

Current Shunts

The image displays three circuit diagrams, labeled Shunt0, Shunt1, and Shunt2, each showing a different topology for current shunting. All three circuits share common components: a positive input terminal VIN, a load, a diode ZD1 (MMSZ5231B), a diode ZD2 (MMSZ5231B), a diode ZD3 (MMSZ5231B), and two NPN transistors QP1, QP2 (CJ3401) and QP3, QP4 (CJ3401) and QP5, QP6 (CJ3401). The shunt resistors are labeled RSHUNT1 (R100), RSHUNT2 (1R00), and RSHUNT3 (10R0). The shunt resistors are labeled RP1 (100k), RP2 (100k), and RP3 (100k). The shunt resistors are labeled RN1 (100k), RN2 (100k), and RN3 (100k). The shunt resistors are labeled RZ1 (10k), RZ2 (10k), and RZ3 (10k). The shunt resistors are labeled QN1 (CJ3400), QN2 (CJ3400), and QN3 (CJ3400). The shunt resistors are labeled GND, GND, and GND. The shunt resistors are labeled Load, IN-, and IN-.

Shunt0: This circuit features a shunt resistor RSHUNT1 (R100) in series with the load. A diode ZD1 (MMSZ5231B) is connected in parallel with the shunt resistor. A transistor QN1 (CJ3400) is connected in parallel with the shunt resistor, with its base connected to the input VIN and its emitter connected to ground. A resistor RN1 (100k) is connected between the input VIN and the base of QN1. A resistor RP1 (100k) is connected between the input VIN and the shunt resistor. A resistor RZ1 (10k) is connected between the shunt resistor and the base of QN1. A diode ZD1 (MMSZ5231B) is connected in parallel with the shunt resistor. Two transistors QP1 and QP2 (CJ3401) are connected in parallel with the shunt resistor, with their bases connected to the input VIN and their emitters connected to ground.

Shunt1: This circuit features a shunt resistor RSHUNT2 (1R00) in series with the load. A diode ZD2 (MMSZ5231B) is connected in parallel with the shunt resistor. A transistor QN2 (CJ3400) is connected in parallel with the shunt resistor, with its base connected to the input VIN and its emitter connected to ground. A resistor RN2 (100k) is connected between the input VIN and the base of QN2. A resistor RP2 (100k) is connected between the input VIN and the shunt resistor. A resistor RZ2 (10k) is connected between the shunt resistor and the base of QN2. A diode ZD2 (MMSZ5231B) is connected in parallel with the shunt resistor. Two transistors QP3 and QP4 (CJ3401) are connected in parallel with the shunt resistor, with their bases connected to the input VIN and their emitters connected to ground.

Shunt2: This circuit features a shunt resistor RSHUNT3 (10R0) in series with the load. A diode ZD3 (MMSZ5231B) is connected in parallel with the shunt resistor. A transistor QN3 (CJ3400) is connected in parallel with the shunt resistor, with its base connected to the input VIN and its emitter connected to ground. A resistor RN3 (100k) is connected between the input VIN and the base of QN3. A resistor RP3 (100k) is connected between the input VIN and the shunt resistor. A resistor RZ3 (10k) is connected between the shunt resistor and the base of QN3. A diode ZD3 (MMSZ5231B) is connected in parallel with the shunt resistor. Two transistors QP5 and QP6 (CJ3401) are connected in parallel with the shunt resistor, with their bases connected to the input VIN and their emitters connected to ground.

[illegible]

INA219 (Addr = 0x45)

Probes

Switch

OLED

The image displays two circuit diagrams for connecting an OLED display to a microcontroller. Both diagrams show a 4-pin connector with pins numbered 1 through 4. In both cases, pin 1 is connected to a +5V power supply, pin 2 is connected to the SDA data line, pin 3 is connected to the SCL clock line, and pin 4 is connected to a common ground (GND). The left diagram is labeled 'OLED HDR-M' and the right diagram is labeled 'OLED_SMT HDR-F'.

Battery

The diagram illustrates a 5V battery connected to a 2-pin header labeled J1. The battery's positive terminal is connected to pin 1 of J1, and the ground terminal is connected to pin 2 of J1. The header is identified as J1 HDR-M-2.54_1x2.

Mounting Holes

H1
Mounting Hole M2

H2
Mounting Hole M2

H3
Mounting Hole M2

H4
Mounting Hole M2