



TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,
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Product Specifications Approval Sheet


Product Name: SAW DPX 1747.5/1842.5MHz LTE Band3 SMD1.8X1.4 mm

TST Parts No.: TF0135A

Customer Part No.: _____

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

Checked by: _____ Anne Chen 

Approved by: _____ Andy Yu 

Date: _____ 07, 01, 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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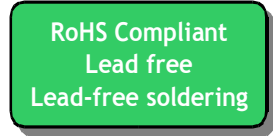
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SAW DPX 1747.5/1842.5MHz 74.7/74.7MHz BW Single type SMD 1.8X1.4 mm
MODEL NO.: TF0135A REV. No.: 3.0

A. MAXIMUM RATING:

1. Input power : 29dBm (Ta=+50deg C,5000h,CW)
2. Maximum DC Voltage: +/-3 V
3. Operating temperature range: -40 °C to +85 °C
4. Storage temperature range: -40 °C to +85 °C
5. Moisture Sensitivity Level: Level 1 (MSL 1)
6. ESD 50V(MM) 150V(HBM)



Electrostatic Sensitive Device (ESD)

B. ELECTRICAL CHARACTERISTICS:

Terminating impedance(Tx Port): 50//10nH Ω

Terminating impedance(Rx Port): 50//12nH Ω

Terminating impedance(Ant Port): 50//4.3nH Ω

Tx to ANT

| Parameters Description | | Unit | Minimum | Typical | Maximum | Note |
|------------------------|----------------------|--------|---------|---------|---------|--------------|
| Insertion Loss | 1710.15~ 1784.85 MHz | dB(*1) | - | 2.3 | 3.0 | -20~65°C |
| | | | | | 3.3 | -65~85°C |
| Ripple(any 5MHz) | 1710.15~ 1784.85 MHz | dB | - | 1.6 | 2.8 | |
| VSWR | ANT | - | - | 1.4 | 2.0 | |
| | Tx | - | - | 1.4 | 2.0 | |
| Attenuation: | | | | | | |
| 1559 ~1586 MHz | | dB | 36 | 44 | - | Compass, GPS |
| 1597 ~1606 MHz | | dB | 33 | 43 | - | GLONASS- |
| 1805 ~1880 MHz | | dB | 40 | 52 | - | Rx |
| 2400 ~2500 MHz | | dB | 33 | 39 | - | ISM |
| 3420 ~3570 MHz | | dB | 25 | 32 | - | 2f0 |
| 5130 ~5355 MHz | | dB | 20 | 40 | - | 3f0 |

ANT to Rx

| Parameters Description | | Unit | Minimum | Typical | Maximum | Note |
|------------------------|----------------------|--------|---------|---------|---------|---------|
| Insertion Loss | 1805.15~ 1879.85 MHz | dB(*1) | - | 2.1 | 2.9 | 0~85°C |
| | | | | | 3.3 | -20~0°C |
| Ripple | 1805.15~ 1879.85 MHz | dB | - | 1.4 | 2.8 | |
| VSWR | ANT | - | - | 1.6 | 2.3 | |
| | Rx | - | - | 1.5 | 2.2 | |
| Attenuation: | | | | | | |
| 1710 ~ 1785 MHz | | dB | 50 | 54 | - | Tx |
| 2400 ~ 2500 MHz | | dB | 42 | 45 | - | ISM |
| 3610 ~ 3760 MHz | | dB | 47 | 57 | | 2f0 |
| 5415 ~ 5640 MHz | | dB | 42 | 49 | | 3f0 |

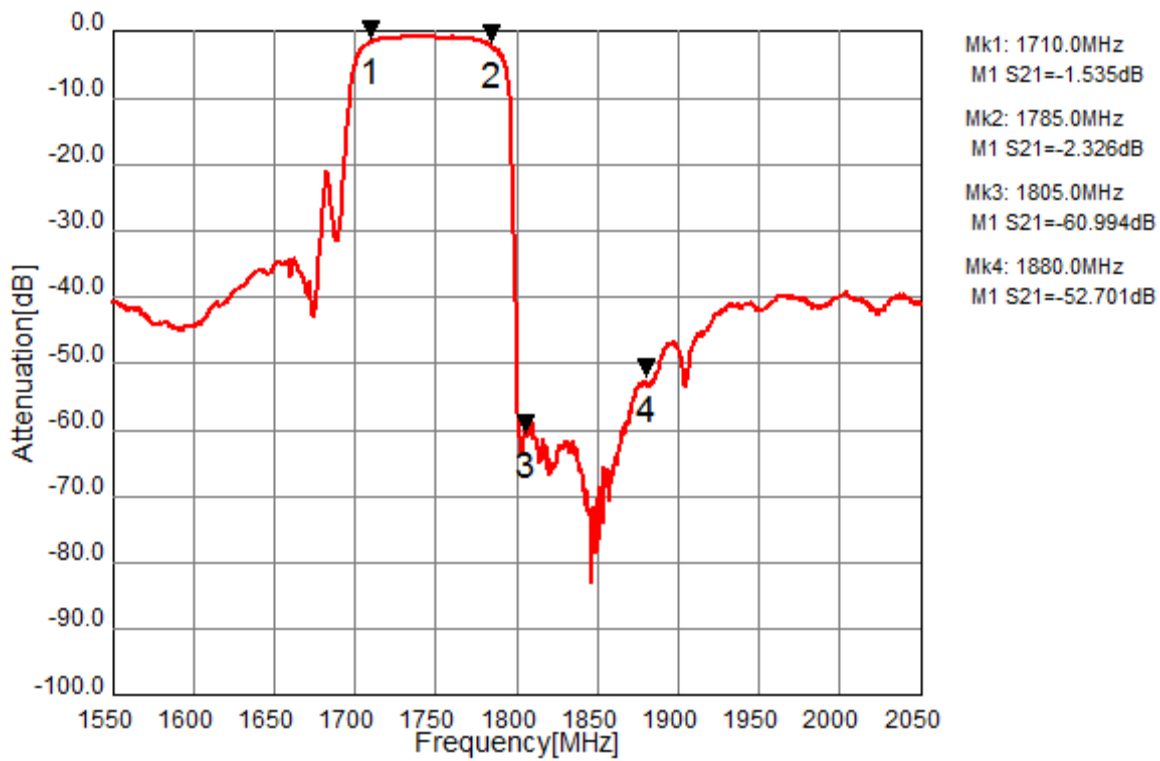
Tx to Rx

| | | | | | | |
|-----------|-----------------------|----|----|----|---|--------------|
| Isolation | 1710.15 ~ 1784.85 MHz | dB | 50 | 56 | - | Tx |
| | 1805.15 ~ 1879.85 MHz | dB | 46 | | - | Rx -20~0°C |
| | | dB | 50 | 56 | | Rx +0~ +85°C |

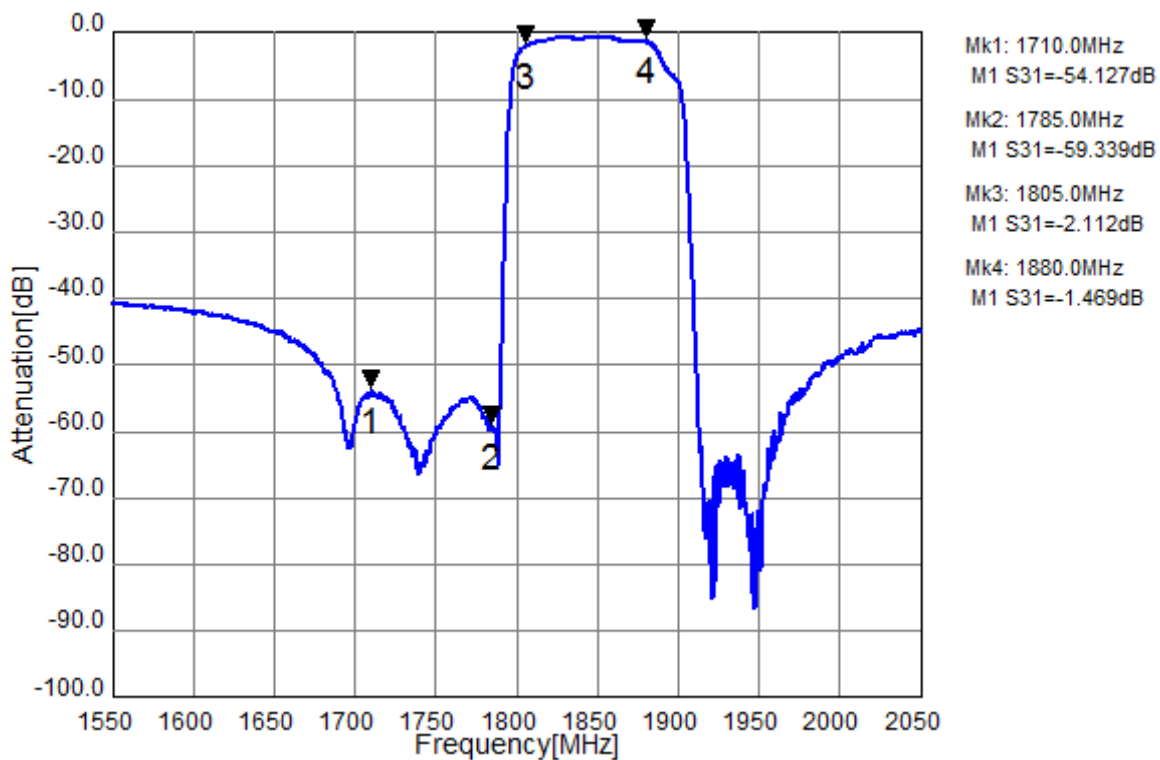
(*1) Specification of insertion loss excludes loss that comes from the test board.

C. Frequency Characteristics:

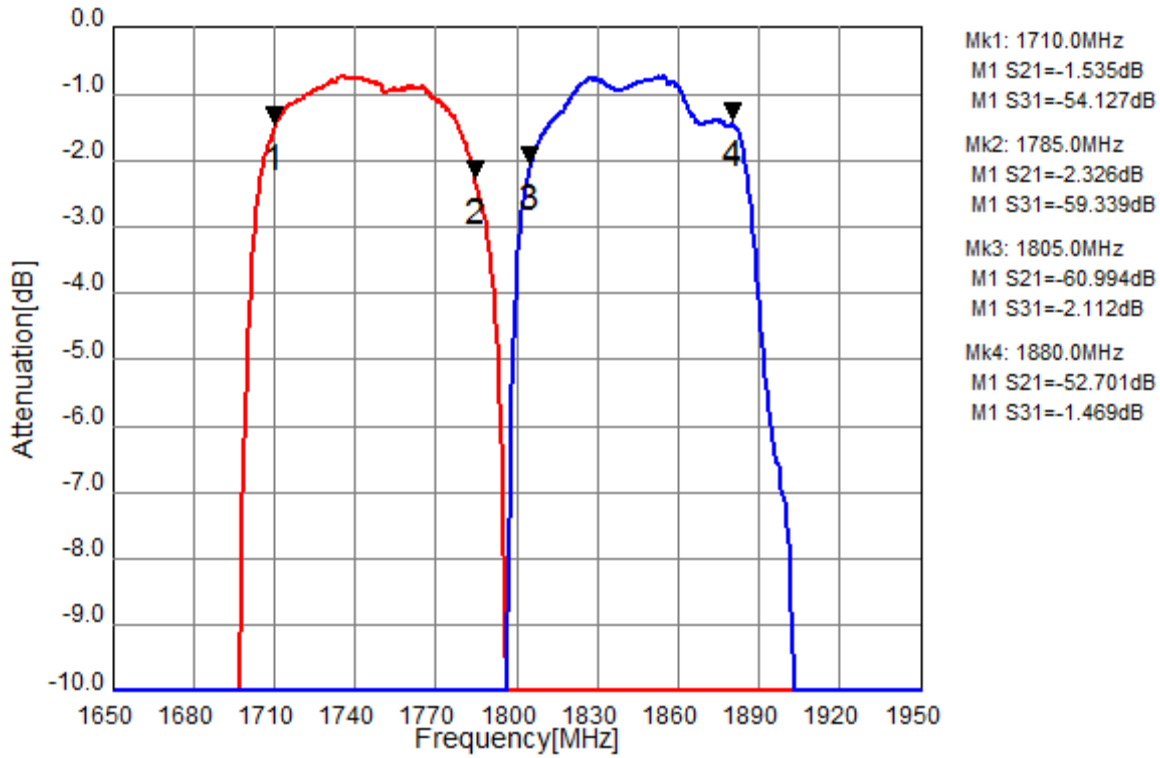
Tx to Ant



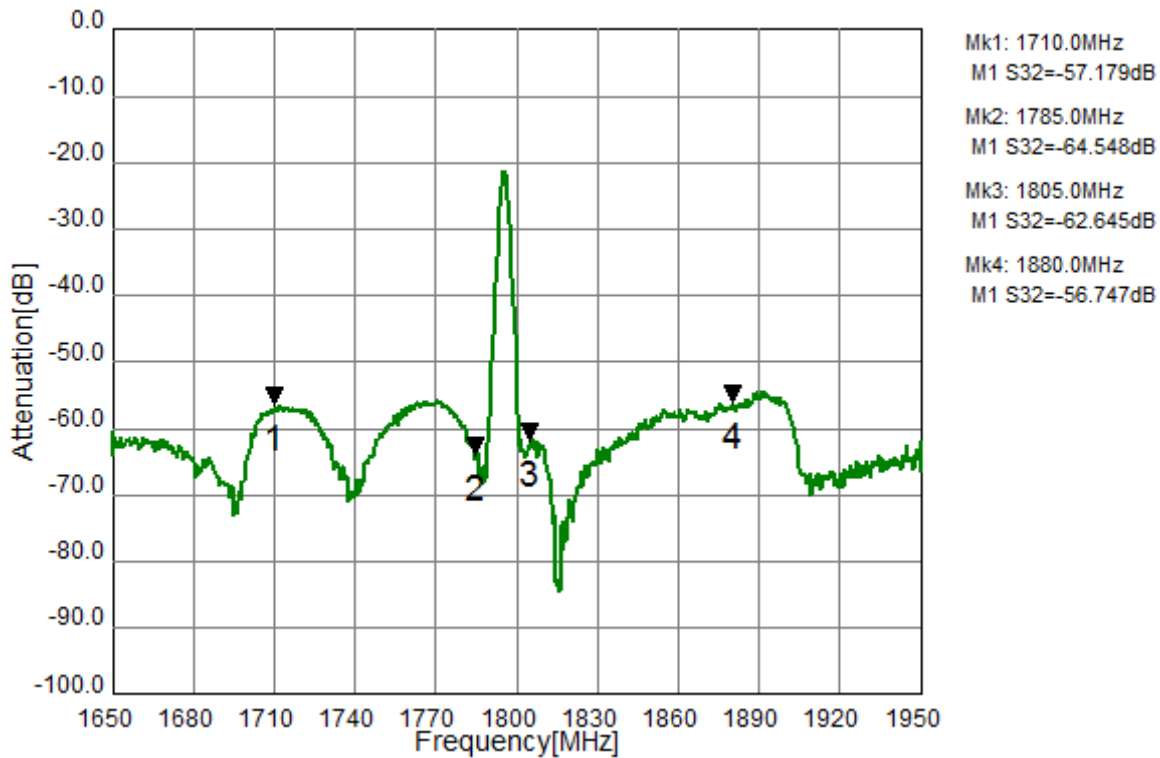
Ant to Rx



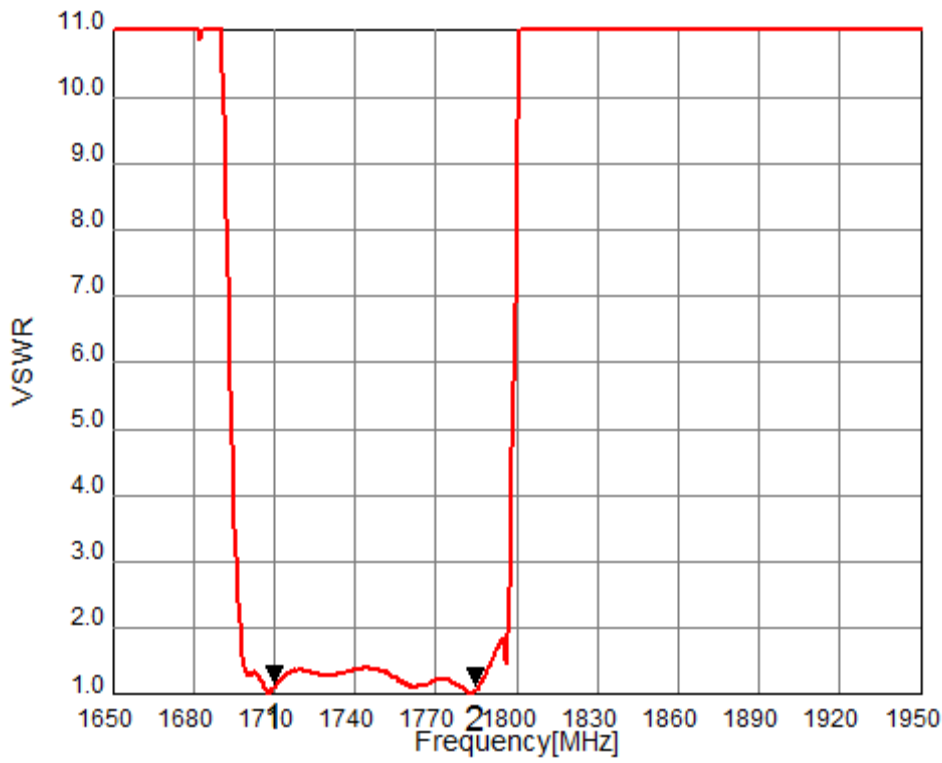
Tx to Ant, Ant to Rx



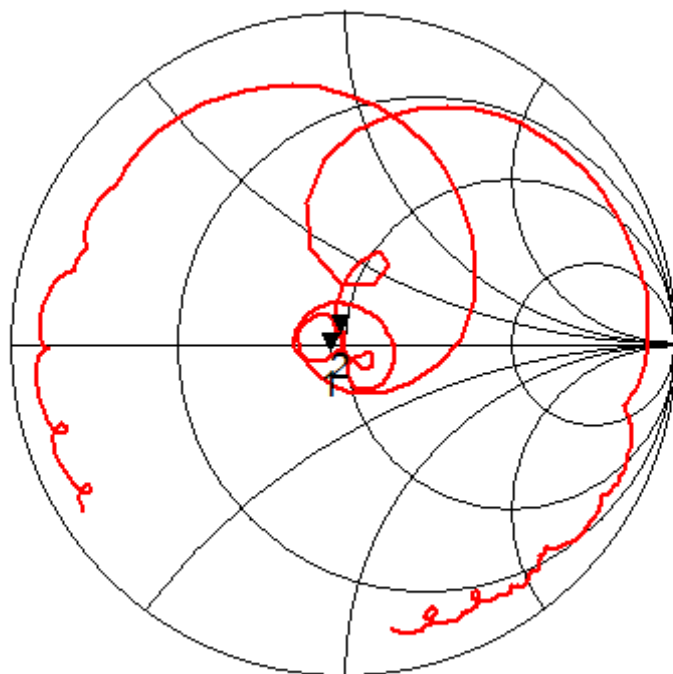
Tx to Rx Isolation



Tx Port

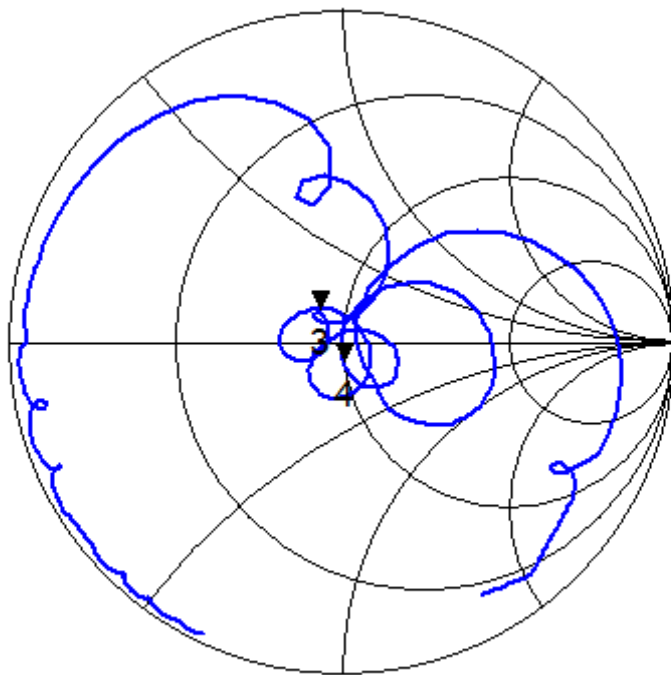
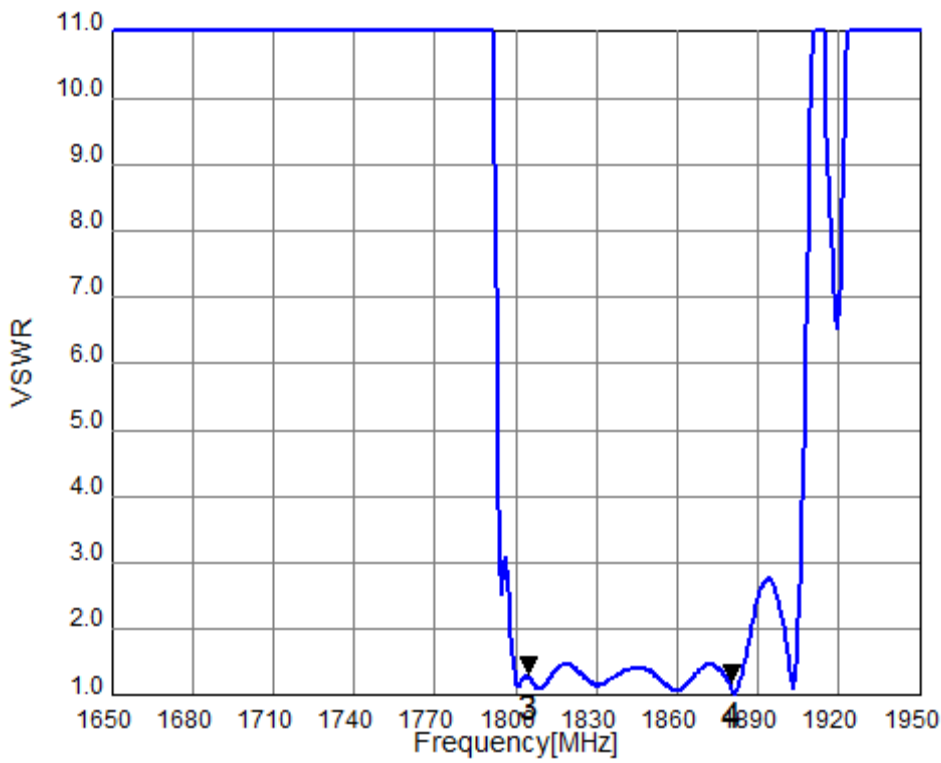


Mk1: 1710.0MHz
M1 VS2= 1.119
Mk2: 1785.0MHz
M1 VS2= 1.064

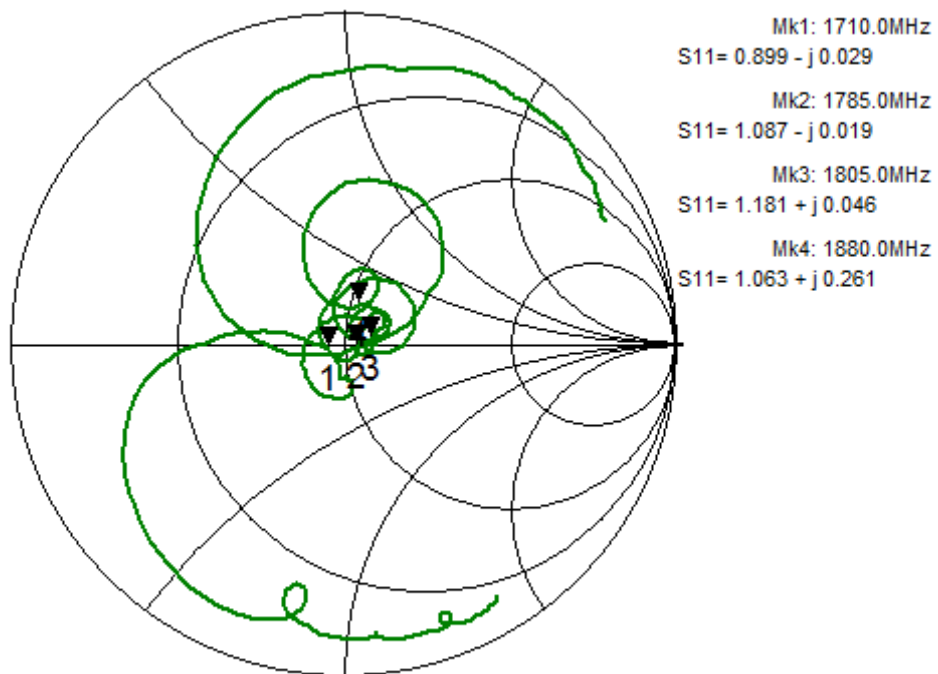
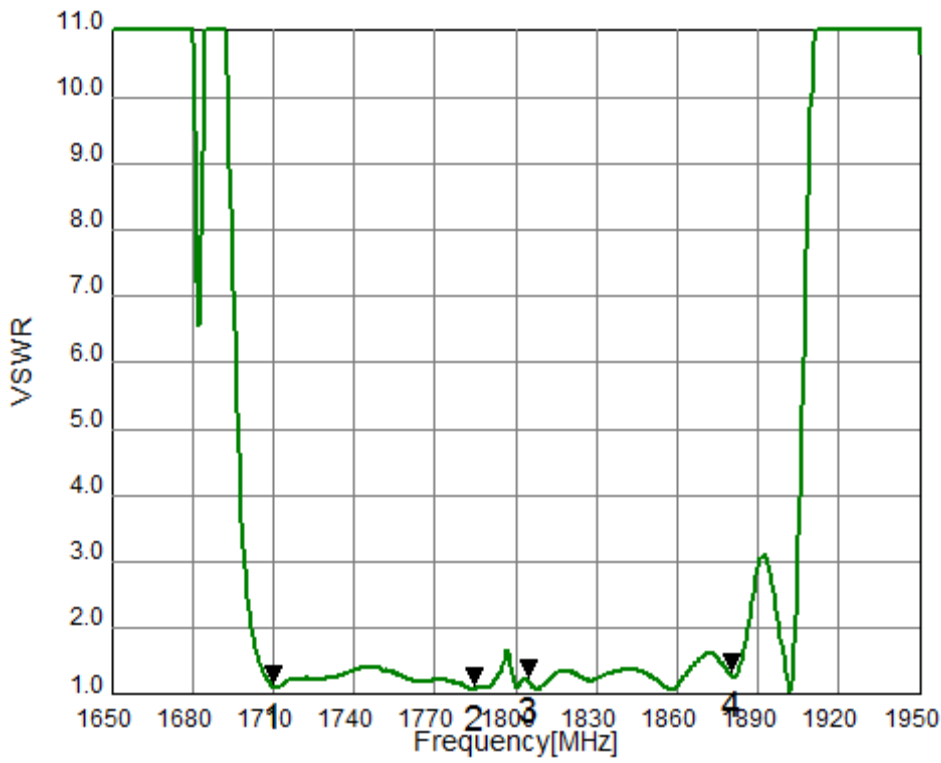


Mk1: 1710.0MHz
S22= 0.915 - j0.066
Mk2: 1785.0MHz
S22= 0.973 + j0.055

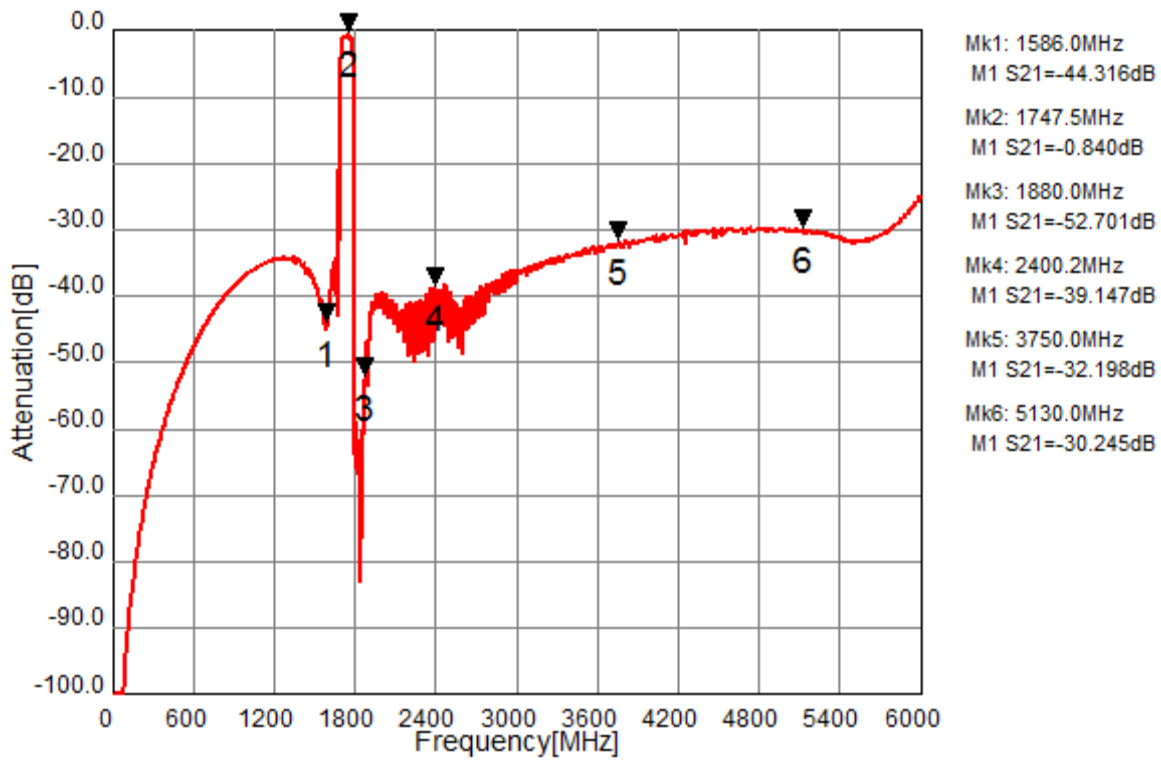
Rx Port



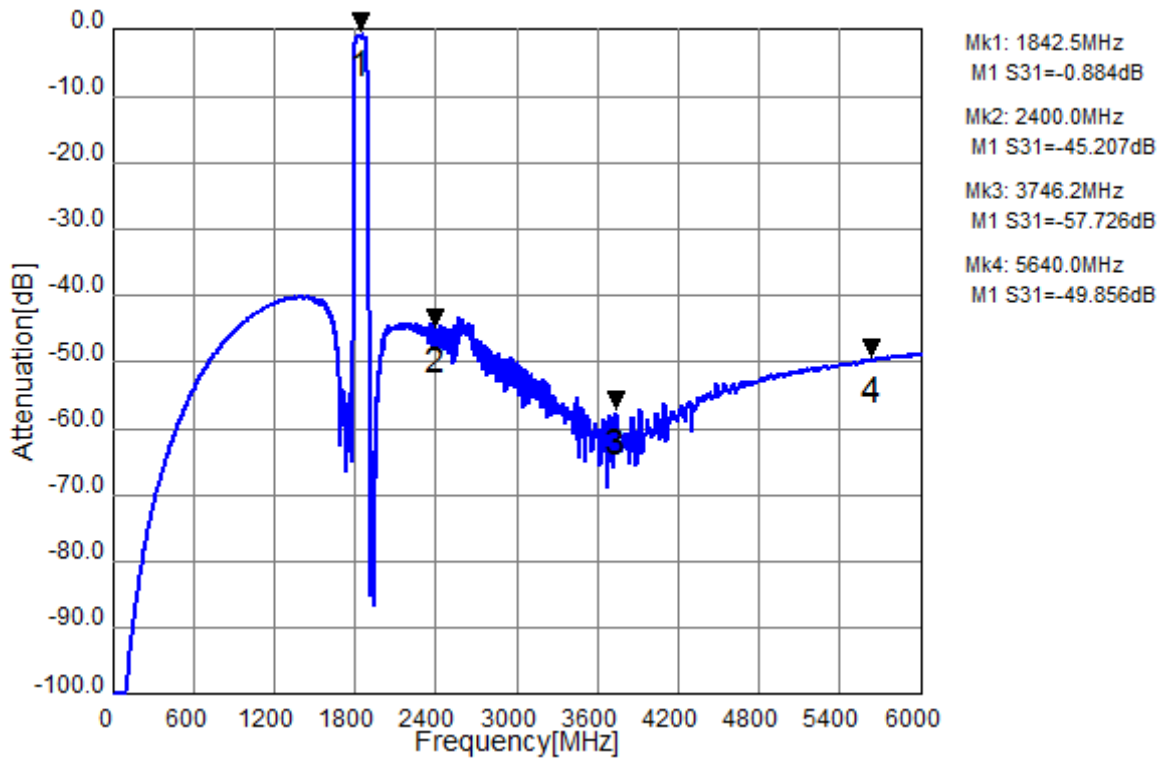
Ant Port



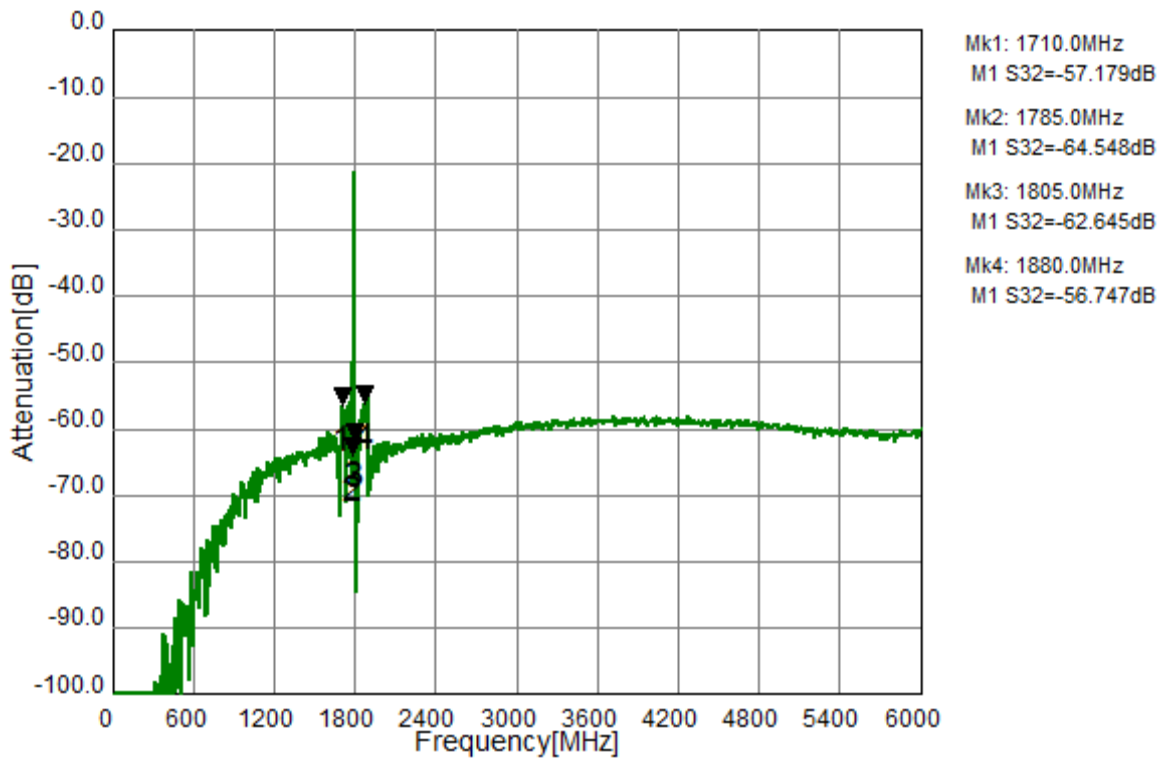
Tx to Ant (Wide span)



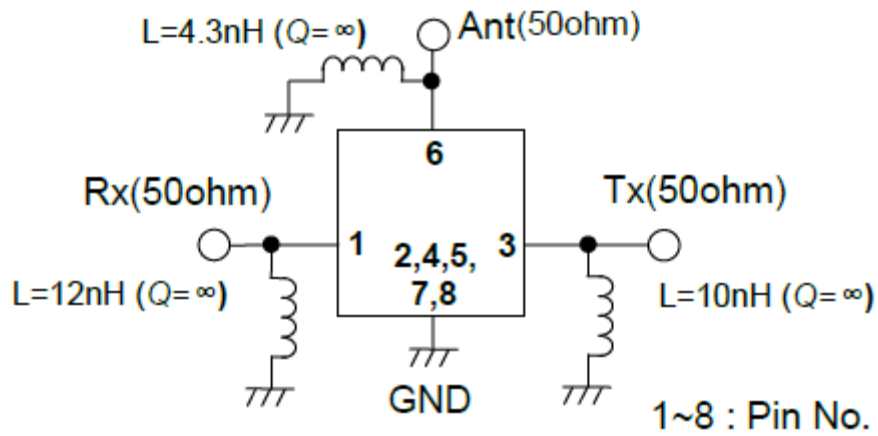
Ant to Rx (Wide span)



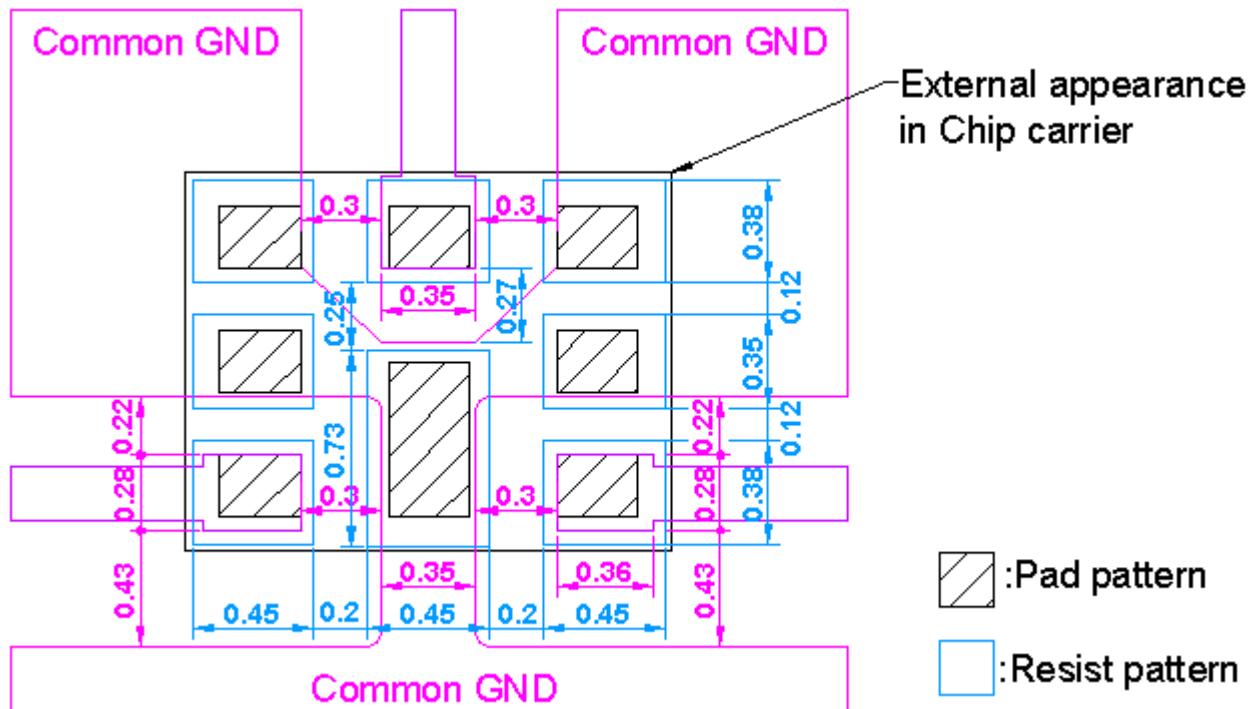
Tx to Rx Isolation(Wide span)



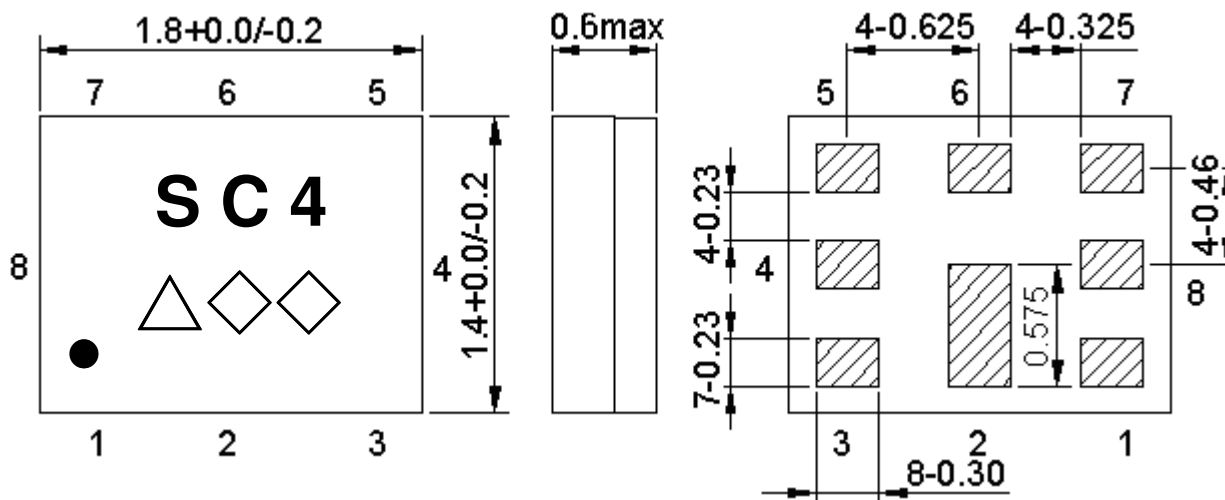
D. MEASUREMENT CIRCUIT:



Recommended foot print pattern



E.OUTLINE DRAWING: (Mass Production)



Marking name : C4

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

◇◇: Lot Code.

Product Date Code. Follow below table.

Not Specified Tolerance: $\pm 0.05\text{mm}$

Coplanarity: 0.1mm max

1 to 8: Pin No. Unit:mm

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2016 / 2020 | n | p | q | r | s | t | u | v | w | x | y | z |
| 2017 / 2021 | A | B | C | D | E | F | G | H | J | K | L | M |
| 2018 / 2022 | N | P | Q | R | S | T | U | V | W | X | Y | Z |
| 2019 / 2023 | a | b | c | d | e | f | g | h | j | k | l | m |

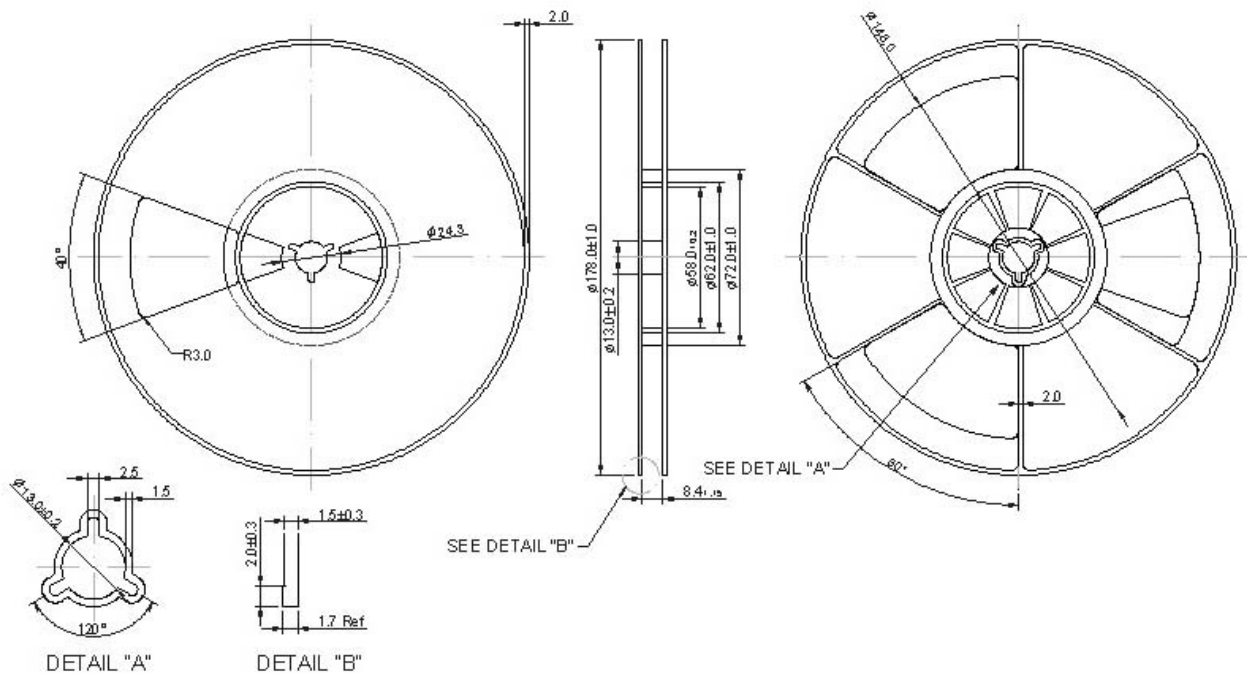
Pin assignment

| 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 |

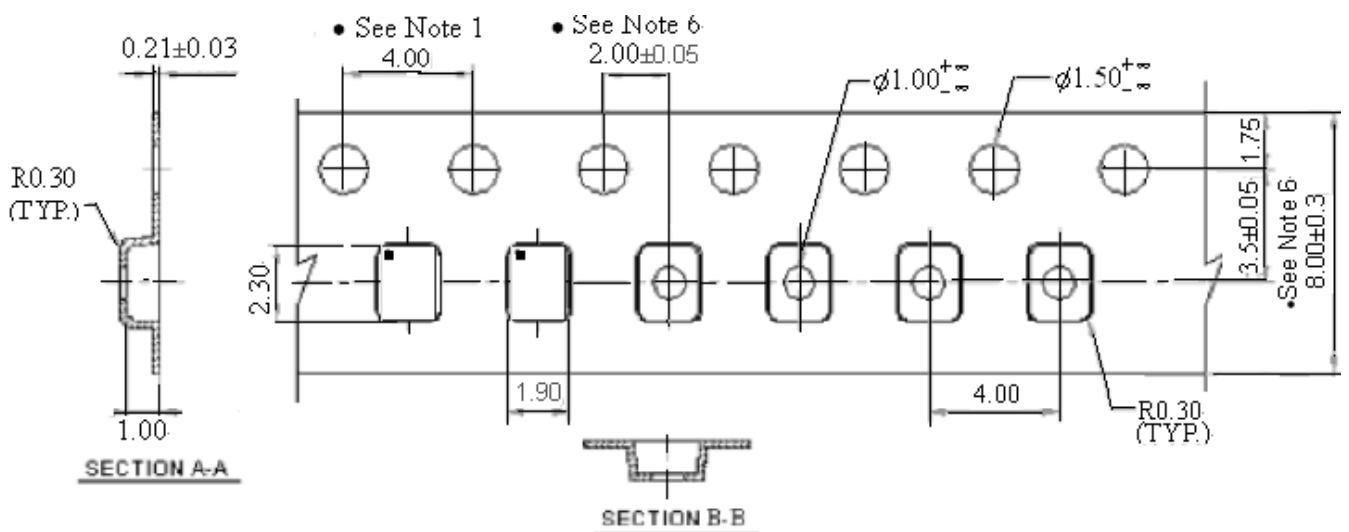
F. PACKING:

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.

