

## 5 Module Schematics

This is the reference design of the module.

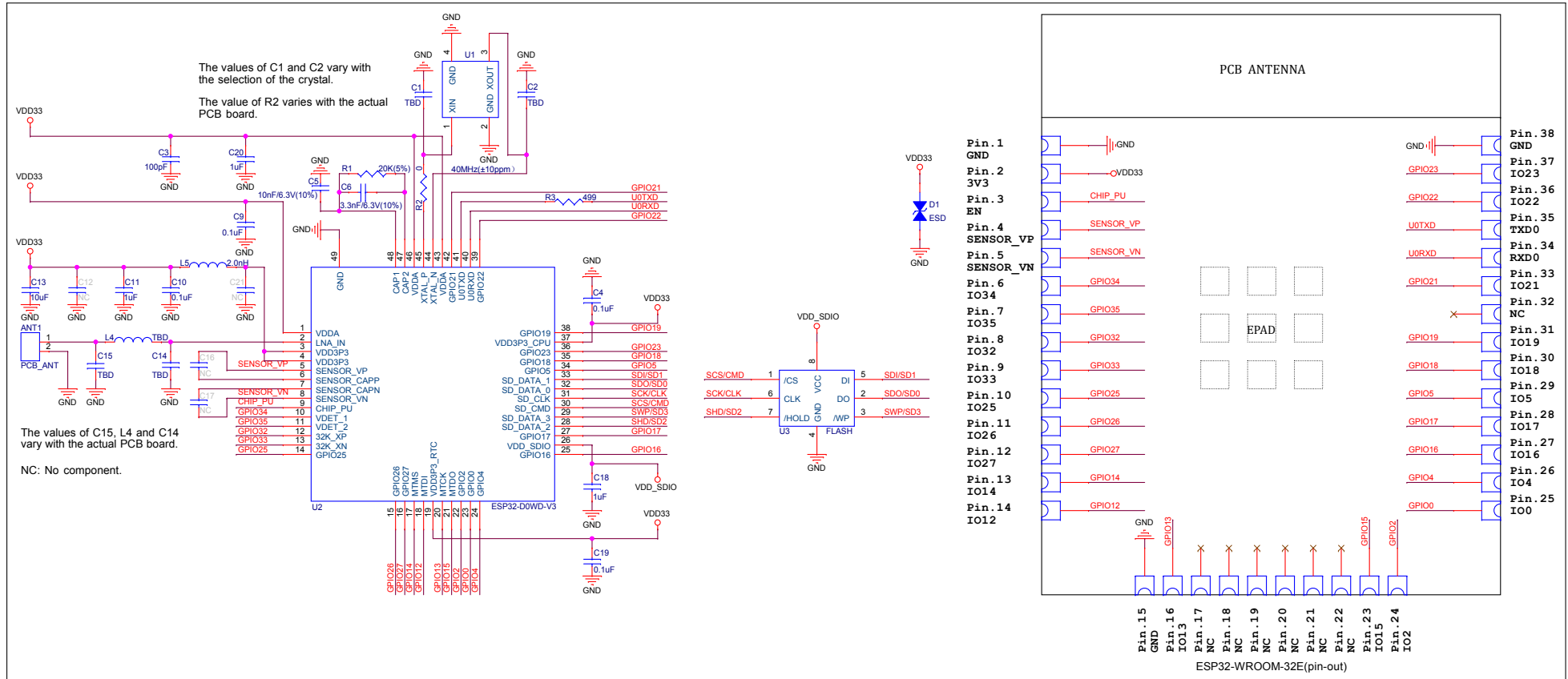


Figure 4: ESP32-WROOM-32E Schematics

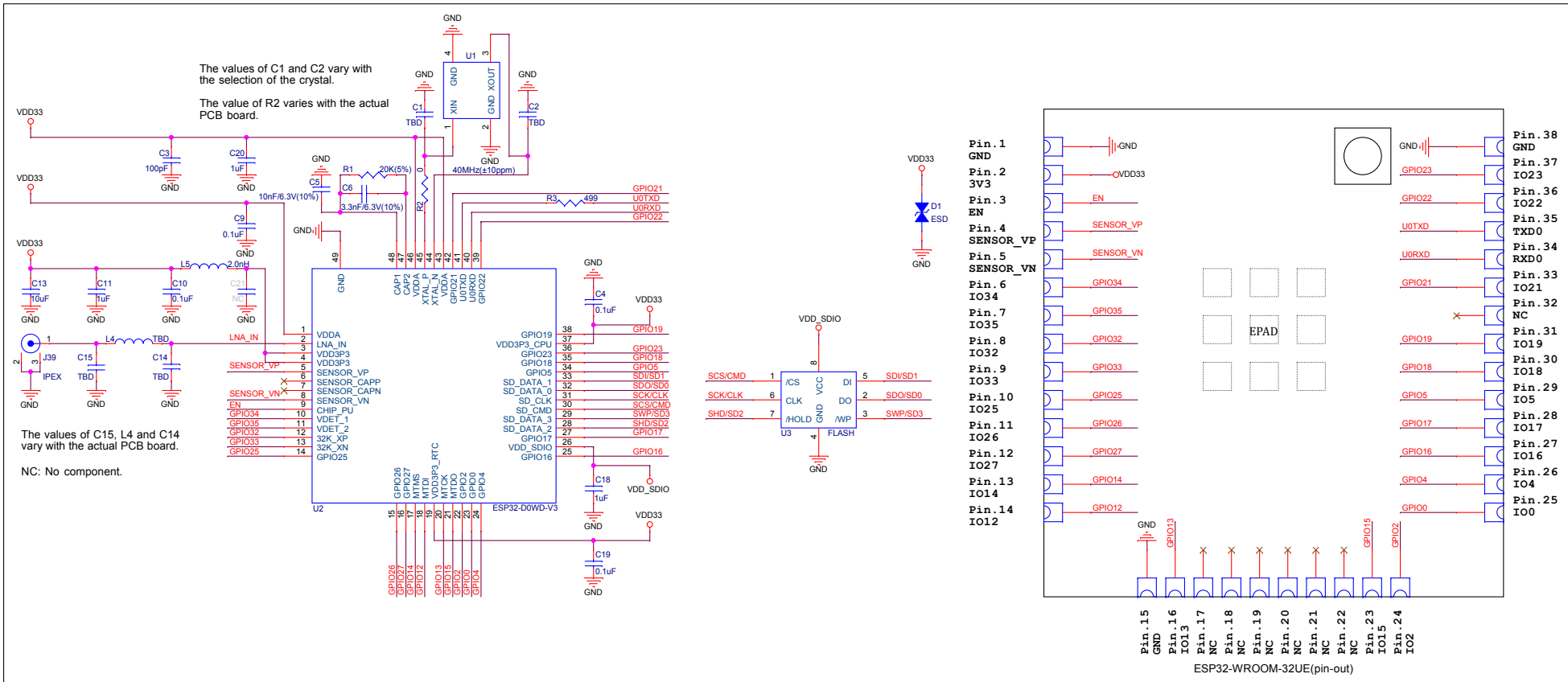
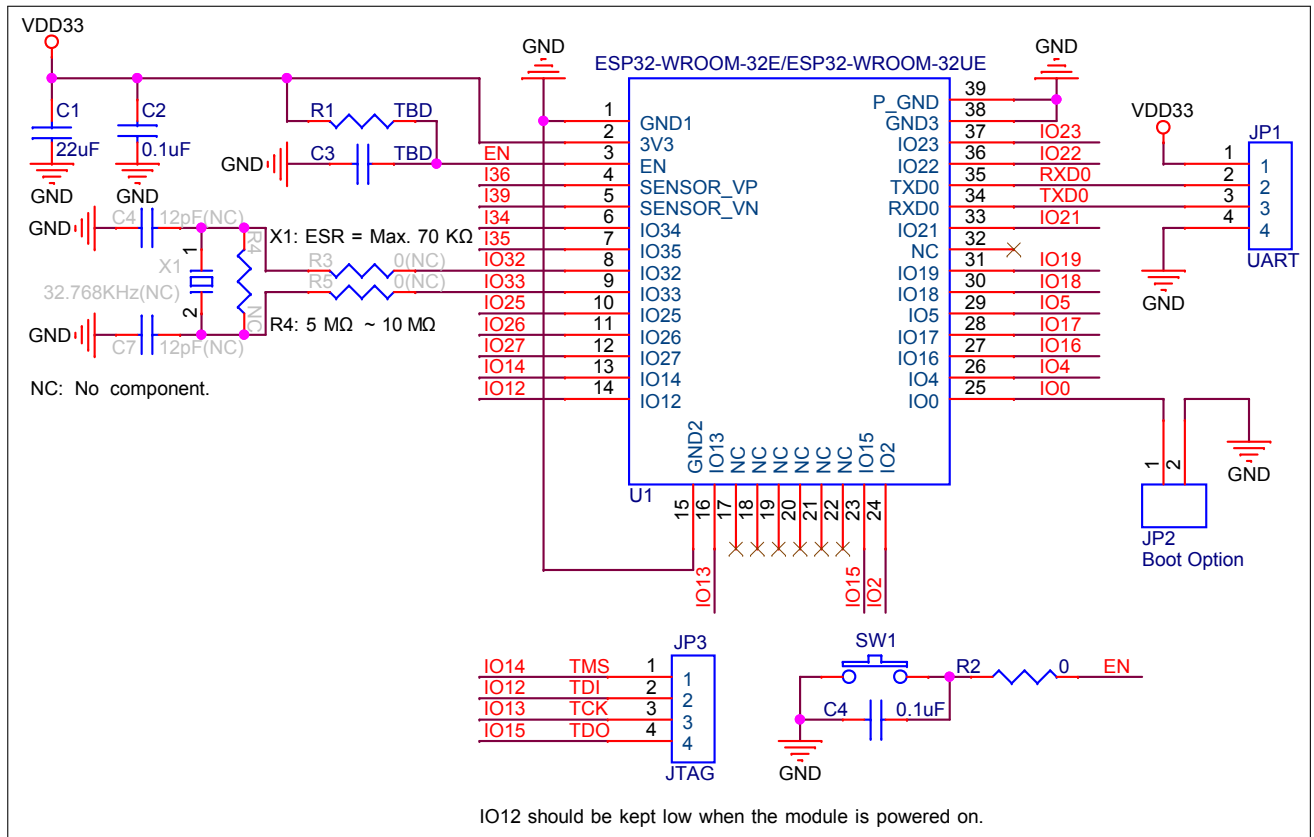


Figure 5: ESP32-WROOM-32UE Schematics

## 6 Peripheral Schematics

This is the typical application circuit of the module connected with peripheral components (for example, power supply, antenna, reset button, JTAG interface, and UART interface).



**Figure 6: Peripheral Schematics**

- Soldering EPAD Pin 39 to the ground of the base board is not a must, however, it can optimize thermal performance. If you choose to solder it, please apply the correct amount of soldering paste.
- To ensure that the power supply to the ESP32 chip is stable during power-up, it is advised to add an RC delay circuit at the EN pin. The recommended setting for the RC delay circuit is usually  $R = 10\text{ k}\Omega$  and  $C = 1\text{ }\mu\text{F}$ . However, specific parameters should be adjusted based on the power-up timing of the module and the power-up and reset sequence timing of the chip. For ESP32's power-up and reset sequence timing diagram, please refer to Section *Power Scheme* in [ESP32 Series Datasheet](#).

## 7 Physical Dimensions and PCB Land Pattern

### 7.1 Physical Dimensions

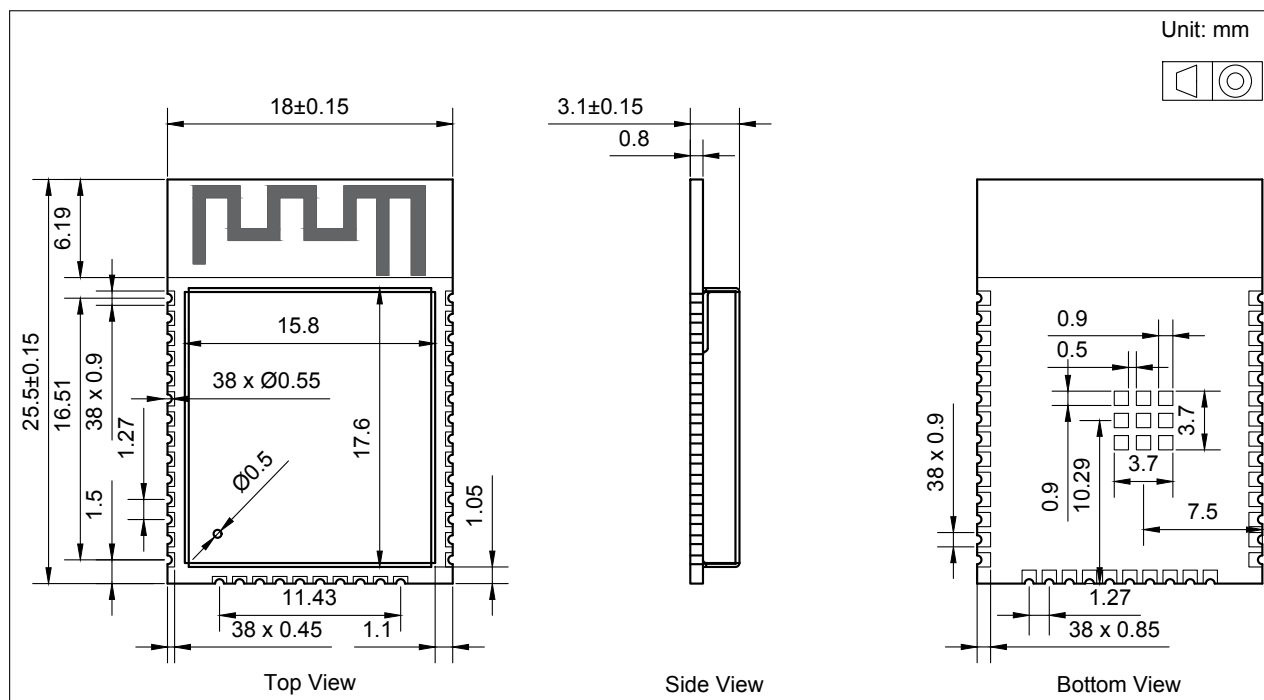


Figure 7: ESP32-WROOM-32E Physical Dimensions

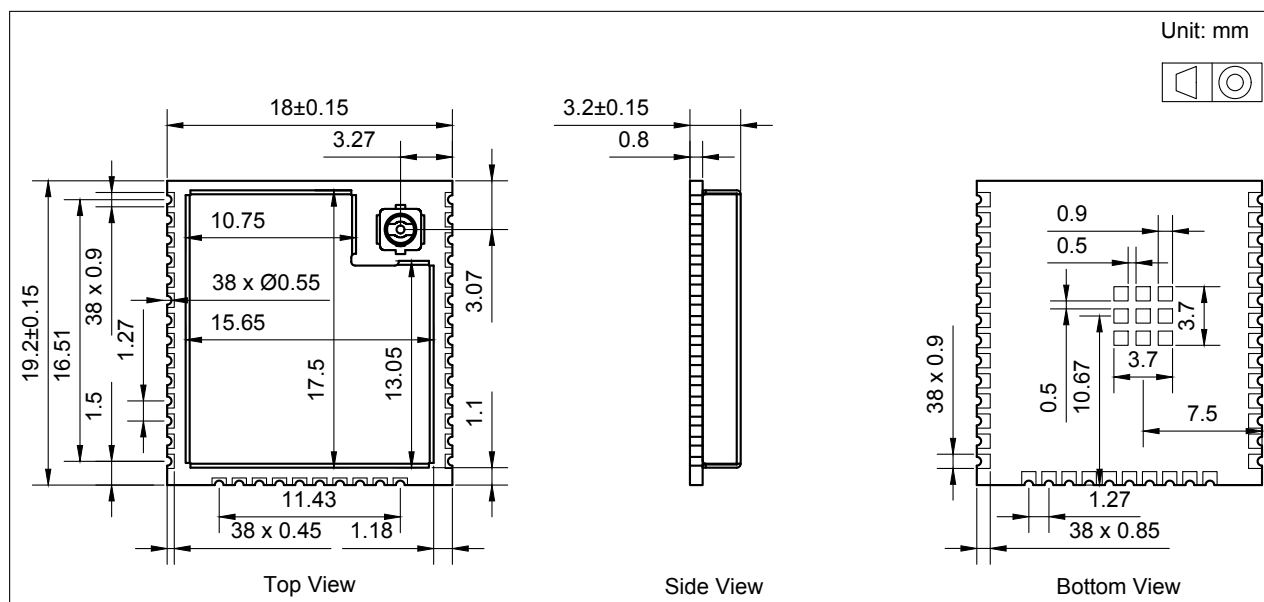
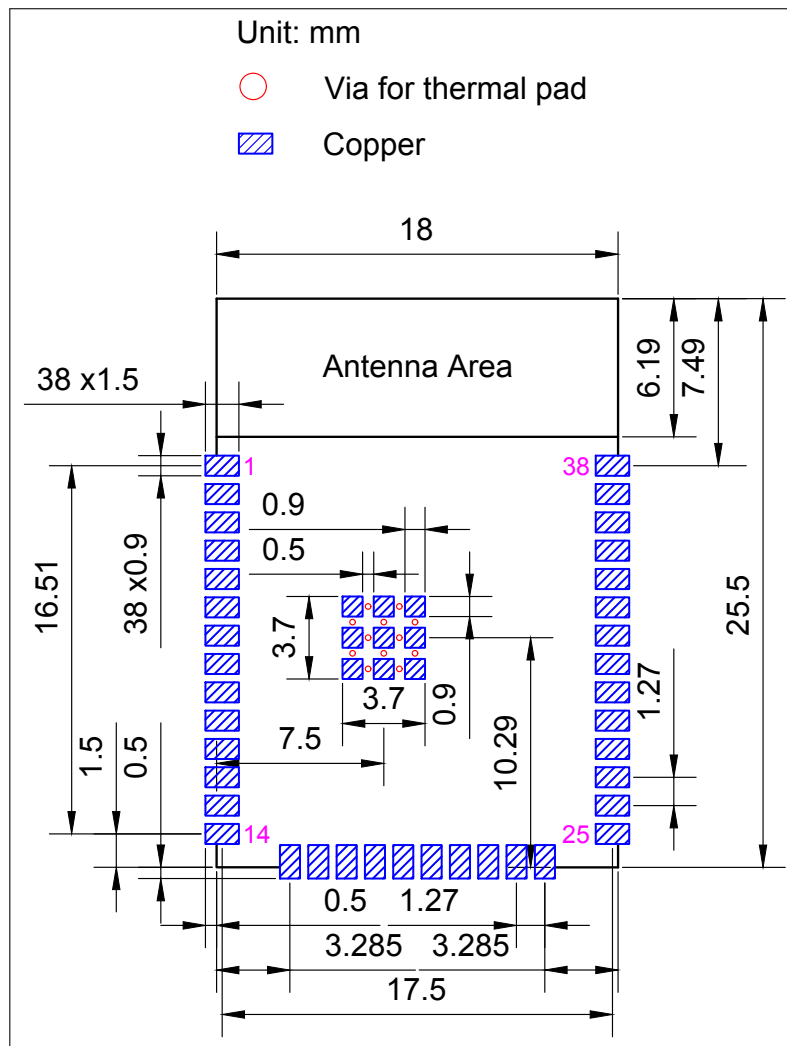


Figure 8: ESP32-WROOM-32UE Physical Dimensions

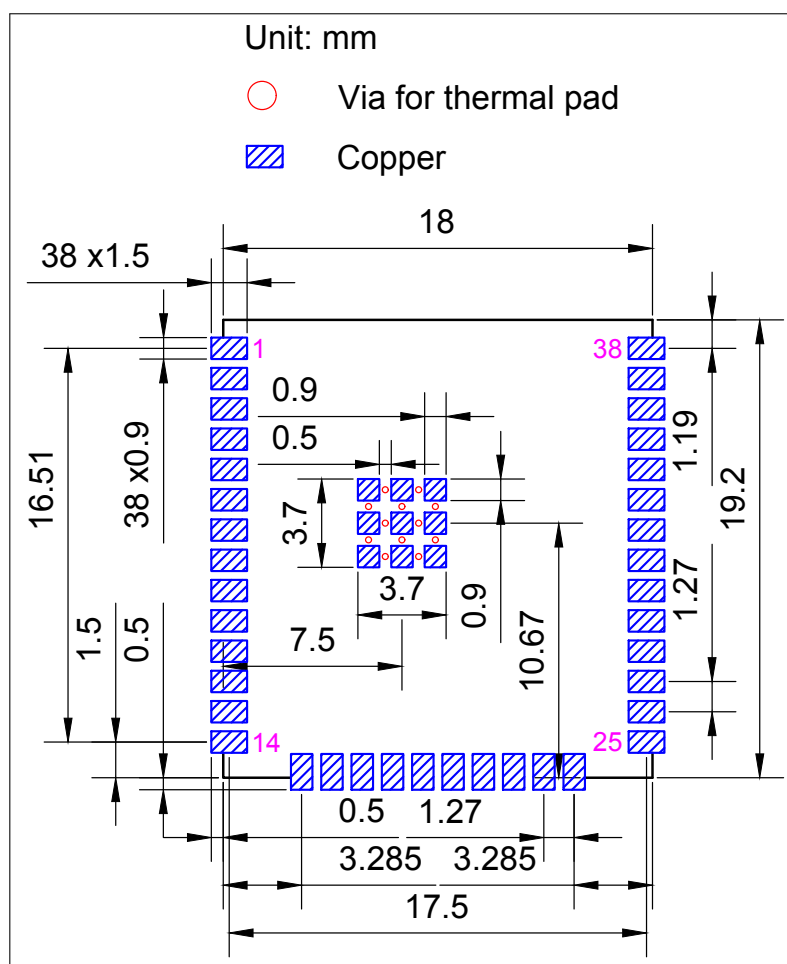
**Note:**

For information about tape, reel, and product marking, please refer to [Espressif Module Package Information](#).

## 7.2 Recommended PCB Land Pattern



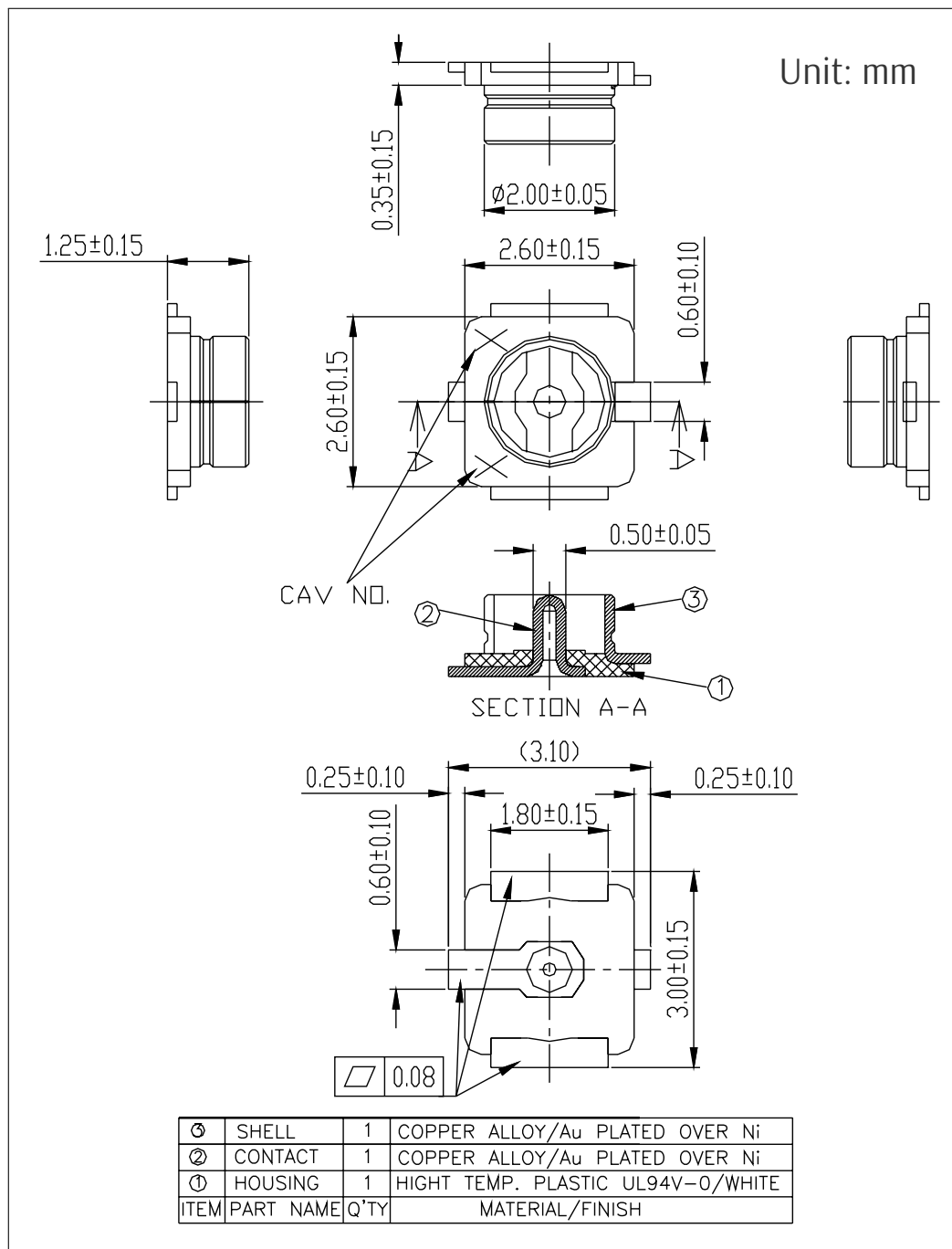
**Figure 9: ESP32-WROOM-32E Recommended PCB Land Pattern**



### 7.3 Dimensions of External Antenna Connector

ESP32-WROOM-32UE uses the first generation external antenna connector as shown in Figure 11. This connector is compatible with the following connectors:

- U.FL Series connector from Hirose
- MHF I connector from I-PEX
- AMC connector from Amphenol



### Figure 11: Dimensions of External Antenna Connector