





The PCB layout is divided into two main sections: Temp/Hum Sensor and Accelerometer.

**Temp/Hum Sensor:** This section contains the SHT40-AD1B-R2 sensor (IC2). It is connected to the +3V3 power supply and GND. The sensor's VDD (pin 3) is connected to P0.11, and its SDA (pin 4) is connected to P0.26/SDA. The sensor's SCL (pin 2) is connected to P0.27/SCL, and its VSS (pin 1) is connected to GND. A 0.1uF 50V capacitor (C10) is connected between P0.11 and GND.

**Accelerometer:** This section contains the IC-LIS2DH12TR accelerometer (U10). It is connected to the +3V3 power supply and GND. The accelerometer's VDD (pin 9) is connected to P0.11, and its SDA/SDIO (pin 4) is connected to P0.26/SDA. The accelerometer's SCL/SPC (pin 1) is connected to P0.27/SCL, and its INT1/INT2 (pin 12) is connected to P0.29/D2. A 1.00uF 100V capacitor (C18) is connected between P0.11 and GND. A 0.1uF 50V capacitor (C19) is connected between P0.11 and GND. A 1% 100k resistor (U10) is connected between P0.11 and GND. A jumper (JMP1) is connected between P0.29/D2 and GND.

The PCB layout shows two sensor modules connected to a microcontroller. The first module is a Temperature/Humidity Sensor (SHT40-AD1B-R2) connected to pins P0.27/SCI and P0.26/SDA. The second module is an Accelerometer (IC-LIS2DH12TR) connected to pins P0.11, P0.27/SCI, and P0.26/SDA. A jumper (JMP1) is used to connect the INT1/INT2 pins of the accelerometer to the P0.29/D2 pin.

**Solar Energy Harvesting**

The schematic diagram illustrates the Solar Energy Harvesting circuit for the AEM10941 IC. The circuit is designed to harvest energy from a solar panel and store it in a battery (VBATT) while providing a regulated output (VOUT).

**Key Components and Connections:**

- Solar Panel:** Connected to the SRC pin (pin 25) of the AEM10941 IC. The positive terminal is connected to SRC, and the negative terminal is connected to GND.
- Boost Converter Stage:**
  - Inductor L5 (10µH, 0.55A) is connected between the SRC pin and the SWBOOST pin (pin 28).
  - Capacitor C15 (10µF) is connected between the SRC pin and GND.
  - Capacitor C14 (22µF, 10V) is connected between the SWBOOST pin and GND.
  - Capacitor C16 (10µF) is connected between the SWBUCK pin (pin 2) and GND.
- Buck Converter Stage:**
  - Inductor L3 (10µH) is connected between the SWBUCK pin (pin 2) and the BUCK pin (pin 3).
  - Capacitor C16 (10µF) is connected between the BUCK pin (pin 3) and GND.
- Reverse Voltage Protection:**
  - Diode D1 (DMP2150LW) is connected in series with the VBATT pin (pin 16) to protect the battery from reverse voltage.
  - Capacitor C5 (100µF) is connected between the VBATT pin (pin 16) and GND.
- IC Pins and Connections:**
  - Pin 17 (PRIM):** Connected to GND.
  - Pin 10 (FBPRIM\_U):** Connected to GND.
  - Pin 9 (FBPRIM\_D):** Connected to GND.
  - Pin 16 (BATT):** Connected to the battery (VBATT).
  - Pin 15 (BAL):** Connected to GND.
  - Pin 11 (LVOUT):** Connected to GND.
  - Pin 14 (HVOUT):** Connected to GND.
  - Pin 12 (ENHV):** Connected to GND.
  - Pin 19 (ENLV):** Connected to GND.
  - Pin 7 (SELMPR1):** Connected to GND.
  - Pin 8 (SELMPP2):** Connected to GND.
  - Pin 4 (CFG2):** Connected to GND.
  - Pin 5 (CFG1):** Connected to GND.
  - Pin 6 (CFG0):** Connected to GND.
  - Pin 29 (EPAD):** Connected to GND.

The circuit is labeled with a part number **AEM10941** and a revision **IC3**.

**Legend:**

- SR**: Solar panel positive terminal
- VBATT**: Battery
- VOUT**: Output voltage
- D1**: Diode (DMP2150LW)
- C5**: Capacitor (100µF)
- L5**: Inductor (10µH, 0.55A)
- L3**: Inductor (10µH)
- C15**: Capacitor (10µF)
- C14**: Capacitor (22µF, 10V)
- C16**: Capacitor (10µF)

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