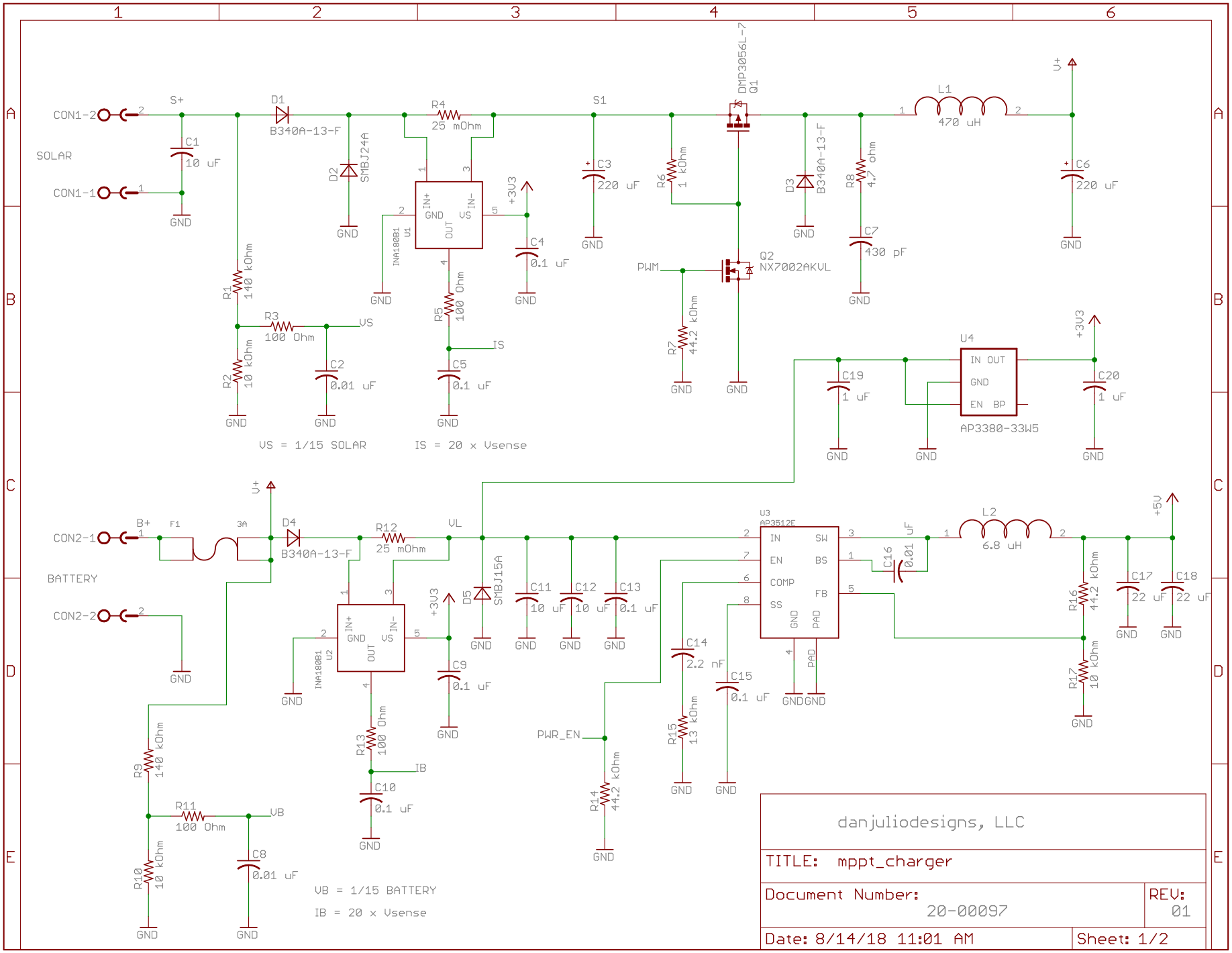
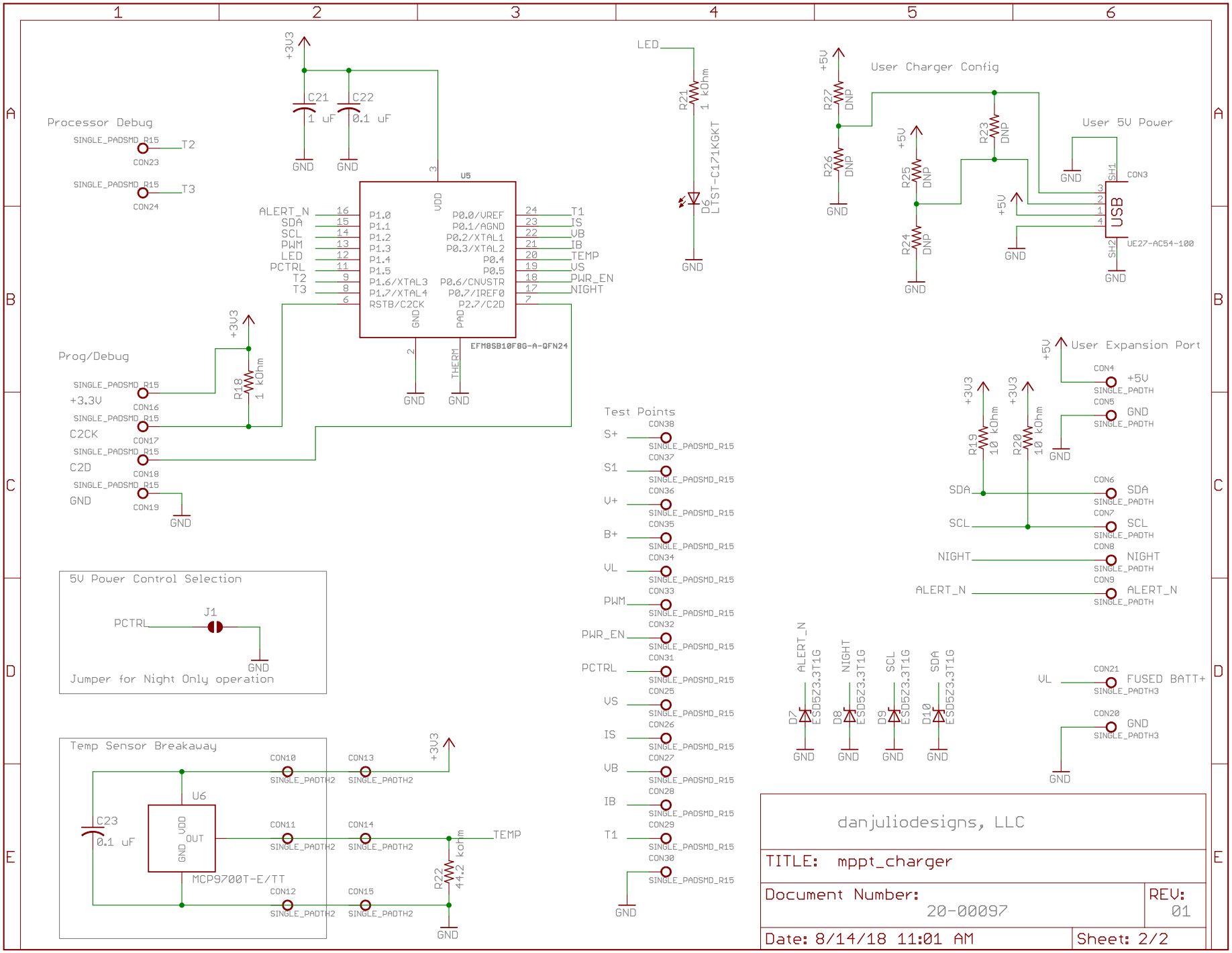

CON1-2
SOLAR
CON1-1
S+
C1
10 uF
GND
D1
B340A-13-F
D2
SMBJ24A
R4
25 mOhm
IN+
GND
OUT
VS
IN-
INA180B1
U1
+3V3
C4
0.1 uF
R1
140 kOhm
R3
100 Ohm
VS
R2
10 kOhm
C2
0.01 uF
R5
100 Ohm
IS
C5
0.1 uF
VS = 1/15 SOLAR
IS = 20 x Vsense
S1
C3
220 uF
R6
1 kOhm
DMP3056L-7
Q1
PWM
Q2
NX7002AKVL
R7
44.2 kOhm
D3
B340A-13-F
R8
4.7 ohm
C7
430 pF
L1
470 uH
V+
C6
220 uF
U4
IN OUT
GND
EN BP
AP3380-33W5
C19
1 uF
C20
1 uF
CON2-1
BATTERY
CON2-2
B+
F1
3A
D4
B340A-13-F
R12
25 mOhm
VL
D5
SMBJ15A
C11
10 uF
C12
10 uF
C13
0.1 uF
INA180B1
U2
C9
0.1 uF
R13
100 Ohm
IB
C10
0.1 uF
R9
140 kOhm
R11
100 Ohm
VB
R10
10 kOhm
C8
0.01 uF
VB = 1/15 BATTERY
IB = 20 x Vsense
U3
AP3512E
IN
EN
COMP
SS
SW
BS
FB
GND
PAD
C16
0.01 uF
C14
2.2 nF
C15
0.1 uF
PWR_EN
R14
44.2 kOhm
R15
13 kOhm
L2
6.8 uH
+5V
R16
44.2 kOhm
R17
10 kOhm
C17
22 uF
C18
22 uF
danjuliodesigns, LLC
TITLE: mppt_charger
Document Number: 20-00097
REV: 01
Date: 8/14/18 11:01 AM
Sheet: 1/2


Processor Debug
SINGLE_PADSMD_R15
CON23
T2
CON24
T3
+3V3
C21
1 uF
C22
0.1 uF
GND
U5
VDD
ALERT_N
SDA
SCL
PWM
LED
PCTRL
T2
T3
P1.0
P1.1
P1.2
P1.3
P1.4
P1.5
P1.6/XTAL3
P1.7/XTAL4
RSTB/C2CK
P0.0/VREF
P0.1/AGND
P0.2/XTAL1
P0.3/XTAL2
P0.4
P0.5
P0.6/CNVSTR
P0.7/IREF0
P2.7/C2D
T1
IS
VB
IB
TEMP
VS
PWR_EN
NIGHT
EFM8SB10F8G-A-QFN24
THERM
Prog/Debug
+3.3V
C2CK
C2D
R18
1 kOhm
LED
R21
1 kOhm
D6
LTST-C171KGKT
User Charger Config
R27
DNP
R26
DNP
R25
DNP
R24
DNP
R23
DNP
User 5V Power
CON3
SH1
SH2
USB
UE27-AC54-100
User Expansion Port
CON4
+5V
CON5
GND
R19
10 kOhm
R20
10 kOhm
SDA
SCL
NIGHT
ALERT_N
CON6
CON7
CON8
CON9
SINGLE_PADTH
Test Points
S+
S1
V+
B+
VL
PWM
PWR_EN
PCTRL
VS
IS
VB
IB
T1
CON38
CON37
CON36
CON35
CON34
CON33
CON32
CON31
CON25
CON26
CON27
CON28
CON29
CON30
D7
D8
D9
D10
ESD5Z3.3T1G
VL
CON21
FUSED BATT+
SINGLE_PADTH3
CON20
5V Power Control Selection
PCTRL
J1
Jumper for Night Only operation
Temp Sensor Breakaway
U6
C23
0.1 uF
GND VDD
OUT
MCP9700T-E/TT
CON10
CON11
CON12
CON13
CON14
CON15
SINGLE_PADTH2
R22
44.2 kOhm
TEMP
danjuliodesigns, LLC
TITLE: mppt_charger
Document Number:
20-00097
REV:
01
Date: 8/14/18 11:01 AM
Sheet: 2/2