

ECN/PCN No.: R0043

For Manufacturer			
<b>Product Description:</b> Bluetooth modules	<b>Abrakon Part Number / Part Series:</b> ABBTM Bluetooth module series	<input type="checkbox"/> Documentation only <input type="checkbox"/> ECN <input checked="" type="checkbox"/> EOL	<input checked="" type="checkbox"/> Series <input type="checkbox"/> Part Number
<b>Affected Revision:</b> N/A	<b>New Revision:</b> EOL	<b>Application:</b> <input type="checkbox"/> Safety <input checked="" type="checkbox"/> Non-Safety	
<b>Prior to Change:</b> ABBTM-2.4GHZ, ABBTM-2.4GHZ-31, ABBTM-2.4GHZ-31-T, ABBTM-2.4GHZ-33, ABBTM-2.4GHZ-33-T, ABBTM-2.4GHZ-51, ABBTM-2.4GHZ-51-T, ABBTM-2.4GHZ-52, ABBTM-2.4GHZ-52-T, ABBTM-2.4GHZ-EVAL, ABBTM-2.4GHZ-T, ABBTM-2.4GHZ-T2, ABBTM-NVC-EVK-56, ABBTM-NVC-EVK-71, ABBTM-NVC-EVK-71-MESH, ABBTM-NVC-MB-EVK, ABBTM-NVC-MDCS42A-CON, ABBTM-NVC-MDCS71, ABBTM-NVC-MDCS71-CON, ABBTM-NVC-MDCS71-MESH, ABBTM-NVC-MDCS71-MESH-CON, ABBTM-NVC-MDCS71-101, ABBTM-NVC-MDCS86-101, ABBTM-101-2.4GHZ-T, ABBTM-2.4GHZ-51-101-, ABBTM-2.4GHZ-52-101, ABBTM-53-2.4GHZ-T, ABBTM-103-2.4GHZ-T, ABBTM-2.4GHZ-T; VER.10, ABBTM-NVC-MDCS42A-101, ABBTM-NVC-MDCS42A-F07, and ABBTM-NVC-MDCS56-102.			
<b>After Change:</b> All 32 EOL			
<b>Cause/Reason for Change:</b> Due to low demand, the Bluetooth Module ABBTM series is discontinued.			
Change Plan			
<b>Effective Date:</b> 06/08/2021	<b>Additional Remarks:</b> N/A		
<b>Change Declaration:</b> EOL			
<b>Issued Date:</b> 06/08/2021	<b>Issued By:</b> <i>Nicholas El-Takach</i>	<b>Issued Department:</b> Engineering	
<b>Approval:</b> <i>Syed Raza</i> Engineering VP	<b>Approval:</b> <i>Reuben Quintanilla</i> Quality Director	<b>Approval:</b> <i>Ying Huang</i> Purchasing Director	
For Abracon EOL only			
<b>Last Time Buy (if applicable):</b> No last time buy.		<b>Alternate Part Number / Part Series:</b> N/A	
<b>Additional Approval:</b>	<b>Additional Approval:</b>	<b>Additional Approval:</b>	
Customer Approval (If Applicable)			
<b>Qualification Status:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Not accepted <i>Note: It is considered approved if there is no feedback from the customer 1 month after ECN/PCN is released.</i>			
<b>Customer Part Number:</b>		<b>Customer Project:</b>	
<b>Company Name:</b>	<b>Company Representative:</b>	<b>Representative Signature:</b>	
<b>Customer Remarks:</b>			

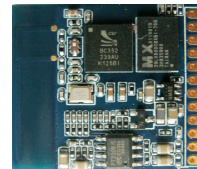
# 29.0 x 25.5 x 2.8 mm SMT Bluetooth Module

ABBTM-2.4GHz-33-T

Compliant to MSL level 3



RoHS  
Compliant



29.0 x 25.5 x 2.8 mm SMT

## FEATURES:

- Bluetooth Spec v1.2 Compliant
- Class 2, up to 10-meter range
- Complete 2.4GHz Bluetooth® System
- Power management: low power 1.8V operation for Bluetooth® core
- Compact size: 29.0mm (L) x 25.5 (W) mm x 2.8 (H) mm
- Bluetooth® Profile Supported: HSP, HFP, A2DP, AVRCP
- Built-in stereo codec
- Internal antenna
- Built-in audio amplifier
- Built-in power manager
- On-board flash memory (8Mbits)
- Echo cancellation software library
- Several firmware options
- Rewritable flash memory for easy upgrade route

## APPLICATIONS:

- Automotive car kit applications
- PDAs and other portable terminals
- Car radio/Car DVD

## GENERAL DESCRIPTION

Abracon's ABBTM-2.4GHz-33-T module is a complete Bluetooth® solution built on CSR BC03 MultiMedia External Core, supported by 8Mbit on-board Flash Memory. ABBTM-2.4GHz-33-T is a short range, compact, cost effective solution designed to facilitate Bluetooth® connectivity for applications including Car & Home Audio and other Handsfree solutions.

ABBTM-2.4GHz-33-T module is a Power Class-2 Bluetooth® device, compliant with version 1.2 specification. The overall architecture comprises of built-in antenna and supporting circuitry for software protocols including L2CAP, SDP, GAP, HSP, HFP, A2DP and AVRCP, resident in the on-board Flash Memory.

## ELECTRICAL SPECIFICATIONS:

Operating Frequency Band	2.4GHz ~ 2.48GHz Unlicensed ISM Band
Bluetooth Specification	V1.2
Output Power Class	Class 2
Operating Voltage	+3.3V and +5.0V
Host Interface	UART
Flash Memory Size	8 Mb

### Absolute Maximum Ratings

	Minimum	Maximum
Storage temperature	-40°C	+150°C
Supply voltage: VBAT	-0.30V	3.6V

### Recommended Operating Conditions

	Minimum	Maximum
Operating temperature range	-40°C	+85°C
Supply voltage: Vcc	+3.0V	+3.6V
Supply voltage: Vdd	+1.7V	+1.9V

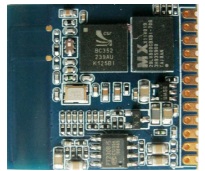


# 29.0 x 25.5 x 2.8 mm SMT Bluetooth Module

ABBTM-2.4GHz-33-T



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29.0 x 25.5 x 2.8 mm SMT

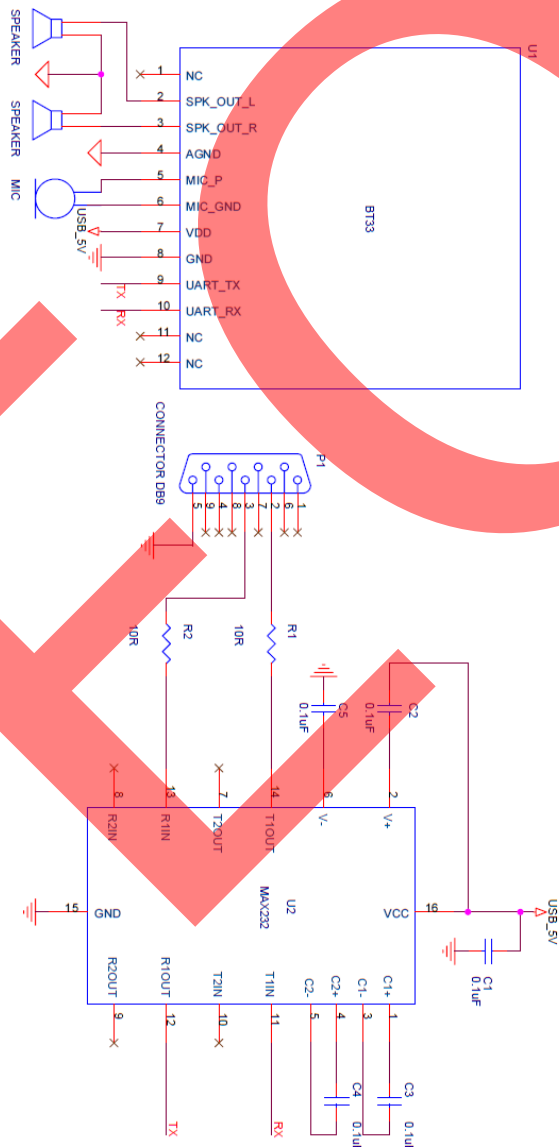
## Firmware Configuration

- a) UART Baud: 115200 , N, 8, 1
- b) BlueTooth Name: BlueAudio
- c) Pin Code: 0000

## Software Description

1. After Power on 3V3, the module is connectable and Pairing
2. ABBTM-2.4GHz-33-T can be found with the name “BlueAudio” via any Bluetooth device
3. Input the Pincode “0000”, you can pair with the module named “BlueAudio”
4. Then the BlueAudio can be connected
5. Data can be transferred between the BlueAudio and any other Bluetooth device

## APPLICATION SCHEMATIC

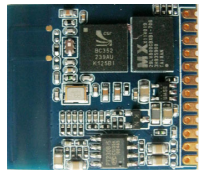


# 29.0 x 25.5 x 2.8 mm SMT Bluetooth Module

ABBTM-2.4GHz-33-T

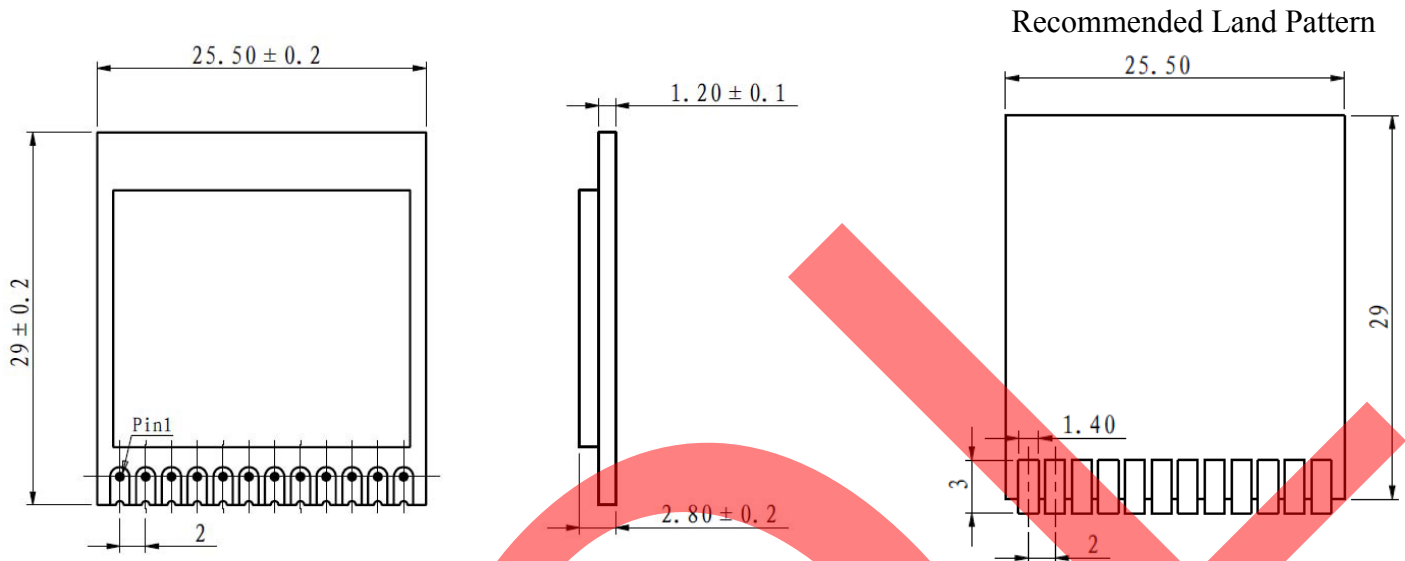


RoHS  
Compliant



29.0 x 25.5 x 2.8 mm SMT

## MECHANICAL DIMENSIONS



Note: Specified dimensions without tolerance are listed for reference purposes only.

Dimensions: mm.

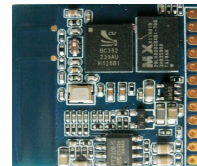
## PIN DESCRIPTION

Pin No.	Name	Type	Function
1	NC	Input / Output	Not used currently
2	SPK_OUT_L	Output	Left channel audio out
3	SPK_OUT_R	Output	Right channel audio out
4	AGND	Ground	Analog ground
5	MIC_P	Input	Microphone positive pole input, internal power supply
6	MIC_GND	Ground	Microphone ground
7	VDD	Input	Power supply, +3.3V ~ +5V
8	GND	Ground	Power ground
9	UART_TX	Output	UART data output
10	UART_RX	Input	UART data input
11	NC	Input / Output	Not used currently
12	NC	Input / Output	Not used currently

# ABBTM-2.4GHz-33-T



**RoHS**  
**Compliant**



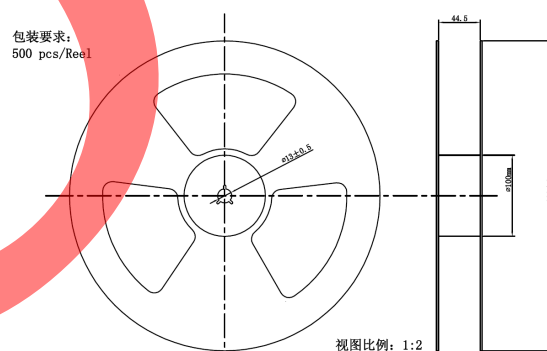
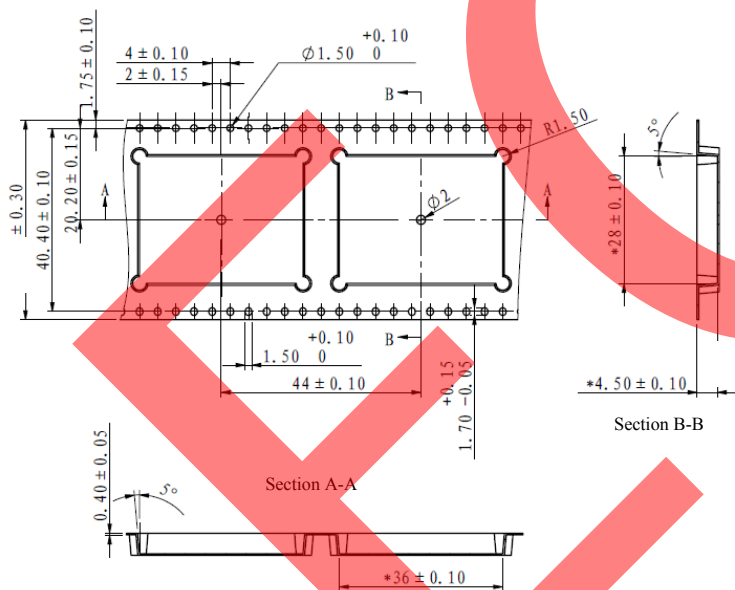
29.0 x 25.5 x 2.8 mm SMT

The graph illustrates the temperature profile over time. The y-axis represents Temperature (T) with levels  $T_s \text{ Min}$ ,  $T_s \text{ Max}$ ,  $T_L$ , and  $T_P$ . The x-axis represents Time (t) with intervals  $T_s \text{ Preheat}$ ,  $t_{25^\circ\text{C to Peak}}$ ,  $t_L$ , and  $t_P$ . The profile shows a ramp-up from  $T_s \text{ Min}$  to  $T_L$ , a critical zone between  $T_L$  and  $T_P$ , and a ramp-down from  $T_P$  to  $T_L$ .

T <sub>S</sub> max to T <sub>L</sub> (Ramp-up Rate)	3°C/second max.
Preheat Temperature Min. (T <sub>S</sub> Min.) Temperature Typical (T <sub>S</sub> Typ.) Temperature Max. (T <sub>S</sub> Max.) Time (t <sub>s</sub> )	150°C 175°C 200°C 60 ~ 180 seconds
Ramp-up rate (T <sub>L</sub> to T <sub>p</sub> )	3°C/second max.
Time Maintained Above: --Temperature (T <sub>L</sub> )/Time (T <sub>L</sub> )	217°C/60 ~ 150 seconds
Peak Temperature (T <sub>p</sub> )	250°C max. for 10 seconds
Target Peak Temperature (T <sub>p</sub> Target)	250°C +0/-5°C
Time within 5°C of actual peak (t <sub>p</sub> )	20 ~ 40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature (t)	8 minutes max.

## PACKAGING:

**300pcs/reel**



- a) Unless otherwise specified, the tolerance is  $\pm 0.1\text{mm}$
- b) The carrier tape material thickness is  $0.4\text{mm}$
- c) Unless otherwise specified, the round corner is  $R0.3$ ; the peeling angle is no greater than  $5^\circ$
- d) The finished products has no rough edges and no damage; cover tape should is sealed
- e) Material is ROHS compliant

**Packaging:**

ABBTM-2.4GHz-33-T devices will be packaged per MSL level-3 requirements; Labeled as MSL 3, Tape- Packed + Vacuum-Packed with Antistatic bag, Desiccant, Humidity Indicator Card (HIC). Ref: IPC/JEDEC J-STD-033B.1

**ATTENTION:** Abracon Corporation's products are COTS – Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. Abracon's products are not specifically designed for Military, Aviation, Aerospace, Life-dependant Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from Abracon Corporation is required. Please contact Abracon Corporation for more information.



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