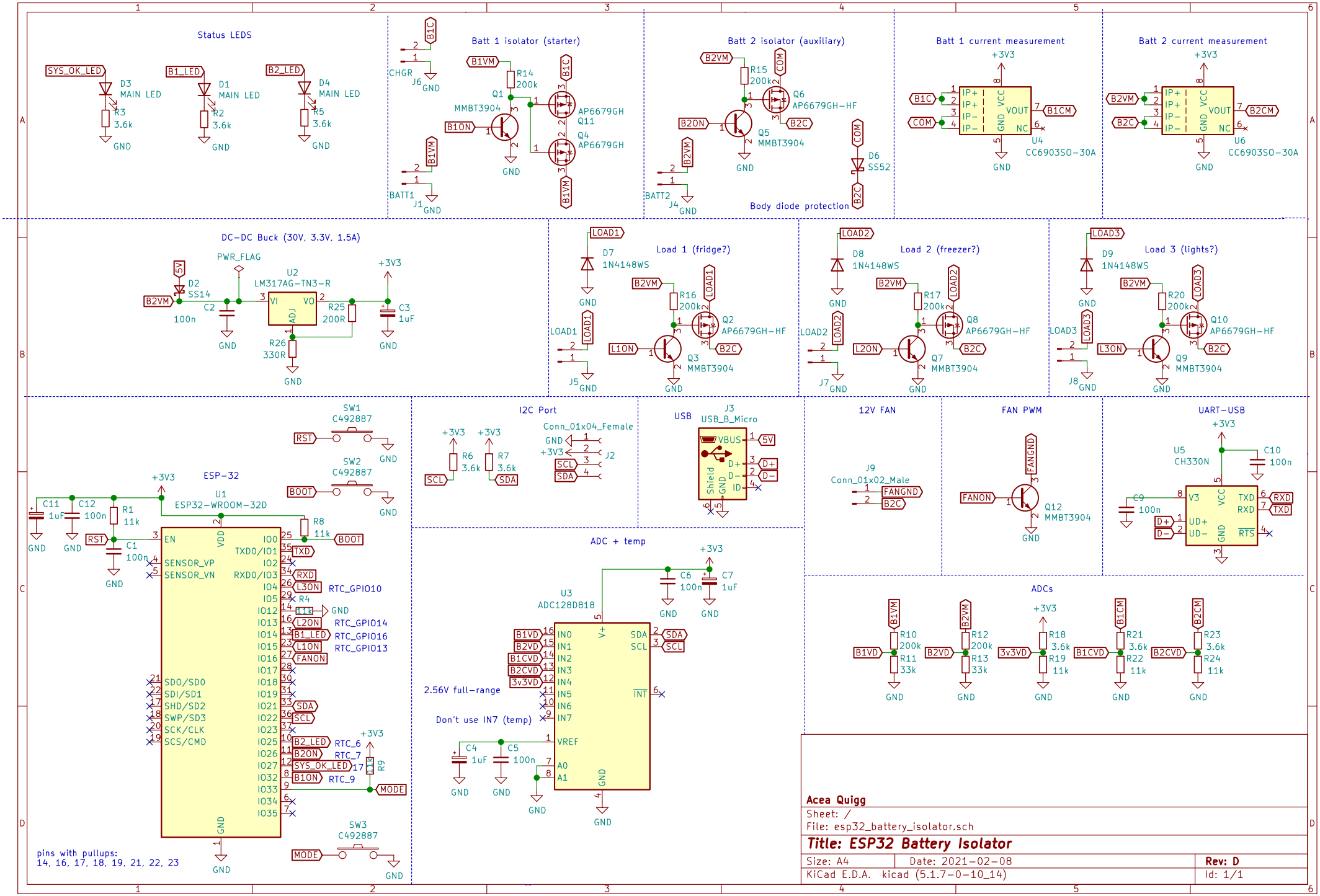
Status LEDS
SYS_OK_LED
B1_LED
B2_LED
D3 MAIN LED
D1 MAIN LED
D4 MAIN LED
R3 3.6k
R2 3.6k
R5 3.6k
GND
Batt 1 isolator (starter)
B1C
CHGR
J6
B1VM
R14 200k
Q1 MMBT3904
B1ON
AP6679GH Q11
Q4 AP6679GH
BATT1
J1
Batt 2 isolator (auxiliary)
B2VM
R15 200k
Q6 AP6679GH-HF
B2ON
Q5 MMBT3904
B2C
COM
D6 SS52
BATT2
J4
Body diode protection
Batt 1 current measurement
+3V3
IP+ IP+ IP− IP−
VCC VOUT GND NC
B1CM
U4 CC6903SO-30A
Batt 2 current measurement
B2CM
U6 CC6903SO-30A
DC-DC Buck (30V, 3.3V, 1.5A)
PWR_FLAG
5V
D2 SS14
C2 100n
U2 LM317AG-TN3-R
VI VO ADJ
R25 200R
R26 330R
C3 1uF
Load 1 (fridge?)
LOAD1
D7 1N4148WS
R16 200k
Q2 AP6679GH-HF
L1ON
Q3 MMBT3904
J5
Load 2 (freezer?)
LOAD2
D8 1N4148WS
R17 200k
Q8 AP6679GH-HF
L2ON
Q7 MMBT3904
J7
Load 3 (lights?)
LOAD3
D9 1N4148WS
R20 200k
Q10 AP6679GH-HF
L3ON
Q9 MMBT3904
J8
ESP-32
U1 ESP32-WROOM-32D
C11 1uF
C12 100n
R1 11k
C1 100n
RST
EN
VDD
SENSOR_VP
SENSOR_VN
SDO/SD0
SDI/SD1
SHD/SD2
SWP/SD3
SCK/CLK
SCS/CMD
IO0 BOOT
TXD0/IO1 TXD
IO2
RXD0/IO3 RXD
IO4 L3ON RTC_GPIO10
IO5 R4
IO12 L2ON RTC_GPIO14
IO13 B1_LED RTC_GPIO16
IO14 L1ON RTC_GPIO13
IO15 FANON
IO16
IO17
IO18
IO19
IO21 SDA
IO22 SCL
IO23
IO25 B2_LED RTC_6
IO26 B2ON RTC_7
IO27 SYS_OK_LED
IO32 B1ON RTC_9
IO33 MODE
IO34
IO35
R8 11k
R9
SW1 C492887
SW2 C492887
SW3 C492887
pins with pullups:
14, 16, 17, 18, 19, 21, 22, 23
I2C Port
R6 3.6k
R7 3.6k
SCL
SDA
Conn_01x04_Female
J2
USB
J3 USB_B_Micro
VBUS
D+
D−
ID
Shield
12V FAN
J9 Conn_01x02_Male
FANGND
FAN PWM
FANON
Q12 MMBT3904
UART-USB
U5 CH330N
C10 100n
C9 100n
V3 VCC TXD RXD UD+ UD− GND RTS
ADC + temp
U3 ADC128D818
C6 100n
C7 1uF
IN0 IN1 IN2 IN3 IN4 IN5 IN6 IN7
B1VD B2VD B1CVD B2CVD 3v3VD
2.56V full-range
Don't use IN7 (temp)
SDA SCL INT
VREF A0 A1 V+
C4 1uF
C5 100n
ADCs
R10 200k
R11 33k
R12 200k
R13 33k
R18 3.6k
R19 11k
R21 3.6k
R22 11k
R23 3.6k
R24 11k
Acea Quigg
Sheet: /
File: esp32_battery_isolator.sch
Title: ESP32 Battery Isolator
Size: A4
Date: 2021-02-08
Rev: D
KiCad E.D.A. kicad (5.1.7-0-10_14)
Id: 1/1