# SAW Filter 1842.5 MHz

MODEL NO.:TA1857D REV.3.0

## A. MAXIMUM RATING:

1. Maximum Input Power: 15 dBm
2. DC Voltage: 0 V
3. Operating Temperature: -30 ℃ to +85 ℃
4. Storage Temperature Range: -40 ℃ to +85 ℃
5. Moisture Sensitive Level: Level 3 (MSL 3)
6. ESD: 50 V(MM), 100 V(HBM)

RoHS Compliant
Lead free
Lead-free soldering

**E**lectrostatic **S**ensitive **D**evice (**ESD**)

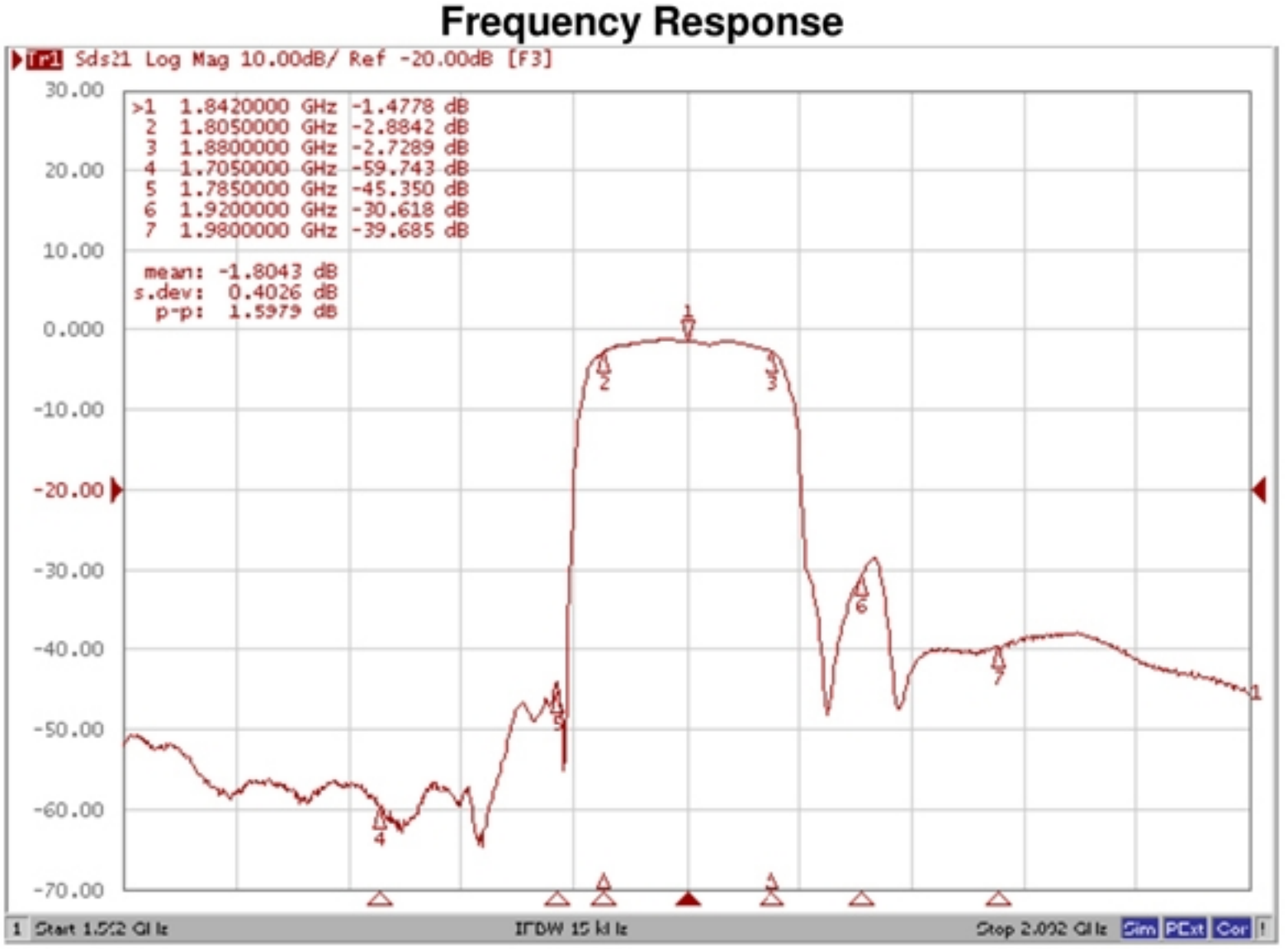
## B. ELECTRICAL CHARACTERISTICS:

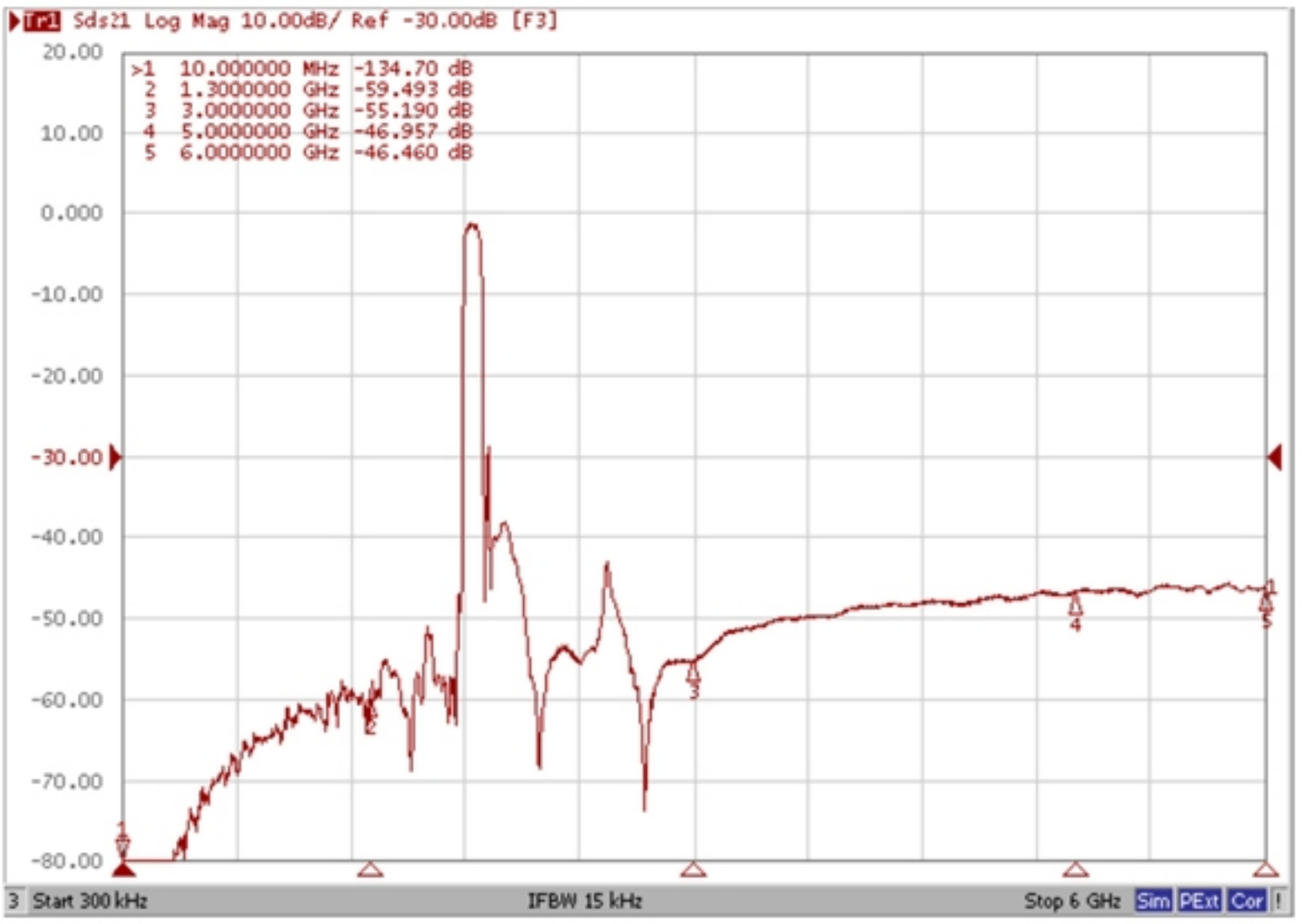
Terminating source impedance: Zs = 50 Ω (Unbalanced)

Terminating load impedance: $Z_L$ = 100//18nH Ω (Balanced / differential)

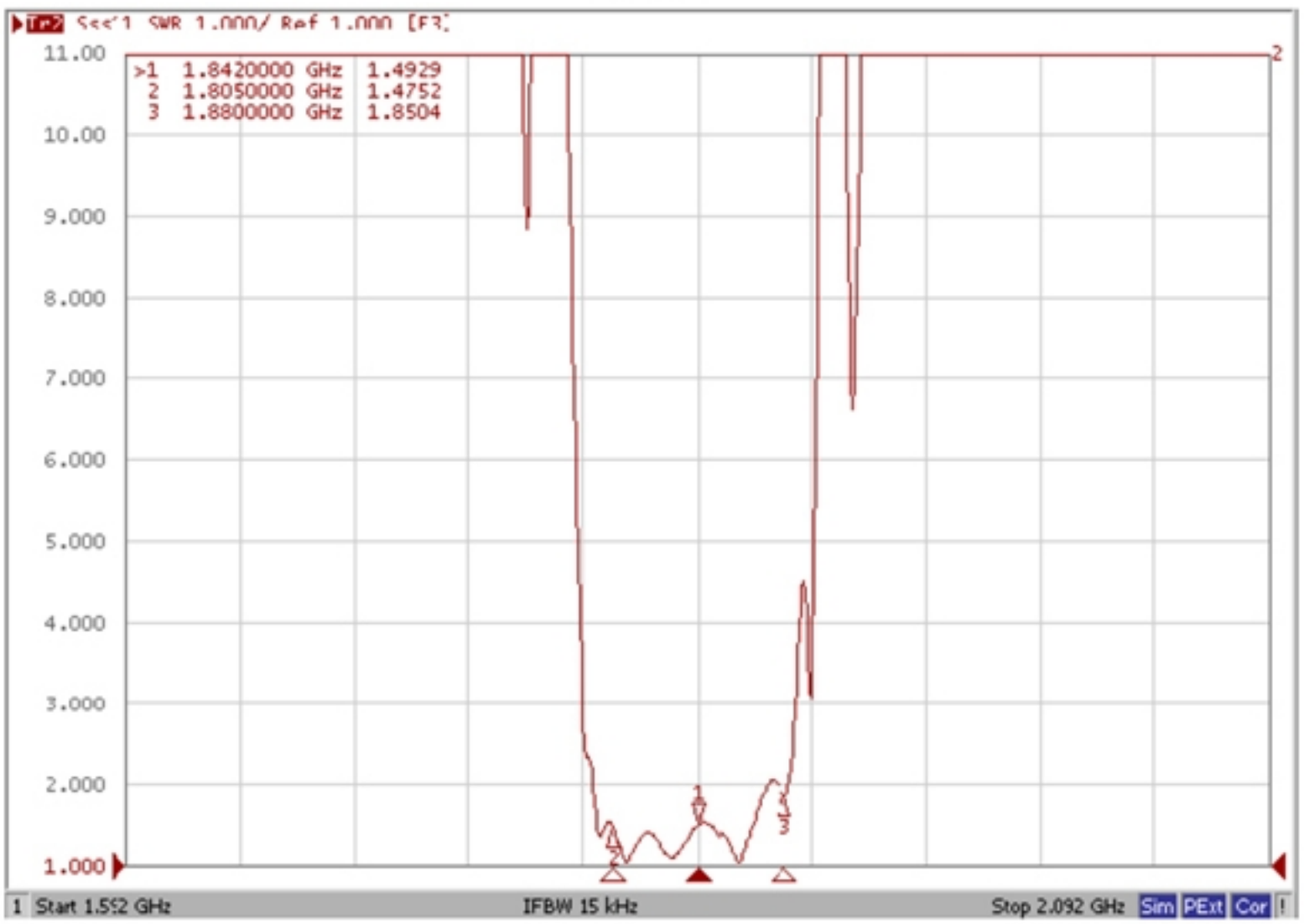
| Item | | Unit | Min. | Typ. | Max. |
|---|---|---|---|---|---|
| **Center Frequency** | | MHz | - | 1842.5 | - |
| **Insertion Loss** | 1805 ~ 1880 MHz | dB | - | 2.9 | 4.5 |
| **Amplitude Ripple** | 1805 ~ 1880 MHz | dB | - | 1.6 | 3.3 |
| **VSWR (Input)** | 1805 ~ 1880 MHz | - | - | 2.1 | 2.5 |
| **VSWR (Output)** | 1805 ~ 1880 MHz | - | - | 2.1 | 2.3 |
| **Amplitude Balance (\|S21\|/\|S31\|)** | 1805 ~ 1880 MHz | dB | -1.3 | -0.6/+1.0 | +1.3 |
| **Phase Balance ((ΦS21-ΦS31)+180)** | 1805 ~ 1880 MHz | deg | -12 | -3/+3 | +12 |
| **Attenuation** (Reference level from 0 dB) | | | | | |
| 10 ~ 1300 MHz | | dB | 40 | 58 | - |
| 1300 ~ 1705 MHz | | dB | 40 | 53 | - |
| 1705 ~ 1785 MHz | | dB | 38 | 45 | - |
| 1920 ~ 1980 MHz | | dB | 24 | 28 | - |
| 1980 ~ 3000 MHz | | dB | 30 | 38 | - |
| 3000 ~ 5000 MHz | | dB | 30 | 58 | - |
| 5000 ~ 6000 MHz | | dB | 30 | 46 | - |

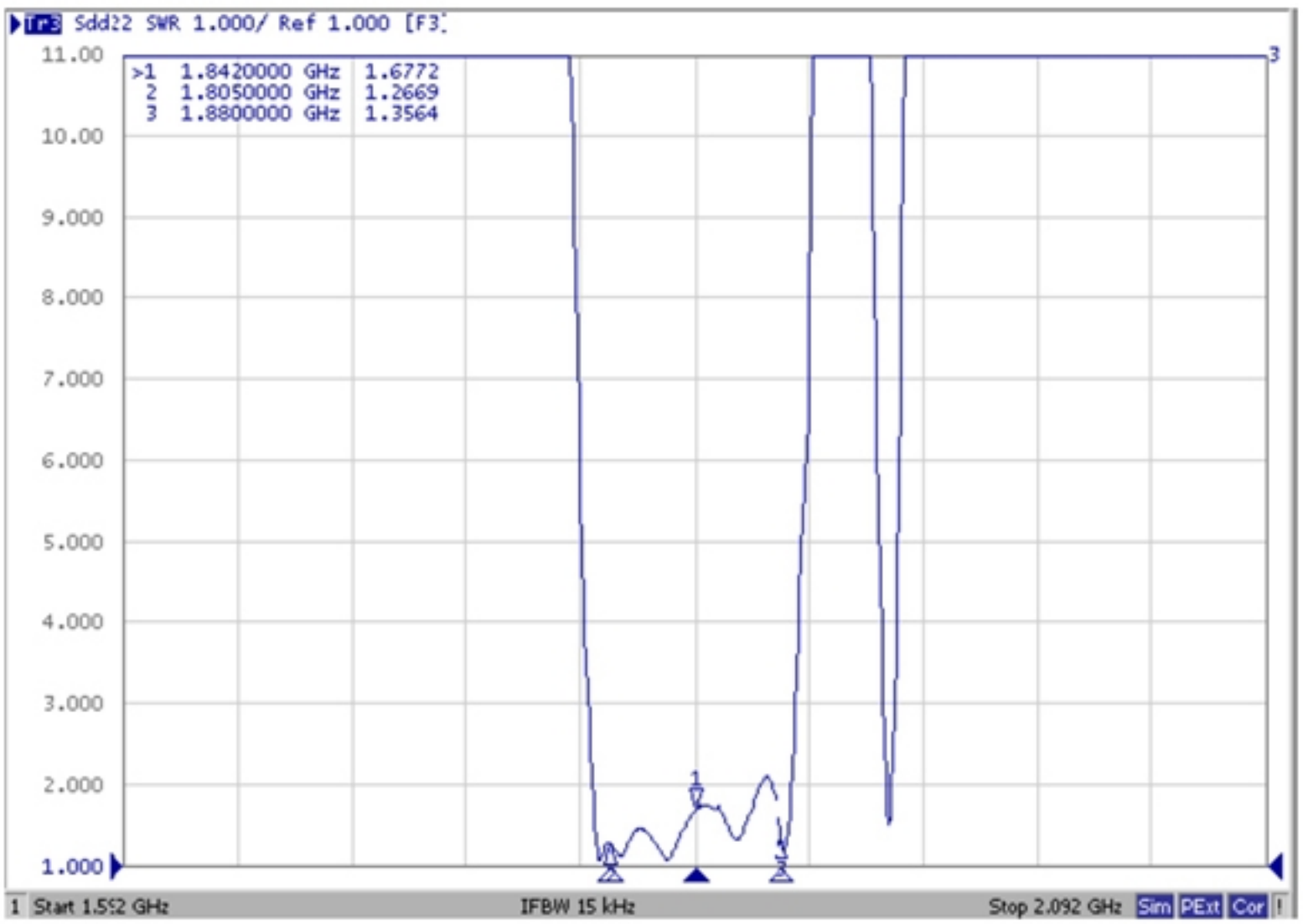
## C. EFREQUENCY CHARACTERISTICS:



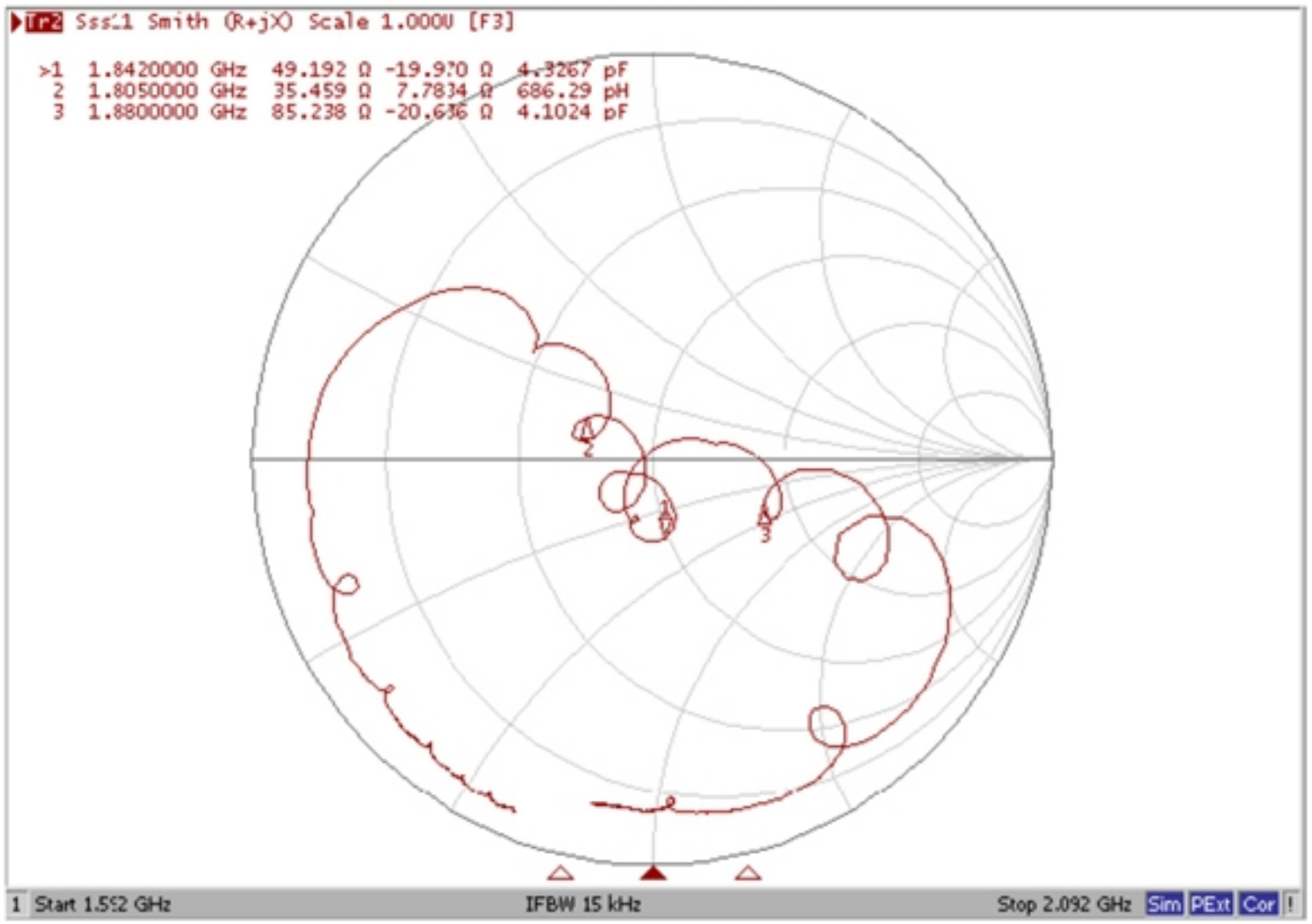



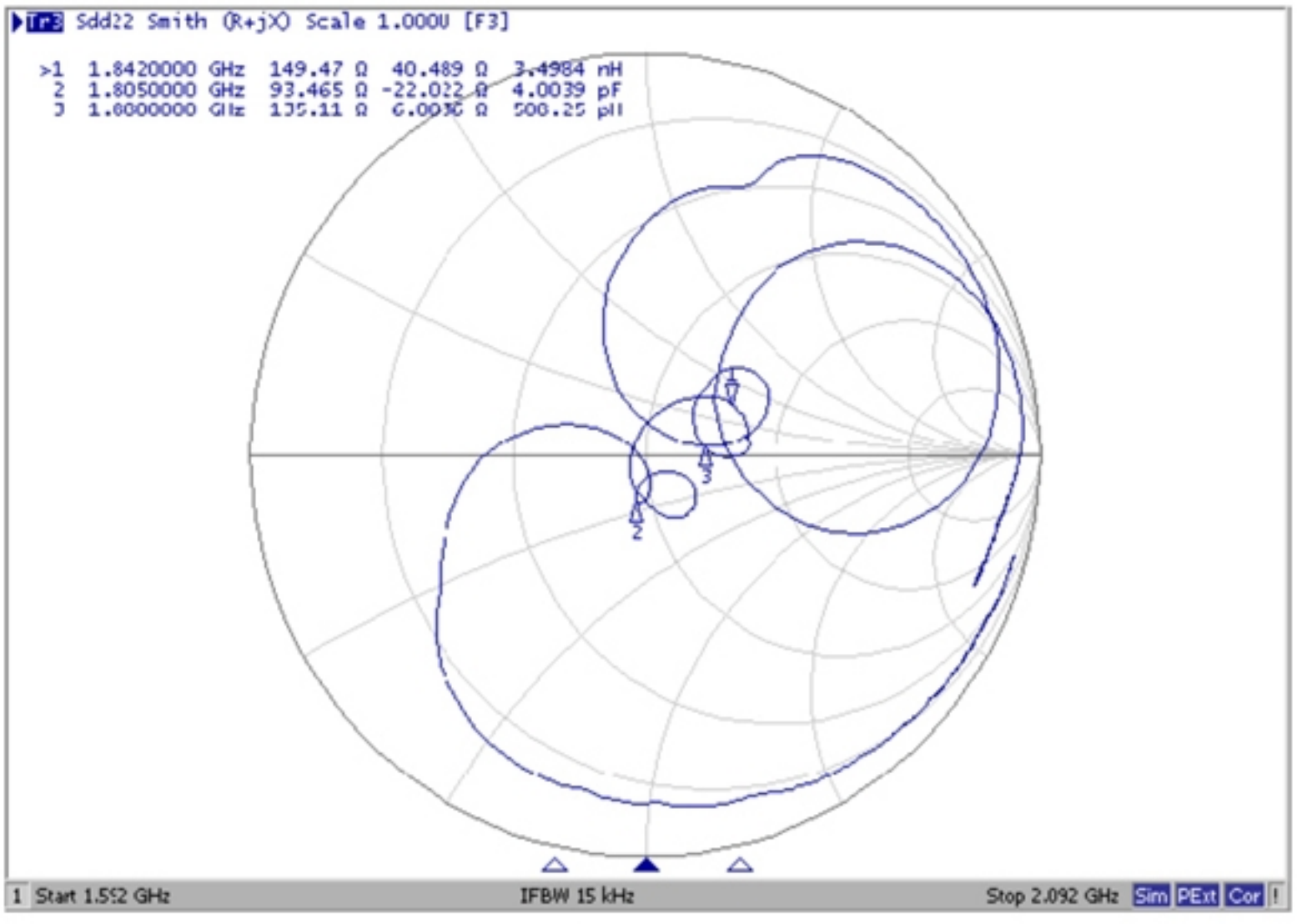
# VSWR


Sss'1 SWR 1.000/ Ref 1.000 [F3]
>1 1.8420000 GHz 1.4929
2 1.8050000 GHz 1.4752
3 1.8800000 GHz 1.8504
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 1.552 GHz
IFBW 15 kHz
Stop 2.092 GHz
Sim
PExt
Cor

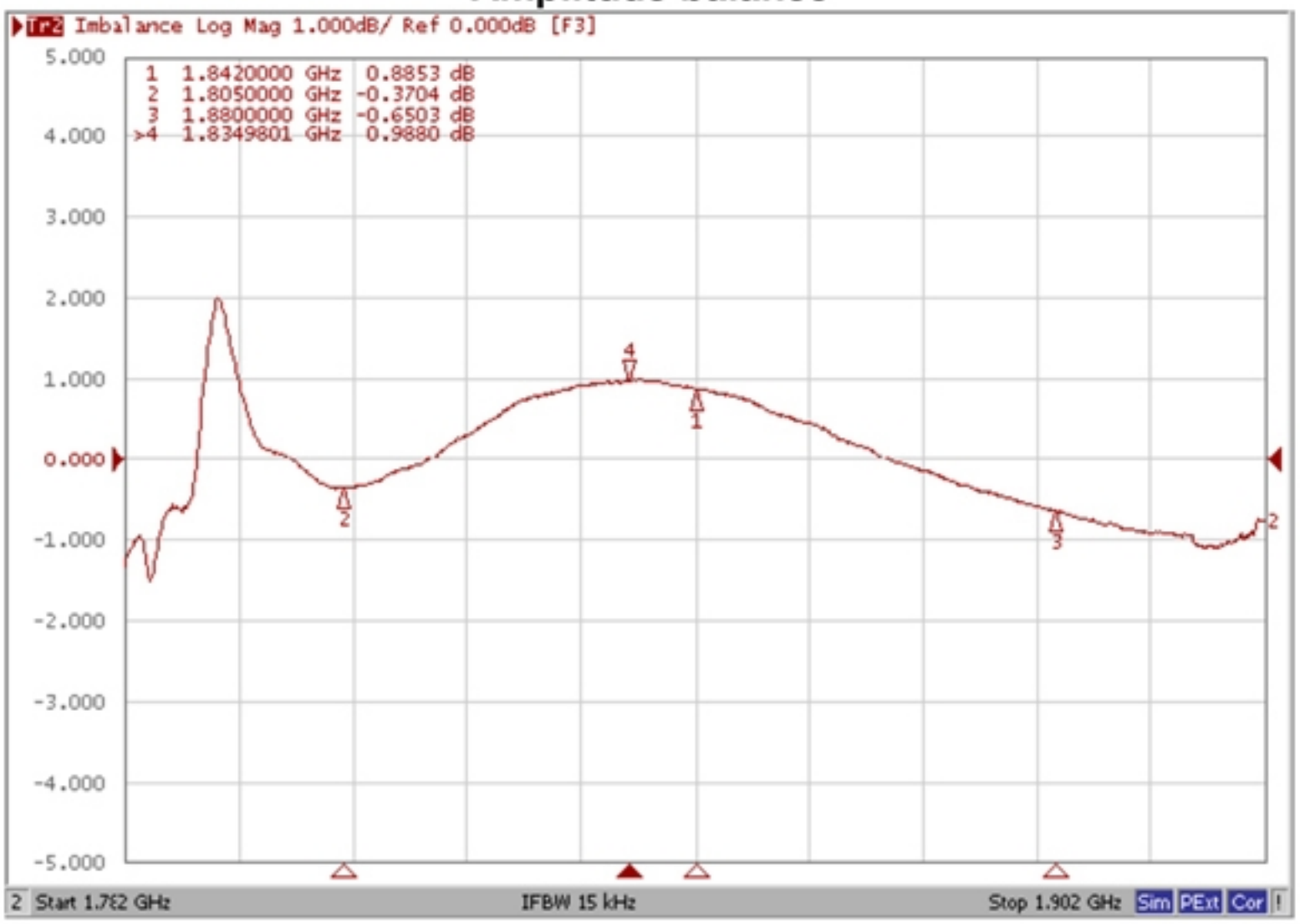

Sdd22 SWR 1.000/ Ref 1.000 [F3]
>1 1.8420000 GHz 1.6772
2 1.8050000 GHz 1.2669
3 1.8800000 GHz 1.3564
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 1.552 GHz
IFBW 15 kHz
Stop 2.092 GHz
Sim
PExt
Cor

## Smith Chart

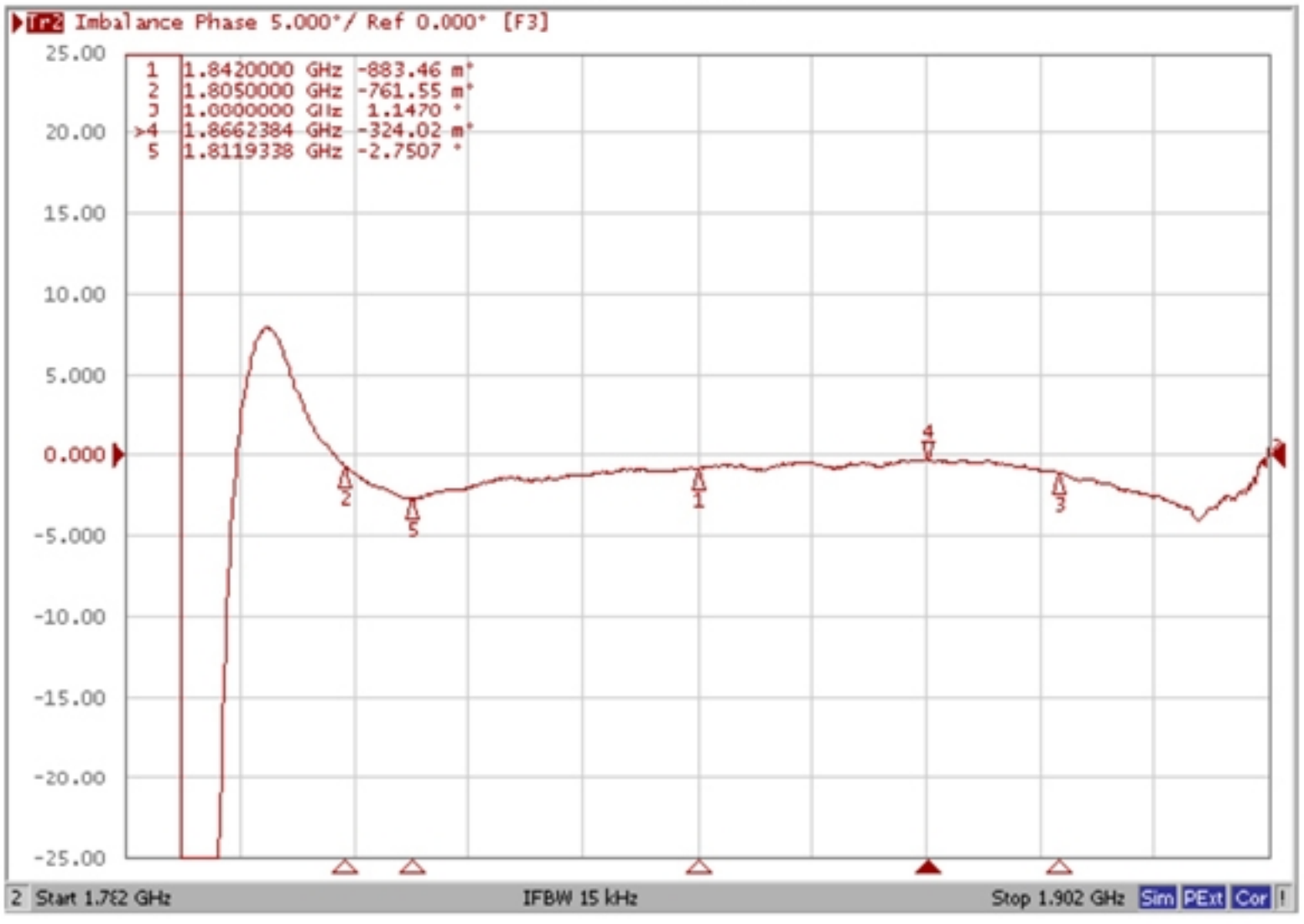

Tr2 Ss:1 Smith (R+jX) Scale 1.000U [F3]
>1 1.8420000 GHz 49.192 Ω -19.970 Ω 4.3267 pF
2 1.8050000 GHz 35.459 Ω 7.7834 Ω 686.29 pH
3 1.8800000 GHz 85.238 Ω -20.636 Ω 4.1024 pF
1 Start 1.552 GHz
IFBW 15 kHz
Stop 2.092 GHz
Sim PExt Cor


Tr3 Sdd22 Smith (R+jX) Scale 1.000U [F3]
>1 1.8420000 GHz 149.47 Ω 40.489 Ω 3.4984 nH
2 1.8050000 GHz 93.465 Ω -22.022 Ω 4.0039 pF
3 1.8800000 GHz 135.11 Ω 6.0030 Ω 500.25 pH
1 Start 1.552 GHz
IFBW 15 kHz
Stop 2.092 GHz
Sim PExt Cor

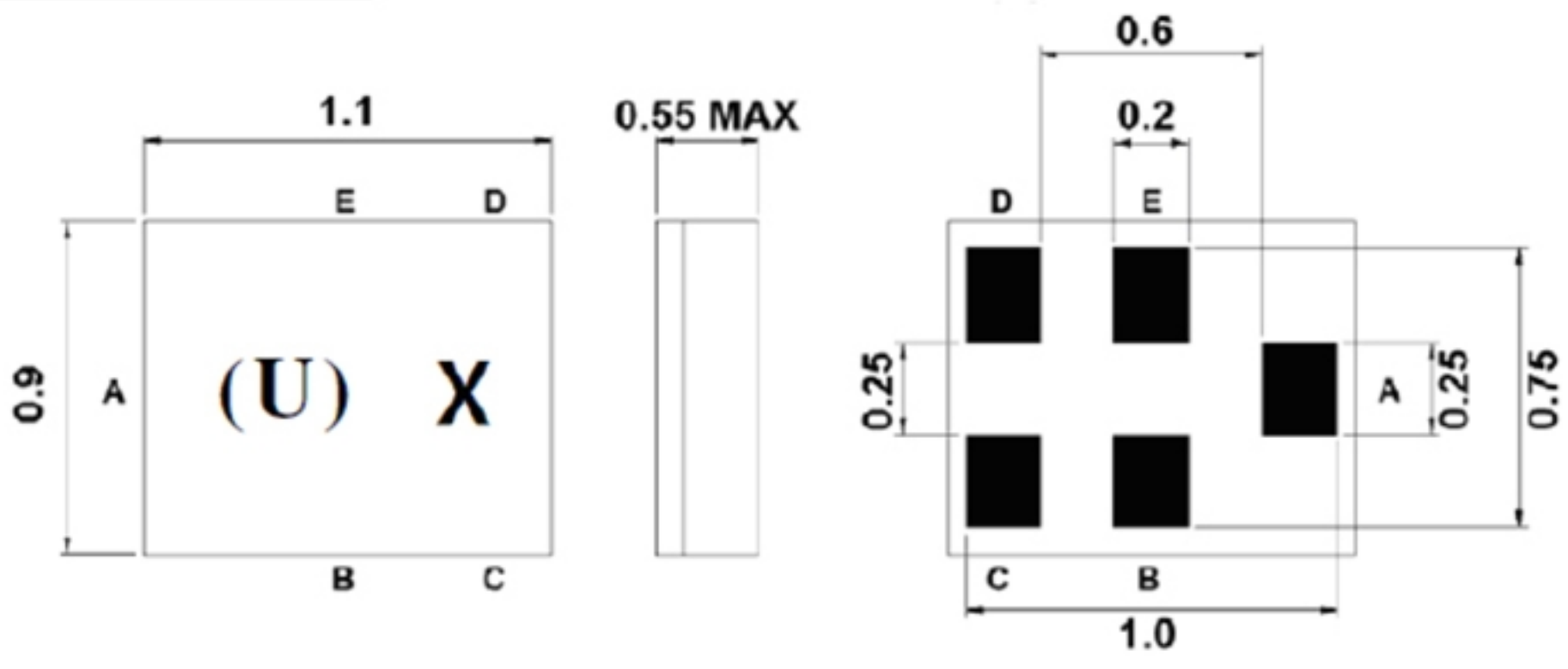
## Amplitude balance




## Phase balance



## D. OUTLINE DRAWING:




| Pin Description | |
|---|---|
| B, E | Ground |
| A | Input |
| C, D | Balanced Output |

**Marking Descriptions:**

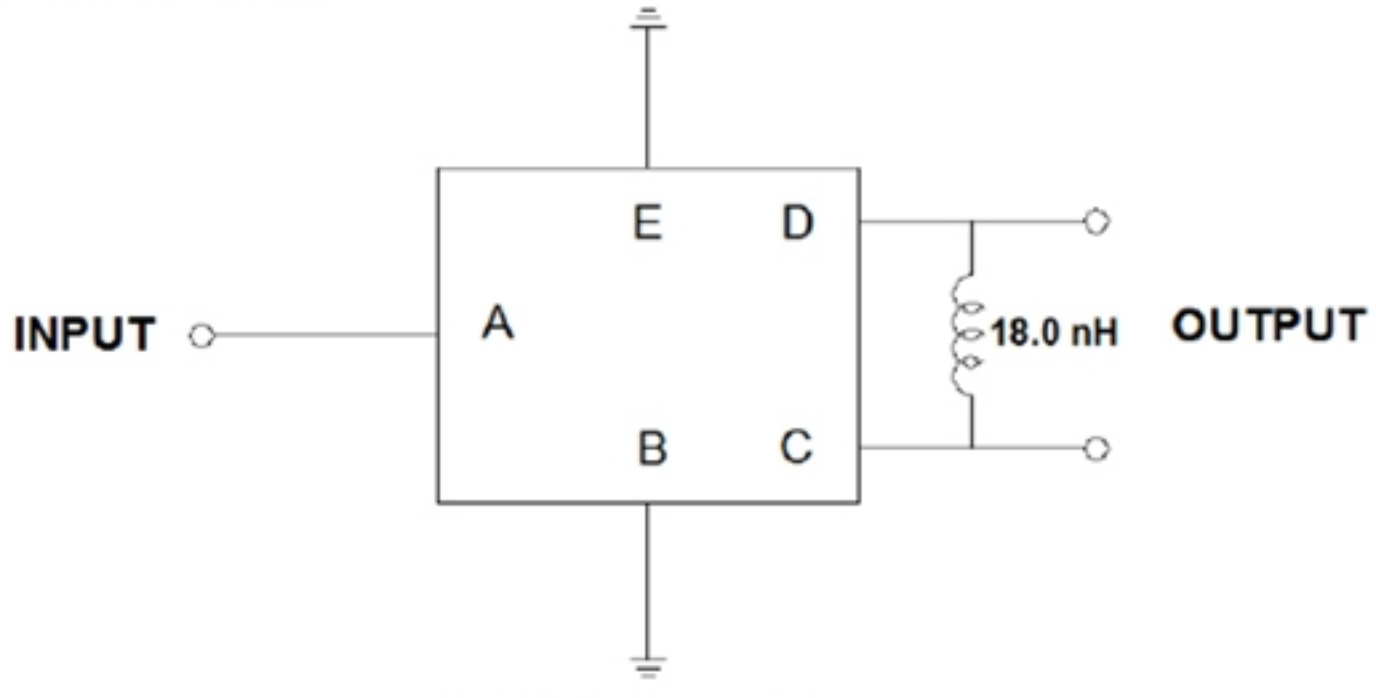
(U): Series Number

X : Date Code (Year/Month Code)(Follow the table)

**Date Code (Year/Month Code)**

| YEAR/Month | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 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 |

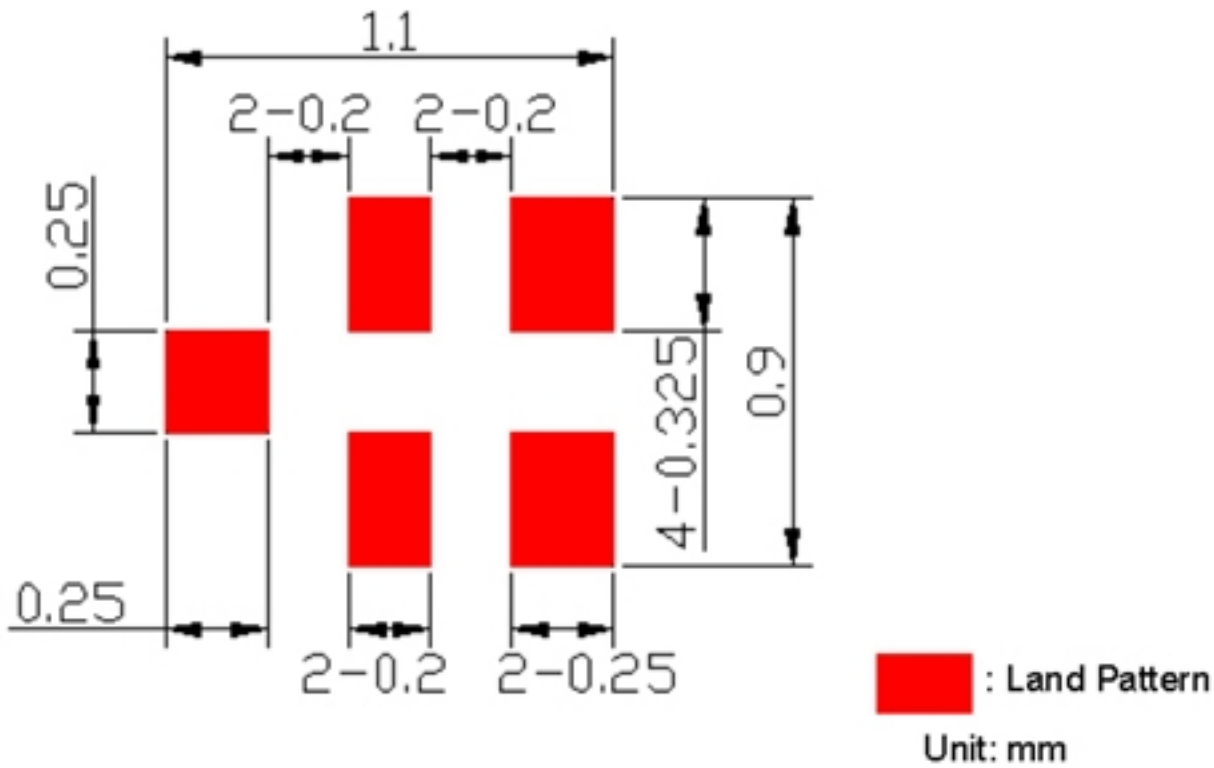
## E. MEASUREMENT CIRCUIT:




Source Impedance : 50

Load Impedance : 100

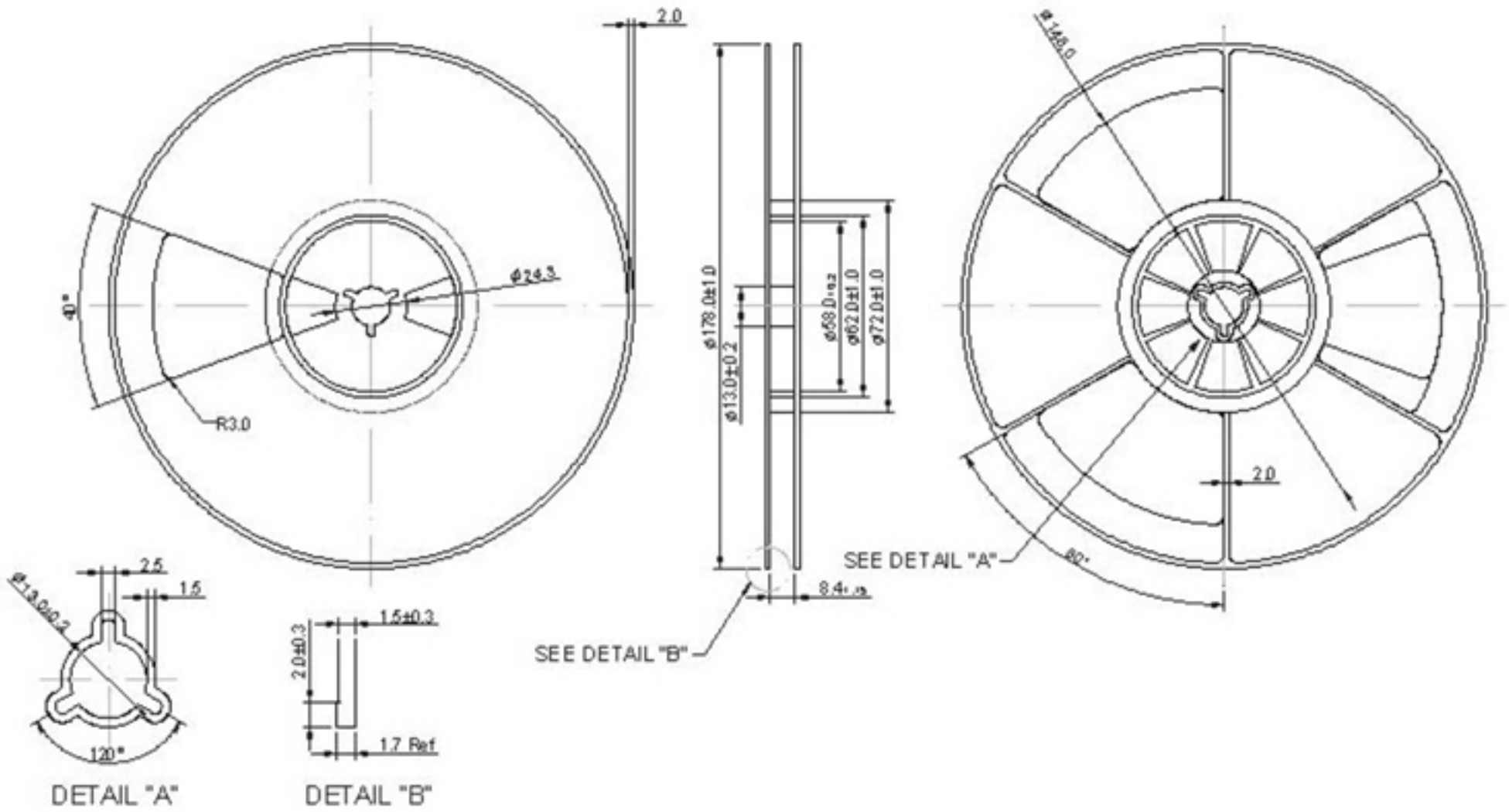
## F. PCB Footprint:



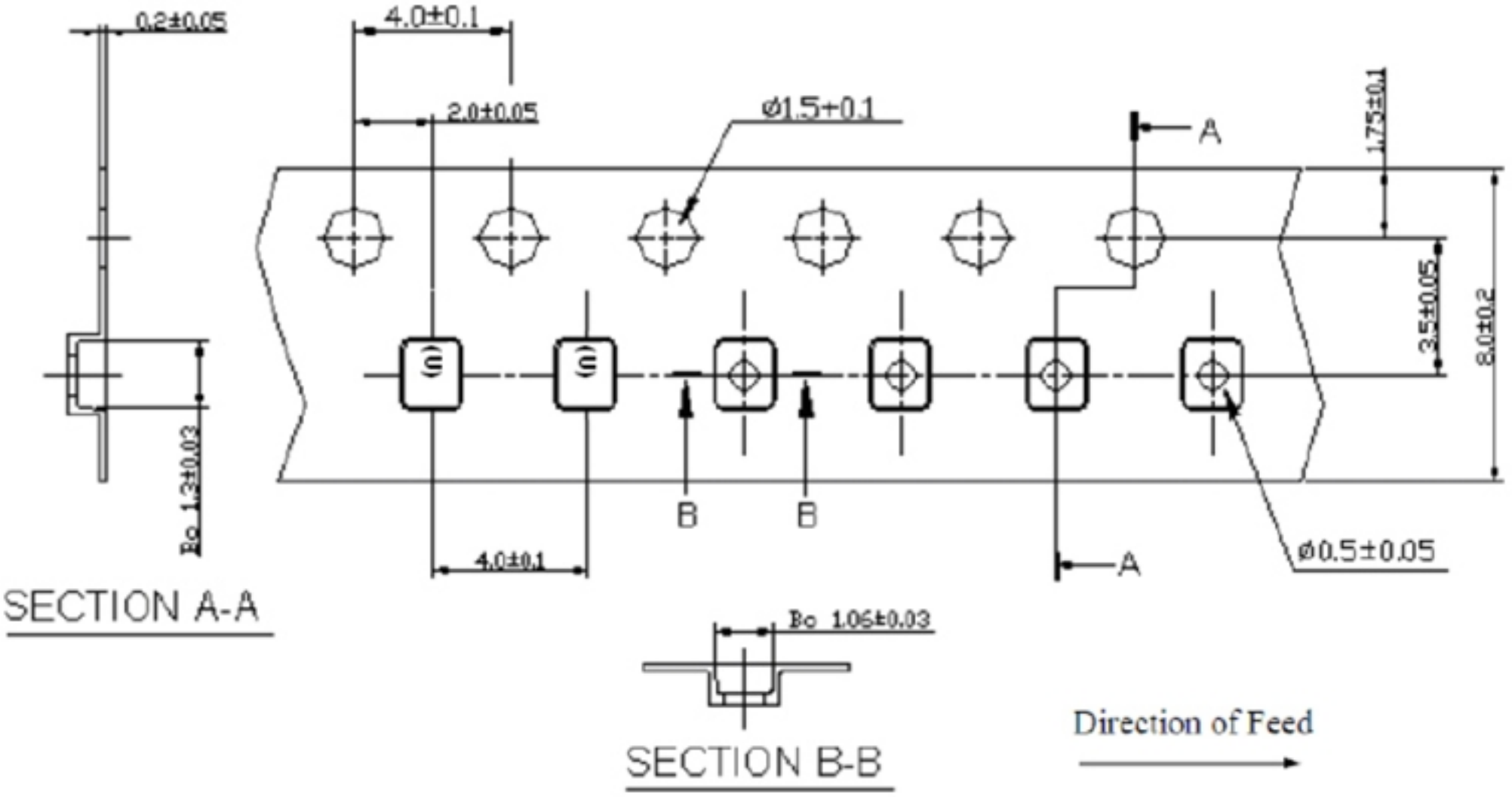

## G. PACKING: (Ref: WI-75M03)

1. REEL DIMENSION

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



## 2. TAPE DIMENSION




## H. 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.