

### Description

RSFD1702N is a high performance duplexer designed for applications in LTE Band3 (1710~1785 MHz TX, 1805~1880 MHz RX).

RSFD1702N is designed with ROFS's Film Bulk Acoustic Resonator (FBAR) technology, which provides high-Q filters and meets requirements of low insertion loss, high return loss decreases loss at Tx port, high out-of-band attenuation.

RSFD1702N uses chip scale packaging (CSP) technology to assembly the filters into a molded chip-on-board module with the footprint of 1.6mm x 1.2mm and height of 0.6mm.

### Features

- Miniature Size  
1.6 mm x 1.2 mm x 0.6 mm
- Insertion Loss:
  - Tx 2.1dB Typ.
  - Rx 2.6dB Typ.
- Tx-RX Isolation:
  - Tx Pass Band 55dB Typ.
  - Rx Pass Band 56dB Typ.
- Tx Input Power
  - +29dBm CW 55°C 5000hours
- ESD protection ability: HBM Class 1C
- Moisture Sensitivity: MSL3
- Storage Temperature: -40 to +85 °C

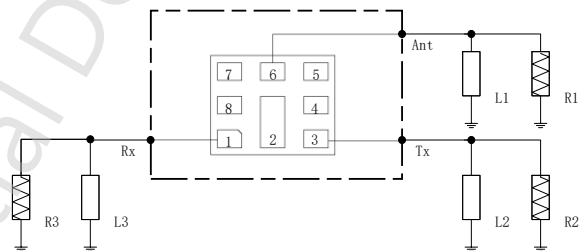
### Environmental

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



8 Pin 1.6 x 1.2 x 0.6mm Package

### Functional Block Diagram (Top Thru View)



Reference Des.	Value	Description
R1	50ohm	
R2	50ohm	
R3	50ohm	
L1	3.2 nH	Inductor
L2	8.2 nH	Inductor
L3	5.6 nH	Inductor

### Pin Connection

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

### Electrical Specification

### Transmit Port to Antenna Port

Parameter(Operable Temperature: -20 to +85 deg.C)	Min <sup>(2)</sup>	Typ <sup>(1)</sup>	Max <sup>(2)</sup>	Unit
<b>Insertion Loss</b> (1710~1785MHz)	\	2.1	3.0	dB
<b>Ripple</b> (1710~1785MHz)	\	1.0	2.0	dB
<b>VSWR</b> (1710~1785MHz,ANT)	\	1.6	2.0	\
<b>VSWR</b> (1710~1785MHz,TX)	\	1.7	2.0	\
<b>Absolute Attenuation</b>				
(10~1565.4MHz)	30	33	\	dB
Wideband GPS (1565.4~1573.4MHz)	40	44	\	dB
Regular GPS (1573.4~1577.5MHz)	40	44	\	dB
Wideband GPS (1577.5~1585.4MHz)	35	43	\	dB
GLONASS (1597.6~1605.9MHz)	40	45	\	dB
(1605.9~1680MHz)	30	34	\	dB
RX Band (1805~1880MHz)	48	53	\	dB
Band1 RX (2110~2170MHz)	43	48	\	dB
ISM Band (2400~2500MHz)	35	40	\	dB
Band7 RX (2620~2690MHz)	32	37	\	dB
(3420~3570MHz, <b>2f0</b> )	30	34	\	dB
(5130~5355MHz, <b>3f0</b> )	10	20	\	dB

### Antenna Port to Receive Port

Parameter(Operable Temperature: -20 to +85 deg.C)	Min <sup>(2)</sup>	Typ <sup>(1)</sup>	Max <sup>(2)</sup>	Unit
<b>Insertion Loss</b> (1805~1880MHz)	\	2.6	3.5	dB
<b>Ripple</b> (1805~1880MHz)	\	1.5	2.5	dB
<b>VSWR</b> (1805~1880MHz,ANT)	\	1.7	2.0	\
<b>VSWR</b> (1805~1880MHz,RX)	\	1.7	2.0	\
<b>Absolute Attenuation</b>				
(10~1710MHz)	25	30	\	dB
TX Band (1710~1785MHz)	50	55	\	dB
ISM Band (2400~2500MHz)	48	56	\	dB
Band7 TX (2500~2570MHz)	45	54	\	dB
(2570~3515MHz)	42	47	\	dB
(3515~3760MHz, <b>2f<sub>0</sub></b> )	40	47	\	dB
ISM 5G (4900~5950MHz)	20	25	\	dB
(5205~5660MHz, <b>3f<sub>0</sub></b> )	20	25	\	dB

Parameter(Operable Temperature: -20 to +85 deg.C)	Min <sup>(2)</sup>	Typ <sup>(1)</sup>	Max <sup>(2)</sup>	Unit
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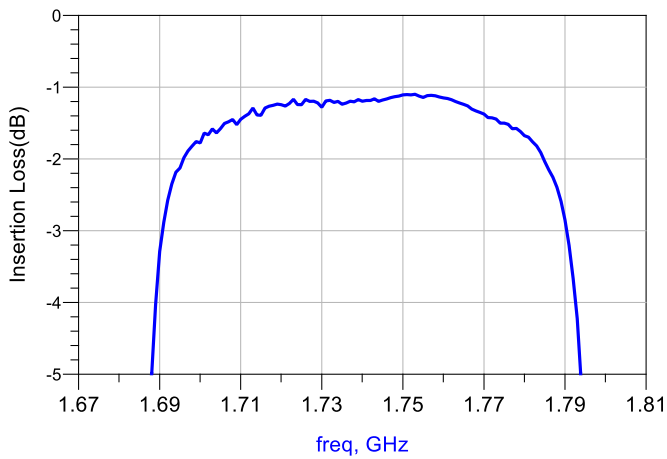
### Transmit Port to Receive Port

<b>Isolation</b>				
1710~1785MHz	50	55	\	dB
1805~1880MHz	52	56	\	dB

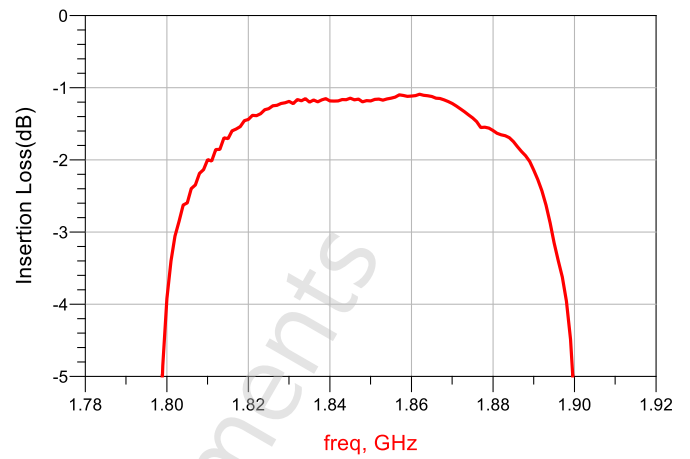
(1) Reference value within band at +25°C

(2) Max/Min value within band at -20 ~ +85°C

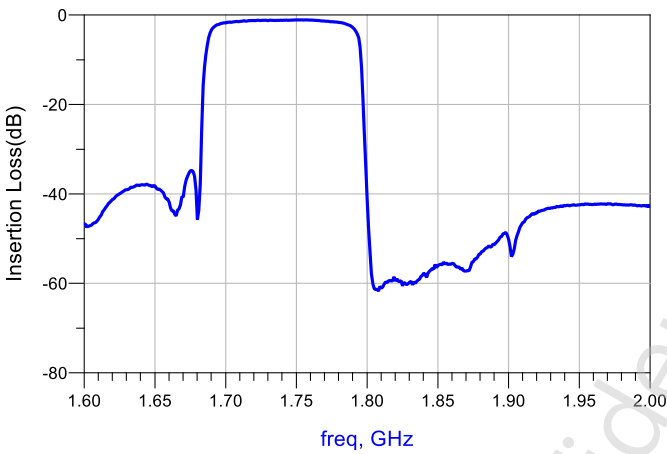
Typical Performance at Tc=25°C



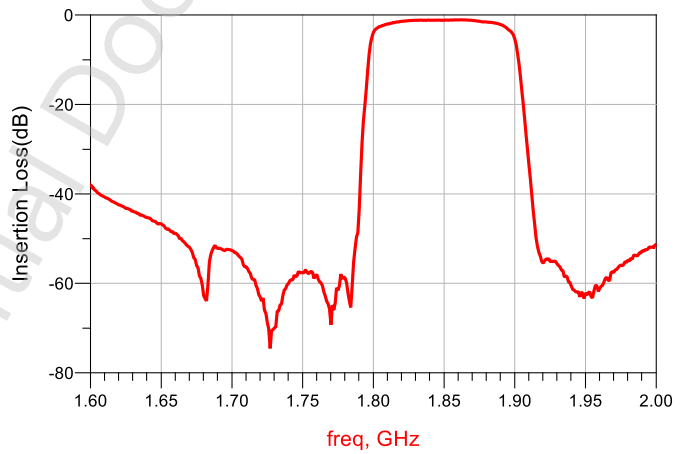
**Figure1. TX-ANT Passband**



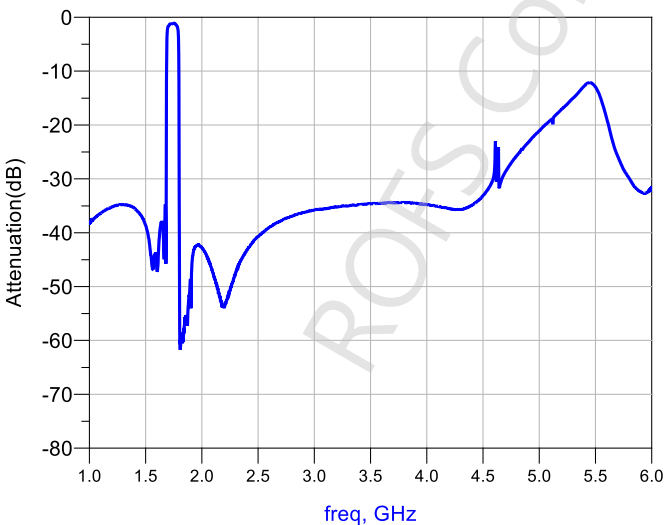
**Figure2. ANT-RX Passband**



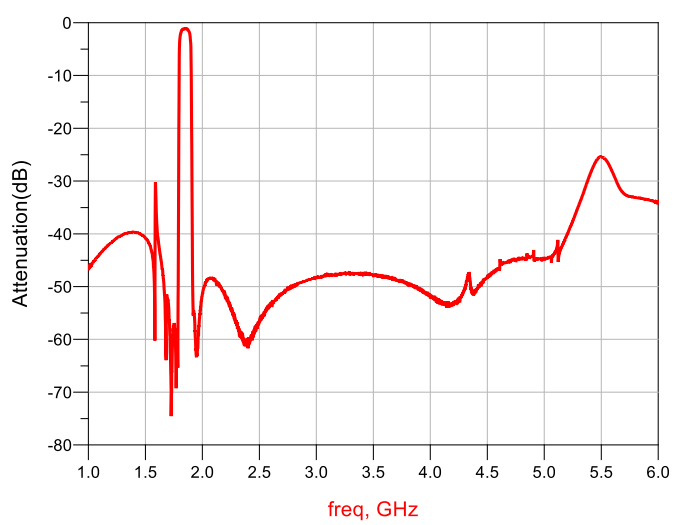
**Figure3. TX-ANT**



**Figure4. ANT-RX**

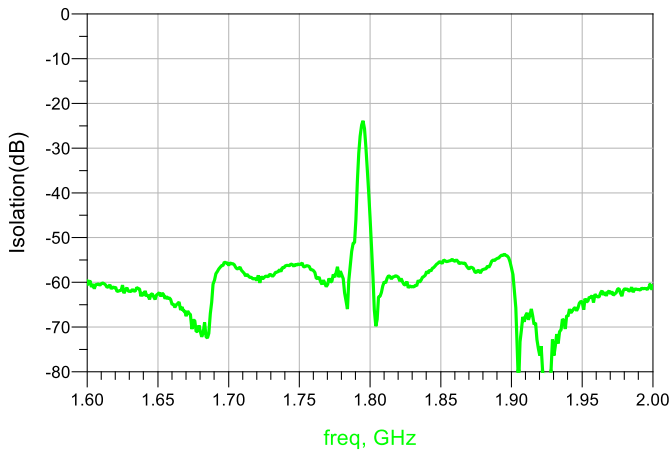


**Figure5. TX-ANT Wideband**

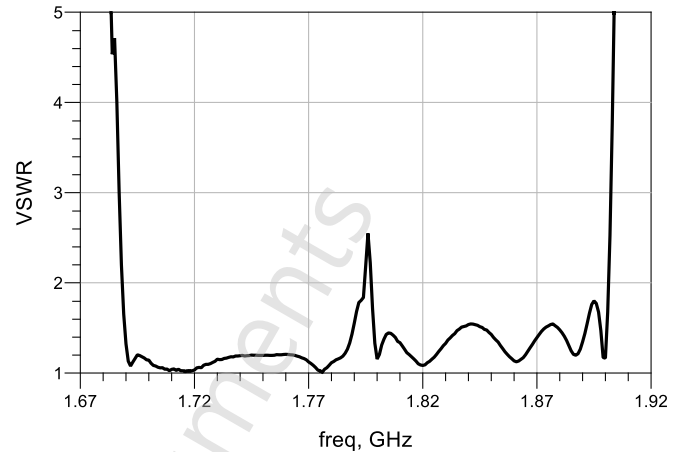


**Figure6. ANT-RX Wideband**

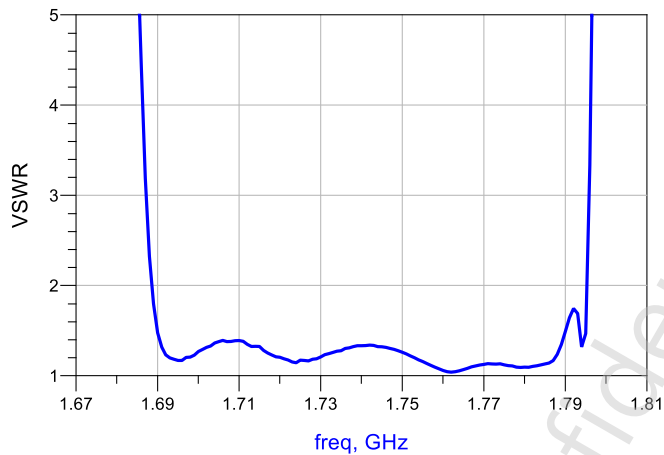
### Typical Performance at Tc=25°C



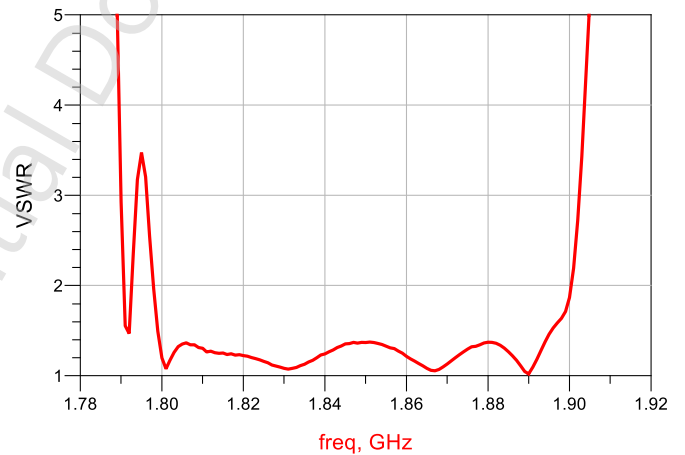
**Figure7. TX - RX Isolation**



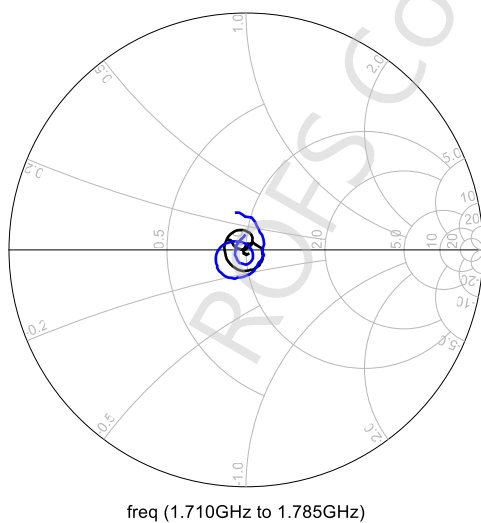
**Figure8. ANT Port Return Loss**



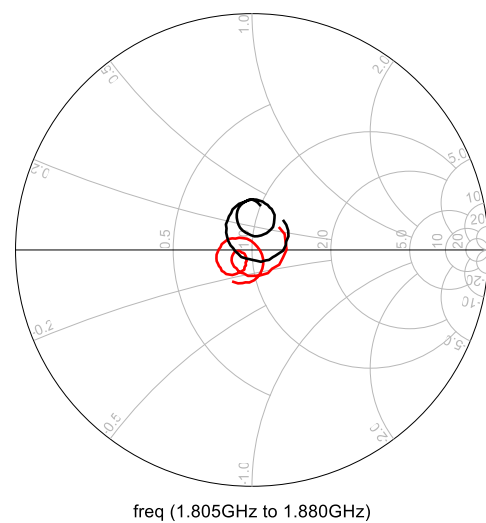
**Figure9. TX Port Return Loss**



**Figure10. RX Port Return Loss**

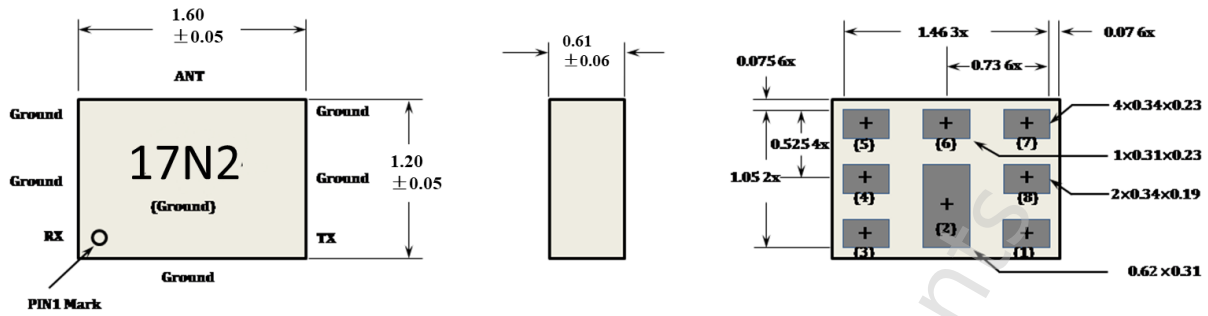


**Figure11. TX/ANT Smith Chart at Tx Port**



**Figure12. RX/ANT Smith Chart at Rx Port**

### 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. 17N2 is product code

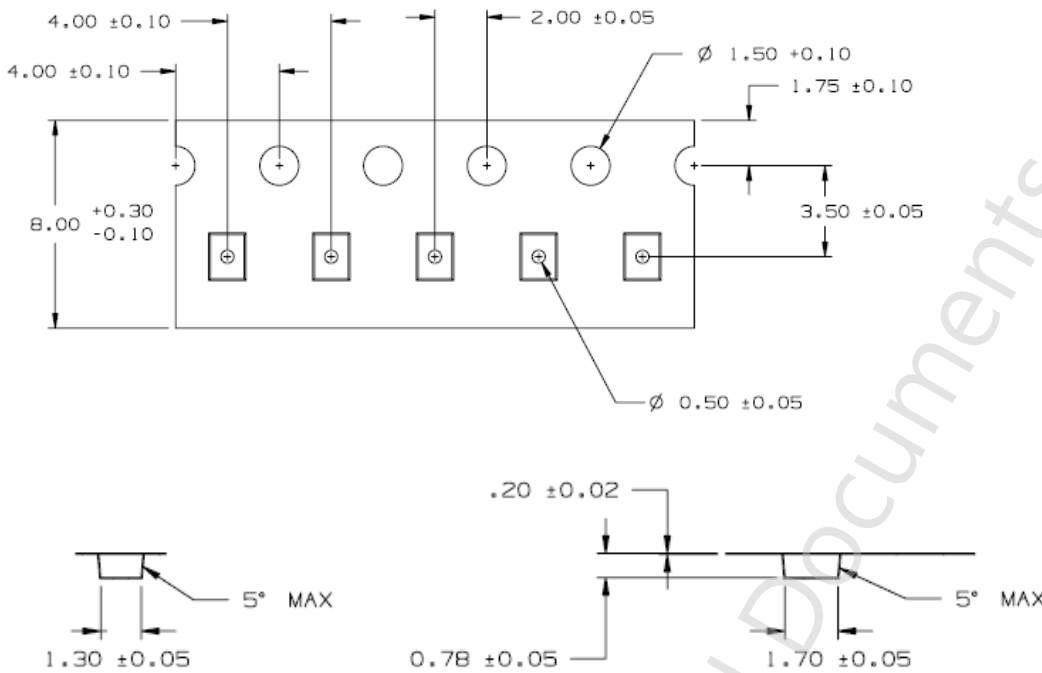
No.	Function
1	Rx
3	Tx
6	Ant
2,4,5,7,8	Ground

### Order Information

P/N	Qty/Reel	Container
RSFD1702N	5000	7 inch Reel

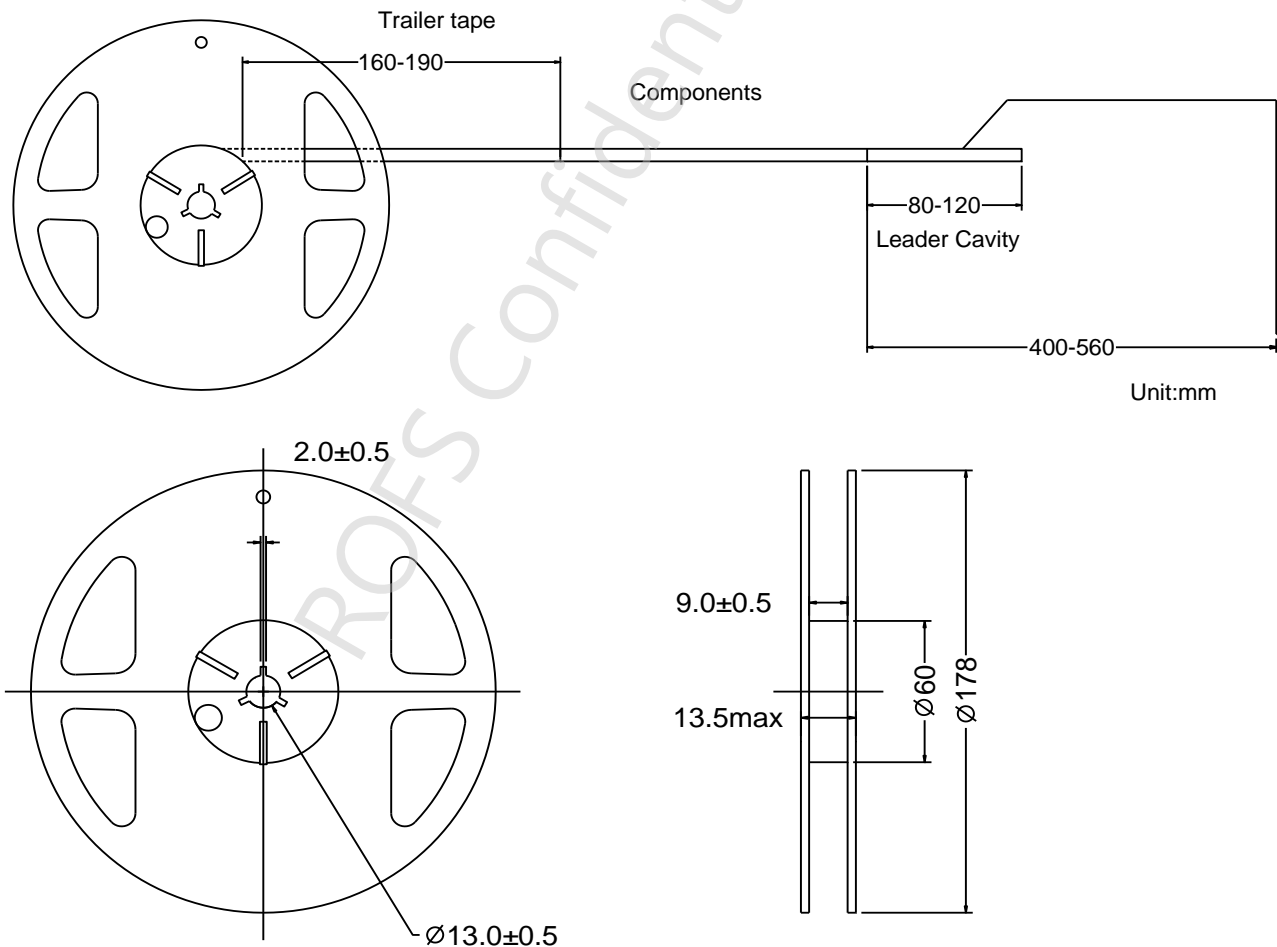
### Packing

#### 1. Tape Dimension

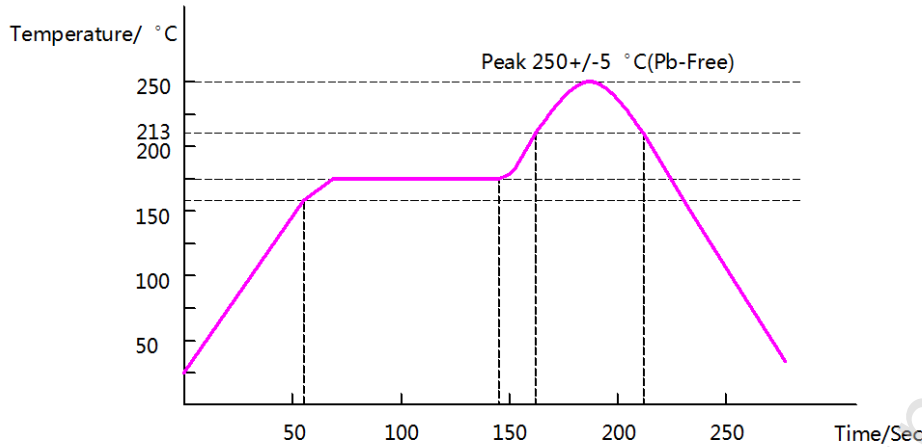


#### 2. Reel Dimension

5000Pcs/Reel



**Recommended Reflow Profile**



For more information, please contact: [rofs\\_sales1@rofsmicro.com](mailto:rofs_sales1@rofsmicro.com)

**Notes:**

The specification may be changed or the product had been discontinued, please check with our sales or product engineer before order.



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