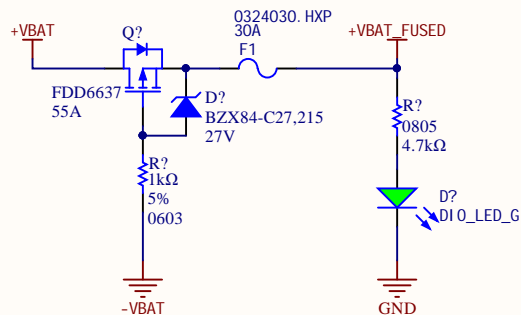
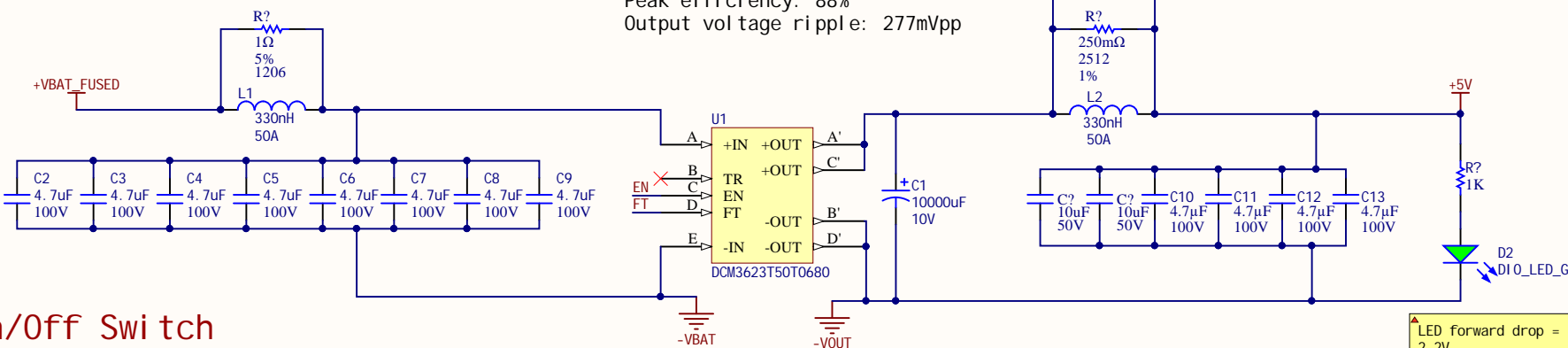


Reverse Polarity Protection



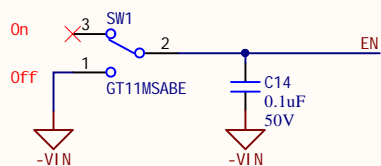
LED forward drop = 2.0V
Max VBAT = 24V
Min VBAT = 18V
Max LED current = $(24-2)/4700$
= 4.7mA
Min LED current = $(18-2)/4700$
= 3.4mA

Buck Converter ratings:
Input voltage range: 9-50V
Output voltage: 5.0V
Max output current: 16A
Peak efficiency: 88%
Output voltage ripple: 277mVpp

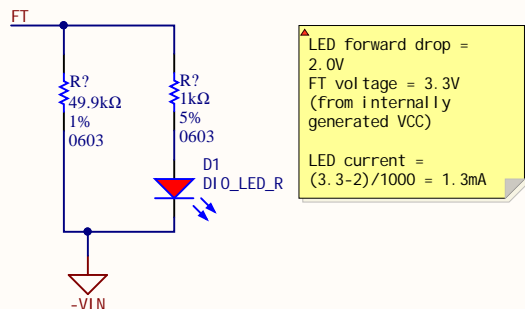


LED forward drop = 2.2V
LED current = $(5-2.2)/1000$ = 2.8mA

On/Off Switch

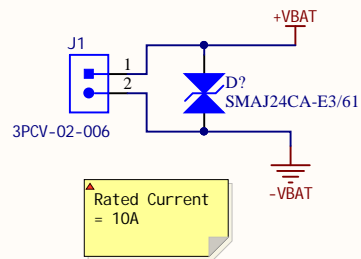


Fault Indicator

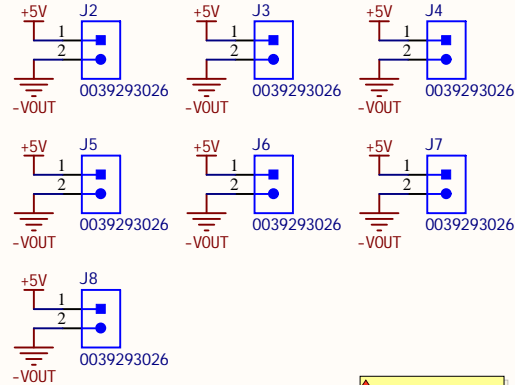


LED forward drop = 2.0V
FT voltage = 3.3V (from internally generated VCC)
LED current = $(3.3-2)/1000$ = 1.3mA

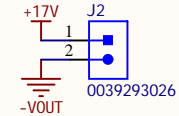
24V Input



5V Output



17V Output



Mates with
0039012020
0039013022
0039012025

22-24 AWG

Associated crimps:
0039000038 (18-24 AWG)
0039000038 (22-28 AWG)
0039000077 (16 AWG)

Title Connectors

Size: Letter

Drawn By: Adrianna Ascalon

Date: 25/05/20

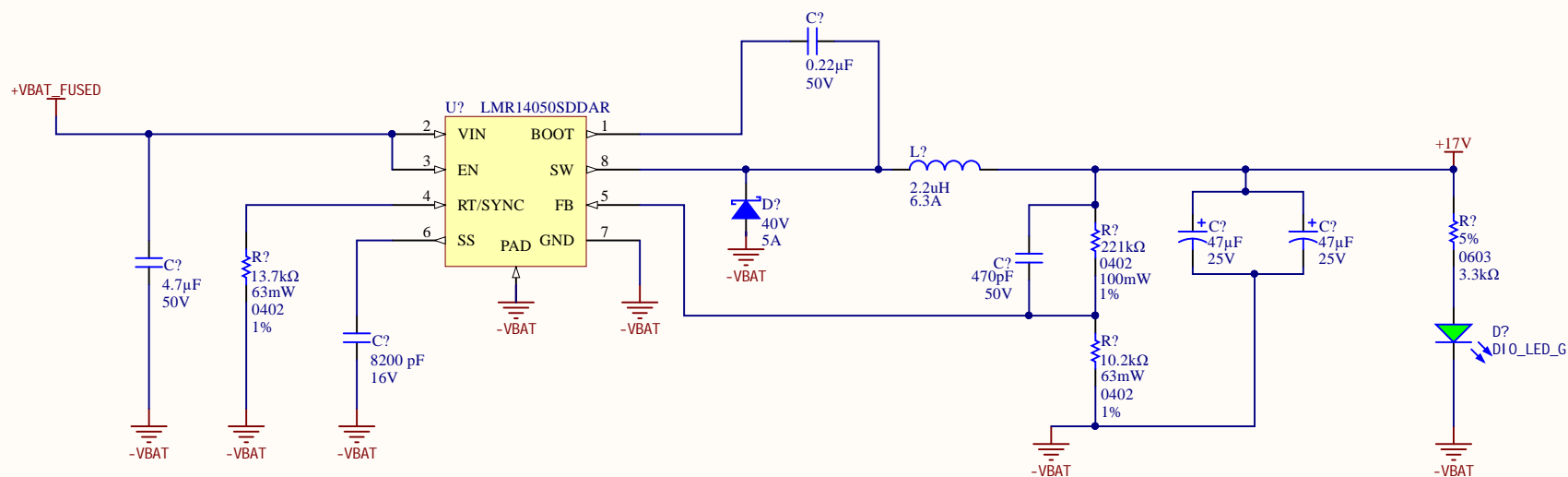
Sheet 2 of 3

File: C:\Users\Adrianna\Documents\MarsRover2020-PCB\Projects\Power Distribution Board\Rev1\sch\1 - Conn

UW Robotics
200 University Avenue
Waterloo
Ontario
Canada N2L 3G6



Buck Converter ratings:
 Input voltage range: 18-24V
 Output voltage: 17V
 Max output current: 4A
 Peak efficiency: 94.8%
 Output voltage ripple: 19.45mVpp



LED forward drop =
2.2V

LED current =
 $(17 - 2.2) / 3300 = 4.5\text{mA}$