

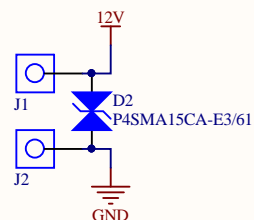
MCU IO current limit resistors
 - $R = (V_{io} - V_{cc}) / I_{rmax} = (3.3V - 12V) / (-25mA) = 348 \text{ Ohm}$ as a minimum
 - Use 680 Ohm for safety and BOM optimization

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

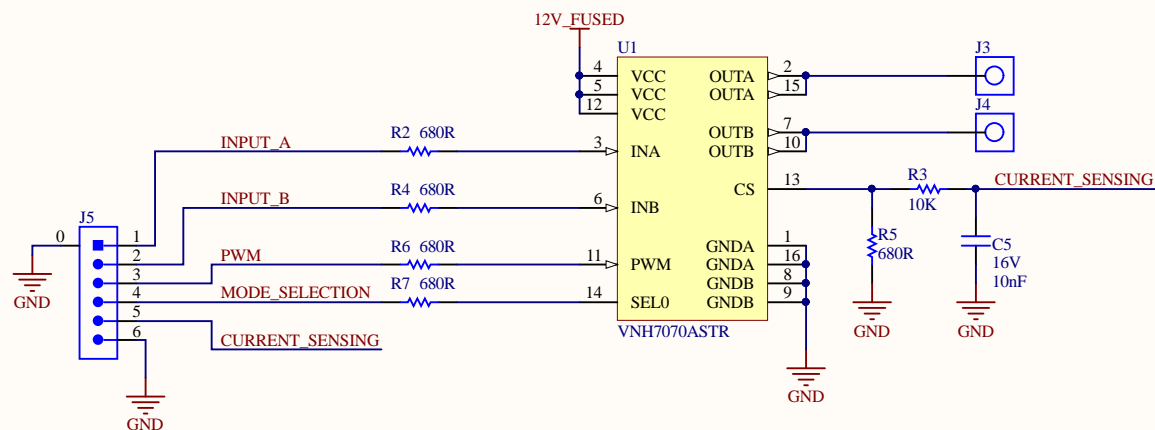
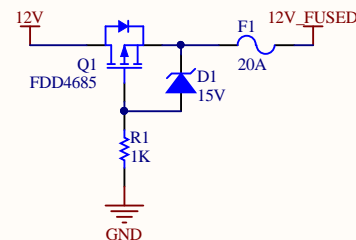
Current Sense output voltage resistor
 - current range
 + Saturation condition: 4.6mA
 + Fault condition: 730mA (not configured yet)
 - $R = 3.3V / 4.6mA = 717.39 \text{ Ohm}$
 - Use 680 Ohm so that max voltage = 3.128 V

Reverse polarity protection
 - From data sheet

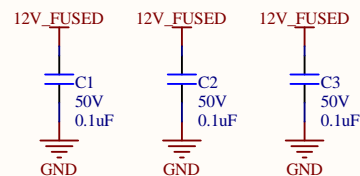
Power Supply



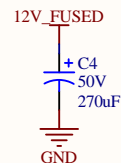
Reverse Polarity Protection



Bypass Capacitors



Bulk Capacitor



Title Brushed Motor Controller

Size: Letter Drawn By: Kyle Hong

Date: 4/11/2020

Sheet 1 of 1

File: C:\Users\kyleh\Desktop\Works\UWRT\MarsRover2020-PCB\Projects\Brushed_Motorcontrol_Ier\Rev1\Schematic1

