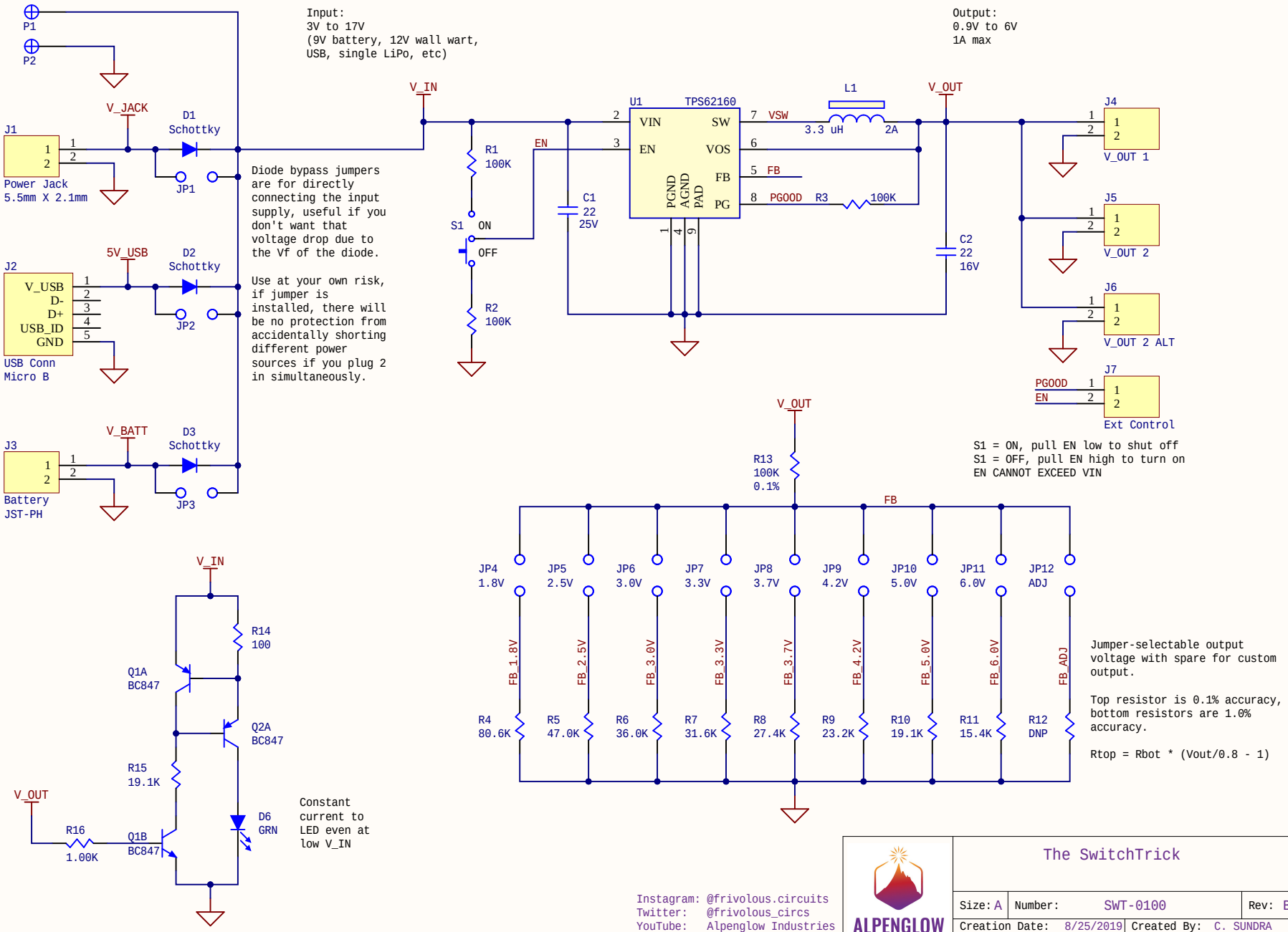
Input:
3V to 17V
(9V battery, 12V wall wart,
USB, single LiPo, etc)
Output:
0.9V to 6V
1A max
P1
P2
V_JACK
J1
Power Jack
5.5mm X 2.1mm
D1
Schottky
JP1
Diode bypass jumpers are for directly connecting the input supply, useful if you don't want that voltage drop due to the Vf of the diode.
Use at your own risk, if jumper is installed, there will be no protection from accidentally shorting different power sources if you plug 2 in simultaneously.
5V_USB
J2
V_USB
D-
D+
USB_ID
GND
USB Conn
Micro B
D2
Schottky
JP2
V_BATT
J3
Battery
JST-PH
D3
Schottky
JP3
V_IN
R1
100K
S1
ON
OFF
R2
100K
EN
C1
22
25V
U1
TPS62160
VIN
EN
SW
VOS
FB
PG
PGND
AGND
PAD
VSW
FB
PGOOD
R3
100K
L1
3.3 uH
2A
V_OUT
C2
22
16V
J4
V_OUT 1
J5
V_OUT 2
J6
V_OUT 2 ALT
J7
PGOOD
EN
Ext Control
S1 = ON, pull EN low to shut off
S1 = OFF, pull EN high to turn on
EN CANNOT EXCEED VIN
V_OUT
R13
100K
0.1%
FB
JP4
1.8V
JP5
2.5V
JP6
3.0V
JP7
3.3V
JP8
3.7V
JP9
4.2V
JP10
5.0V
JP11
6.0V
JP12
ADJ
FB_1.8V
FB_2.5V
FB_3.0V
FB_3.3V
FB_3.7V
FB_4.2V
FB_5.0V
FB_6.0V
FB_ADJ
R4
80.6K
R5
47.0K
R6
36.0K
R7
31.6K
R8
27.4K
R9
23.2K
R10
19.1K
R11
15.4K
R12
DNP
Jumper-selectable output voltage with spare for custom output.
Top resistor is 0.1% accuracy, bottom resistors are 1.0% accuracy.
Rtop = Rbot * (Vout/0.8 - 1)
V_IN
R14
100
Q1A
BC847
Q2A
BC847
R15
19.1K
V_OUT
R16
1.00K
Q1B
BC847
D6
GRN
Constant current to LED even at low V_IN
Instagram: @frivolous.circuits
Twitter: @frivolous_circs
YouTube: Alpenglow Industries
Hackaday: Alpenglow Industries
www.alpenglowindustries.com
ALPENGLOW
INDUSTRIES
The SwitchTrick
Size: A
Number: SWT-0100
Rev: B
Creation Date: 8/25/2019
Created By: C. SUNDRA
Saved Date: 2/2/2021
Modified By: C. SUNDRA
File: SwitchTrickB.SchDoc
Sheet 1 of 1