



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 Web: www.taisaw.com

Product Specifications Approval Sheet

Product Name: SAW DPX 1745 / 2155MHz 69.04/89.04MHz BW Band66 SMD1.8X1.4 mm

TST Parts No.: TF0167B (This part is compliant by AEC-Q200)

Customer Part No.: _____

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

Checked by: _____ Anne Chen *Anne Chen*

Approved by: _____ Andy Yu *Andy Yu*

Date: _____ 05, 03, 2021

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



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 Web: www.taisaw.com

SAW DPX 1745/2155MHz 69.04/89.04MHz BW Band66 SMD1.8X1.4 mm

MODEL NO.: TF0167B

REV. No.: 2.0

A. MAXIMUM RATING:

1. Input power : 29dBm (Ta=+50deg C,5000h,CW)
2. Maximum DC Voltage: +/-5 V
3. Operating temperature range: -40 °C to +85 °C
4. Storage temperature range: -40 °C to +105 °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:

Terminating impedance(Tx Port): 50 Ω//4.7nH (Ω) (Single-ended)

Terminating impedance(Rx Port): 50 Ω//3.6nH (Ω) (Single-ended)

Terminating impedance(Ant Port): 50Ω//2.8nH (Ω) (Single-ended)

Tx to ANT

| Parameters Description | | Unit | Minimum | Typical | Maximum | Note | |
|------------------------|-----------------------|-----------------------|---------|---------|---------|----------------|----------------|
| Insertion Loss | 1710.48 ~ 1779.52 MHz | dB (*1) | - | 2.0 | 2.8 | -30 °C ~+85 °C | |
| | | dB (*1) | | 2.0 | 3.3 | | |
| Ripple | 1710.48 ~ 1779.52 MHz | dB | - | 1.1 | 1.9 | -30 °C ~+85 °C | |
| | | dB | | 1.1 | 2.3 | | |
| VSWR | Tx | 1710.48 ~ 1779.52 MHz | - | - | 1.7 | 2.1 | -30 °C ~+85 °C |
| | | | | | 1.7 | 2.4 | |
| | | ANT | | | 1.6 | 2.1 | -30 °C ~+85 °C |
| | | | - | - | 1.6 | 2.4 | |
| Attenuation: | | | | | | | |
| 1559 ~ 1606 MHz | | dB | 38 | 44 | - | -30 °C ~+85 °C | |
| | | dB | 35 | 44 | | | |
| 2110.48 ~ 2199.52 MHz | | dB | 45 | 51 | - | - | |
| 2400 ~ 2500 MHz | | dB | 40 | 47 | - | - | |
| 3420 ~ 3560 MHz | | dB | 35 | 41 | - | - | |
| 5130 ~ 5340 MHz | | dB | 28 | 39 | | - | |

ANT to Rx

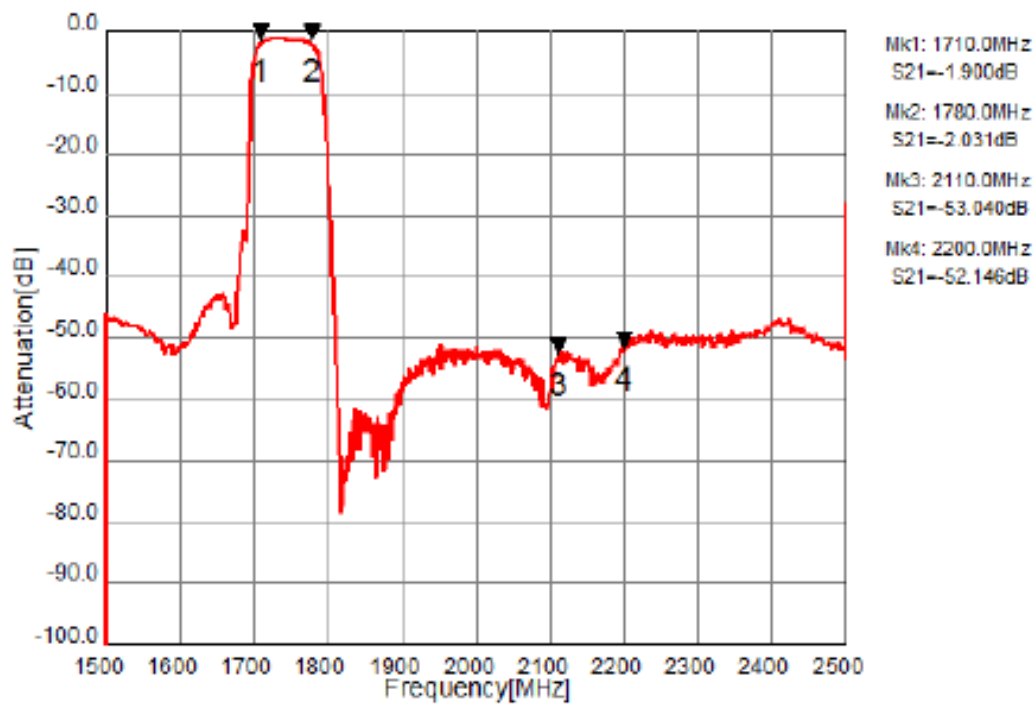
| Parameters Description | | Unit | Minimum | Typical | Maximum | Note | |
|------------------------|-----------------------|-----------------------|---------|---------|---------|----------------|----------------|
| Insertion Loss | 2110.48 ~ 2199.52 MHz | dB(*1) | - | 2.0 | 2.9 | -30 °C ~+85 °C | |
| | | dB | | 2.0 | 3.3 | | |
| Ripple | 2110.48 ~ 2199.52 MHz | dB | - | 0.7 | 1.7 | -30 °C ~+85 °C | |
| | | dB | | 0.7 | 2.1 | | |
| VSWR | ANT | 2110.48 ~ 2199.52 MHz | - | - | 1.5 | 2.3 | -30 °C ~+85 °C |
| | | | | | 1.5 | 2.5 | |
| | Rx | 2110.48 ~ 2199.52 MHz | | | 1.3 | 2.2 | -30 °C ~+85 °C |
| | | | - | - | 1.3 | 2.4 | |
| Attenuation: | | | | | | | |
| 1710.48 ~ 1779.52 MHz | | dB | 45 | 53 | - | | |
| 2400 ~ 2500 MHz | | dB | 33 | 40 | - | | |
| 4220 ~ 4400 MHz | | dB | 33 | 48 | - | | |

Tx to Rx

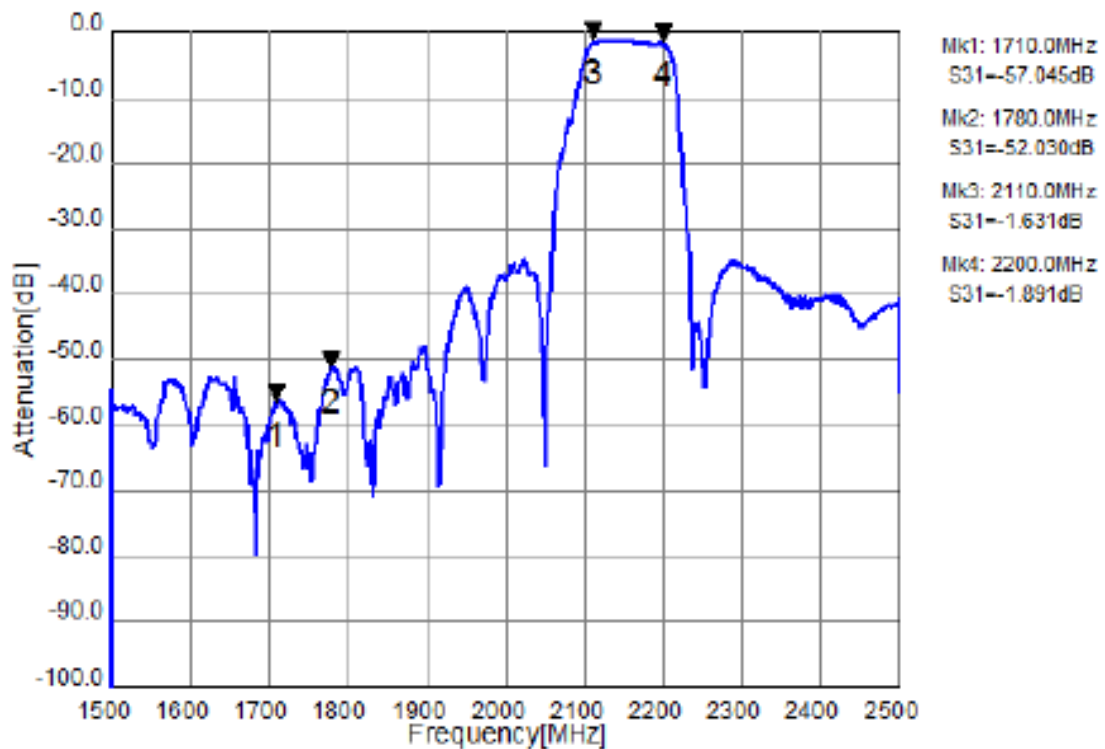
| | | | | | | |
|-----------|-----------------------|----|----|----|---|--|
| Isolation | 1710.48 ~ 1779.52 MHz | dB | 53 | 57 | - | |
| | 2110.48 ~ 2199.52 MHz | dB | 50 | 54 | - | |

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

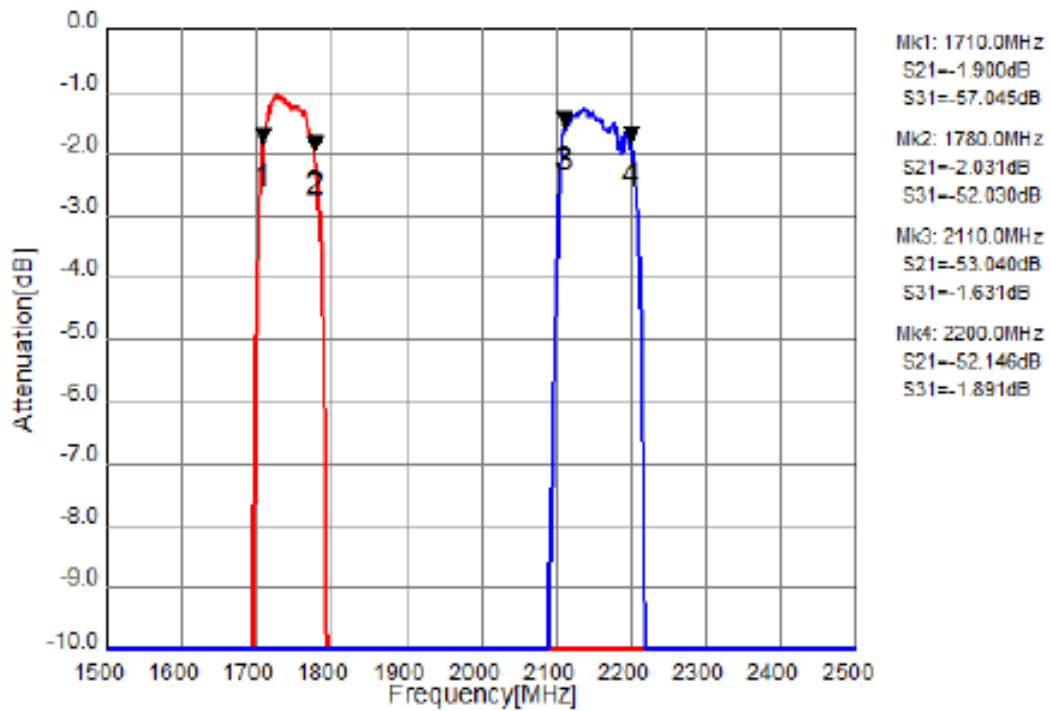
Tx to Ant



Ant to Rx



Tx to Ant, Ant to Rx



Tx to Rx Isolation

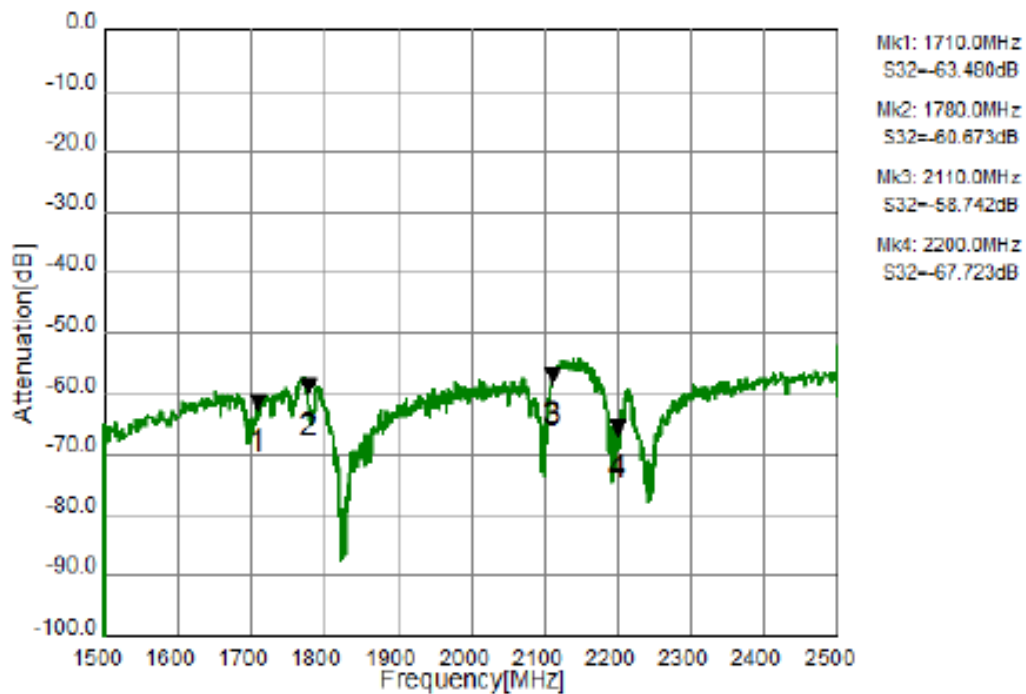
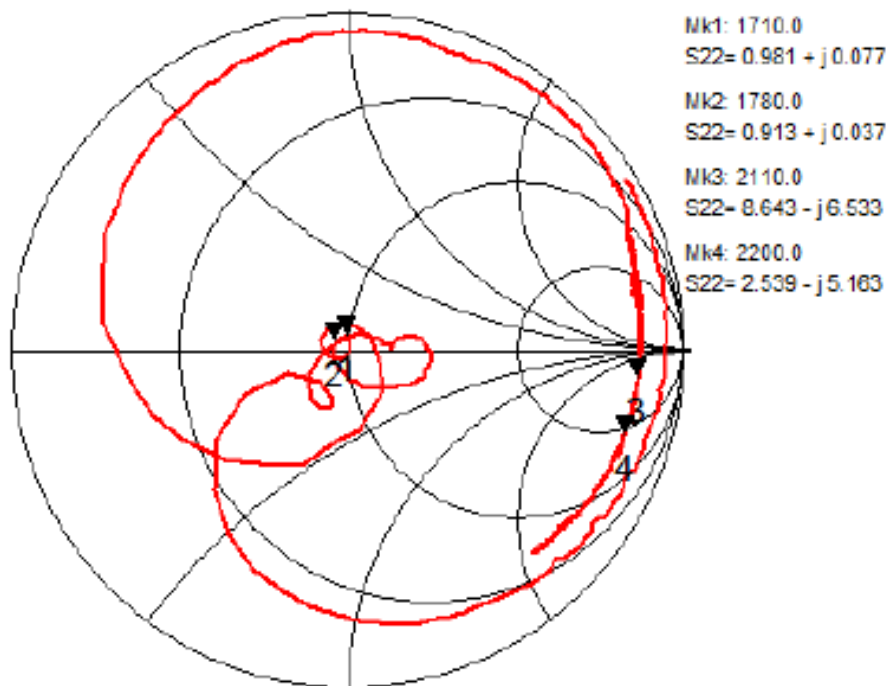
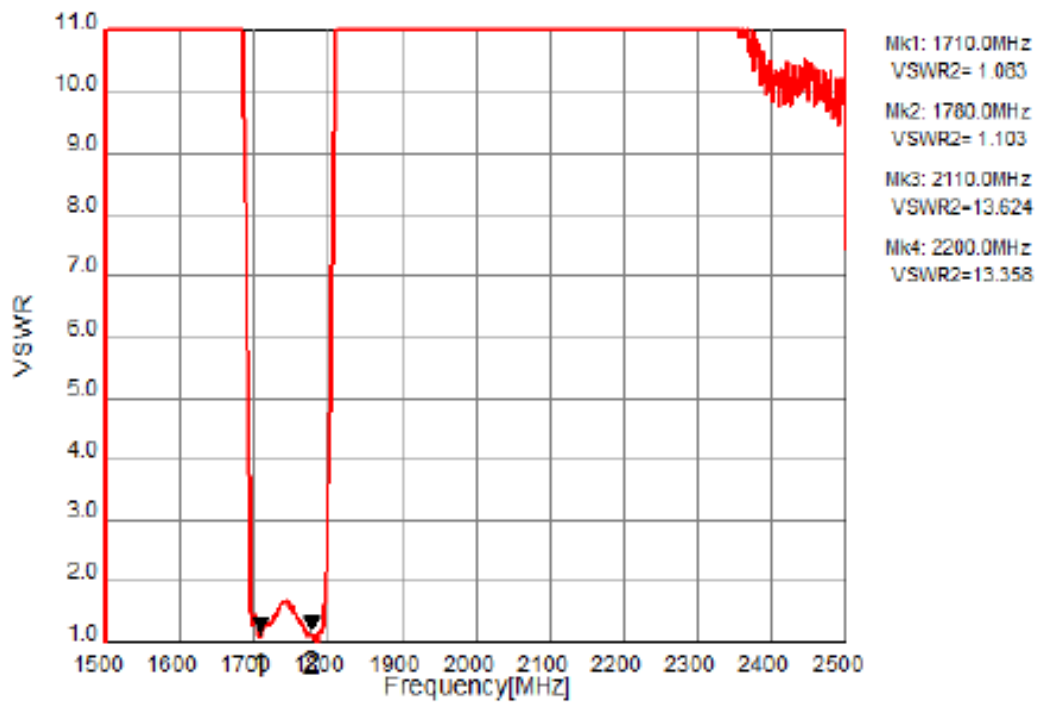


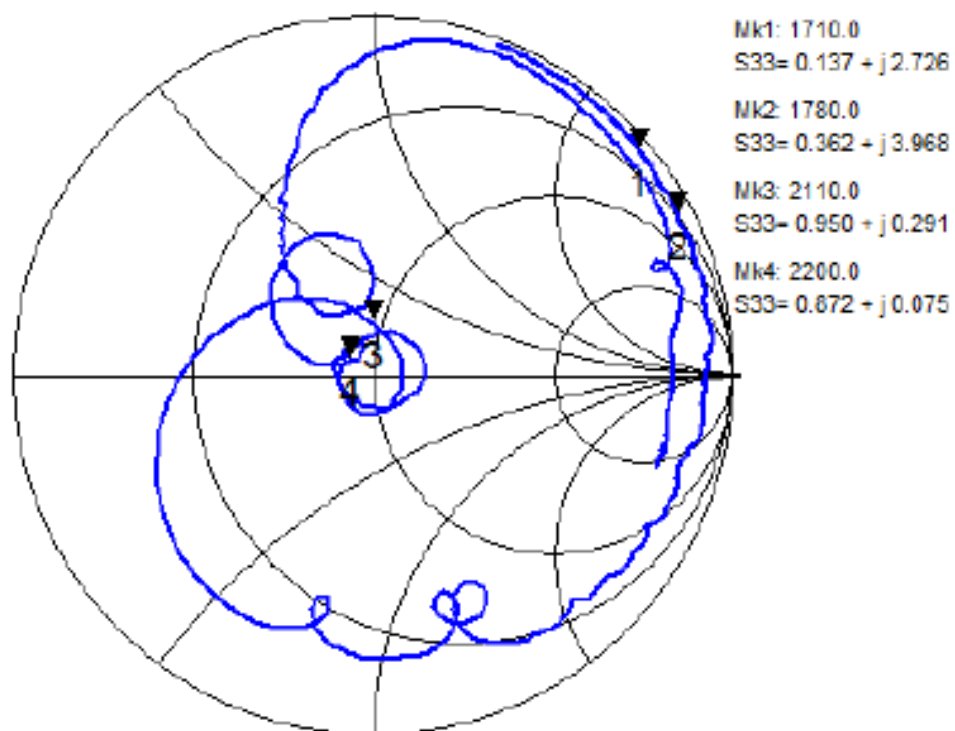
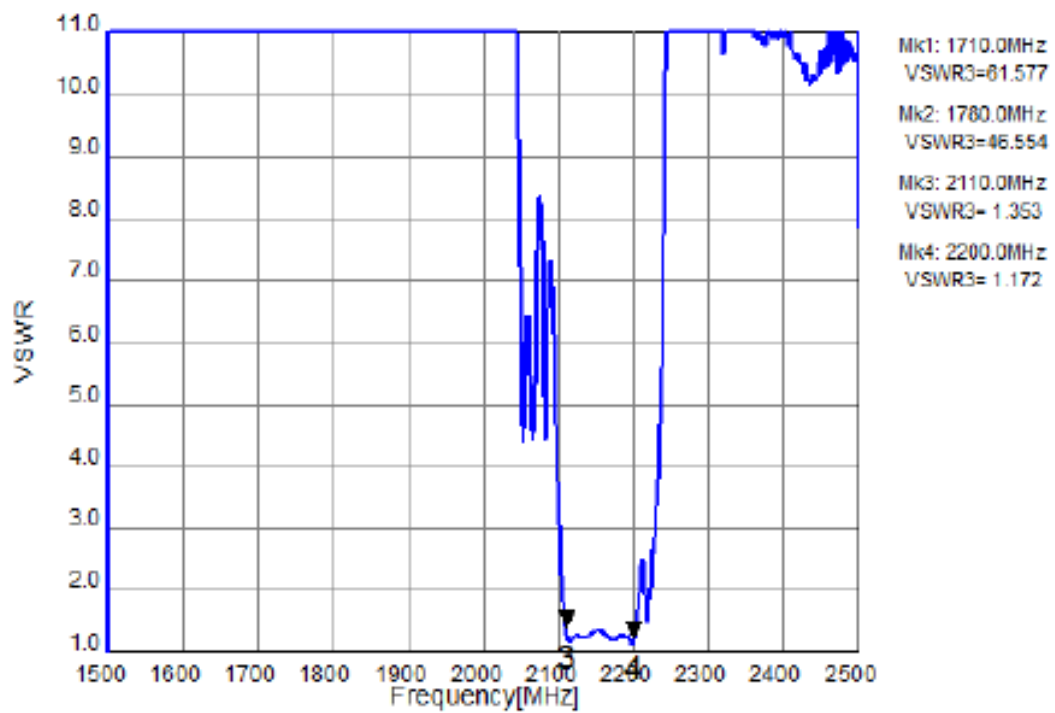
Figure 3-2. Electrical Characteristics

These data exclude loss that comes from the test board.

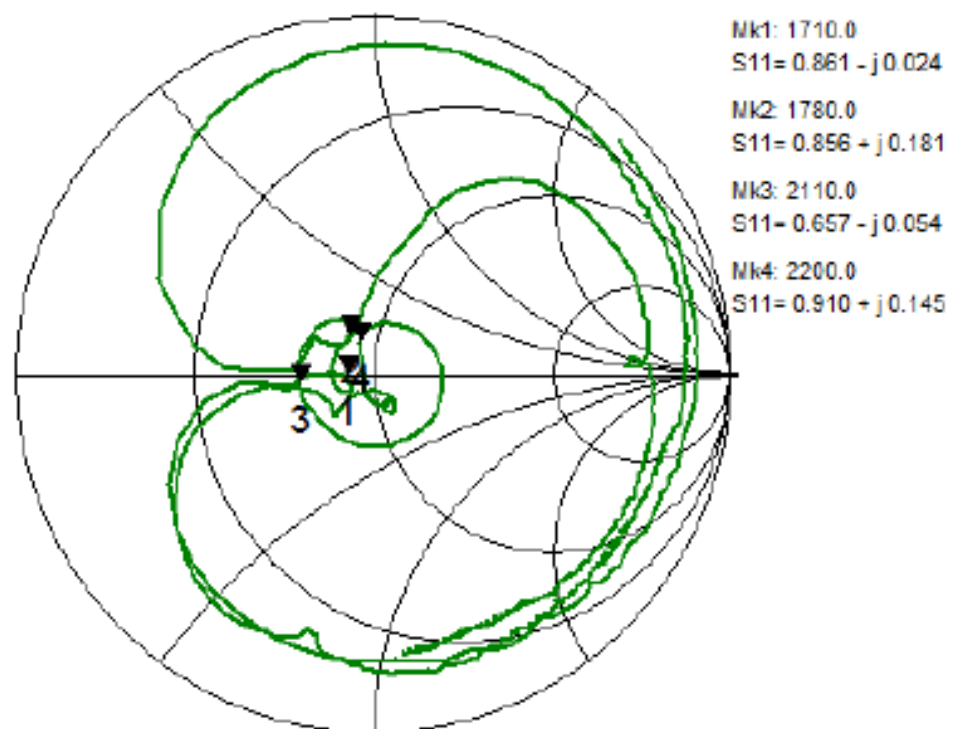
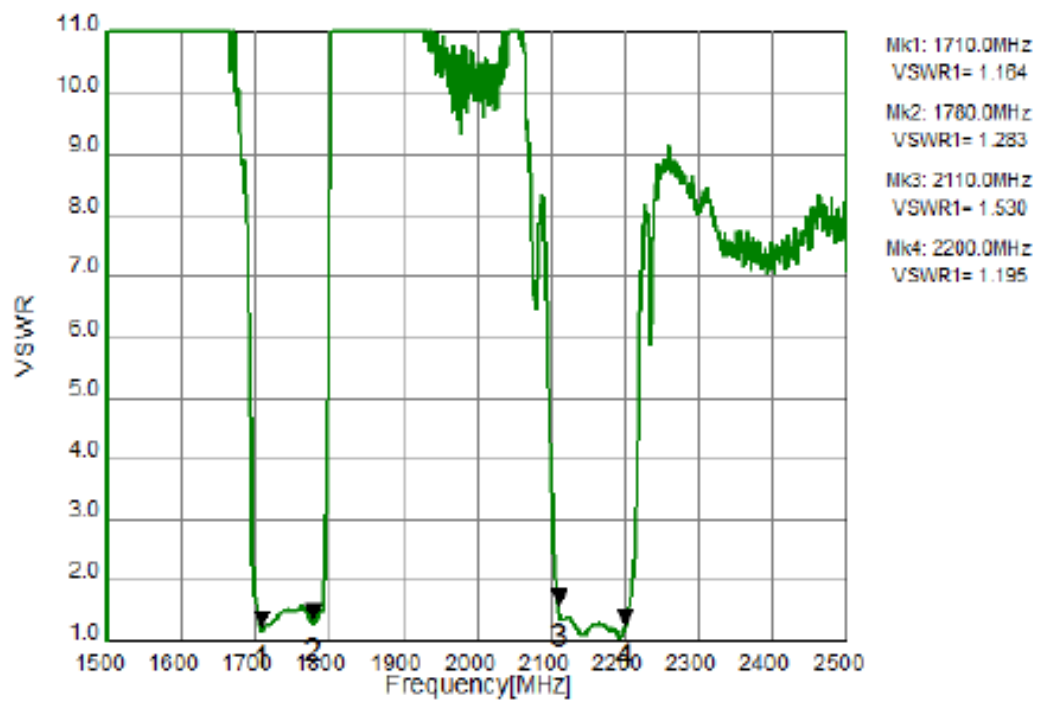
Tx Port



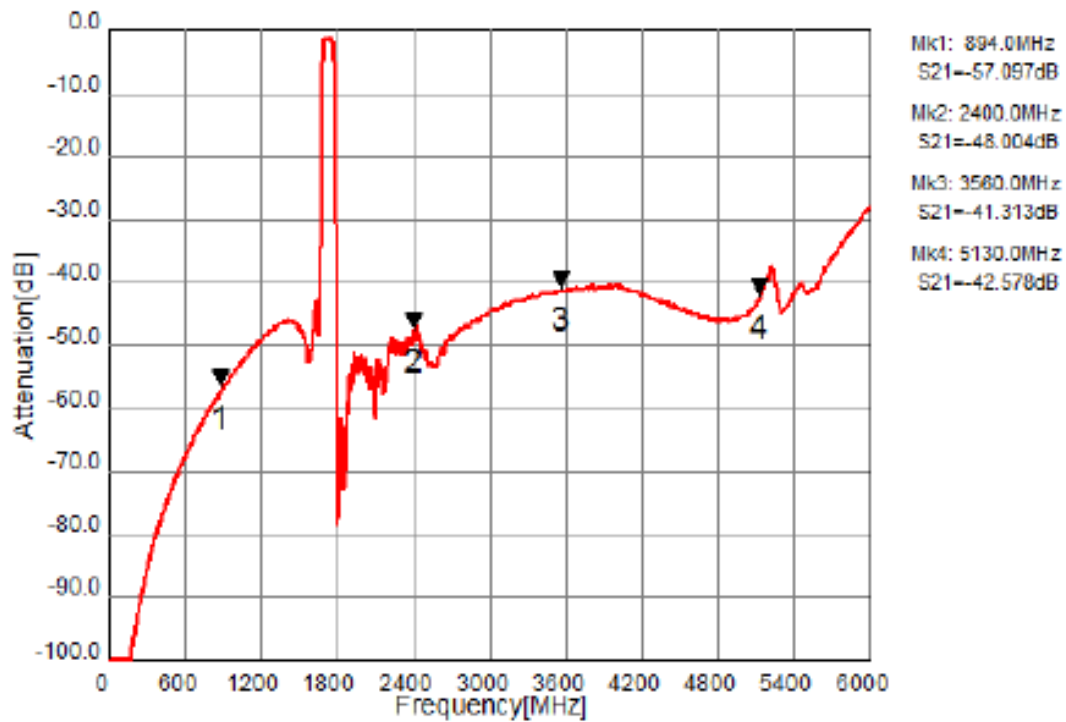
Rx Port



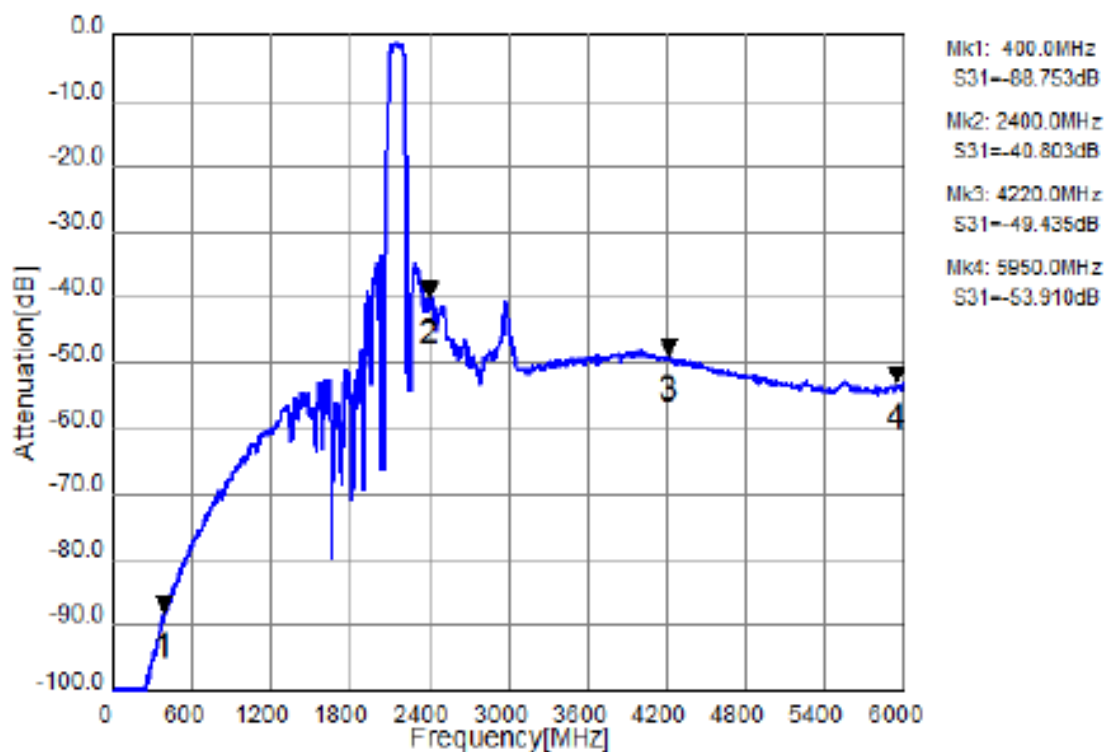
Ant Port



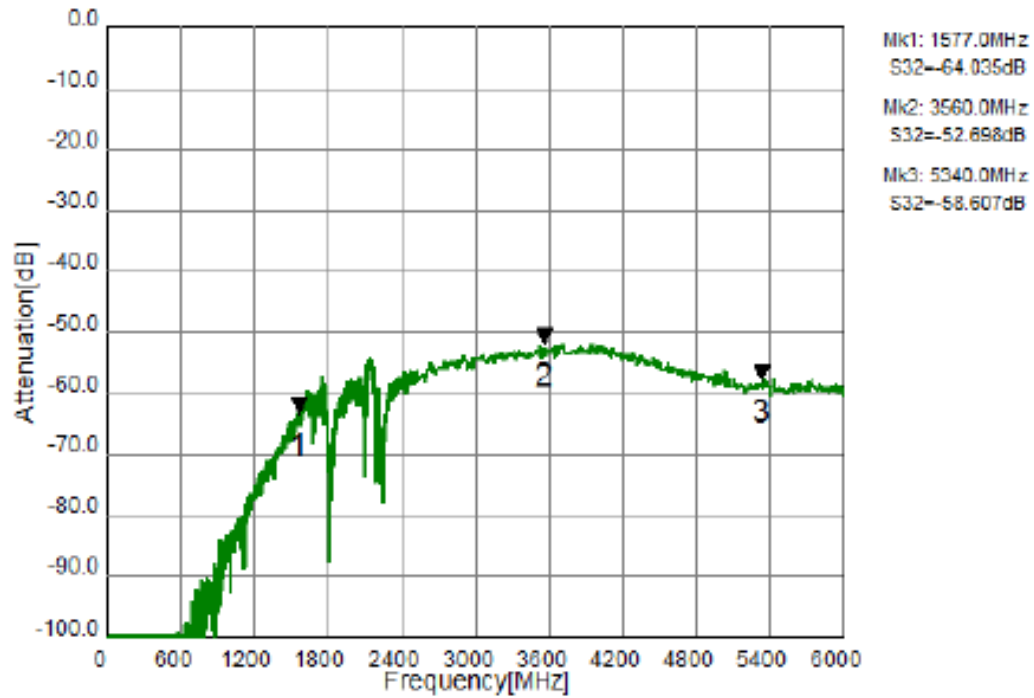
Tx to Ant(Wide span)



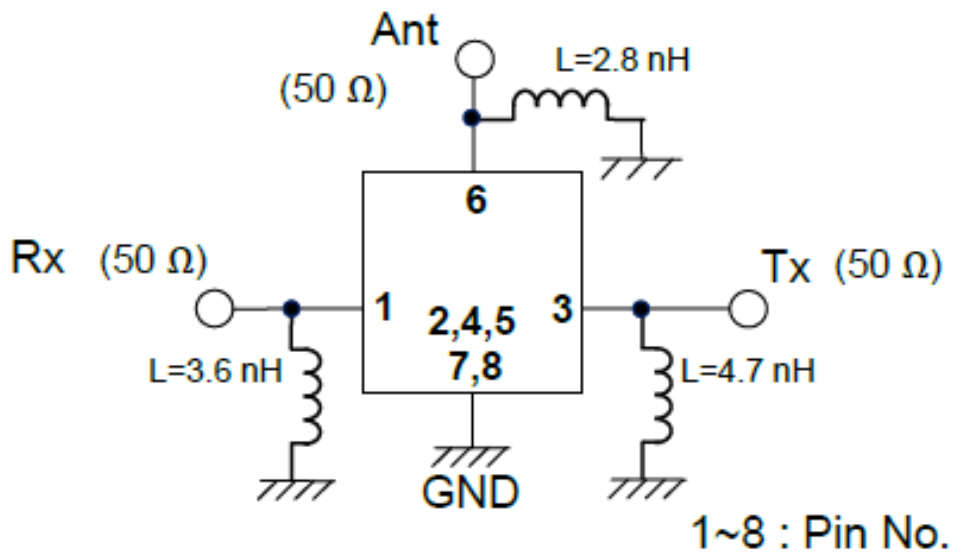
Ant to Rx(Wide span)



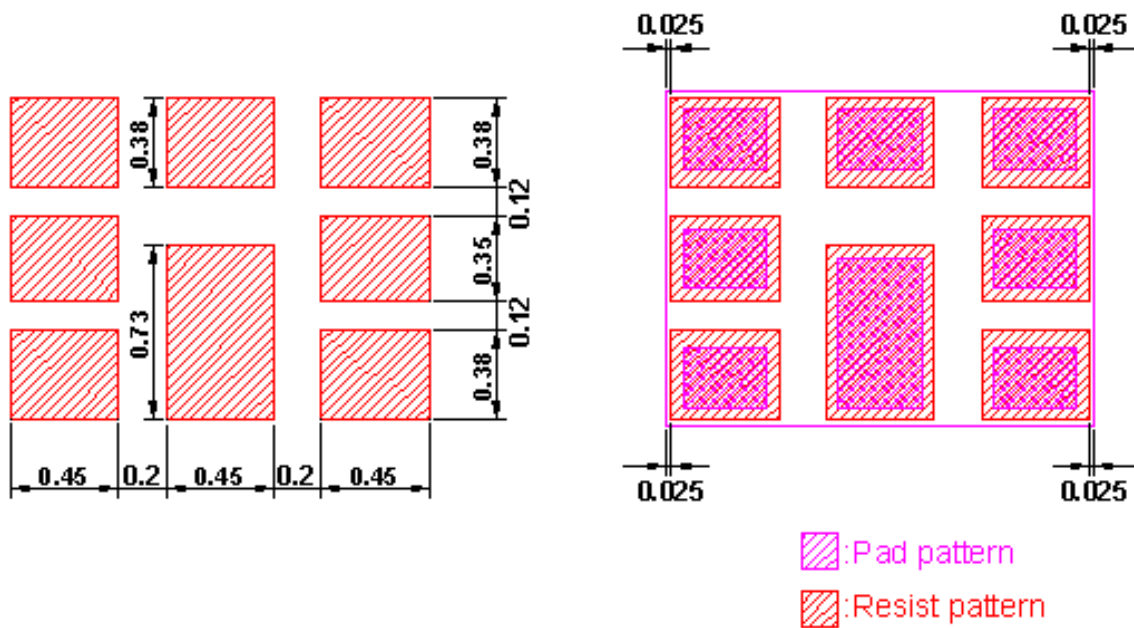
Tx to Rx Isolation(Wide span)



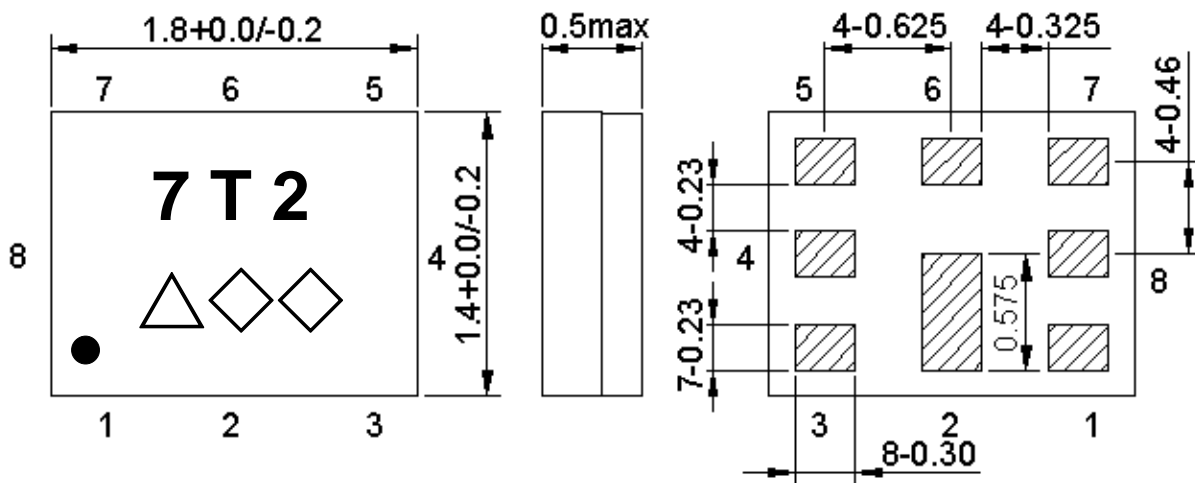
D. MEASUREMENT CIRCUIT:



E. PCB Footprint:



E.OUTLINE DRAWING: (Mass Production)



Marking name : T2

△: 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 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2016 | n | p | q | r | s | t | u | v | w | x | y | z |
| 2017 | A | B | C | D | E | F | G | H | J | K | L | M |
| 2018 | N | P | Q | R | S | T | U | V | W | X | Y | Z |
| 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 |

Pin assignment

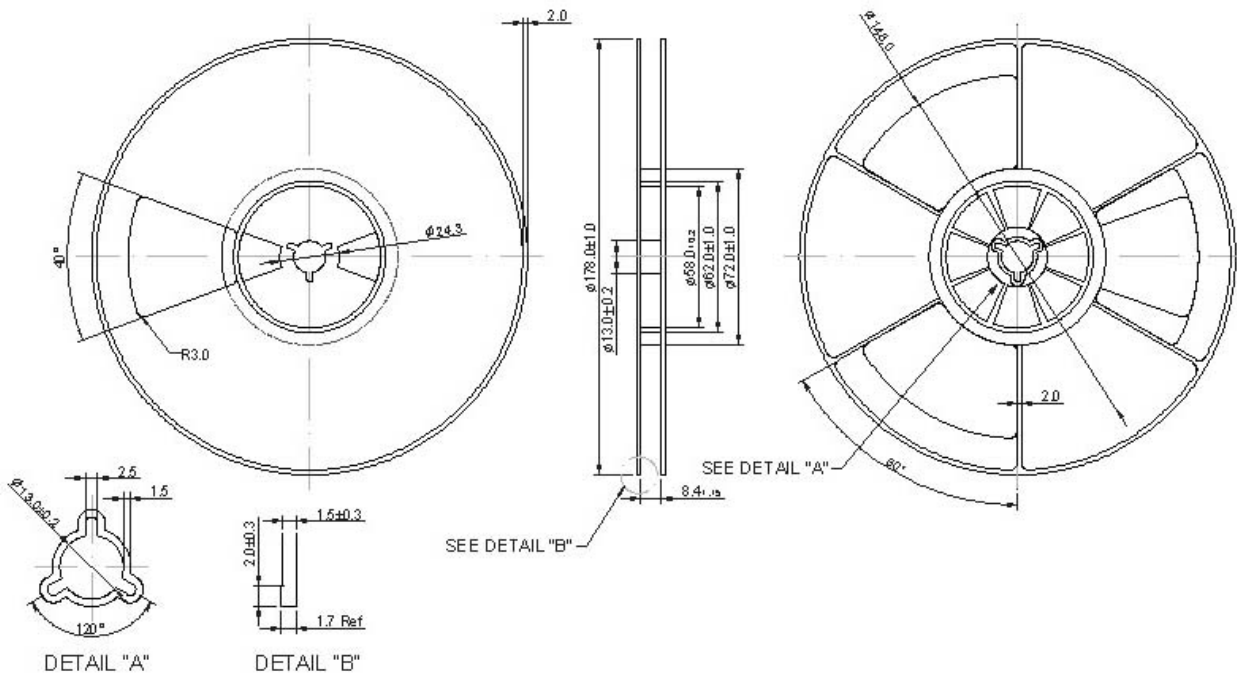
| Pin No. | Pin name | Description |
|---------|----------|-------------|
| 1 | Rx | Receiver |
| 2 | GND | Ground |
| 3 | Tx | Transmitter |
| 4 | GND | Ground |
| 5 | GND | Ground |
| 6 | Ant | Antenna |
| 7 | GND | Ground |
| 8 | GND | Ground |

Figure 1.Dimensions and Pin assignment

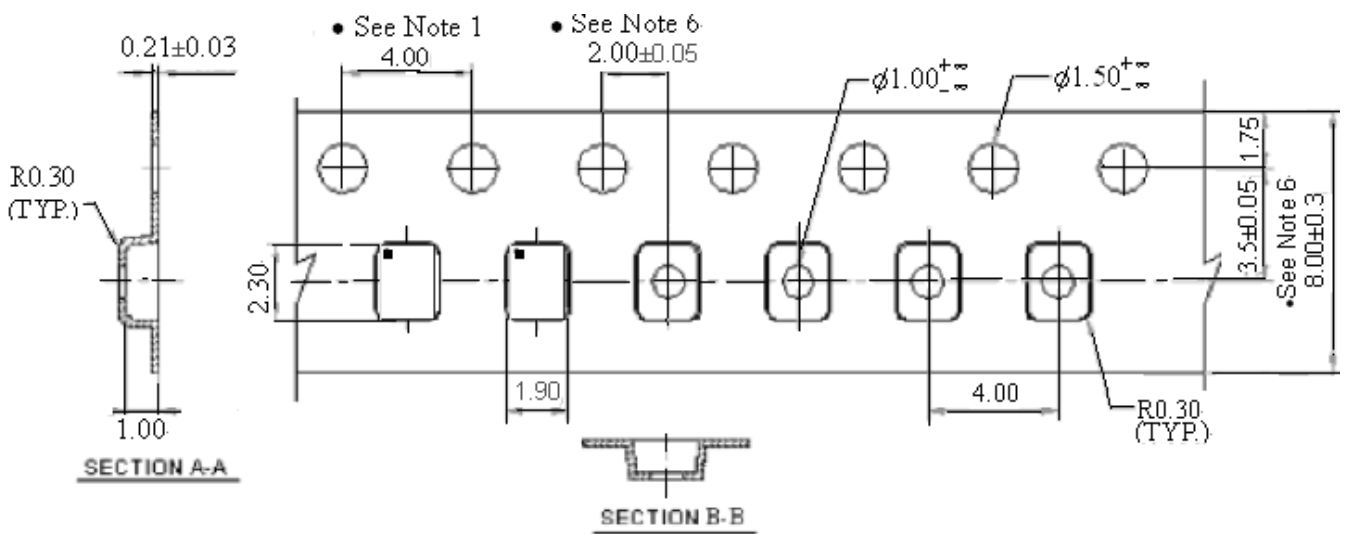
F. PACKING:

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.

