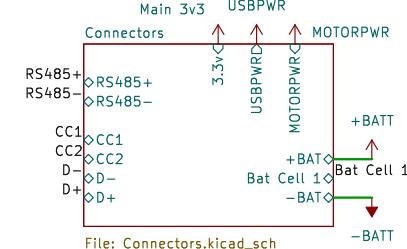
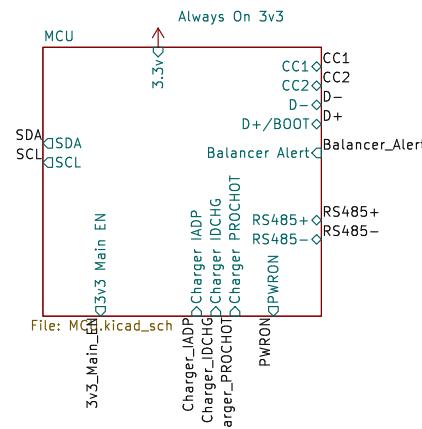
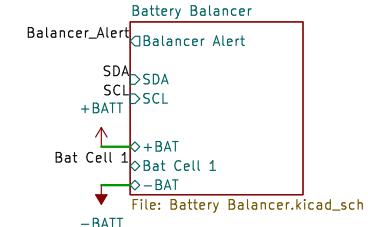
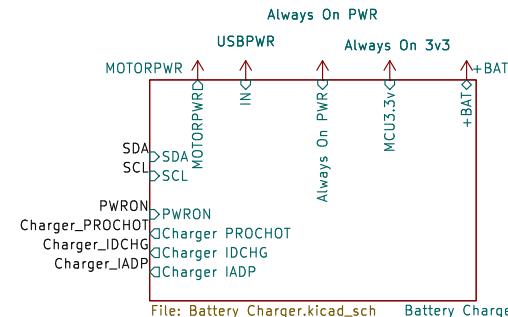
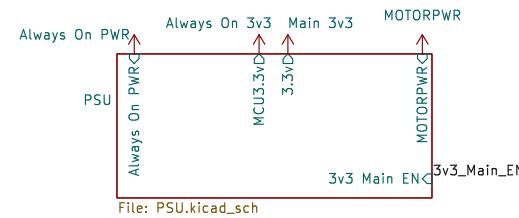


A

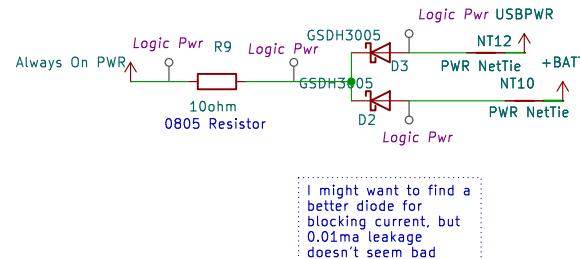
All capacitors (in my current setup) are Ceramic and X5r or X7r according to datasheet recommendations. All low power capacitors should be rated for 6.3v, while high power should be 16v



B



C



Licensed under CERN-OHL-S  
Author: Asher Edwards

Sheet: /  
File: 2s 40A PSU and charger.kicad\_sch

**Title: CACKLE 2s 40A PSU & Charger**

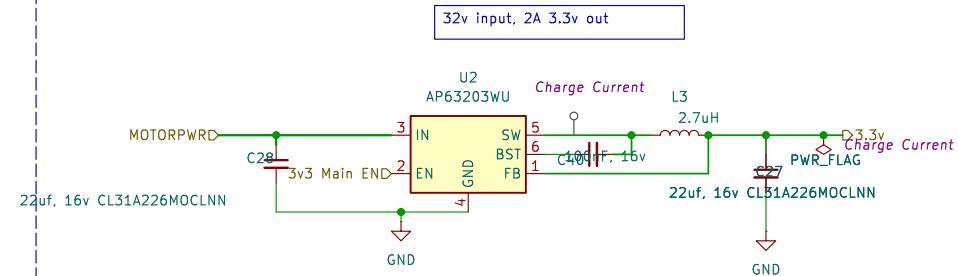
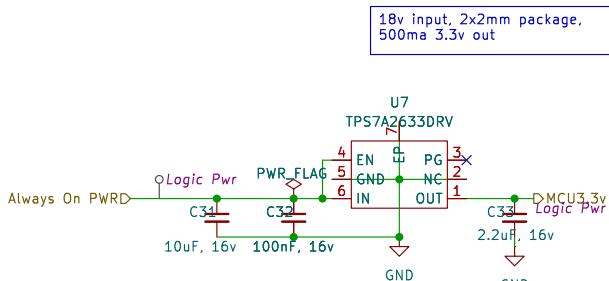
Size: A4 Date: 2025-11-17

KiCad E.D.A. 9.0.6

Rev: V1.1

Id: 1/6

D



Onboard MCU 3.3v Supply, 100mA

Main 3.3v Supply, 2A

Inductor calculation:  $L = (V_{OUT} * (V_{IN} - V_{OUT})) / (V_{IN} * \Delta_{LL} * f_{sw})$   
 Peak Inductance:  $\Delta_{LL\_PEAK} = \Delta_{LOAD} + (\Delta_{LL} / 2)$   
 Inputs:  
 $\Delta_{LL}$ : 35% of max current 2  
 amps: 0.7,  
 $f_{sw}$ : 1.1mhz  
 $V_{IN}$ : 9v  
 Values:  
 2.7uH value  
 2.35+ A peak current  
 <100mΩ resistance

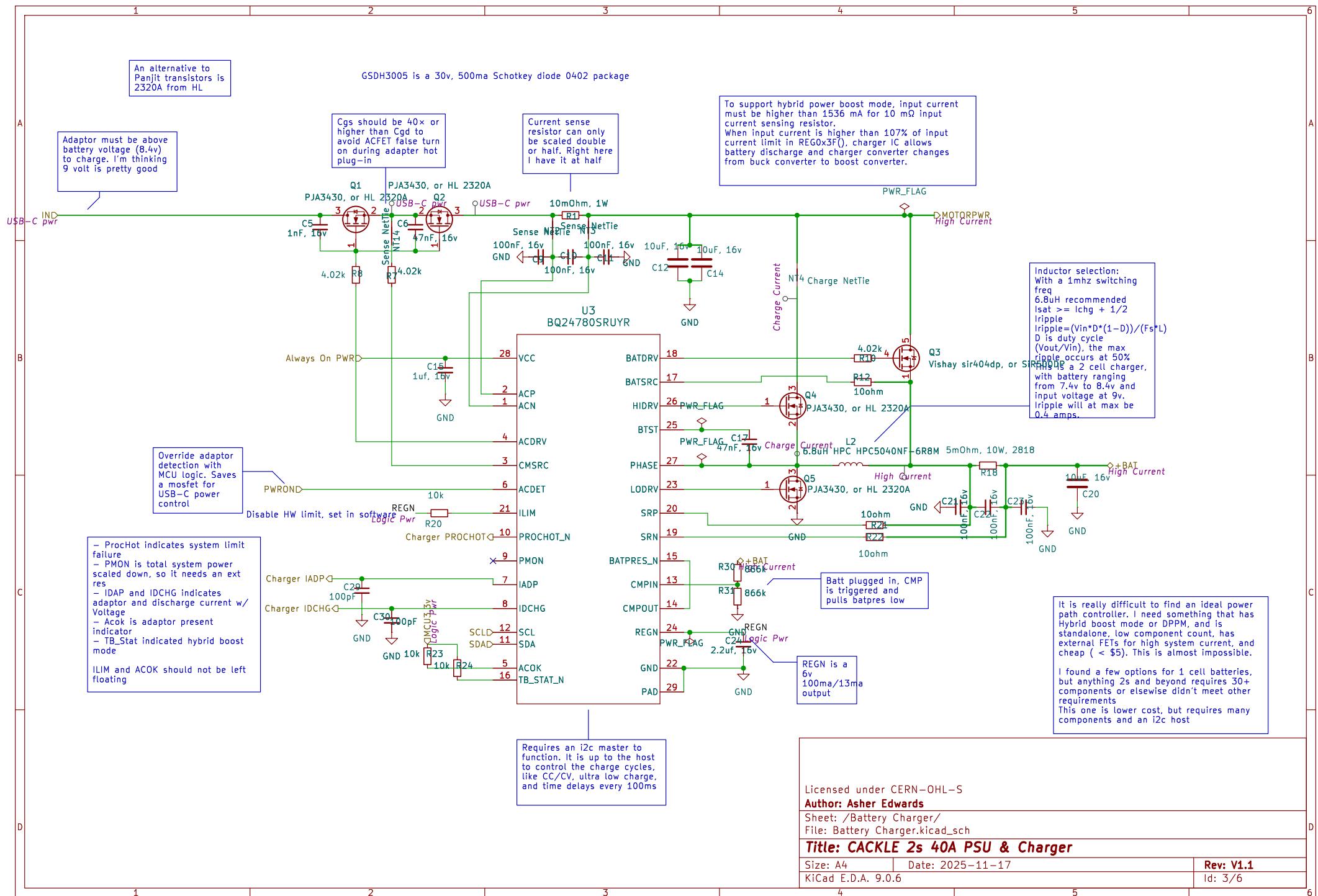
Licensed under CERN-OHL-S  
 Author: Asher Edwards

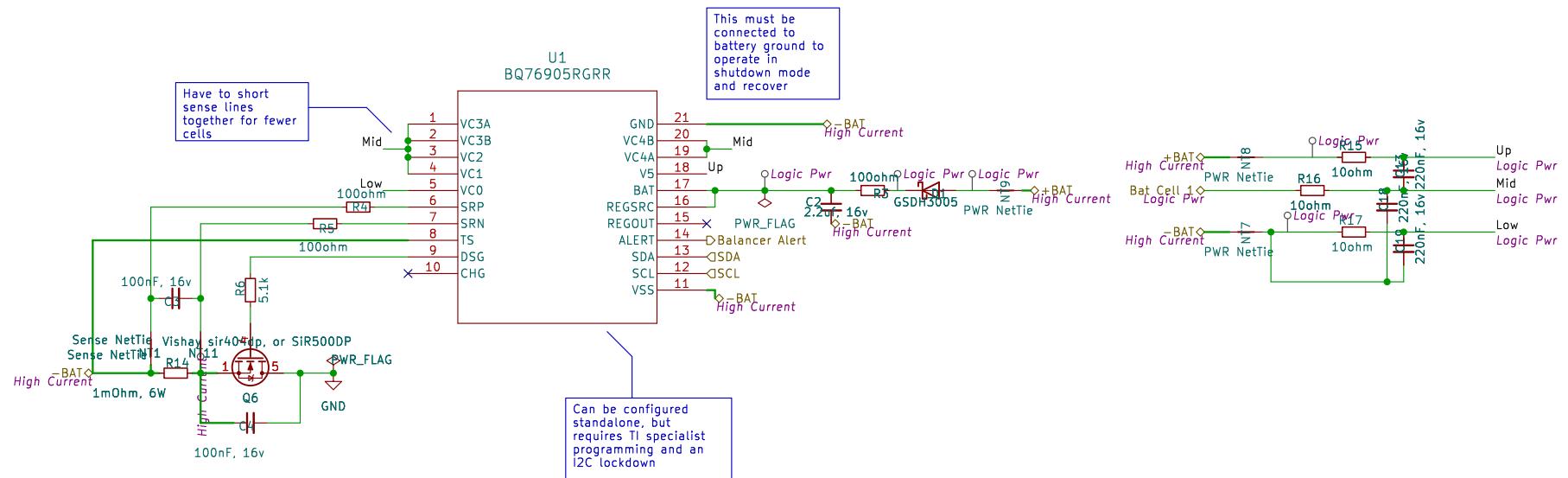
Sheet: /PSU/  
 File: PSU.kicad\_sch

**Title: CACKLE 2s 40A PSU & Charger**

Size: A4 Date: 2025-11-17  
 KiCad E.D.A. 9.0.6

Rev: V1.1  
 Id: 2/6





Licensed under CERN-OPEN-5

Author: Asher Edwards

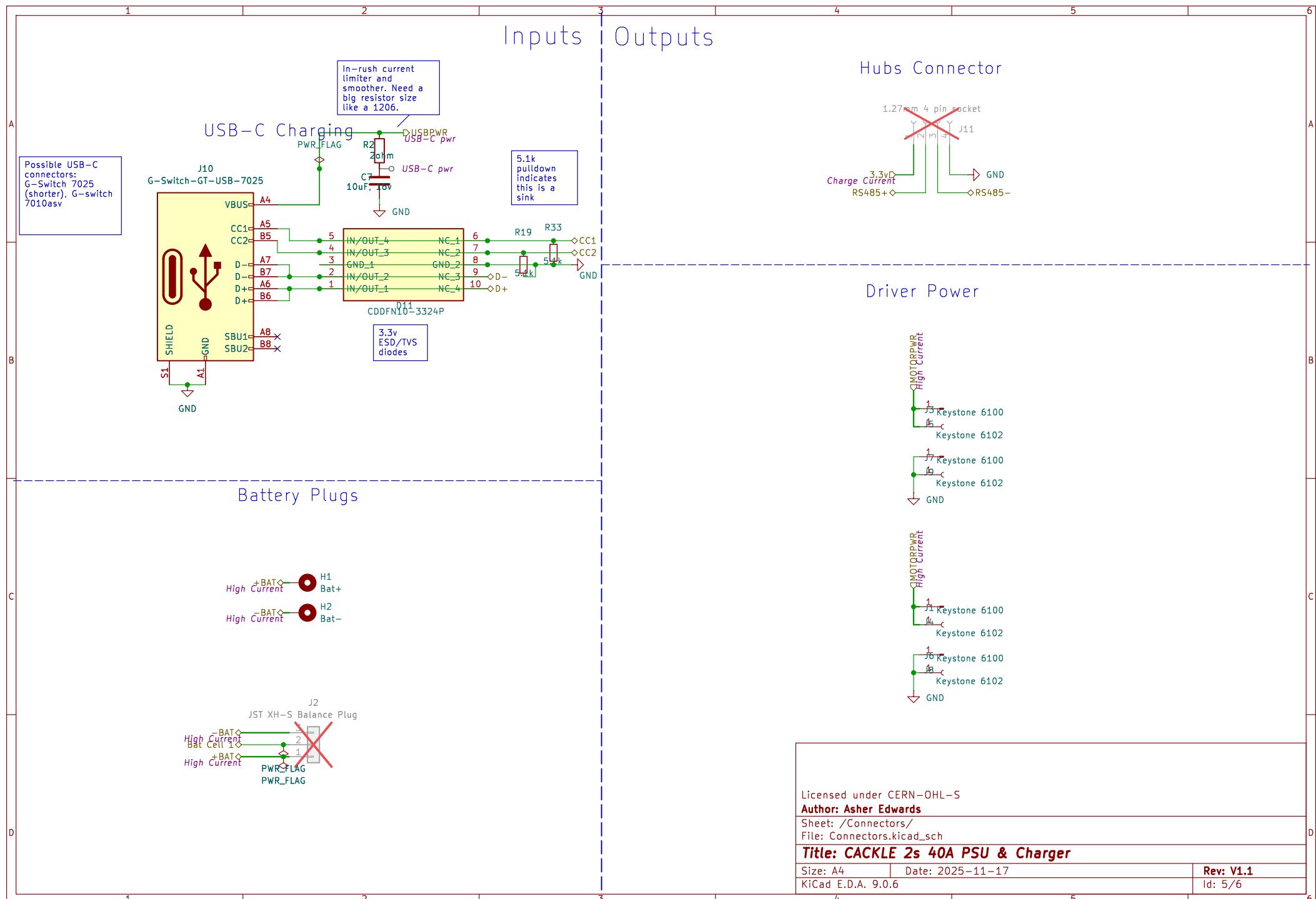
Sheet: /Battery Balancer/  
File: Battery Balancer.kicad\_sch

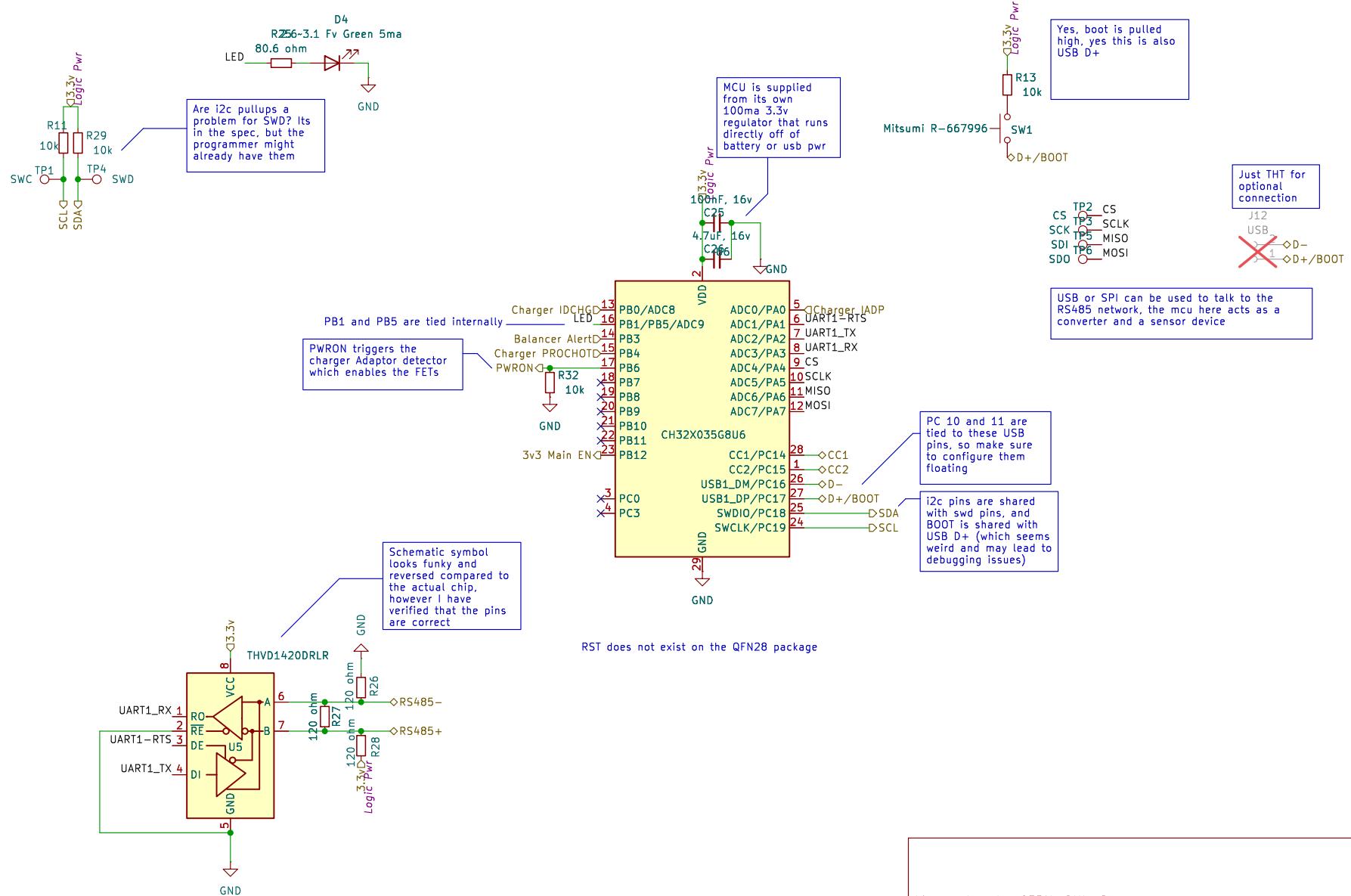
## Title: CACKLE 2s 40A PSU & Charger

Size: A4 Date: 2025-11-17

Rev: V1.1

Id: 4/6





Licensed under CERN-OHL-S  
Author: Asher Edwards

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

**Title: CACKLE 2s 40A PSU & Charger**

Size: A4 Date: 2025-11-17  
KiCad E.D.A. 9.0.6

Rev: V1.1  
Id: 6/6