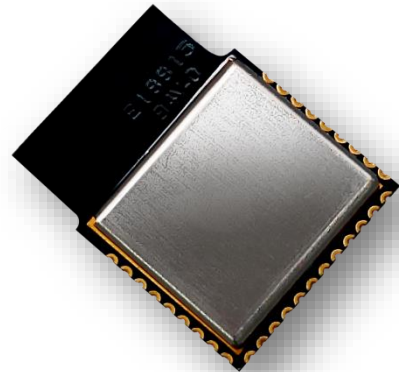


RXB090D

2.4GHz dual-mode Bluetooth Module
with Integrated Antenna

Datasheet



PRODUCT DESCRIPTION

The RYP090D is a dual-mode (BR/EDR/LE) Bluetooth v2.x & v5.0 Module. It supports SPP and GATT profiles. Data is transferred over the Bluetooth link by sending/receiving data via transparent mode, making it easy to integrate with any processor or microcontroller with a UART interface.

Configuration is made easy through ASCII commands via UART.

FEATURES

- Complies with Bluetooth Core Specification v5.0 with LE 2Mbps
- Supports Basic Rate (BR), Enhanced Data Rate (EDR) 2&3Mbps, Bluetooth Low Energy (BLE)
- CYPRESS CYW20719 industry-standard chip
- Designed with PCB integrated antenna
- Metal cover against EMI interference
- Support Customizable Firmware

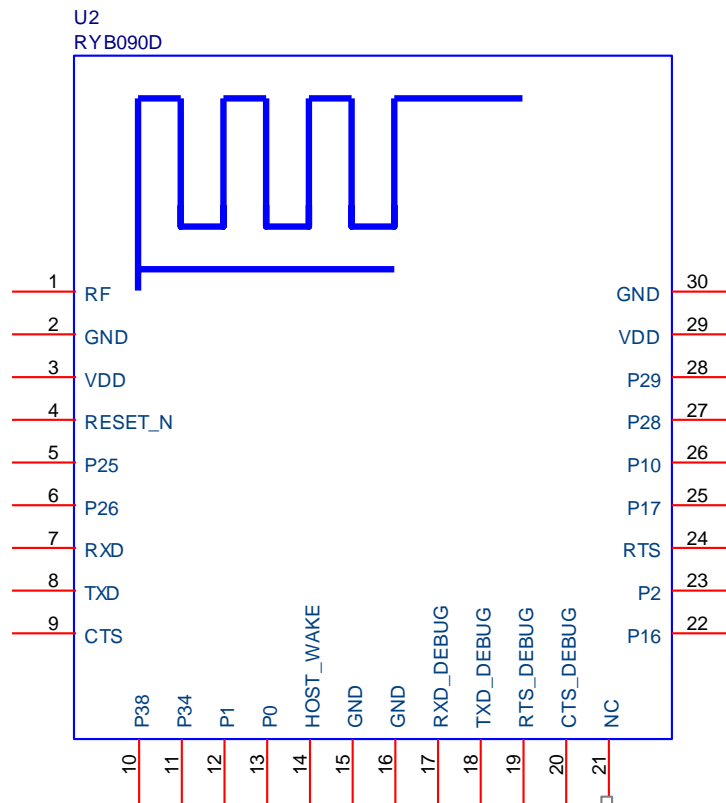
APPLICATIONS

- Smart phone/Tablet accessories
- Remote monitoring and control
- Smart home
- Indoor positioning
- Sensors

SPECIFICATION

Item	Min.	Typical	Max.	Unit	Condition
Operation Voltage	1.9		3.63	V	VDD
RF Output Power			4	dBm	
RF Sensitivity	-95.5			dBm	BLE
TX current		5.6		mA	BLE 0dBm
RX current		5.9		mA	BLE
Baud Rate	1200	115200	921600	bps	
RF Frequency Range	2379		2496	MHz	
Communication Range		10		M	Open Space
Operating Temperature	-40	25	+85	°C	
Antenna					Embedded PCB Antenna
Dimensions					16.7mm*13mm*2.2mm
Weight		0.8		g	

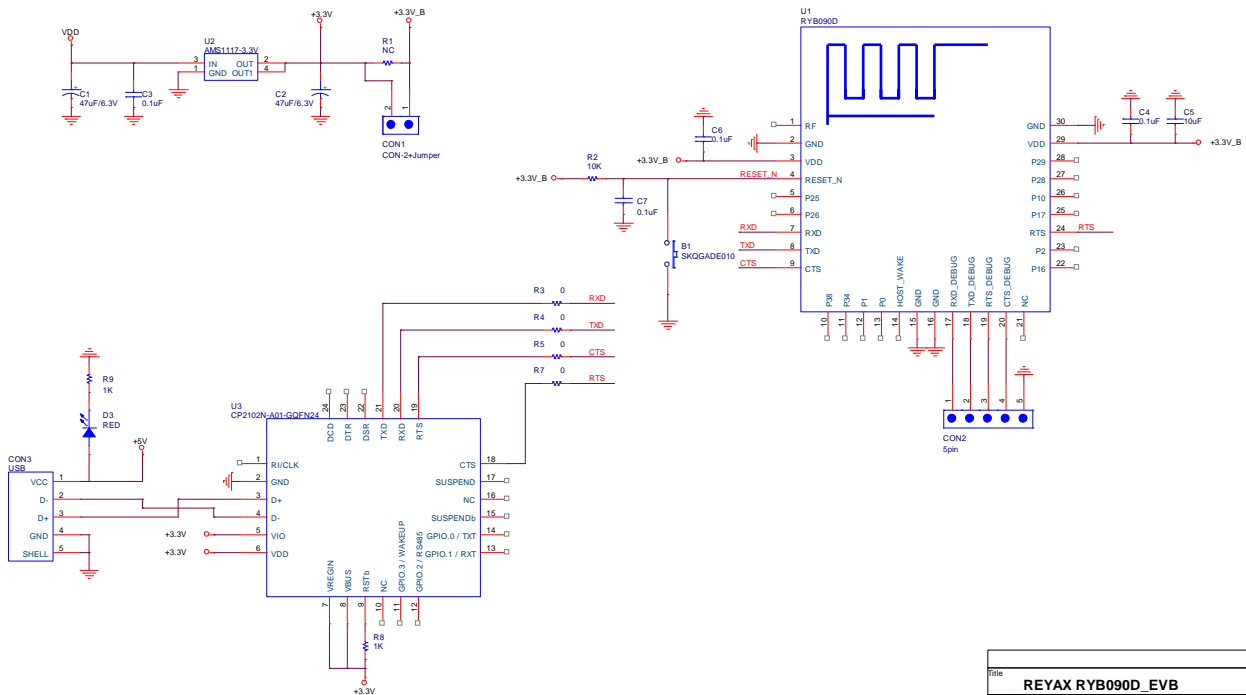
PIN DESCRIPTION



Pin	Name	I/O	Condition
1	RF		External Antenna Version Used
2	GND	-	Ground
3	VDD	I	Power Supply
4	RESET_N	I	Low Reset
5	P25	I/O	GPIO Reserved, Leave Unconnected.
6	P26	I/O	GPIO Reserved, Leave Unconnected.
7	RXD	I	UART Data Input
8	TXD	O	UART Data Output
9	CTS	I	Clear To Send control
10	P38	I/O	GPIO Reserved, Leave Unconnected.
11	P34	I/O	GPIO Reserved, Leave Unconnected.
12	P1	I/O	GPIO Reserved, Leave Unconnected.
13	P0	I/O	GPIO Reserved, Leave Unconnected.
14	HOST_WAKE	O	A signal from the CYW20719 device to the host indicating that the Bluetooth device requires attention.

15	GND	-	Ground
16	GND	-	Ground
17	RXD_DEBUG	I	UART Data Input, DEBUG
18	TXD_DEBUG	O	UART Data Output, DEBUG
19	RTS_DEBUG	O	Request to send, DEBUG
20	CTS_DEBUG	I	Clear to Send control, DEBUG
21	NC	-	Leave Unconnected.
22	P16	I/O	GPIO Reserved, Leave Unconnected.
23	P2	I/O	GPIO Reserved, Leave Unconnected.
24	RTS	O	Request to send
25	P17	I/O	GPIO Reserved, Leave Unconnected.
26	P10	I/O	GPIO Reserved, Leave Unconnected.
27	P28	I/O	GPIO Reserved, Leave Unconnected.
28	P29	I/O	GPIO Reserved, Leave Unconnected.
29	VDD	I	Power Supply
30	GND	-	Ground

APPLICATION SCHEMATIC



Title		
REYAX RYB090D_EVB		
Size	Document Number	Rev
CustomDoc>		1.0
Date	Thursday, March 15, 2019	Sheet 1 of 1

REFLOW SOLDERING

Consider the "IPC-7530 Guidelines for temperature profiling for mass soldering (reflow and wave) processes, published 2001.

Preheat phase

Initial heating of component leads and balls. Residual humidity will be dried out. Please note that this preheat phase will not replace prior baking procedures.

- Temperature rise rate: max. 3 °C/s If the temperature rise is too rapid in the preheat phase it may cause excessive slumping.
- Time: 60 - 120 s If the preheat is insufficient, rather large solder balls tend to be generated. Conversely, if performed excessively, fine balls and large balls will be generated in clusters.
- End Temperature: 150 - 200 °C If the temperature is too low, non-melting tends to be caused in areas containing large heat capacity.

Heating/ Reflow phase

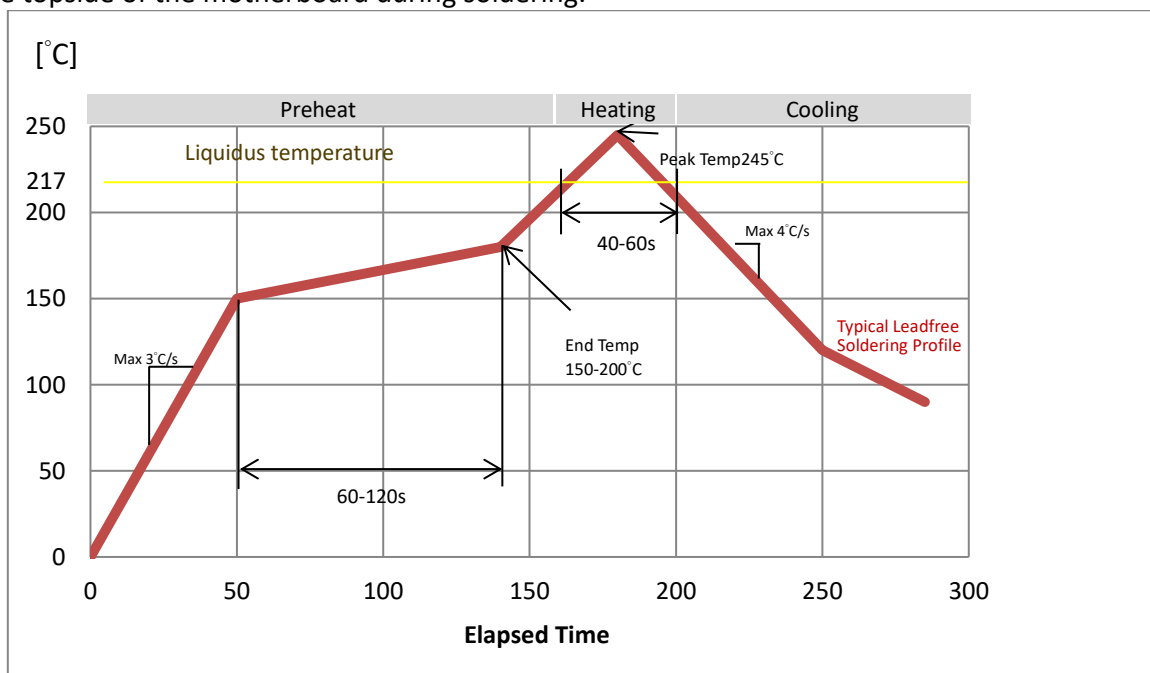
The temperature rises above the liquidus temperature of 217°C. Avoid a sudden rise in temperature as the slump of the paste could become worse.

- Limit time above 217 °C liquidus temperature: 40 - 60 s
- Peak reflow temperature: 245 °C

Cooling phase

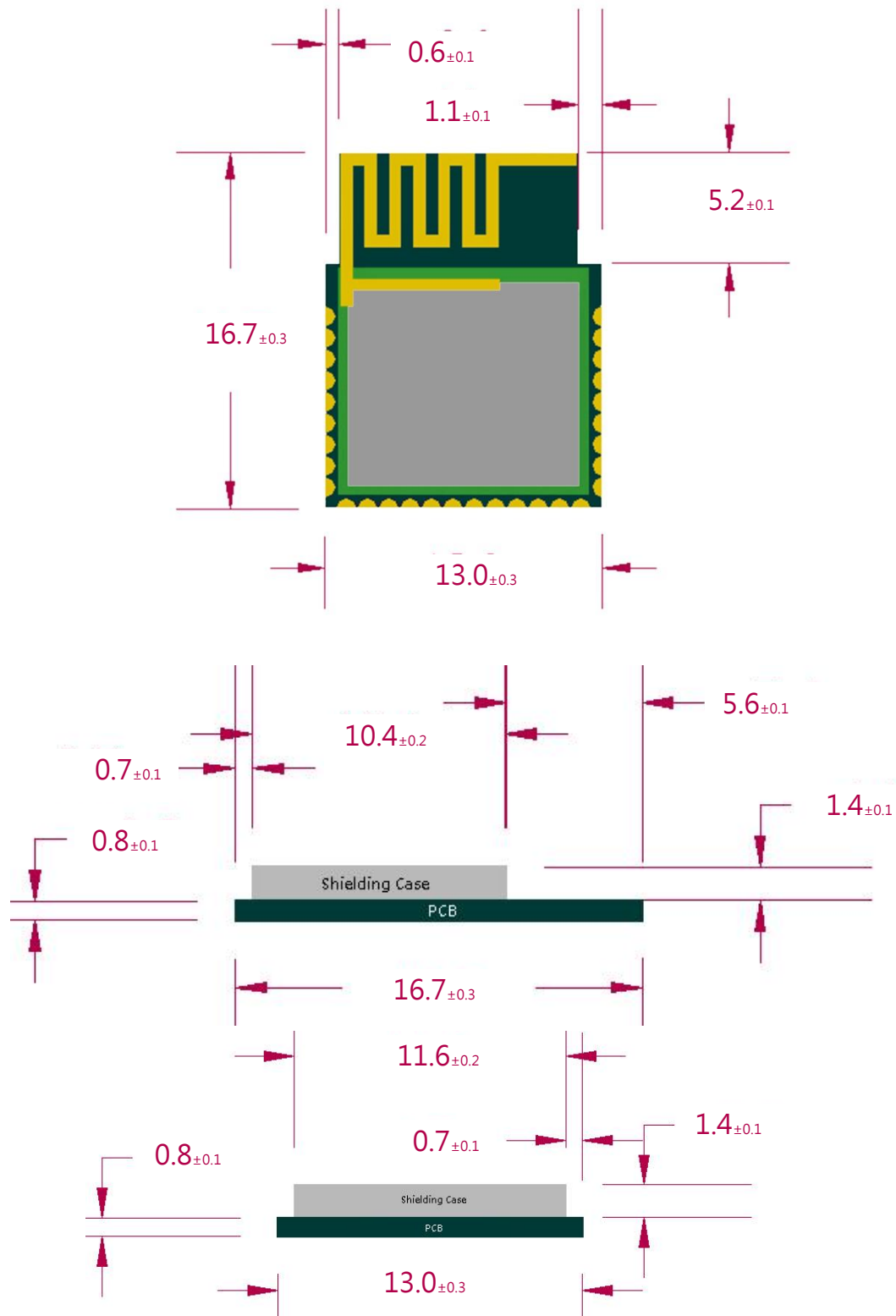
A controlled cooling avoids negative metallurgical effects (solder becomes more brittle) of the solder and possible mechanical tensions in the products. Controlled cooling helps to achieve bright solder fillets with a good shape and low contact angle.

- Temperature fall rate: max 4 °C/s To avoid falling off, the REYAX RYB070I module should be placed on the topside of the motherboard during soldering.



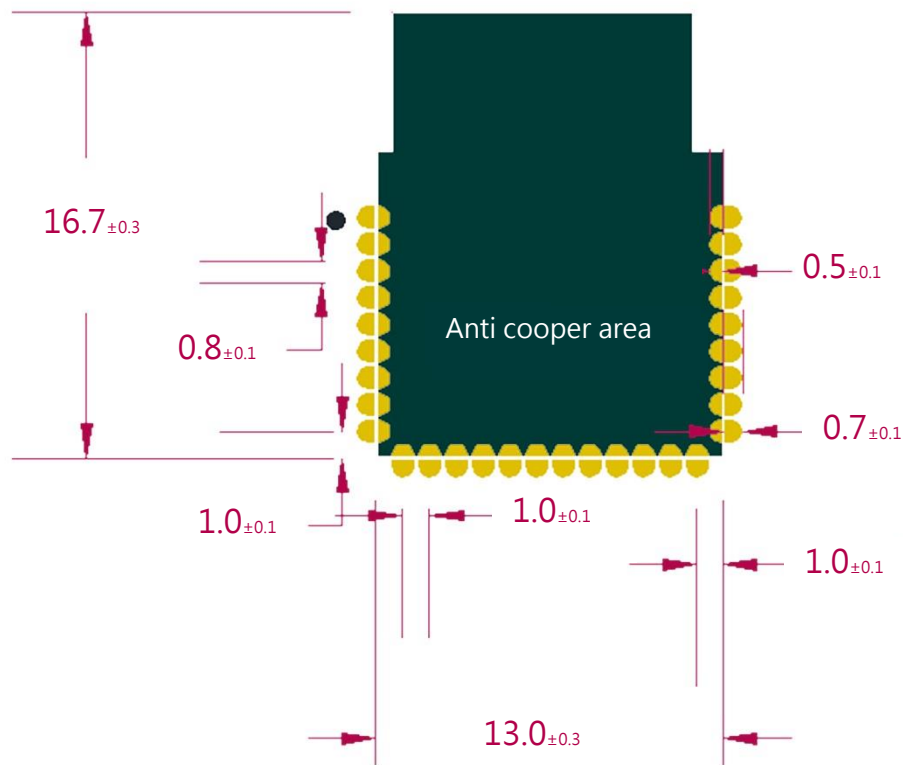
Recommended soldering profile

DIMENSIONS



Unit : mm

LAYOUT FOOTPRINT RECOMMENDATIONS



Unit : mm

ORDER INFORMATION

Ordering No.	Baud rate
RYB090D-9600	9600
RYB090D-38400	38400
RYB090D	115200
RYB090D-921600	921600

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