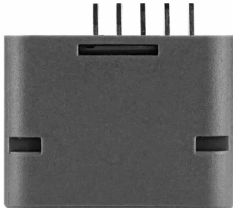
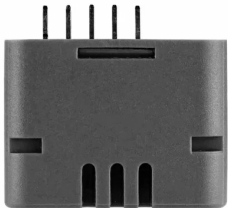
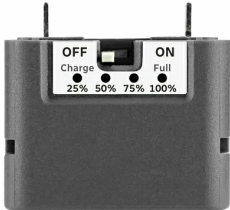
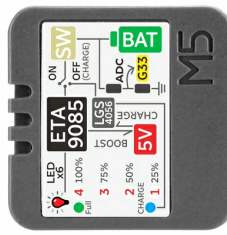


Atomic Battery Base

SKU:A151





Description

Atomic Battery Base is a portable power base designed specifically to power Atom series products. It features the ETA9085E10 high-efficiency boost converter solution and the LGS4056HDA linear charging management chip, with a built-in **200mAh rechargeable battery**. It provides stable 5V **boosted** output and ensures safe and efficient battery **charging** management. The product includes a built-in battery **voltage detection** circuit with an LED battery level indicator to display the battery's **status** in real-time. It comes with a **Battery Charge and discharge dip switch** that supports one-touch switching between boost and charging modes, meeting the needs of portable power applications. It is suitable for IoT devices, portable electronic products, and other applications requiring a stable power supply.

Features

- ETA9085E10 high-efficiency boost converter chip
- LGS4056HDA charging chip
- Built-in 200mAh rechargeable battery
- Battery voltage ADC detection
- LED battery level indicator
- Battery Charge and discharge dip switch

Includes

- 1 x Atomic Battery Base

Applications

- Power supply for IoT devices
- Portable electronic products
- Mobile testing platform

Specifications

Specification	Parameter
Charging/Discharging Chip	LGS4056HDA
Boost Converter Chip	ETA9085E10
Battery Level Indicator	4-level display (red LED)
Charging Indicator	Charging (blue LED), Fully charged (green LED)
Battery Capacity	DC 3.7V@200mAh
Battery Circuit Detection	Voltage divider detection circuit
Charging Current	DC 5V@223mA
Maximum Boost Output Current	DC 5V@300mA
Standby Current (Switch OFF)	DC 4.2V@2.55uA
Operating Temperature	0~40°C
Operating Current	DC 4.2V@39.55mA
Product Size	24.0 x 24.0 x 23.93mm
Product Weight	9.9g
Package Size	47.0 x 46.0 x 27.0mm
Gross Weight	15.8g

Learn

Charging/Discharging Instructions



Charging Tip

When the power switch is turned ON, the battery boosts to 5V to power the Atom. When the power switch is turned OFF, the battery can be charged via the Atom USB interface. The boost and charging states need to be manually switched with the switch and cannot occur simultaneously.

4-level battery display (red LED) for battery status, and charging status is displayed (blue LED: charging, green LED: fully charged).

LED Display and Voltage Range Correspondence

Battery Voltage Range	Estimated Battery Level
3.00V ~ 3.47V	0 ~ 25%
3.48V ~ 3.61V	25 ~ 50%
3.62V ~ 3.81V	50 ~ 75%
3.82V ~ 4.20V	75 ~ 100%

Additional Notes



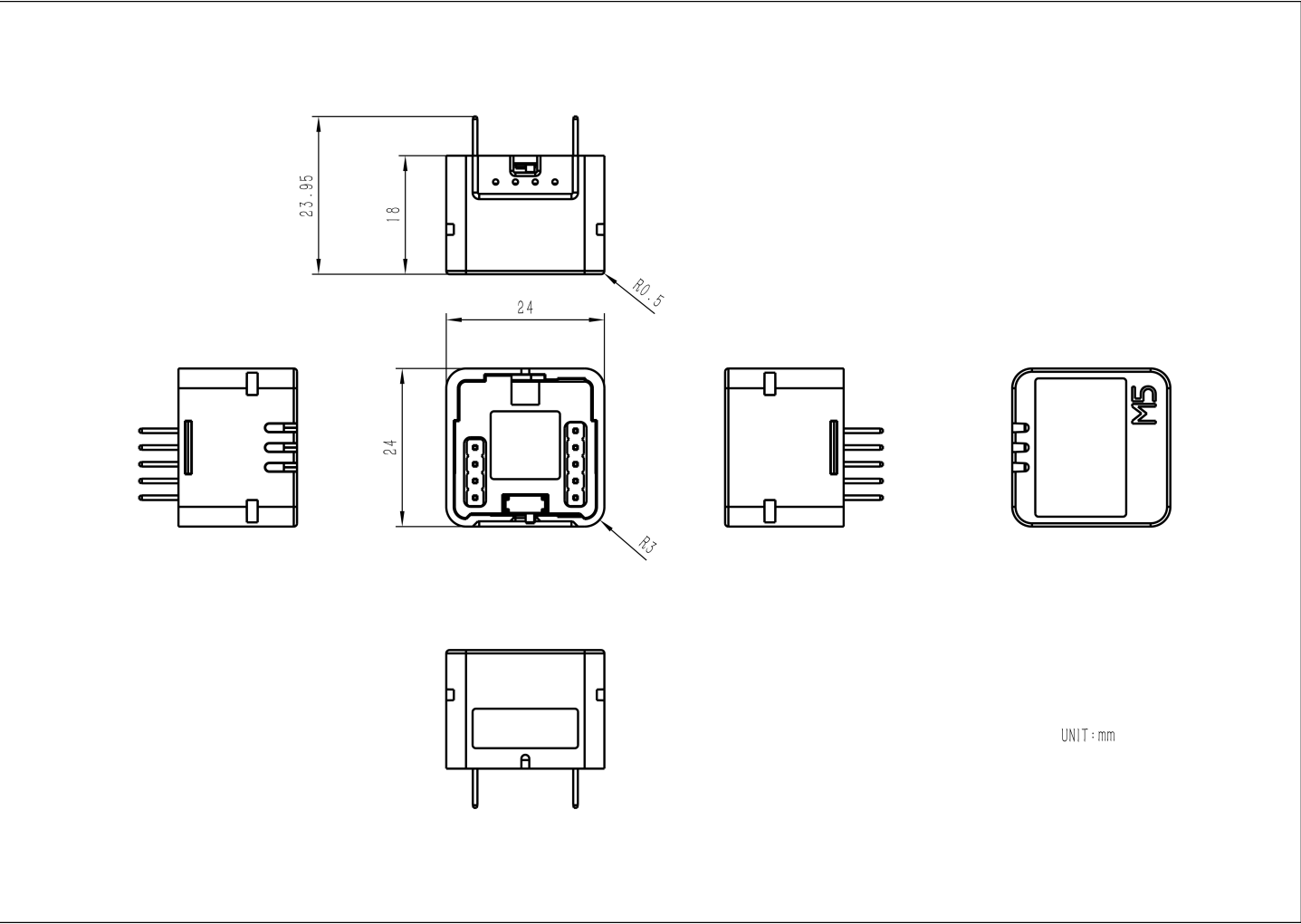
Compatibility

If used with the Atomic Voice Base, all pins on the right side of the Atomic Battery Base (5P) must be cut. If used with Atom Voice, the G33 pin connection must be cut. In these combinations, the Atomic Battery Base is only used for power supply and cannot read the battery voltage status.

Schematics

Atomic Battery Base	BAT ADC
Atom-Lite / Atom-Matrix	G33
AtomS3 / AtomS3-Lite	G8
AtomS3R / AtomS3R-CAM / AtomS3R-M12	G8

Model Size



Structure

- Atomic Battery Base Structure Files

Datasheets

- ETA9085
- LGS4056H

Softwares

| Arduino

- Example code to get battery level:

Battery Voltage Acquisition Formula

$$\frac{ADC_{\text{raw}}}{2^{\text{分辨率}} - 1} = \frac{V_{\text{BAT}}}{V_{\text{REF}}} \times \frac{R6}{R14 + R6}$$

For the **Atom** series control board, $V_{\text{REF}} = 3.3\text{V}$, ADC resolution set to 12-bit, R14 and R6 are both $1\text{M}\Omega$, thus $V_{\text{BAT}} = 3.3 * (\text{detected ADC value} / 4095) * 2$

```
#include "Arduino.h"

#define ATOM_BAT_ADC_PIN    33  // For Atom Series
#define ATOMS3_BAT_ADC_PIN  8   // For AtomS3 Series, AtomS3R Series

#define BAT_ADC_RESOLUTION 12

void setup()
{
    Serial.begin(115200);
    pinMode(ATOM_BAT_ADC_PIN, INPUT);
    analogReadResolution(BAT_ADC_RESOLUTION);
}

void loop()
{
    uint32_t adc_vol = 0;
    adc_vol          = analogReadMilliVolts(ATOM_BAT_ADC_PIN);
    uint32_t bat_vol = adc_vol * 2;
    Serial.printf("ADC:%d,Vol:%d\n", analogRead(ATOM_BAT_ADC_PIN), bat_vol);
}
```

| Video

- Atomic Battery Base product introduction and demonstration video

[A151_Video.mp4](#)