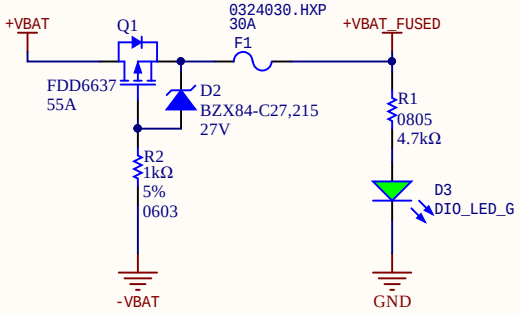
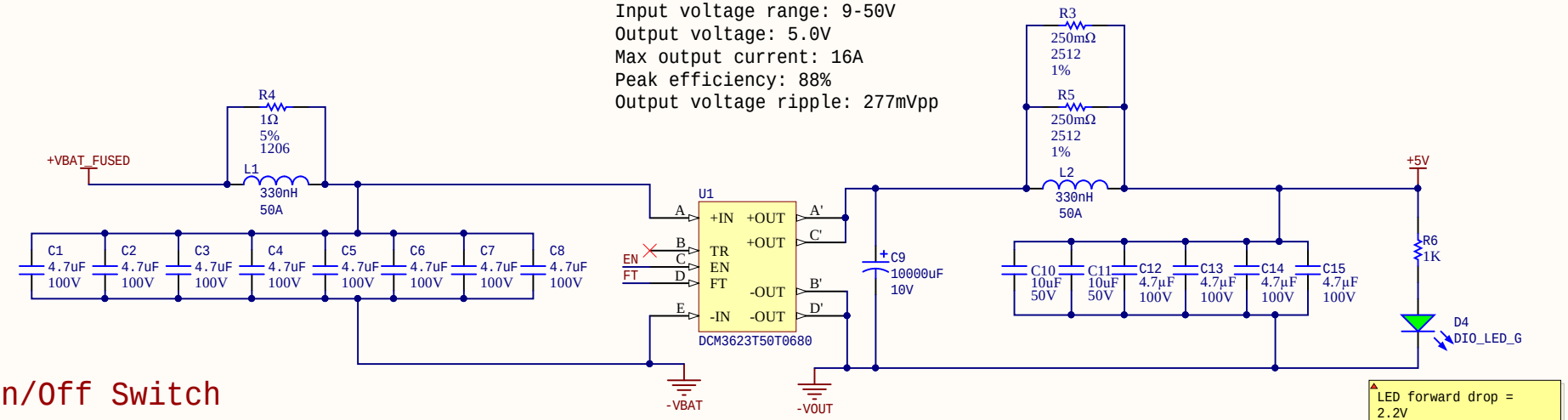
Reverse Polarity Protection



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

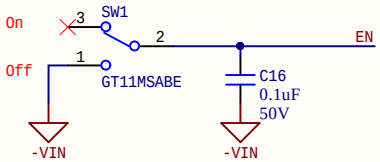
Buck Converter ratings:
Input voltage range: 9-50V
Output voltage: 5.0V
Max output current: 16A
Peak efficiency: 88%
Output voltage ripple: 277mVpp



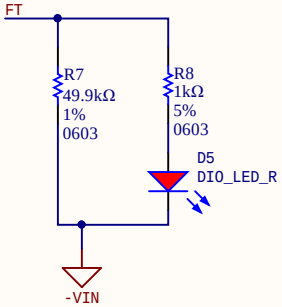
LED forward drop = 2.2V

LED current = (5-2.2)/1000 = 2.8mA

On/Off Switch



Fault Indicator

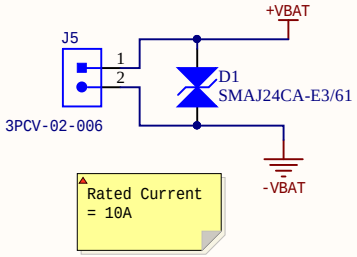


LED forward drop = 2.0V
FT voltage = 3.3V (from internally generated VCC)

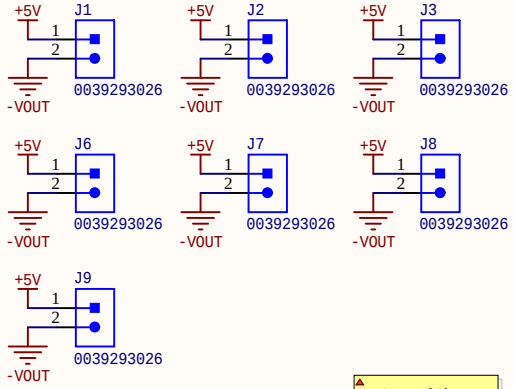
LED current = (3.3-2)/1000 = 1.3mA

Title: Buck Converter		UW Robotics 200 University Avenue Waterloo Ontario Canada N2L 3G6	UW ROBOTICS TEAM
Size: Letter	Drawn By: Adrianna Ascalon		
Date: 25/05/20	Sheet 1 of 2		
File: C:\Users\Adrianna\Documents\MarsRover2020-PCB\Projects\Power Distribution Board\Rev1\sch\2 - 5V B			

24V Input



5V Output

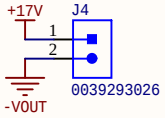


Mates with
0039012020
0039013022
0039012025

22-24 AWG

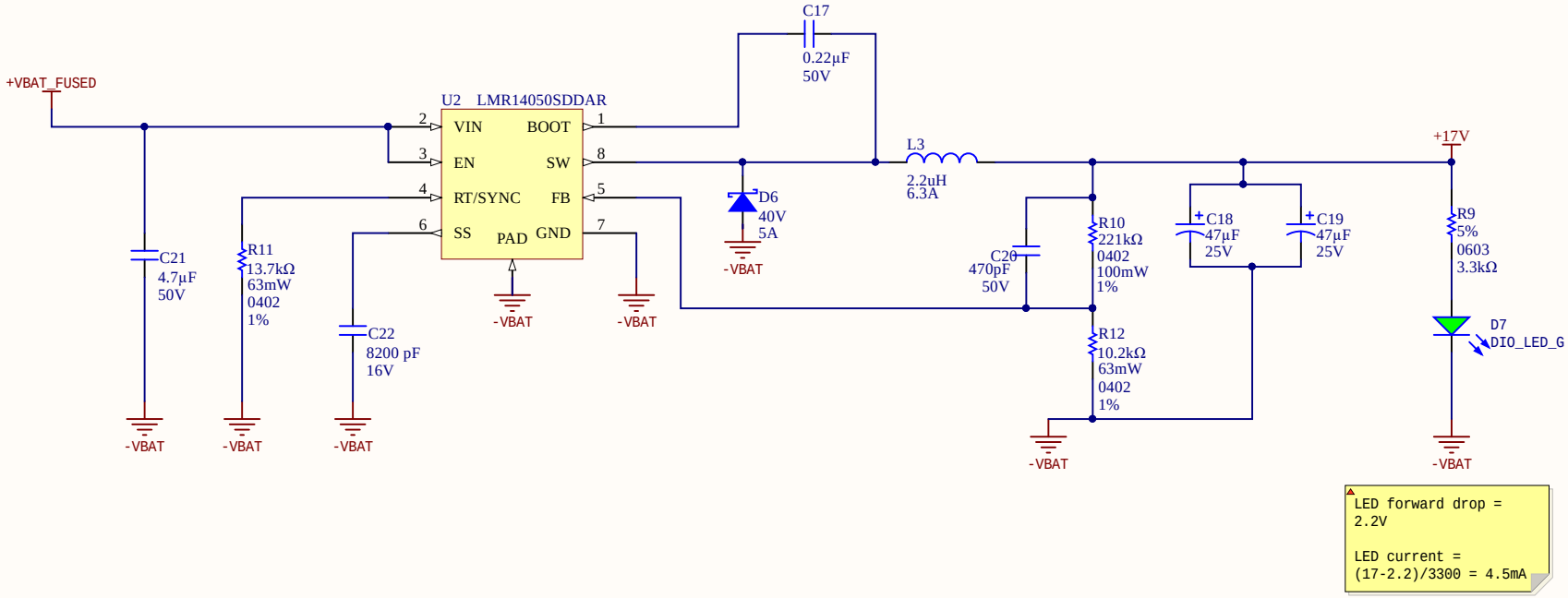
Associated crimps:
0039000038 (18-24 AWG)
0039000038 (22-28 AWG)
0039000077 (16 AWG)

17V Output



Title Connectors		UW Robotics 200 University Avenue Waterloo Ontario Canada N2L 3G6
Size: Letter	Drawn By: Adrianna Ascalon	
Date: 25/05/20	Sheet2 of 3	
File: C:\Users\Adrianna\Documents\MarsRover2020-PCB\Projects\Power Distribution Board\Rev1\sch\1 - Conn		

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



Title 19V Buck		UW Robotics 200 University Avenue Waterloo Ontario Canada N2L 3G6	UW ROBOTICS TEAM
Size: Letter	Drawn By: Adrianna Ascalon		
Date: 25/05/20	Sheet* of *		
File: C:\Users\Adrianna\Documents\MarsRover2020-PCB\Projects\Power Distribution Board\Rev1\sch\3 - 19V			