



# TAI-SAW TECHNOLOGY CO., LTD.

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## Product Specifications Approval Sheet


Product Description: SAW DPX 897.5 / 942.5 MHz Band 8, Rx Balanced SMD 1.8X1.4 mm

(BW=35 MHz)

TST Part No.: TF0130D

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

|                             |
|-----------------------------|
| Customer signature required |
| Company: _____              |
| Division: _____             |
| Approved by : _____         |
| Date: _____                 |

Checked by: \_\_\_\_\_ Anne Chen 

Approved by: \_\_\_\_\_ Bob Chau 

Date: \_\_\_\_\_ 05, 11, 2017

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 change



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SAW DPX 897.5 / 942.5 MHz Band 8 SMD 1.8X1.4 mm (BW=35 MHz)

MODEL NO.:TF0130D

REV.1.0

## A. MAXIMUM RATING:

1. Operating temperature range: -20 °C to +85 °C
2. Storage temperature range: -40 °C to +85 °C
3. Tx Input power : 29dBm (Ta=+50°C,10000h,CW)
- 3.1Rx Input power : 15dBm
4. Maximum DC Voltage: 0 V
5. Moisture Sensitivity Level: Level 3 (MSL 3)
6. ESD 100V(MM) 200V(HBM)

RoHS Compliant  
Lead free  
Lead-free soldering

Electrostatic Sensitive Device (ESD)

## B. ELECTRICAL CHARACTERISTICS:

Terminating impedance (Tx Port): 50 Ω(unbalanced)

Terminating impedance (Rx Port): 100Ω//56nH (balanced)

Terminating impedance (Ant Port): 50 Ω//8.2nH (unbalanced)

### Tx to ANT (f<sub>T0</sub>=897.5 MHz)

| Parameters Description |                   | Unit  | Min | Typ | Max | Remarks |
|------------------------|-------------------|-------|-----|-----|-----|---------|
| Insertion Loss         | 880.0 ~ 915.0 MHz | dB    | -   | 2.2 | 3.4 |         |
|                        | 882.4 ~ 912.5 MHz | dB    |     | 1.9 | 2.6 |         |
| Amplitude ripple       | 880 ~ 915 MHz     | dBp-p | -   | 1.3 | 2.5 |         |
| VSWR                   | ANT               |       |     | 1.7 | 2.2 |         |
|                        | Tx                |       |     | 1.7 | 2.3 |         |
| <b>Attenuation:</b>    |                   |       |     |     |     |         |
| 927.4 ~ 957.6 MHz      |                   | dB    | 42  | 46  |     |         |
| 1573.3 ~ 1605.89 MHz   |                   | dB    | 40  | 43  |     |         |
| 1710.0 ~ 1785.0 MHz    |                   | dB    | 40  | 45  |     |         |
| 1920.0 ~ 1980.0 MHz    |                   | dB    | 35  | 41  |     |         |
| 2110.0 ~ 2170.0 MHz    |                   | dB    | 30  | 37  |     |         |
| 2400.0 ~ 2500.0 MHz    |                   | dB    | 27  | 33  |     |         |
| 2620.0 ~ 2745.0 MHz    |                   | dB    | 25  | 31  |     |         |
| 4900.0 ~ 5950.0 MHz    |                   | dB    | 15  | 27  |     |         |

**ANT to Rx (f<sub>T0</sub>=942.5 MHz)**

| Parameters Description |               | Unit              | Min  | Typ       | Max  | Remarks |
|------------------------|---------------|-------------------|------|-----------|------|---------|
| Insertion Loss         | 925.0 ~ 960.0 | dB                | -    | 2.2       | 3.1  |         |
|                        | 927.4 ~ 957.6 | dB                | -    | 1.9       | 2.4  |         |
| Amplitude ripple       | 925 ~ 960 MHz | dB <sub>p-p</sub> |      | 0.9       | 2.2  |         |
| Phase Balance          | 925 ~ 960 MHz | deg               | -10  | +0.3/+3.0 | +10  |         |
| Amplitude Balance      | 925 ~ 960 MHz | dB                | -1.5 | -0.2/+0.2 | +1.5 |         |
| VSWR                   | ANT           | 925 ~ 960 MHz     |      | 1.6       | 2.3  |         |
|                        | Rx            |                   | -    | 1.7       | 2.4  |         |
| <b>Attenuation:</b>    |               |                   |      |           |      |         |
| 882.4 ~ 912.6 MHz      |               | dB                | 45   | 53        |      |         |
| 1710.0 ~ 1785.0 MHz    |               | dB                | 40   | 51        |      |         |
| 1805.0 ~ 1920.0 MHz    |               | dB                | 40   | 50        |      |         |
| 1920.0 ~ 1980.0 MHz    |               | dB                | 40   | 50        |      |         |
| 2400.0 ~ 2500.0 MHz    |               | dB                | 40   | 48        |      |         |
| 2500.0 ~ 2570.0 MHz    |               | dB                | 40   | 48        |      |         |
| 4900.0 ~ 5950.0 MHz    |               | dB                | 35   | 42        |      |         |

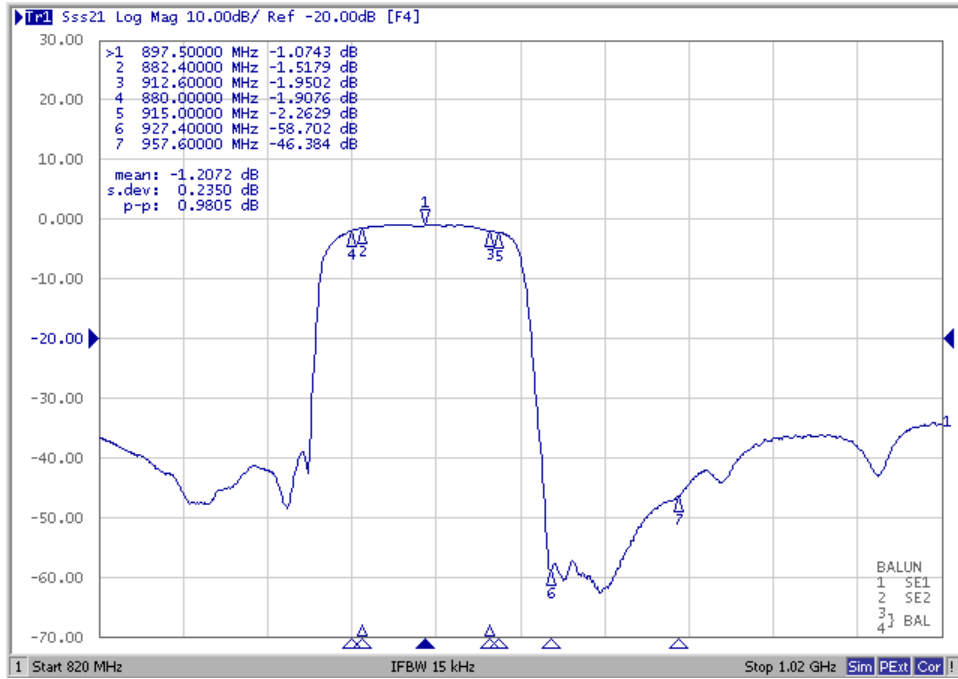
**Tx to Rx**

|           |                   |    |    |    |   |  |
|-----------|-------------------|----|----|----|---|--|
| Isolation | 882.4 ~ 912.6 MHz | dB | 52 | 56 | - |  |
|           | 927.4 ~ 957.6 MHz | dB | 46 | 49 | - |  |

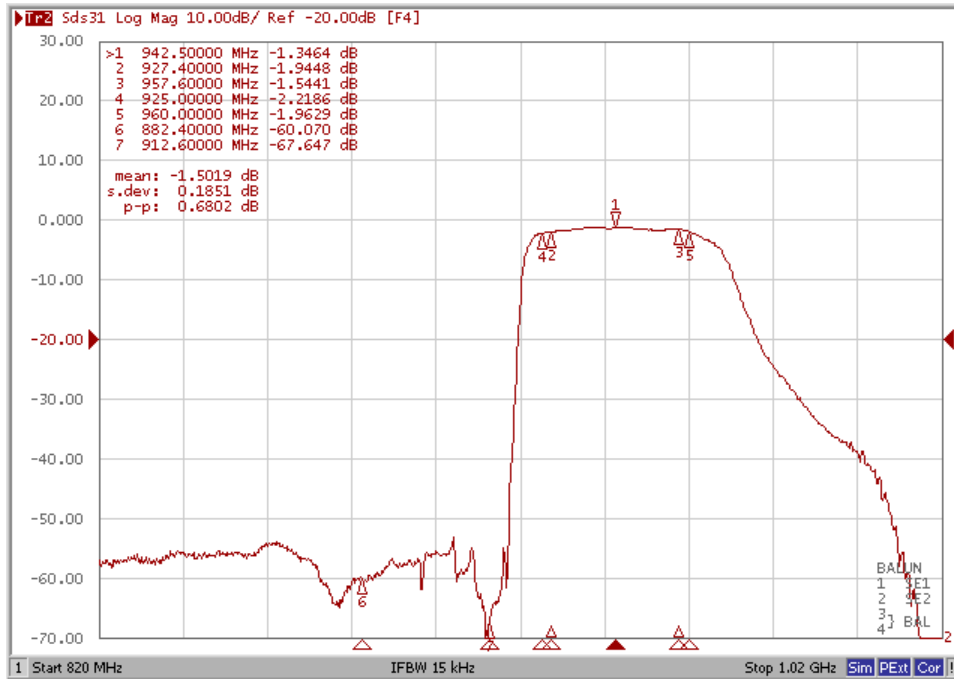
**Notes :** (1) With Matching Network

### C. FREQUENCY CHARACTERISTICS:

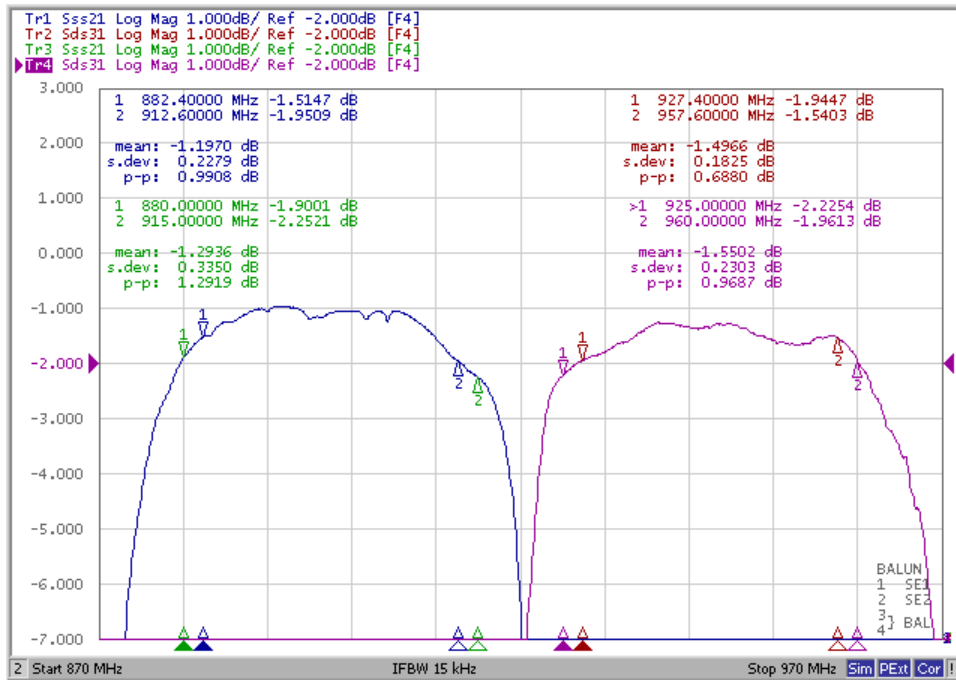
#### Tx to Ant



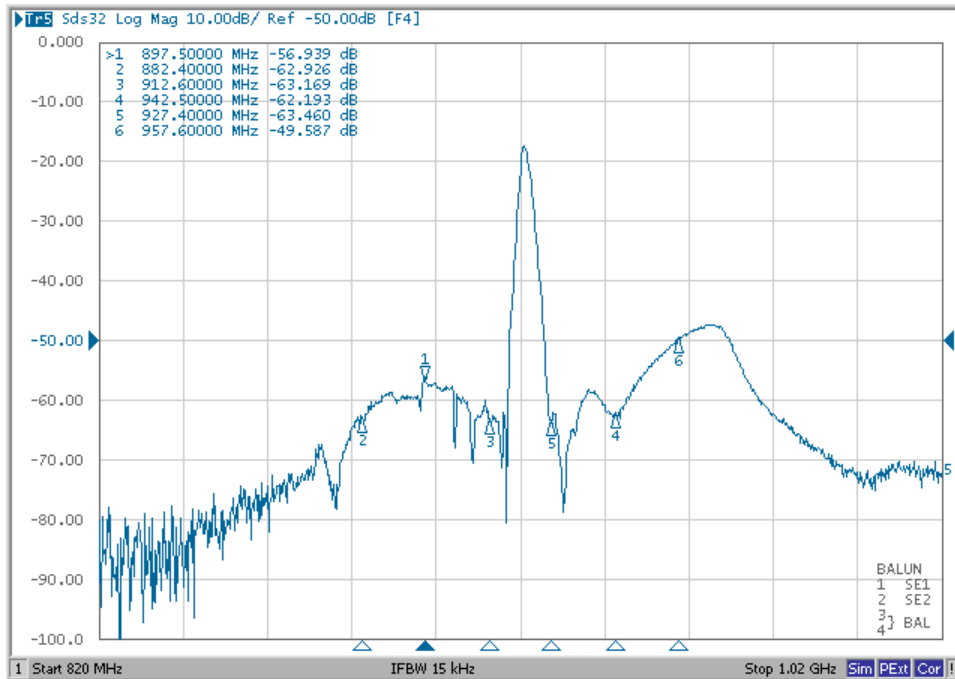
#### Ant to Rx



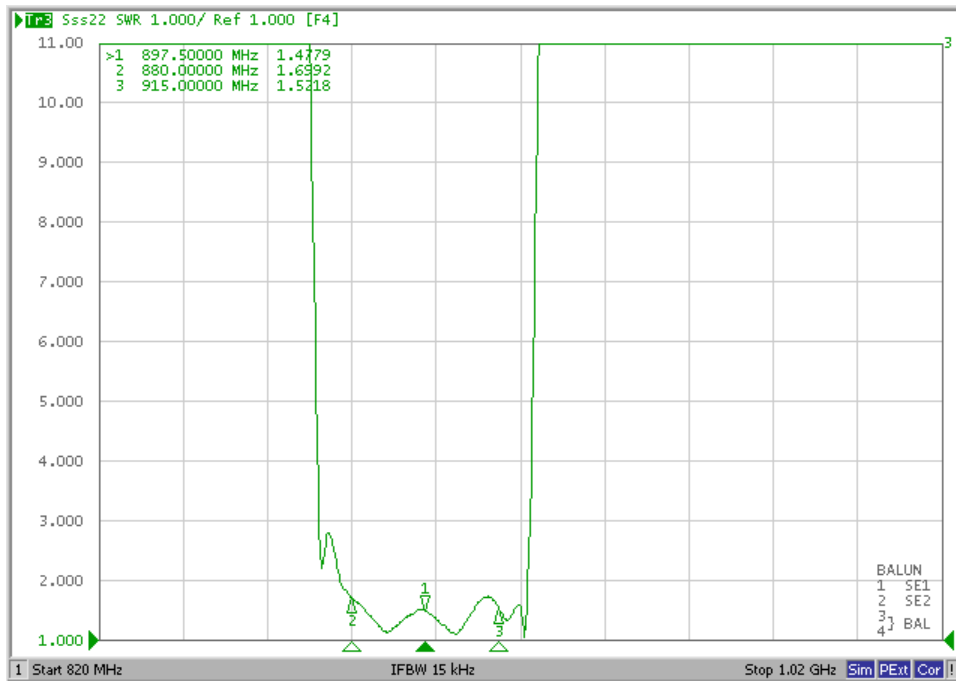
## Ripple



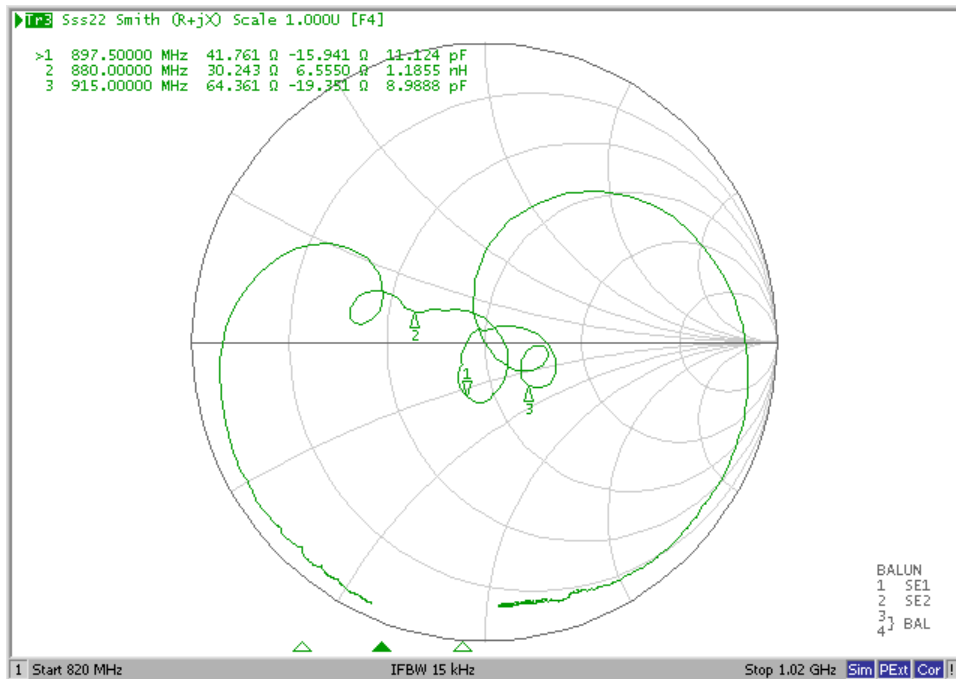
## Isolation



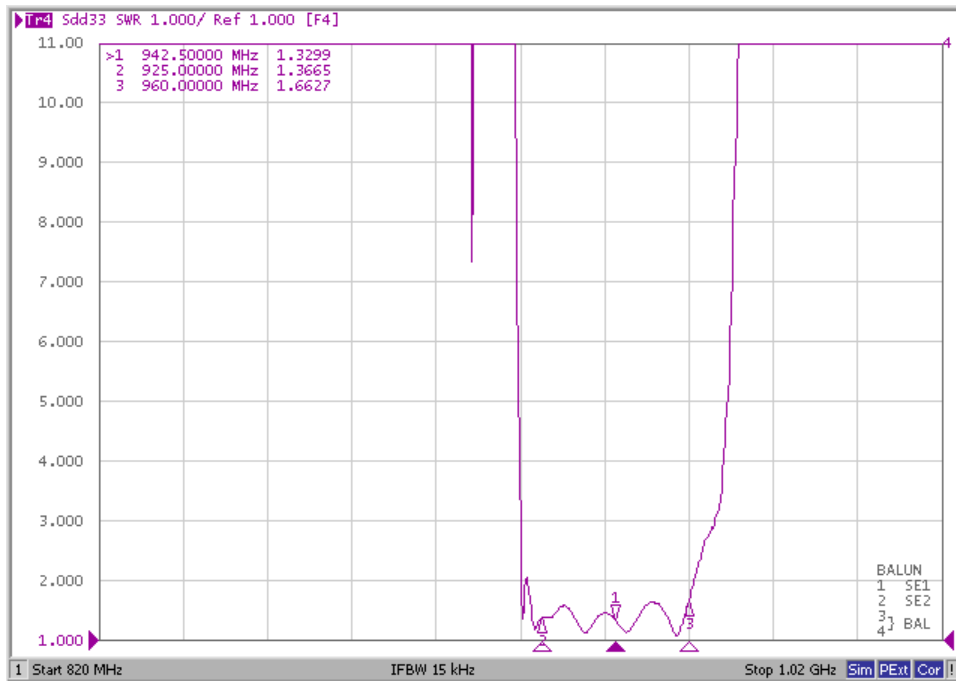
## VSWR (Tx Port)



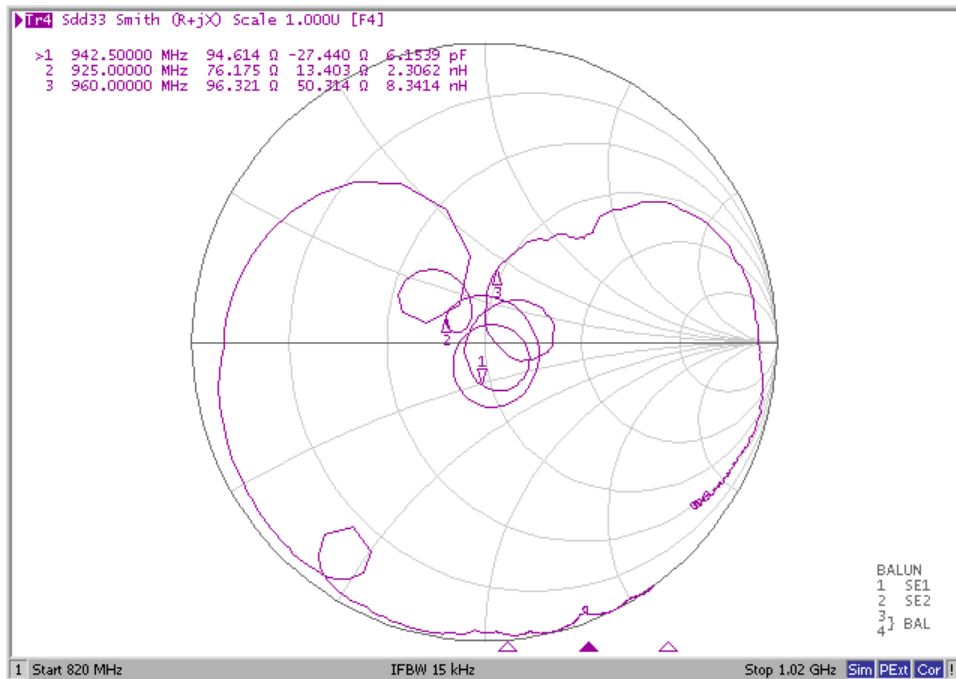
## Smith Chart (Tx Port)



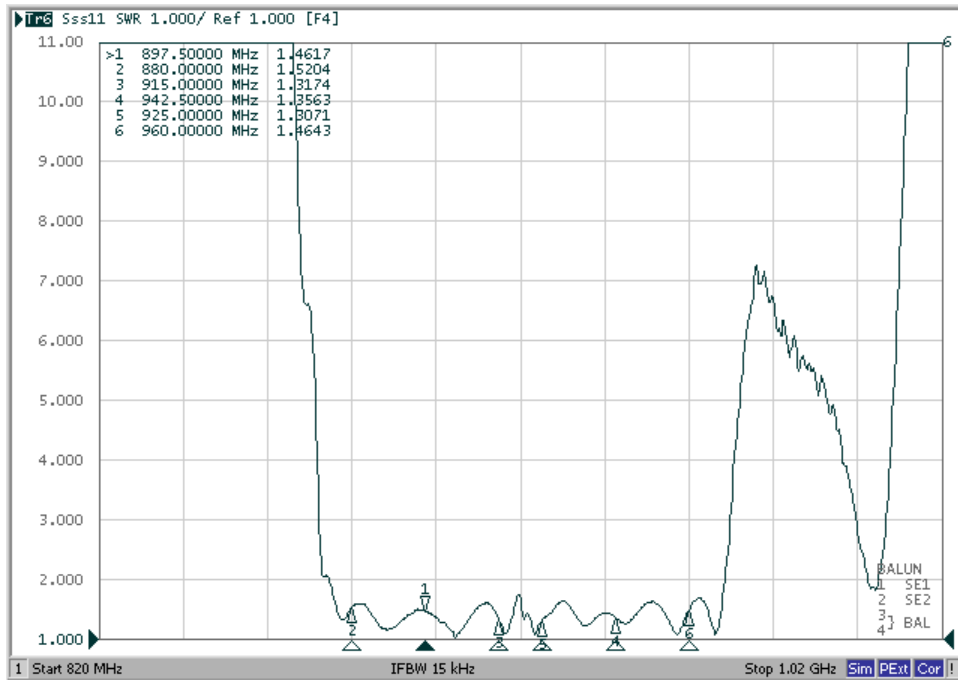
## VSWR (Rx Port)



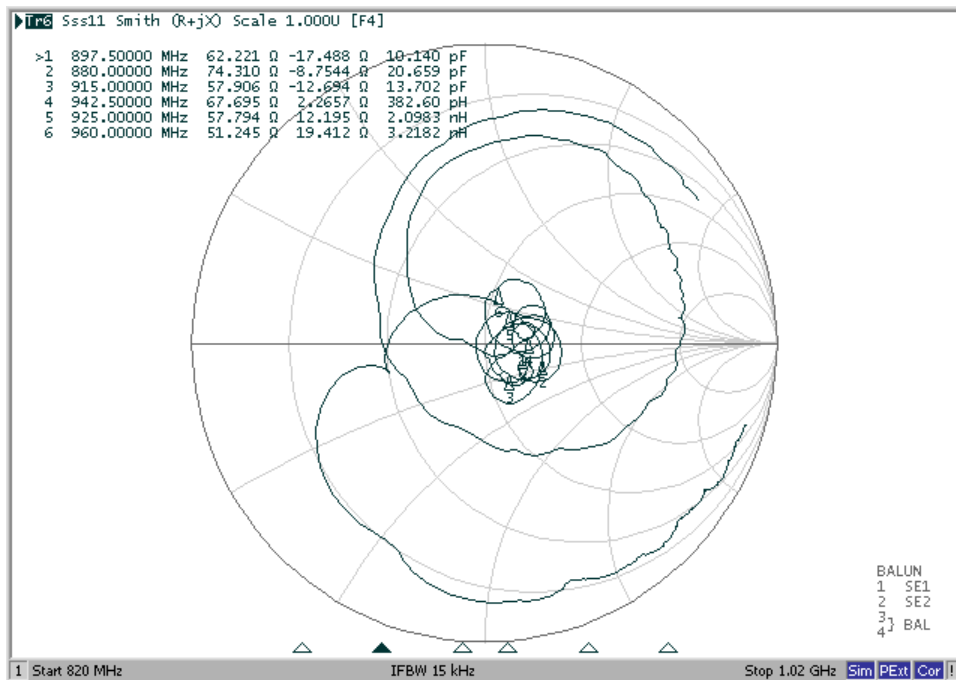
## Smith Chart (Rx Port)



### VSWR (ANT Port)

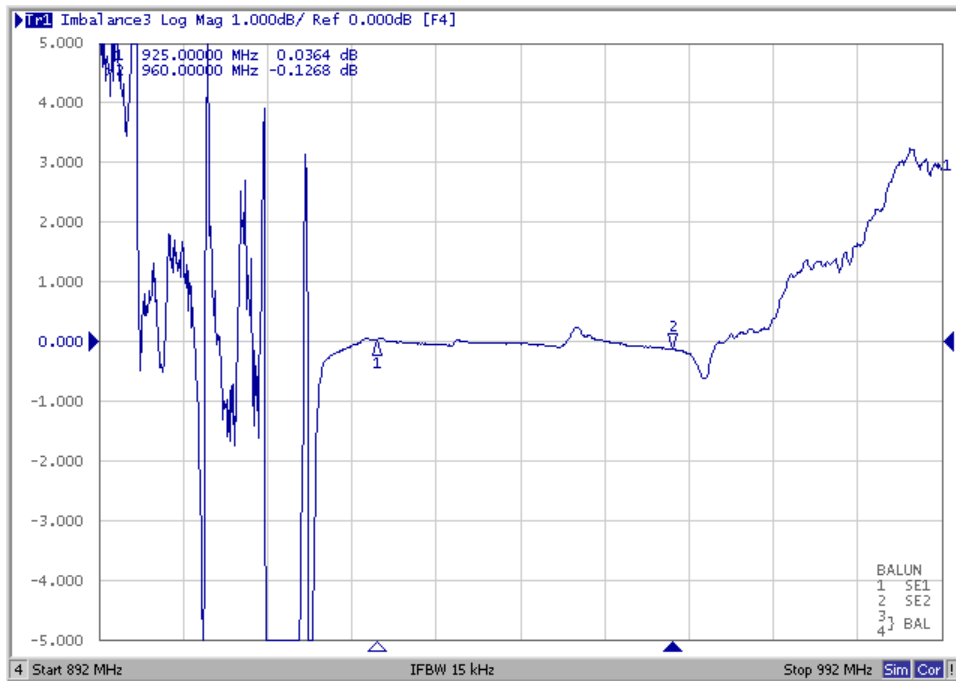


### Smith Chart (ANT Port)

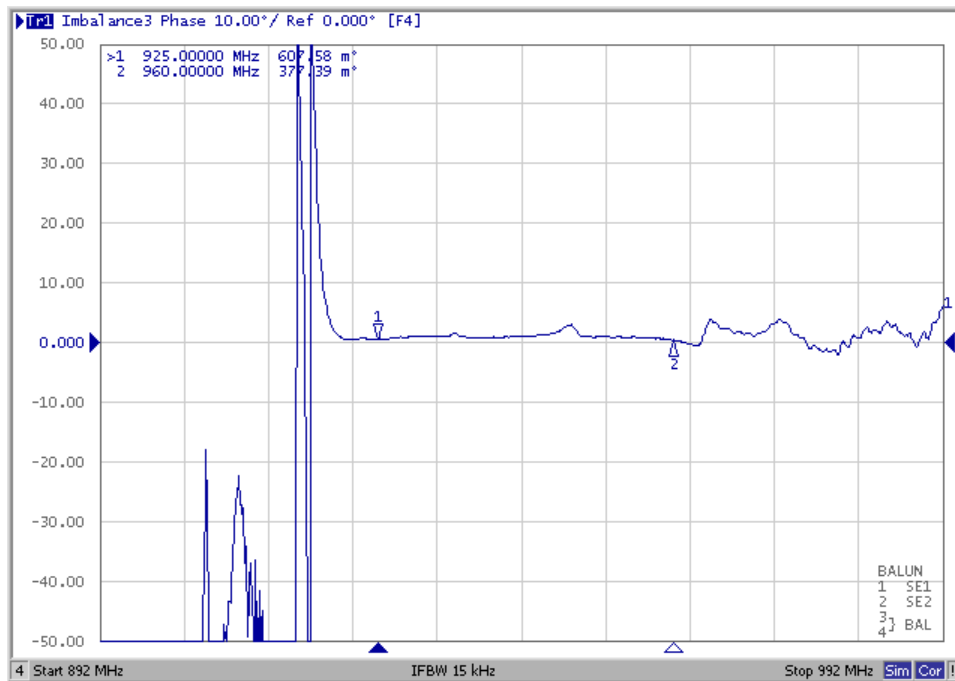




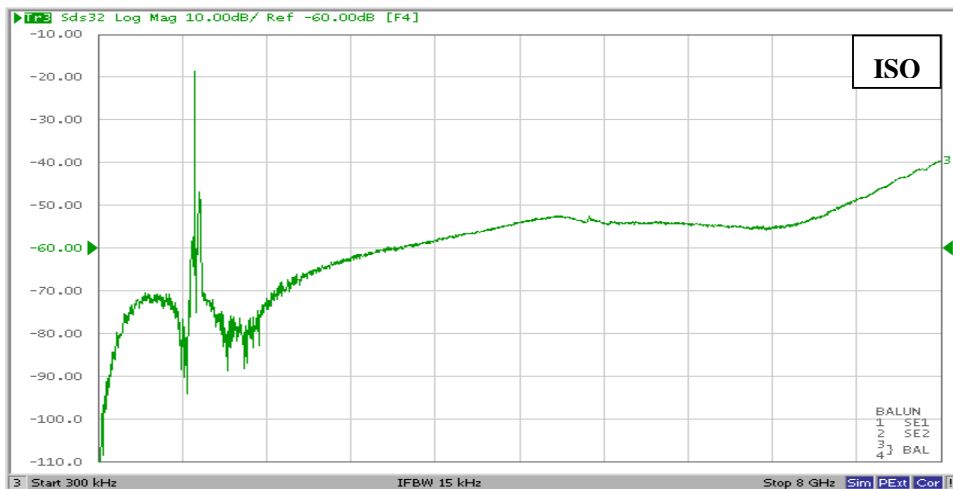
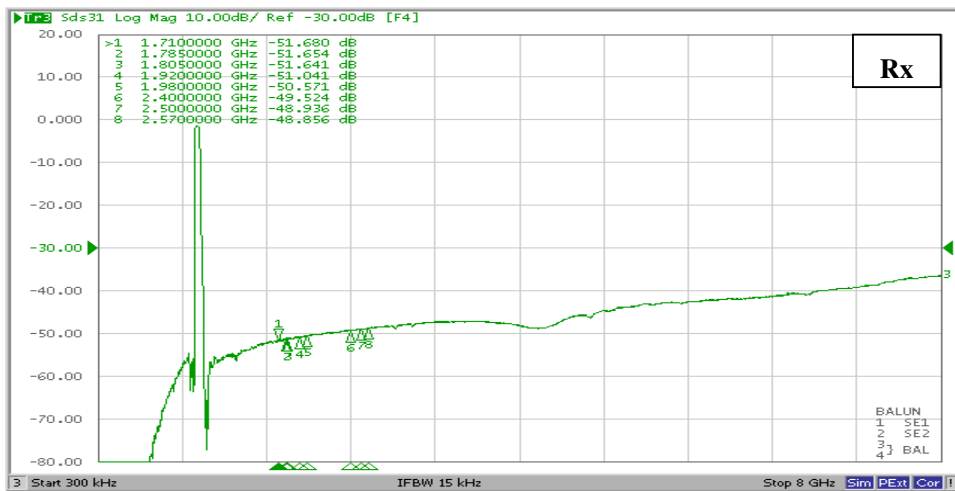
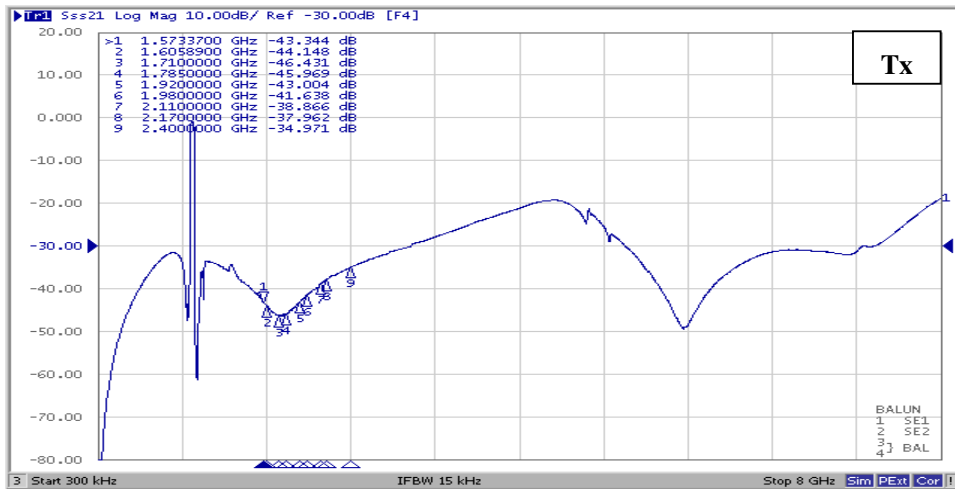
## Phase Balance



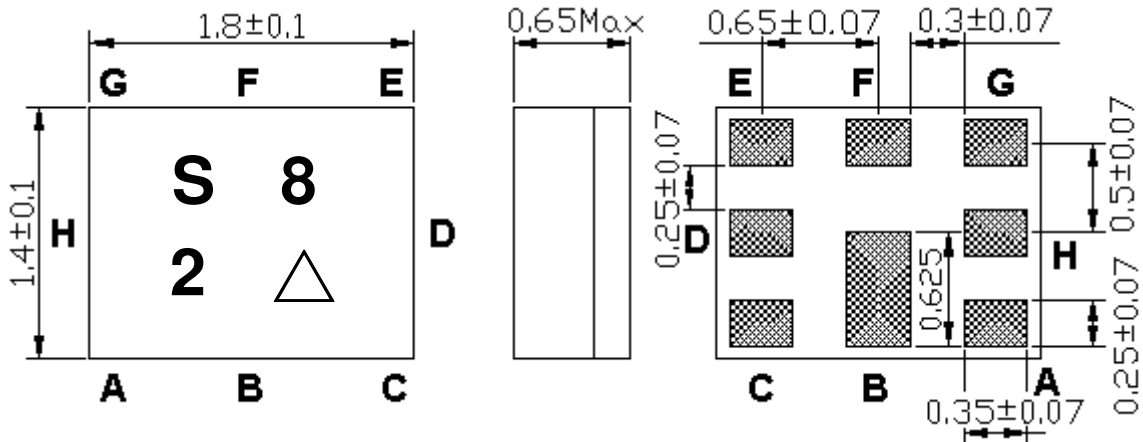
## Amplitude Balance



# Wide Span



**D.OUTLINE DRAWIN:**



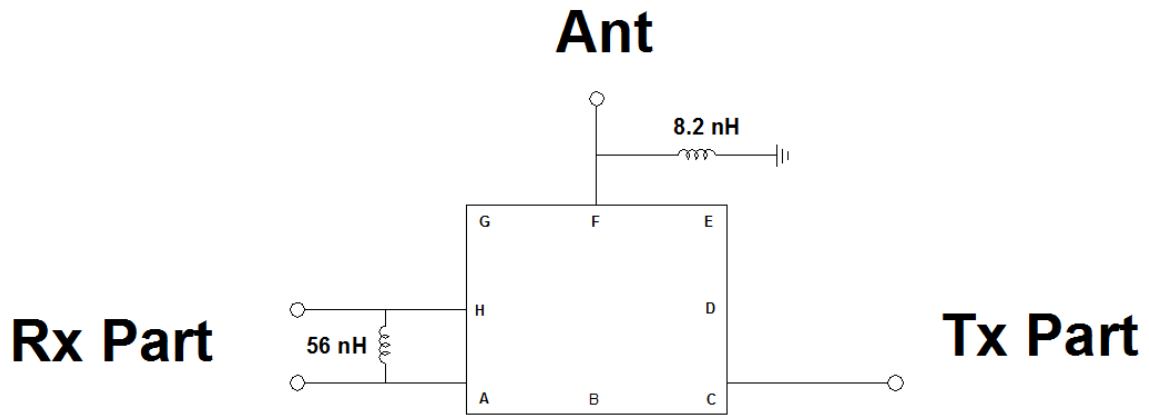
| Marking Descriptions |                       |
|----------------------|-----------------------|
| S                    | Marking name          |
| 8                    | Band Class            |
| 2                    | Series Number         |
| △                    | Date Code(Year+Month) |

| Pin Description |               |
|-----------------|---------------|
| B,D,E,G         | Ground        |
| F               | Ant           |
| C               | Tx (897.5MHz) |
| A,H             | Rx (942.5MHz) |

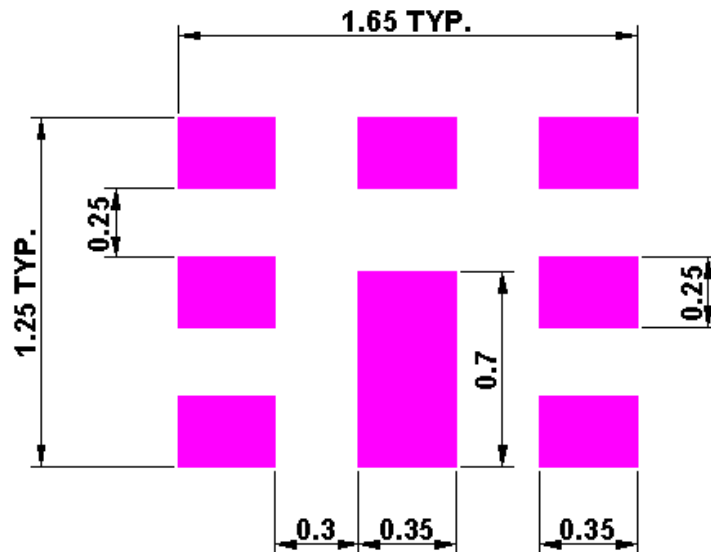
**Date Code ( year+month)**

| Year | Jan.     | Feb.     | Mar.     | Apr.     | May.     | Jun.     | Jul.     | Aug.     | Sep.     | Oct.     | Nov.     | Dec.     |
|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 2013 | A        | B        | C        | D        | E        | F        | G        | H        | J        | K        | L        | M        |
| 2014 | N        | P        | Q        | R        | S        | T        | U        | V        | W        | X        | Y        | Z        |
| 2015 | a        | b        | c        | d        | e        | f        | g        | h        | j        | k        | l        | m        |
| 2016 | n        | p        | q        | r        | s        | t        | u        | v        | w        | x        | y        | z        |
| 2017 | <u>A</u> | <u>B</u> | <u>C</u> | <u>D</u> | <u>E</u> | <u>F</u> | <u>G</u> | <u>H</u> | <u>J</u> | <u>K</u> | <u>L</u> | <u>M</u> |
| 2018 | <u>N</u> | <u>P</u> | <u>Q</u> | <u>R</u> | <u>S</u> | <u>T</u> | <u>U</u> | <u>V</u> | <u>W</u> | <u>X</u> | <u>Y</u> | <u>Z</u> |
| 2019 | <u>a</u> | <u>b</u> | <u>c</u> | <u>d</u> | <u>e</u> | <u>f</u> | <u>g</u> | <u>h</u> | <u>i</u> | <u>k</u> | <u>l</u> | <u>m</u> |
| 2020 | <u>n</u> | <u>p</u> | <u>q</u> | <u>r</u> | <u>s</u> | <u>t</u> | <u>u</u> | <u>v</u> | <u>w</u> | <u>x</u> | <u>y</u> | <u>z</u> |

## E. Evaluation Circuit



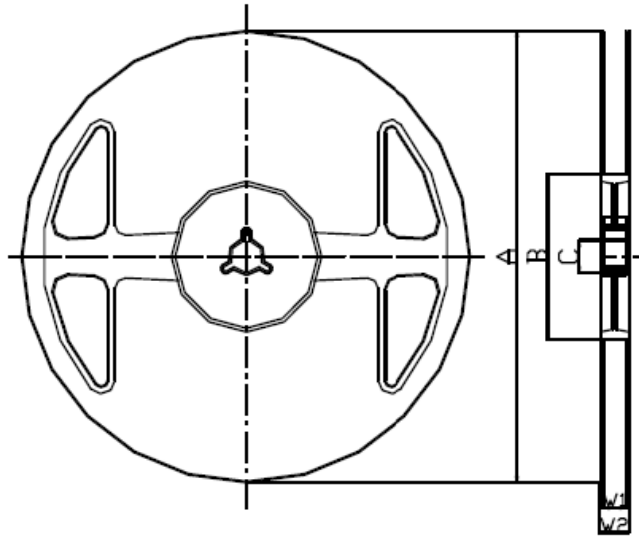
## F. FOOTPRINT:



**G. PACKING:**

1. REEL DIMENSION

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



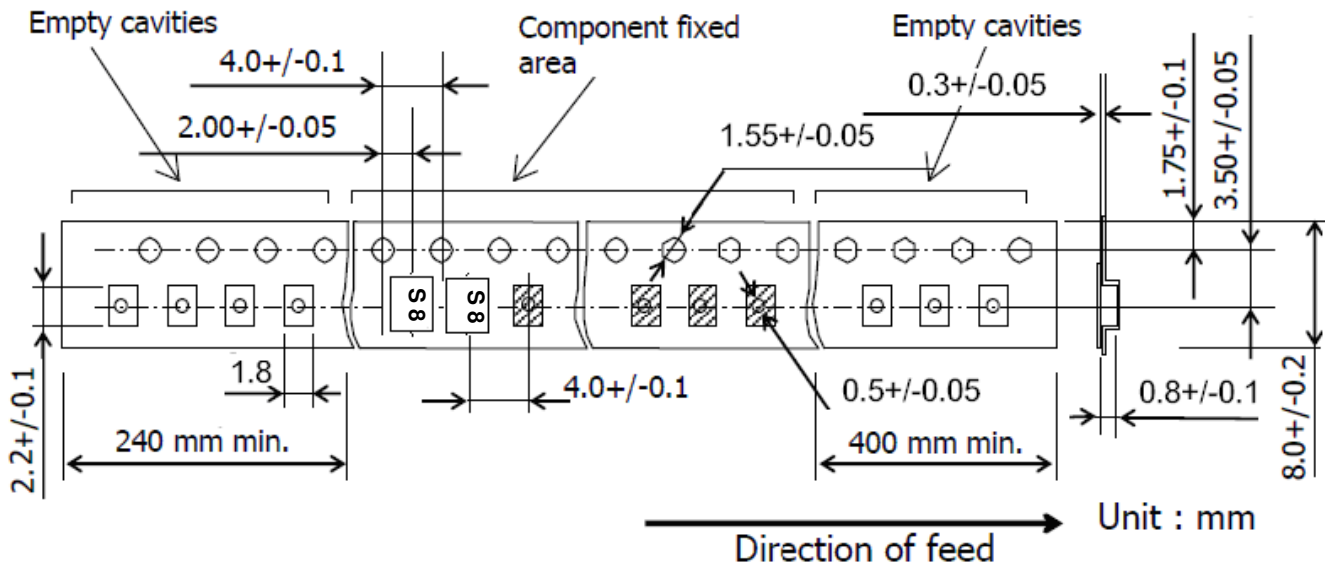
**Materials of Reel**

Material : Polystyrene + Carbon  
 Characteristics : Conforms to EIAJ-ET-7200A  
 Color : Black  
 Surface resistance (reference value) :  $10^9\Omega/\text{sq Max.}$

Unit : mm

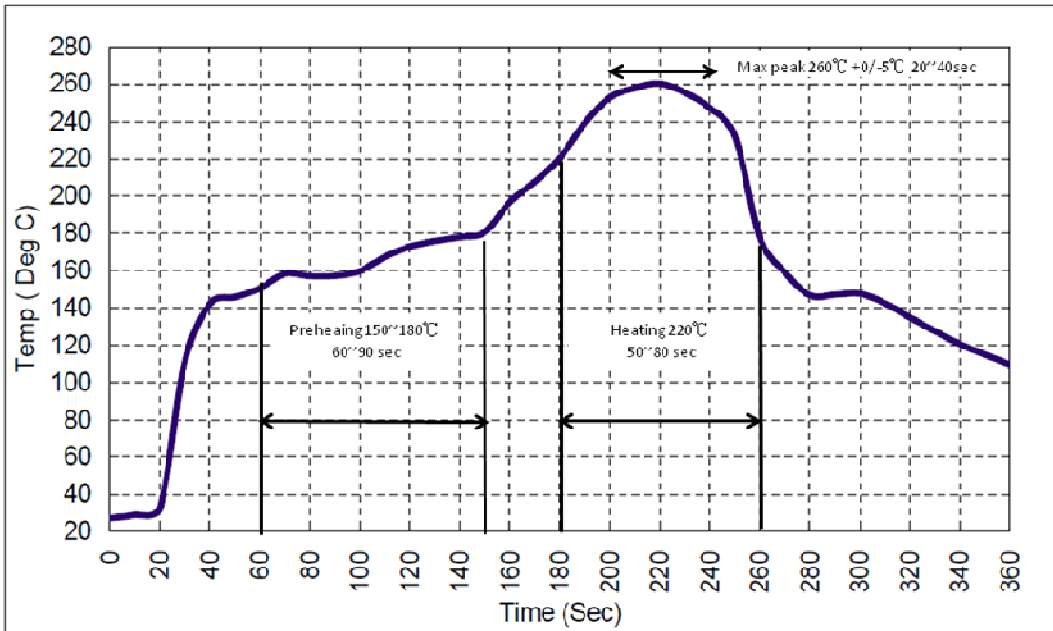
| Code | Quantity  | A                      | B                  | C                  | W1              | W2            |
|------|-----------|------------------------|--------------------|--------------------|-----------------|---------------|
| Z    | 3,000 pcs | $\phi 180.0 +0.0/-1.5$ | $\phi 66.0 +/-0.5$ | $\phi 13.0 +/-0.2$ | $9.0 +1.0/-0.0$ | $11.4 +/-1.0$ |

2. TAPE DIMENSION



## H. RECOMMENDED REFLOW PROFILE :

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 245~260°C peak (min. 10sec).
4. Time : 2 times.





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[MAPDCC0005](#) [3A325](#) [BD0810N50100AHF](#) [DC0710J5005AHF](#) [DC2327J5005AHF](#) [LFL15869MTC1B787](#) [X3C19F1-20S](#)

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