

PHASE\_A

MOTOR CONTROL  
PHASE A  
AND CANBUS

File: phase\_a.kicad\_sch

PHASE\_B

MOTOR CONTROL  
PHASE B

File: phase\_b.kicad\_sch

PHASE\_C

MOTOR CONTROL  
PHASE C

File: phase\_c.kicad\_sch

POWER\_USB

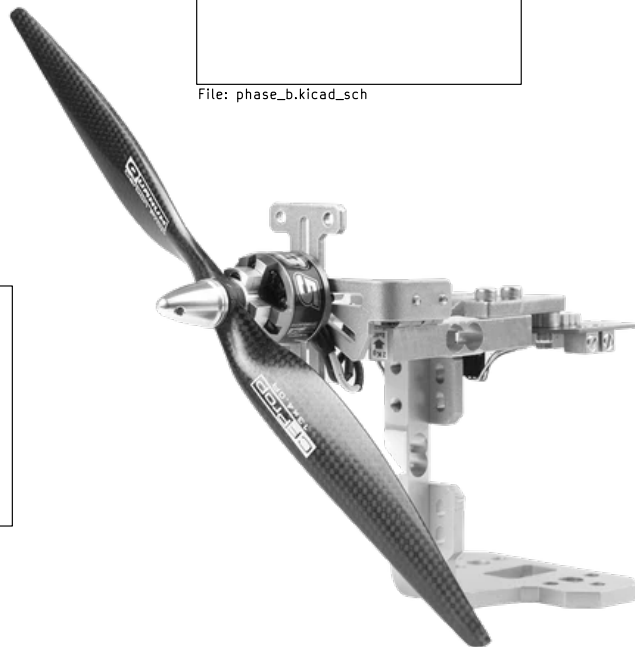
POWER  
AND  
USB DATA

File: pwr\_usb\_can.kicad\_sch

MCU

STM32G474  
MICROCONTROLLER

File: mcu.kicad\_sch



DESIGNED FOR 4S, 6S BATTERIES  
60A PEAK CURRENT

DRAWN BY: N.PHILIPENKO  
GITHUB: /nikphillydev

REVIEWED BY:

Sheet: /  
File: ESC\_KiCAD.kicad\_sch

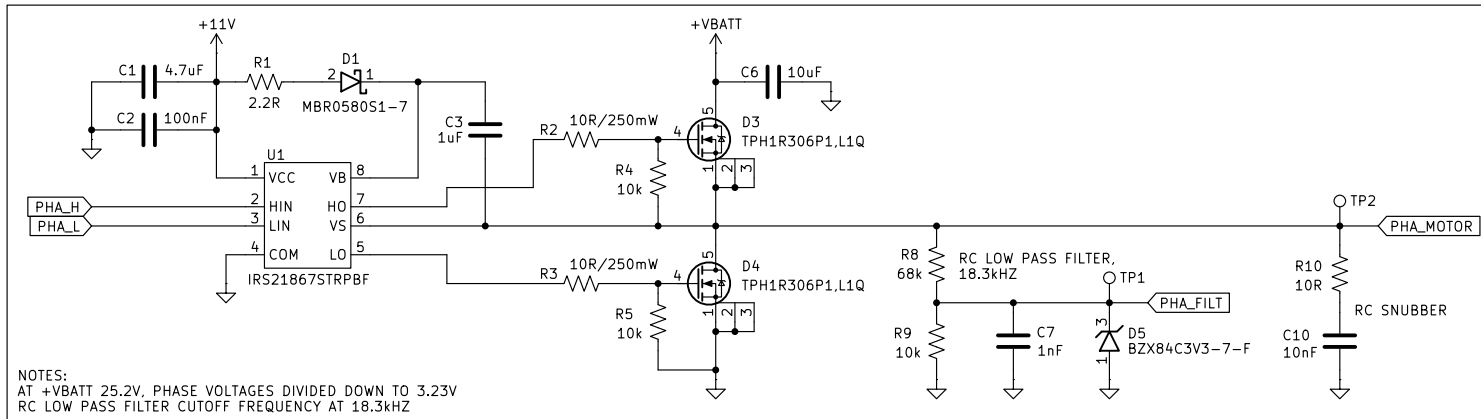
**Title: NP1 ELECTRONIC SPEED CONTROLLER**

Size: A4 Date: 2025-12-20

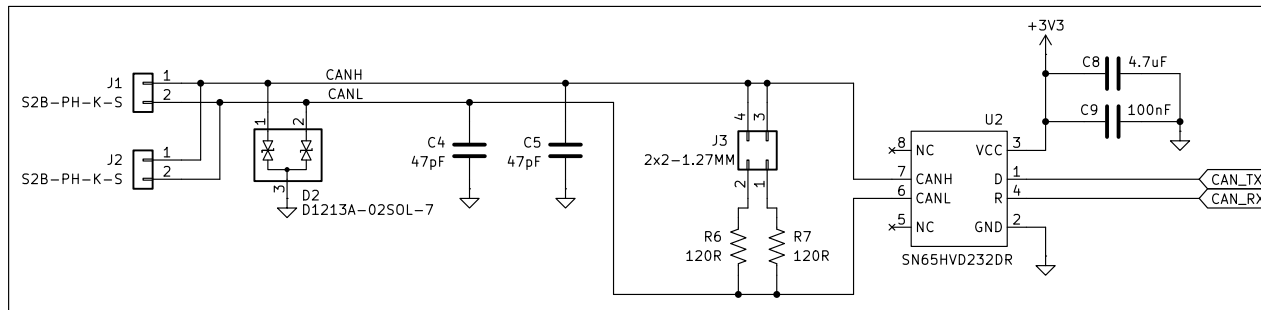
KiCad E.D.A. 8.0.9

Rev: A  
Id: 1/6

## PHASE A HALF-BRIDGE



## ESC CANBUS



DRAWN BY: N.PHILIPENKO  
GITHUB: /nikphillydev

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Sheet: /PHASE\_A/  
File: phase\_a.kicad\_sch

**Title: PHASE A HALF-BRIDGE AND CANBUS**

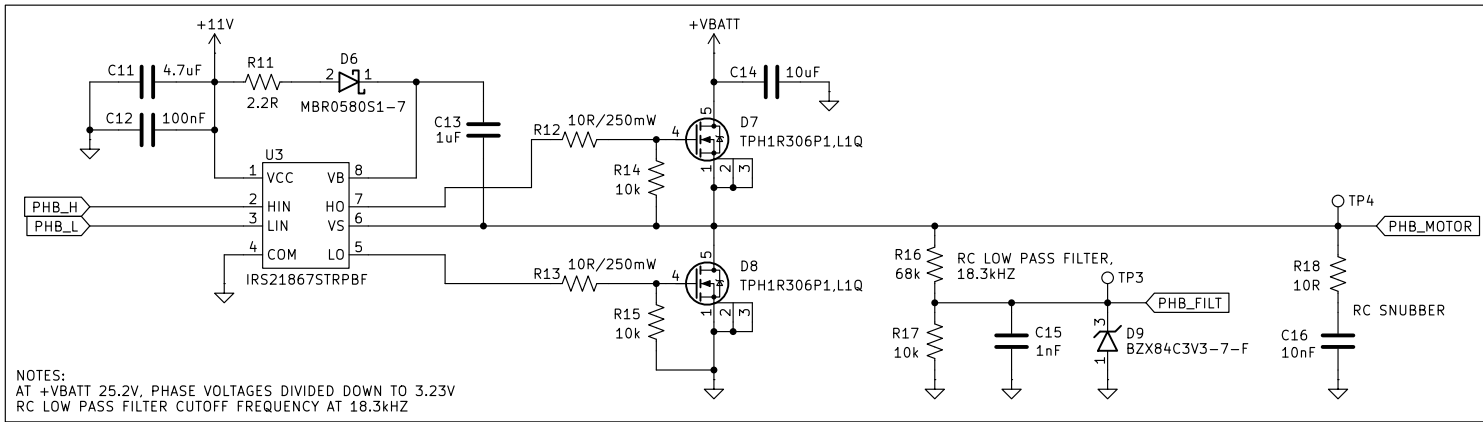
Size: A4 Date: 2025-12-20

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Rev: A

Id: 2/6

# PHASE B HALF-BRIDGE



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 GITHUB: /nikphillydev

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Sheet: /PHASE\_B/  
 File: phase\_b.kicad\_sch

**Title: PHASE B HALF-BRIDGE**

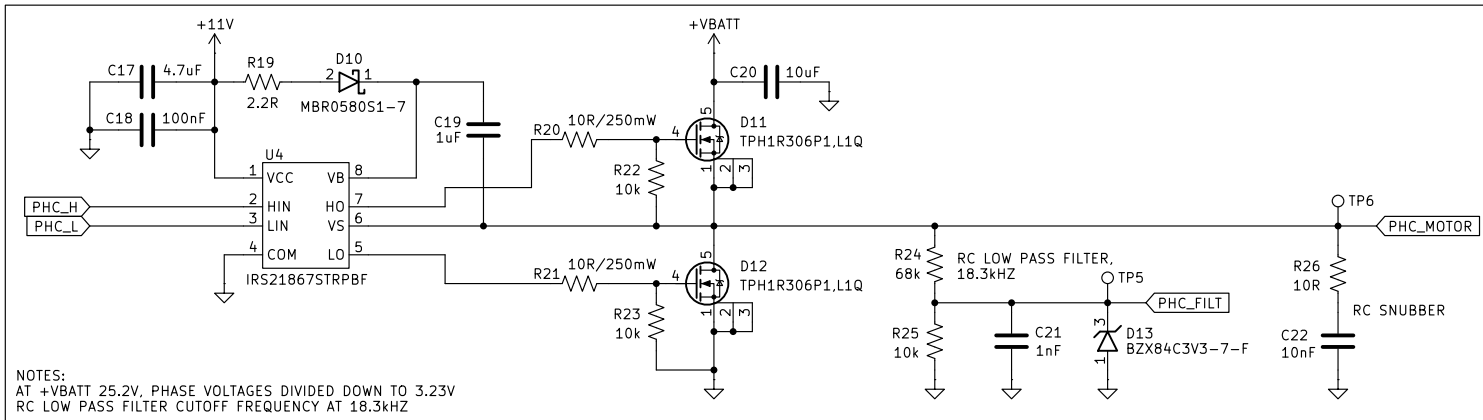
Size: A4 Date: 2025-12-20

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Rev: A

Id: 3/6

# PHASE C HALF-BRIDGE



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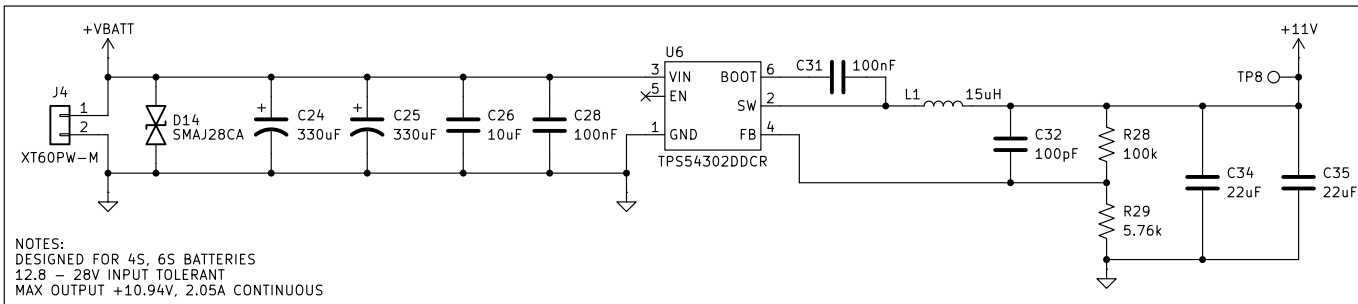
Sheet: /PHASE\_C/  
 File: phase\_c.kicad\_sch

**Title: PHASE C HALF-BRIDGE**

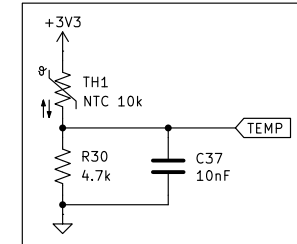
Size: A4 Date: 2025-12-20  
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Rev: A  
 Id: 4/6

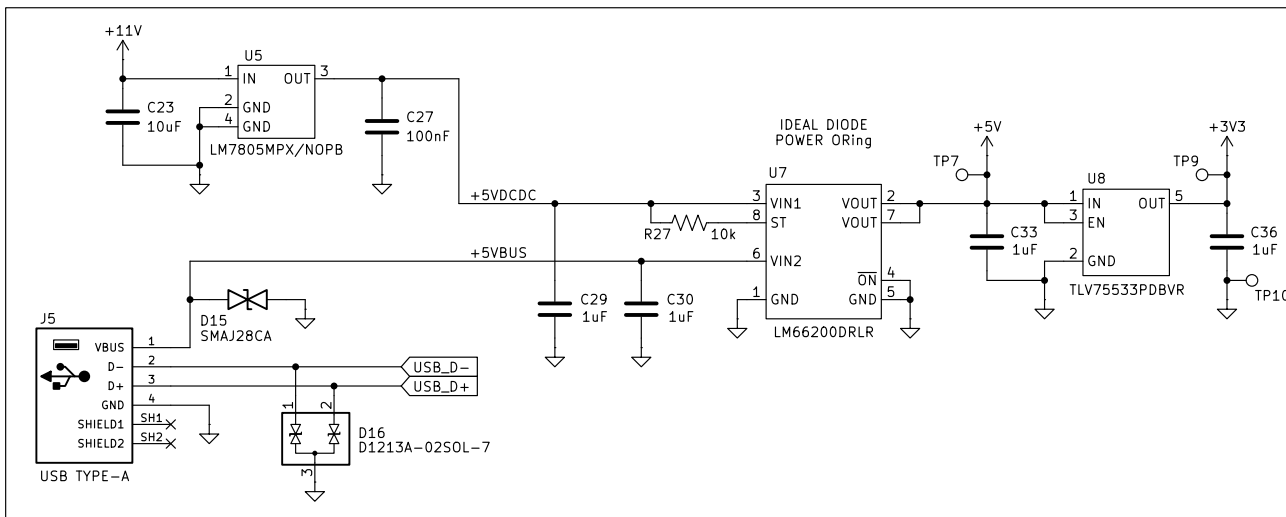
## BEC STEP-DOWN CONVERTER



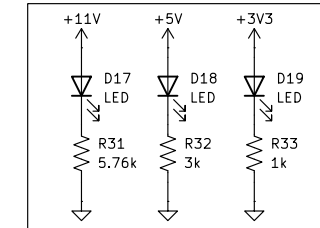
## TEMPERATURE MONITORING



## LOGIC POWER AND USB DATA



## POWER STATUS LEDS



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GITHUB: /nikphillydev

REVIEWED BY:

Sheet: /POWER\_USB/  
File: pwr\_usb\_can.kicad\_sch

**Title: POWER AND USB DATA**

Size: A4 Date: 2025-12-20

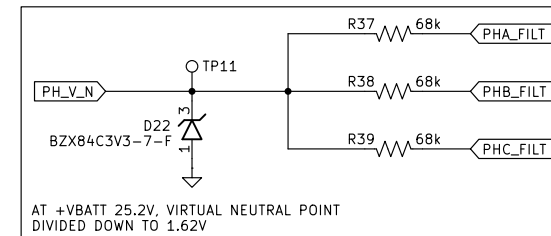
KiCad E.D.A. 8.0.9

Rev: A

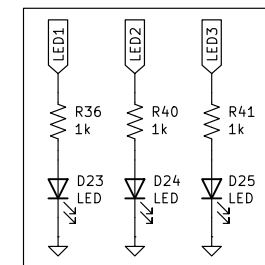
Id: 5/6

# STM32G474 MCU – NP1 ESC

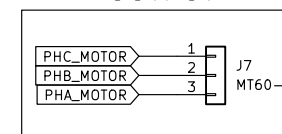
## VIRTUAL NEUTRAL POINT (BEMF ZERO-CROSSING DETECTION)



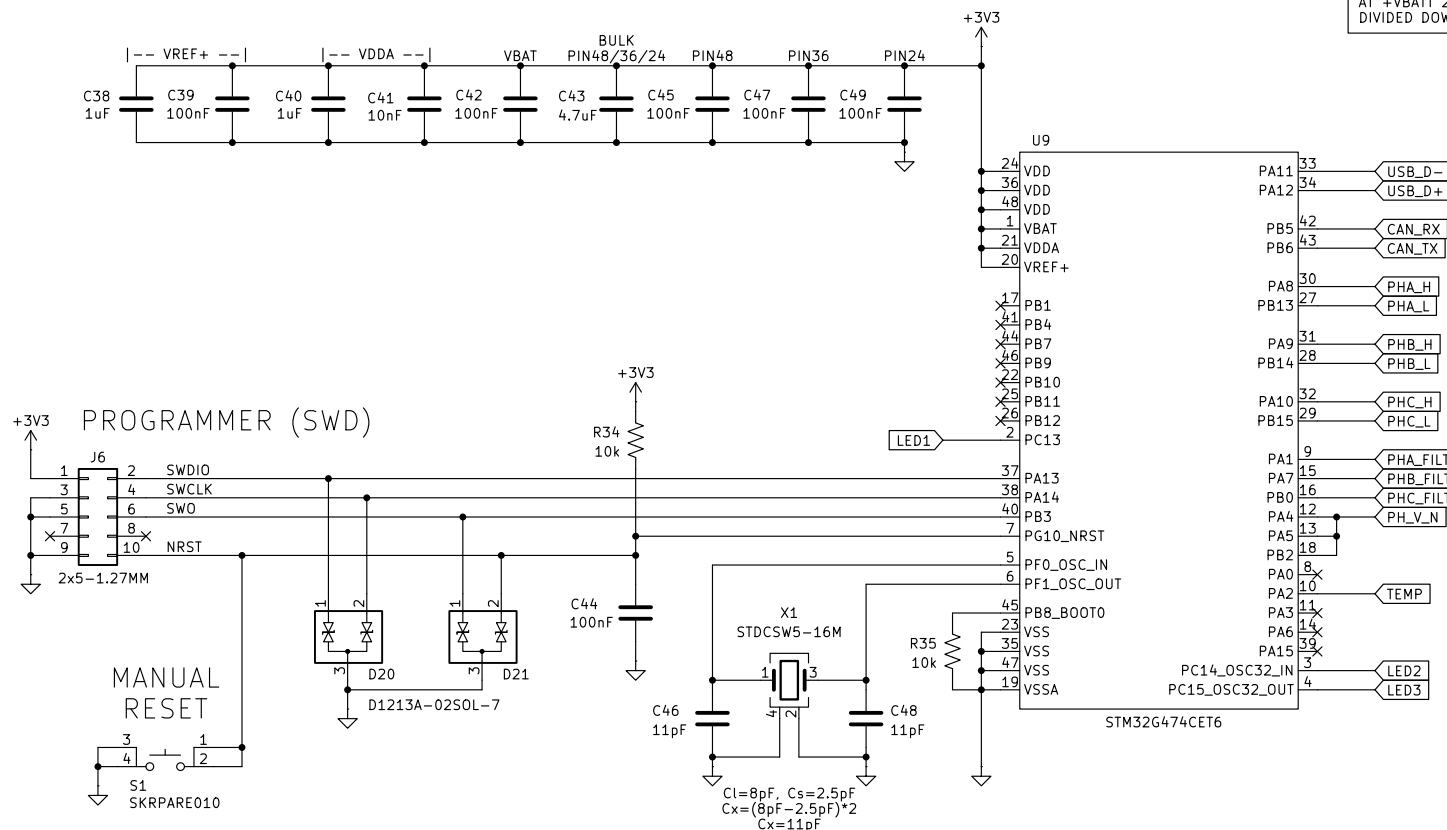
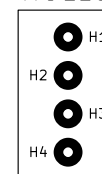
## DEBUG LEDS



## BLDC MOTOR OUTPUT



## MOUNTING HOLES



DRAWN BY: N.PHILIPENKO  
GITHUB: /nikphillydev

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Sheet: /MCU/  
File: mcu.kicad\_sch

**Title: MICROCONTROLLER**

Size: A4 Date: 2025-12-20

KiCad E.D.A. 8.0.9

Rev: A

Id: 6/6