



TAI-SAW TECHNOLOGY CO., LTD.

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Product Specifications Approval Sheet

Product Description: LTE Filter 2058.5 MHz / 3750 MHz / 5537.5MHz 2.5x2.0 mm

TST Part No.: TL0045AA0090

Customer Part No.: _____

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

Checked by: _____ Nina Chen *Nina Chen*

Approved by: _____ Kazuma Lee *Kazuma Lee*

Date: _____ 2022/04/15

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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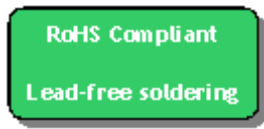
LTE Filter 2058.5 MHz / 3750 MHz / 5537.5MHz 2.5x2.0 mm

MODEL NO.: TL0045AA0090

REV.1

A. Maximum Rating:

1. Operating temperature range: -40°C to +85°C
2. Storage temperature range: -40 °C to +85 °C
3. Impedance : 50Ω
4. Moisture Sensitive Level: Level 1 (**MSL 1**)



B. Electrical Characteristics:

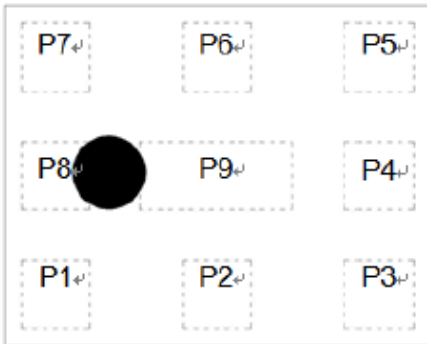
| Item (Low Band) | | Unit | Typ |
|-------------------------|-----------------|------|------|
| Center frequency | 2058.5 MHz | MHz | |
| Insertion Loss (at25°C) | 1427~1511MHz | dB | 0.23 |
| | 1559~1563MHz | dB | 0.23 |
| | 1574~1511MHz | dB | 0.23 |
| | 1598~1606MHz | dB | 0.24 |
| | 1710~1785MHz | dB | 0.28 |
| | 1805~1885MHz | dB | 0.30 |
| | 1930~1990MHz | dB | 0.35 |
| | 2300~2496MHz | dB | 0.68 |
| | 2496~2690MHz | dB | 0.95 |
| Return Loss | 1427 ~ 2690 MHz | dB | 18 |
| Isolation | 617~960MHz | dB | 30 |
| | 1427~1606MHz | dB | 28 |
| | 1695~1710MHz | dB | 28 |
| | 1710~2200MHz | dB | 28 |
| | 2300~2690MHz | dB | 24 |
| | 3300~4200MHz | dB | 21 |
| | 5150~5925MHz | dB | 36 |
| Attenuation | 3300~3700MHz | dB | 21 |
| | 3700~3800MHz | dB | 32 |
| | 3800~4200MHz | dB | 28 |
| | 4400~5000MHz | dB | 28 |
| | 5150~5925MHz | dB | 32 |
| | 5925~12750MHz | dB | 28 |

| Item (Middle Band) | | Unit | Typ |
|-------------------------|-----------------|------|------|
| Center frequency | 3750MHz | MHz | |
| Insertion Loss (at25°C) | 3300 ~ 4200 MHz | dB | 1.41 |
| Return Loss | 3300 ~ 4200 MHz | dB | 15 |
| Isolation | 617~960MHz | dB | 38 |
| | 1427~1606MHz | dB | 36 |
| | 1695~1710MHz | dB | 36 |
| | 1710~2690MHz | dB | 36 |
| | 3300~4200MHz | dB | 40 |
| | 5150~5925MHz | dB | 31 |
| Attenuation | 500~1606MHz | dB | 28 |
| | 1606~2400MHz | dB | 26 |
| | 2400~2500MHz | dB | 24 |
| | 2500~2690MHz | dB | 24 |
| | 2700~3150MHz | dB | 2.0 |
| | 4400~4900M | dB | 3.3 |
| | 4900~5150MHz | dB | 32 |
| | 5150~5925MHz | dB | 32 |
| | 6250~6550MHz | dB | 44 |
| | 6600~8400MHz | dB | 23 |
| | 8400~9900MHz | dB | 19 |
| | 9900~12600MHz | dB | 15 |
| 13200~16800MHz | dB | 22 | |

| Item (High Band) | | Unit | Typ |
|-------------------------|-----------------|------|------|
| Center frequency | 5537.5MHz | MHz | |
| Insertion Loss (at25°C) | 5150 ~ 5925 MHz | dB | 0.75 |
| Return Loss | 5150 ~ 5925 MHz | dB | 13 |
| Isolation | 617~960MHz | dB | 35 |
| | 1427~1606MHz | dB | 35 |
| | 1710~2690MHz | dB | 23 |
| | 3300~4200MHz | dB | 20 |
| | 5150~5925MHz | dB | 23 |
| Attenuation | 100~960MHz | dB | 38 |
| | 1166~1249MHz | dB | 37 |
| | 1427~1610MHz | dB | 35 |
| | 1695~2200MHz | dB | 35 |
| | 2300~2370MHz | dB | 40 |
| | 2400~2484MHz | dB | 42 |
| | 2496~2690MHz | dB | 40 |
| | 3300~4200MHz | dB | 19 |
| | 10300~11850MHz | dB | 25 |
| 15450~17775MHz | dB | 8 | |

C. Outline Drawing:

Top view

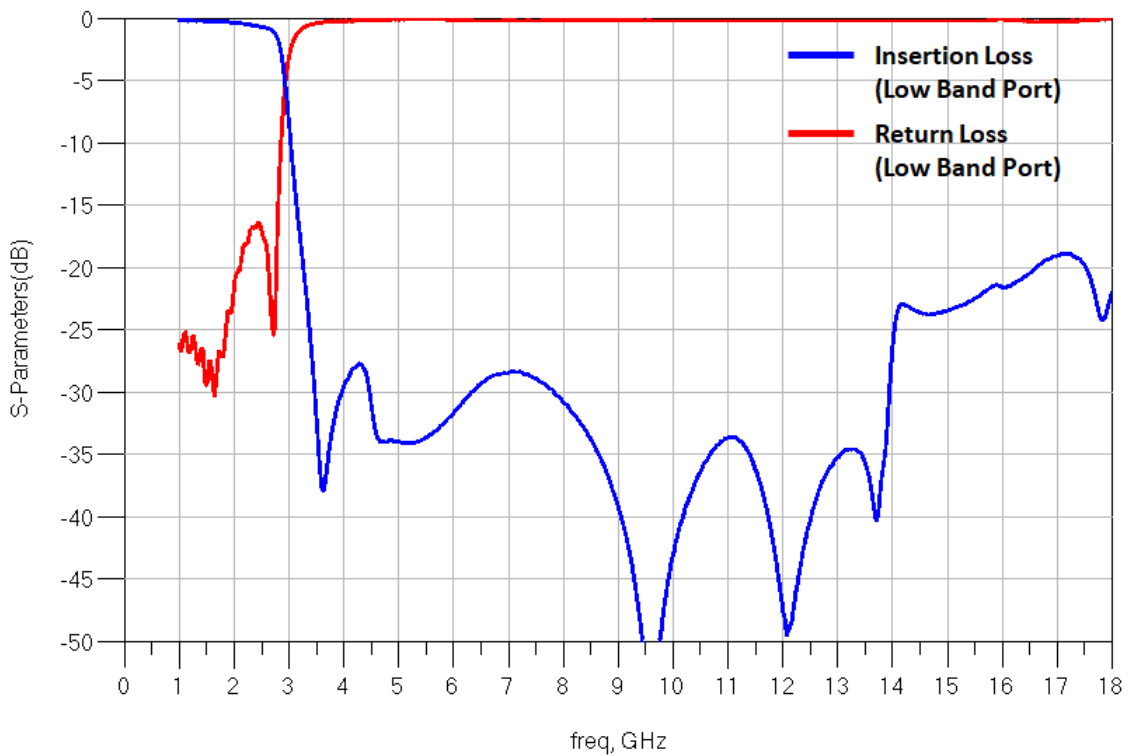


| PIN | Connection | PIN | Connection |
|-----|------------------|-----|---------------|
| P1 | Common Port | P6 | GND |
| P2 | GND | P7 | Low Band Port |
| P3 | High Band Port | P8 | GND |
| P4 | GND | P9 | GND |
| P5 | Middle Band Port | | |

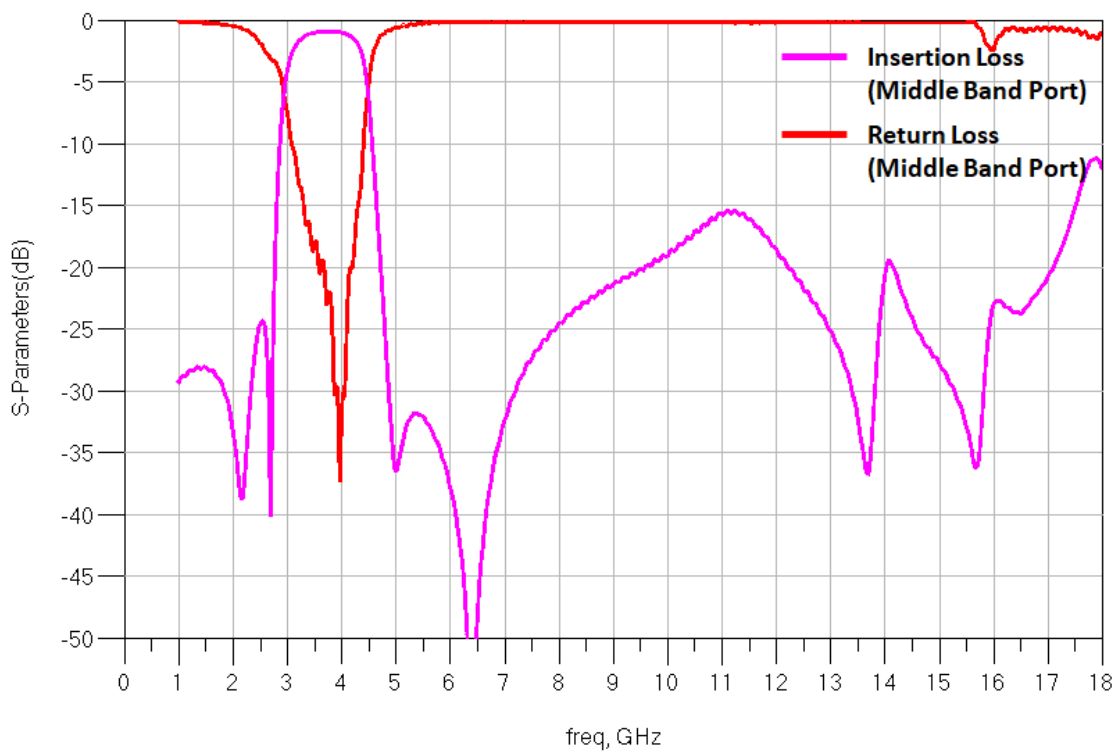
| Figure | Symbol | Dimension (mm) |
|--------------------|--------|-----------------|
| <p>Top view</p> | L | 2.50 ± 0.15 |
| | W | 2.00 ± 0.15 |
| <p>Side view</p> | T | 0.70 ± 0.10 |
| | A | 0.30 ± 0.10 |
| <p>Bottom view</p> | B | 0.40 ± 0.10 |
| | C | 0.55 ± 0.10 |
| | D | 0.40 ± 0.10 |
| | E | 0.90 ± 0.10 |
| | F | 0.30 ± 0.10 |
| | | |

D. Frequency Characteristics:

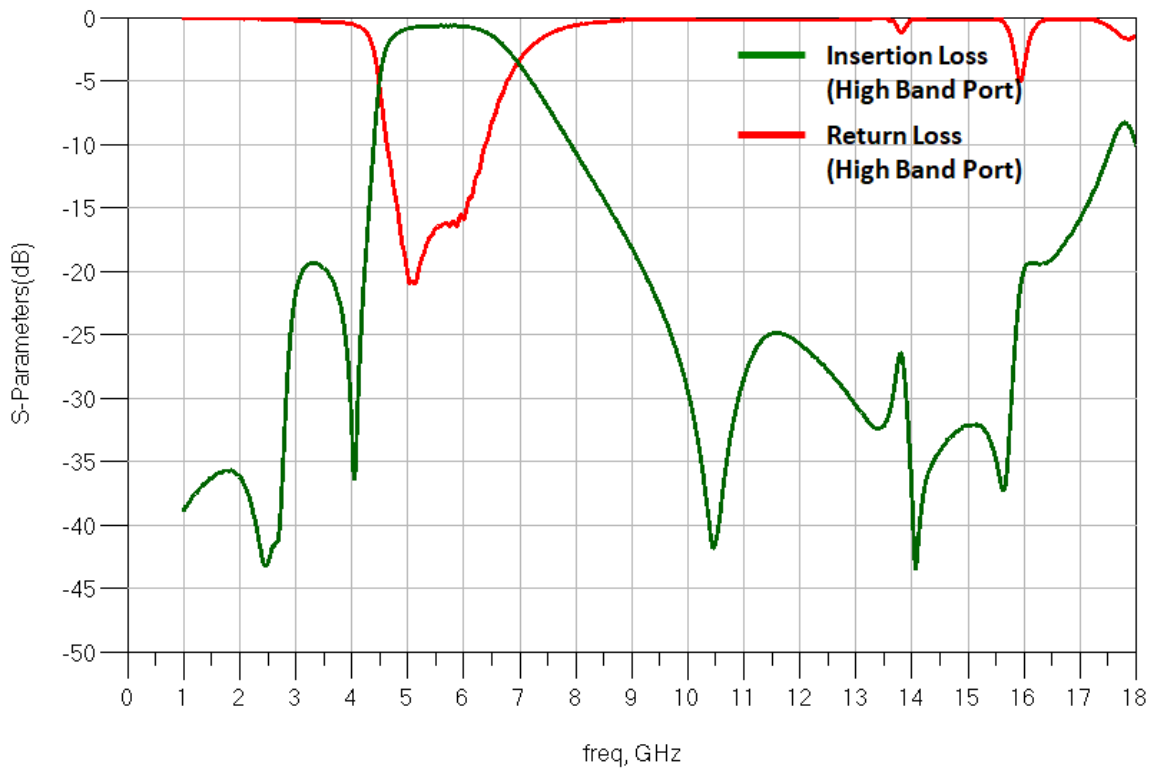
Low Band



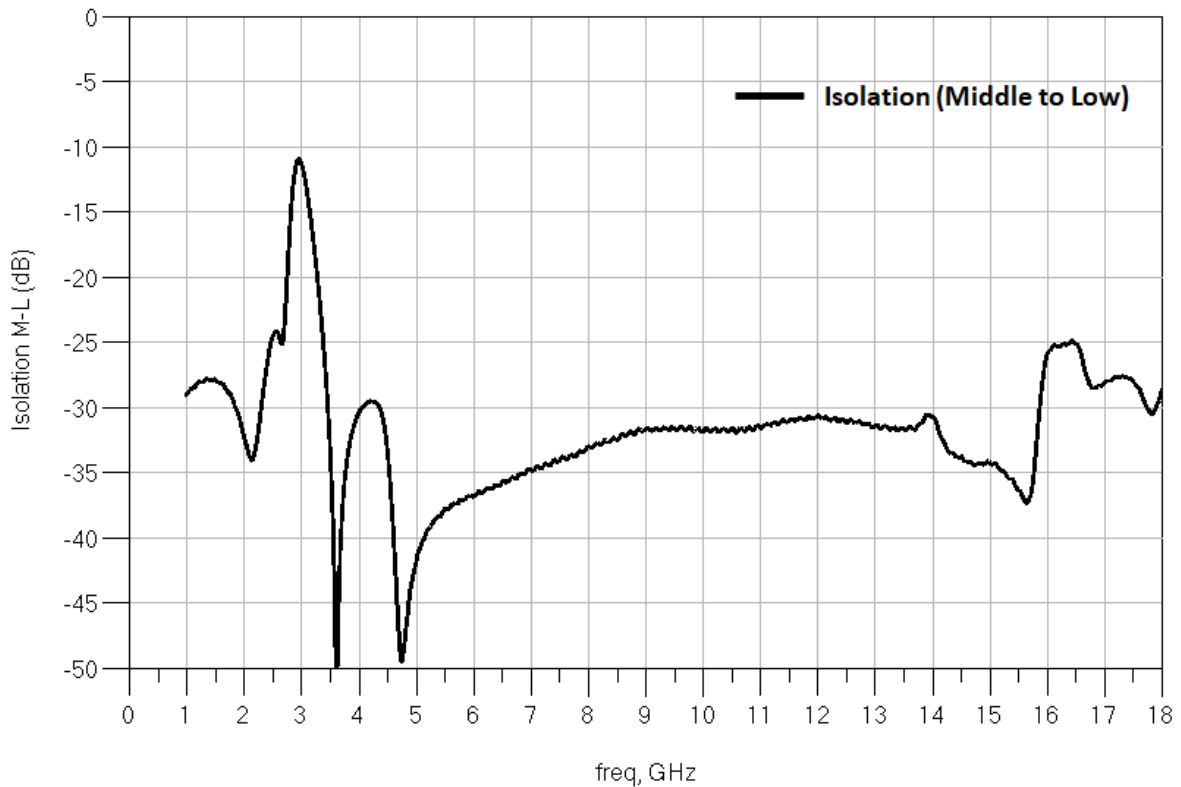
Middle Band



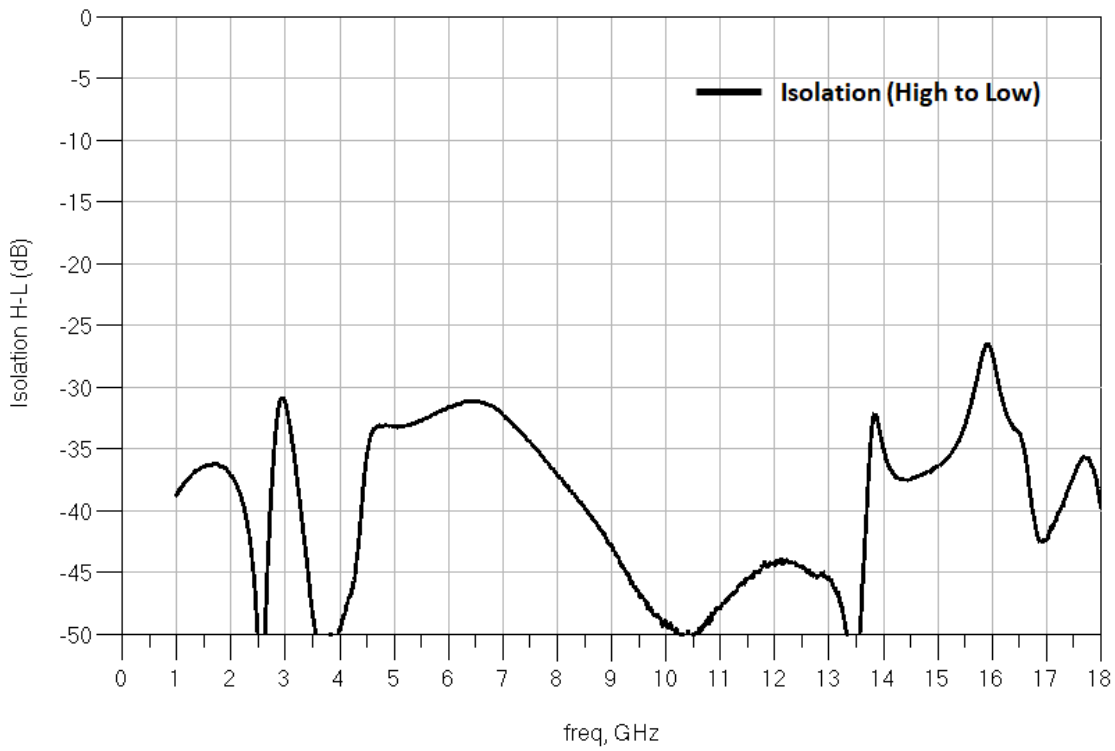
High Band



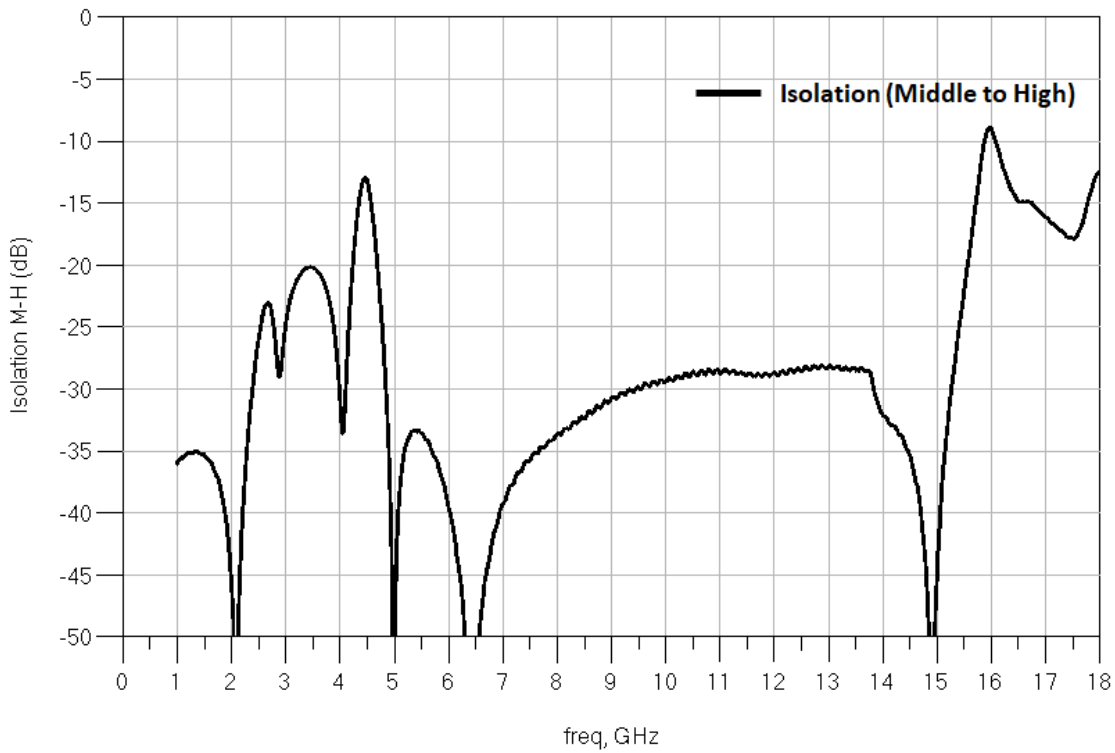
Isolation (Middle to Low)



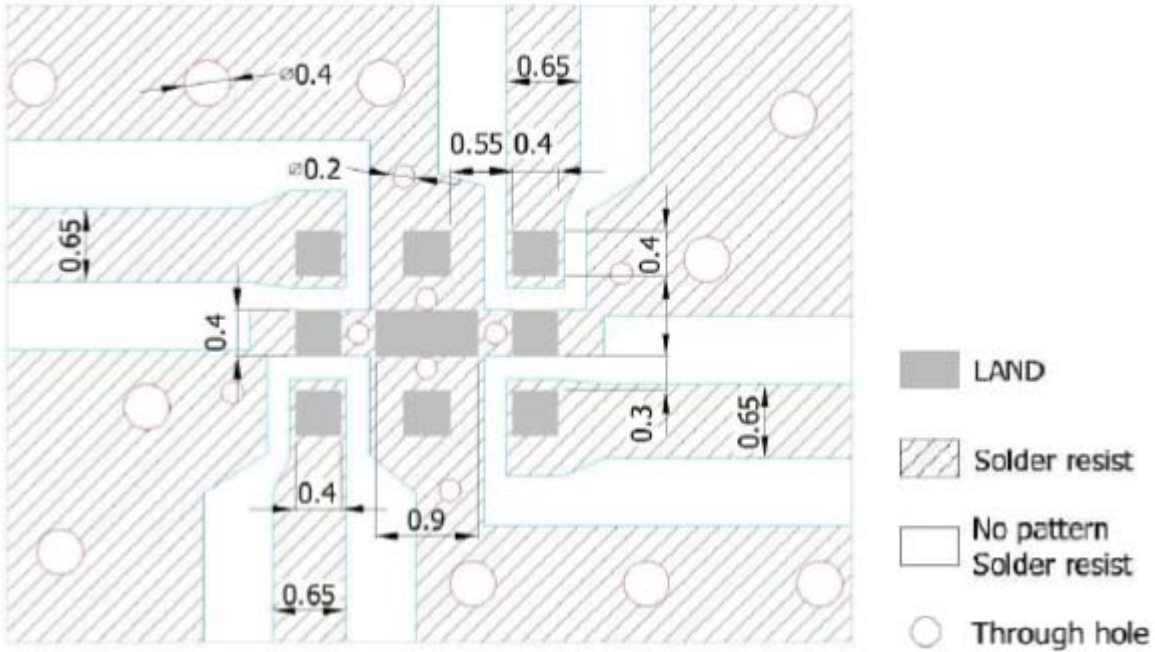
Isolation (High to Low)



Isolation (Middle to High)



E. PCB Footprint:

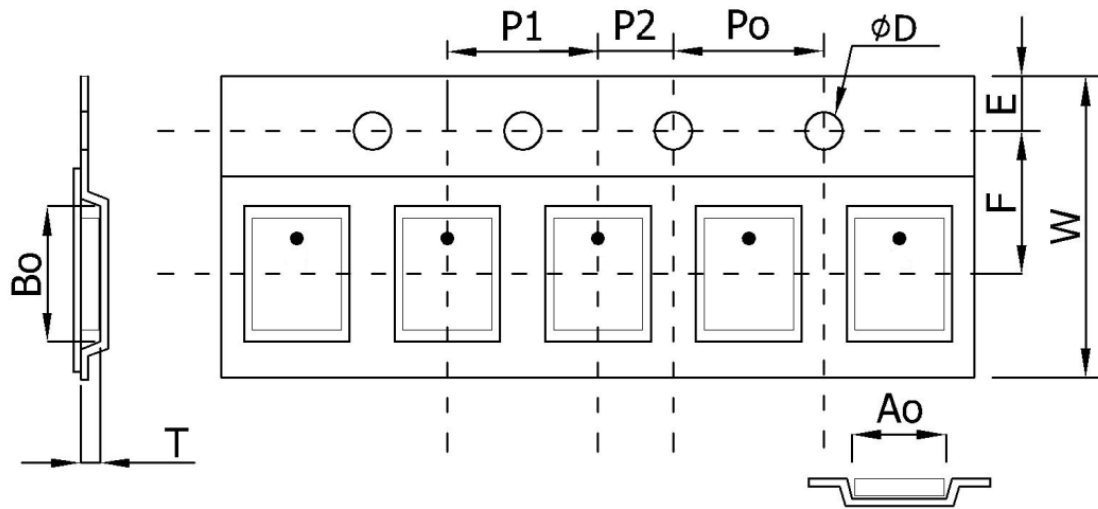


Unit: mm

Line width to be designed to match 50 Ω characteristic impedance , depending on PCB material and thickness.

F. Packing:

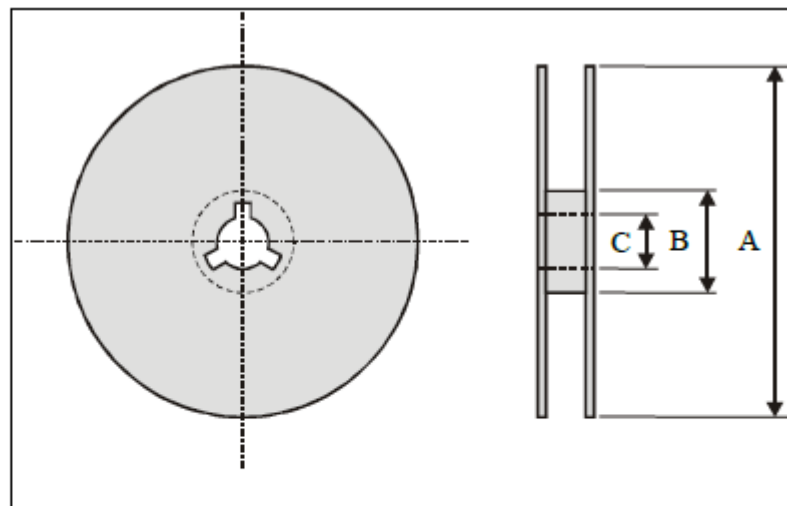
1. TAPE DIMENSION



Plastic Tape specifications (unit :mm)

| | | | | | |
|----------------|-------------|-------------|-------------|-------------|-------------|
| Index | Ao | Bo | øD | T | W |
| Dimension (mm) | 2.27 ± 0.10 | 2.74 ± 0.10 | 1.55 ± 0.05 | 1.18 ± 0.10 | 8.00 ± 0.10 |
| Index | E | F | Po | P1 | P2 |
| Dimension (mm) | 1.75 ± 0.10 | 3.50 ± 0.05 | 4.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.05 |

2. REEL DIMENSION



| | | | |
|----------------|---------|--------|--------|
| Index | A | B | C |
| Dimension (mm) | ø 178.0 | ø 60.0 | ø 13.0 |

Taping Quantity: 2000 pieces per 7" reel

G. Recommended Solder 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.

