MCU IO current limit resistors
- R=(Vio-Vcc)/Irmax=(3.3V-12V)/(-25mA)=348 Ohm as a minimum
- Use 680 Ohm for safety and BOM optimization

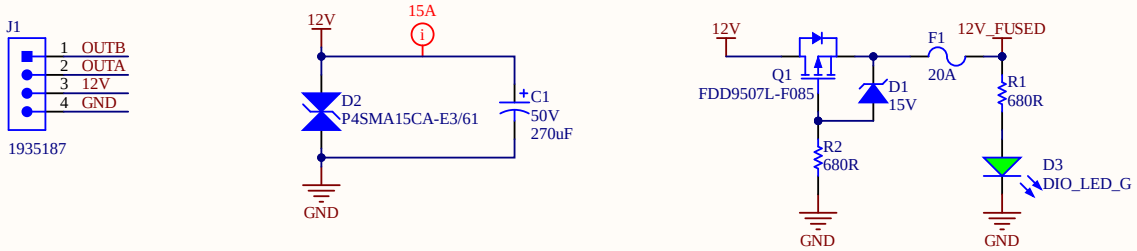
Current Sense output RC filter
- values from the chip application note

Current Sense output voltage resistor
- current range
  + Saturation condition: 4.6mA
  + Fault condition: 730mA (not configured yet)
- R = 3.3V/4.6mA = 717.39 Ohm
- Use 680 Ohm so that max voltage = 3.128 V

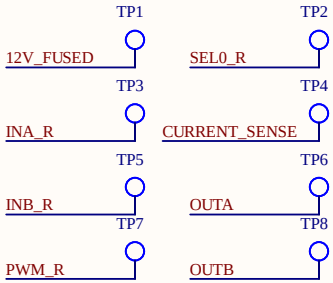
Reverse polarity protection
- From data sheet

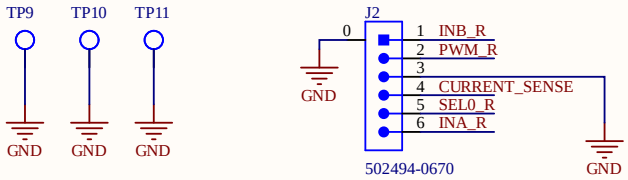
12V Fused LED resistor
- Vcc = 12V, Vf = 2.2V, If = 20mA
- R = (Vcc - Vf) / If = (12V - 2.2V) / (20mA) = 490 Ohm (minimum)
- Use 680 Ohm for BOM optimization

Reverse Polarity Protection

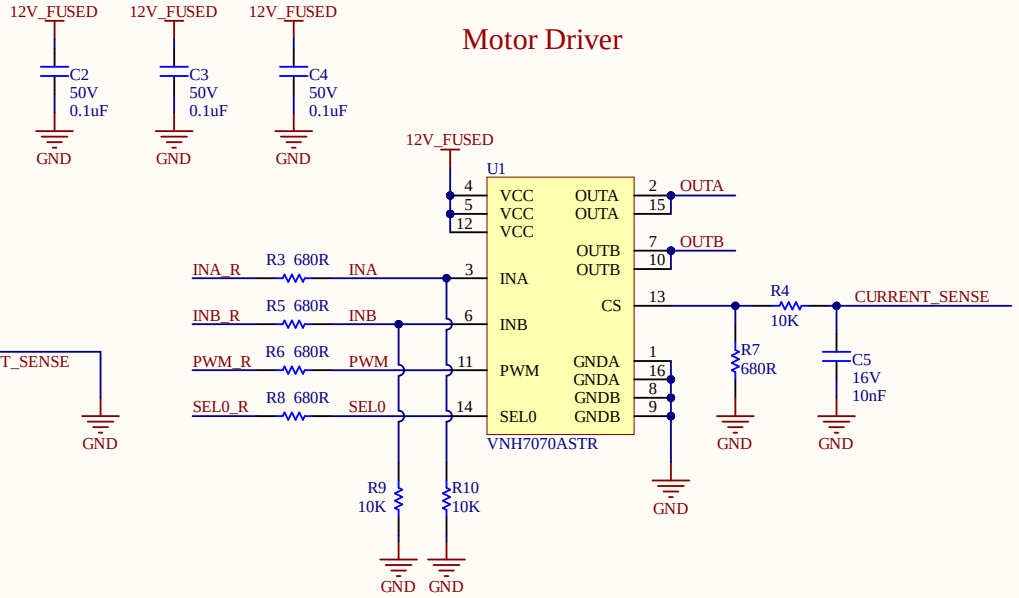


Test Points

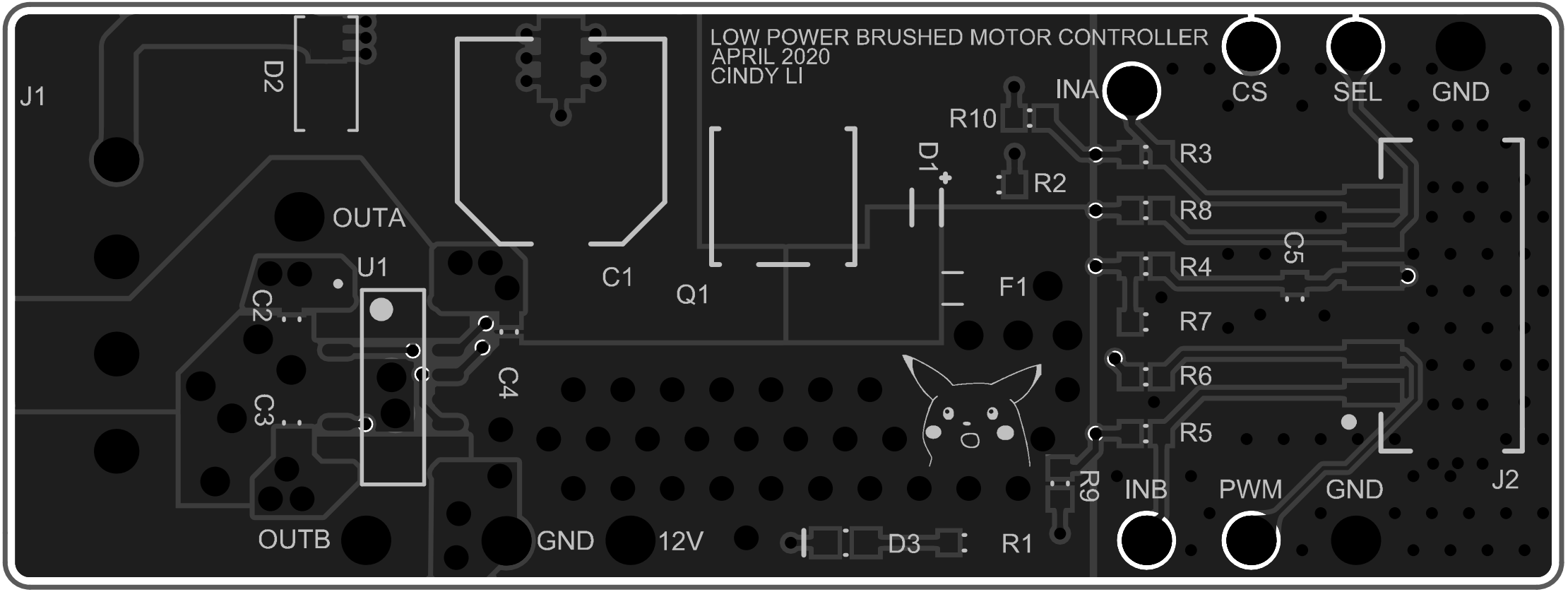




Motor Driver



Title: Low Power Brushed Motor Controller			
Size: Letter	Drawn By: Kyle Hong, Cindy Li		
Date: 2020-05-12	Sheet 1 of 1		
File: C:\UWRT\MarsRover2020-PCB\Projects\Low Power Brushed Motor Controller\Rev1\sch\Low Power Brushed Motor Co			


LOW POWER BRUSHED MOTOR CONTROLLER
APRIL 2020
CINDY LI
J1
D2
C1
Q1
D1
R10
R2
INA
CS
SEL
GND
R3
R8
R4
R7
R6
R5
C5
J2
OUTA
U1
C2
C3
C4
F1
R9
INB
PWM
GND
OUTB
GND
12V
D3
R1

Board Stack Report