RoHS & Halogen Free & REACH Compliance.

# SPECIFICATION FOR APPROVAL

**Customer：** _____

**Customer P/N：** _____

**Drawing No：** _____

**Quantity：** _____ **Pcs.** **Date：** _____

**Chilisin P/N：** **BTLL001608JXVSBA10**

| SPECIFICATION ACCEPTED BY: | |
|---|---|
| COMPONENT ENGINEER | |
| ELECTRICAL ENGINEER | |
| MECHANICAL ENGINEER | |
| APPROVED | |
| REJECTED | |

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| Drawn by | Checked by | Approved by |
|---|---|---|
| **Jasper** | **CF** | **Derek** |

## APPLICATION

**LTE, WLAN, Bluetooth, Home RF.**

## FEATURES

**1-1 Compact Size**

Miniaturized SMD packaged in low profile and lightweight.

**1-2 Low loss**

Low insertion loss, high attenuation.

**1-3 High Soldering Heat Resistance**

High quality termination allows both flow and re-flow soldering methods to be applied.

**1-4 Characteristics**

Eliminate noise over a wide frequency range. Idea for high frequency and space limited designs.

**1-5 Available in tape and reel packaging for automatic mounting**

## PRODUCT IDENTIFICATION

| B T L L | 0 0 | 1 6 0 8 | # # # x x | A 1 | 0 |
|---|---|---|---|---|---|
| ① | ② | ③ | ④ | ⑤ | ⑥ |

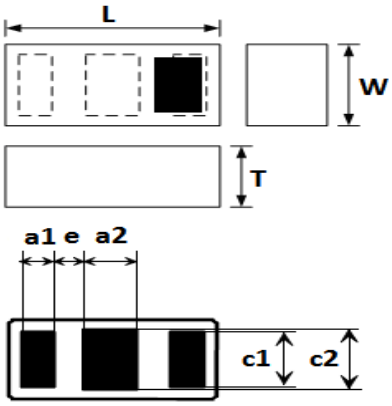
① Product Code
② Customer Code
③ Dimension Code
④ Series Type (### represents center frequency and xx represents material type)
⑤ Design Code
⑥ Version Code

## ELECTRICAL REQUIREMENTS

| Pass Band | Insertion Loss in BW | Return Loss | Attenuation |
|---|---|---|---|
| 410~2690 MHz | 0.5 dB max. | 10 dB min. | 35 dB min. at 4950~6000 MHz<br>35 dB min. at 6000~7500 MHz<br>35 dB min. at 7500~8100 MHz<br>27 dB min. at 8100~12500 MHz |

Operating Temperature Range：-40~85°C
Power Capacity：3W max.

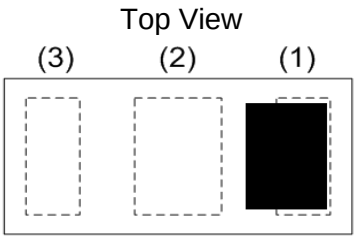
## PRODUCT DIMENSION




| L | W | T | a1 |
|---|---|---|---|
| 1.60±0.10 | 0.80±0.10 | 0.65 max. | 0.25±0.10 |
| a2 | c1 | c2 | e |
| 0.40±0.10 | 0.55±0.10 | 0.60±0.10 | 0.23±0.05 |

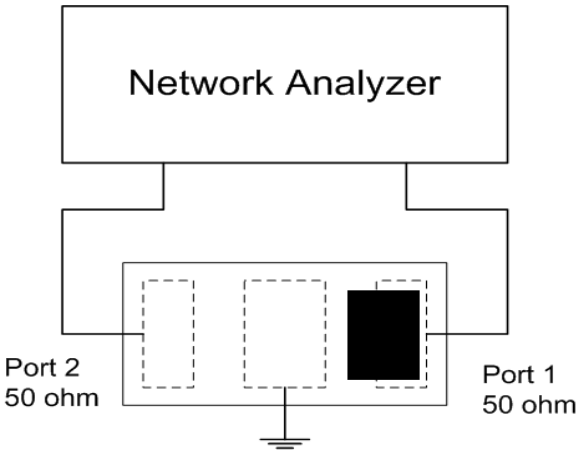
NOTE：Dimensions in mm.

## TERMINAL CONFIGURATION



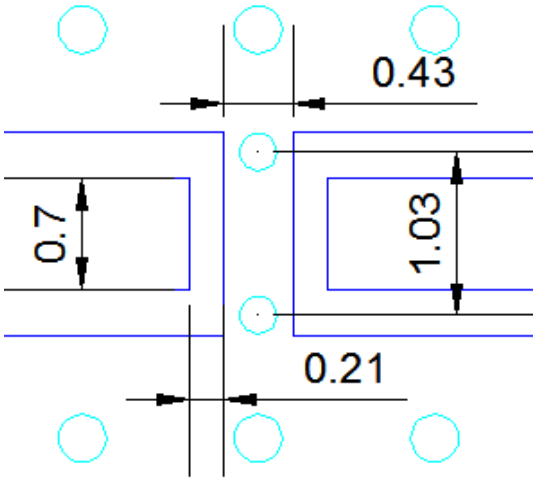

① IN
② GND
③ OUT

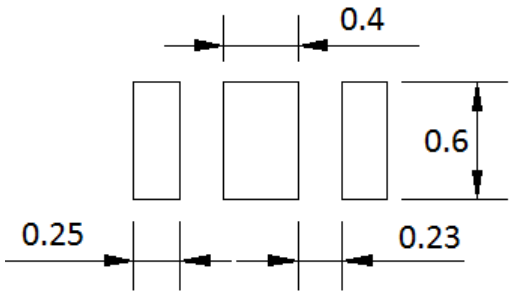
## MEASURING DIAGRAM




Test Instrument：
Agilent E5071C Network Analyzer.

## RECOMMENDED PCB LAYOUT AND LAND PATTERN

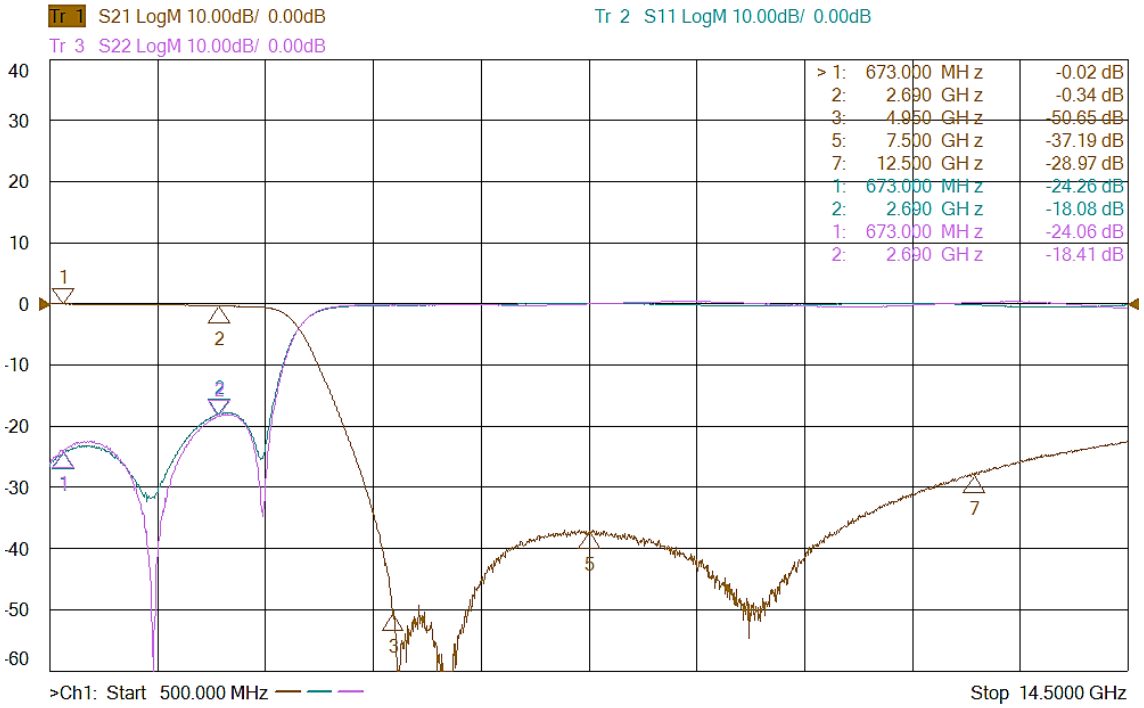



Unit：mm

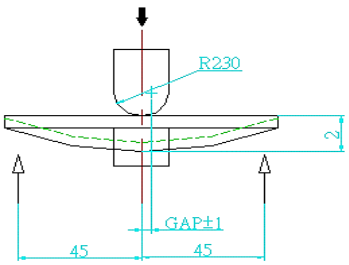
◎Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

## ELECTRICAL CHARACTERISTICS ( T=25℃)



# RELIABILITY TEST

## Mechanical Test

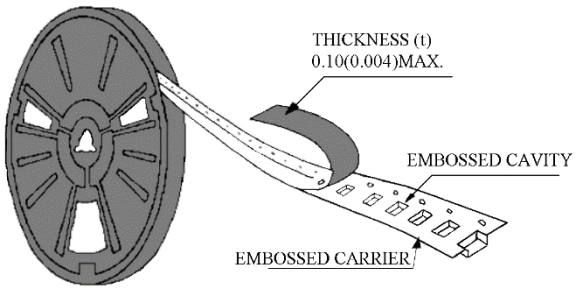
| Item | Test Condition | Specification |
|---|---|---|
| **Vibration** | 10 Hz/min~55 Hz/min~10 Hz/min vibration frequency with 1.5 mm amplitude for two hours in x, y, z directions | No apparent damage |
| **Drop shock** | Dropped onto printed circuit board from 100cm height three times in x, y, z directions. The terminals shall be protected. | No apparent damage |
| **Soldering heat resistance** | Preheating temperature : 150±10℃<br>Preheating time : 1 to 2 minutes<br>Solder bath temperature : 260±5℃<br>Bathing time : 10±1 seconds | Loss of metallization on the edges of each electrode shall not exceed 25%. |
| **Bending test onto printed circuit board** | Solder specimen LTCC components on the test printed circuit board (L: 100 x W: 40 x T: 1.6mm) in appended recommended PCB pattern.<br>Apply the load in direction of the arrow until bending reaches 2 mm.<br>60sec holding time.<br>  <br>Unit: mm | No apparent damage |
| **Solderability** | *Solder bath temperature：245±5℃<br>*Immersion time：3±1 seconds.<br>Solder：Sn3Ag0.5Cu for lead-free | At least 95% of a surface of each terminal electrode must be covered by fresh solder. |
| **Adhesive strength** | Standard is as follows<br>0605~1005 >0.1KgF<br>1109~2016 >0.5KgF<br>2520~>1KgF | No apparent damage |

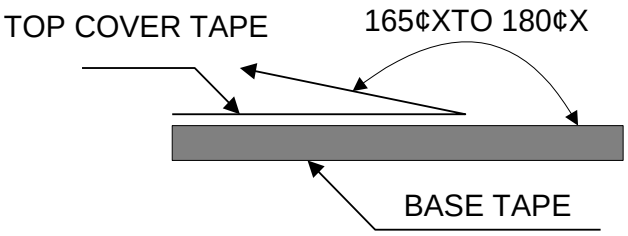
## Environment Test

| | | |
|---|---|---|
| **Thermal shock** | -40℃~85℃ for 100 cycles each cycle being 30 min | No apparent damage<br>Fulfill the electrical spec. after test |
| **Humidity resistance** | 85±2℃,80~90% R.H. for 1000 hours | No apparent damage<br>Fulfill the electrical spec. after test |
| **High temperature resistance** | 85±2℃ for 1000 hours | No apparent damage<br>Fulfill the electrical spec. after test |
| **Low temperature resistance** | -40±3℃ for 1000 hours | No apparent damage<br>Fulfill the electrical spec. after test |

# PACKAGING FOR SMC

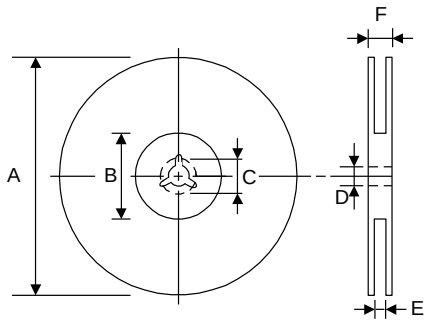
## Peel-off force




The force for peeling off cover tape is 10 grams in the arrow direction.

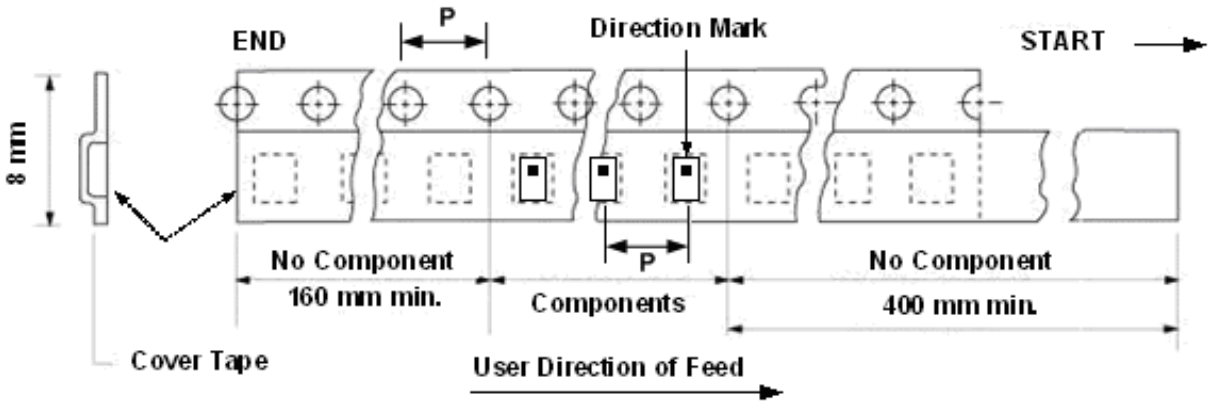
## Dimension (Unit: mm)




| TYPE | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 8 mm | 178±1 | 60+0.5 -0 | - | 13±0.2 | 9±0.5 | 12±0.5 |
| 12 mm | 178±0.3 | 60±0.2 | 19.3±0.1 | 13.5±0.1 | 13.6±0.1 | - |

## Taping quantity

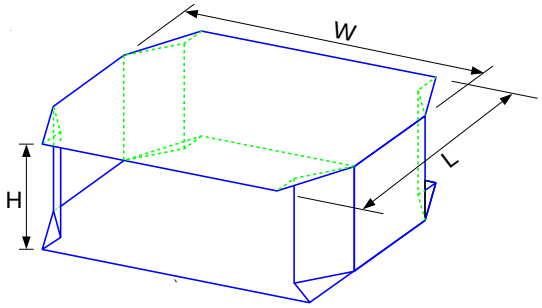
| SERIES | 5824 5724 | 5320 5220 | 4532 | 4516 | 3225 | 3216 2520 | 2012 1608 | 1005 0605 |
|---|---|---|---|---|---|---|---|---|
| PCS/Reel | 5000 | 3000 | 1000 | 2000 | 2500 | 3000 | 4000 | 10000 |




P= 4 mm

## TAPE PACKING CASE

Unit:cm




| No. of Reels | W | L | H |
|---|---|---|---|
| 2 | 18±0.5 | 18±0.5 | 2.4±0.2 |
| 3 | 18±0.5 | 18±0.5 | 3.6±0.2 |
| 4 | 18±0.5 | 18±0.5 | 4.8±0.2 |
| 5 | 18±0.5 | 18±0.5 | 6.0±0.2 |

## MSL RATING

Level 1

## OPERATION TEMPERATURE

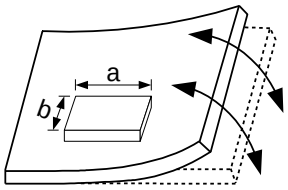
-40℃ ~85℃

## STORAGE CONDITION

The temperature should be within -40~85℃ and humidity should be less than 75% RH. The product should be used within 12 months from the time of delivery.

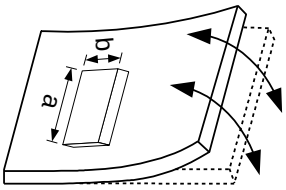
## ATTENTION REGARDING PCB BENDING

(a) PCB shall be designed so that products are not subjected to the mechanical stress for board wrapage. Product shall be located in the sideway direction to the mechanical stress.



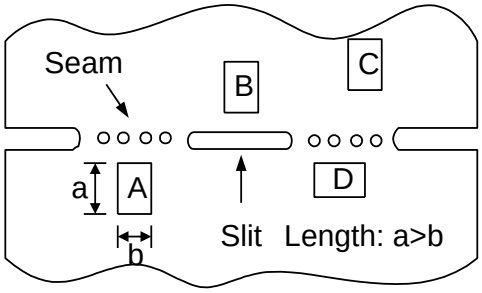

(Poor example)

Length: a>b

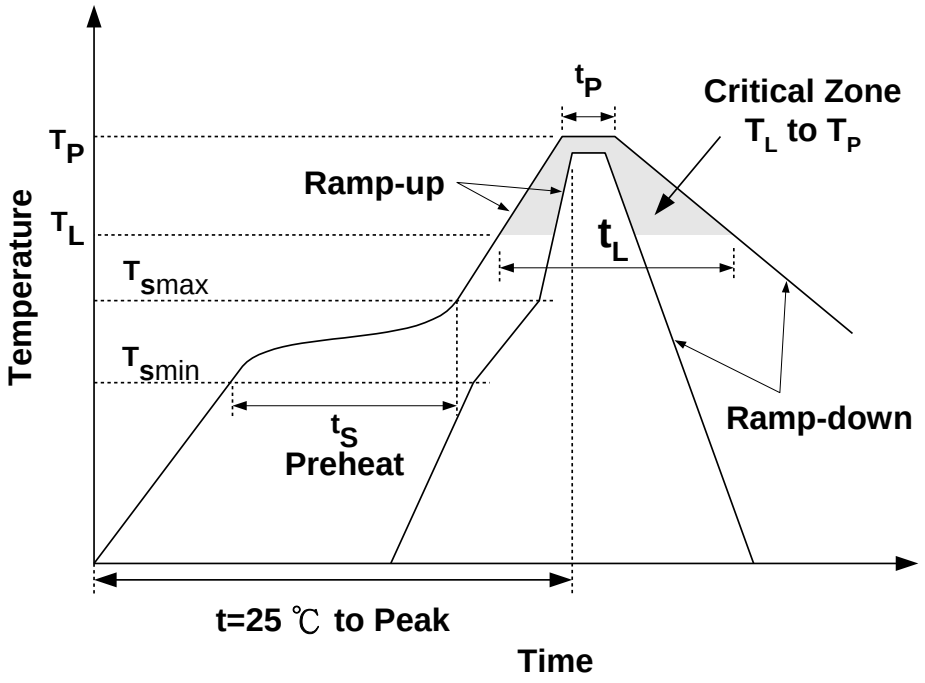



(Good example)

(b) Products (A,B,C,D) shall be located carefully so that products are not subjected to the mechanical stress due to warping the board. Because they may be subjected to the mechanical stress in order of A>C>B≒D.



# RECOMMENDED REFLOW SOLDERING PROFILE




| Profile Feature | | Sn-Pb | Pb-Free |
|---|---|---|---|
| Preheat | $t_s$ | 60~120 seconds | 60~180 seconds |
| | $T_{smin}$ | 100℃ | 150℃ |
| | $T_{smax}$ | 150℃ | 200℃ |
| Average ramp-up rate ($T_{smax}$ to $T_P$) | | 3℃/second max. | 3℃/second max. |
| Time main above | Temperature ($T_L$) | 183℃ | 217℃ |
| | Time ($t_L$) | 60~150 seconds | 60~150 seconds |
| Peak temperature ($T_P$) | | 230℃ | 250~260℃ |
| Time within 5℃ of actual peak temperature ($t_P$) | | 10 seconds | 10 seconds |
| Ramp-down rate | | 6℃/sec max. | 6℃/sec max. |
| Time 25℃ to peak temperature | | 6 minutes max. | 8 minutes max. |

## NOTES

**The contents of this data sheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.**

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