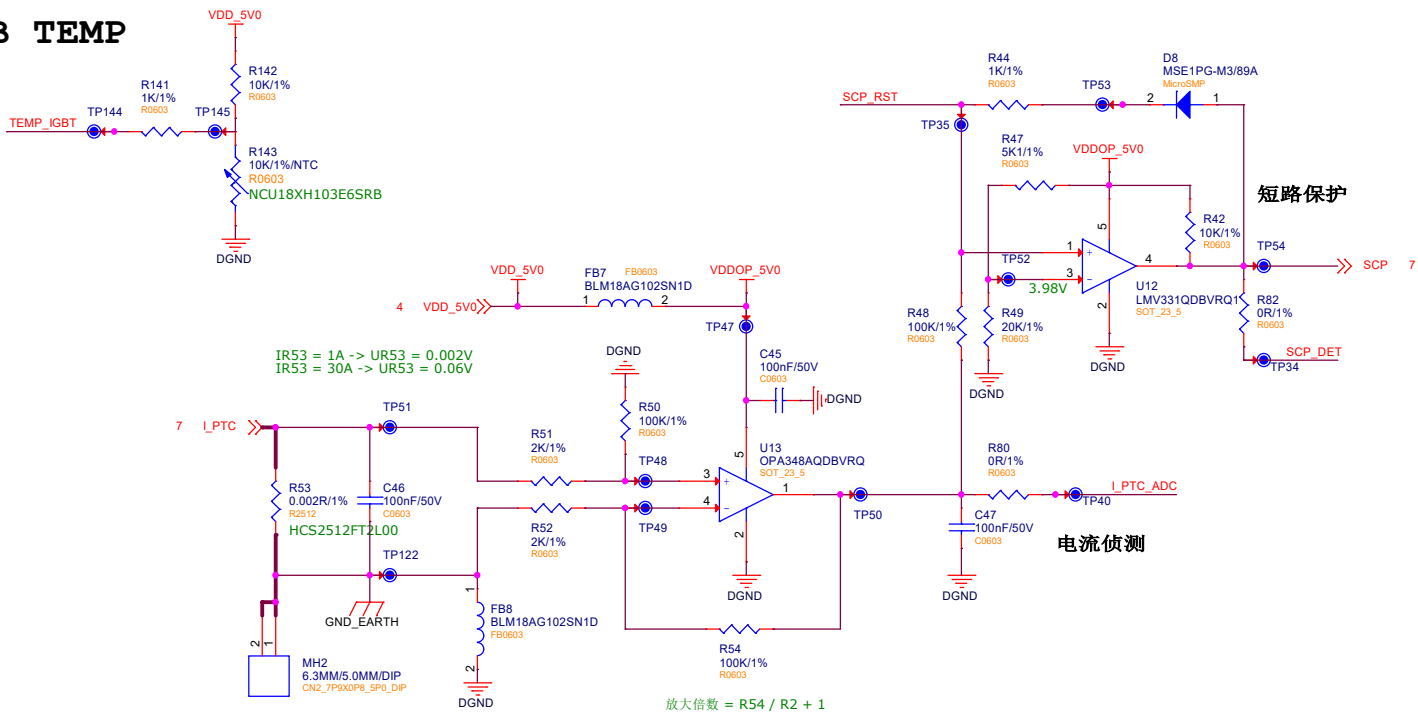
## WATER TEMPERATURE SENSORS



## HIGH VOLTAGE IN & MEASURE

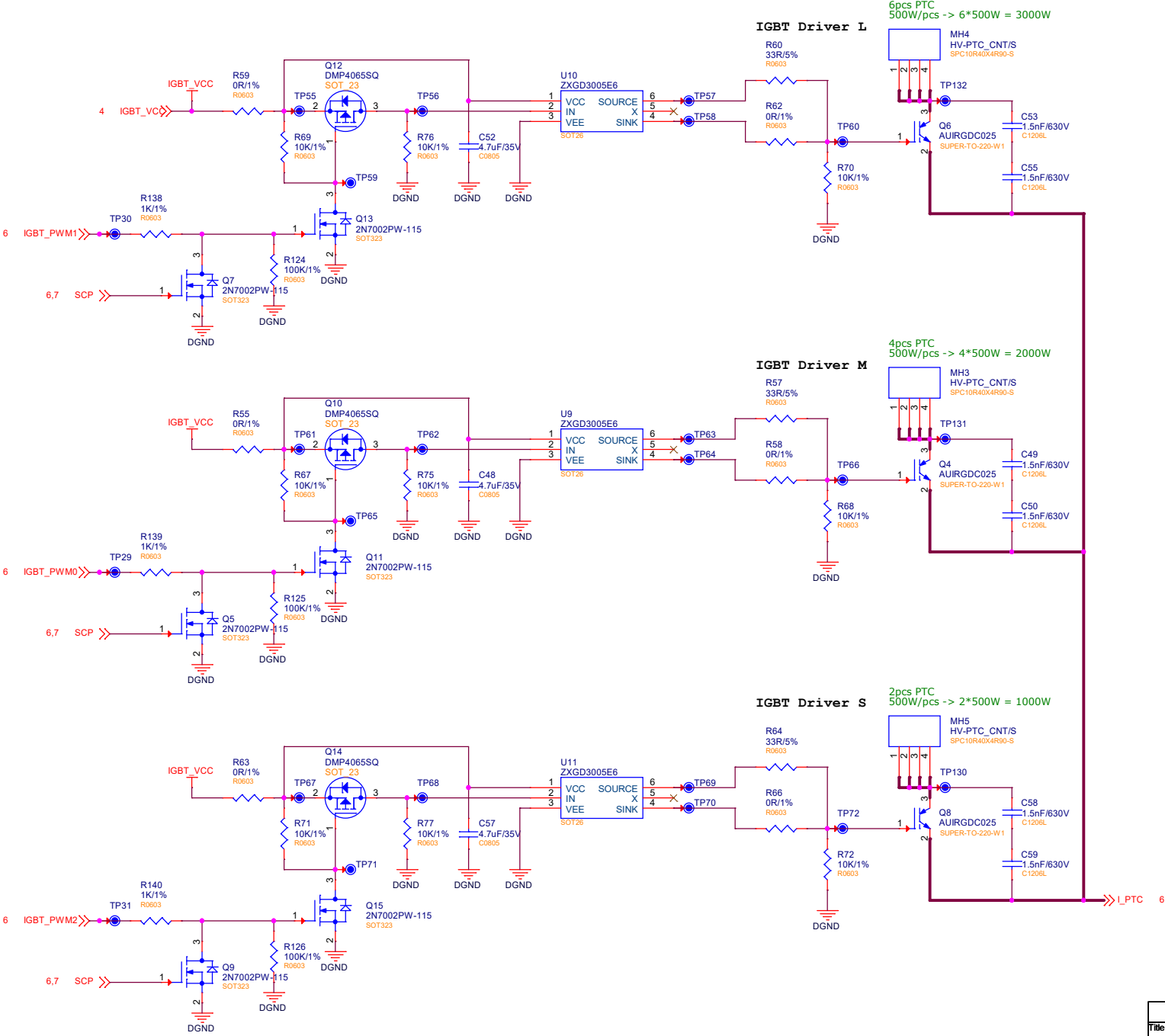


## PCB TEMP



Title			<Title>
Size			Document Number
Date			Monday, June 08, 2020
Sheet			6 of 7
Rev			V3.0

# 7 IGBT & DRIVER



Title			<Title>
Size	A3	Document Number	<Doc>
Date:	Monday, June 08, 2020	Sheet	7 of 7
Rev	V3.0		