

# MBDP1718D18

## High Isolation Band3 BAW Duplexer

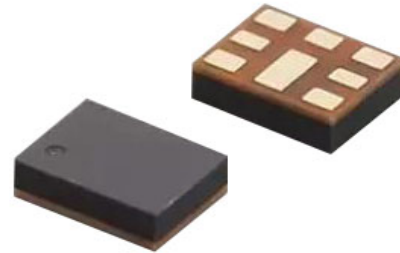


### Description

MBDP1718 is a high performance duplexer designed for applications in LTE Band3 (1710~1785 MHz TX, 1805~1880 MHz RX).

provides high-Q filters and meets requirements of low insertion loss, high return loss decreases loss at Tx port, high out-of-band attenuation.

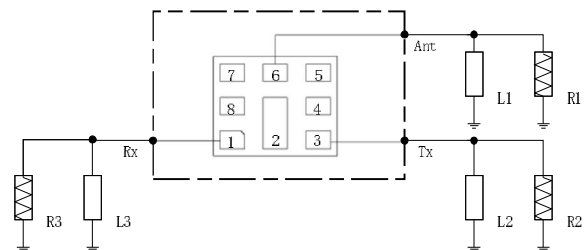
MBDP1718 uses chip scale packaging (CSP) technology to assembly the filters into a molded chip-on-board module with the footprint of 1.8mm x 1.4mm and height of 0.6mm.



8 Pin 1.8 x 1.4 x 0.6mm Package

### Functional Block Diagram

#### Top View



### Features

- Miniature Size  
1.8 mm x 1.4 mm x 0.6 mm
- Insertion Loss:
  - Tx 1.3dB Typ.
  - Rx 1.4dB Typ.
- Tx-RX Isolation:
  - Tx Pass Band 65 dB Typ.
  - Rx Pass Band 61 dB Typ.
- Tx Input Power
  - +29dBm
- Rx Input Power
  - +29dBm
- ESD protection ability: TBD
- Moisture Sensitivity: MSL3
- Storage Temperature: -40 to +85 °C

### Environmental

- Full implement with RoHS compliant
- Lead Free (Pb free)

Reference Des.	Value	Description
R1	50ohm	
R2	50ohm	
R3	50ohm	
L1	3 nH	Inductor
L2	7.5 nH	Inductor
L3	5.1 nH	Inductor

### Pin Connection

No.	Function
1	Rx
3	Tx
6	Ant
2,4,5,7,8	Ground

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### Electrical Specification

Transmit Port to Antenna Port				
Parameter (Operation Temperature: -20~85°C)	Min <sup>(2)</sup>	Typ <sup>(1)</sup>	Max <sup>(2)</sup>	Unit
Insertion Loss (1710~1785MHz)	/	1.3	3.5	dB
Ripple(1710~1785MHz)	/	2.2	2.5	dB
VSWR (1710~1785MHz, ANT Port)	/	1.3	2.0	/
VSWR (1710~1785MHz, TX Port)	/	1.2	2.0	/
(500~1565.4 MHz)	28	37	/	dB
(1565.4~1573.4 MHz), Wideband GPS	38	42	/	dB
(1573.4~1577.5 MHz), Regular GPS	38	43	/	dB
(1597.6~1605.9 MHz), GLONASS	49	55	/	dB
(1805~1880 MHz), RX Band	48	60	/	dB
(1920~1980 MHz), Band1 TX	36	40	/	dB
(2110~2170 MHz), Band1 RX	38	43	/	dB
(2400~2500 MHz), ISM Band	43	47	/	dB
(2620~2690 MHz), Band7 RX	37	41	/	dB
(3420~3570 MHz), 2f0	30	35	/	dB
(5130~5355 MHz), 3f0	15	18	/	dB

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Antenna Port to Receive Port				
Parameter (Operation Temperature: -20~85°C)	Min <sup>(2)</sup>	Typ <sup>(1)</sup>	Max <sup>(2)</sup>	Unit
Insertion Loss (1805~1880MHz)	/	1.4	3.5	dB
Ripple(1805~1880MHz)	/	2.2	2.5	dB
VSWR(1805~1880MHz, ANT Port)	/	1.3	2.0	/
VSWR (1805~1880MHz, RX Port)	/	1.3	2.0	/
(500~1710 MHz)	32	45	/	dB
(1710~1785 MHz), TX Band	53	65	/	dB
(2400~2500 MHz), ISM Band	45	51	/	dB
(2500~2570 MHz), Band7 TX	48	52	/	dB
(2570~3515 MHz)	48	55	/	dB
(3610~3760 MHz), 2f <sub>0</sub>	48	58	/	dB
(4900~5950 MHz), ISM 5G	23	32	/	dB
(5415~5640 MHz), 3f <sub>0</sub>	25	28	/	dB

Transmit Port to Receive Port				
Parameter(Operation Temperature: -20~85°C)	Min <sup>(2)</sup>	Typ <sup>(1)</sup>	Max <sup>(2)</sup>	Unit
<b>Isolation</b>				
(1710~1785 MHz)	50	65	/	dB
(1805~1880 MHz)	48	61	/	dB

### Notes:

Data is the integrated value of the linear s-parameter over indicated band

- (1) Average value within band at 25 °C
- (2) Min/Max value within band at 25 °C

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### Typical Performance at Tc=25°C

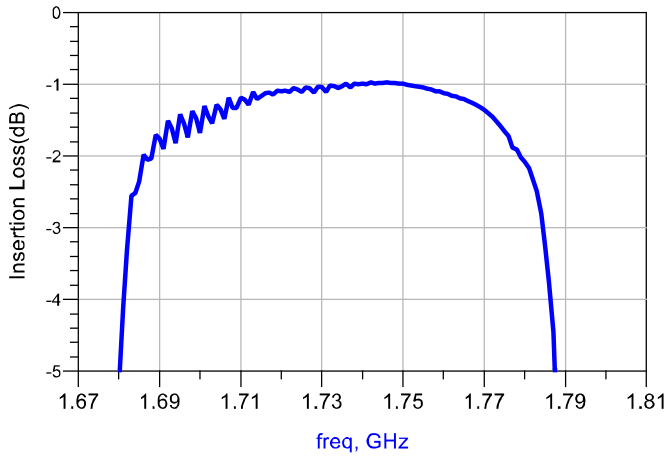


Figure1. TX-ANT Passband

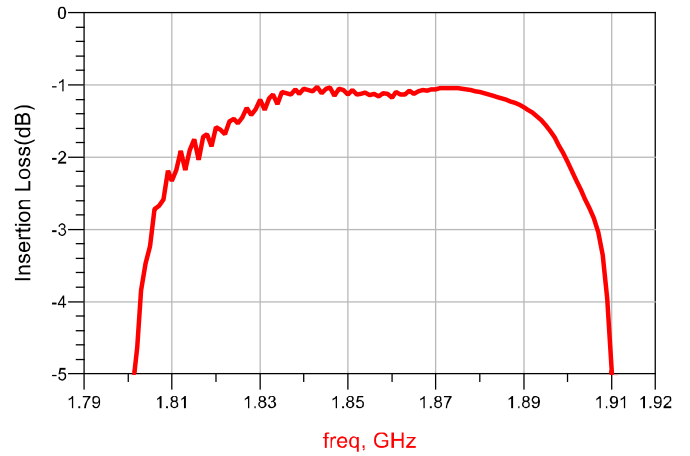


Figure2. ANT-RX Passband

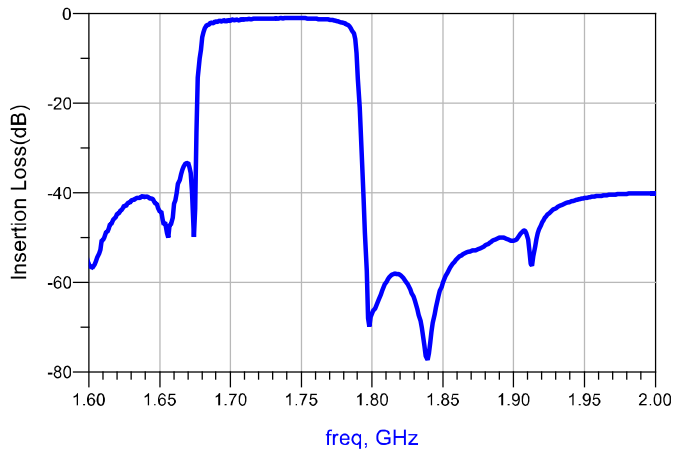


Figure3. TX-ANT

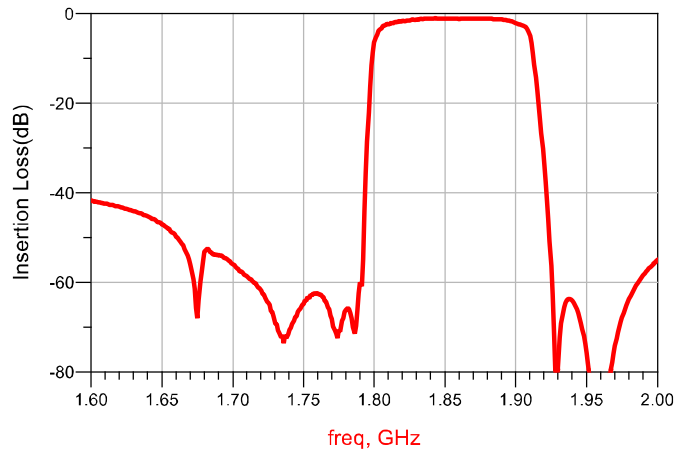


Figure4. ANT-RX

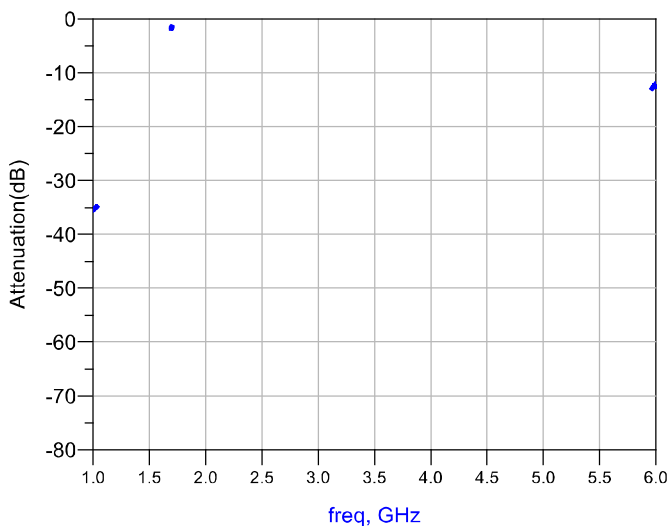


Figure5. TX-ANT Wideband

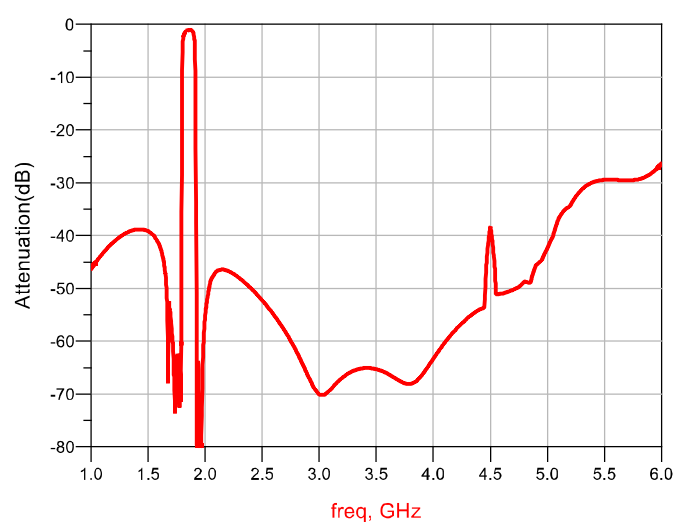


Figure6. ANT-RX Wideband

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### Typical Performance at Tc=25°C

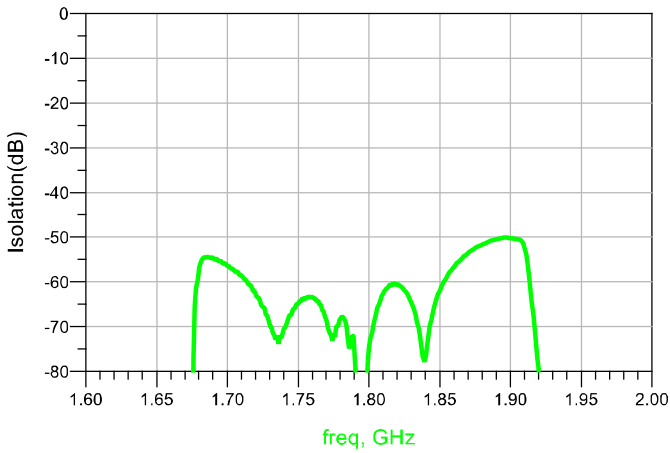


Figure7. TX - RX Isolation

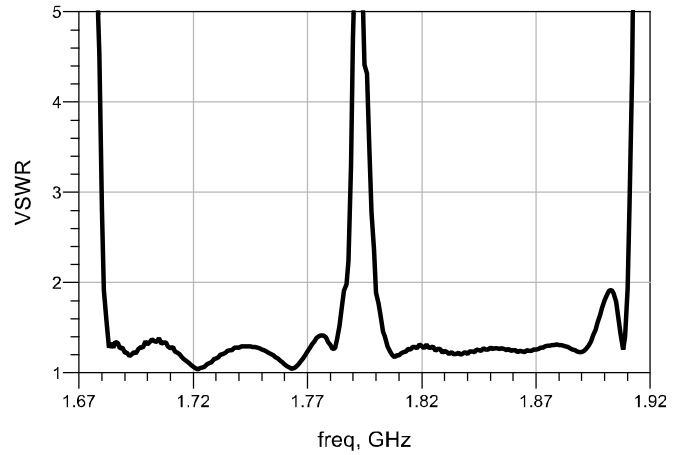


Figure8. ANT Port Return Loss

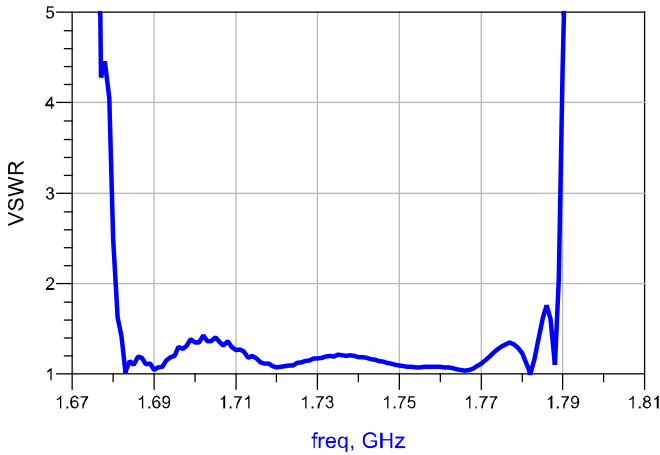


Figure9. TX Port Return Loss

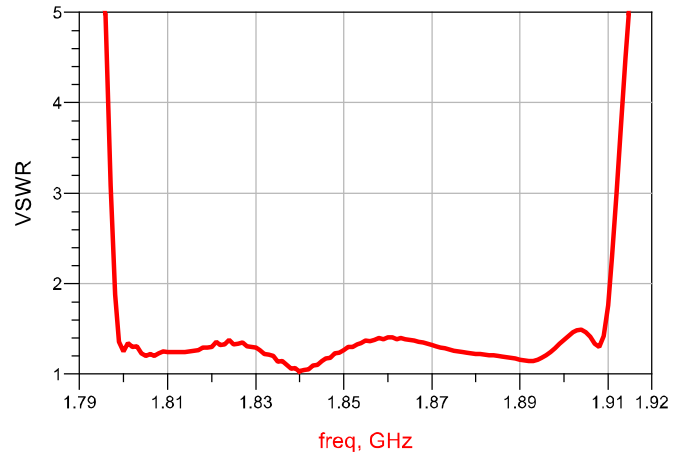
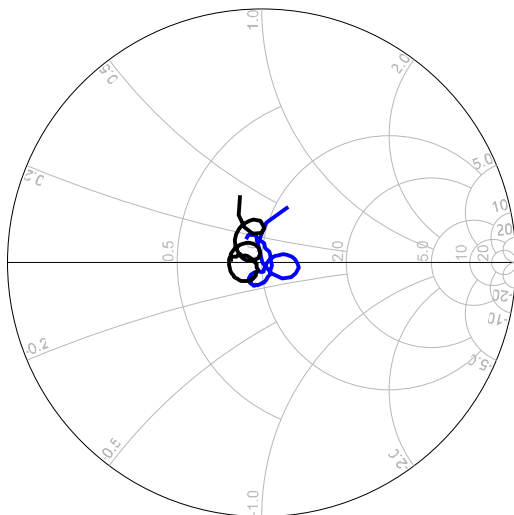
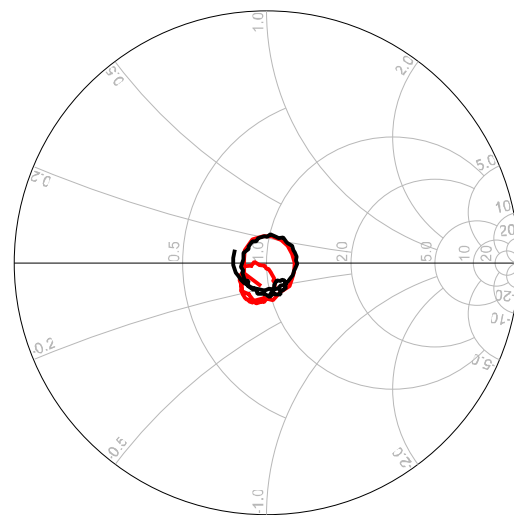


Figure10. RX Port Return Loss



freq (1.710GHz to 1.785GHz)

Figure11. TX/ANT Smith Chart at Tx Port



freq (1.805GHz to 1.880GHz)

Figure12. RX/ANT Smith Chart at Rx Port

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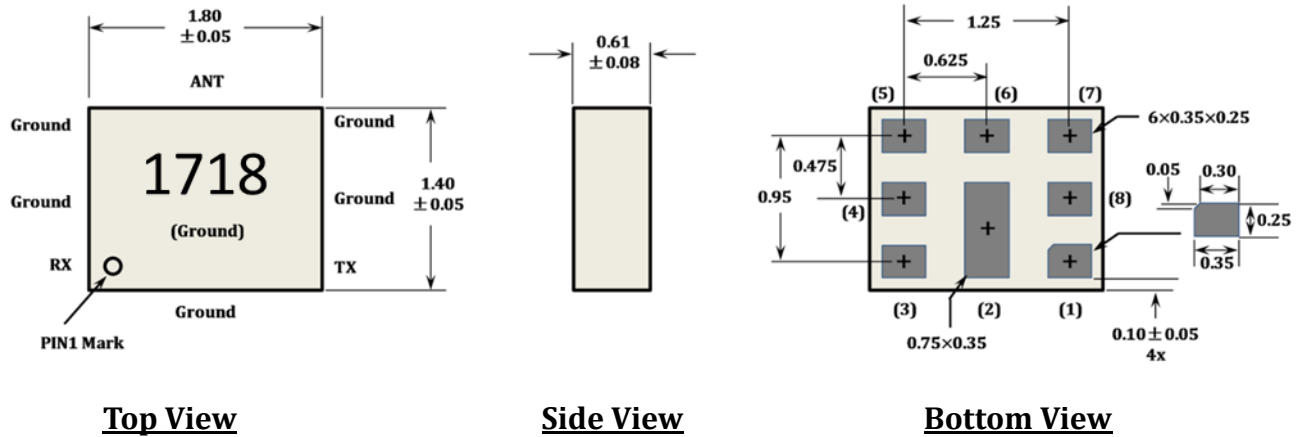
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## High Isolation Band3 BAW Duplexer



### Package Outline



Top View

Side View

Bottom View

### Note:

1. Dimension: mm
2. Dimensions nominal unless otherwise noted
3. Contact area are gold plated
4. Pad(1)(2) is single size, others are same size
5. 1718 is product code

No.	Function
1	Rx
3	Tx
6	Ant
2,4,5,7,8	Ground

### Order Information

P/N	Qty/Reel	Container
MBDP1718D18	4000	7 inch Reel

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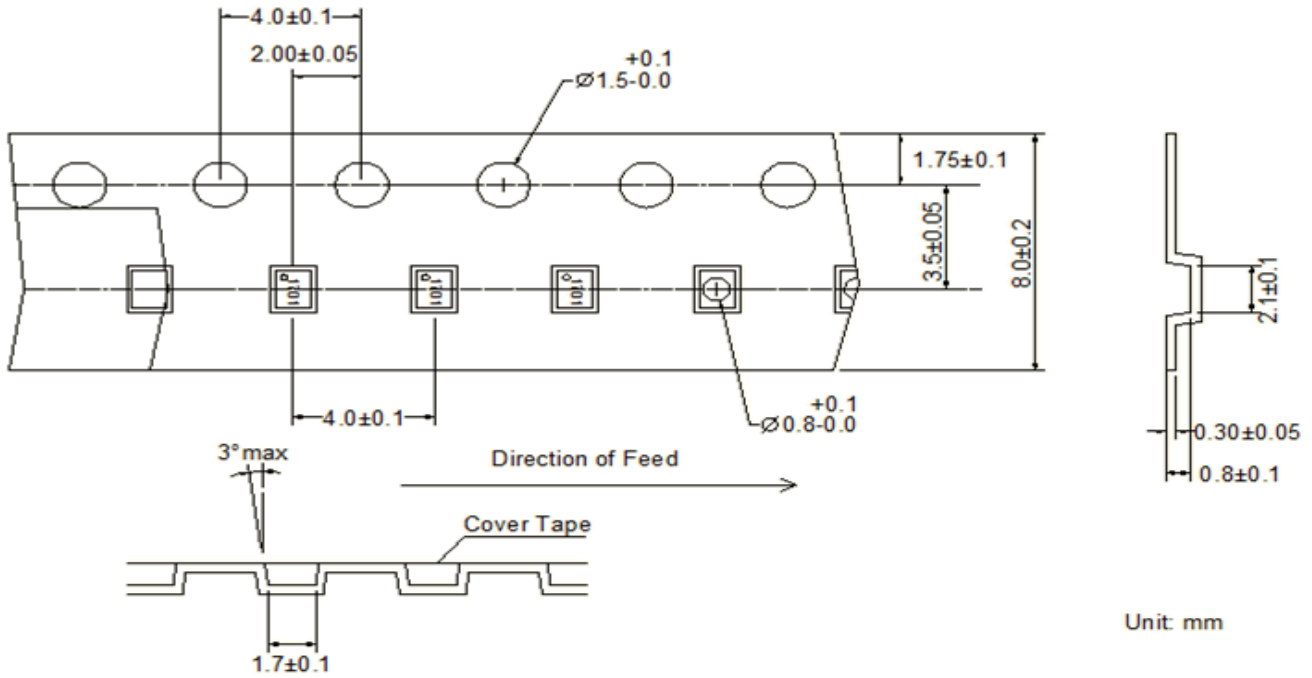
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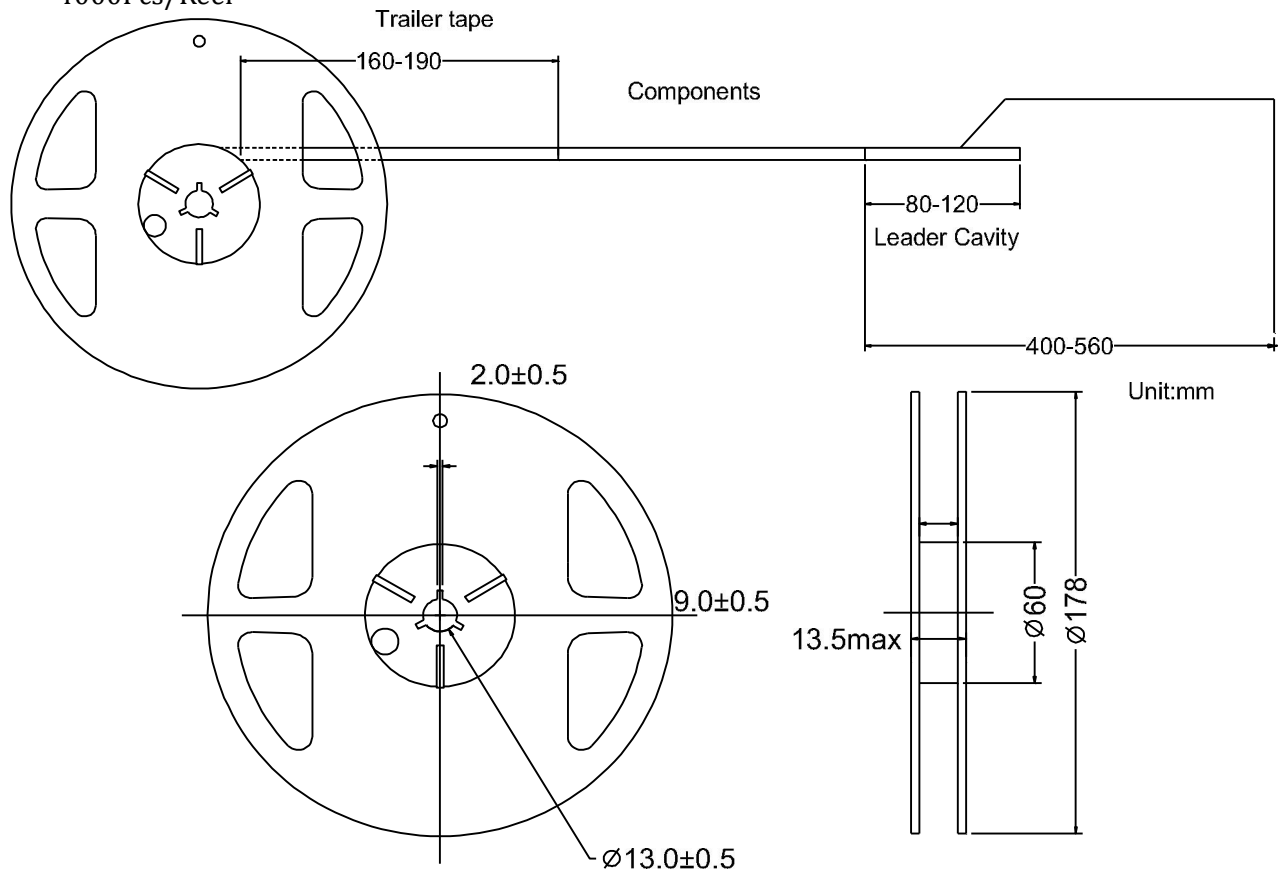
### Packing

#### 1. Tape Dimension



#### 2. Reel Dimension

4000Pcs/Reel



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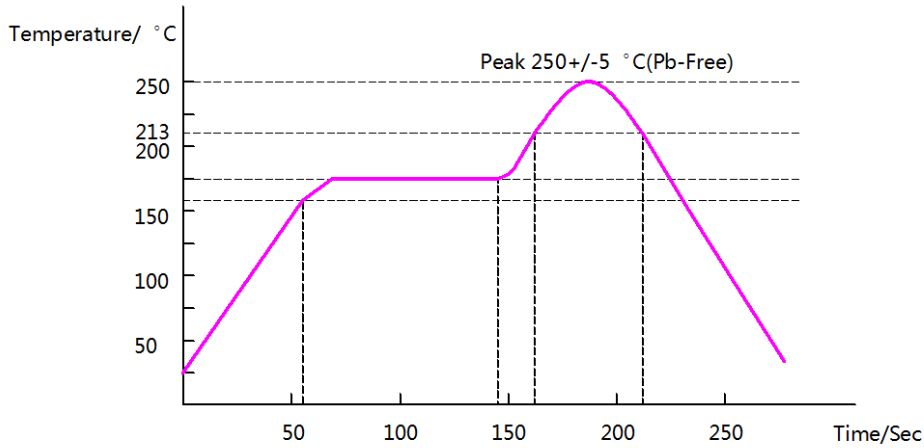
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### Recommended Reflow Profile



For more information, please contact: [sales@megsine.com](mailto:sales@megsine.com)

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Revision	Description	Date
Rev0	Preliminary	2020/3/29
Rev1	Update	2021/6/9
Rev1.1	Update	2022/7/18

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