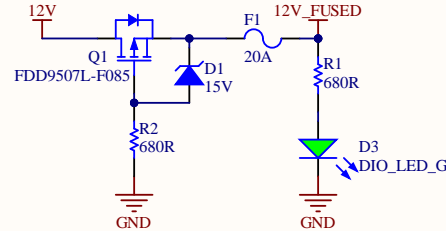


Reverse Polarity Protection



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

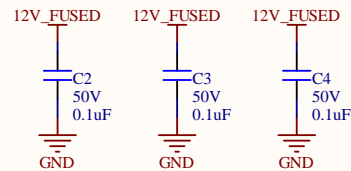
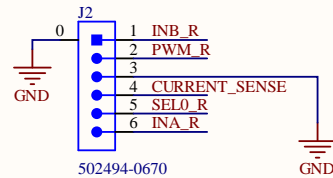
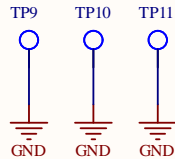
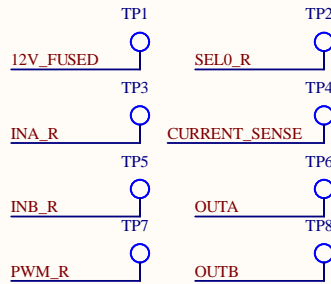
Current Sense output RC filter
 - values from the chip application note

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

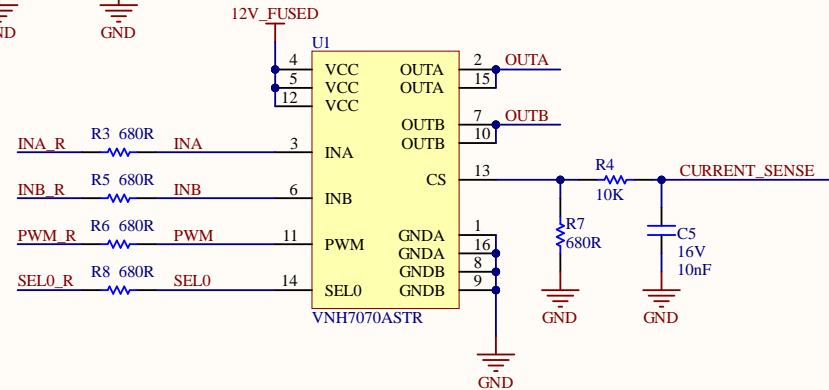
Reverse polarity protection
 - From data sheet

12V Fused LED resistor
 - $V_{cc} = 12V, V_f = 2.2V, I_f = 20mA$
 - $R = (V_{cc} - V_f) / I_f = (12V - 2.2V) / (20mA) = 490 \text{ Ohm (minimum)}$
 - Use 680 Ohm for BOM optimization

Test Points



Motor Driver



Board Stack Report