



# TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,  
Taoyuan, 324, Taiwan, R.O.C.

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## Product Specifications Approval Sheet

Product Description: SAW Filter 869 MHz (BW 2MHz) SMD 3X3 mm

TST Part No.: TA2021A (This part is is compliant with AEC-Q200)

Customer Part No.: \_\_\_\_\_

Customer signature required

Company: \_\_\_\_\_

Division: \_\_\_\_\_

Approved by : \_\_\_\_\_

Date: \_\_\_\_\_

Checked by: \_\_\_\_\_ Michael Yang 

Approval by: \_\_\_\_\_ Bob Chau 

Date: \_\_\_\_\_ 2016/8/30

1. Customer signed back is required before TST can proceed with sample build and receive orders.
2. Orders received without customer signed back will be regarded as agreement on the specifications.
3. Any specifications changes must be approved upon by both parties and a new revision of specifications shall be released to reflect the changes.



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## SAW Filter 869MHz

MODEL NO.:TA2021A

REV. NO.:1.0

### A. MAXIMUM RATING:

1. Input Power Level: 13 dBm
2. DC Voltage : 6V
3. Operating Temperature: -40°C to +80°C
4. Storage Temperature: -40°C to +80°C

RoHS Compliant  
Lead free  
Lead-free soldering

Electrostatic Sensitive Device (ESD)

### B. ELECTRICAL CHARACTERISTICS:

Terminating source impedance (single) :  $Z_s = 50 \Omega$

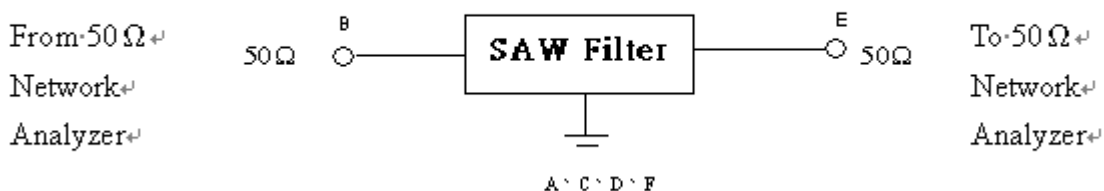
Terminating load impedance(single) :  $Z_L = 50 \Omega$

| Item                                     | Unit | Min              | Type. | Max |
|------------------------------------------|------|------------------|-------|-----|
| Center Frequency <b>F<sub>c</sub></b>    | MHz  | -                | 869.  | -   |
| Insertion Loss (868~870 MHz) <b>IL</b>   | dB   |                  | 3.0   | 3.5 |
| <b>VSWR</b> (868~870 MHz)                |      |                  | 1.5   | 2.0 |
| <b>Amplitude ripple</b><br>(868~870 MHz) | dB   |                  | 0.5   | 1.2 |
| <b>Attenuation</b>                       |      |                  |       |     |
| 50 ~ 791 MHz                             | dB   | 45               | 50    |     |
| 791 ~ 835 MHz                            | dB   | 45               | 50    |     |
| 835 ~ 848 MHz                            | dB   | 43               | 48    |     |
| 848 ~ 862 MHz                            | dB   | 15 <sup>1)</sup> | 25    |     |
| 880 ~ 883 MHz                            | dB   | 35               | 45    |     |
| 883 ~ 1000 MHz                           | dB   | 49               | 54    |     |
| Package size                             | mm   | SMD 3x3          |       |     |

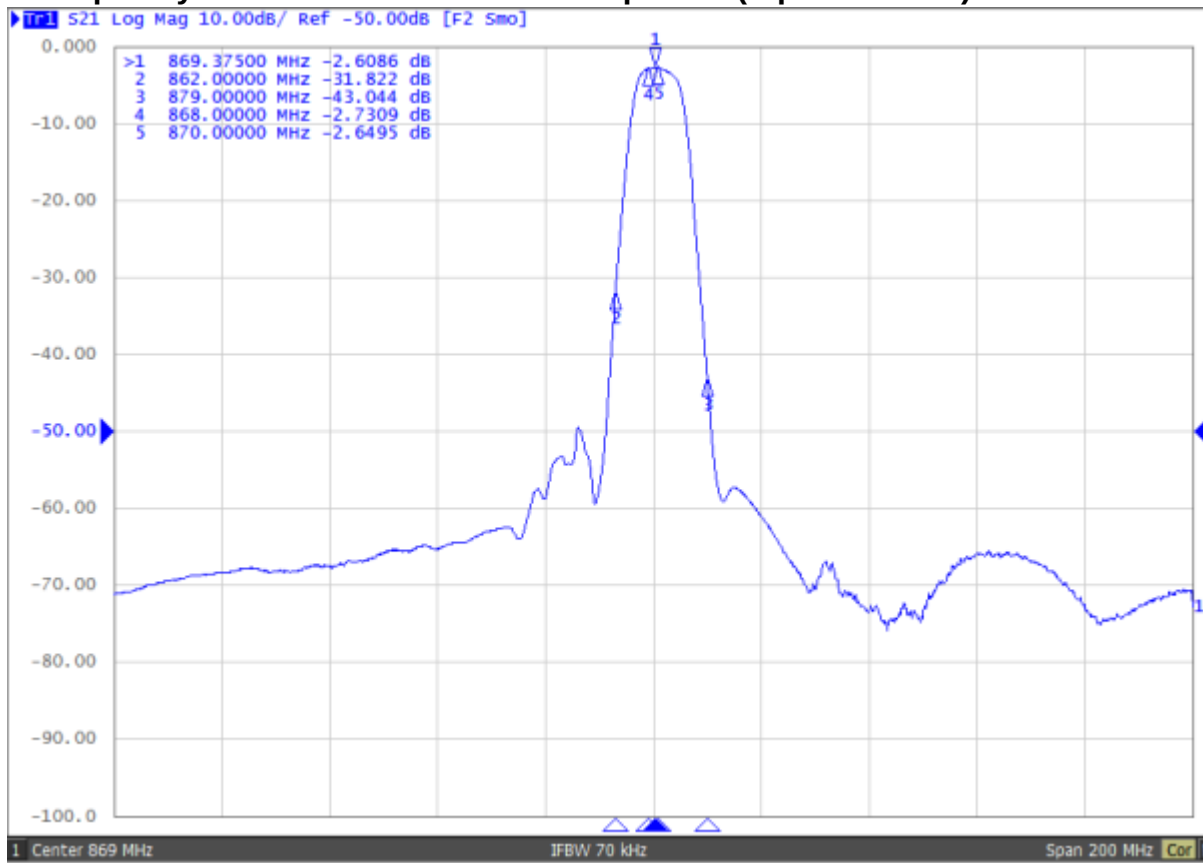
1) 25dB at 25°C; 15dB for -40°C to +60°C

### C. TEST CIRCUIT:

Network analyzer



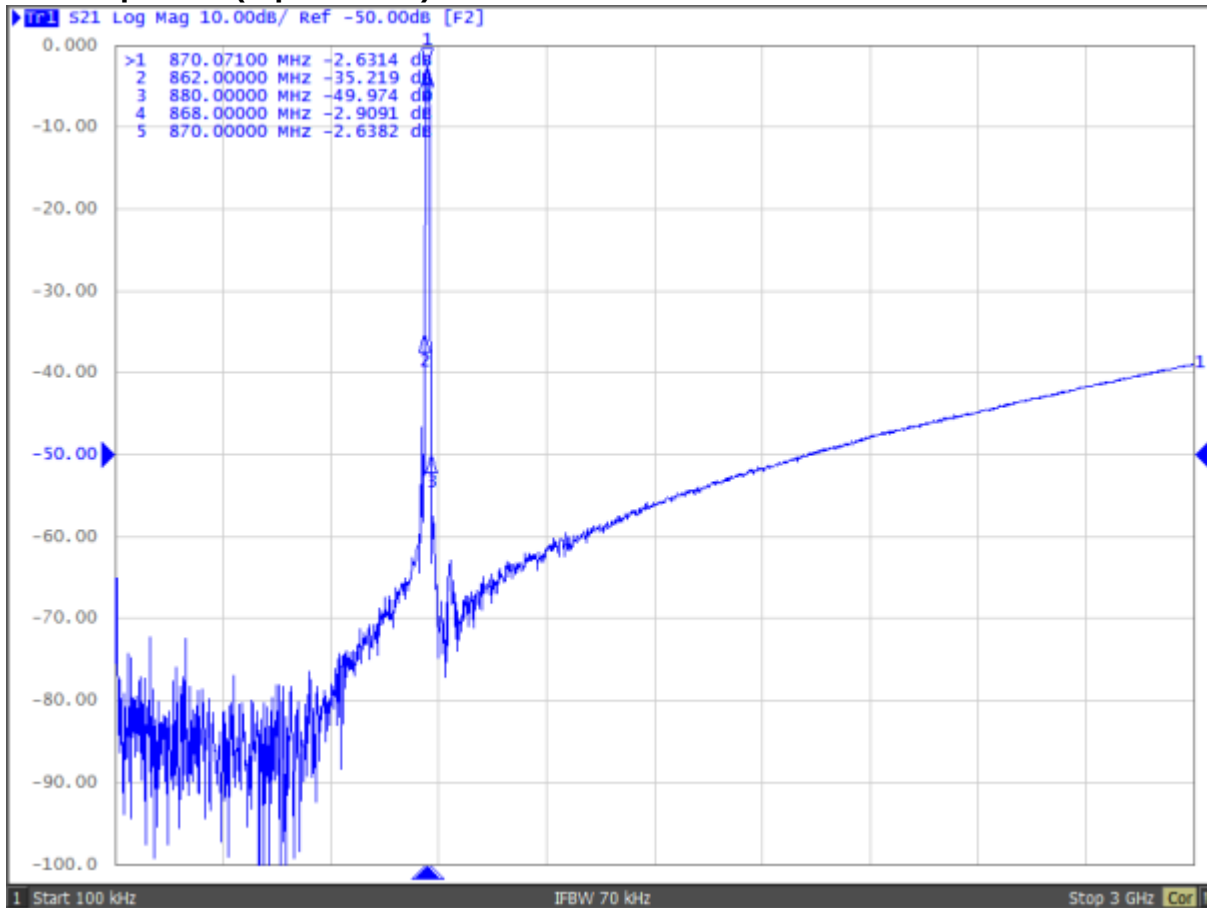
#### D. Frequency Characteristics: S21 response :( Span 200MHz)



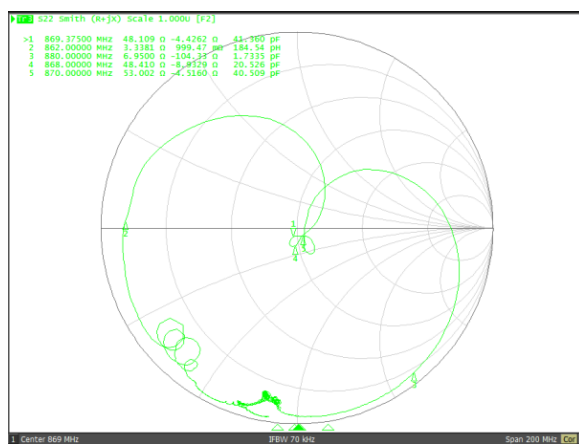
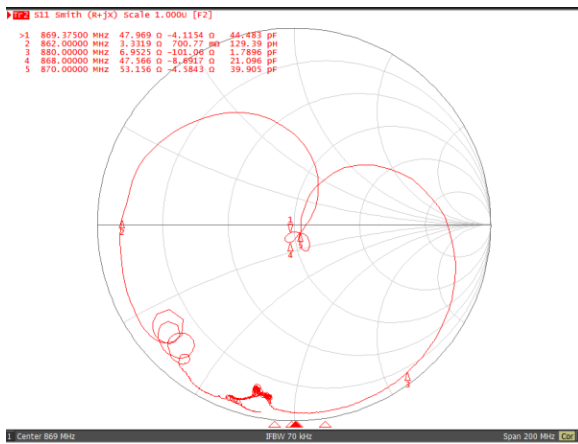
#### S21 response :( Span 20MHz)



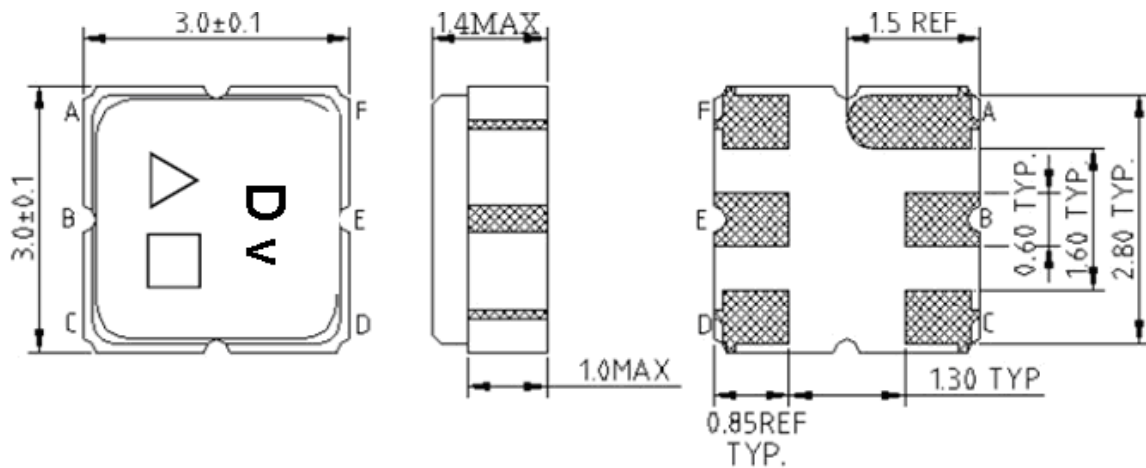
## S21 response :( Span 3GHz)



## S11/S22 response:



## E.OUTLINE DRAWING:



#B: Input  
 #E: Output  
 # A.C.D.F Ground  
 △:Year code (ex 2008→8)  
 □: Date code  
 Unit: mm

Data code : See the table

| WK   | 01 | 02 | ... | 26 | 27 | 28 | ... | 52 |
|------|----|----|-----|----|----|----|-----|----|
| Code | A  | B  | ... | Z  | a  | b  | ... | z  |

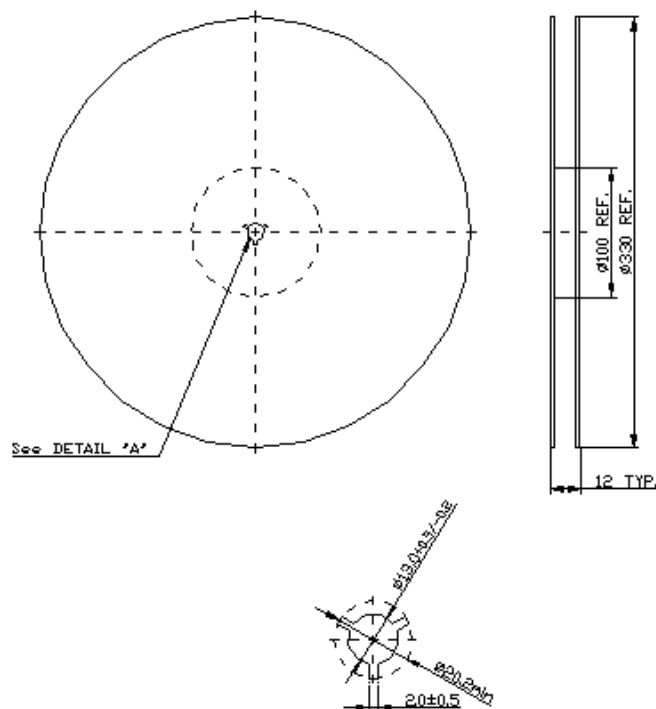
△ Year code : See the table

| Year | 2008 | 2009 | 2010 | 2011 | ... | 2019 | 2020 |
|------|------|------|------|------|-----|------|------|
| Code | 8    | 9    | 0    | 1    | ... | 9    | 0    |

## F. PACKING:

### 1. REEL DIMENSION

(Please refer to FR-75D10 for packing quantity)



2. TAPE DIMENSION.

The drawing shows a 10-hole punch tape with the following dimensions and features:

- Top View:**
  - Overall width:  $12.0 \pm 0.3$
  - Distance from left edge to first hole center:  $4.0 \pm 0.1$
  - Distance between hole centers:  $4.0 \pm 0.1$
  - Distance from last hole center to right edge:  $4.0 \pm 0.1$
  - Hole diameter:  $\phi 1.5^{+0.1}_{-0}$
  - Distance from hole center to tape edge (bottom):  $1.75 \pm 0.1$
  - Distance from hole center to tape edge (top):  $5.5 \pm 0.05$
  - Section line A-A is indicated.
- Bottom View:**
  - Overall width:  $12.0 \pm 0.3$
  - Distance from left edge to first hole center:  $4.0 \pm 0.1$
  - Distance between hole centers:  $4.0 \pm 0.1$
  - Distance from last hole center to right edge:  $4.0 \pm 0.1$
  - Hole diameter:  $\phi 1.6 \pm 0.1$  DIA
  - Distance from hole center to tape edge (bottom):  $1.75 \pm 0.1$
  - Distance from hole center to tape edge (top):  $5.5 \pm 0.05$
  - Section line A-A is indicated.
- Side View (Left):**
  - Overall width:  $0.25 \pm 0.05$
  - Distance from left edge to first hole center:  $3.3 \pm 0.1$
  - Distance between hole centers:  $3.3 \pm 0.1$
  - Distance from last hole center to right edge:  $3.3 \pm 0.1$
- Direction of Feed:** Indicated by an arrow pointing to the right.

### **G. RECOMMENDED REFLOW PROFILE :**

1. Preheating shall be fixed at 150~180℃ for 60~90 seconds.
2. Ascending time to preheating temperature 150℃ shall be 30 seconds min.
3. Heating shall be fixed at 220℃ for 50~80 seconds and at 260℃+0/-5℃ peak (20~40sec).
4. Time: 2 times.

