

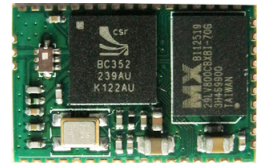
20.0 x 13.0 x 2.0 mm SMT Bluetooth Module

ABBTM-2.4GHz-31-T

Compliant to MSL level 3



RoHS
Compliant



20.0 x 13.0 x 2.0 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: 20.0mm (L) x 13.0 (W) mm x 2.0mm (H)
- Bluetooth® Profile Supported: HSP, HFP, A2DP, AVRCP
- Built-in 16-bit stereo codec
- On-board flash memory (8Mbits)
- Optional echo cancellation software library
- Surface mount module for embedded applications
- Several firmware options
- Rewritable flash memory for easy upgrade route
- Custom firmware production available

APPLICATIONS:

- Stereo Bluetooth® headset/headphone
- Automotive car kit applications
- Personal Navigation Devices
- PDAs and other portable terminals
- MP3 headset

GENERAL DESCRIPTION

Abracon's ABBTM-2.4GHz-31-T module is a complete Bluetooth® solution built on CSR BC03 MultiMedia External Core, supported by 8Mbit on-board Flash Memory. ABBTM-2.4GHz-31-T is a short range, compact, cost effective solution designed to facilitate Bluetooth® connectivity for applications including PND, Car & Home Audio and other Handsfree solutions.

ABBTM-2.4GHz-31-T module is a Power Class-2 Bluetooth® device, compliant with version 1.2 specification. The overall architecture comprises of a radio front-end, antenna interface & 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 | +1.8V and +3.3V |
| Host Interface | UART |
| Audio Interface | Analogue |
| 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 |

Test Conditions: Vcc=3.3V; F=2.45GHz; T=20°C

ABRACON IS
ISO 9001:2008
CERTIFIED



Visit www.abracon.com for Terms & Conditions of Sale
30332 Esperanza, Rancho Santa Margarita, California 92688
tel 949-546-8000 | fax 949-546-8001 | www.abracon.com

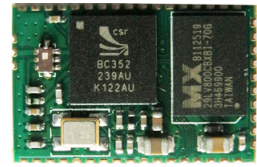
Revised: 01.14.15

20.0 x 13.0 x 2.0 mm SMT Bluetooth Module

ABBTM-2.4GHz-31-T



RoHS
Compliant



20.0 x 13.0 x 2.0 mm SMT

POWER CONSUMPTION

| Operation Mode | Average | Unit |
|---|---------|------|
| SCO Connection HV3 (30ms interval sniff mode) | 21 | mA |
| SCO Connection HV1 | 42 | mA |
| ACL Data transfer 115.2Kbps UART no traffic | 5 | mA |
| ACL Data transfer 115.2Kbps UART no traffic | 22 | mA |
| ACL Data transfer 721Kbps USB | 45 | mA |
| Standby | 0.15 | mA |
| CODEC | | |
| Microphone inputs and ADC/channel | 0.85 | mA |
| DAC and loudspeaker driver, no signal/channel | 1.4 | mA |
| Digital audio processing subsystem | 8 | mA |

Test Conditions: Vcc=3.3V; F=2.45GHz; T=20°C

Firmware Configuration

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

Software Description

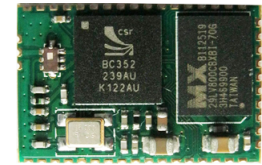
1. After Power on 3V3, the module is connectable and Pairing
2. ABBTM-2.4GHz-T can be found with the name “ABBTM” via any Bluetooth device
3. Input the Pincode “0000”, you can pair with the module named “ABBTM”
4. Then the ABBTM can be connected
5. Data can be transferred between the ABBTM and any other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

State Indicator

- a) Connectable and discoverable LED: 100mS High Level per 2S
- b) Connected LED: always on

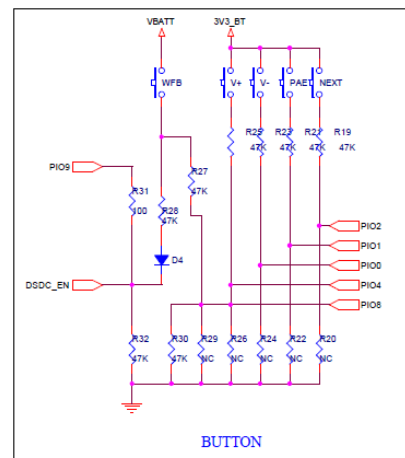
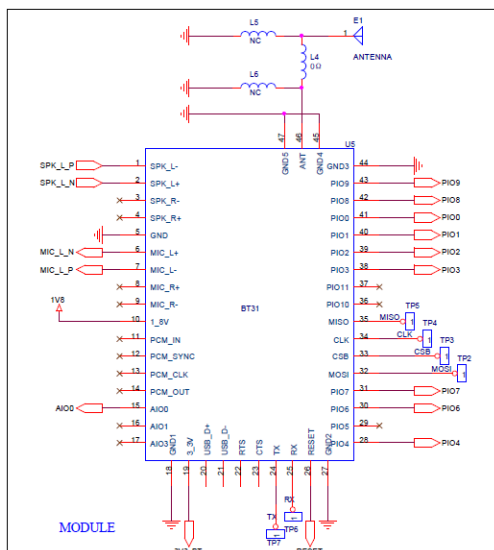
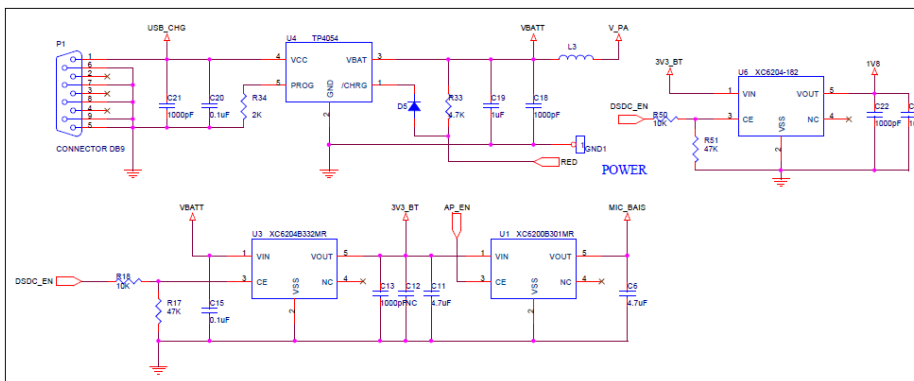
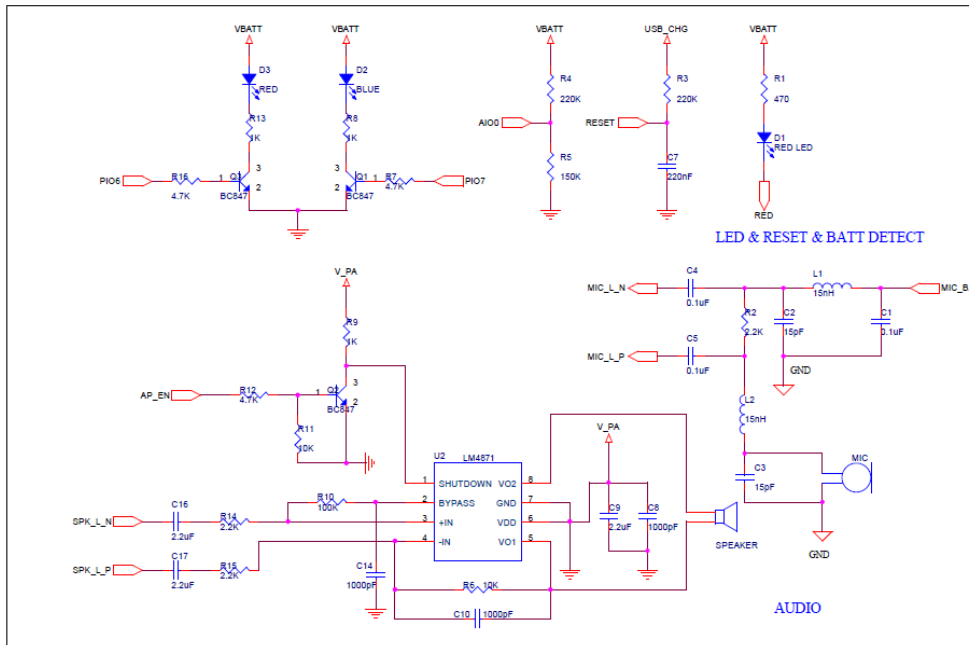
20.0 x 13.0 x 2.0 mm SMT Bluetooth Module

ABBTM-2.4GHz-31-T



20.0 x 13.0 x 2.0 mm SMT

APPLICATION SCHEMATIC

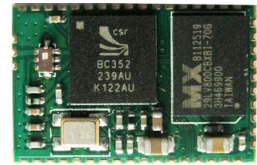


20.0 x 13.0 x 2.0 mm SMT Bluetooth Module

ABBTM-2.4GHz-31-T



RoHS
Compliant



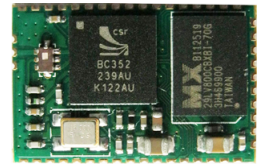
20.0 x 13.0 x 2.0 mm SMT

PIN DESCRIPTION

| Pin No. | Name | Type | Function |
|---------|----------|--|---|
| 1 | SPK L- | Analogue | Speaker output negative(left side) |
| 2 | SPK L+ | Analogue | Speaker output positive(left side) |
| 3 | SPK R- | Analogue | Speaker output negative(right side) |
| 4 | SPK R+ | Analogue | Speaker output positive(right side) |
| 5 | GND | GND | Ground |
| 6 | MIC L+ | Bi-directional | Programmable input/output line |
| 7 | MIC L- | Bi-directional | Programmable input/output line |
| 8 | MIC R+ | Bi-directional | Programmable input/output line |
| 9 | MIC R- | Bi-directional | Programmable input/output line |
| 10 | 1.8V | Power | +1.8V Supply |
| 11 | PCM-IN | CMOS Input | Synchronous Data Input |
| 12 | PCM-SYNC | Bi-directional | Synchronous Data Sync |
| 13 | PCM-CLK | Bi-directional | Synchronous Data Clock |
| 14 | PCM-OUT | CMOS Output | Synchronous Data Output |
| 15 | AIO0 | Bi-directional | Programmable input/output line |
| 16 | AIO1 | Bi-directional | Programmable input/output line |
| 17 | AIO3 | Bi-directional | Programmable input/output line |
| 18 | GND | GND | Ground |
| 19 | 3.3V | Power | +3.3V Supply |
| 20 | N.C. | Not Connected | |
| 21 | N.C. | Not Connected | |
| 22 | RTS | CMOS Output, tri-state, with weak internal pull-up | UART request to send active low |
| 23 | CTS | CMOS Input with weak internal pull-down | UART clear to send active low |
| 24 | TX | CMOS Output, tri-state, with weak internal pull-up | UART data output |
| 25 | RX | CMOS Input with weak internal pull-down | UART data input |
| 26 | RESET | CMOS Input | Reset if High |
| 27 | GND | GND | Ground |
| 28 | PIO4 | Bi-directional with programmable strength | PIO |
| 29 | PIO5 | Bi-directional with programmable strength | PIO |
| 30 | PIO6 | Bi-directional with programmable strength | PIO line or clock request output to enable external clock for external clock line |
| 31 | PIO7 | Bi-directional with programmable strength | Programmable input/output line or programmable frequency clock output |
| 32 | MOSI | CMOS Input | Serial Peripheral Interface Data Input |
| 33 | CSB | CMOS Input | Chip Select for Synchronous Serial Interface (active low) |
| 34 | CLK | CMOS Input | Serial Peripheral Interface Clock |
| 35 | MISO | CMOS Output | Serial Peripheral Interface Data Output |
| 36 | PIO10 | Bi-directional | Programmable input/output line |
| 37 | PIO11 | Bi-directional | Programmable input/output line |
| 38 | PIO3 | Bi-directional with programmable strength | PIO |
| 39 | PIO2 | Bi-directional with programmable strength | PIO or external clock request |
| 40 | PIO1 | Bi-directional with programmable strength | Control output for external PA (if fitted) |
| 41 | PIO0 | Bi-directional with programmable strength | Control output for external Tx/Rx switch (if fitted) |
| 42 | PIO8 | Bi-directional | Programmable input/output line |
| 43 | PIO9 | Bi-directional | Programmable input/output line |
| 44 | GND | GND | Ground |
| 45 | GND | GND | Ground |
| 46 | ANT | RF | RF Interface |
| 47 | GND | GND | Ground |

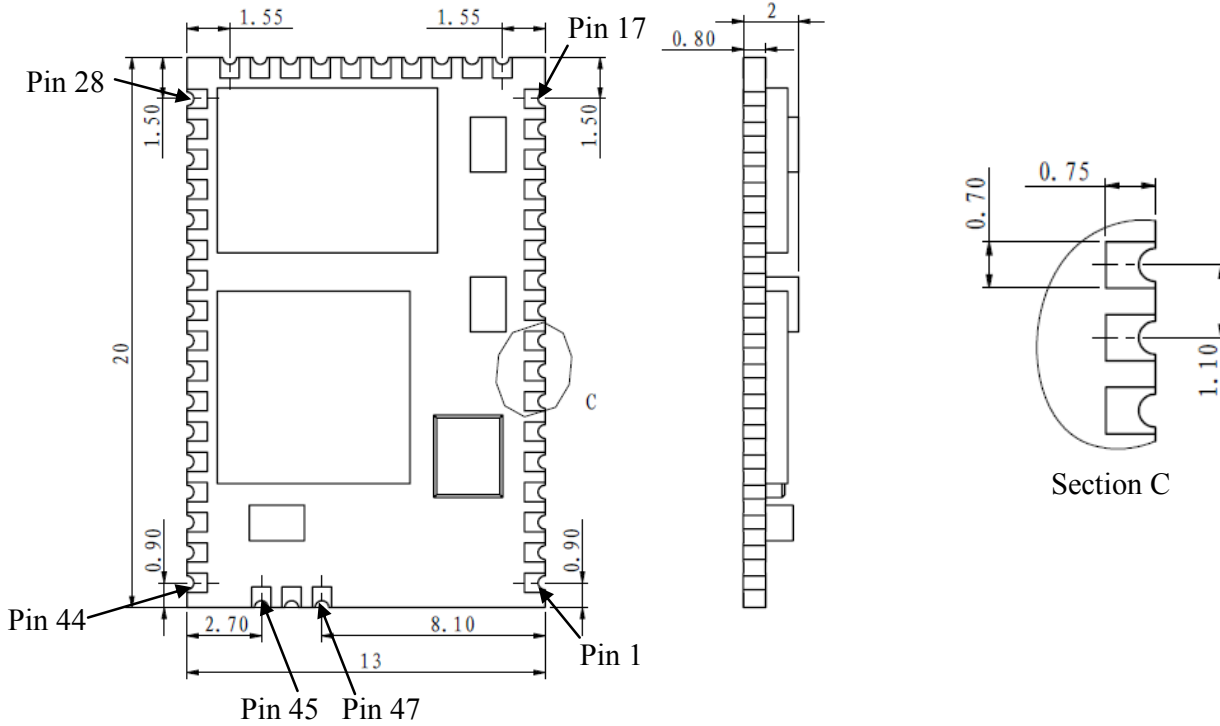
20.0 x 13.0 x 2.0 mm SMT Bluetooth Module

ABBTM-2.4GHz-31-T

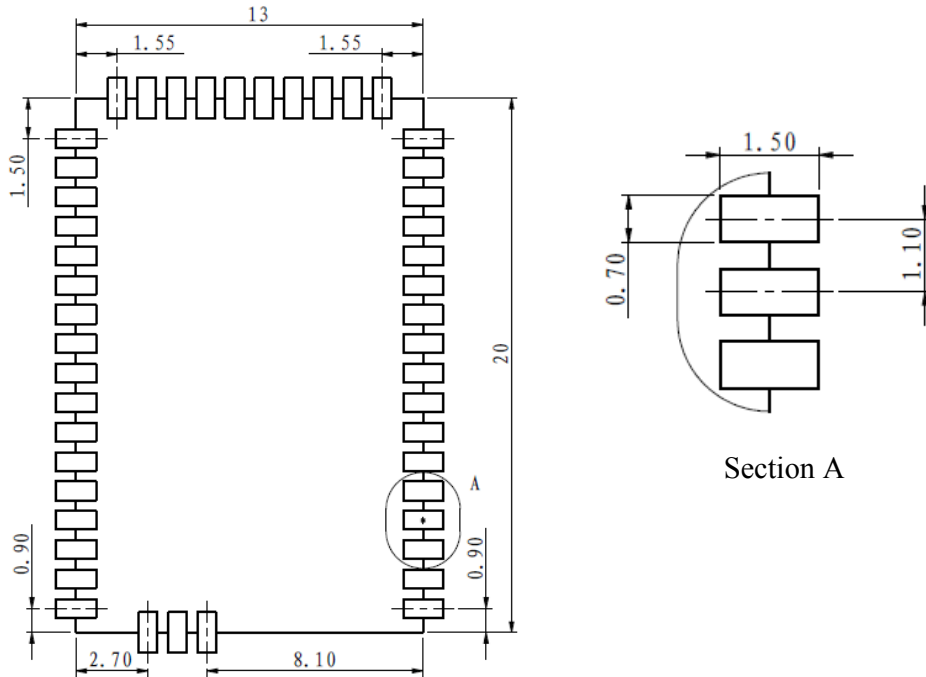


20.0 x 13.0 x 2.0 mm SMT

MECHANICAL DIMENSIONS



Recommended Land Pattern



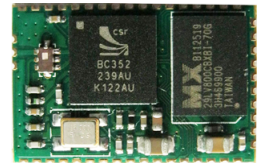
Note: Specified dimensions without tolerance are listed for reference purposes only. Dimensions: mm.

20.0 x 13.0 x 2.0 mm SMT Bluetooth Module

ABBTM-2.4GHz-31-T

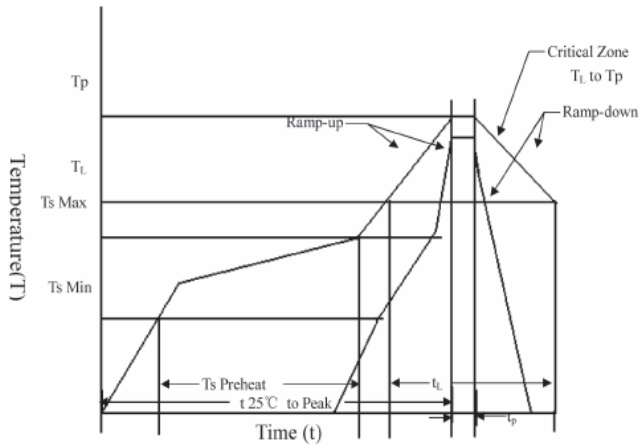


RoHS
Compliant



20.0 x 13.0 x 2.0 mm SMT

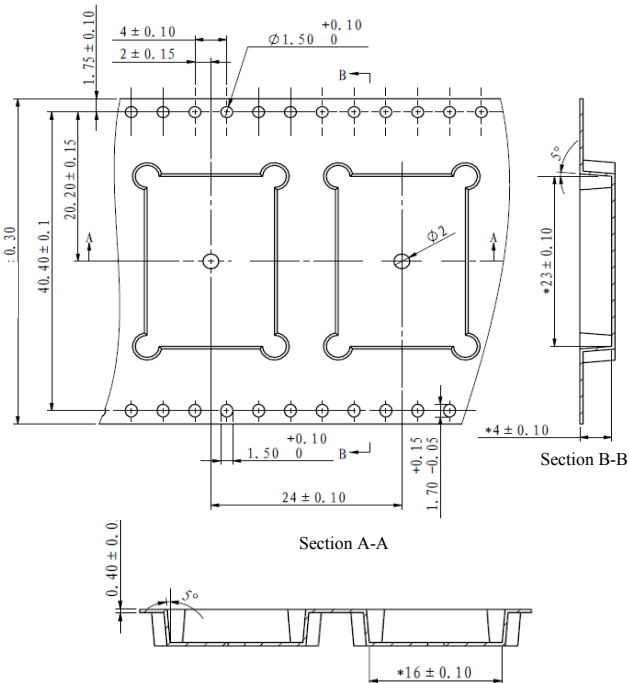
REFLOW PROFILE



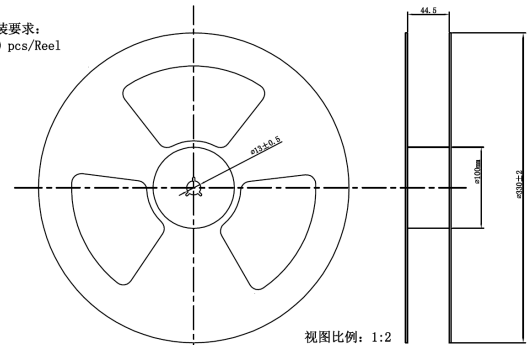
| | |
|--|---------------------------|
| T_s max to T_l (Ramp-up Rate) | 3°C/second max. |
| Preheat | |
| Temperature Min. (T_s Min.) | 150°C |
| Temperature Typical (T_s Typ.) | 175°C |
| Temperature Max. (T_s Max.) | 200°C |
| Time (t_s) | 60 ~ 180 seconds |
| Ramp-up rate (T_l to T_p) | 3°C/second max. |
| Time Maintained Above: --Temperature (T_l)/Time (T_l) | 217°C/60 ~ 150 seconds |
| Peak Temperature (T_p) | 250°C max. for 10 seconds |
| Target Peak Temperature (T_p Target) | 250°C +0/-5°C |
| Time within 5°C of actual peak (t_p) | 20 ~ 40 seconds |
| Ramp-down Rate | 6°C/second max. |
| Tune 25°C to Peak Temperature (t) | 8 minutes max. |

PACKAGING:

500pcs/reel



包装要求:
500 pcs/Reel



- Unless otherwise specified, the tolerance is ± 0.1 mm
- The carrier tape material thickness is 0.4mm
- Unless otherwise specified, the round corner is R0.3; the peeling angle is no greater than 5°
- The finished products has no rough edges and no damage; cover tape should be sealed
- Material is ROHS compliant

Packaging:

ABBTM-2.4GHz-31-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.

ABRACON IS
ISO 9001:2008
CERTIFIED



Visit www.abracon.com for Terms & Conditions of Sale
30332 Esperanza, Rancho Santa Margarita, California 92688
tel 949-546-8000 | fax 949-546-8001 | www.abracon.com

Revised: 01.14.15