

Vcc номин = 12В.
 Vcc раб = 9-16В.
 Vcc max = 24В.
 I max < 15А.
 Выдерживать 18В в течение 60 мин.
 Выдерживать 24В в течение 60 сек.

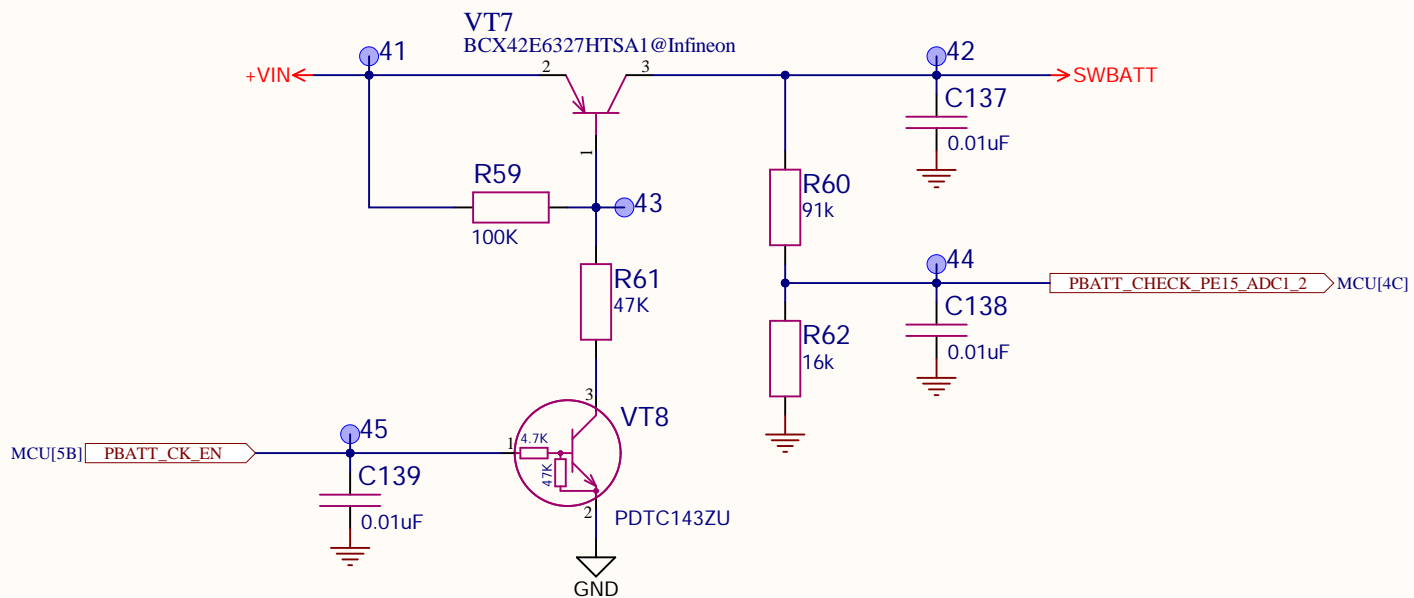
STANDBY POWER

IGN CHECK

Vbat = 9V -> IGN_ANS = 1.5V
 Vbat = 24V -> IGN_ANS = 4.16V

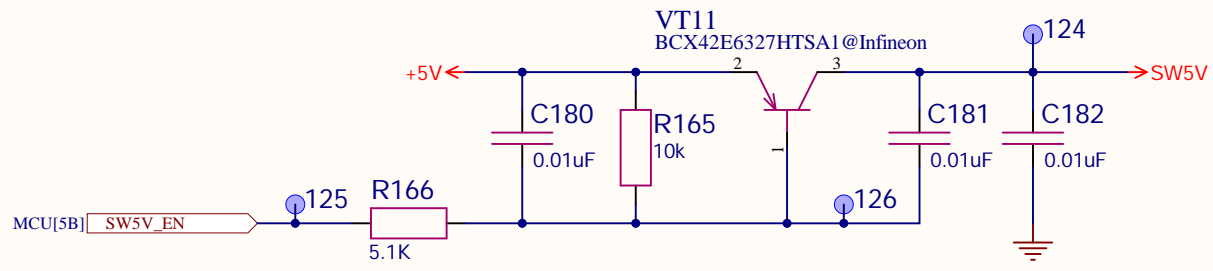
Title		
Size	Number	Revision
A3		
Date:	5.04.2026	Sheet of
File:	D:\Altiun\...\Power_1.SchDoc	Drawn By:

SWBATT AND BATTERY CHECK



Title		
Size A4	Number	Revision
Date: 5.04.2026	Sheet of	
File: D:\Altium\...\Power_2_1.SchDoc	Drawn By:	

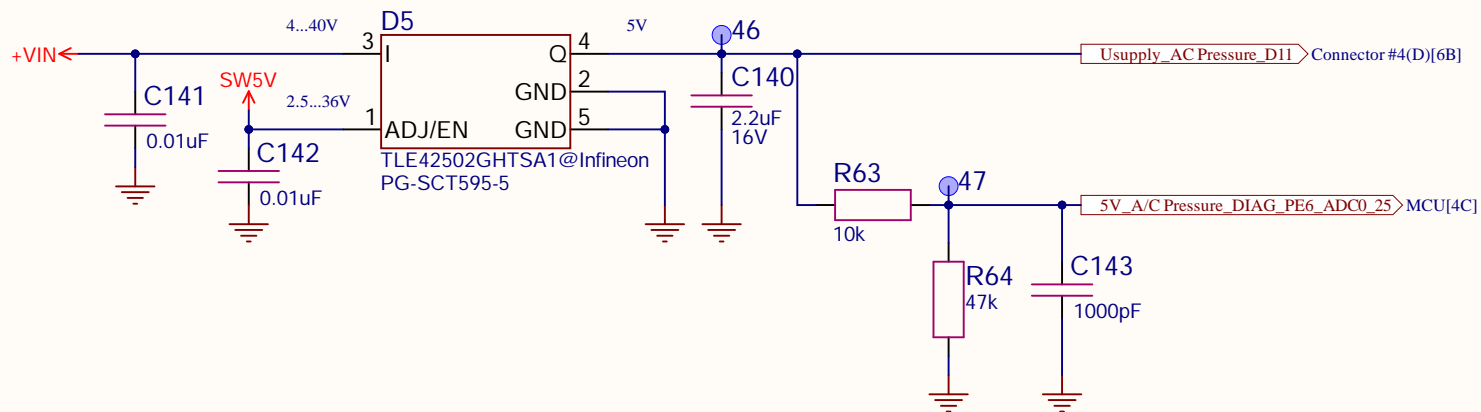
SWITCHED 5V



Title		
Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
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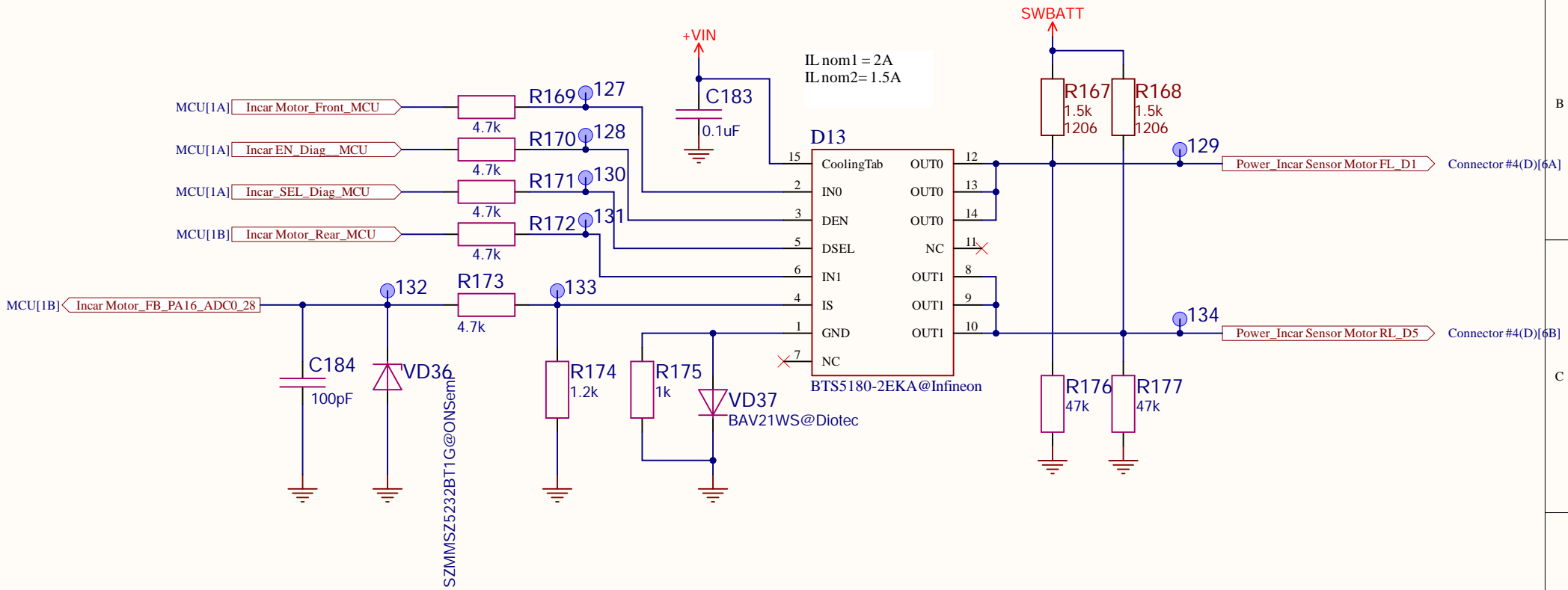
A/C Pressure Sensor Power Supply

Iout = 50mA



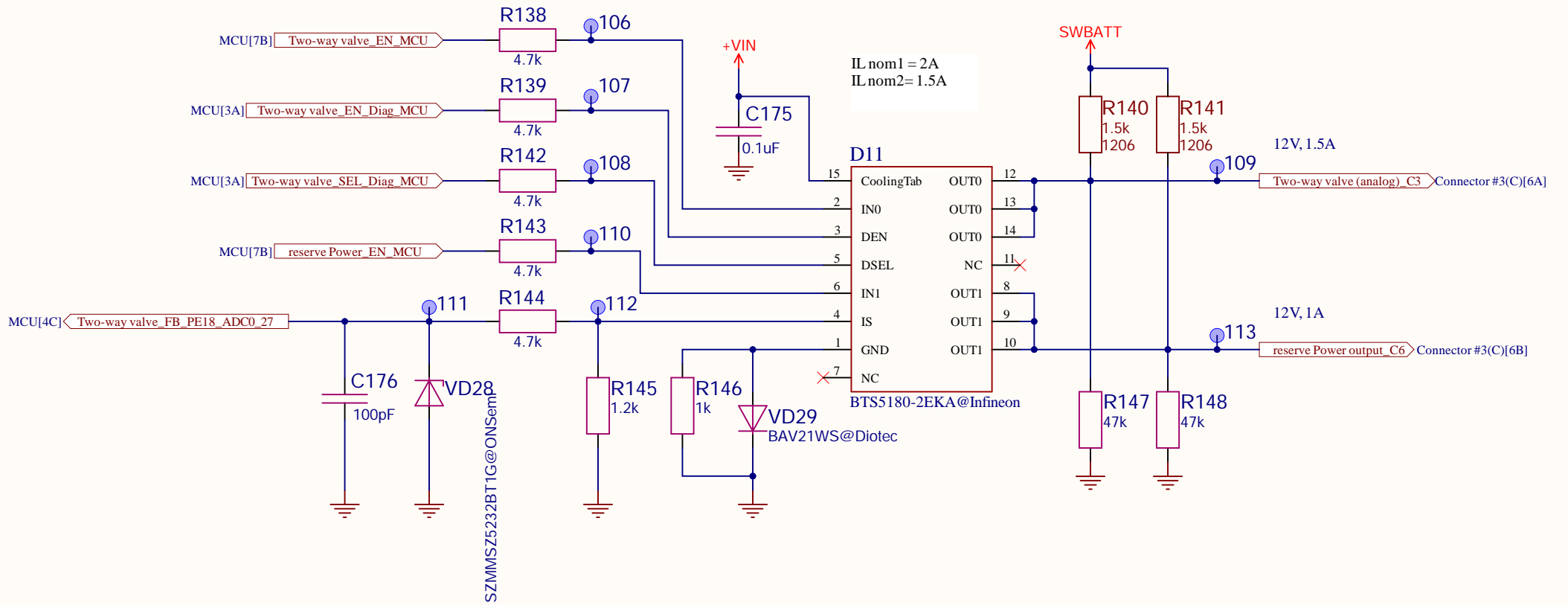
Title		
Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\..\Power_3_1.SchDoc	Drawn By:

Front and Rear Incar Motor Power Supply



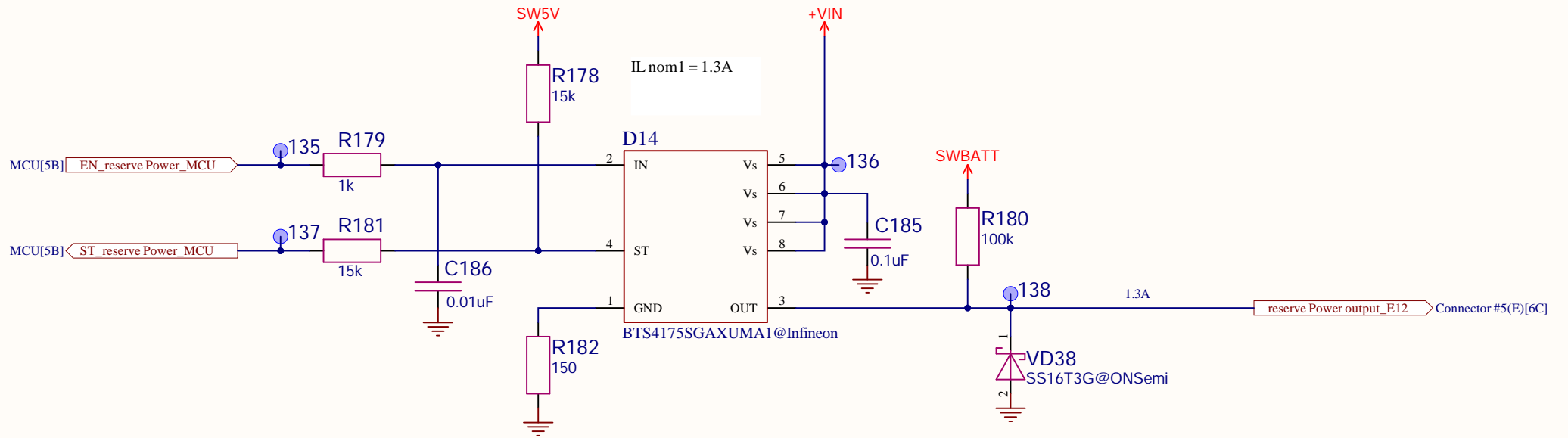
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Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\...\Power_3_2.SchDoc	Drawn By:

Two-way valve (analog) and Reserve Power Supply



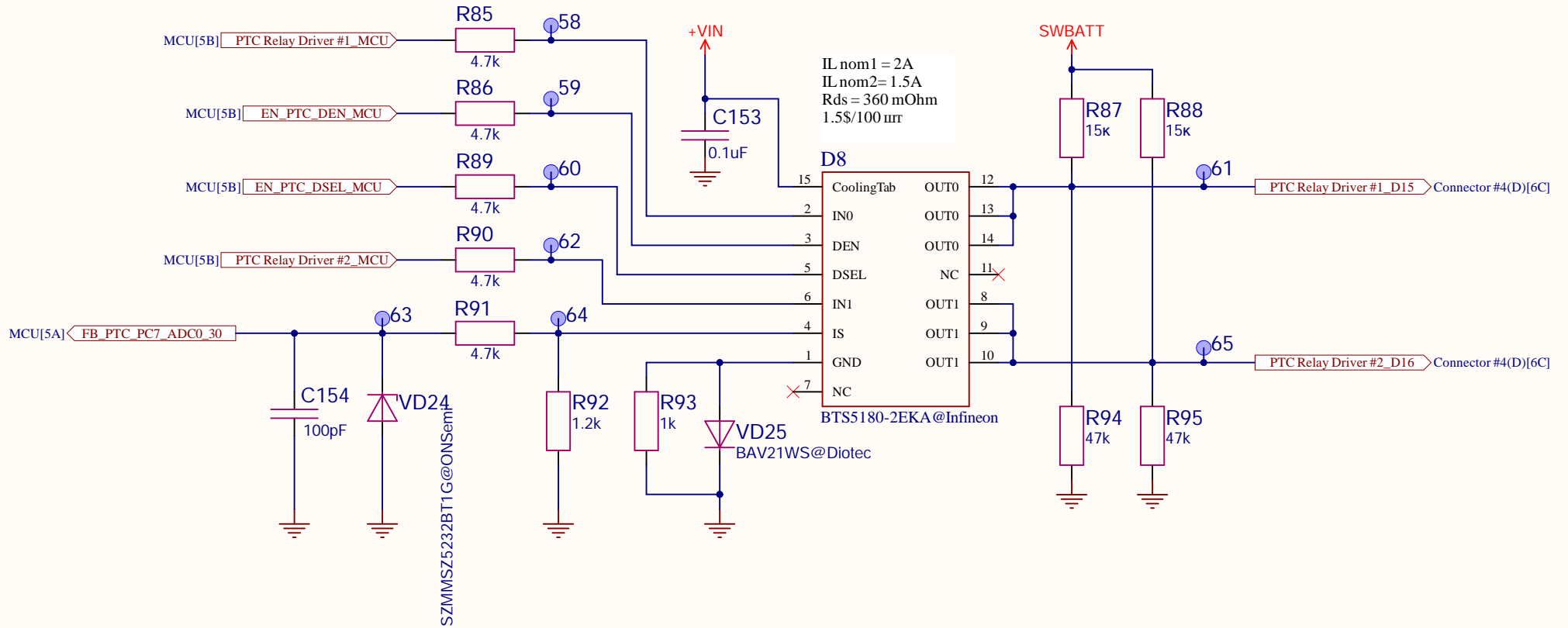
Title		
Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\...\Power_4_1.SchDoc	Drawn By:

reserve Power output



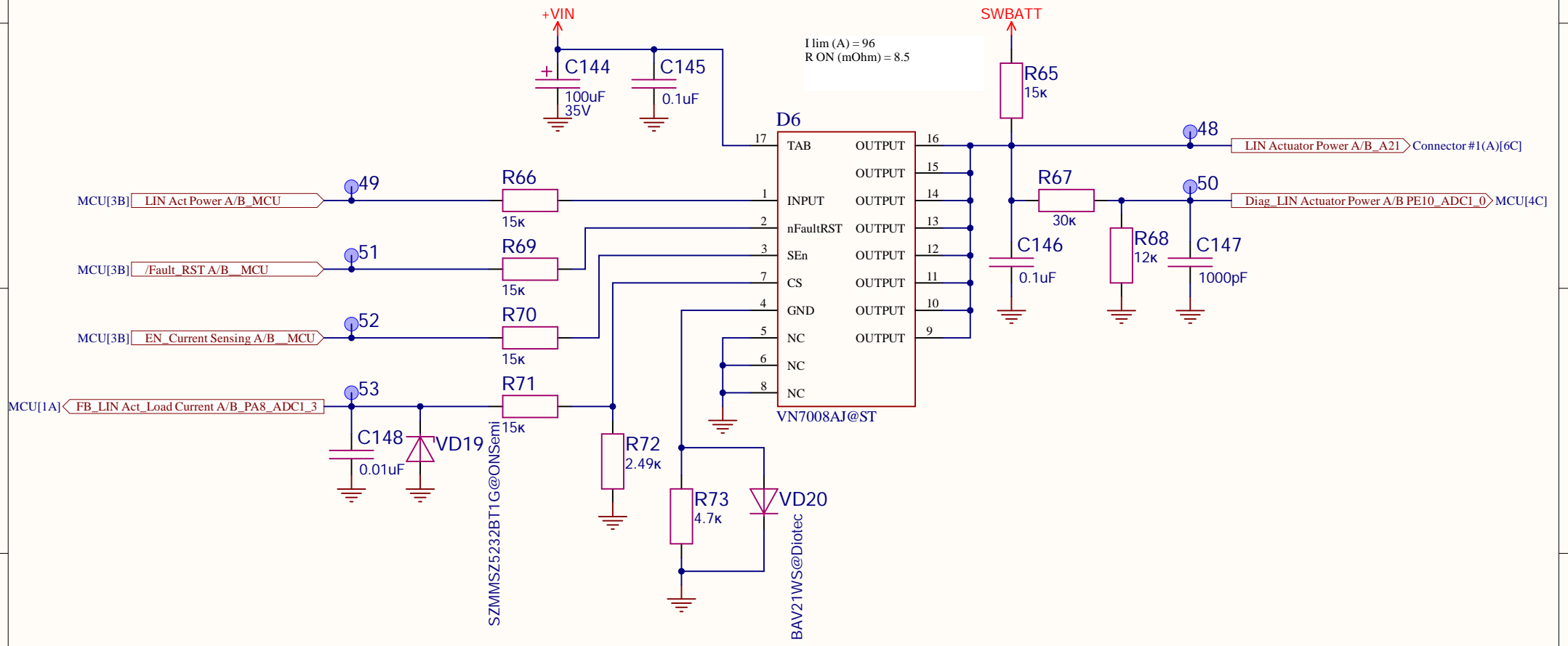
Title		
Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\..\Power_4_2.SchDoc	Drawn By:

2x Channel PTC Power Control



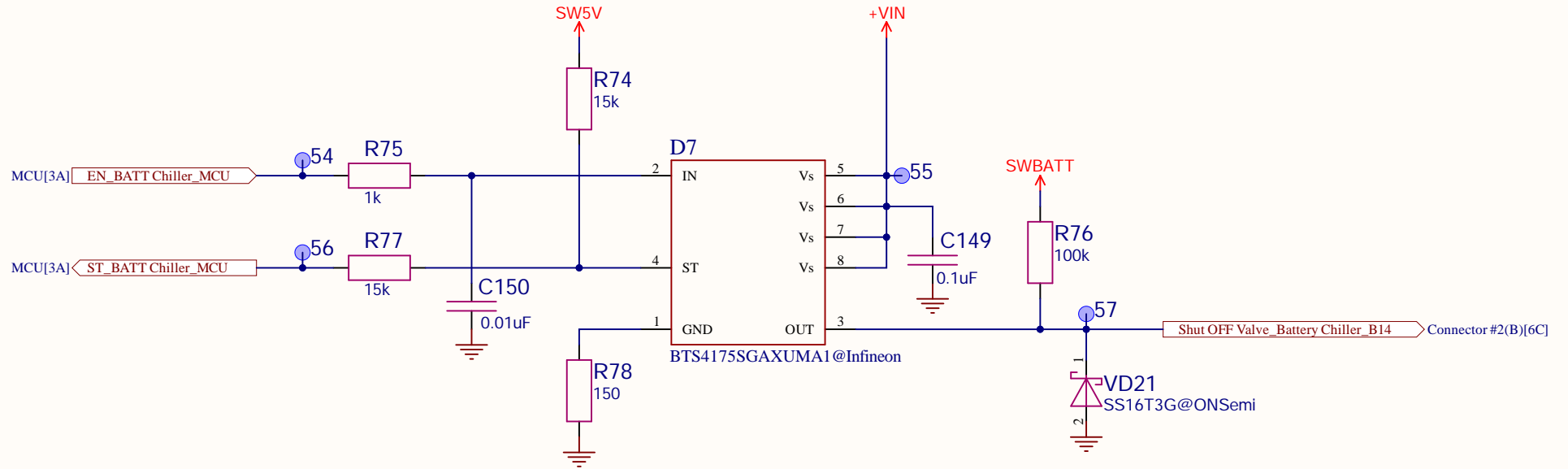
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Size A4	Number	Revision
Date: 5.04.2026	Sheet of	
File: D:\Altium\...\Power_5.SchDoc	Drawn By:	

Front LIN Actuator Power Driver A/B



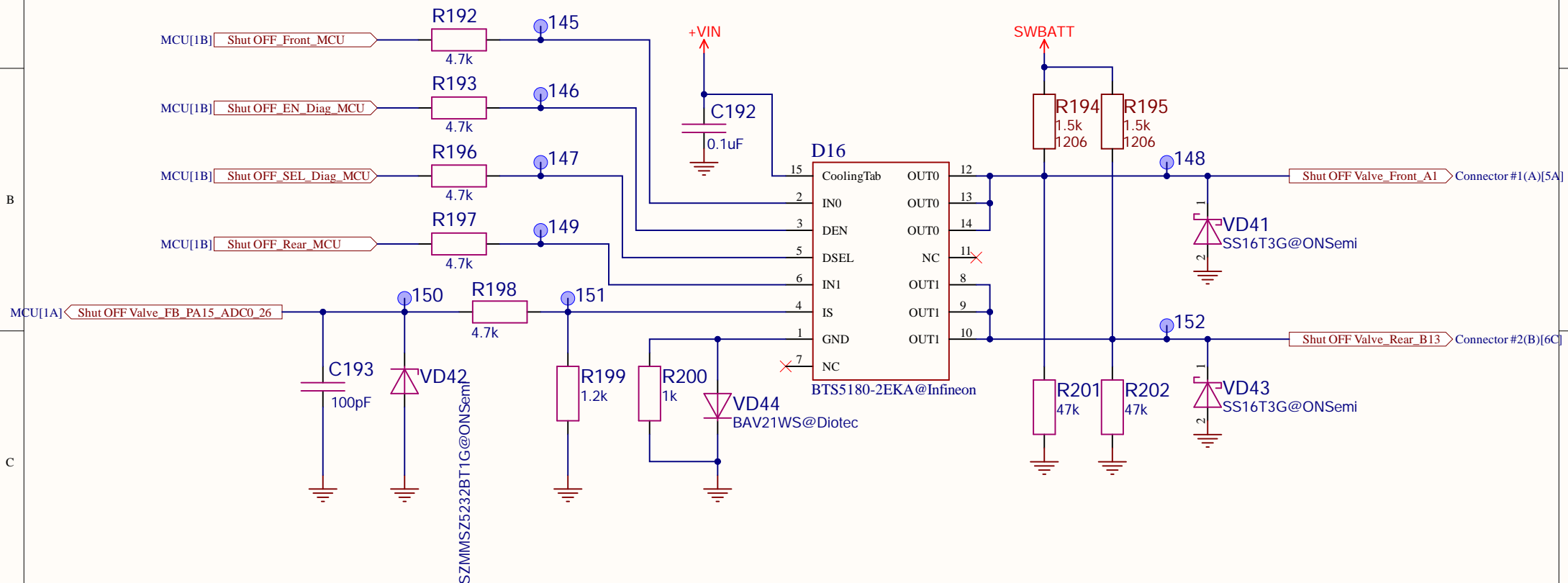
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Size A4	Number	Revision
Date:	5.04.2026	Sheet of
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Shut OFF Valve Battery Chiller



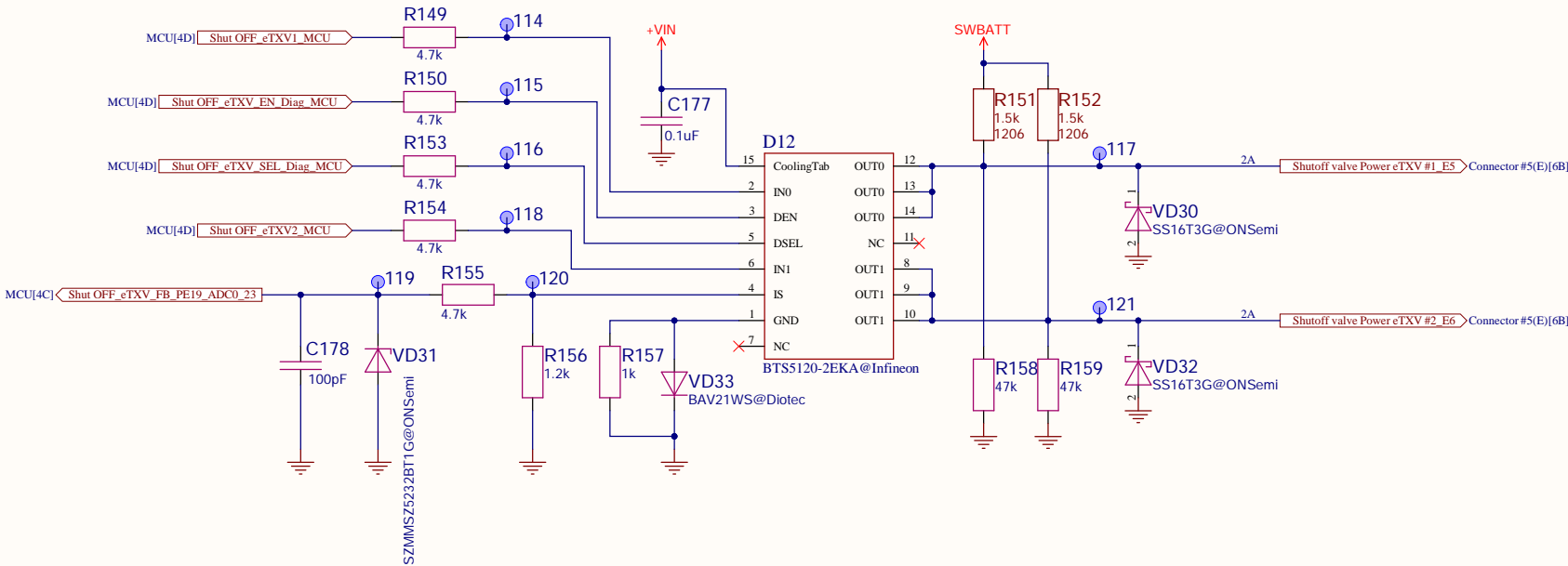
Title		
Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\..\Power_7_1.SchDoc	Drawn By:

Shut OFF Valve Front & Rear



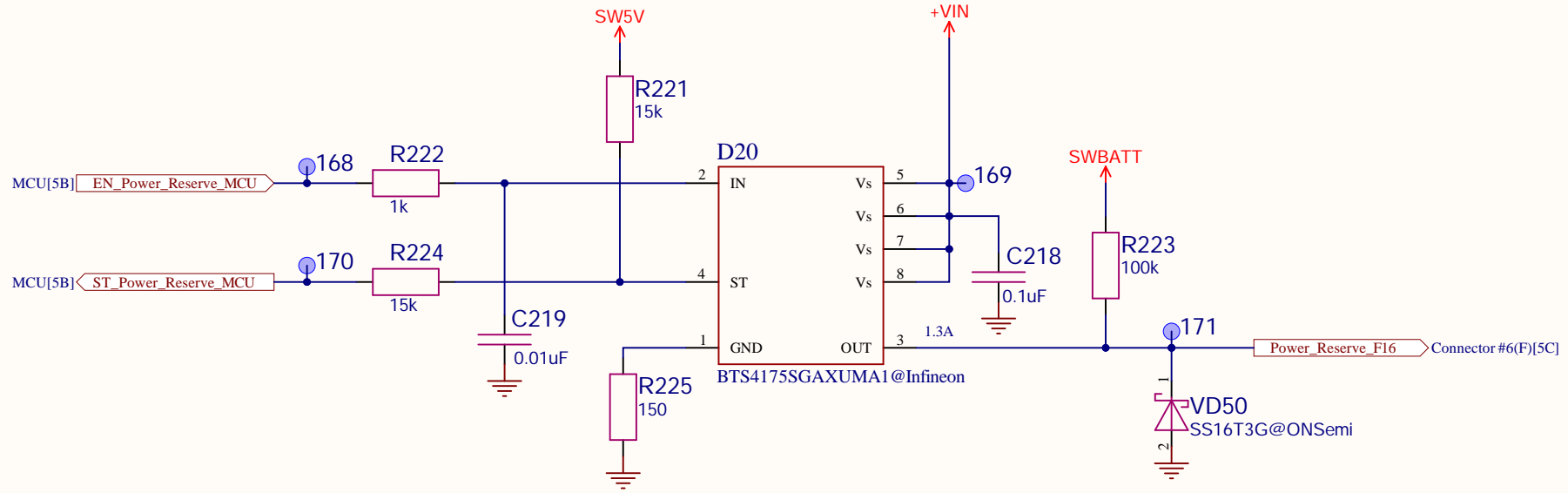
Title		
Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\...\Power_7_2.SchDoc	Drawn By:

Shutoff Valve Power eTXV



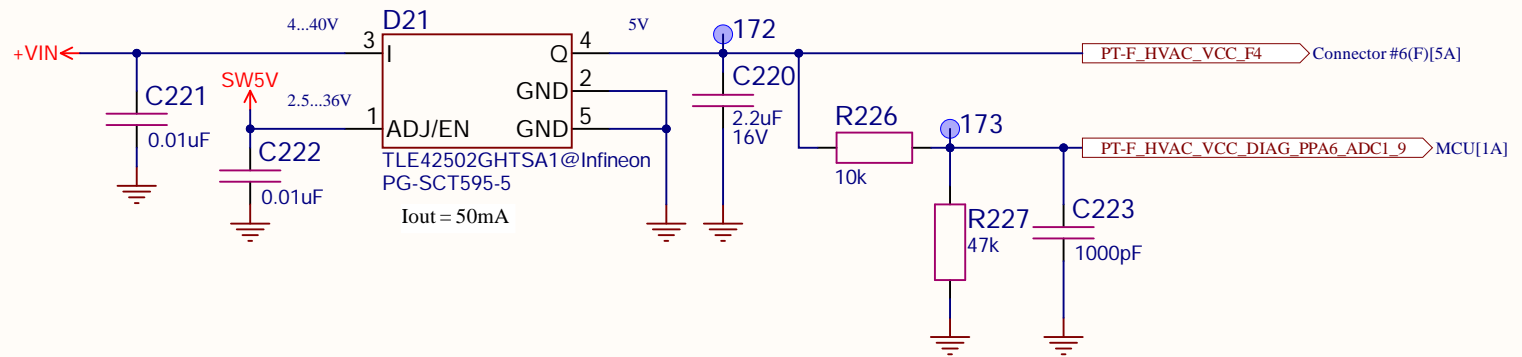
Title		
Size A3	Number	Revision
Date: 5.04.2026	Sheet of	
File: D:\Alitium\...\Power_8.SchDoc	Drawn By:	

Power (reserve)



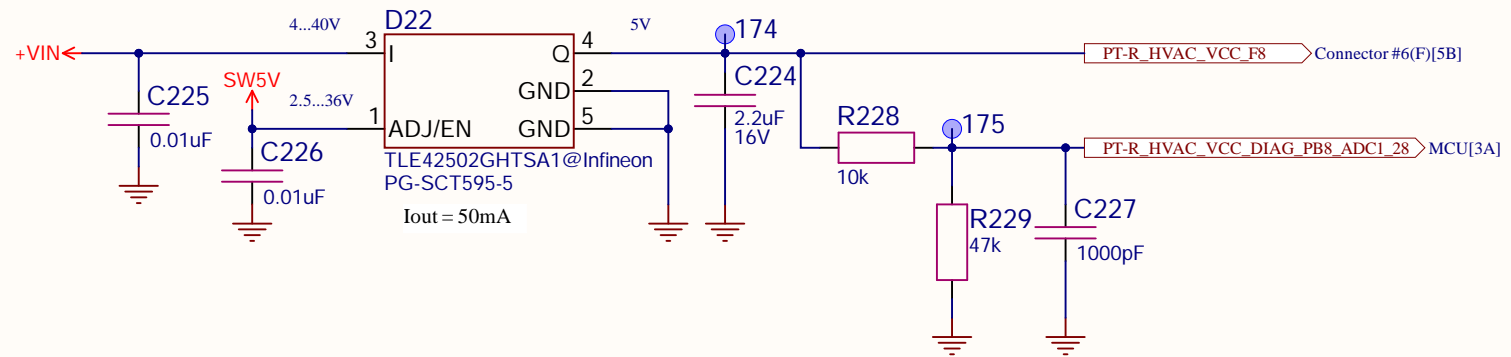
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Size	Number	Revision
A4		
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File:	D:\Altium\..\Power_9.SchDoc	Drawn By:

PT-fHVAC Sensor Power Supply



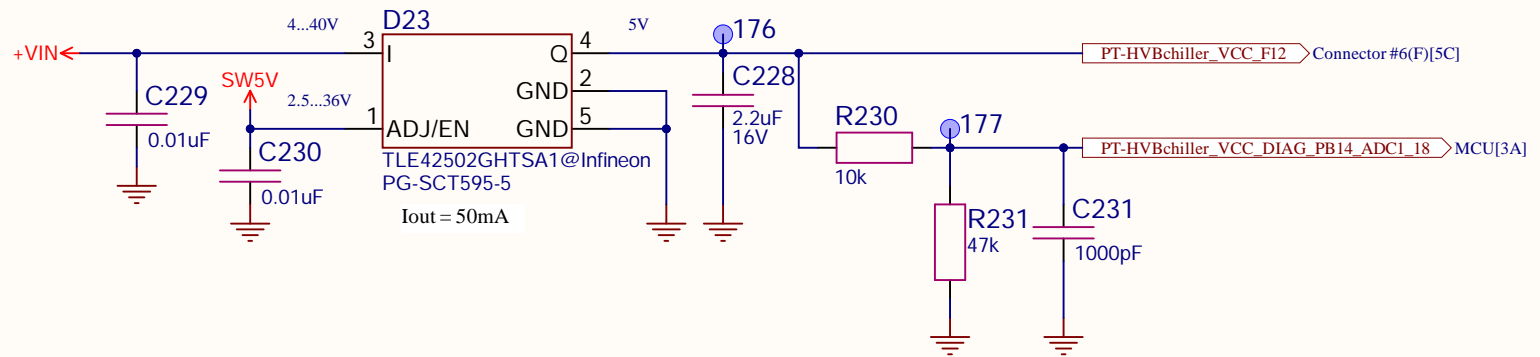
Title		
Size A4	Number	Revision
Date: 5.04.2026	Sheet of	
File: D:\Altium\...\Power_10_1.SchDoc	Drawn By:	

PT-rHVAC Sensor Power Supply



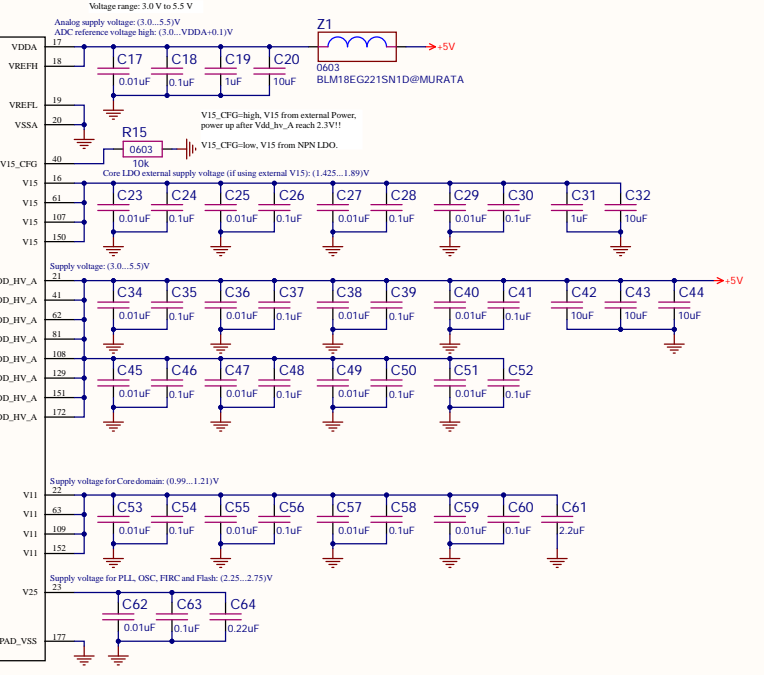
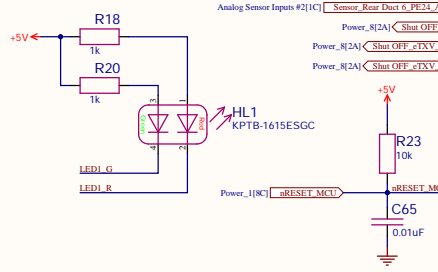
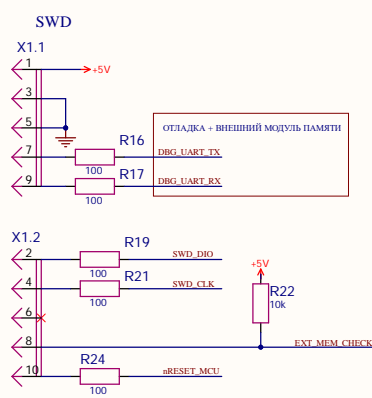
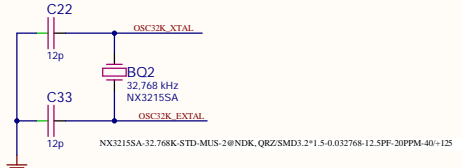
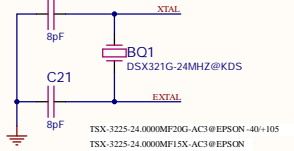
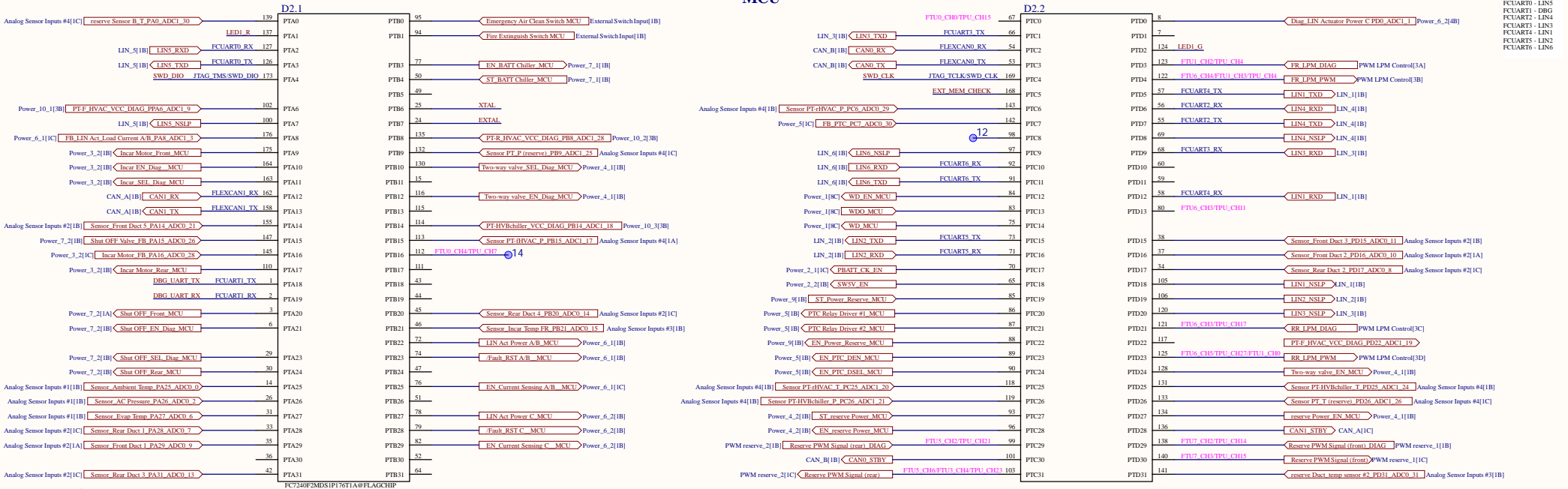
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Size A4	Number	Revision
Date:	5.04.2026	Sheet of
File:	D:\Altium\..\Power_10_2.SchDoc	Drawn By:

PT-HVBchiller Sensor Power Supply



Title		
Size A4	Number	Revision
Date:	5.04.2026	Sheet of
File:	D:\Altium\..\Power_10_3.SchDoc	Drawn By:

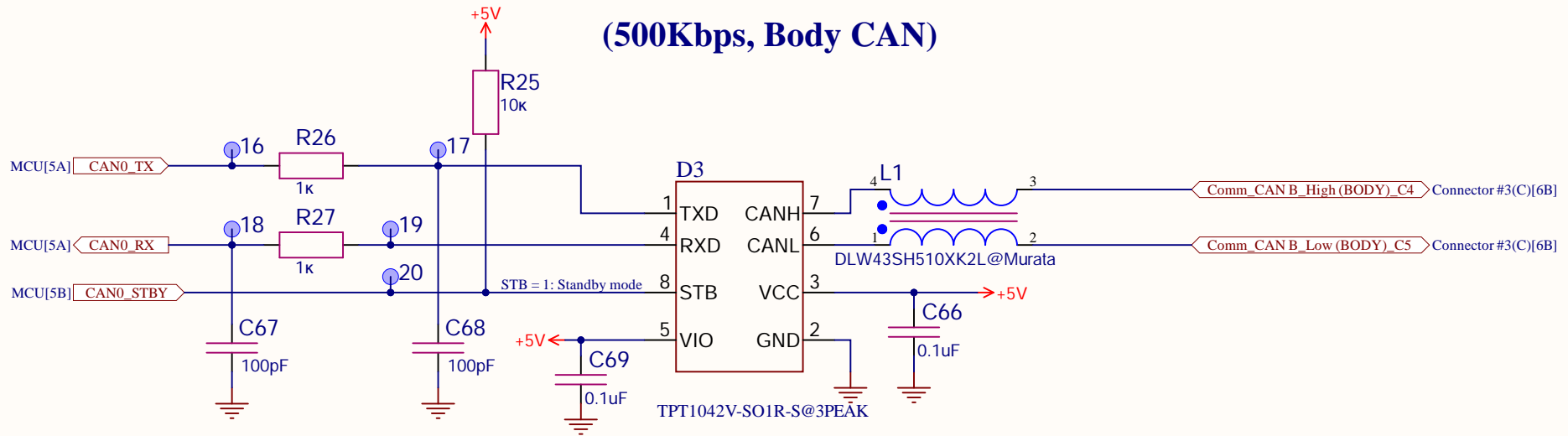
MCU



Title			
Size	Number	Revision	
A2			
Date:	3.04.2026	Sheet of	
File:	D:\Althum_1MCU_SchDoc	Sheet of	
		Drawn By:	

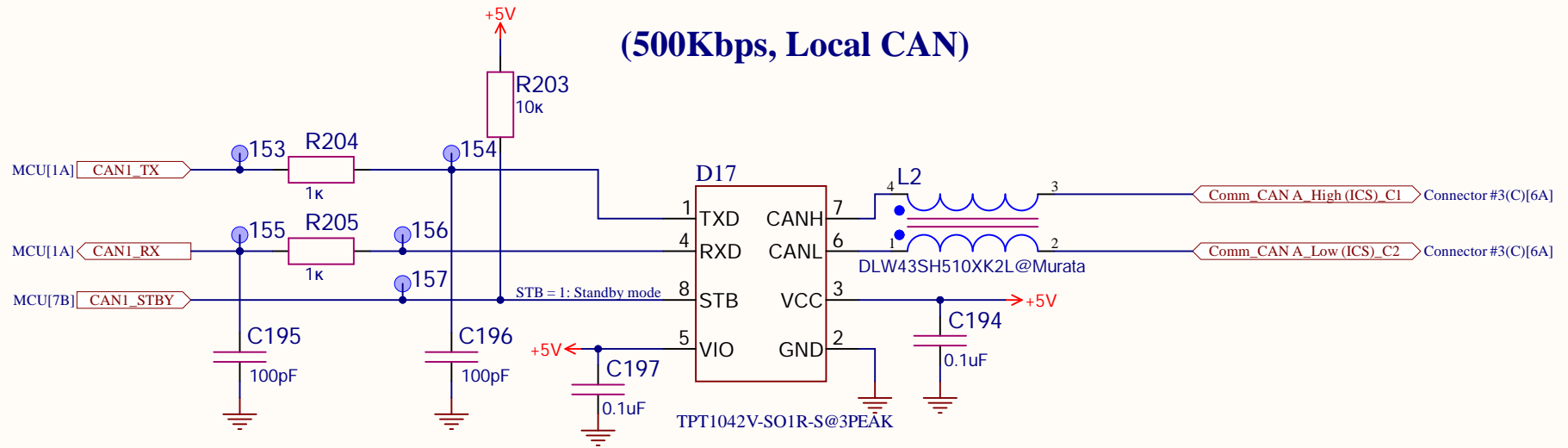
CAN_COMMUNICATION_B

(500Kbps, Body CAN)



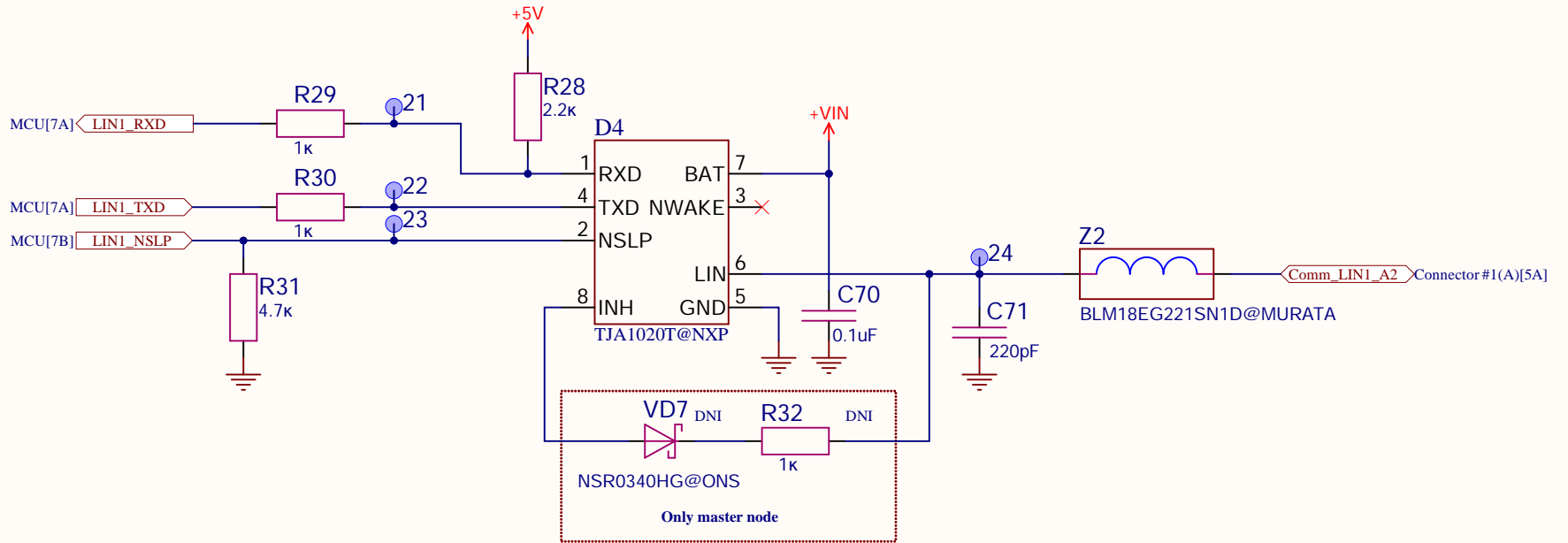
Title		
Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\..\CAN_B.SchDoc	Drawn By:

CAN_COMMUNICATION_A (500Kbps, Local CAN)



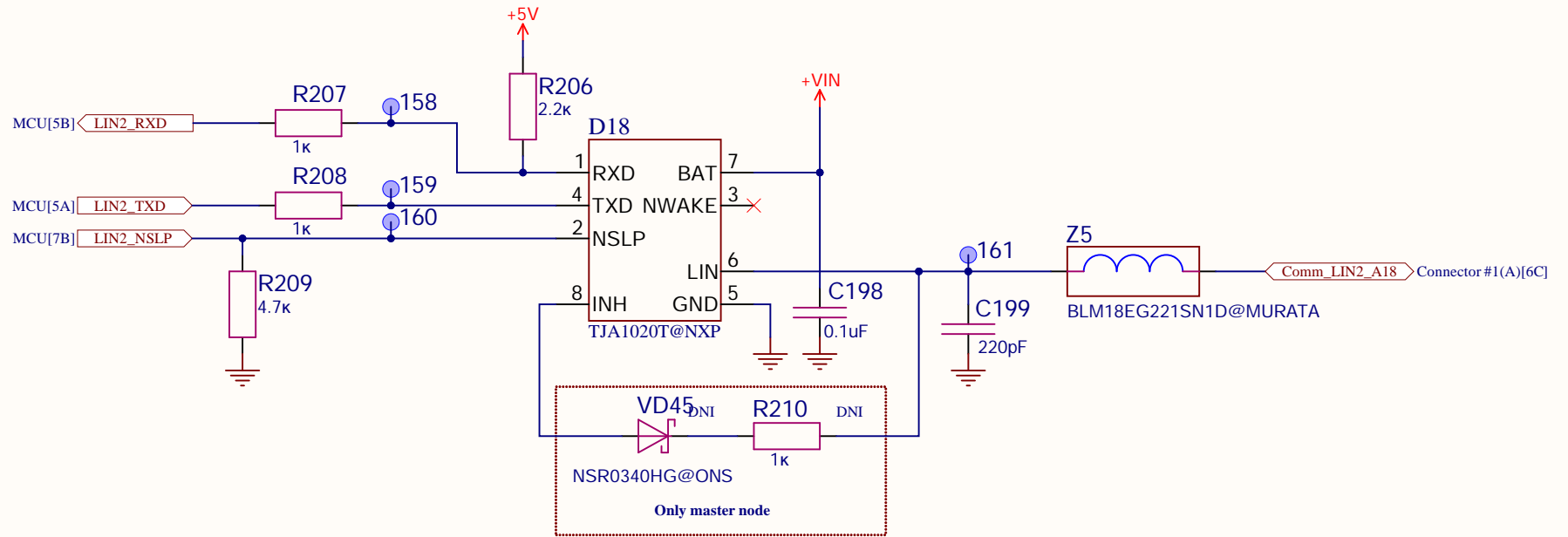
Title		
Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\...\CAN_A.SchDoc	Drawn By:

LIN Communication_1 (Front Actuators)



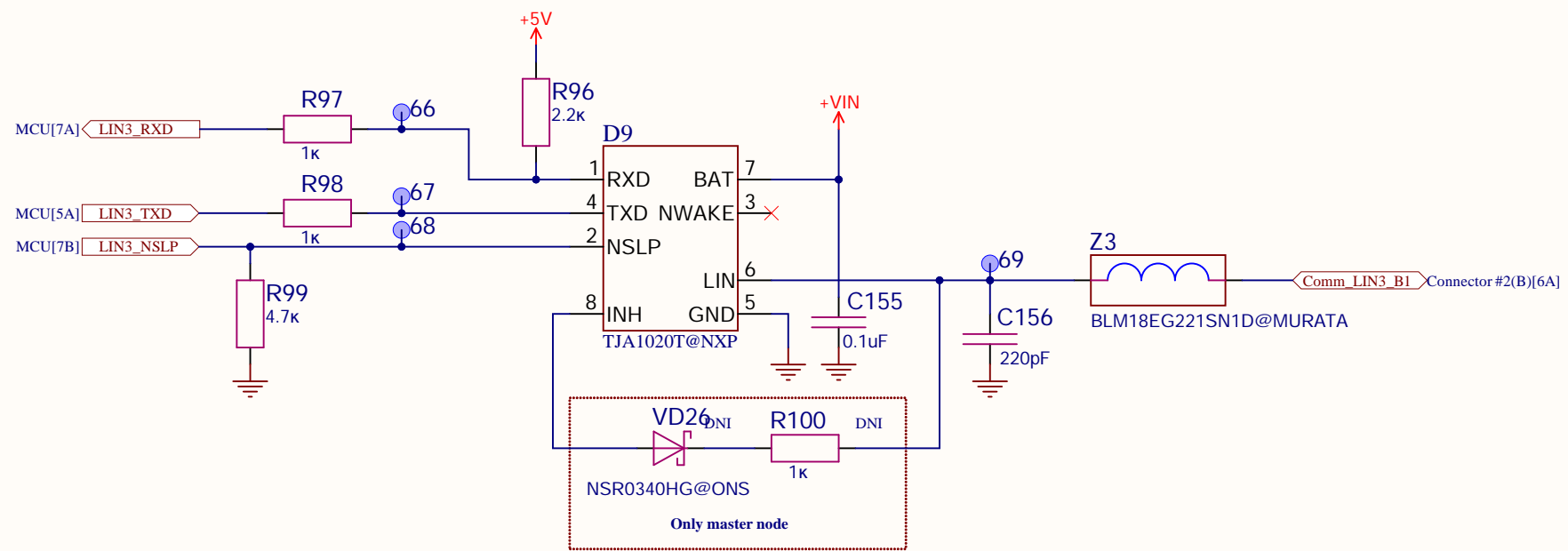
Title		
Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\..\LIN_1.SchDoc	Drawn By:

LIN Communication_2 (Front Actuators)



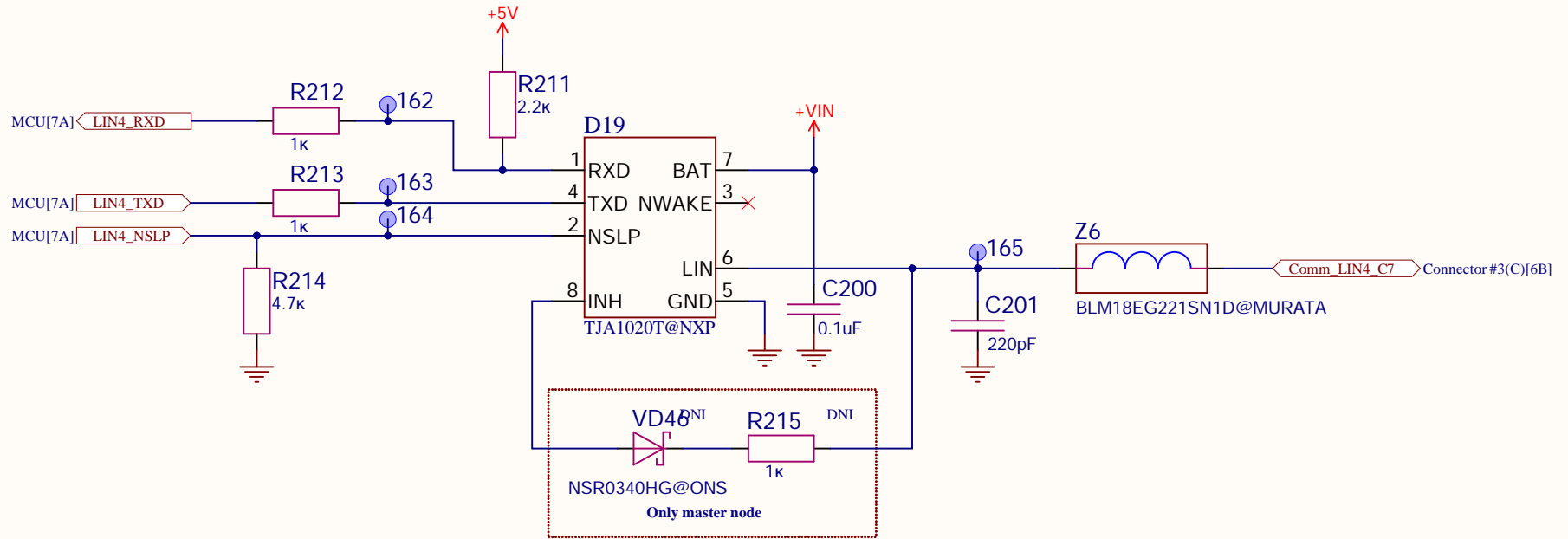
Title		
Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\..\LIN_2.SchDoc	Drawn By:

LIN Communication_3 (Rear Actuators)



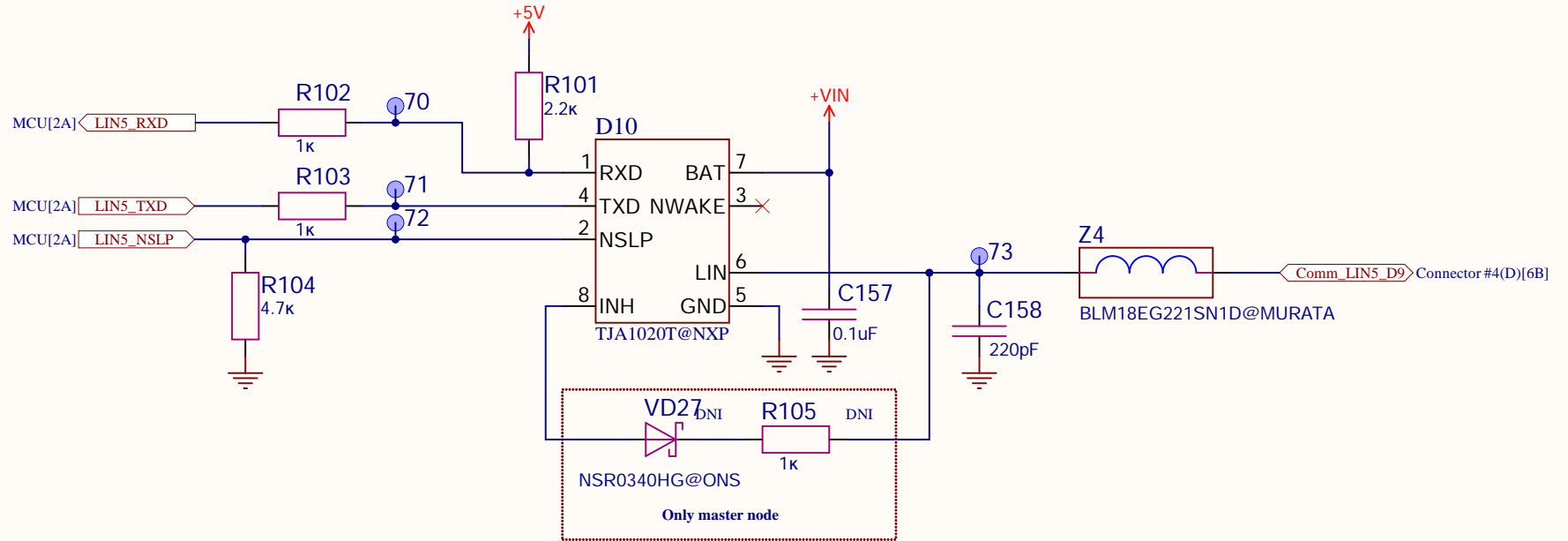
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Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\...\LIN_3.SchDoc	Drawn By:

LIN Communication_4



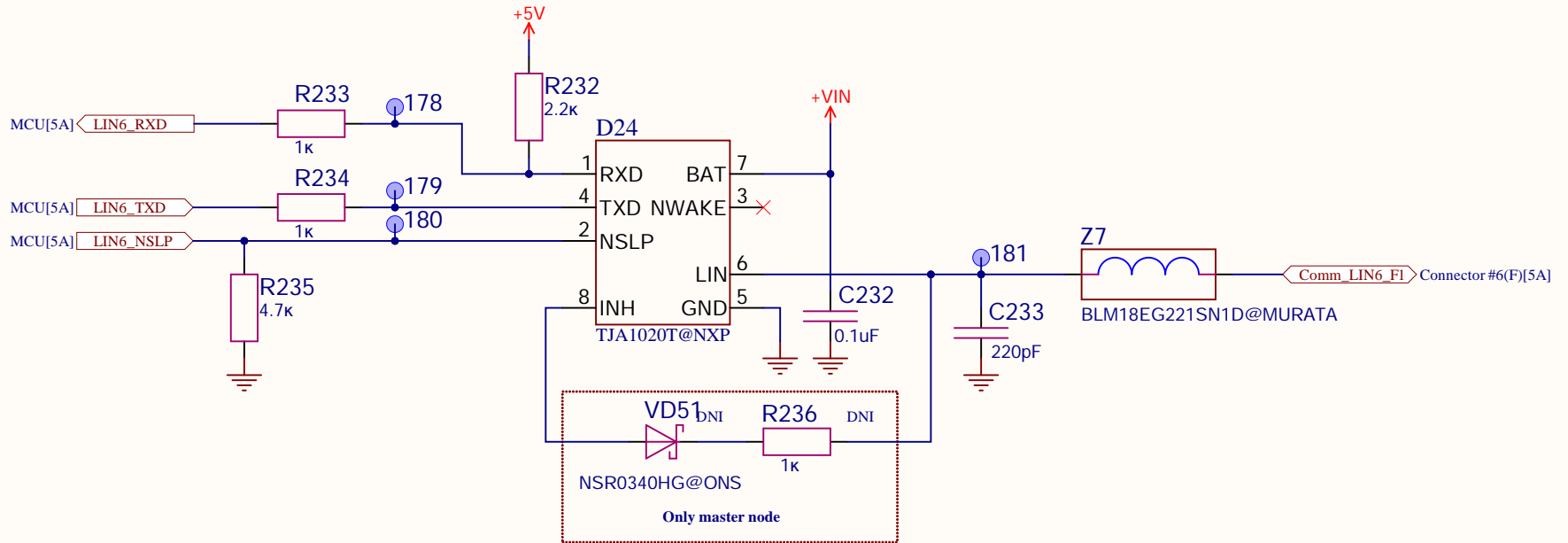
Title		
Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\..\LIN_4.SchDoc	Drawn By:

LIN Communication_5 (Deflector Rotary Switch)



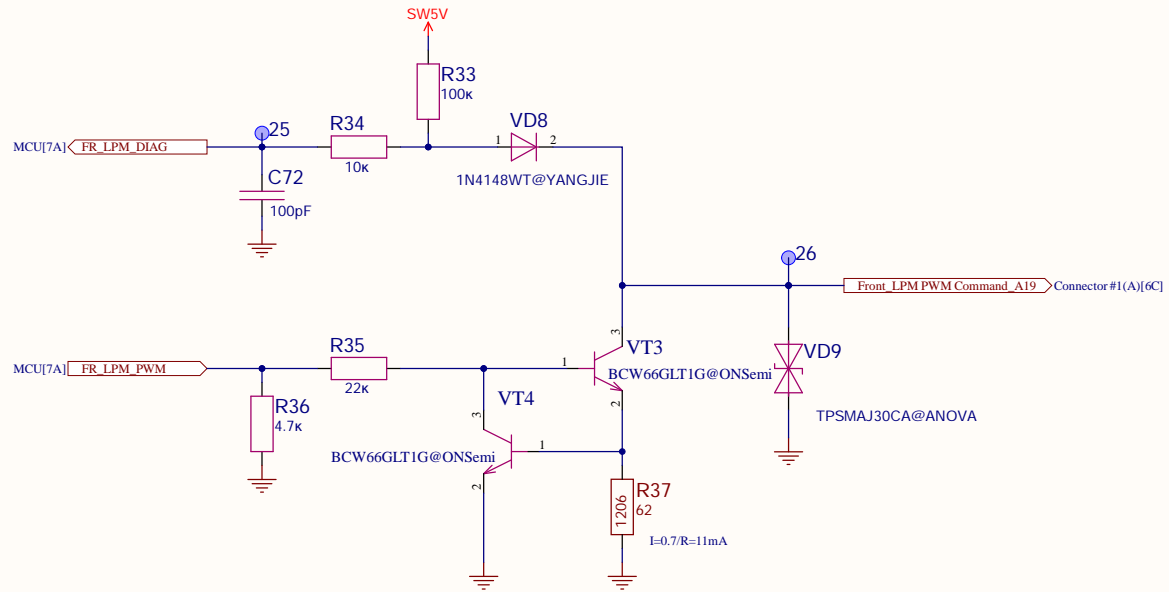
Title		
Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\...\LIN_5.SchDoc	Drawn By:

LIN Communication_6 (PT Sensors)

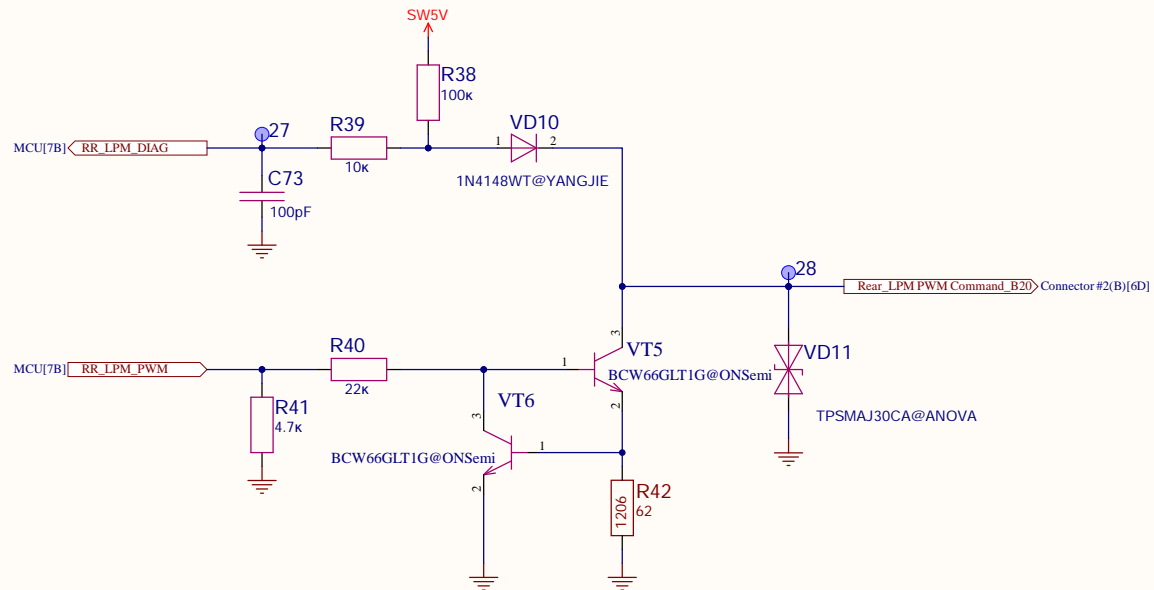


Title		
Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\..\LIN_6.SchDoc	Drawn By:

Front LPM Control

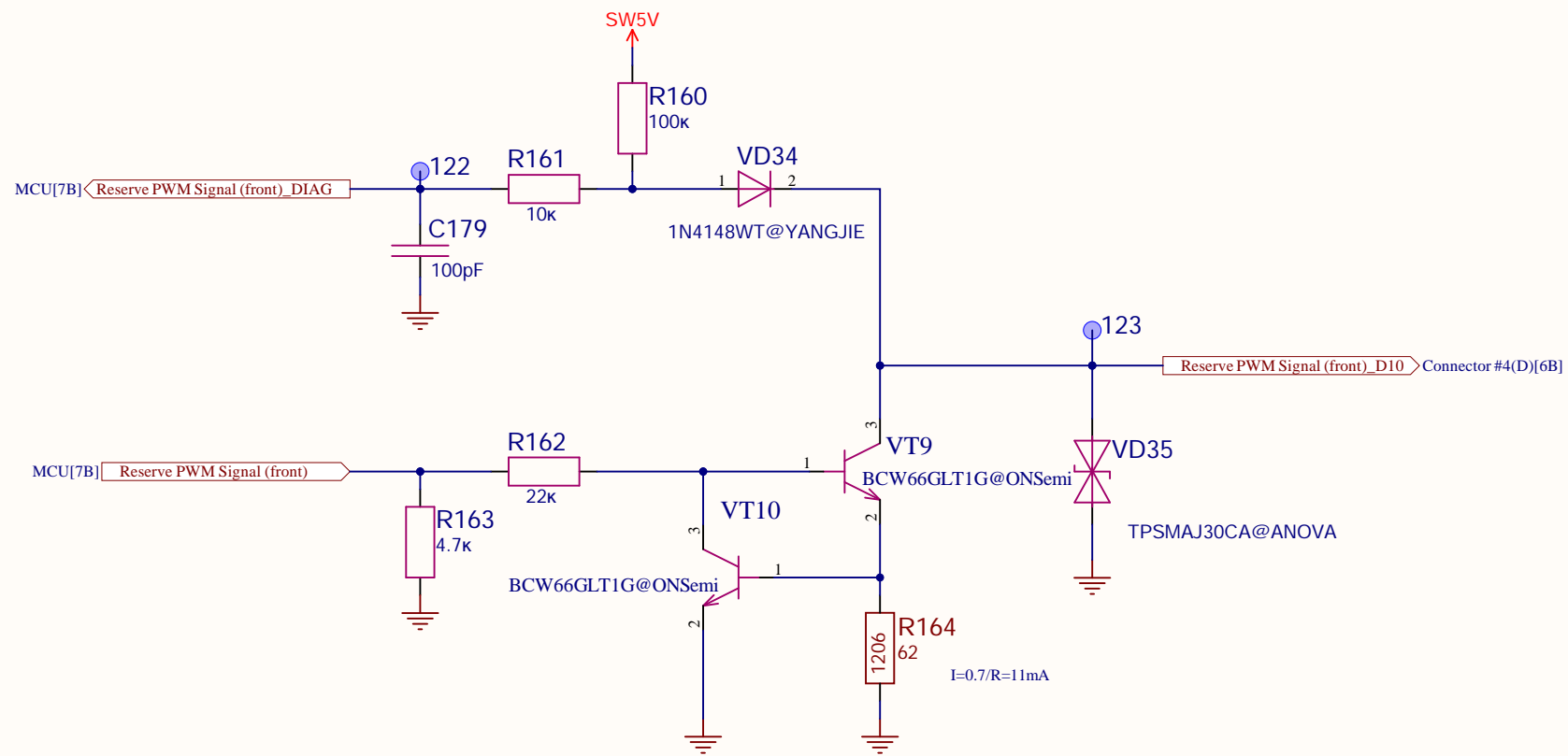


Rear LPM Control



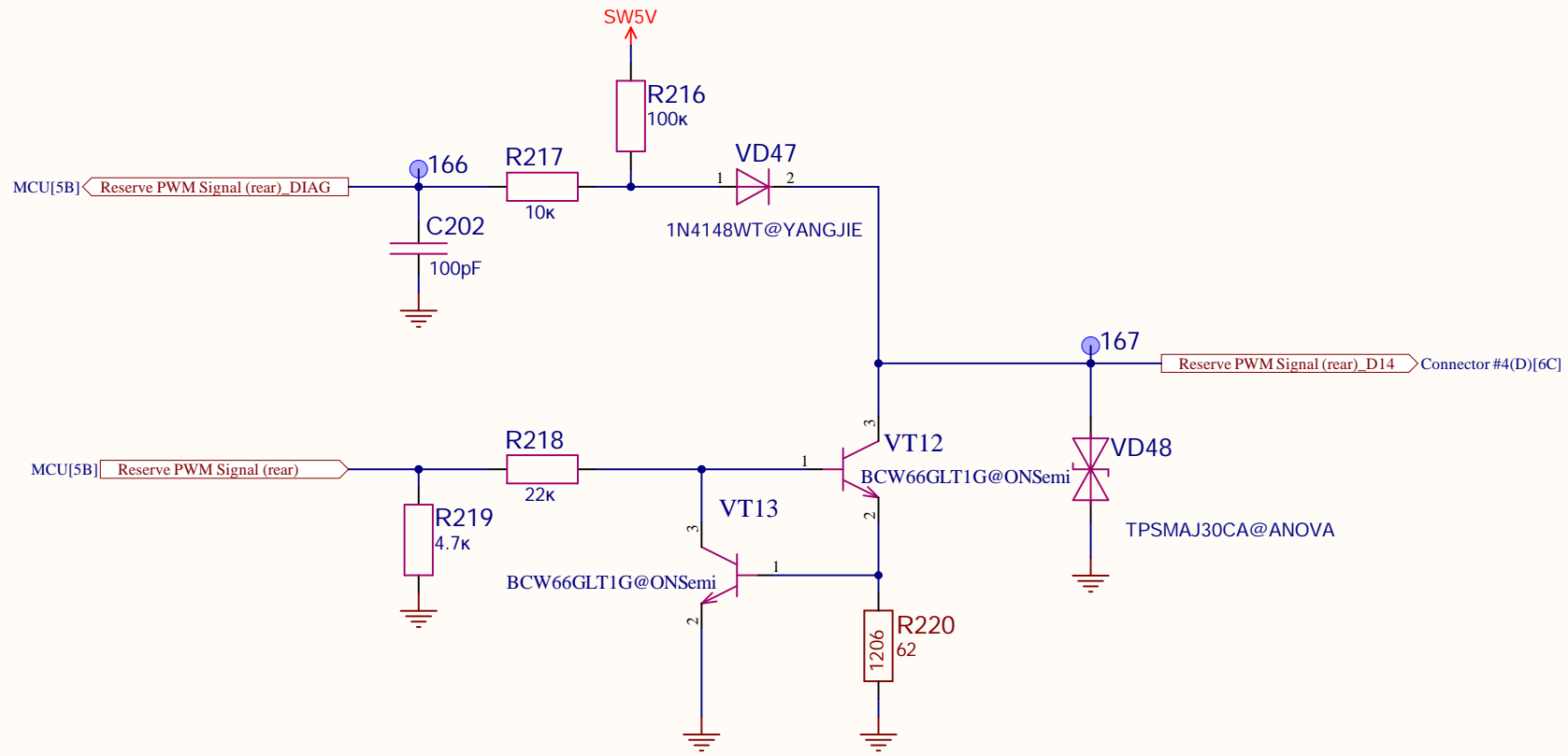
Title		
Size	Number	Revision
A3		
Date:	5.04.2026	Sheet of
File:	D:\Alitum\...\PWM LPM Control.SchDoc	Drawn By:

Reserve PWM Signal (front)



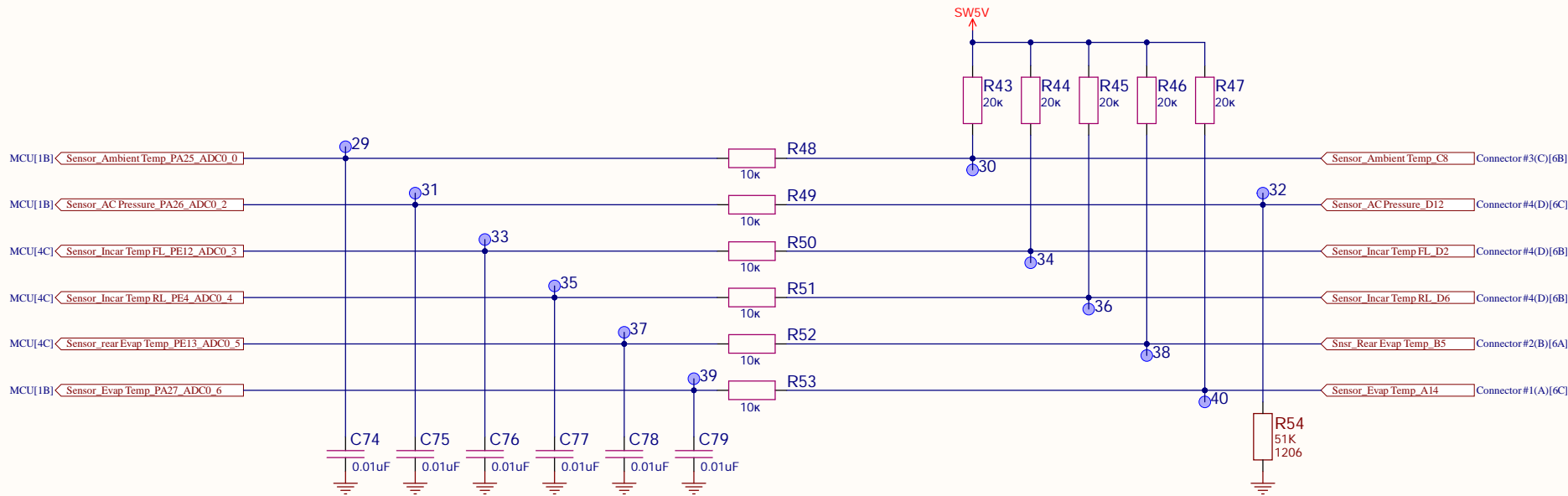
Title		
Size A4	Number	Revision
Date: 5.04.2026	Sheet of	
File: D:\Altium\...\PWM reserve_1.SchDoc	Drawn By:	

Reserve PWM Signal (rear)



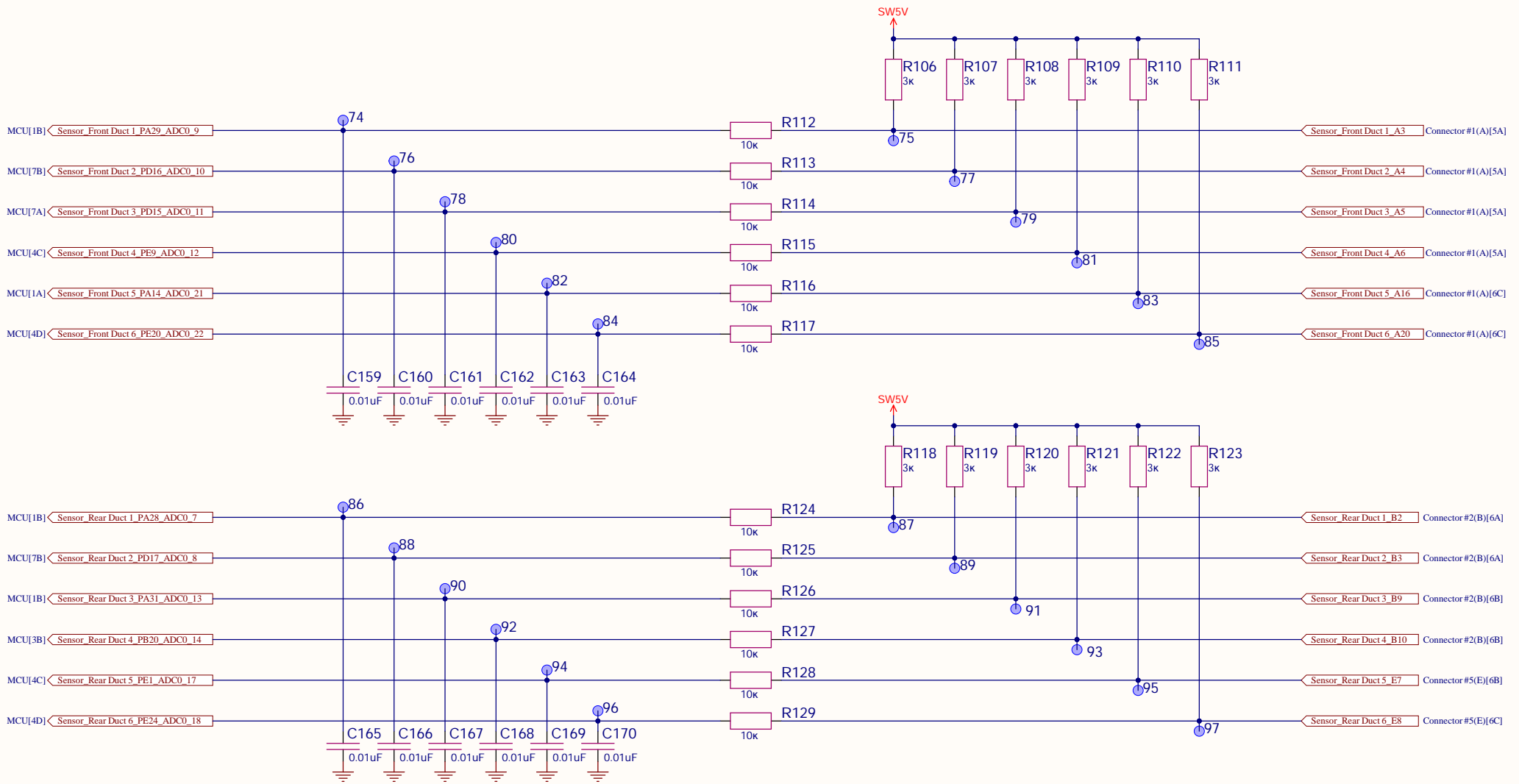
Title		
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Analog Sensor Inputs #1



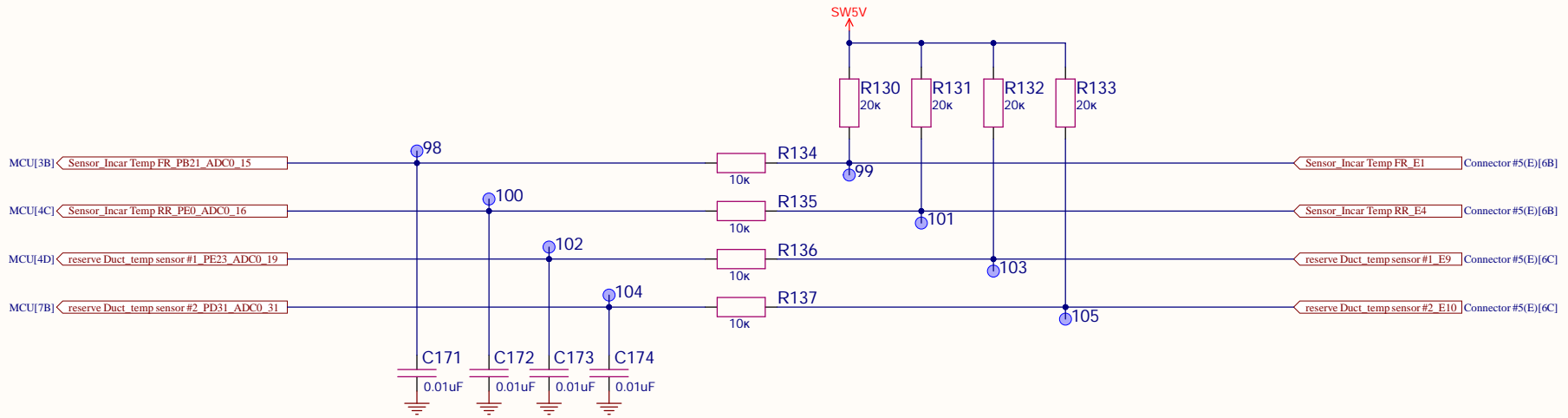
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Size	Number	Revision
A3		
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Analog Sensor Inputs #2



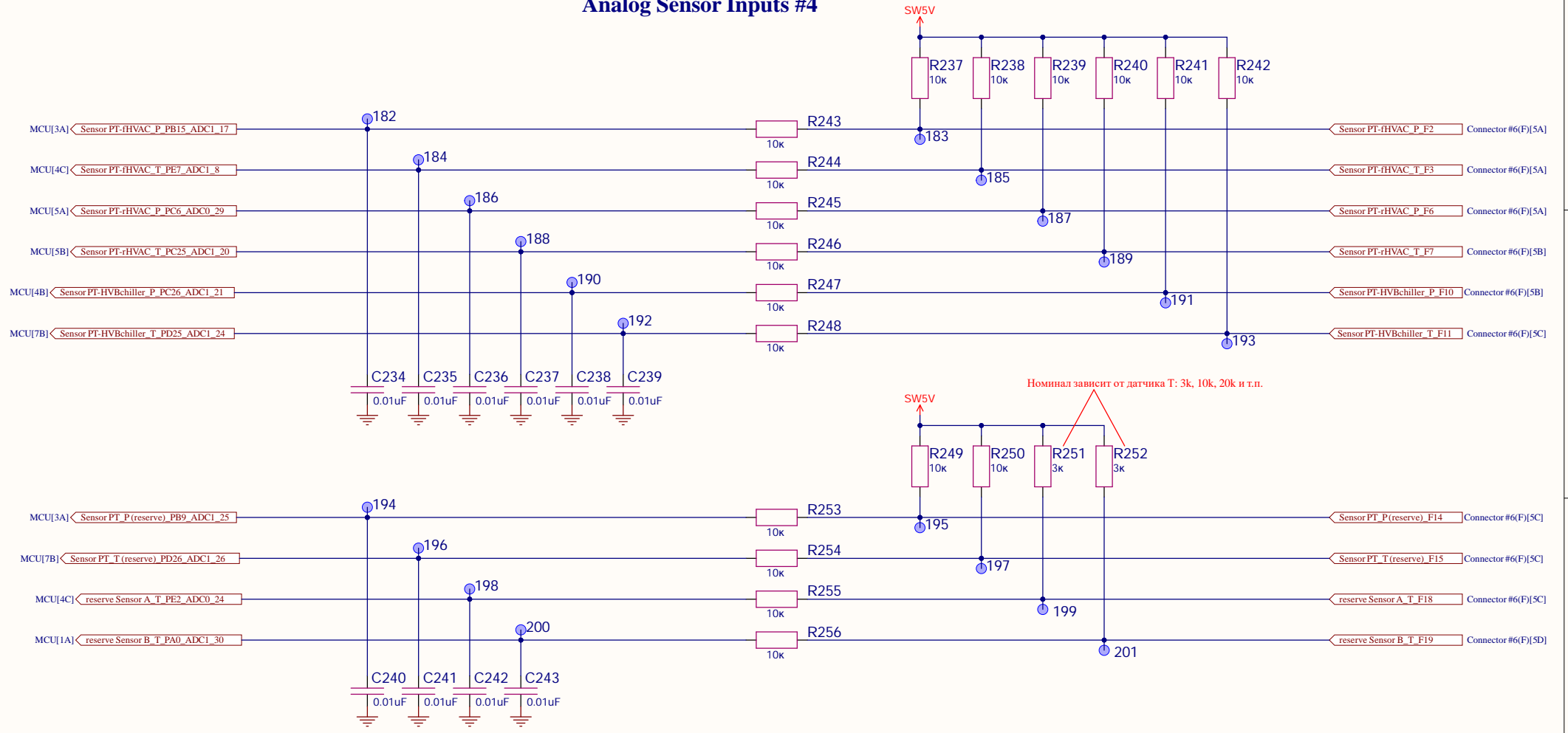
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Size A3	Number	Revision
Date: 5.04.2026	Sheet of	
File: D:\Altium\...\Analog Sensor Inputs #2.Sch	Drawn By:	

Analog Sensor Inputs #3



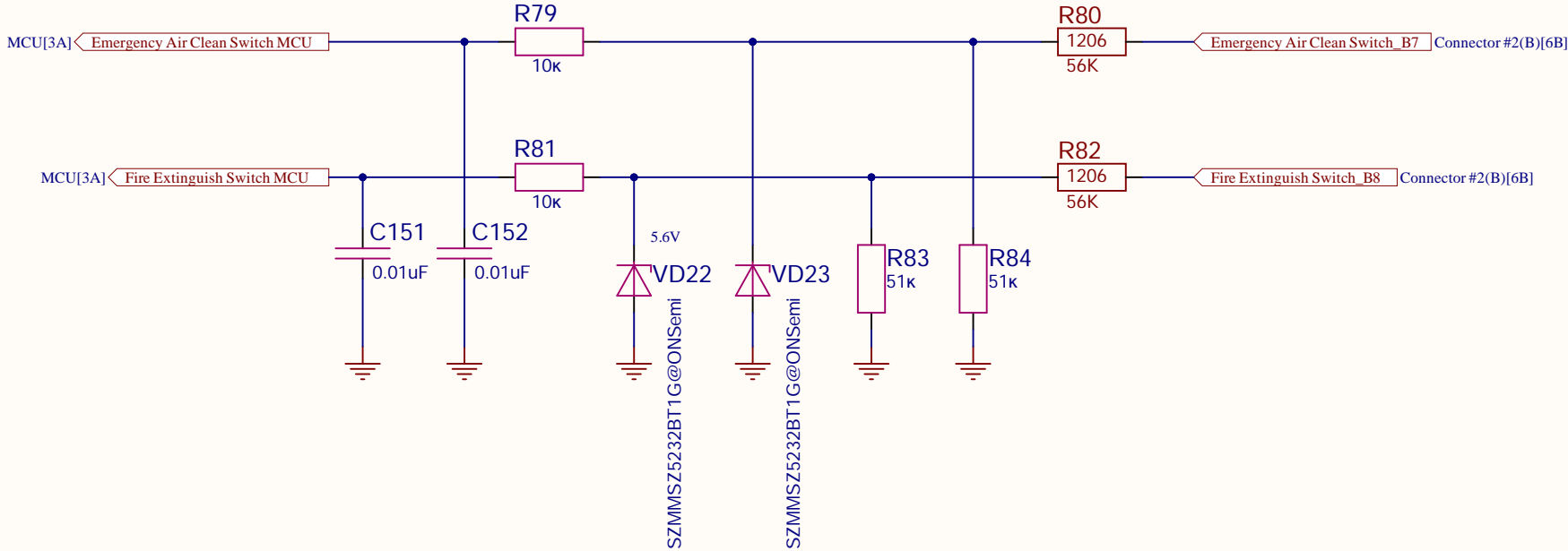
Title		
Size	Number	Revision
A3		
Date:	5.04.2026	Sheet of
File:	D:\Altium\...\Analog Sensor Inputs #3.Sch	Drawn By:

Analog Sensor Inputs #4



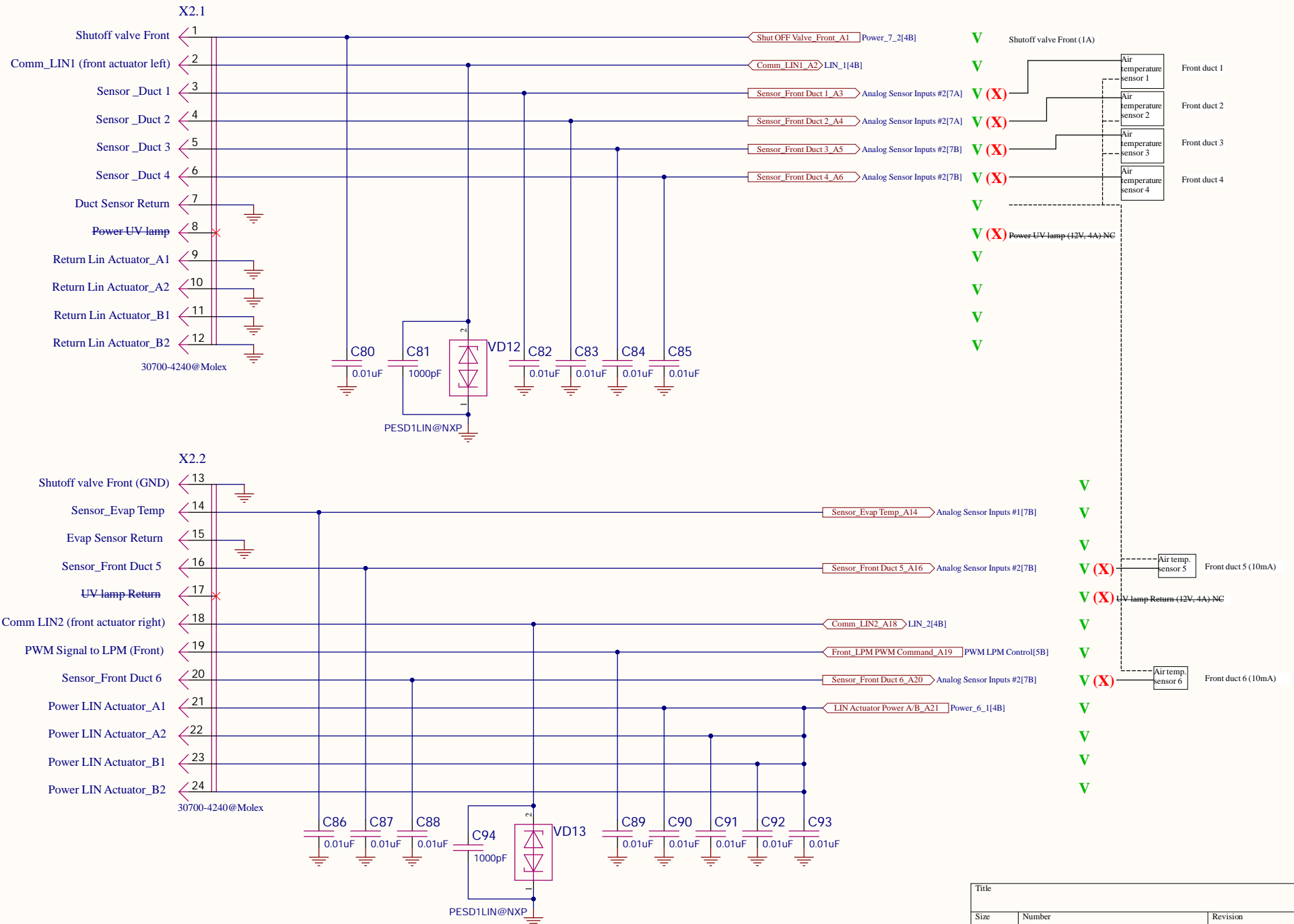
Title		
Size A3	Number	Revision
Date: 5.04.2026	Sheet of	
File: D:\Altium\...\Analog Sensor Inputs #4.Sch	Drawn By:	

External Switch Input



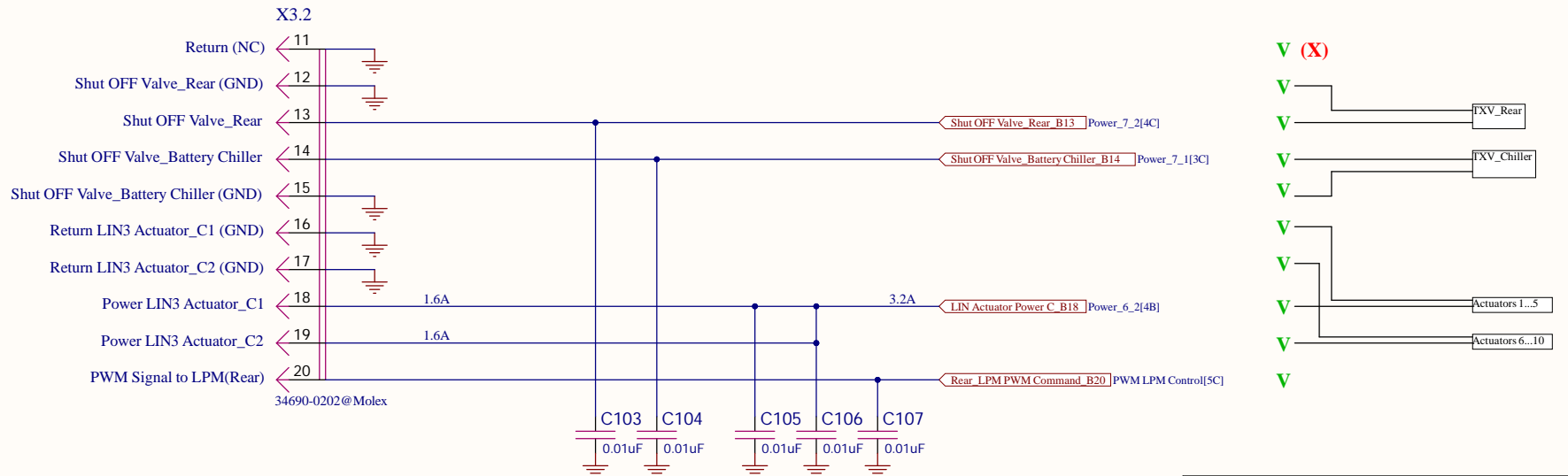
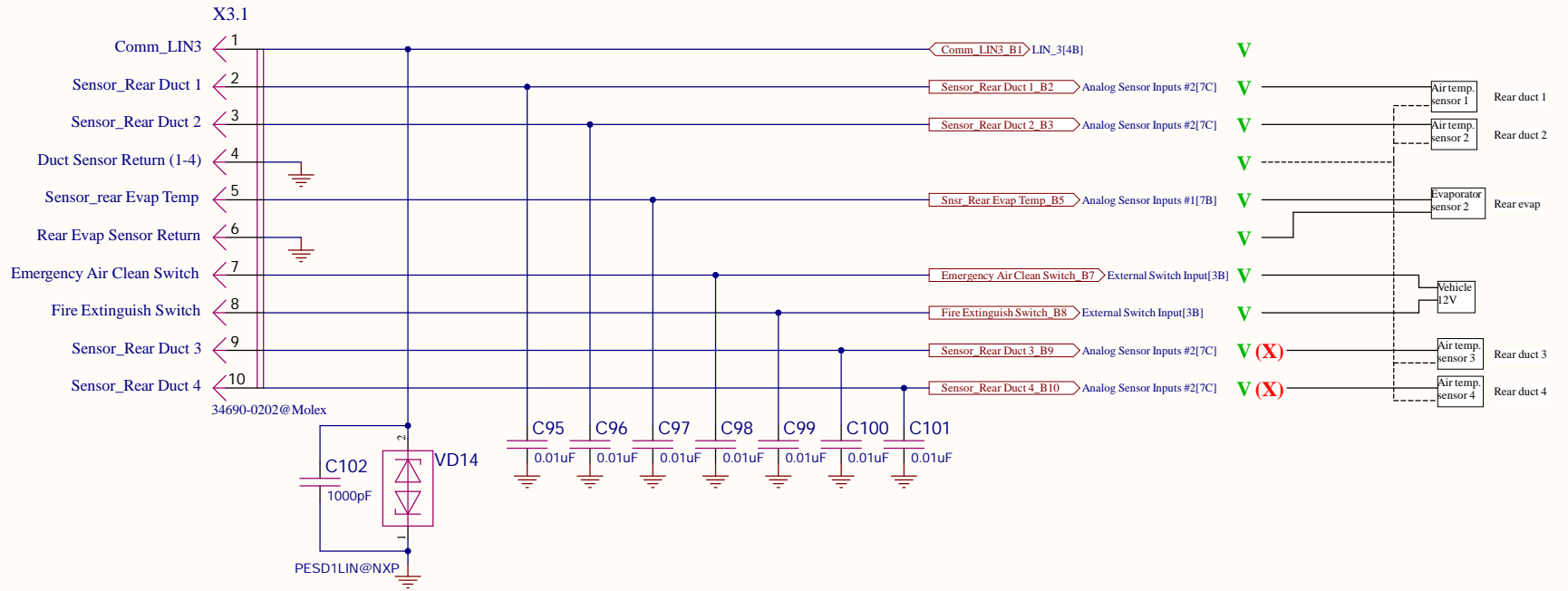
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A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\..\External Switch Input.SchDpDrawn By:	

CONNECTOR #1 (A)



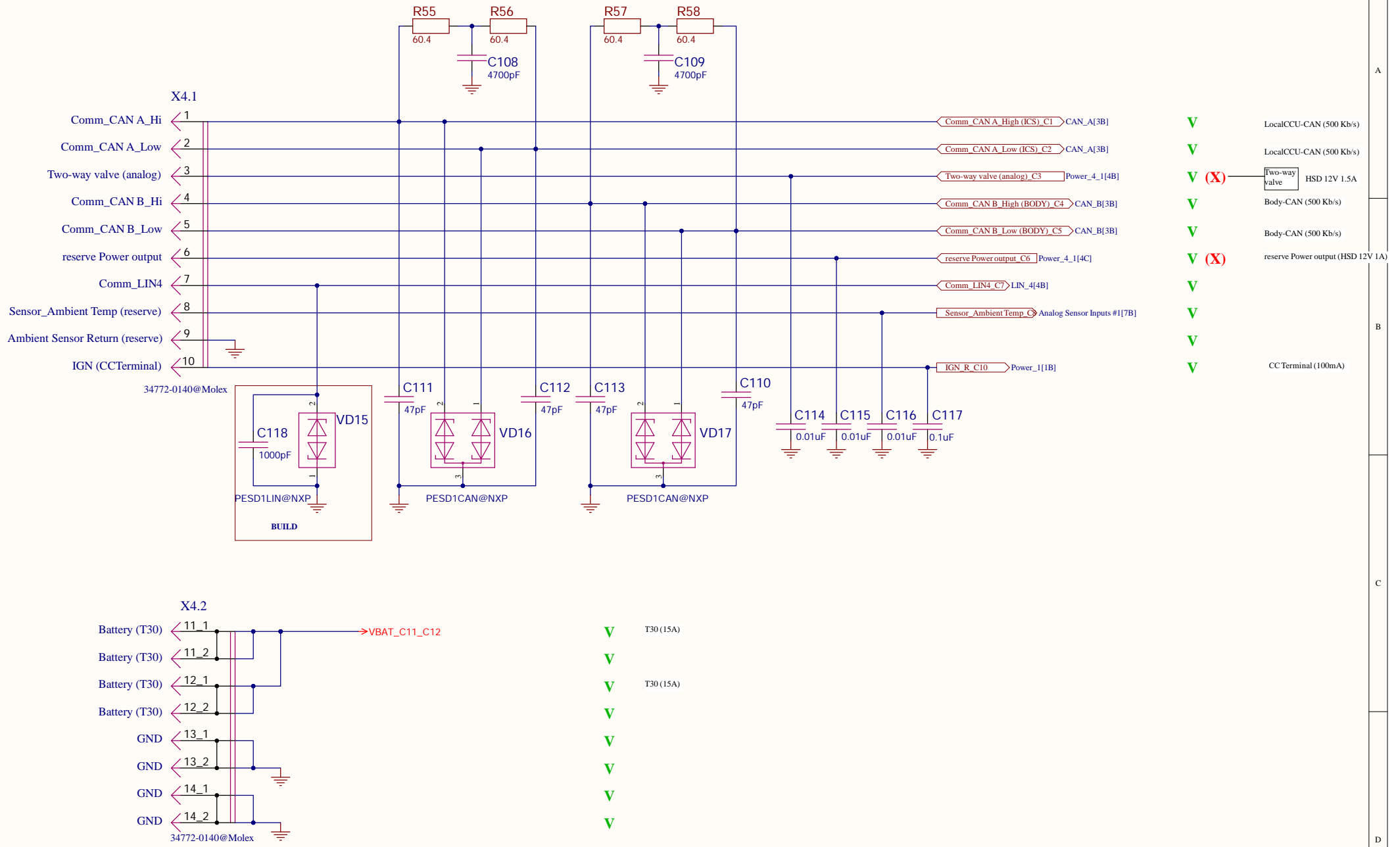
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Size	Number	Revision
A3		
Date:	5.04.2026	Sheet of
File:	D:\Alitum\...\Connector #1(A).SchDoc	Drawn By:

CONNECTOR #2 (B)



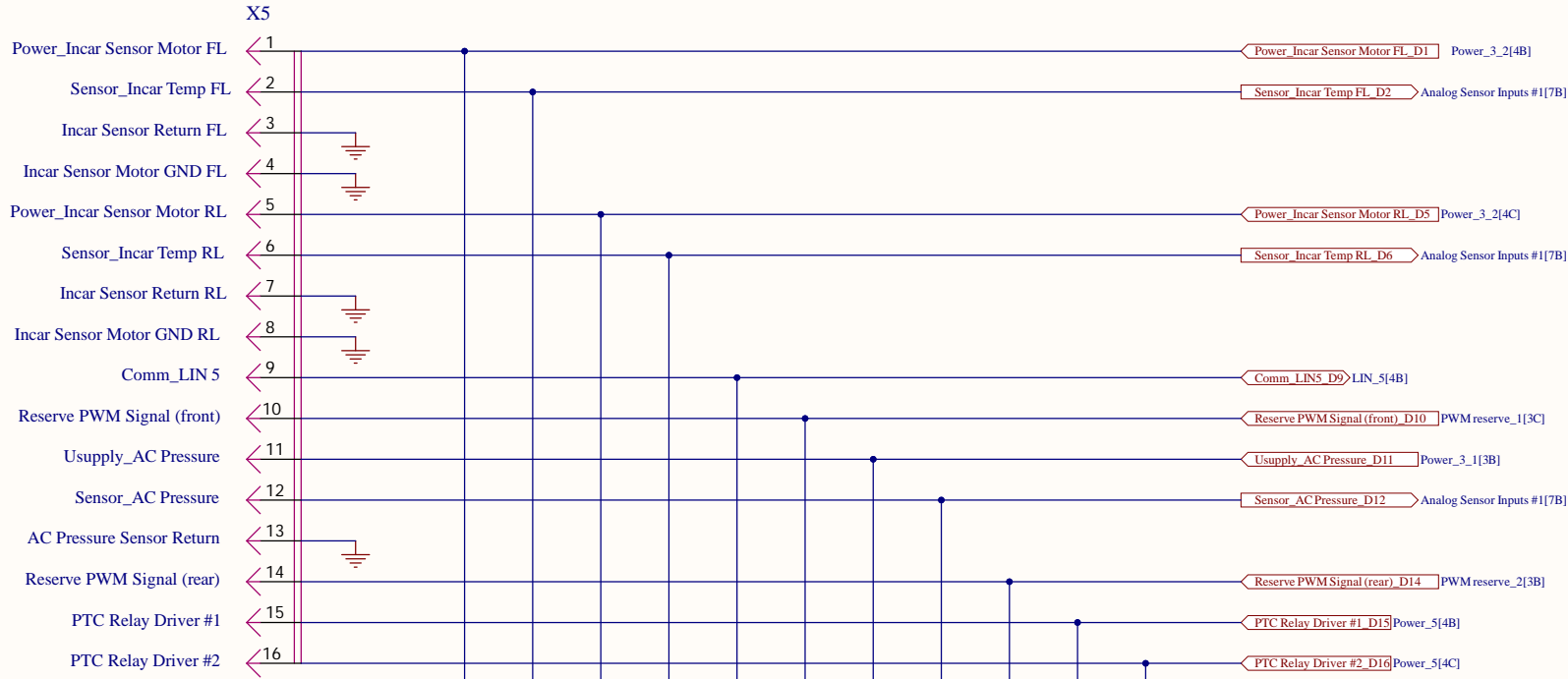
Title		
Size	Number	Revision
A3		
Date:	5.04.2026	Sheet of
File:	D:\Altiun\...\Connector #2(B).SchDoc	Drawn By:

CONNECTOR #3 (C)



Title		
Size	Number	Revision
A3		
Date:	5.04.2026	Sheet of
File:	D:\Altium\...\Connector #3(C).SchDoc	Drawn By:

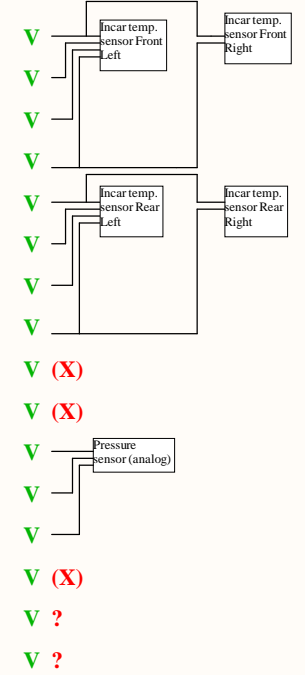
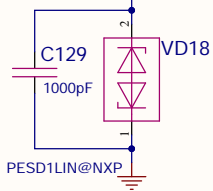
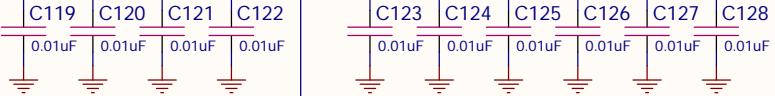
CONNECTOR #4 (D)



X5

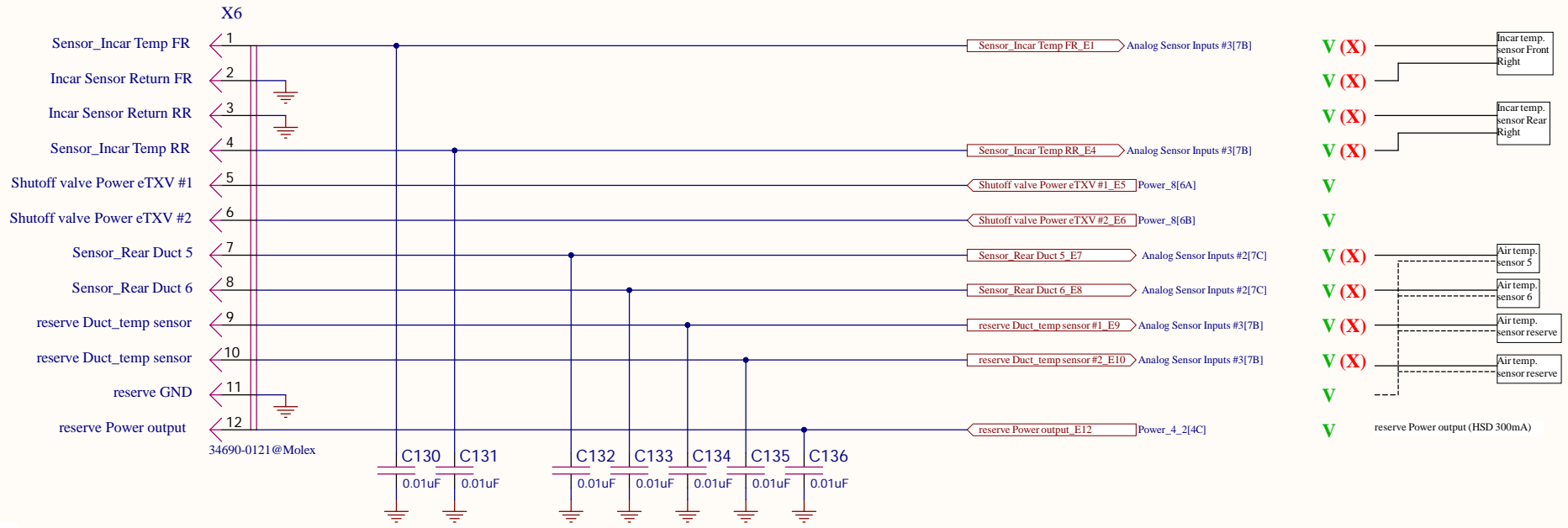
34690-0160@Molex

FL - Front Left
RL - Rear Left



Title		
Size	Number	Revision
A3		
Date:	5.04.2026	Sheet of
File:	D:\Altium\...\Connector #4(D).SchDoc	Drawn By:

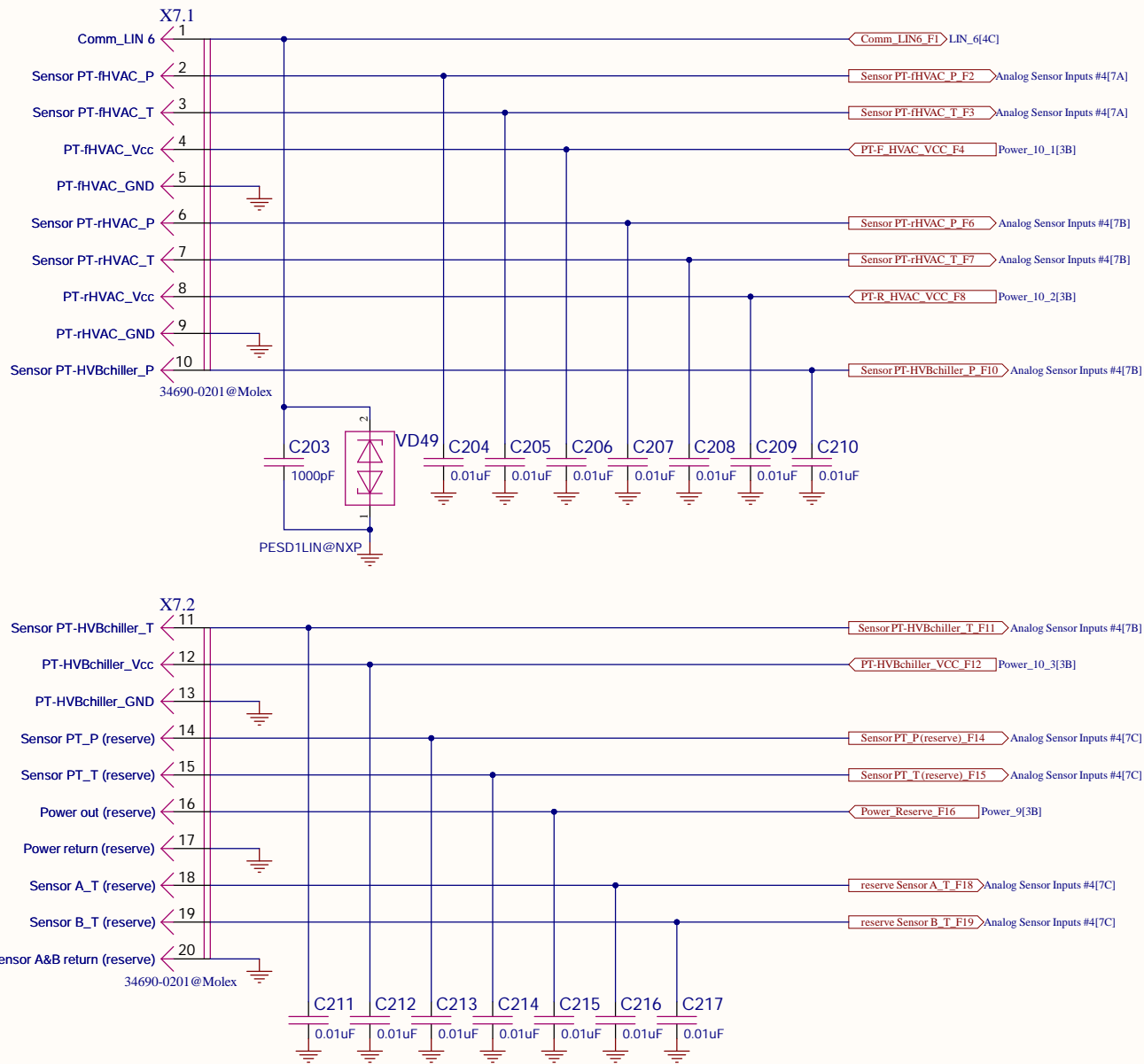
CONNECTOR #5 (E)



FL - Front Left
 FR - Front Right
 RL - Rear Left
 RR - Rear Right

Title		
Size A3	Number	Revision
Date: 5.04.2026	Sheet of	8
File: D:\Altium\...\Connector #5(E).SchDoc	Drawn By:	

CONNECTOR #6 (F)



Все пины питания PT 5V не менее 100 мА.

Силовой выход типа "верхний ключ" не менее 1А.

Пины 18, 19 типа вход датчиков температуры не менее 10 мА, общий 20 мА.

Title		
Size	Number	Revision
A3		
Date:	5.04.2026	Sheet of
File:	D:\Altiun\...\Connector #6(F).SchDoc	Drawn By:

СПИСОК ИЗМЕНЕНИЙ ПЛАТЫ v2

- ADD: резистор подтяжки 10к к +5В на цепь WD_EN, D1;
- ADD: резистор подтяжки 10к к +5В на цепь FSEL, D1;
- ADD: пометка "DNI" (не устанавливать) для резистора R4 подтяжки к земле, цепь WTS, D1;
- ADD: пометка "DNI" (не устанавливать) для резистора R12 подтяжки к земле, цепь FSEL, D1;
- FIX комментарии к выводам МК:
 - pin 122 - FTU6_CH4/FTU1_CH3/TPU_CH4
 - pin 123 - FTU1_CH2/TPU_CH4
 - pin 121 - FTU6_CH3/TPU_CH17
 - pin 125 - FTU6_CH5/TPU_CH27/FTU1_CH0
- FIX ошибочное подключение к МК LIN3:
 - pin 66: FCUART3_TX → LIN3_TXD
 - pin 68: FCUART3_RX ← LIN3_RXD
- FIX комментарии к LIN5:
 - pin 126: LIN5_TXD - FCUART0_TX,
 - pin 127: LIN5_RXD - FCUART0_RX;
- ADD: пин определения наличия блока внешней памяти в коннекторе подключения (pin 8 на «землю»). Сигнал «EXT_MEM_CHECK»;
- ADD: pin168 МК, цепь «EXT_MEM_CHECK» с подтяжкой к +5В через резистор.
- ADD: внешний коннектор #6(F) 34690-0201@Molex, 20 пинов;
- ADD: LIN_6 для внешних датчиков;
- ADD: силовой выход на 1А. (лист Power_9). Цепь Power_Reserve_F16;
- ADD: три источника питания для внешних датчиков (листы Power_10_1...Power_10_3);
- ADD: входы аналоговых датчиков PT1...PT4 (лист Analog Sensor Inputs #4);
- ADD: резервные входы A_Т и B_Т (лист Analog Sensor Inputs #4);
- FIX: наименование pin 141 MCU, д.б. reserve Duct_temp sensor#2_PD31_ADC0_31 (было PD31_ADC0_3).
- CHANGE: KLS1-207-2-10-S@KLSEL (просто штыревой) заменен на BH-10 (с корпусом)

Title		
Size	Number	Revision
A4		
Date:	5.04.2026	Sheet of
File:	D:\Altium\...\ChangeLog.SchDoc	Drawn By: