

# WizFi360 Datasheet

## (Version 1.08)



## 1. Overview

WizFi360 is a low cost and low-power consumption industrial-grade WiFi module. It is compatible with IEEE802.11 b/g/n standard and supports SoftAP, Station and SoftAP+Station modes. The serial port baud rate can be up to 2Mbps, which can meet the requirement of various applications.

## 2. Features

- WiFi 2.4G, 802.11 b/g/n
- Support Station / SoftAP / SoftAP+Station operation modes
- Support "Data pass-through" and "AT command data transfer" mode
- Support serial AT command configuration
- Support TCP Server / TCP Client / UDP operating mode
- Support configuration of operating channel 1 ~ 13
- Support auto 20MHz / 40MHz bandwidth
- Support WPA\_PSK / WPA2\_PSK encryption
- Serial port baud rate up from 600bps to 2Mbps with 16 common values
- Support up to 5 TCP / UDP links
- Obtaining IP address automatically from the DHCP server (Station mode)
- DHCP service for Wireless LAN clients (AP mode)
- Support DNS for communication with servers by domain name
- Support "Keep-Alive" to monitor TCP connection
- Support "Ping" for monitoring network status
- Built-in SNTP client for receiving the network time
- Support built-in unique MAC address and user configurable
- Support firmware upgrade by UART Download / OTA (via WLAN)
- Industrial grade (operating temperature range: -40 ° C ~ 85 ° C)
- CE, FCC, KC, K-MIC(TELEC), RoHS, REACH certification

### 3. Parameters

Categories	Items	Values
Wireless	Wireless Standard	802.11 b/g/n
	Frequency Range	2.4GHz-2.5GHz ( 2400MHz~2483.5MHz )
Hardware	Serial Data Interface	3.3V TTL×1 : TXD、RXD、CTS、RTS、GND
	Operating Voltage	3.0~3.6V ( Typical 3.3V )
	Operating Temperature	-40°C ~85°C
Software	WiFi Operation Modes	Station / SoftAP / SoftAP + Station
	Encryption Method	WPA_PSK/WPA2_PSK
	Operation Modes	TCP Server/TCP Client/UDP
	Configuration Mode	AT command set
	Firmware Upgrade	UART Download / OTA (via WLAN) upgrade
Certification Report		CE, FCC, KC

**Table 2. Parameters**

Parameter	Typical value	Unit
Input Frequency	2400~2484	MHz
<b>Output Power</b>		
PA Output Power at 72.2Mbps	12	dBm
PA Output Power in 802.11b	19	dBm
<b>Sensitivity</b>		
DSSS,1 Mbps	-95	dBm
CCK,11 Mbps	-86	dBm
OFDM,6 Mbps	-89	dBm
OFDM,54 Mbps	-73	dBm
HT20, MCS0	-89	dBm
HT20, MCS7	-71	dBm
<b>Adjacent-channel interference (ACI)</b>		
OFDM,6 Mbps	32	dB
OFDM,54 Mbps	15	dB
HT20, MCS0	29	dB
HT20, MCS7	10	dB

**Table 3. Receiver Sensitivity**

Mode	Typical	Max	Unit
Send IEEE802.11b, CCK 11Mbps, POUT = +19 dBm	230	290	mA
Send IEEE802.11g, OFDM 54Mbps, POUT = +13.5 dBm	210	-	mA
Send IEEE802.11n, OFDM MCS7, POUT = +12 dBm	210	-	mA
Receive IEEE802.11 b/g/n	100-110		mA
Standby Mode	135		uA
Modem Sleep Mode	20		mA
Light Sleep Mode	13		mA

**Table 4. Description on Power Consumption**

- Standby mode
  - MCU will shut down all the peripherals and CPU will be powered down too. CPU can be wake up by external WP(WAKEUP) PIN or internal Timer.
- Modem Sleep mode
  - All peripherals of the MCU will operate.
- Light Sleep mode
  - Shutdown peripheral except for UART, TIMER, RFCFG GPSED

## 4. Package Information

### 4.1. WizFi360-PA

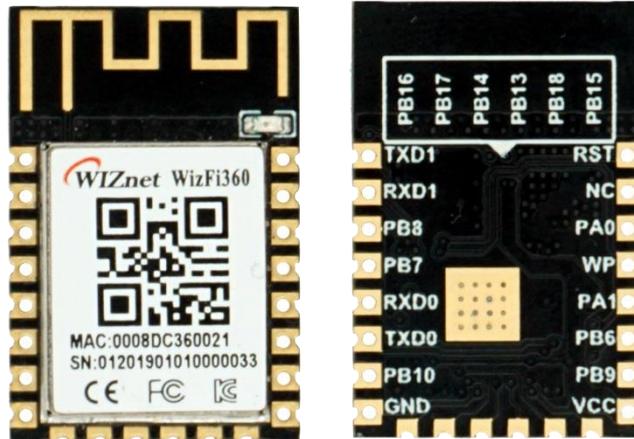


Figure 1. WizFi360-PA

- Onboard PCB antenna
- Onboard LED light, TX/RX LED
- Dimension: 24 × 16 × 3.2 (mm)

### 4.2. WizFi360-CON



Figure 2. WizFi360-CON

- Onboard IPEX connector for connecting antenna
- ANT pin for external antenna
- Dimension: 17 × 16 × 3.2 (mm)

## 5. Pin Definitions

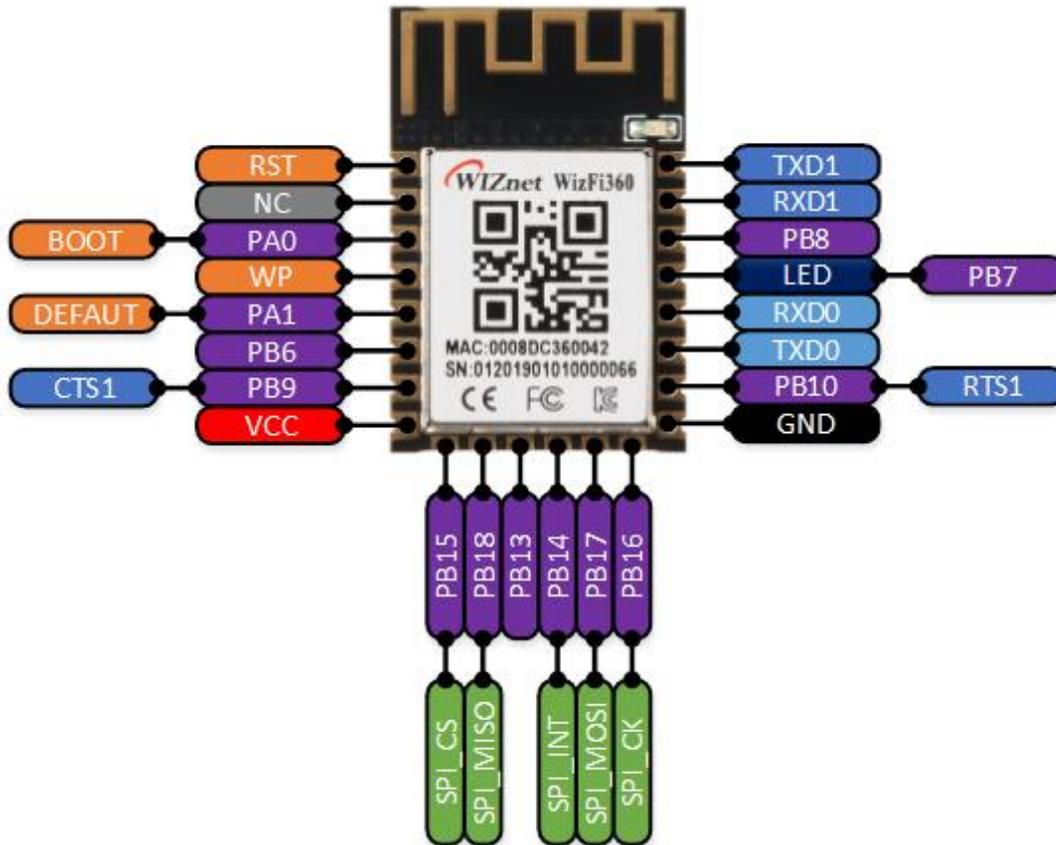


Figure 3. WizFi360 Pinout

No	Pin Name	Type	Pin Function
1	RST	I	Module Reset Pin (Active Low)
2	NC	-	Reserved
3	PA0	I/O	BOOT Pin (Active low) <b>When power on or reset is low, it operates in Boot mode.</b> In the normal operating mode, this pin can be controlled by AT command.
4	WP	I	WAKE-UP Pin (Active High) If the wake-up pin is high in Standby mode, the WizFi360 is reset to the normal operating mode.
5	PA1	I	Pull down over 3s for taking effect. <b>UART1's current parameter changes to default value (please refer to the AT+UART_CUR command in WizFi360 AT command manual).</b>
6	PB6	I/O	This pin can be controlled by AT command.
7	PB9	I	CTS Pin of UART1 If you don't use the CTS function, this pin can be controlled by AT command.
8	VCC	P	Power Pin (Typical Value 3.3V)
9	PB15	I/O	CSn Pin of SPI

			If you don't use the SPI function, this pin can be controlled by AT command.
<b>10</b>	PB18	I/O	MISO Pin of SPI If you don't use the SPI function, this pin can be controlled by AT command.
<b>11</b>	PB13 / SPI_EN	I/O	Enable Pin of SPI When power is applied or reset, this pin is checked to set the module mode. <b>High or NC – UART Mode (Default)</b> Low – SPI Mode
<b>12</b>	PB14	I/O	INTn Pin of SPI If you don't use the SPI function, this pin can be controlled by AT command.
<b>13</b>	PB17	I/O	MOSI Pin of SPI If you don't use the SPI function, this pin can be controlled by AT command.
<b>14</b>	PB16	I/O	CLK Pin of SPI If you don't use the SPI function, this pin can be controlled by AT command.
<b>15</b>	GND	I/O	Ground Pin
<b>16</b>	PB10	O	RTS Pin of UART1 If you don't use the RTS function, this pin can be controlled by AT command.
<b>17</b>	TXD0	O	TXD Pin of UART0
<b>18</b>	RXD0	I	RXD Pin of UART0
<b>19</b>	PB7	O	LED Light output (Active High). Go to High while each TX/RX packet and then back to Low. Note: It has been connected to onboard LED for WizFi360-PA
<b>20</b>	PB8	I/O	This pin can be controlled by AT command.
<b>21</b>	RXD1	I	<b>RXD Pin of UART1</b>
<b>22</b>	TXD1	O	<b>TXD Pin of UART1</b>

**Table 5. WizFi360 Pin Function**

**\*Note: UART1 is used for AT command and data communication. UART0 is used for debugging and firmware upgrade.**

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## 5.1. Initial Value of GPIO Pins

This is the initial value of GPIO when using AT command to use GPIO on the WizFi360.

Pin Name	Initial Mode	Value
PA0	I	High
PB6	O	Low
PB9	O	Low
PB15	O	Low
PB18	O	Low
PB14	O	Low
PB17	O	Low
PB16	O	Low
PB10	O	Low
PB07	O	Low
PB08	O	Low

**Table 6. Initial Value of GPIO Pins**

## 6. Physical Dimensions

### 6.1. WizFi360-PA Dimensions

24(L) x 16(W) x 3.2(H) ( $\pm 0.1$ ), (unit: mm)

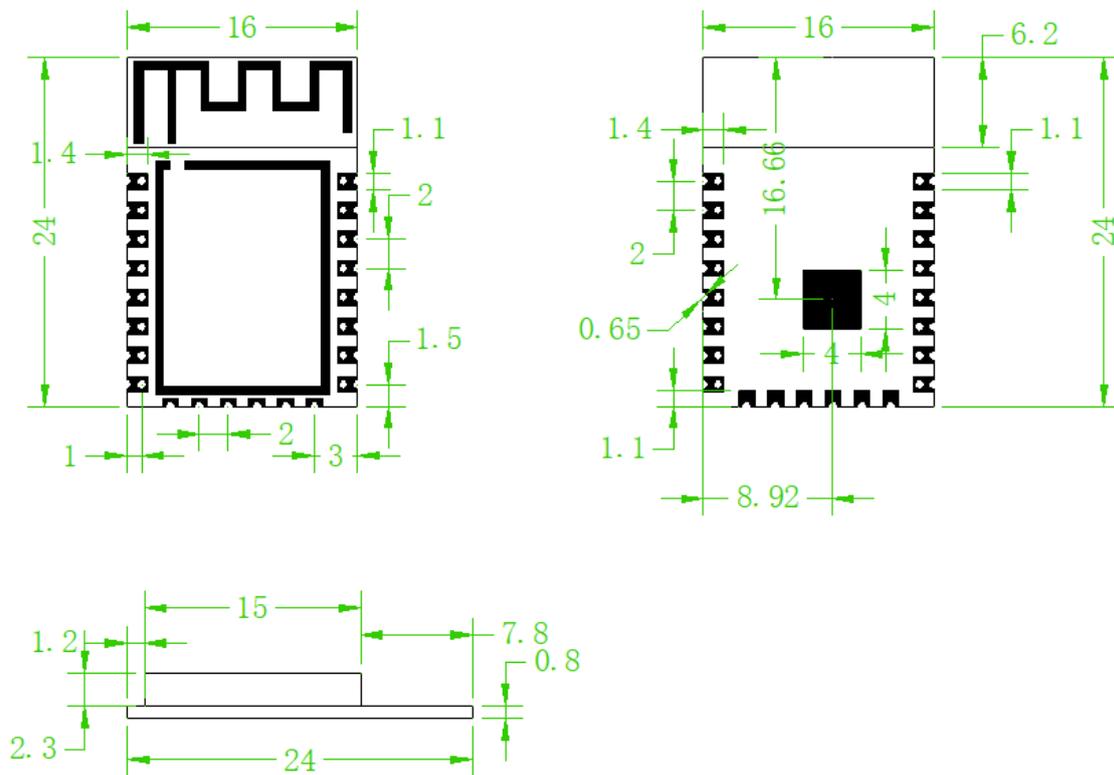


Figure 4. WizFi360-PA Physical Dimensions

### 6.2. WizFi360-CON Dimensions

17(L) x 16(W) x 3.2(H) ( $\pm 0.1$ ), (unit: mm)

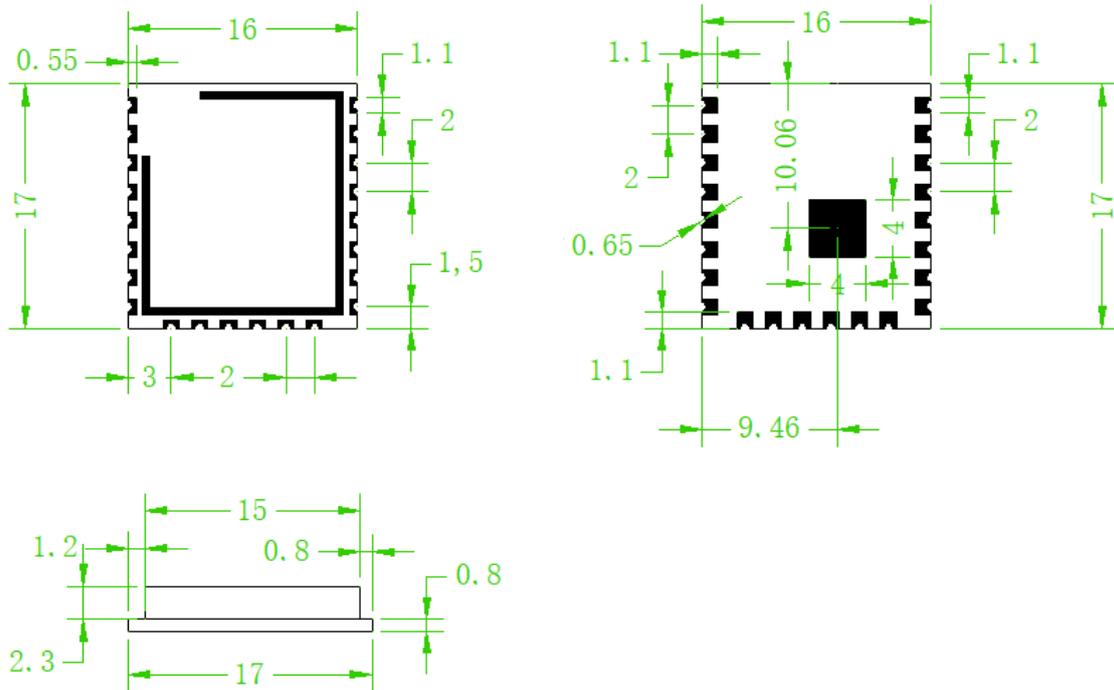


Figure 5. WizFi360-CON Physical Dimensions

## 7. Peripheral Circuit Reference Design

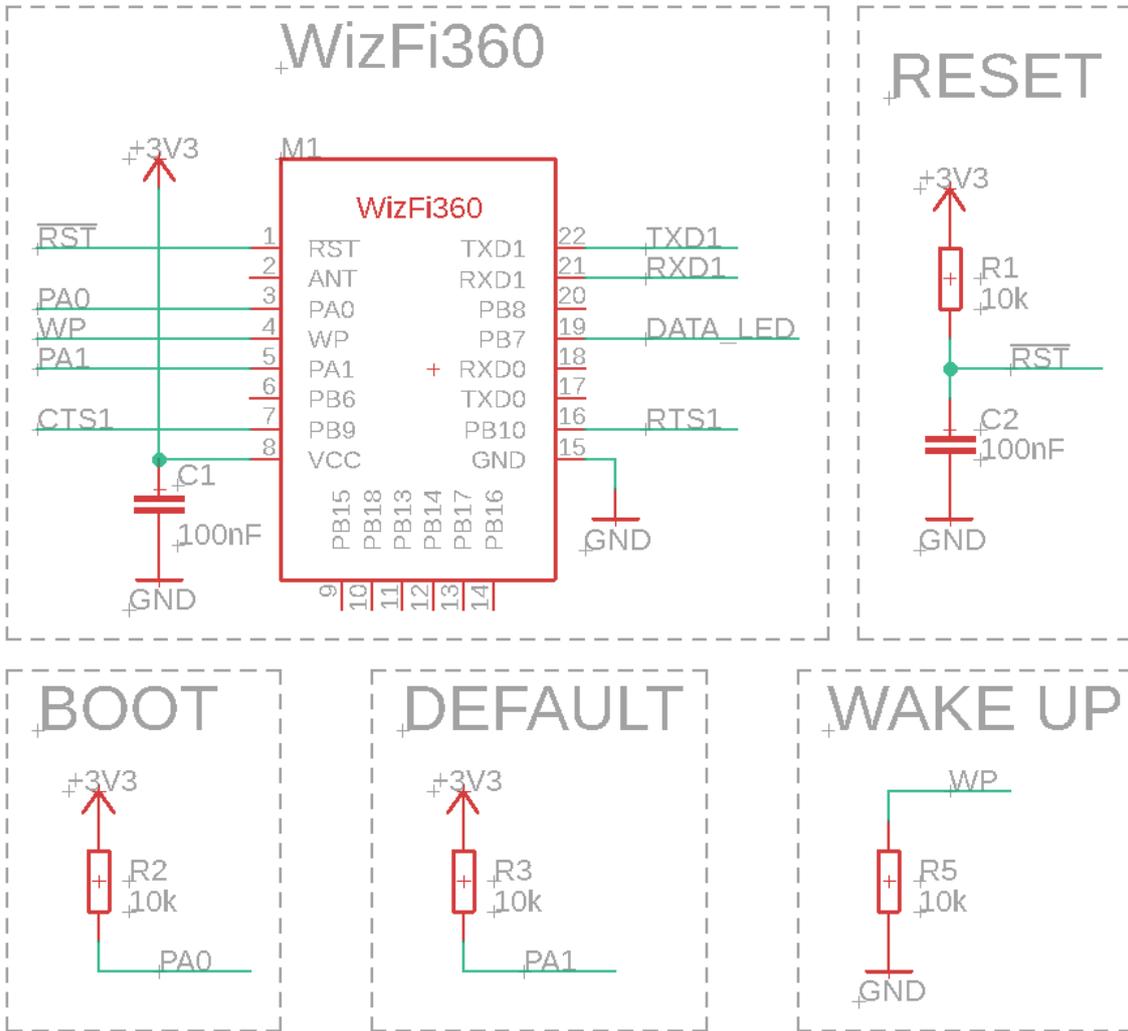


Figure 6. WizFi360 Circuit Reference Design

## 8. Recommended PCB Land Pattern

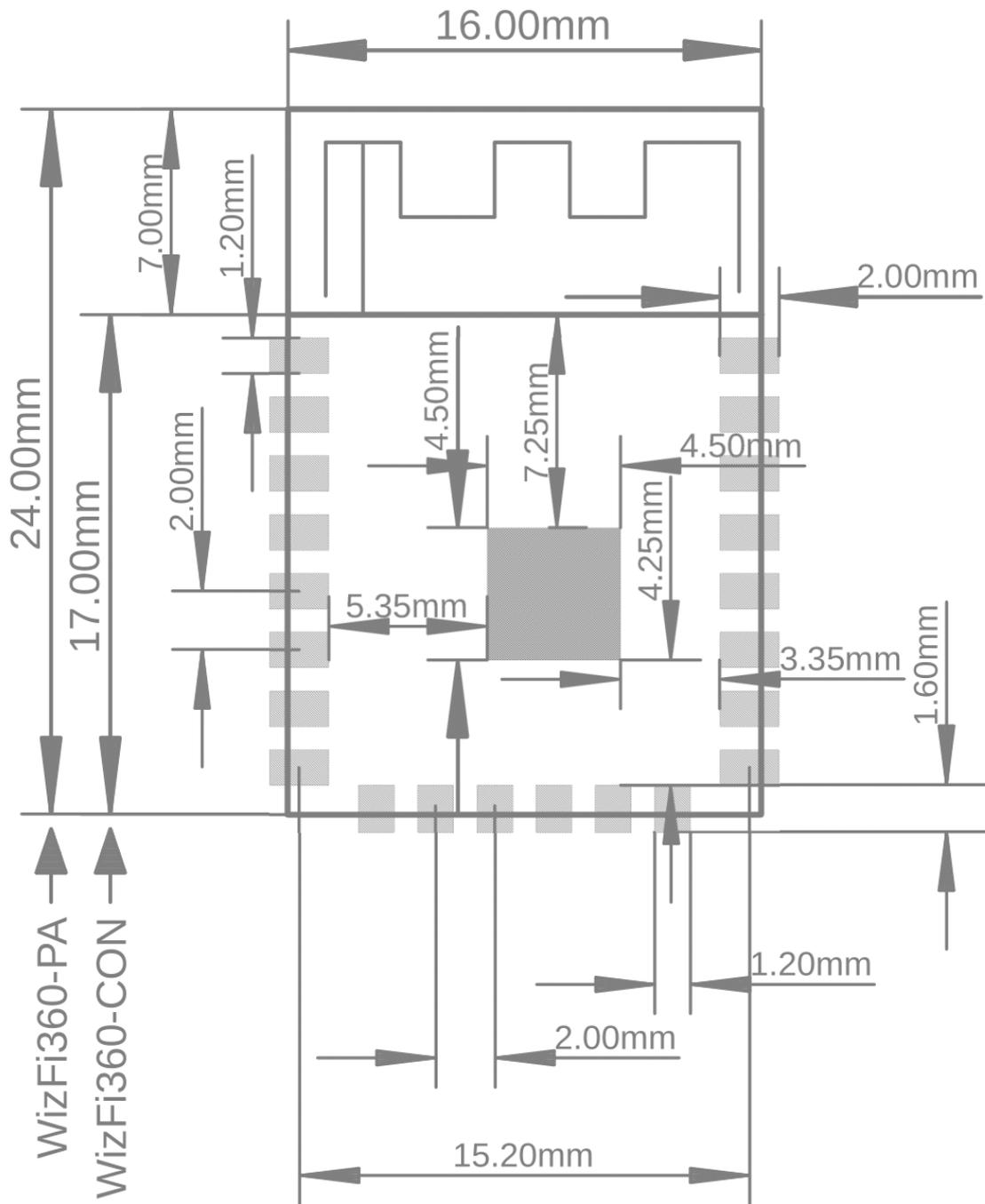
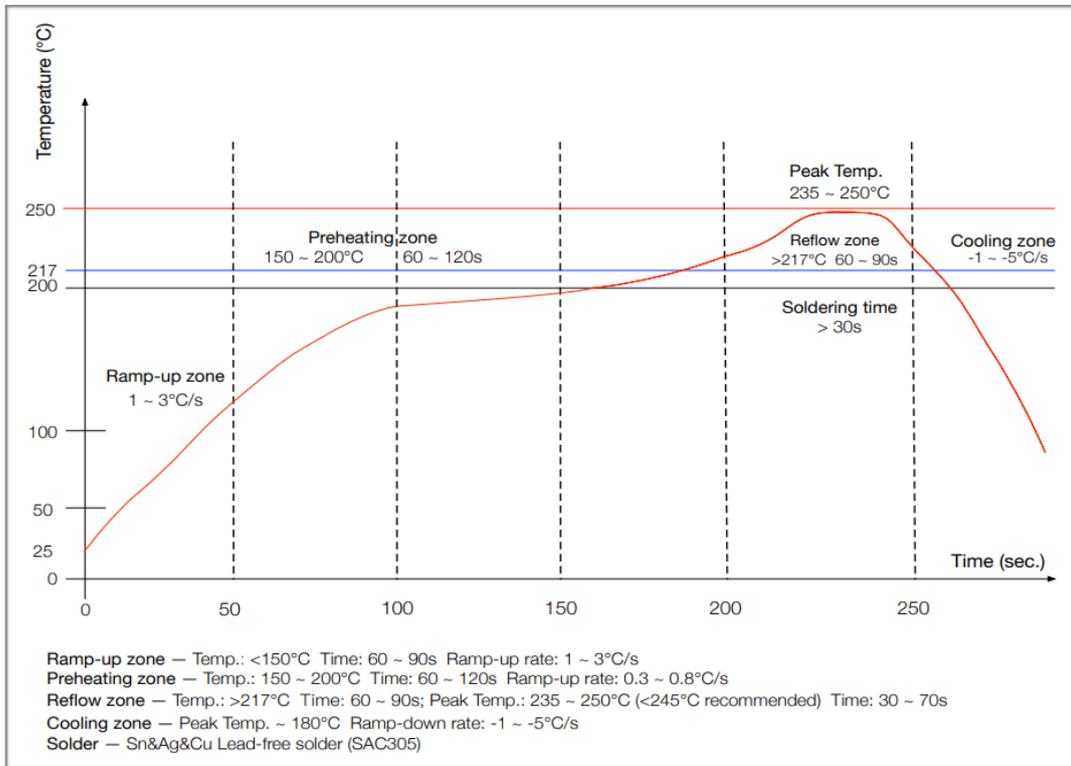


Figure 7. Recommended PCB Land Pattern of WizFi360

## 9. Reflow Condition



**Figure 8. Reflow Condition**

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