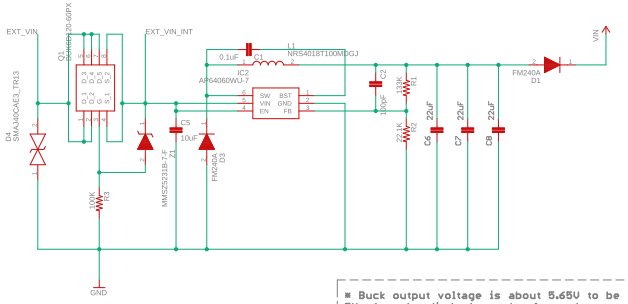
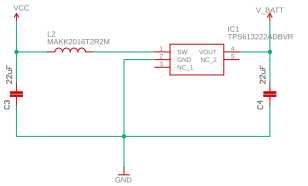
6V to 36V Buck



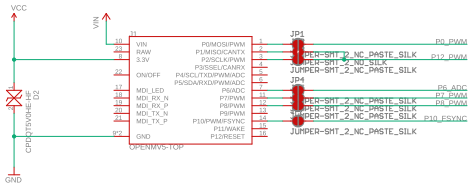
* Buck output voltage is about 5.65V to be 5V after the diode forward voltage drop.

3.3V to 5V Boost



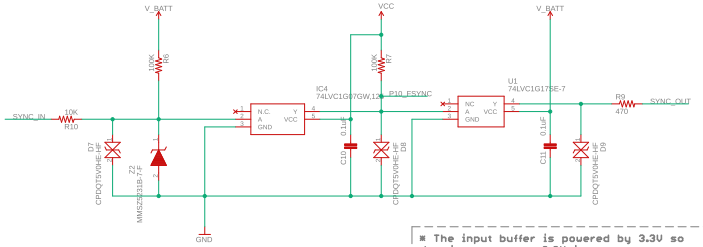
* 3.3V is used to create the 5V rail so it can be turned off in low power mode.

Shield Headers



FSYNC Input and Output

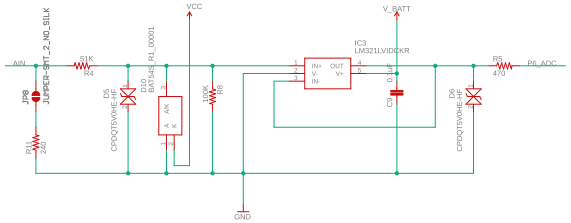
* The input buffer is open drain so that SYNCIN is OR'ed with multiple shields attached.



* The input buffer is powered by 3.3V so that it can accept 3.3V inputs.

ADC Input

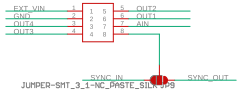
* The shunt resistor when connected allows the ADC circuit to read 4-20mA sensors.



* The front end scales a 0-5V signal down to 0-3.3V. Reverse/Over-Voltage is clamped.

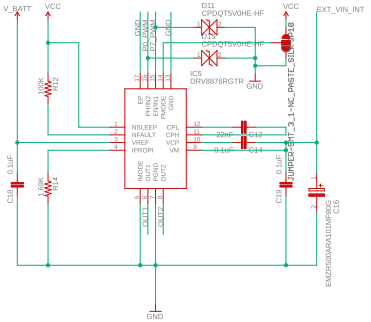
* The opamp is powered by 5V so that it can pass 0-3.3V signals (0-5V on input).

Terminal



Mechanical

H-Bridge Drivers



* PMODE States:

---Low--- (Speed/Direction Mode)

P7 = PWM
P7=0% -> Out1,Out2=L,L (motor break)
P7=1%-100% (below)

P8 = Direction
P8=L -> Out1,Out2=L,H (motor reverse)
P8=H -> Out1,Out2=H,L (motor forward)

---High--- (H-Bridge Mode - Can be PWMed)

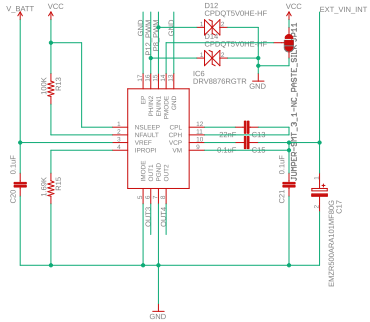
P8,P8=L,L -> Out1,Out2=Hi-Z,Hi-Z (motor coast)
P8,P8=L,H -> Out1,Out2=H,L (motor forward)
P8,P8=H,L -> Out1,Out2=L,H (motor reverse)
P8,P8=H,H -> Out1,Out2=L,L (motor break)

---Float--- (Independent Mode - Can be PWMed)

P7=L -> Out1=L
P7=H -> Out1=H

P8=L -> Out2=L
P8=H -> Out2=H

The current is limited to 3A total for the chip.



* PMODE States:

---Low--- (Speed/Direction Mode)

P8 = PWM
P8=0% -> Out3,Out4=L,L (motor break)
P8=1%-100% (below)

P12 = Direction
P12=L -> Out3,Out4=L,H (motor reverse)
P12=H -> Out3,Out4=H,L (motor forward)

---High--- (H-Bridge Mode - Can be PWMed)

P12,P8=L,L -> Out3,Out4=Hi-Z,Hi-Z (motor coast)
P12,P8=L,H -> Out3,Out4=H,L (motor forward)
P12,P8=H,L -> Out3,Out4=L,H (motor reverse)
P12,P8=H,H -> Out3,Out4=L,L (motor break)

---Float--- (Independent Mode - Can be PWMed)

P8=L -> Out3=L
P8=H -> Out3=H

P12=L -> Out4=L
P12=H -> Out4=H

The current is limited to 3A total for the chip.

TITLE: driver	
Document Number:	REV:
Date: 5/11/2023 1:36 PM	Sheet: 1/1