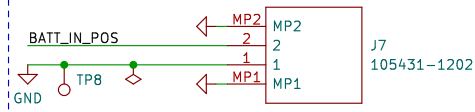


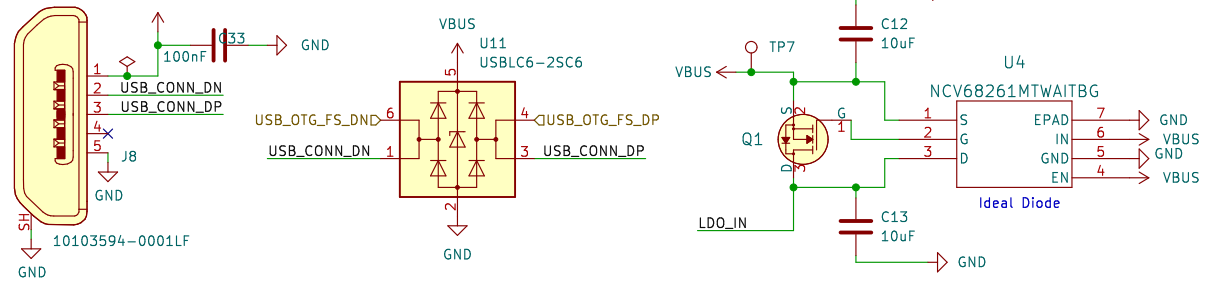


Id: 2/5

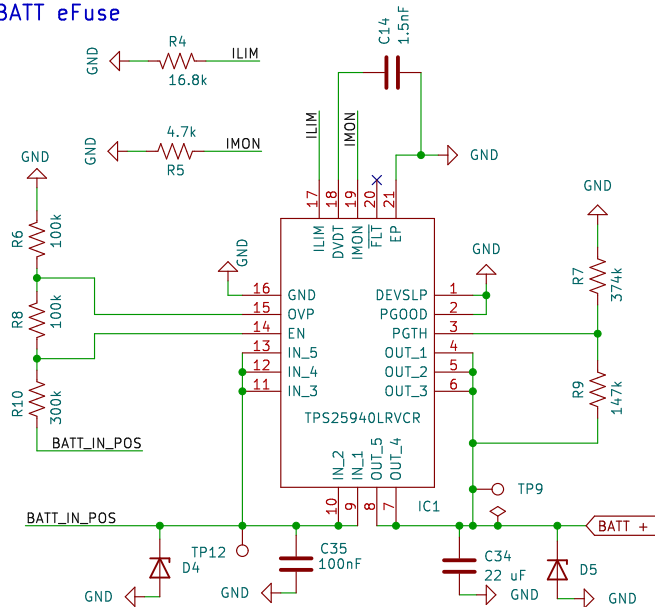
### Input from Battery System



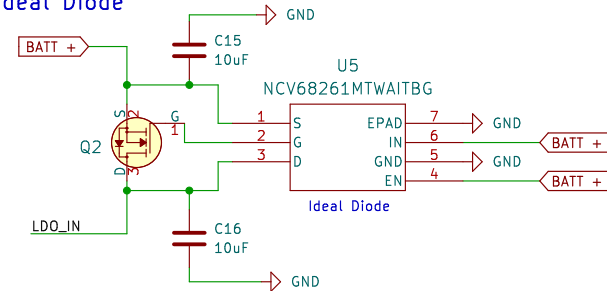
### USB Input



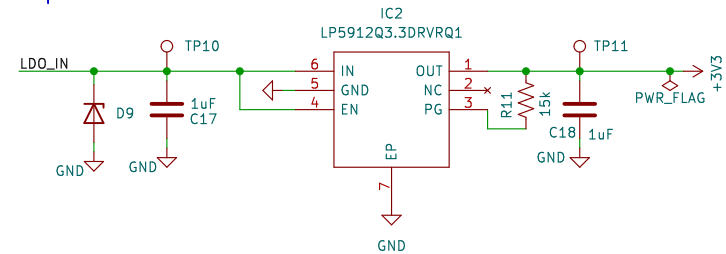
### BATT eFuse



### BATT Ideal Diode



### Stepdown for 3V3



#### Schematic Notes

- NCV68261 is an ideal diode used to prevent current injection into USB or battery source
- Mimics common two source voltage input selection circuit of having a series diode on each line w/o voltage drop
- BATT+ ranges 3.6V to 4.2V depending on SOC
- Most of the health/current information of the eFuse has been neglected since there is no supervisor MCU
- eFuse designed to have overvoltage lockout at 4.95V and undervoltage lockout at 2.5V, though UVLO unnecessary
- The ideal diode circuit for the battery input could perhaps be deleted since the eFuse accomplishes the same purpose, but it was left so that battery outputs such as stepper motors and passive retainment cannot be attempted with only USB power

#### Cal Poly, SLO

Sheet: /USB and MCU LDO/

File: usb\_MCU\_LDO.kicad\_sch

#### Title: CubeSat SADA - Main

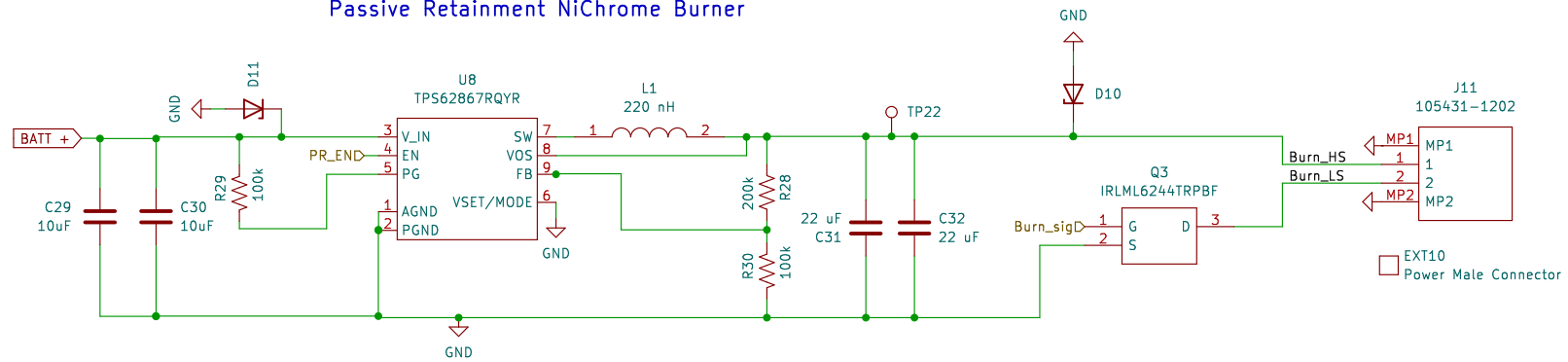
Size: A4 Date: 2023-04-07

KiCad E.D.A. eeschema (6.0.11-0)

Rev: V1.0

Id: 4/5

# Passive Retainment NiChrome Burner



Cal Poly, SLO

Sheet: /Passive Retainment/  
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**Title: CubeSat SADA – Main**

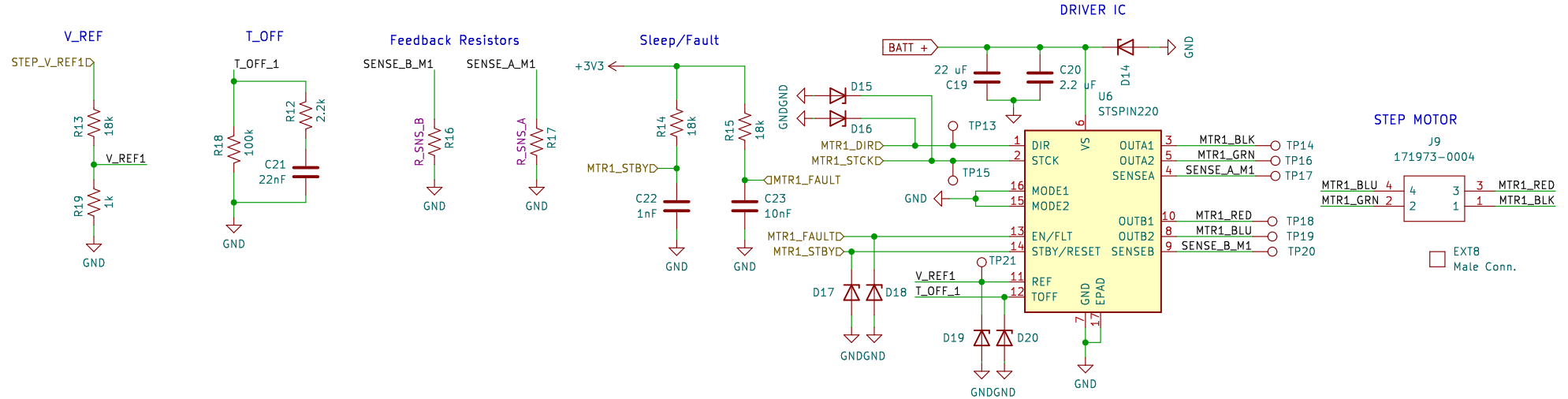
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KiCad E.D.A. eeschema (6.0.11-0)

**Rev: V1.0**

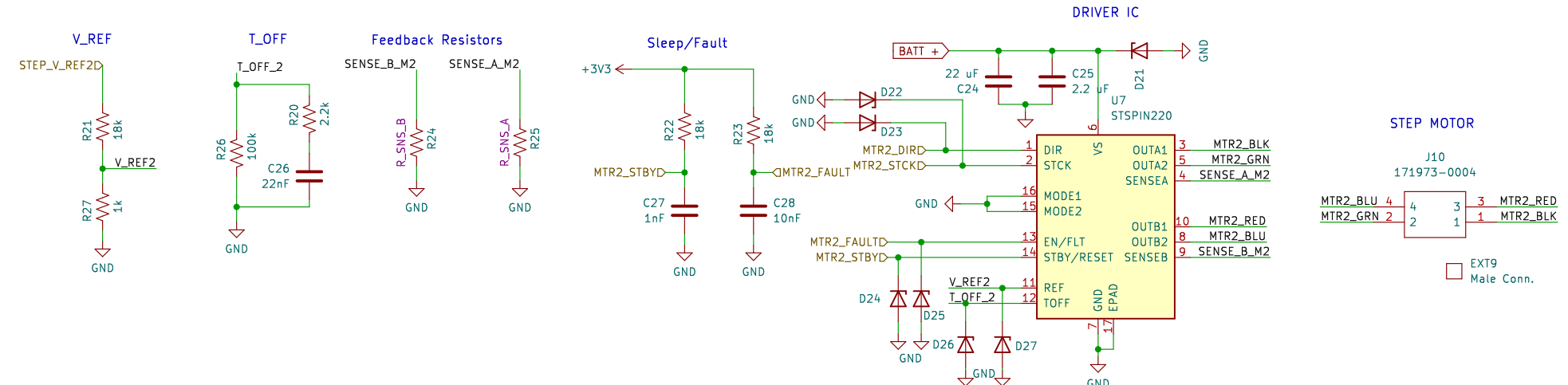
Id: 5/5

## MOTOR 1



Identical Frequency- Necessary to ensure identical movement?

## MOTOR 2



### SCHEMATIC NOTES

- Designed for use with Pololu SY205TH30-0604A
- Chosen to use EN pullup instead of MCU enable control
- MODE1 and MODE2 grounded since only full stepping is used
- Vref/RSNS chosen for max current of 0.6A/phase, though this is likely more current than necessary. R\_SNS and V\_ref can be changed if only significantly lower current is used
- Vref set at constant 0.19 volts since no microstepping takes place
- Motor current is set by PWM through V\_REF pin. 100% Duty cycle represents I\_max motor can handle (0.6A)
- MCU\_STBY is the stepper sleep toggle used to reduce power when motors stationary

### Cal Poly, SLO

Sheet: /Steppers /  
File: Bipolar\_Steppers.kicad\_sch

### Title: CubeSat SADA - Main

Size: A4 Date: 2023-04-07  
KiCad E.D.A. eeschema (6.0.11-0)

Rev: V1.0  
Id: 5/5