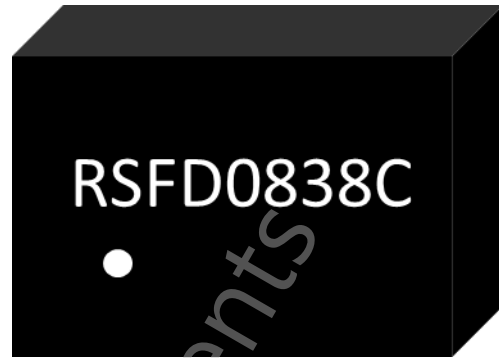


### Description

RSFD0838C is a high performance duplexer designed for applications in LTE Band5 (824~849 MHz TX, 869~894 MHz RX).

RSFD0838C 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 0.65mm.



8 Pin 1.8 x 1.4 x 0.65mm Package

### Features

- Miniature Size  
1.8 mm x 1.4 mm x 0.65 mm
- Insertion Loss:
  - Tx 2.2 dB Typ.
  - Rx 2.6 dB Typ.
- Tx-RX Isolation:
  - Tx Pass Band 55 dB Typ.
  - Rx Pass Band 52 dB Typ.
- Tx Input Power
  - +29dBm in LTE modulation
- ESD protection ability: TBD
- Moisture Sensitivity: MSL3
- Storage Temperature: -40 to +85 °C

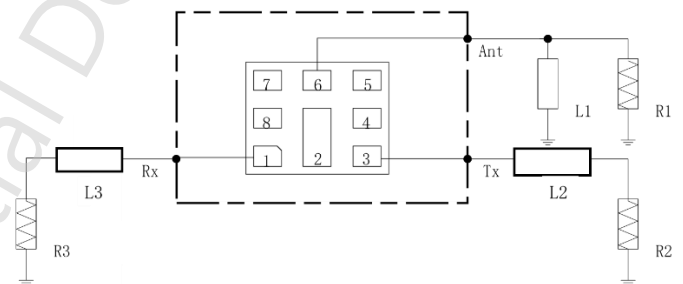
### Environmental

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



### Functional Block Diagram (Top Thru View)

View)



Reference Des.	Value	Description
R1	50ohm	
R2	50ohm	
R3	50ohm	
L1	10 nH	Recommended Inductor
L2	3.9 nH	Recommended Inductor
L3	3.9 nH	Recommended 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 (Operation Temperature: -20~85°C)	Min <sup>(2)</sup>	Typ <sup>(1)</sup>	Max <sup>(2)</sup>	Unit
<b>Insertion Loss</b> (824~849MHz)	/	2.2	2.6	dB
<b>Ripple</b> (824~849MHz)	/	0.8	1.5	dB
<b>VSWR</b> (824~849MHz, <i>ANT Port</i> )	/	1.6	2.0	/
<b>VSWR</b> (824~849MHz, <i>TX Port</i> )	/	1.6	2.0	/
<b>Absolute Attenuation</b>				
(10~701MHz)	33	37	/	dB
(701~728MHz)	35	42	/	dB
(728~764MHz)	35	40	/	dB
(764~804MHz)	30	35	/	dB
(869~894MHz)	45	48	/	dB
(1574~1577MHz)	25	29	/	dB
(1638~1708MHz, <i>2fo</i> )	25	29	/	dB
(1805~1880MHz)	25	29	/	dB
(1920~1980MHz)	22	27	/	dB
(2110~2170MHz)	22	26	/	dB
(2400~2547MHz, <i>3fo</i> )	20	24	/	dB
(3286~3406MHz)	15	18	/	dB
(4900~5950MHz)	23	30	/	dB

### Antenna Port to Receive Port

Parameter (Operation Temperature: -20~85°C)	Min <sup>(2)</sup>	Typ <sup>(1)</sup>	Max <sup>(2)</sup>	Unit
<b>Insertion Loss</b> (869~894MHz)	/	2.6	3.0	dB
<b>Ripple</b> (869~894MHz)	/	0.9	1.5	dB
<b>VSWR</b> (869~894Hz, ANT Port)	/	1.6	2.2	/
<b>VSWR</b> (869~894MHz, RX Port)	/	1.6	2.2	/
<b>Absolute Attenuation</b>				
(10~824MHz)	32	43	/	dB
(824~849MHz)	48	55	/	dB
(1710~1785MHz)	43	52	/	dB
(1850~1920MHz)	45	50	/	dB
(1920~1980MHz)	45	52	/	dB
(1980~2400MHz)	45	52	/	dB
(2400~2500MHz)	40	50	/	dB
(2517~2592MHz)	35	40	/	dB
(2607~2682MHz)	35	45	/	dB
(3476~3576MHz)	40	45	/	dB
(4345~4470MHz)	25	30	/	dB
(4900~5950MHz)	25	38	/	dB

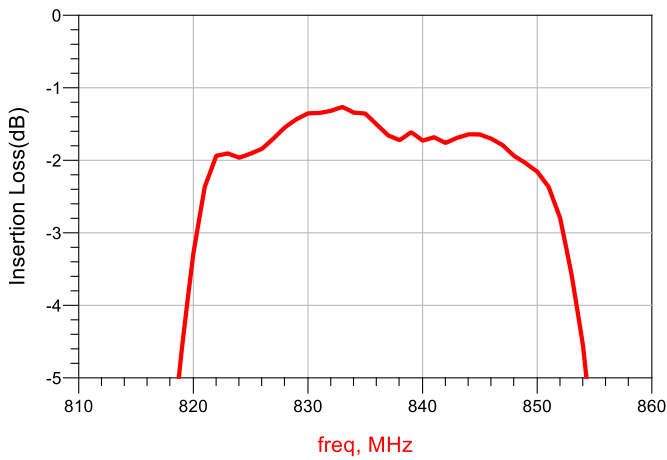
### Transmit Port to Receive Port

Parameter(Operation Temperature: -20~85°C)	Min <sup>(2)</sup>	Typ <sup>(1)</sup>	Max <sup>(2)</sup>	Unit
<b>Isolation</b>				
824~849MHz	50	55	/	dB
869~894MHz	48	52	/	dB

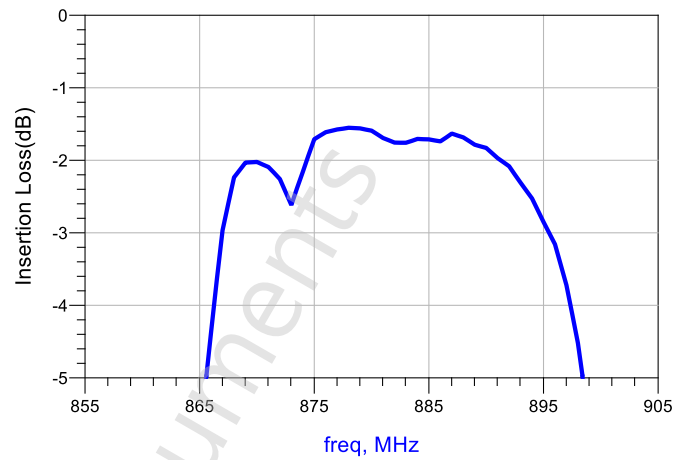
(1) Reference value within band at +25°C

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

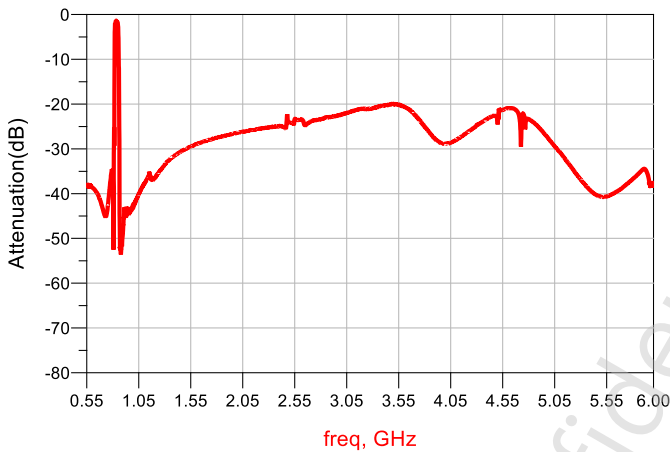
### Typical Performance at Tc=25°C



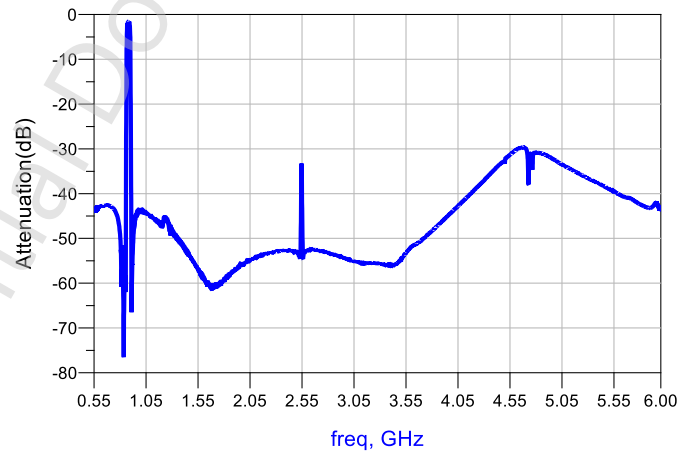
**Figure1. TX-ANT Passband**



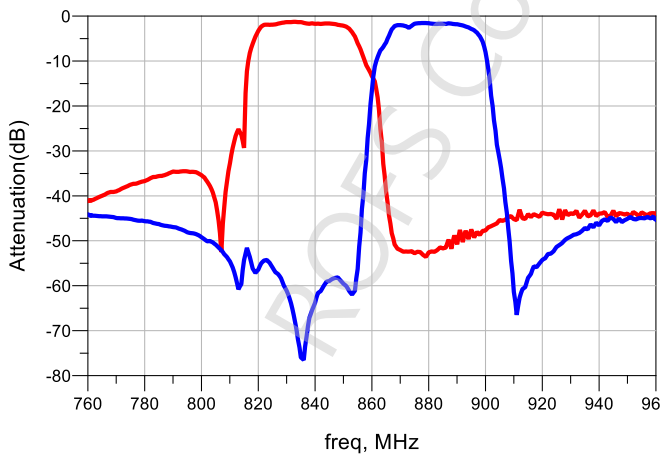
**Figure2. ANT-RX Passband**



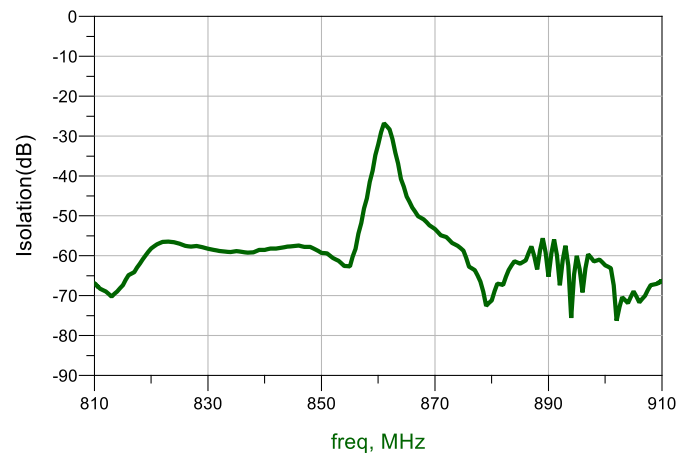
**Figure3. TX-ANT Wideband**



**Figure4. ANT-RX Wideband**

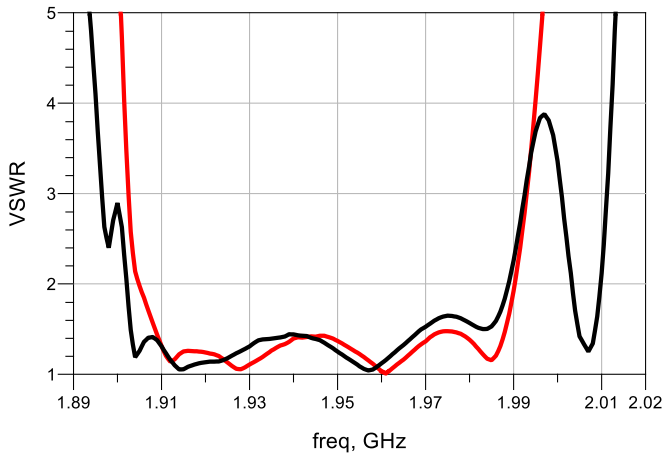


**Figure5. TX-ANT/ANT-RX**

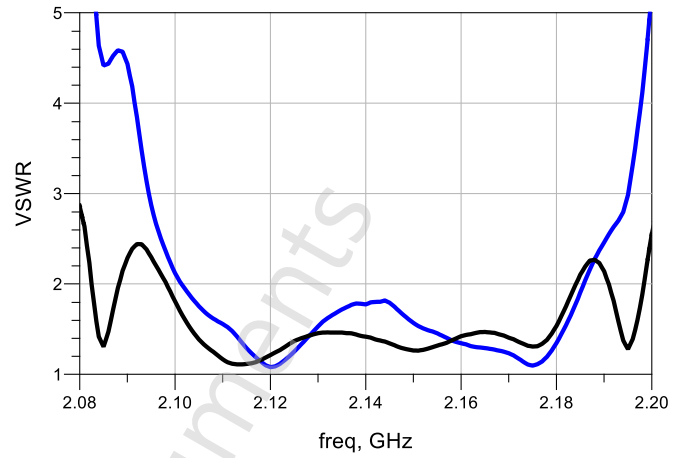


**Figure6. TX - RX Isolation**

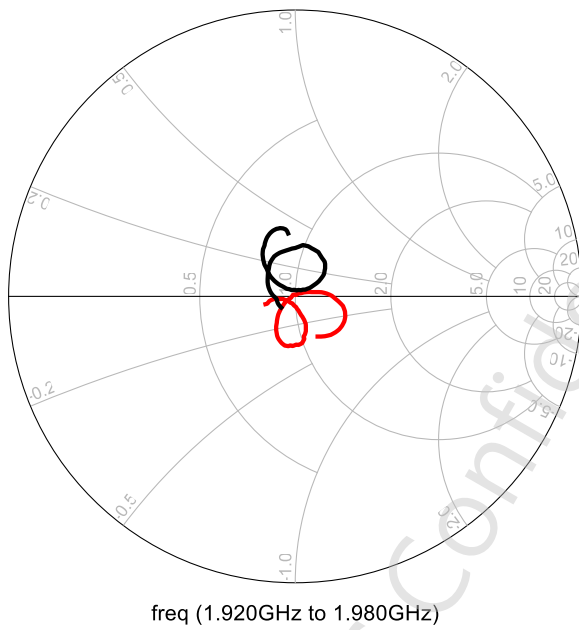
### Typical Performance at Tc=25°C



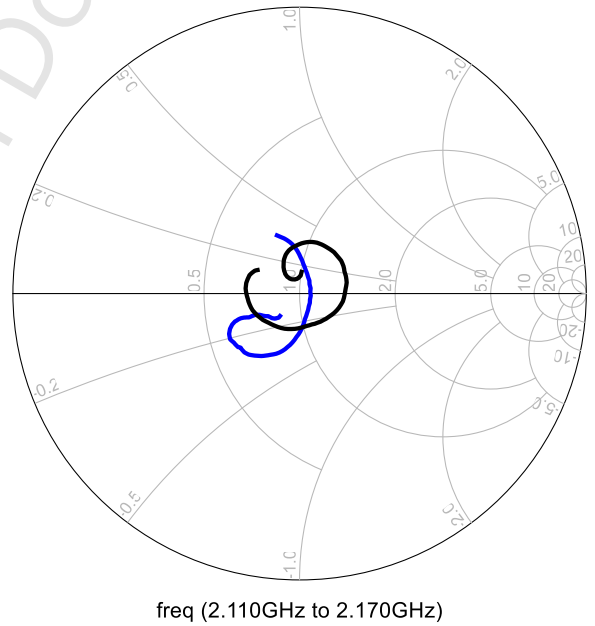
**Figure7. TX/ANT Port VSWR**



**Figure8. RX/ANT Port VSWR**

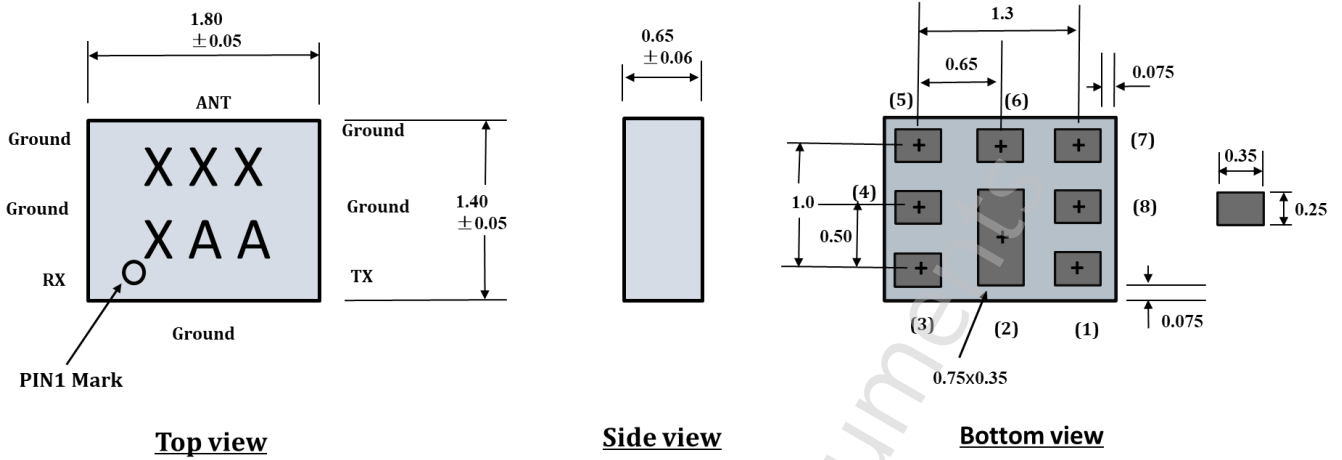


**Figure9. TX/ANT Smith Chart**



**Figure10. RX/ANT Smith Chart**

### Package Outline



### 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. XXXX is product code, AA is trace code

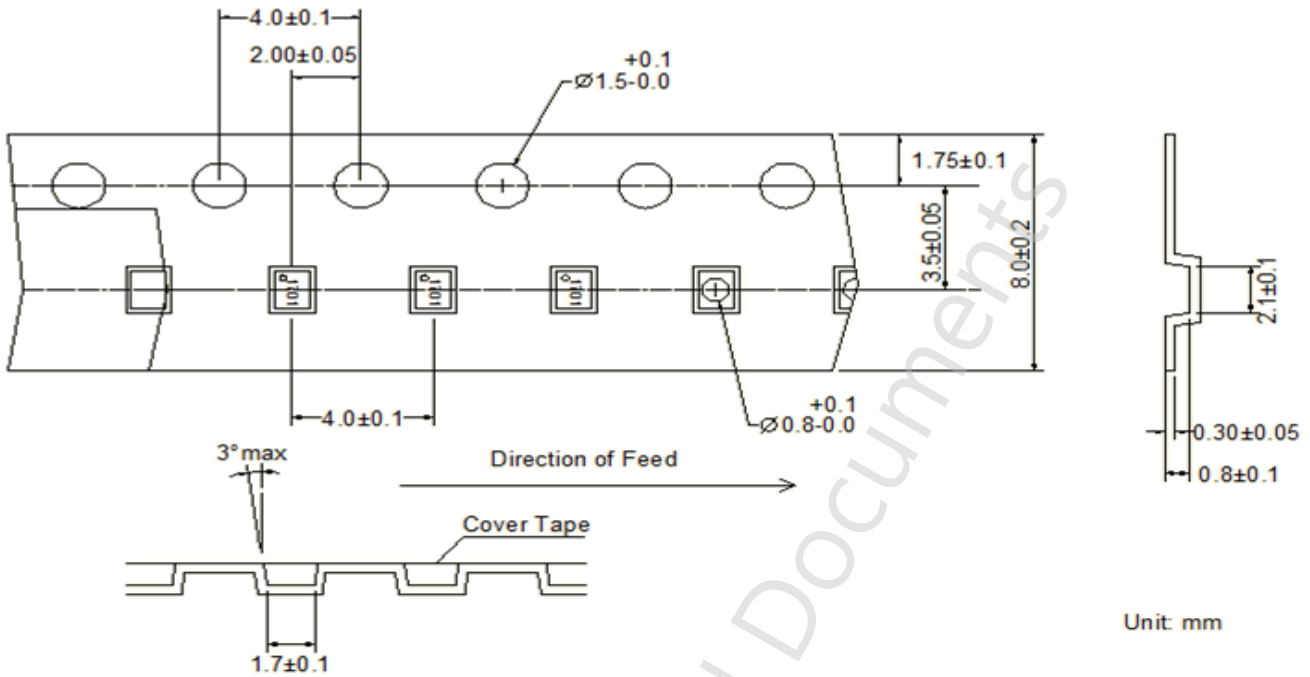
No.	Function
1	Rx
3	Tx
6	Ant
2,4,5,7,8	Ground

### Order Information

P/N	Qty/Reel	Container
RSFD0838C	4000	7 inch Reel

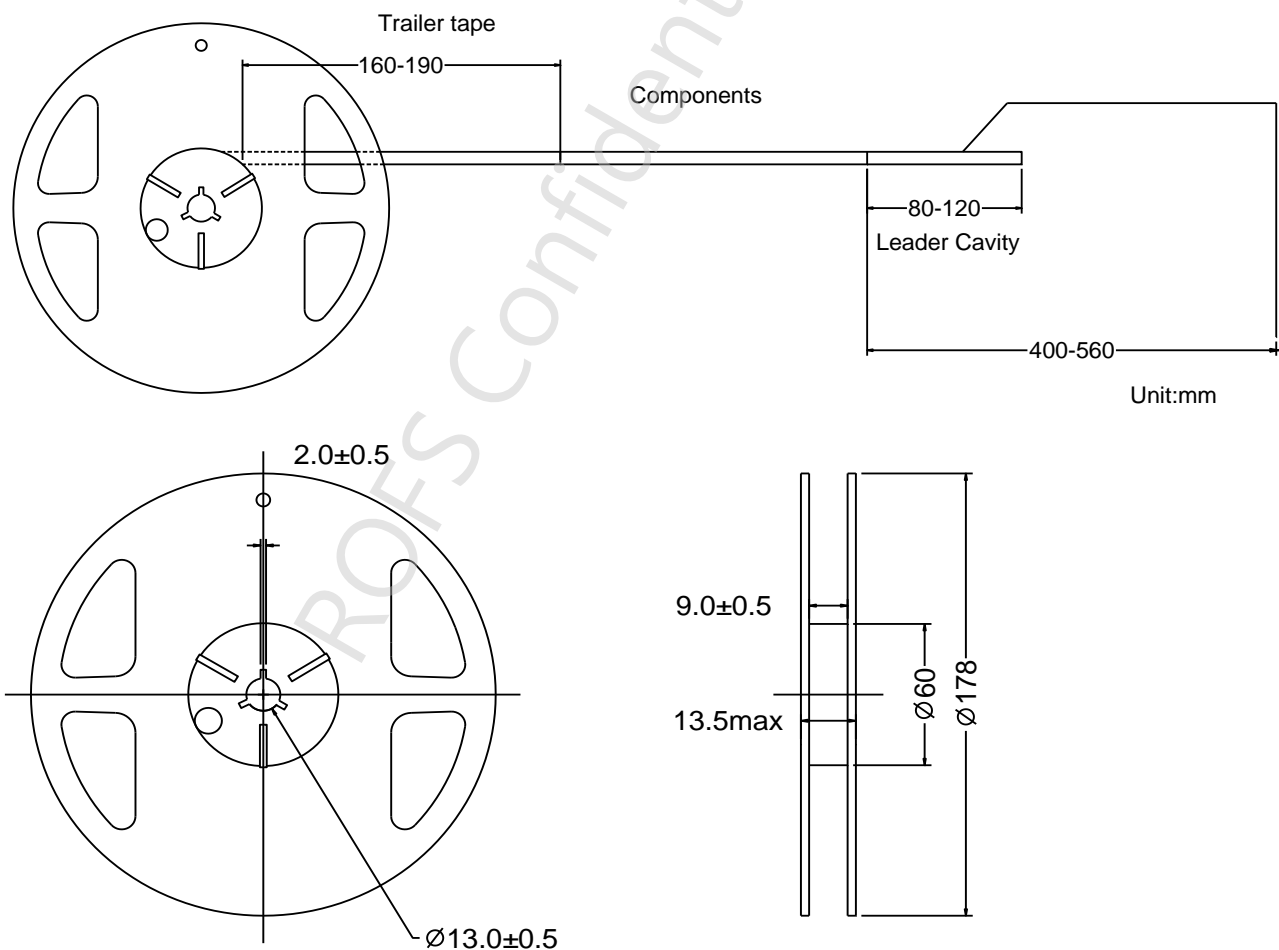
### Packing

#### 1. Tape Dimension

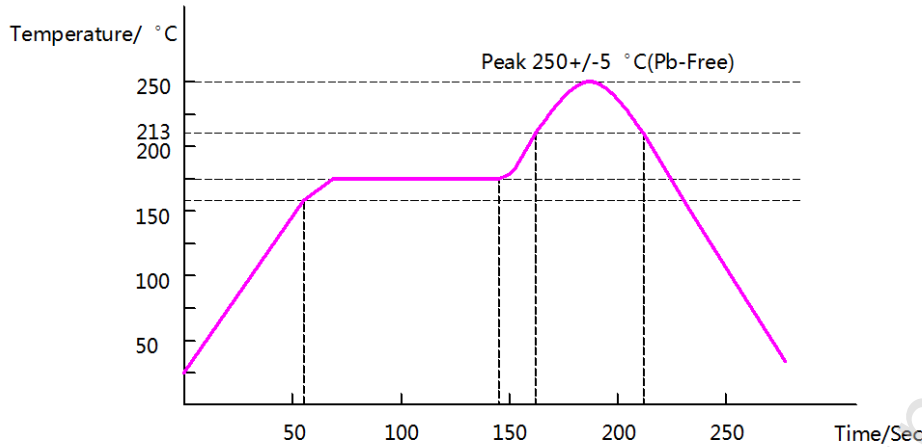


#### 2. Reel Dimension

4000Pcs/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.