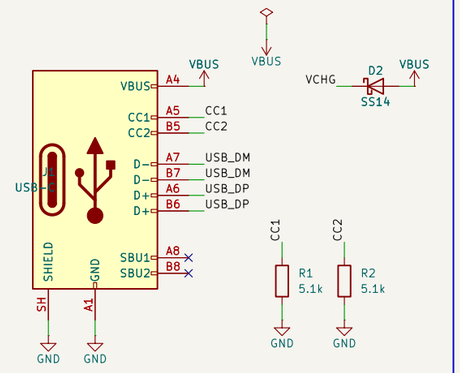
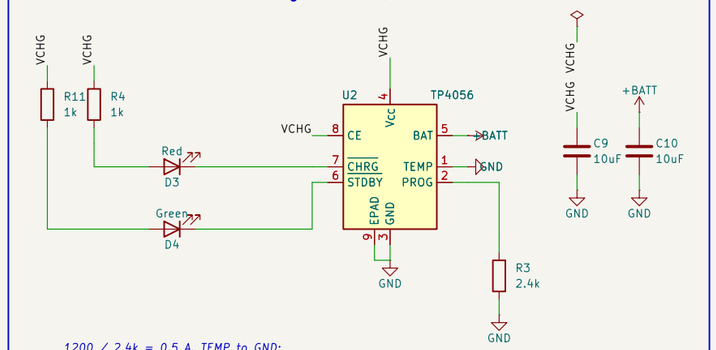
USB-C in



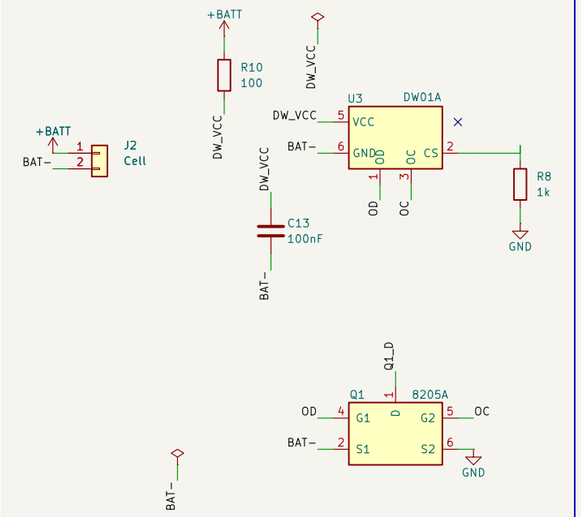
5.1k on CC1 and CC2: "a device, give 5 V". D+ and D− to GPIO19 and 18

Charger: TP4056, 500 mA



1200 / 2.4k = 0.5 A. TEMP to GND: no cell thermistor. LEDs fed from VCHG, so they take nothing from the cell

Cell protection: DW01A and 8205A



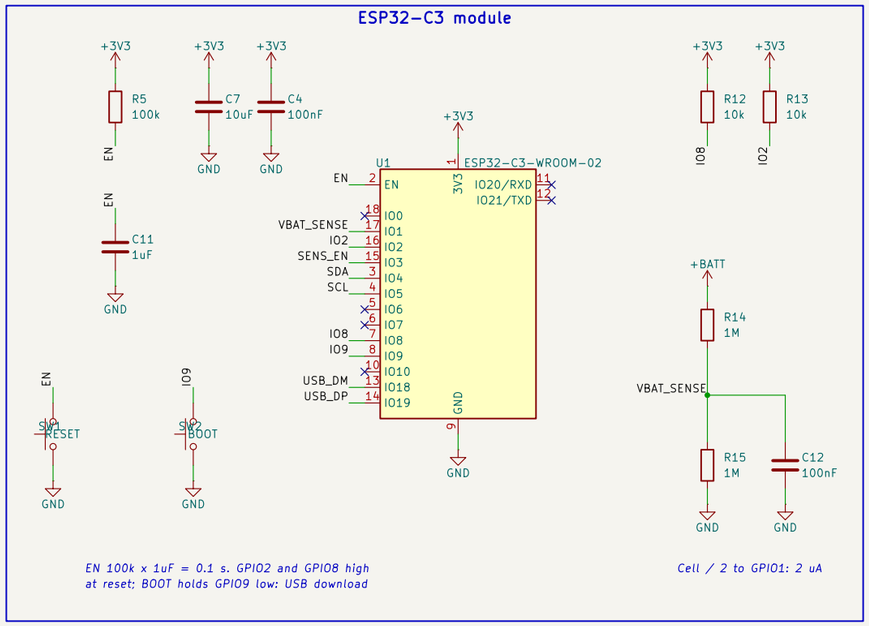
B− reaches GND only through Q1. Cut-offs: 4.3 V charge, 2.4 V discharge, 150 mV on CS (about 3 A). Q1 pins 1 and 8: to each other

Solar panel in



Panel open-circuit voltage under 8 V

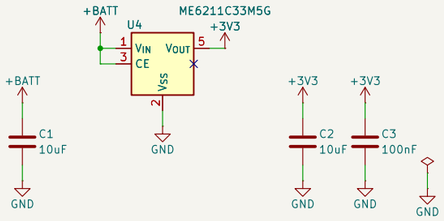
ESP32-C3 module



EN 100k x 1uF = 0.1 s. GPIO2 and GPIO8 high at reset; BOOT holds GPIO9 low: USB download

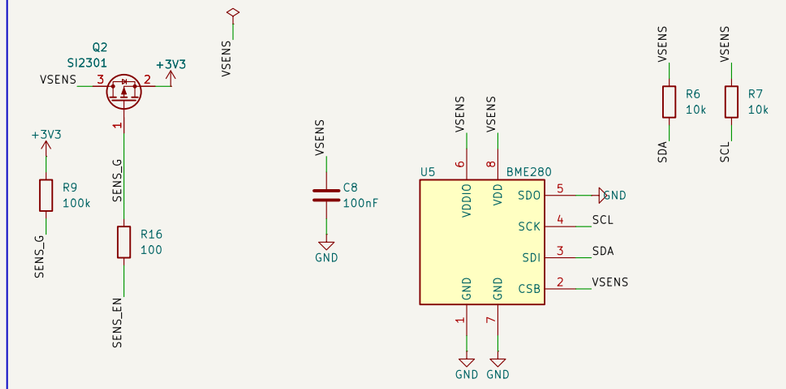
Cell / 2 to GPIO1: 2 uA

3.3 V: ME6211



40 uA for itself, all day: 40 of the 52 uA

BME280 on a switched rail



GPIO3 low: Q2 on, sensor on. R9 holds it off in deep sleep. Pull-ups on VSENS, not 3.3 V. SDO to GND: address 0x76. CSB high: I2C.

BME280 on a switched rail, USB-C and solar input, about 52 uA asleep
ESP32-C3-WROOM-02, TP4056 charger, DW01A + 8205A protection, ME6211 3.3 V
Created by siwit.co/PCB6 Approved by Dr. Sam Macharia
siliconwit.com

Sheet: /
File: esp32-battery.kicad_sch

Title: ESP32-C3 Battery IoT Sensor Node

Size: A3	Date: 2026-11-18	**Rev: A**
KiCad E.D.A. 10.0.8		Id: 1/1