Beetle ESP32-C6 Mini Development Board

DFR1117

Product Overview

01/08/2025

For the most up-to-date information, visit www.mouser.com or the supplier's website.

Description

DFRobot Beetle ESP32-C6 Mini Development Board is an Arduino low-power IoT development board designed based on an ESP32-C6 chip. This board is equipped with a 160MHz RISC-V 32-bit high-performance processor. The ESP32-C6 development board supports Wi-Fi® 6, Bluetooth® 5, Zigbee® 3.0, Thread 1.3, and Matter communication protocols.

The ESP32-C6 development board provides up to 13 IO ports and incorporates a lithium battery charging function. This board supports battery voltage detection and enables proactive measures to be taken when the battery is at low levels. The ESP32-C6 development board features $5V_{DC}$ Type-C input voltage, 14µA sleep current (in deep sleep mode, powered by battery), and 0.5A maximum charging current. This board is used in electronic badges, pet trackers, electronic watches, smart buttons, smart lighting, backpack charms, and human-interactive devices.

Specifications

- 3.3V operating voltage
- $5V_{DC}$ Type-C input voltage
- $5V_{DC}$ input voltage
- 0.5A maximum charging current
- 14µA sleep current (in deep sleep mode, powered by battery)
- -10°C to 60°C operating temperature range

Features

- Boasting an ultra-compact size with 25mm x 20.5mm dimensions
- Equipped with the ESP32-C6 chip and supports communication protocols including Wi-Fi® 6, Bluetooth® 5, Zigbee®, and Thread
- Ultra-low power consumption with deep sleep at 14µA
- Integrated lithium battery charging functionality
- Supports battery voltage detection and provides insights into device power levels
- RISC-V single-core processor
- 160MHz main frequency
- 512KB SRAM
- 4MB flash
- 320KB ROM
- 16KB RTC SRAM
- Wi-Fi®:
  - IEEE 802.11b/g/n Wi-Fi protocol
  - Support 20MHz and 40MHz at 2.4GHz band
  - Station, SoftAP, SoftAP+Station combined mode
  - 2.4GHz Wi-Fi frequency
  - TX/RX A-MPDU and TX/RX A-MSDU frame aggregation
- Bluetooth®:
  - Bluetooth 5 and Bluetooth mesh protocol
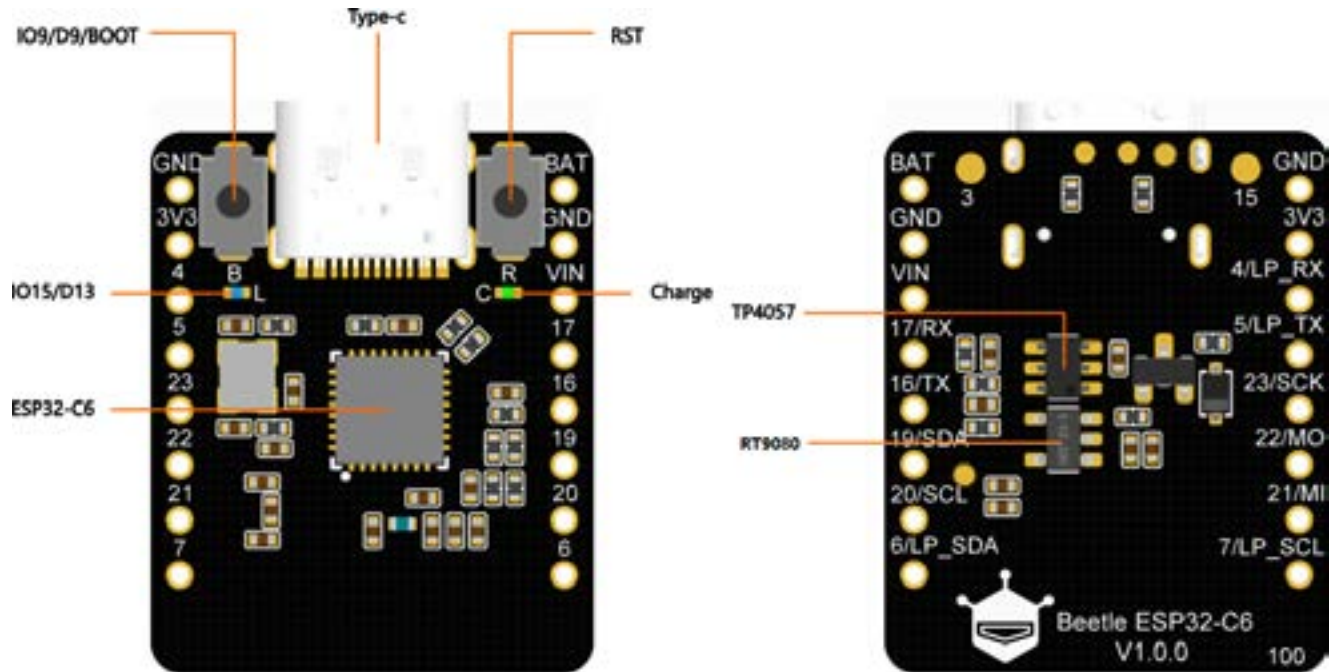 - 125Kbps, 500Kbps, 1Mbps, and 2Mbps Bluetooth frequency

Applications

- Electronic badges
- Pet trackers
- Electronic watches
- Smart buttonSmart lighting
- Backpack charms
- Human-interactive devices

Pet Tracker | Electronic Watch
Backpack Charm | Smart Lock

Multiple Transmission Protocols

Wi-Fi 6

Zigbee 3.0

Bluetooth 5

ESP32-C6

Thread 1.3

Board Overview

Mouser Part Number

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To learn more, visit https://www.mouser.com/new/dfrobot/dfrobot-dfr1117-beetle-board/

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