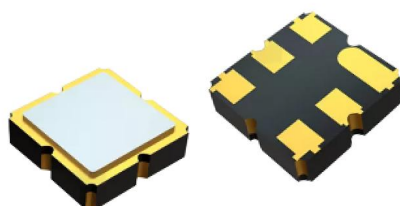


# DATASHEET

SMT 3 × 3 6 Pin 868/915 MHz SAW Pass Band Filter

## YCCF8301



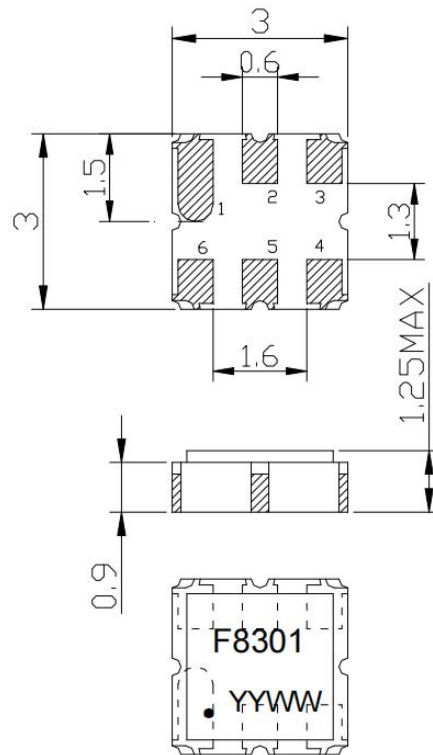
### REVISION HISTORY

| DATE     | VERSION | DESCRIPTION     | AUTHOR   |
|----------|---------|-----------------|----------|
| 29/05/20 | 1.0.0   | Initial release | Asher Z. |
|          |         |                 |          |
|          |         |                 |          |
|          |         |                 |          |
|          |         |                 |          |
|          |         |                 |          |

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# 1 PACKAGE DIMENSIONS (UNIT: mm)



## 2 PIN CONFIGURATION

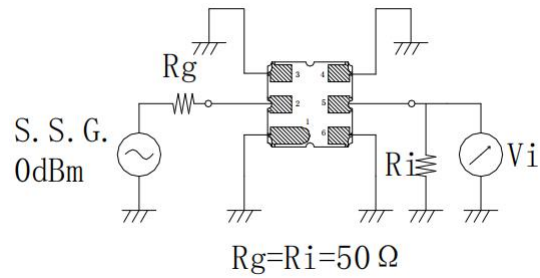
| Pin ID     | Description |
|------------|-------------|
| 2          | Input       |
| 5          | Output      |
| 1, 3, 4, 6 | Ground      |

## 3 MARKING DESCRIPTION

|          |                       |
|----------|-----------------------|
| <b>F</b> | SAW Filter            |
| 8301     | Part No.              |
| ●        | Pin 1                 |
| * YYWW   | Year Code & Week Code |

\* Fig: If the items produced in 6th week of 2022, the year code and week code will be 2206.

## 4 TEST CIRCUIT (Bottom View)



## 5 MAX RATING

|                             | <b>Item</b>      | <b>Value</b> | <b>Unit</b> |
|-----------------------------|------------------|--------------|-------------|
| <b>DC Voltage</b>           | V <sub>DC</sub>  | 5            | V           |
| <b>Operation Temp</b>       | T                | -40 ~ +85    | °C          |
| <b>Storage Temp</b>         | T <sub>stg</sub> | -40 ~ +85    | °C          |
| <b>RF Power Dissipation</b> | P                | 20           | dBm         |

Table 1

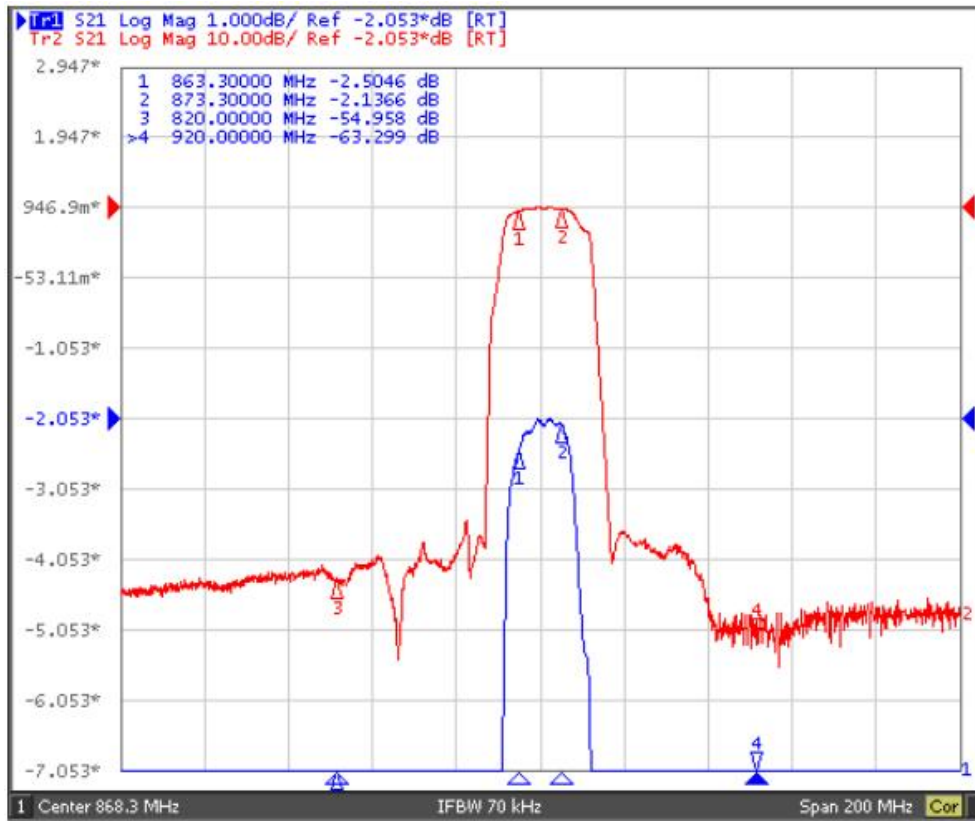
| 6 ELECTRICAL CHARACTERISTICS                   |                |         |        |      |
|--|----------------|---------|--------|------|
| Package Size (Dimensions: 3.0 × 3.0 × 1.25 mm) |                |         |        |      |
| Item   | Mini           | Typical | Max    | Unit |
| Working Frequency                              | 863.30         | -       | 873.30 | MHz  |
| Center Frequency                               | fc             | 868.30  | -      |      |
| Bandwidth                                      | 10             |         |        |      |
| 1dB Bandwidth                                  | 14             |         |        |      |
| Insertion Loss (min)                           | IL             | 2.1     | 3.0    | dB   |
| Insertion Loss (863.30~873.30 MHz)             | IL             | 2.5     | 3.5    |      |
| Amplitude Ripple (P-P, 863.30~873.30 MHz)      | $\Delta\alpha$ | 0.6     | 1.0    |      |
| Group Delay Ripple (863.30~873.30 MHz)         |                | 25.0    | 60.0   | ns   |
| Absolute Attenuation                           | $\alpha$       | -       | -      |      |
| DC-820.00 MHz                                  | -              | 45.0    | 50.0   | dB   |
| 920.00-1100.00 MHz                             | -              | 45.0    | 50.0   | dB   |
| 1100.00-1500.00 MHz                            | -              | 40.0    | 45.0   | dB   |
| Input VSWR (863.30~873.30 MHz)                 | -              | -       | 1.6:1  | -    |
| Output VSWR (863.30~873.30 MHz)                | -              | -       | 1.6:1  | -    |

Table 2

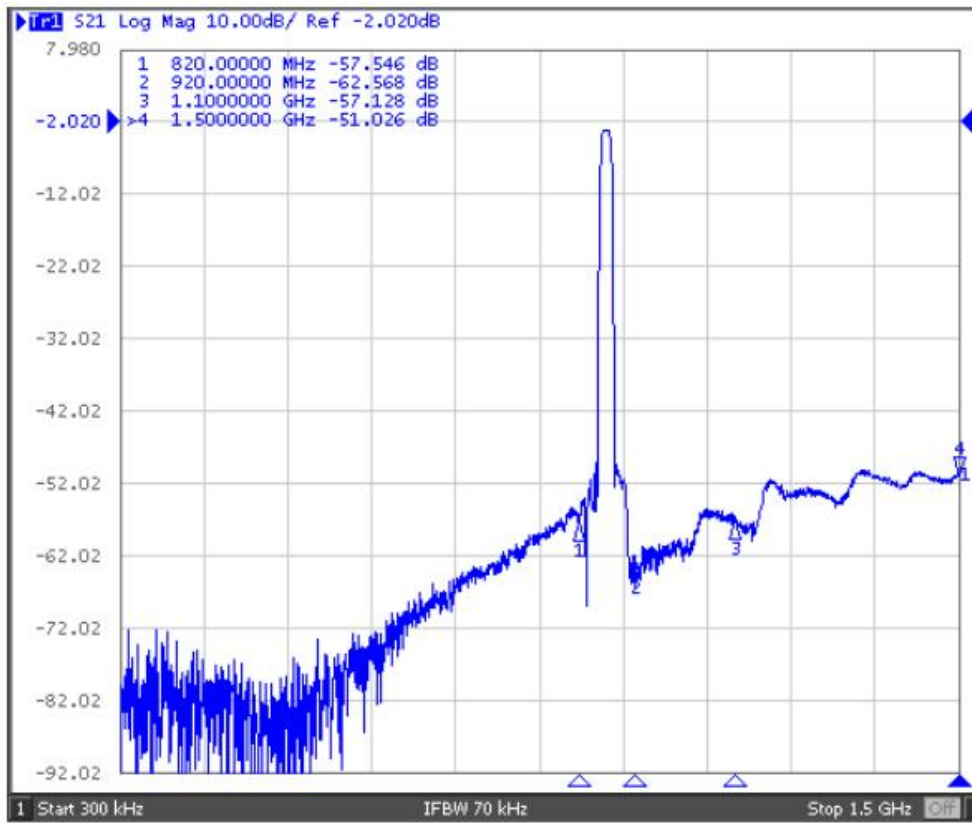
| Environmental                |      |    |
|------------------------------|------|----|
| Operating Temperature        | 25±2 | °C |
| Termination Source Impedance | 50   | Ω  |
| Terminating Load Impedance   |      |    |

## 7 FREQUENCY CHARACTERISTICS

### Frequency Response

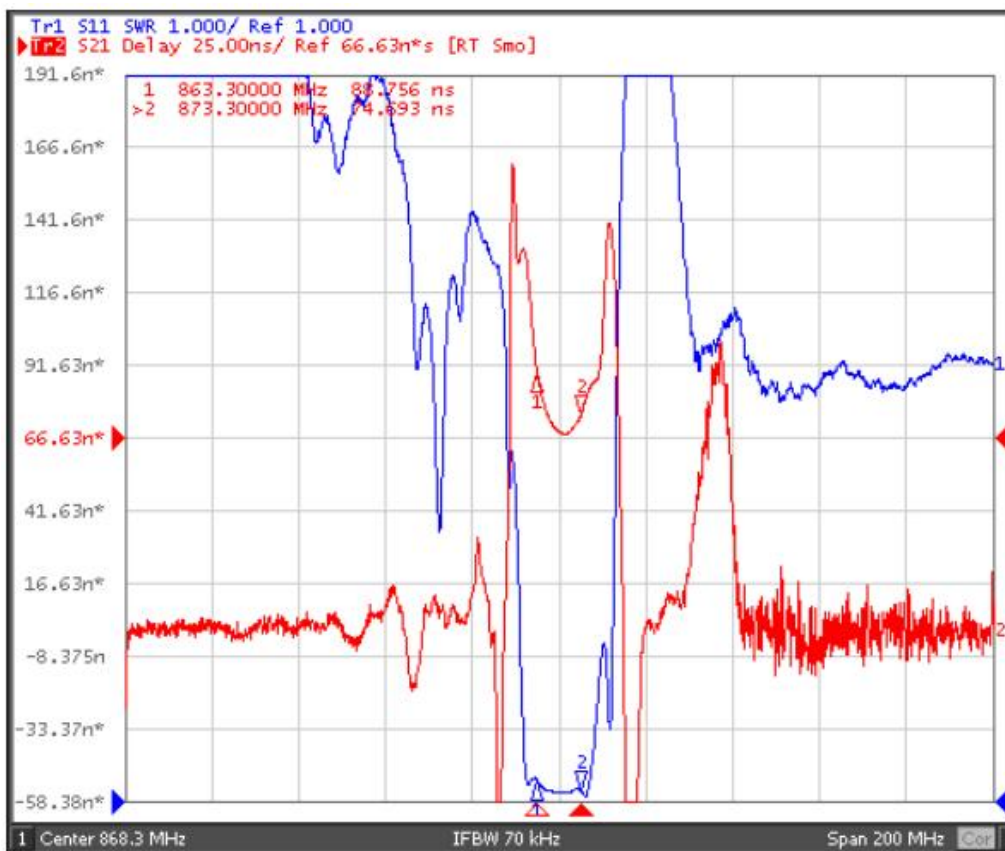


## Frequency Response (wideband)

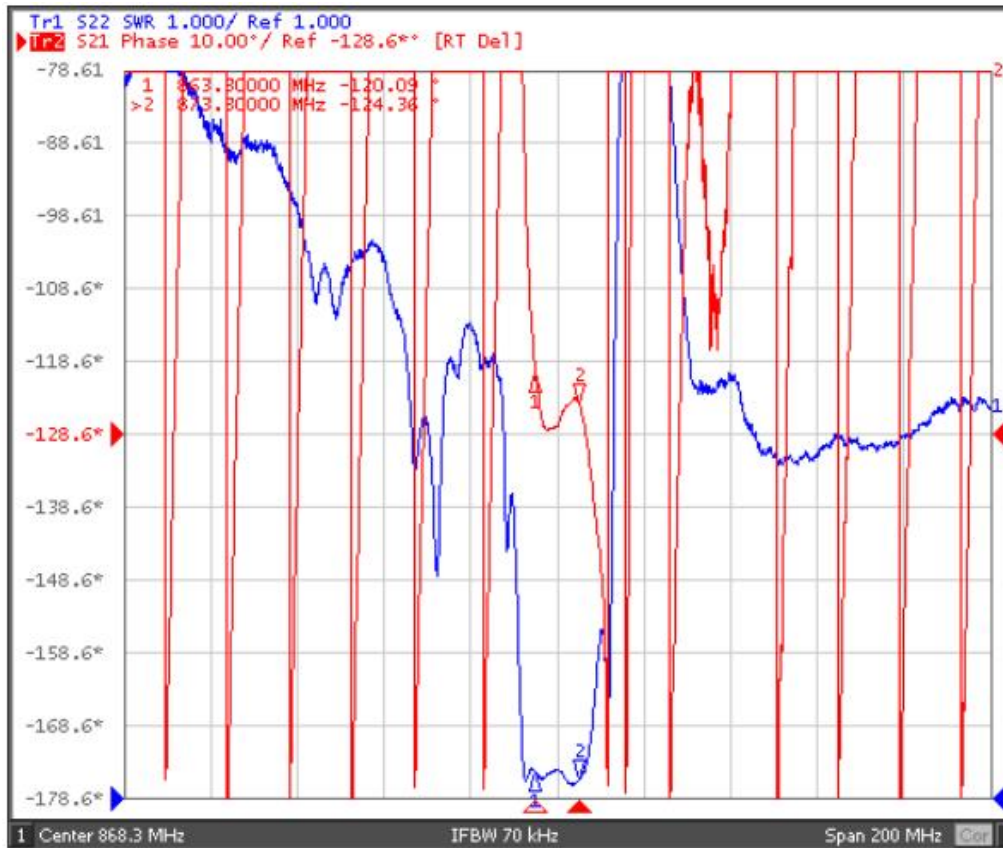




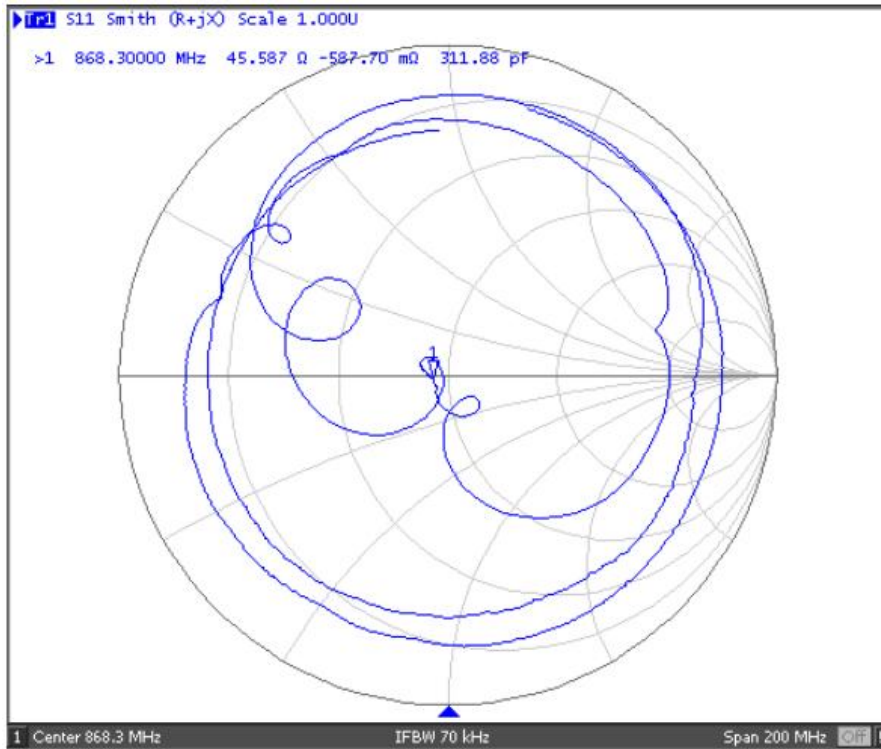
## Delay Ripple & S11 VSWR



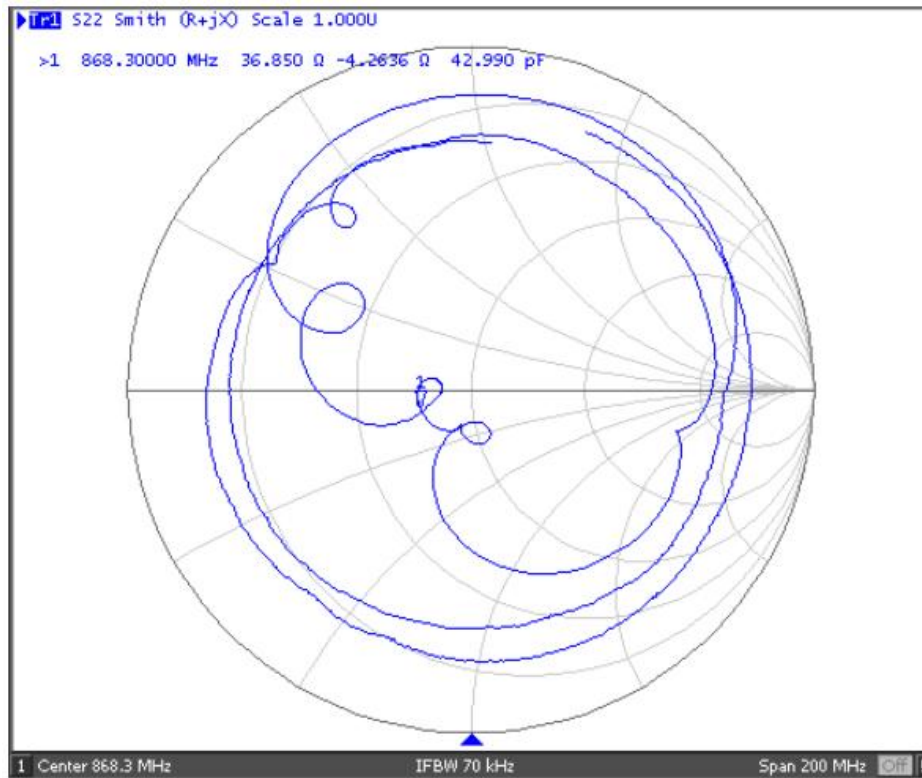
## Phase Linearity & S22 VSWR



## S11 Smith Chart



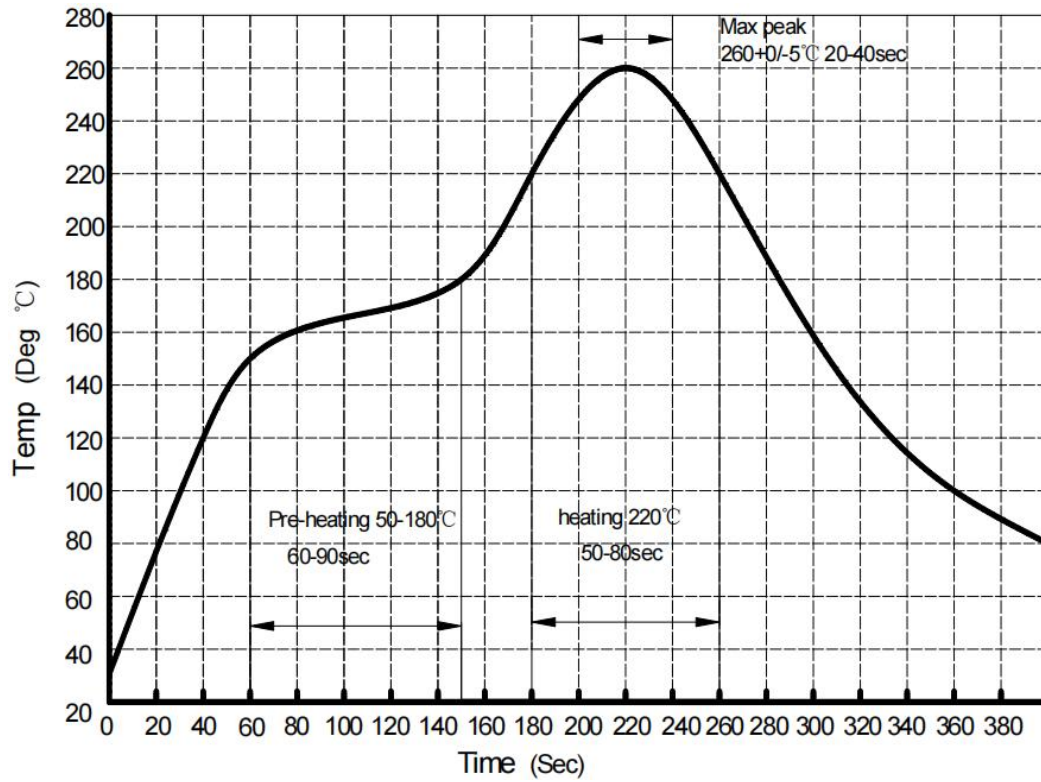
## S22 Smith Chart



## 8 RELIABILITY

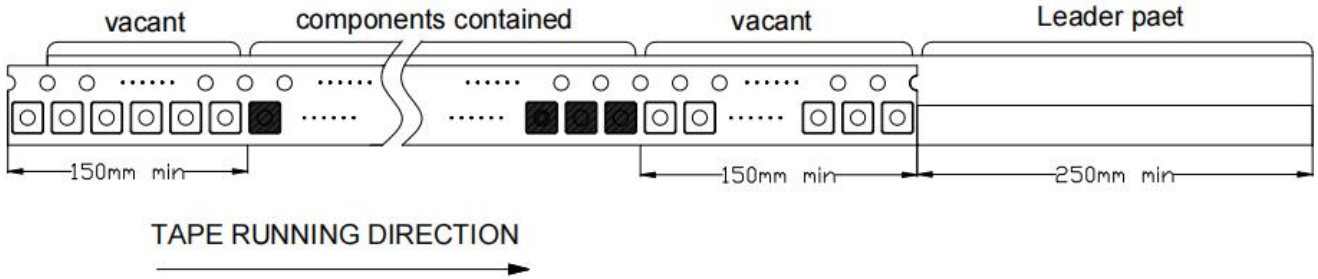
| SL # | Test Item                    | Test Conditions  |
|------|------------------------------|--|
| 1    | Temperature Storage          | <b>Temperature:</b> 85±2 °C, <b>Duration:</b> 250 h, <b>Recovery Time:</b> 2±0.5 h   |
|      |                              | <b>Temperature:</b> -55±3 °C, <b>Duration:</b> 250 h, <b>Recovery Time:</b> 2±0.5 h  |
| 2    | Humidity Test                | <b>Conditions:</b> 60±2 °C, 90~95% RH, <b>Duration:</b> 250 h  |
| 3    | Thermal Shock                | <b>Heat Cycle Conditions:</b> TA=-55±3 °C, TB=85°C±2 °C, t1=t2=30 min, <b>Switch Time:</b> ≤3 min, <b>Cycle Time:</b> 100 times, <b>Recovery Time:</b> 2±0.5 h |
| 4    | Vibration Fatigue            | <b>Frequency of Vibration:</b> 10~55 Hz, <b>Amplitude:</b> 1.5 mm  |
|      |                              | <b>Directions:</b> X,Y and Z, <b>Duration:</b> 2 h   |
| 5    | Drop Test                    | <b>Cycle Time:</b> 10 times, <b>Height:</b> 1.0 m  |
| 6    | Solder Ability Test          | <b>Temperature:</b> 245±5 °C, <b>Duration:</b> 3.0-5.0 s   |
|      |                              | <b>Depth:</b> DIP-2/3 , SMD-1/5  |
| 7    | Resistance to Soldering Heat | <b>Thickness of PCB:</b> 1mm, Solder Condition: 260±5 °C, <b>Duration:</b> 10±1 s  |
|      |                              | <b>Temperature of Soldering Iron:</b> 350±10 °C, <b>Duration:</b> 3~4 s, <b>Recovery Time:</b> 2 ± 0.5 h   |

## 9 Recommended Reflow Soldering Diagram

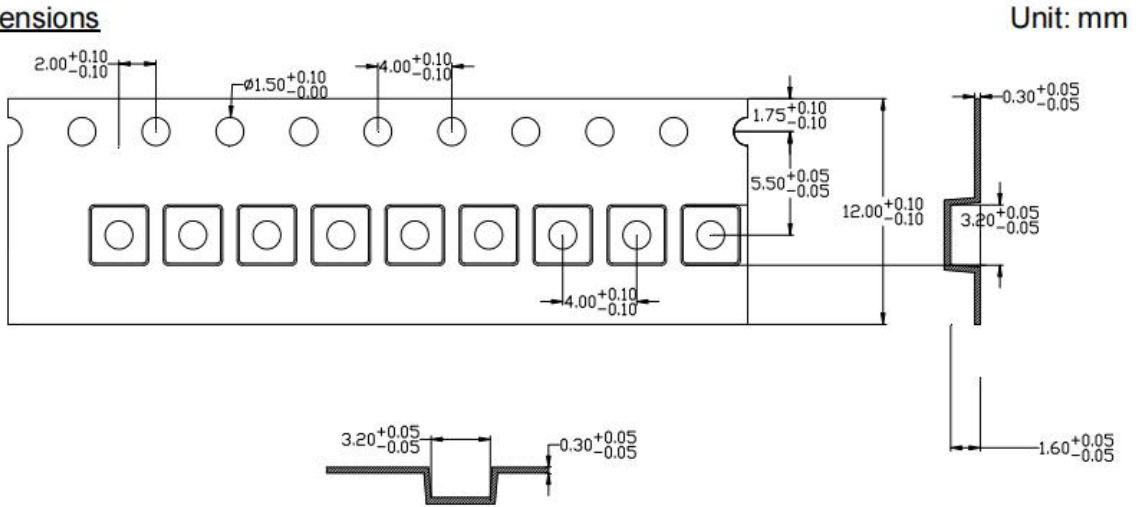


## 10 Packaging

### Carrier Tape

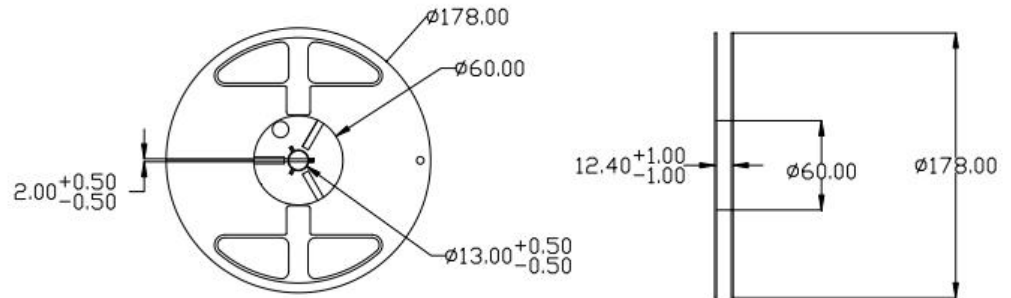


### Reel Dimensions



Unit: mm

### Outer Packing



Unit: mm

**Kindly Note:**

- 1.** As a result of the particularity of inner structure of SAW products, it easy to be breakdown by electrostatic, so we should pay attention to ESD protect in the test.
- 2.** Static voltage between signal load and ground may cause deterioration and destruction of the component. Please avoid static voltage.
- 3.** Ultrasonic cleaning may cause deterioration and destruction of the component. Please avoid ultrasonic cleaning.
- 4.** Only leads of component may be soldered. Please avoid soldering another part of component.
- 5.** There is a close relationship between the device's performance and matching network. The specifications of this device are based on the test circuit shown above. L and C values may change.



