Optional: ESP32 USB for programming
(do not feed 3V3 pin)

B+

R1 100kΩ

B−

VMEAS

BATT +

Li-ion Battery
(3.7V nominal)

TP4056 (Type-C)
with OUT+/OUT-

OUT+

VIN/5V

ADC (GPIO34)

ESP32 Dev Board

0.1µF
(optional)

R2 100kΩ

BATT −

OUT−

GND

Common GND

USB-C 5V in

USB-C 5V for charging

Notes:
• Connect divider ground to OUT− (same as ESP32 GND).
• Do NOT connect battery B+ to ESP32 3V3.
• ESP32 reads VMEAS; in code multiply by 2 to recover Vbat.
• R1=R2=100kΩ keeps battery drain ~21µA.
• You may plug both TP4056 USB-C and ESP32 USB for programming.