



# TAI-SAW TECHNOLOGY CO., LTD.

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

TEL: 886-3-4690038 FAX: 886-3-4697532

E-mail: [tstsales@mail.taisaw.com](mailto:tstsales@mail.taisaw.com) Web: [www.taisaw.com](http://www.taisaw.com)

## Product Specifications Approval Sheet

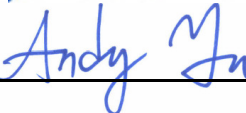
Product Name: Filter 1900 / 2017.5MHz 40/15MHz BW Band39/ Band34 SMD1.5X1.1 mm

TST Parts No.: TE0143A

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

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

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

Approved by: \_\_\_\_\_ Andy Yu 

Date: \_\_\_\_\_ 03, 28, 2019

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 Filter 1900/2017.5MHz 40/15MHz BW Band39/ Band34 SMD1.5X1.1 mm

MODEL NO.: TE0143A

REV. No.: 1.0

## A. MAXIMUM RATING:

1. Input power : 10dBm
2. Maximum DC Voltage: 5V
3. Operating temperature range: -20 °C to +85 °C
4. Storage temperature range: -20 °C to +85 °C
5. Moisture Sensitivity Level: Level 1 (MSL 1)
6. ESD 50V(MM) 100V(HBM)

RoHS Compliant

Lead-free soldering

Electrostatic Sensitive Device (ESD)

## B. ELECTRICAL CHARACTERISTICS:

(Filter1)

| Parameters Description |                 | Unit | Minimum | Typical | Maximum | Note |
|------------------------|-----------------|------|---------|---------|---------|------|
| Insertion Loss(*1)     | 1880 ~ 1920 MHz | dB   | -       | 1.5     | 2.0     |      |
| VSWR                   | Input           | -    | -       | 1.7     | 2.0     |      |
|                        | Output          |      |         | 1.7     | 2.0     |      |
| <b>Attenuation:</b>    |                 |      |         |         |         |      |
| <b>10 ~ 1795 MHz</b>   |                 | dB   | 30      | 33      | -       | -    |
| <b>1795 ~ 1820 MHz</b> |                 | dB   | 25      | 27      | -       | -    |
| <b>1820 ~ 1850 MHz</b> |                 | dB   | 20      | 25      | -       |      |
| <b>1820 ~ 1850 MHz</b> |                 | dB   | 16      | 25      |         |      |
| <b>1950 ~ 1980 MHz</b> |                 | dB   | 20      | 24      | -       | -    |
| <b>1980 ~ 2025 MHz</b> |                 | dB   | 20      | 28      | -       | -    |
| <b>2025 ~ 2400 MHz</b> |                 | dB   | 30      | 34      | -       | -    |
| <b>2400 ~ 2500 MHz</b> |                 | dB   | 32      | 38      | -       | -    |
| <b>2500 ~ 4900 MHz</b> |                 | dB   | 20      | 28      | -       | -    |
| <b>4900 ~ 6000 MHz</b> |                 | dB   | 20      | 26      | -       | -    |

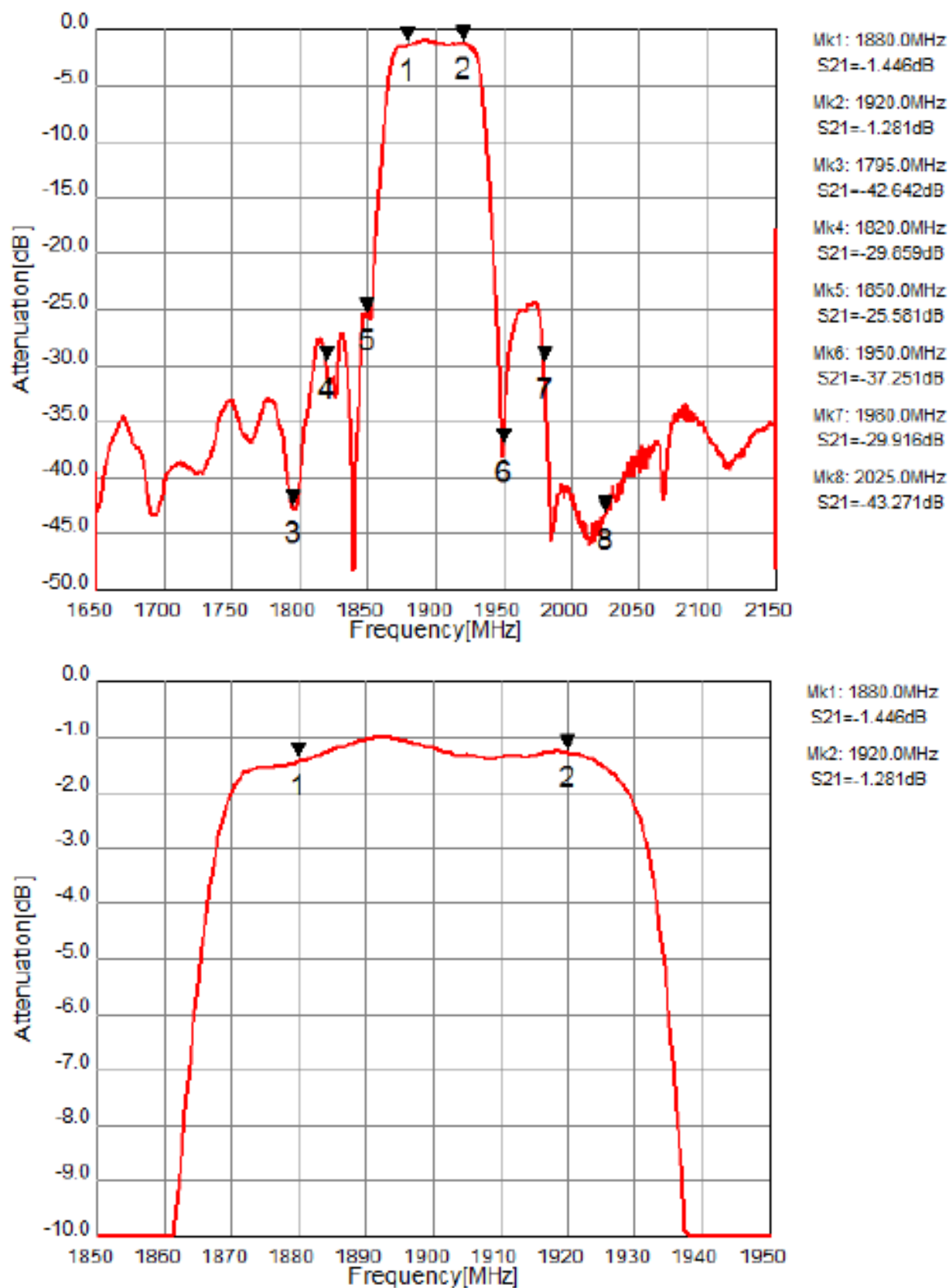
(\*1) Specification of insertion loss excludes loss that comes from the test board.

**(Filter2)**

| Parameters Description |        |                 | Unit | Minimum | Typical | Maximum | Note |
|------------------------|--------|-----------------|------|---------|---------|---------|------|
| Insertion Loss(*1)     |        | 2010 ~ 2025 MHz | dB   | -       | 1.8     | 2.5     |      |
| VSWR                   | Input  | 2010 ~ 2025 MHz | -    | -       | 1.4     | 2.0     |      |
|                        | Output |                 | -    | -       | 1.4     | 2.0     |      |
| Attenuation:           |        |                 |      |         |         |         |      |
| 1 ~ 1925 MHz           |        |                 | dB   | 30      | 36      | -       | -    |
| 1925 ~ 1980 MHz        |        |                 | dB   | 20      | 26      | -       | -    |
| 2050 ~ 2085 MHz        |        |                 | dB   | 8       | 14      | -       | -    |
| 2085 ~ 2110 MHz        |        |                 | dB   | 25      | 27      | -       |      |
| 2110 ~ 2400 MHz        |        |                 | dB   | 27      | 34      | -       | -    |
| 2400 ~ 2500 MHz        |        |                 | dB   | 40      | 45      | -       | -    |
| 2500 ~ 4900 MHz        |        |                 | dB   | 30      | 36      | -       | -    |
| 4900 ~ 6000 MHz        |        |                 | dB   | 30      | 35      | -       | -    |

(\*1) Specification of insertion loss excludes loss that comes from the test board.

### C. Frequency Characteristics:



**Fig.2 In-band Characteristics (Filter1)**

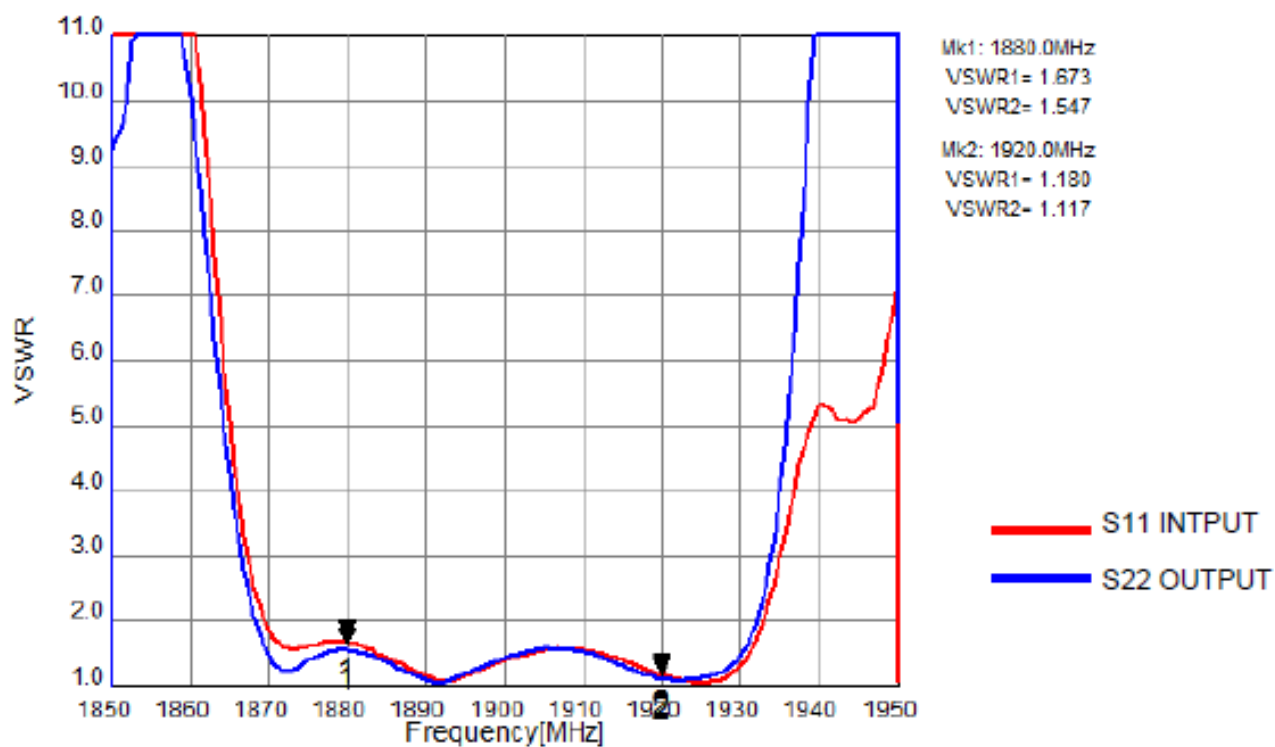


Fig. 3 VSWR (Filter1)

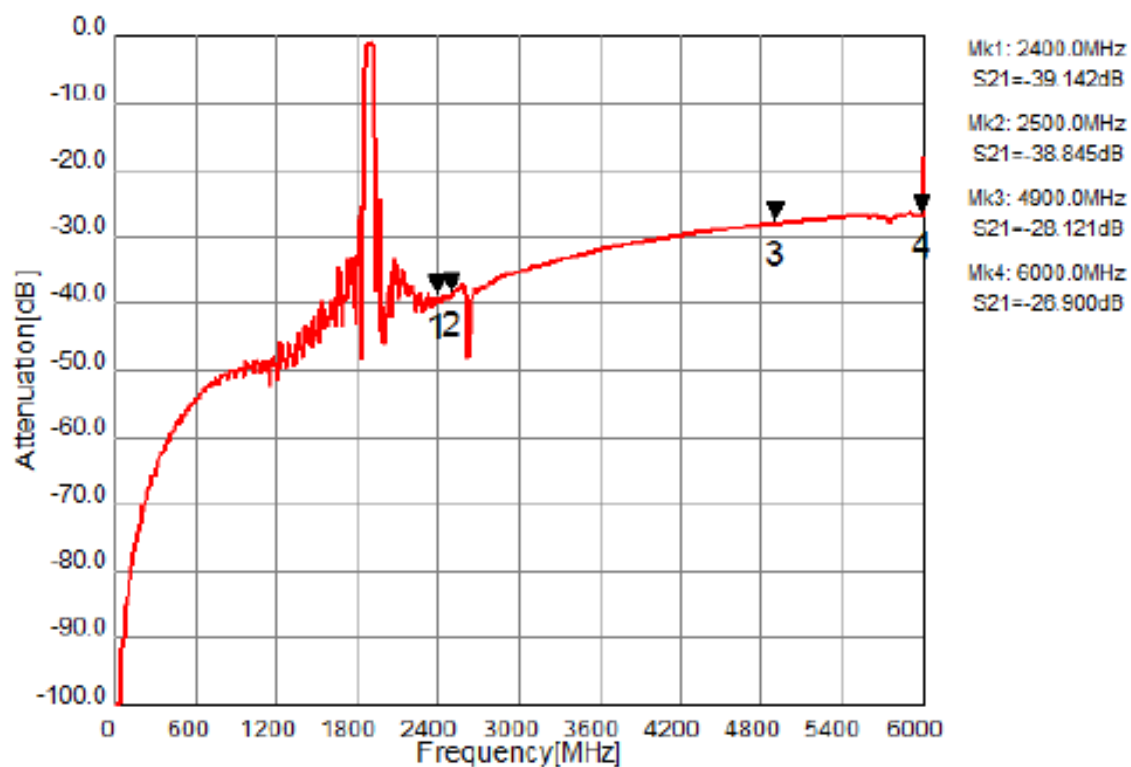
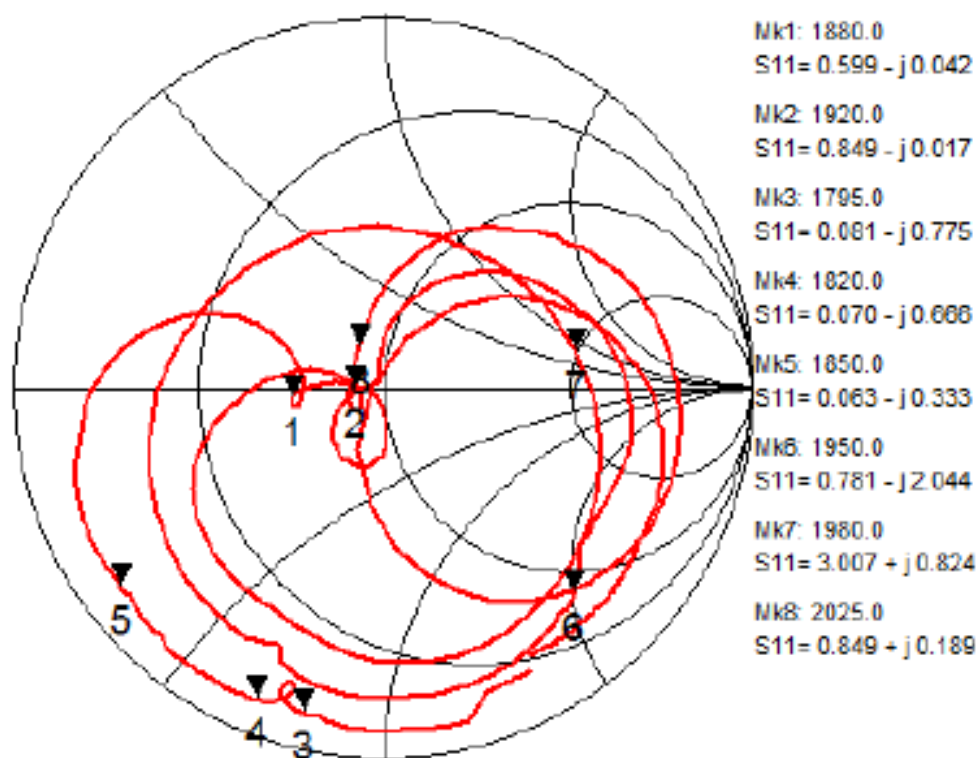
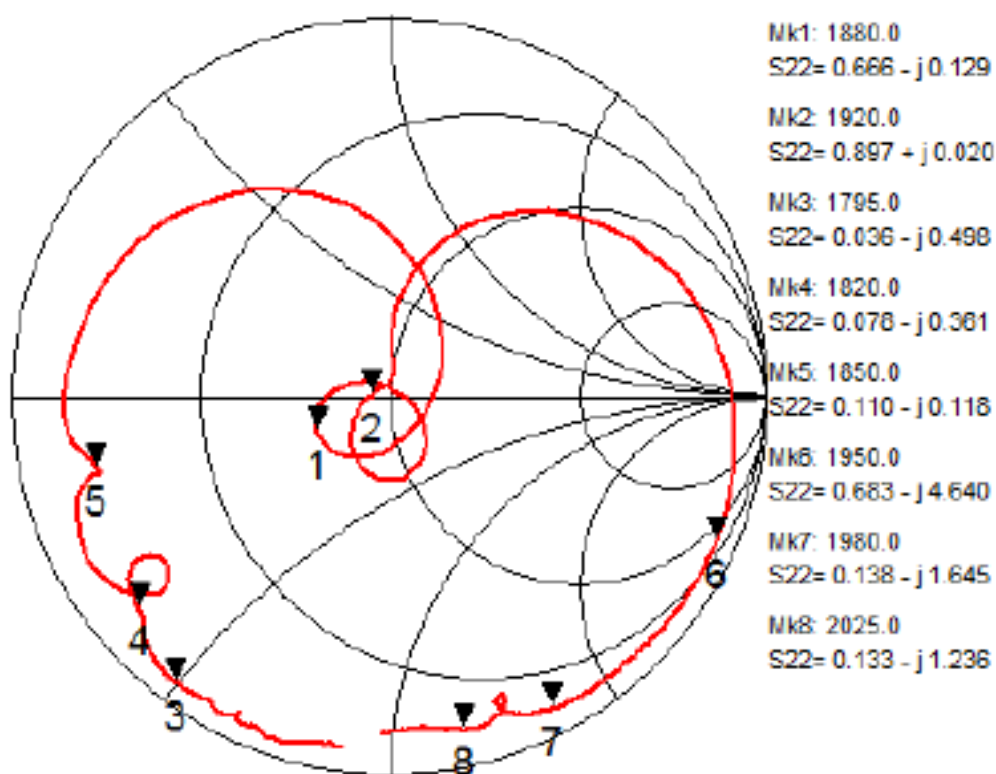


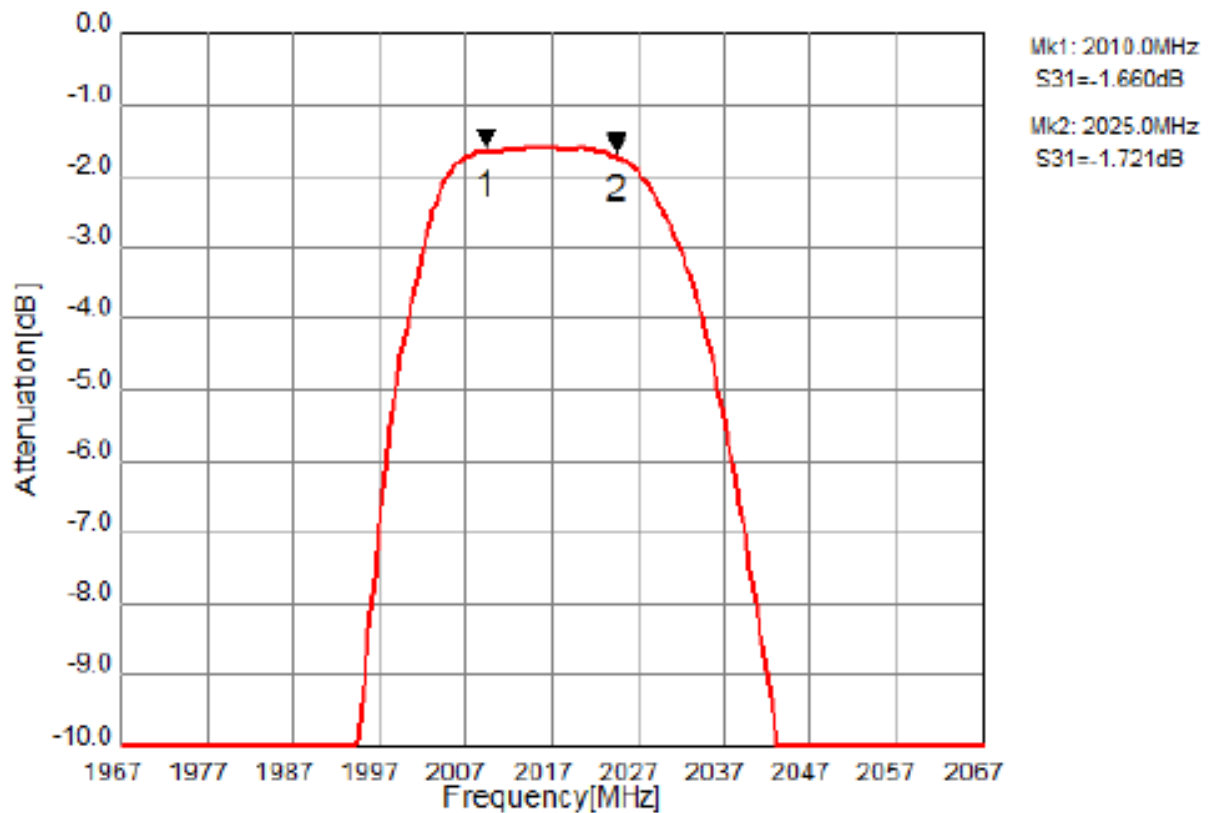
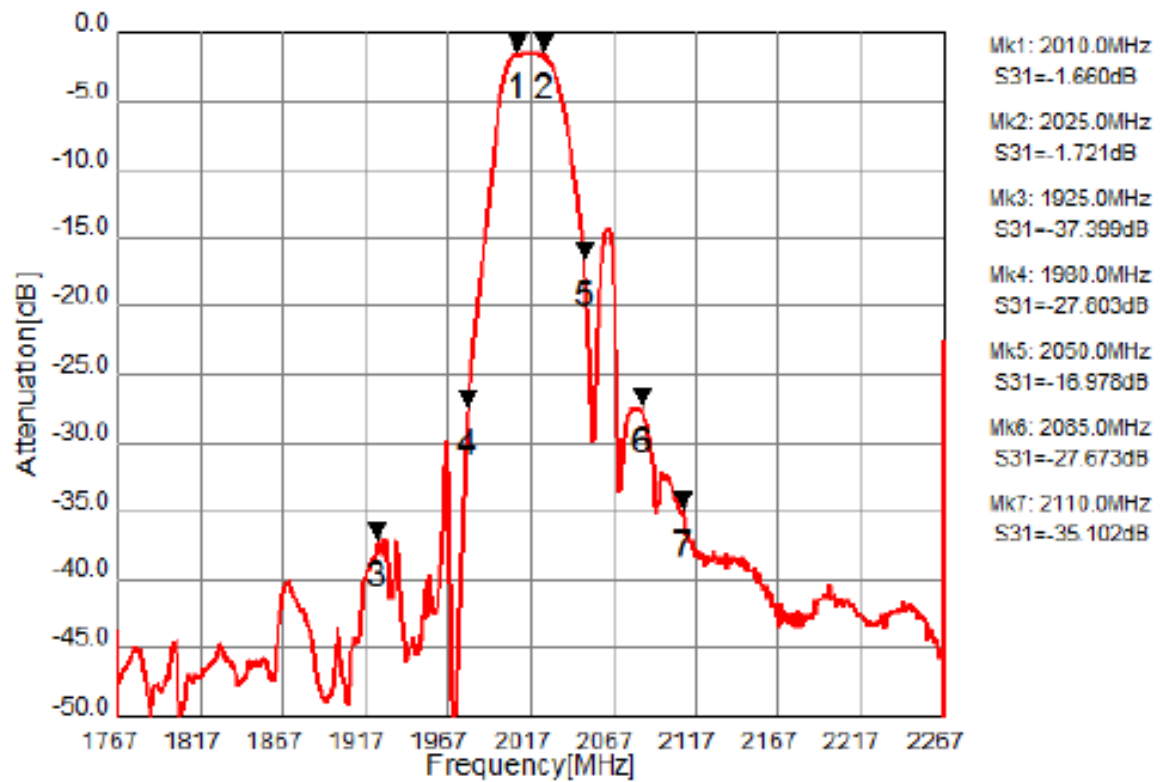
Fig.4 Wide-band Characteristic (Filter1)



**Fig.5 Impedance (INPUT) (Filter1)**



**Fig.6 Impedance (OUTPUT) (Filter1)**



**Fig.8 In-band Characteristics (Filter2)**

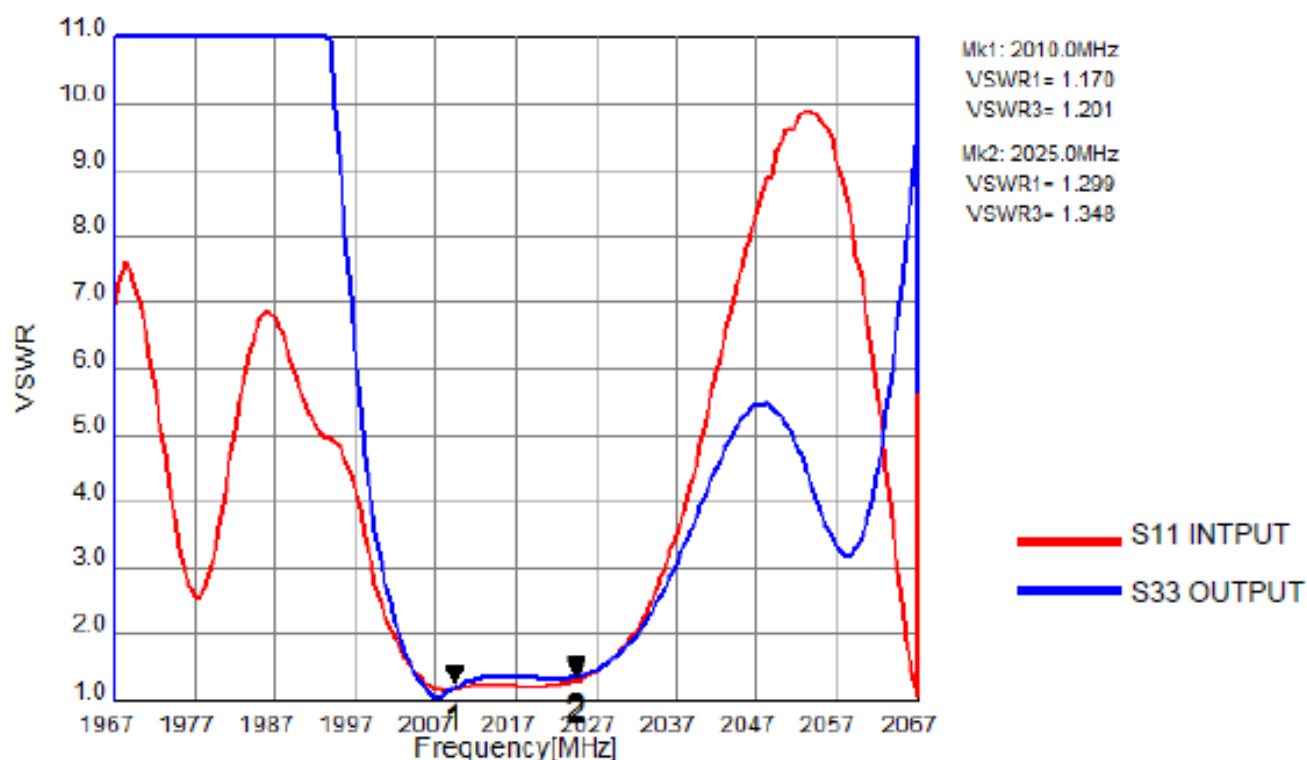


Fig.9 VSWR (Filter2)

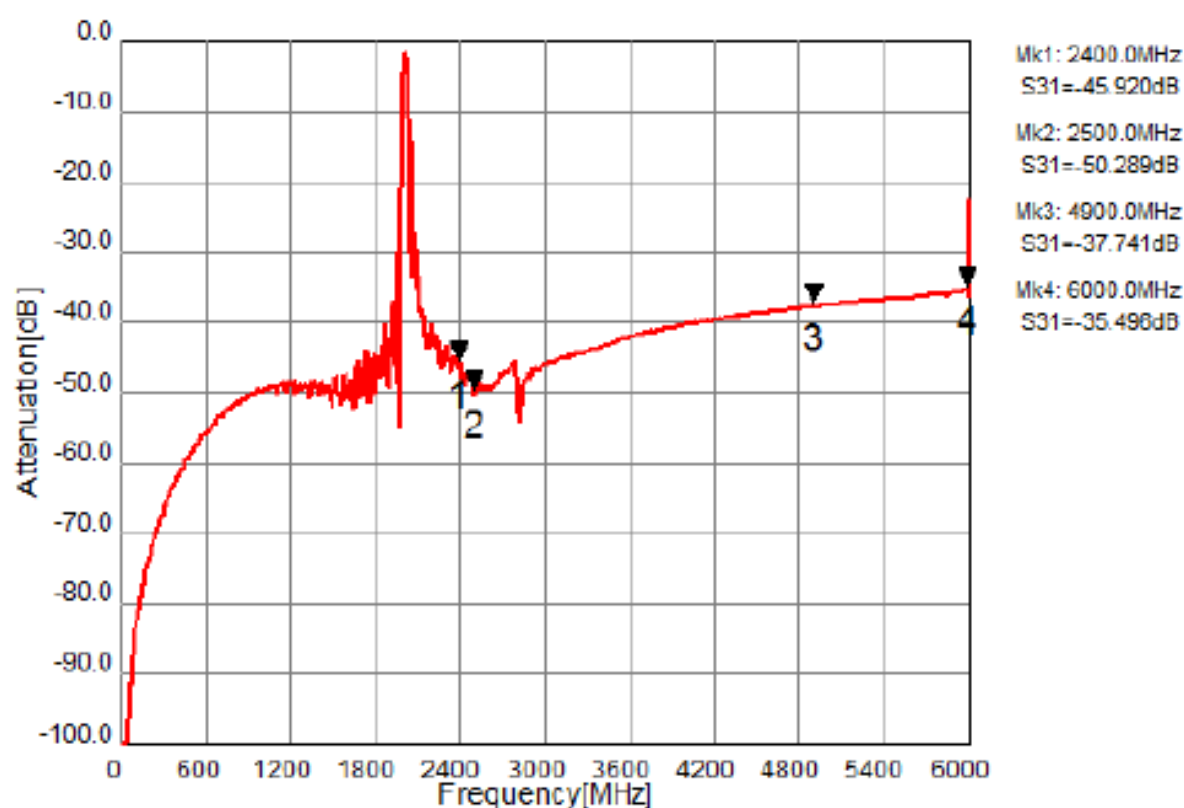
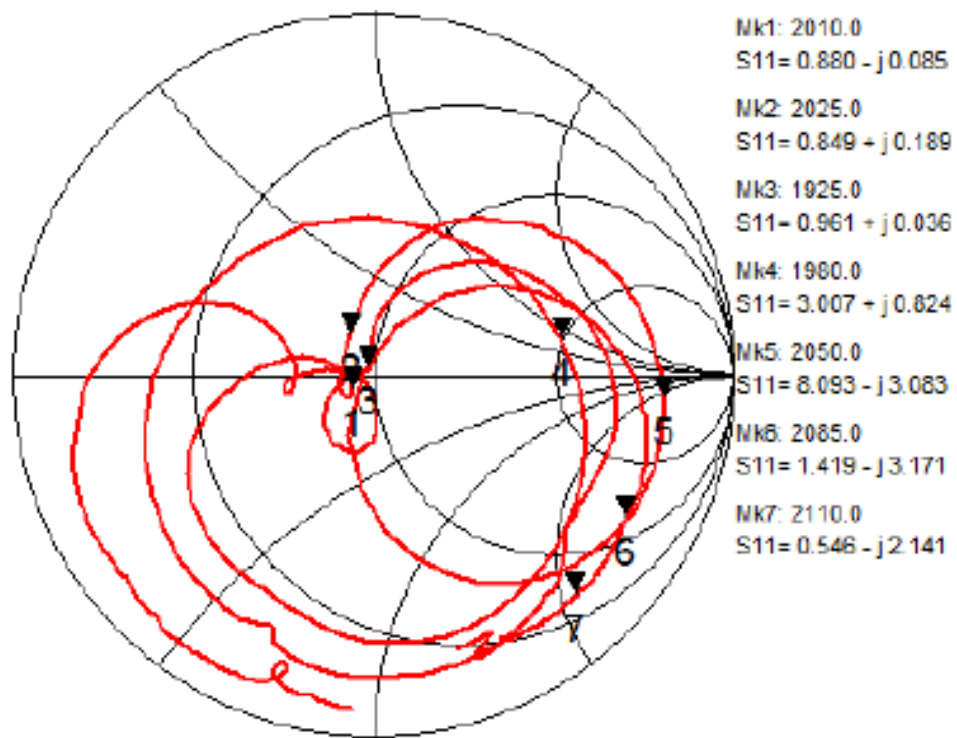
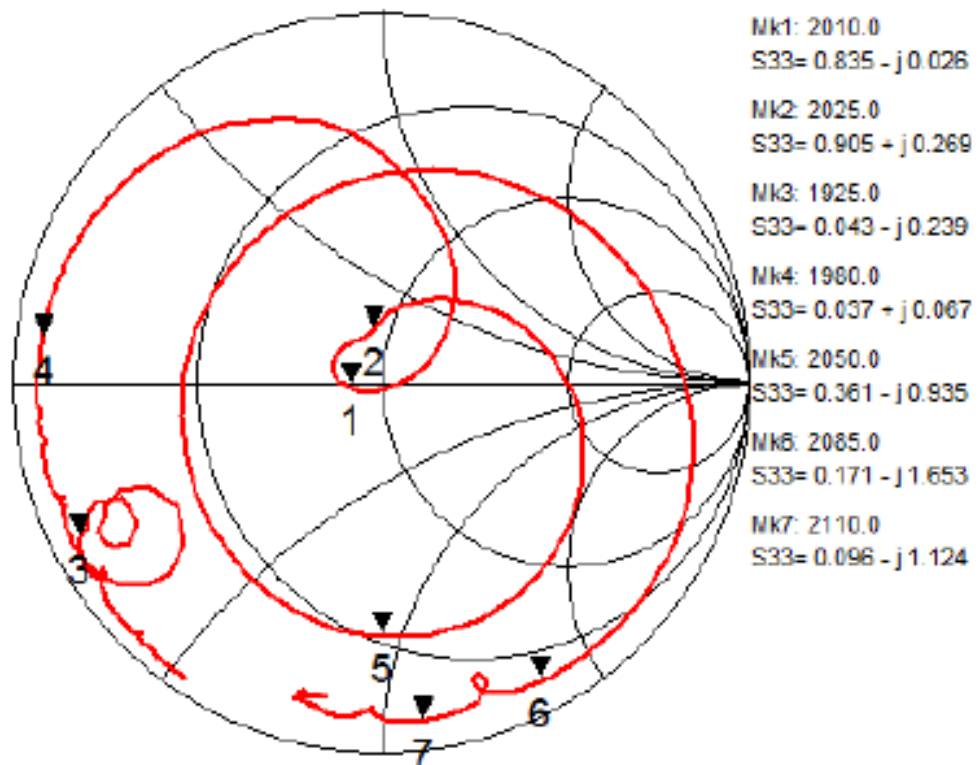


Fig.10 Wide-band Characteristic (Filter2)

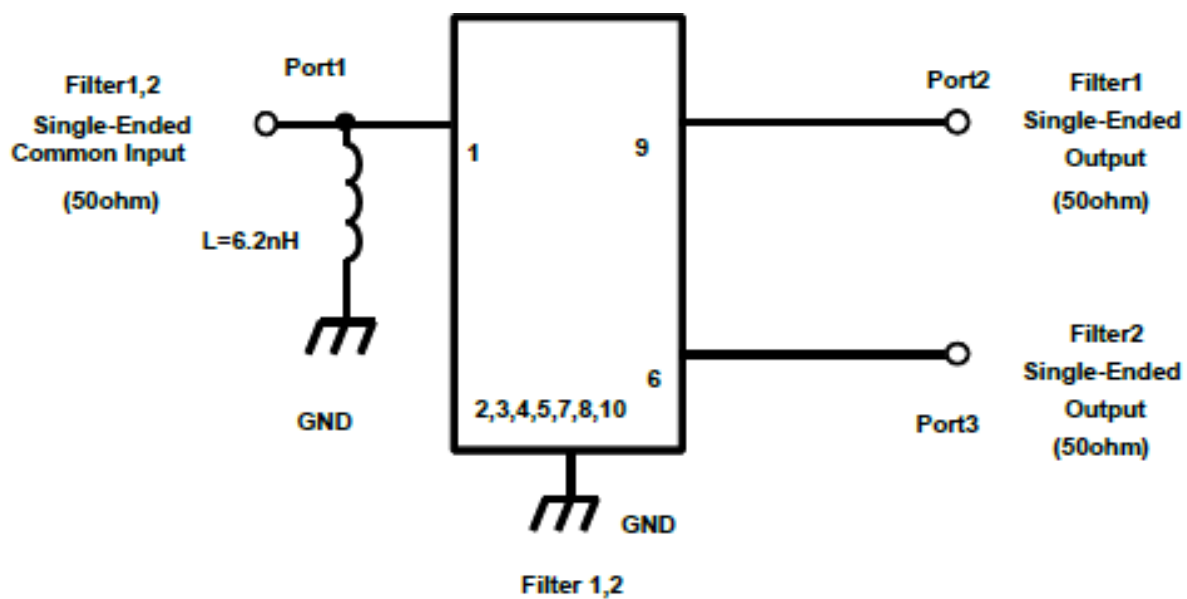


**Fig.11 Impedance (INPUT) (Filter1)**

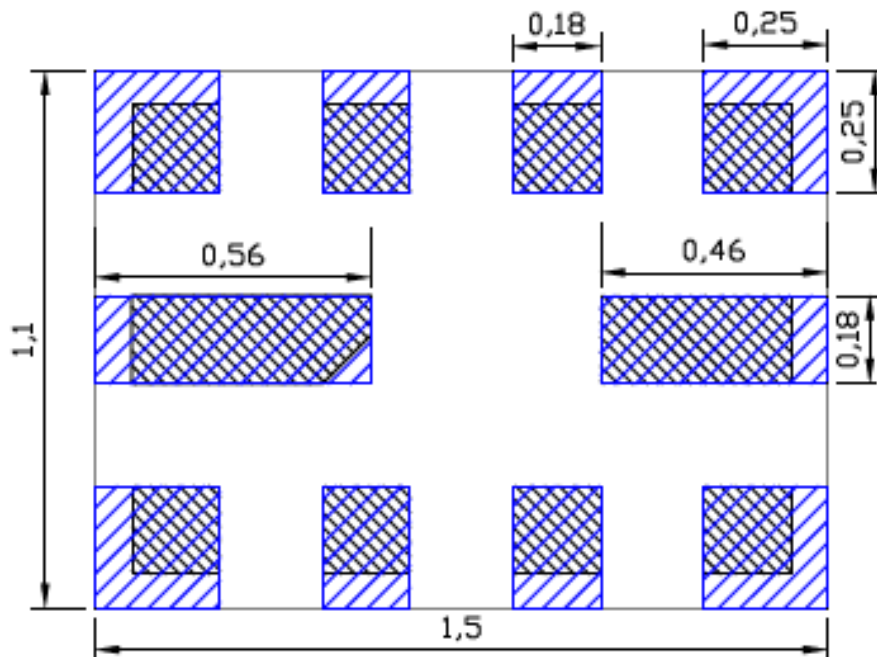


**Fig.12 Impedance (OUTPUT) (Filter2)**

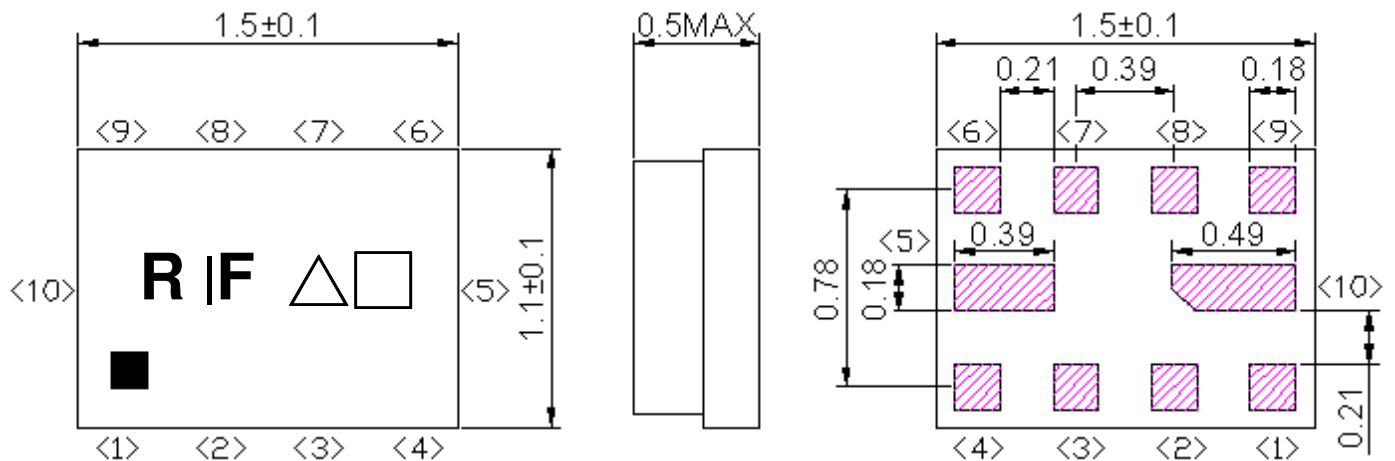
#### D. MEASUREMENT CIRCUIT:



#### D. FOOTPRINT:



## E.OUTLINE DRAWING:



Not Specified Tolerance :  $\pm 0.10$  mm

Coplanarity :  $0.1$  mm max.

A to H : Pin No.

Unit : mm

Marking name : **RF**

△: Date code( 2016 May → s ,....., 2019 Dec→m.)

□: Lot Code.

Product Date Code. Follow below table.

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2019 | a   | b   | c   | d   | e   | f   | g   | h   | j   | k   | l   | m   |
| 2020 | n   | p   | q   | r   | s   | t   | u   | v   | w   | x   | y   | z   |
| 2021 | A   | B   | C   | D   | E   | F   | G   | H   | J   | K   | L   | M   |
| 2022 | N   | P   | Q   | R   | S   | T   | U   | V   | W   | X   | Y   | Z   |

## Pin Configuration

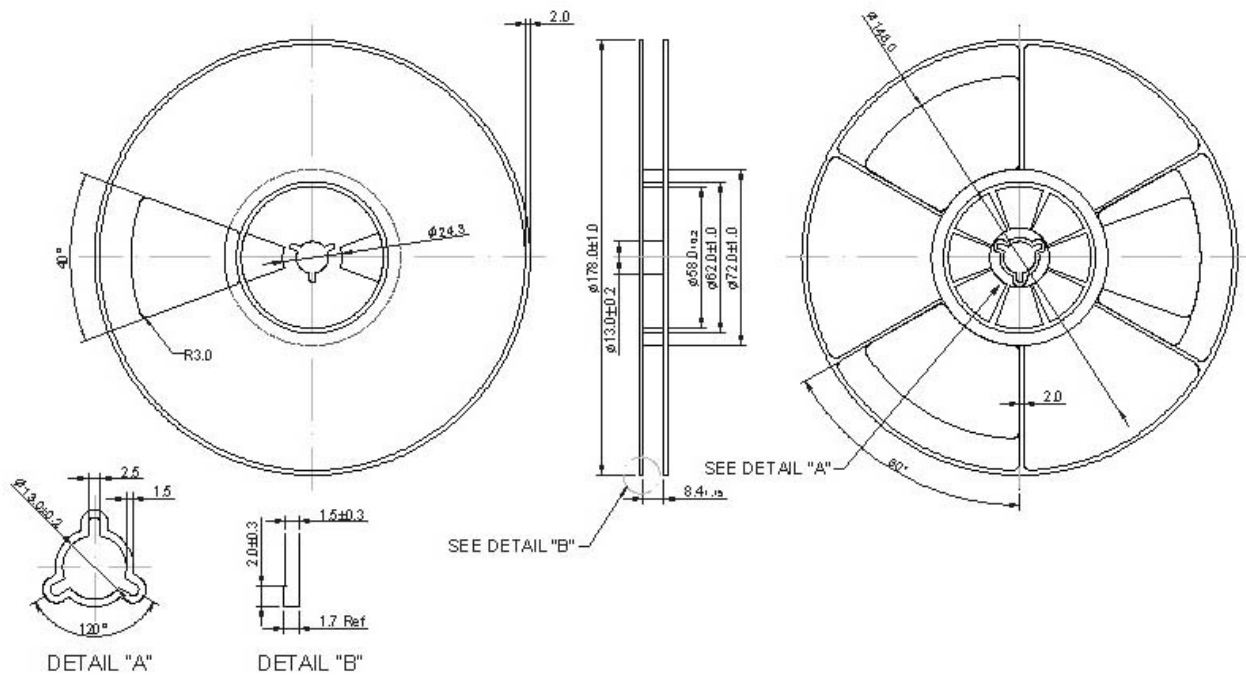
| Pin No. | Pin name | Description         |
|---------|----------|---------------------|
| 1       | IN       | Filter1,2 input pin |
| 2       | GND      | Ground              |
| 3       | GND      | Ground              |
| 4       | GND      | Ground              |
| 5       | GND      | Ground              |
| 6       | OUT      | Filter2 output pin  |
| 7       | GND      | Ground              |
| 8       | GND      | Ground              |
| 9       | OUT      | Filter1 output pin  |
| 10      | GND      | Ground              |

| Filter No. | Passband(MHz) | System |
|------------|---------------|--------|
| 1          | 1880 ~ 1920   | Band39 |
| 2          | 2010 ~ 2025   | Band34 |

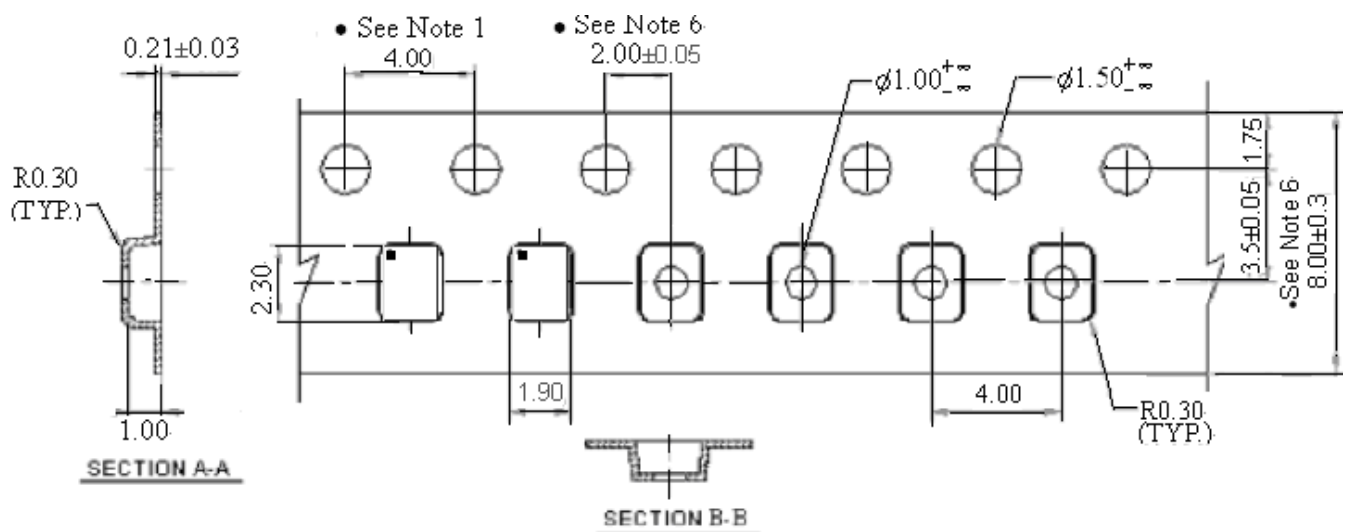
## F. PACKING:

### 1. REEL DIMENSION

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



### 2. TAPE DIMENSION



### G. 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 260°C +0/-5°C peak (20~40sec).
4. Time: 2 times.

