RSFD1950C

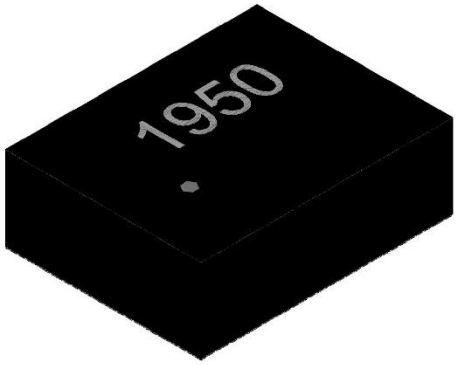
Band1 FBAR Duplexer

Description

RSFD1950C is a high performance duplexer designed for applications in LTE Band1 (1920~1980 MHz UL, 2110~2170 MHz DL).

RSFD1950C 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.

RSFD1950C 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 0.61mm.



8 Pin 1.8 x 1.4 x 0.61mm Package

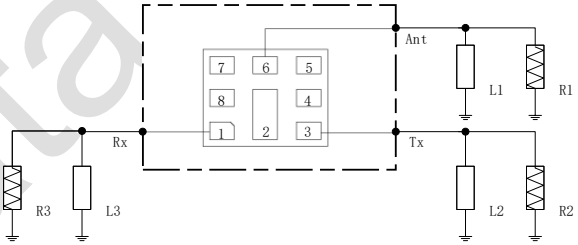
Features

- Miniature Size
  1.8 mm x 1.4 mm x 0.61 mm
- Insertion Loss:
  - Tx 1.3 dB Typ.
  - Rx 1.5 dB Typ.
- Tx-RX Isolation:
  - Tx Pass Band 53 dB Typ.
  - Rx Pass Band 60 dB Typ.
- Tx Input Power
  - TBD
- ESD protection ability: TBD
- Moisture Sensitivity: MSL3
- Storage Temperature: -40 to +85 ℃

Environmental

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

Functional Block Diagram (Top Thru View)



Reference Des.	Value	Description
R1	50ohm	
R2	50ohm	
R3	50ohm	
L1	2.7 nH	Ideal Inductor
L2	8.2 nH	Ideal Inductor
L3	3.9 nH	Ideal 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℃)	**Min**	**Typ***	**Max**	**Unit**
Insertion Loss (1920~1980MHz)	/	1.3	2.0	dB
Ripple(1920~1980MHz)	/	0.4	1.0	dB
VSWR (1920~1980MHz,*ANT Port*)	/	1.2	1.8	/
VSWR (1920~1980MHz,*TX Port*)	/	1.3	1.8	/
Absolute Attenuation(500~8000MHz)				
(500~1560MHz)	32	37	/	dB
(1565 ~1606MHz)	34	39	/	dB
(1805~1880MHz)	26	31	/	dB
(2010~2025MHz)	20	28	/	dB
(2110~2170MHz)	49	54	/	dB
(2300~2400MHz)	36	41	/	dB
(2400~2483MHz)	33	38	/	dB
(2620~2690MHz)	30	35	/	dB
(3400~3800MHz)	20	26	/	dB
(3840~3960MHz, $2f_0$)	20	25	/	dB
(4400~5400MHz)	10	19	/	dB
(5760~5940MHz, $3f_0$)	19	24	/	dB
(6000~7000 MHz)	16	23	/	dB

Antenna Port to Receive Port				
Parameter (Operation Temperature: -20~85℃)	**Min**	**Typ***	**Max**	**Unit**
Insertion Loss (2110~2170MHz)	/	1.5	2.1	dB
Ripple(2110~2170MHz)	/	0.6	1.2	dB
VSWR(2110~2170MHz, ANT Port)	/	1.3	1.9	/
VSWR (2110~2170MHz, RX Port)	/	1.4	1.9	/
Absolute Attenuation(500~8000MHz)				
(500~1680MHz)	29	34	/	dB
(1710~1785MHz)	32	37	/	dB
(1920~1980MHz)	46	51	/	dB
(2300~2400MHz)	46	51	/	dB
(2400~2500MHz)	47	52	/	dB
(2500~2570MHz)	51	56	/	dB
(3300~4200MHz)	33	38	/	dB
(4220~4340MHz, ***2f0***)	38	43	/	dB
(4400~5900MHz)	15	22	/	dB
(6330~6510MHz, ***3f0***)	29	34	/	dB
(6600~8000 MHz)	6	12	/	dB

Transmit Port to Receive Port				
Parameter(Operation Temperature: -20~85℃)	**Min**	**Typ***	**Max**	**Unit**
Isolation				
1920~1980MHz	50	53	/	dB
2110~2170MHz	55	60	/	dB

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

* Typical value at 25±3 ℃

Typical Performance at Tc=25℃

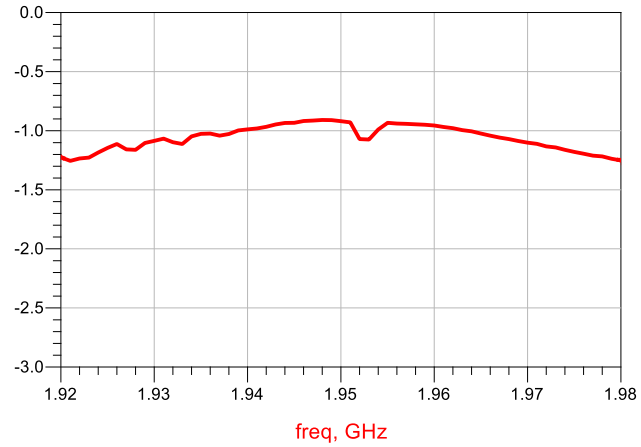


Figure1. TX-ANT Passband

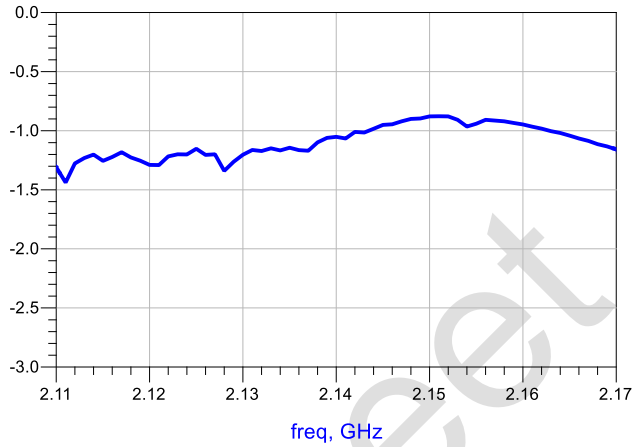


Figure2. ANT-RX Passband

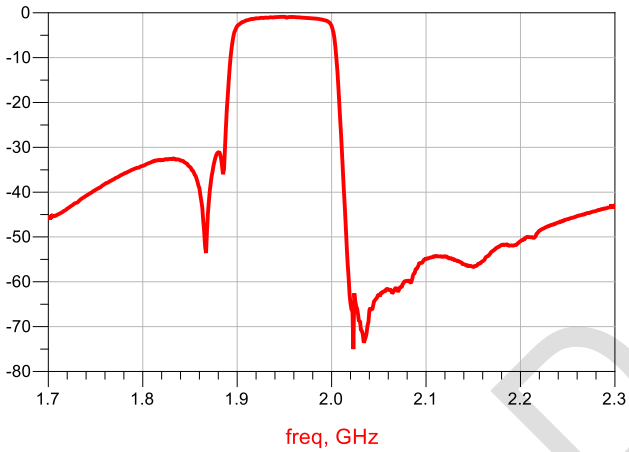


Figure3. TX-ANT

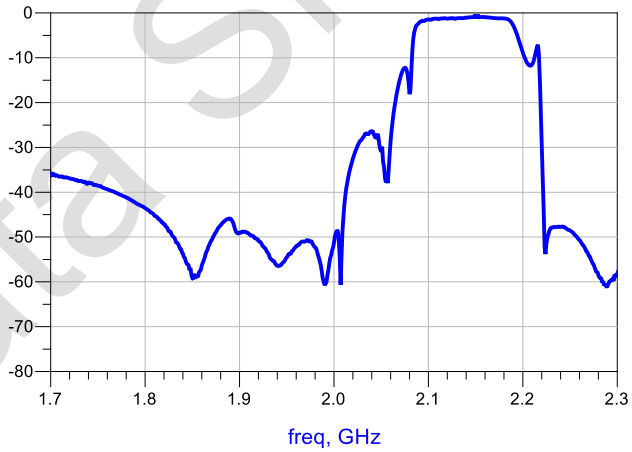


Figure4. ANT-RX

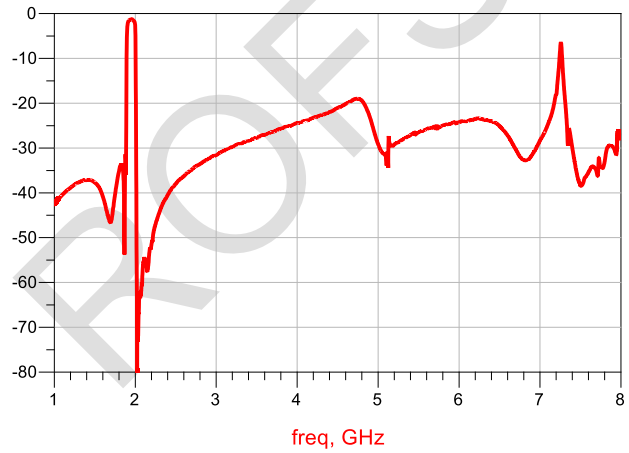


Figure5. TX-ANT Wideband

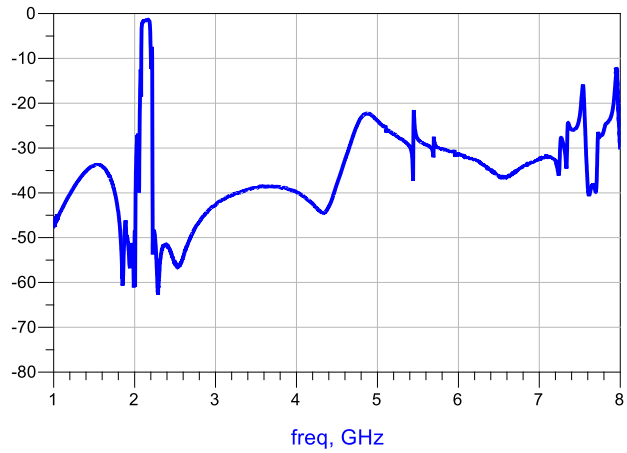


Figure6. ANT-RX Wideband

Typical Performance at Tc=25℃

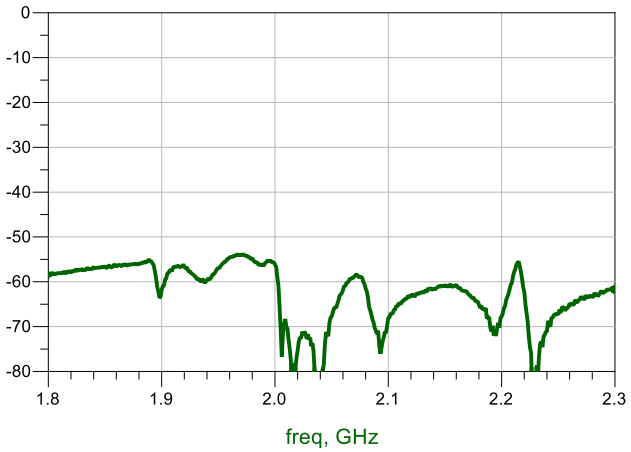


Figure7. TX - RX Isolation

Typical Performance at Tc=25℃

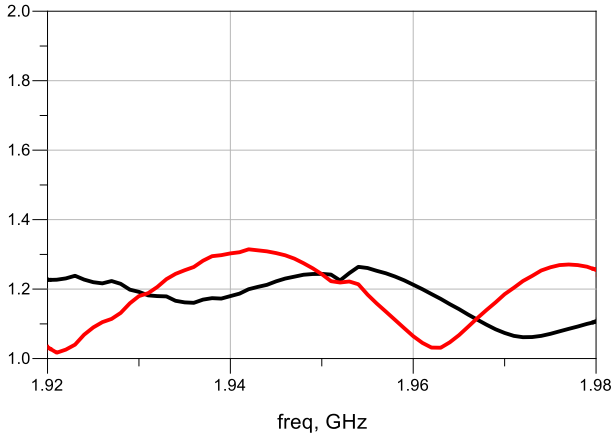


Figure8. TX (Tx/Ant Port)VSWR

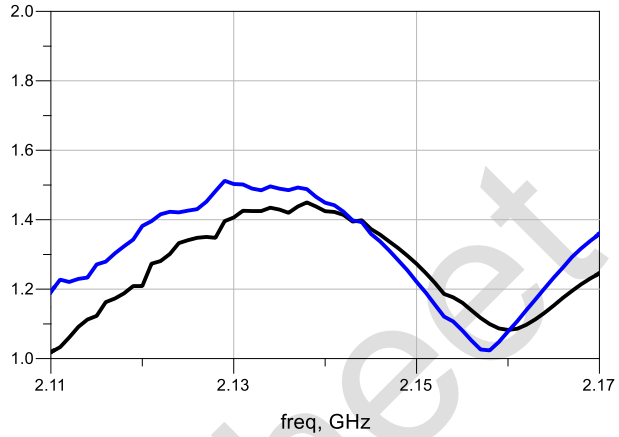


Figure9. RX(RX/Ant Port) VSWR

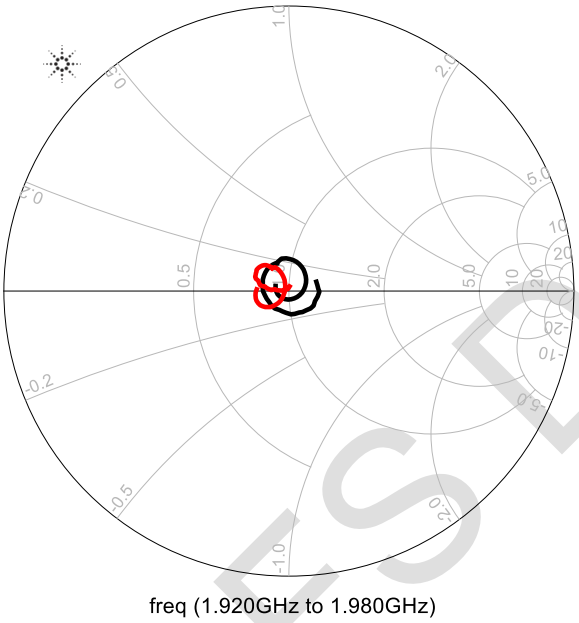


Figure10. TX (Tx/Ant Port)Smith Chart

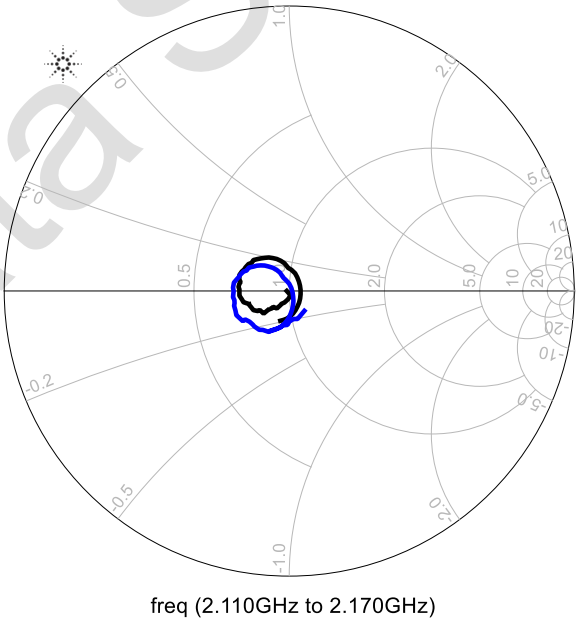
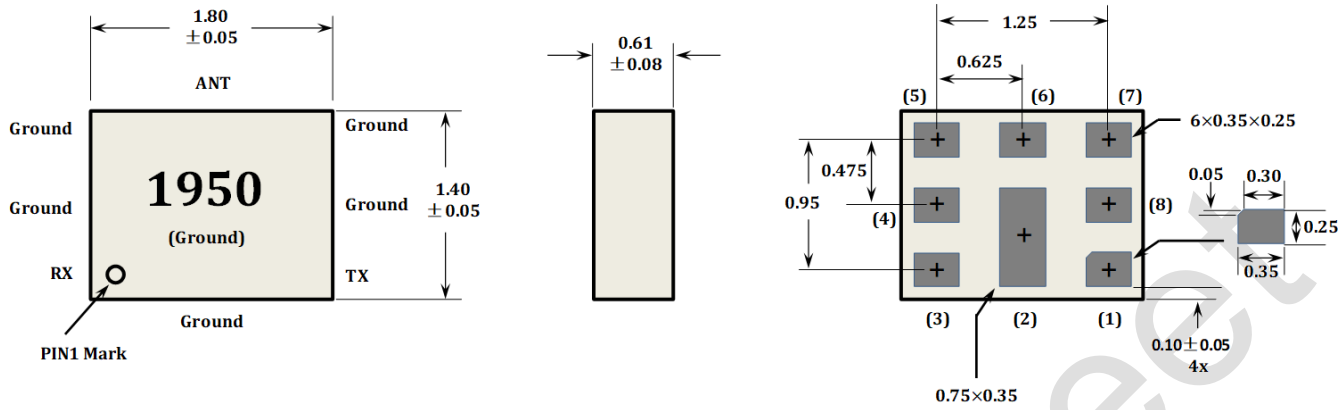


Figure11. RX (RX/Ant Port) Smith Chart

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. 1950 is product code

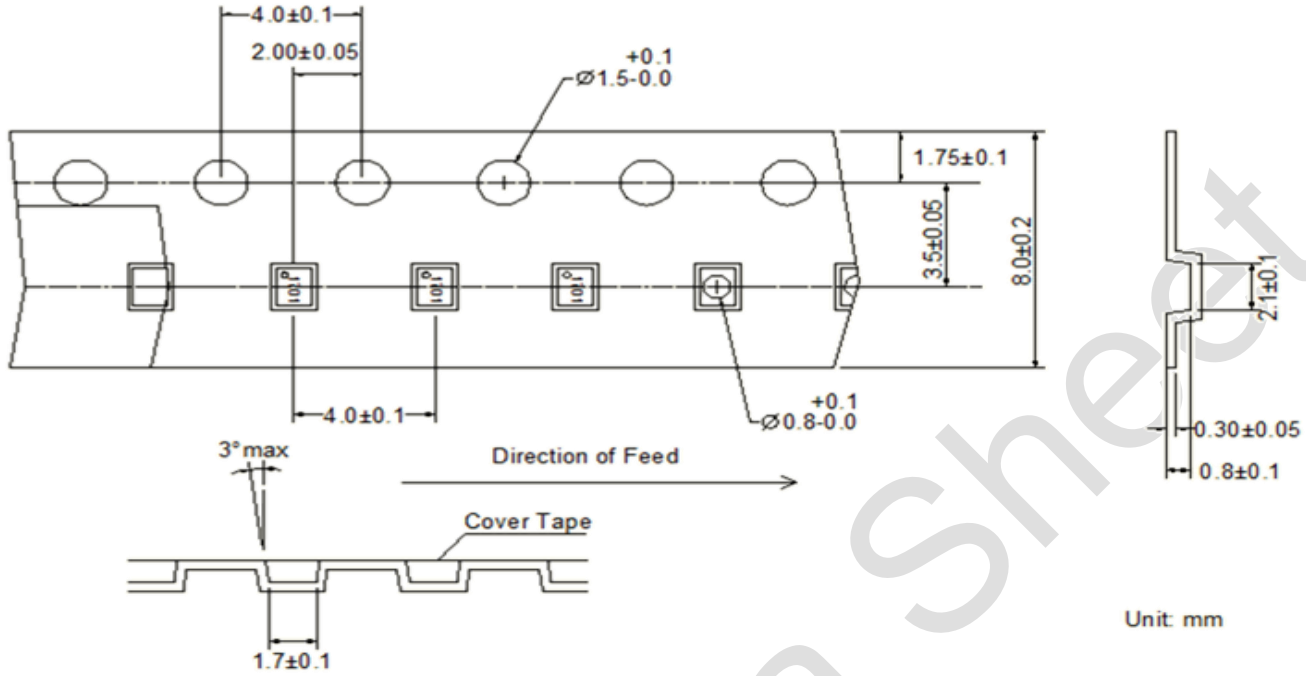
No.	Function
1	Rx
3	Tx
6	Ant
2,4,5,7,8	Ground

Order Information

P/N	Qty/Reel	Container
RSFD1950C	4000	7 inch Reel

Packing

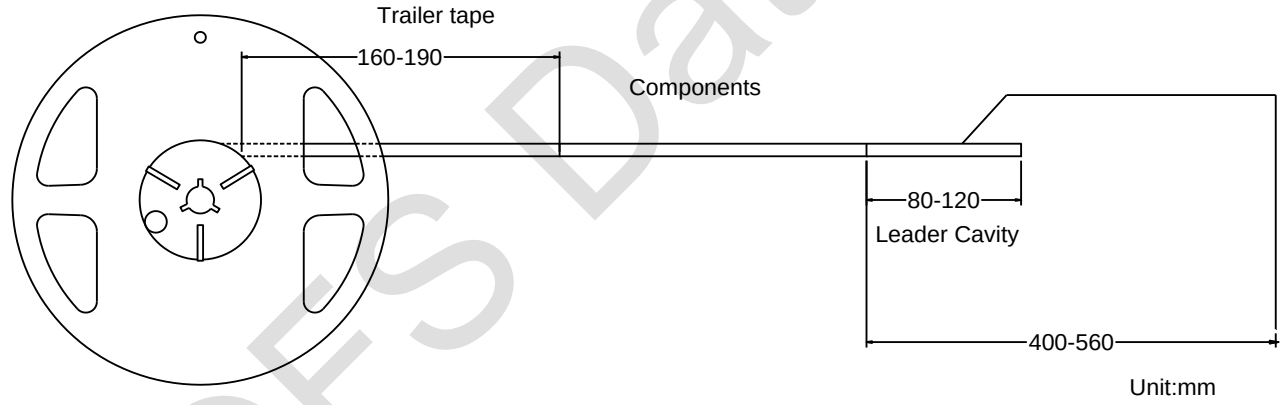
1. Tape Dimension



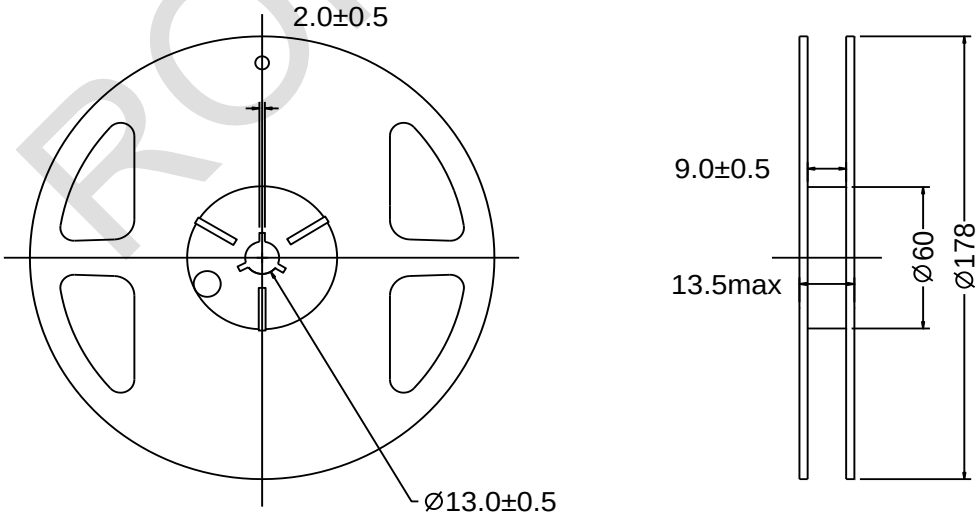
Unit: mm

2. Reel Dimension

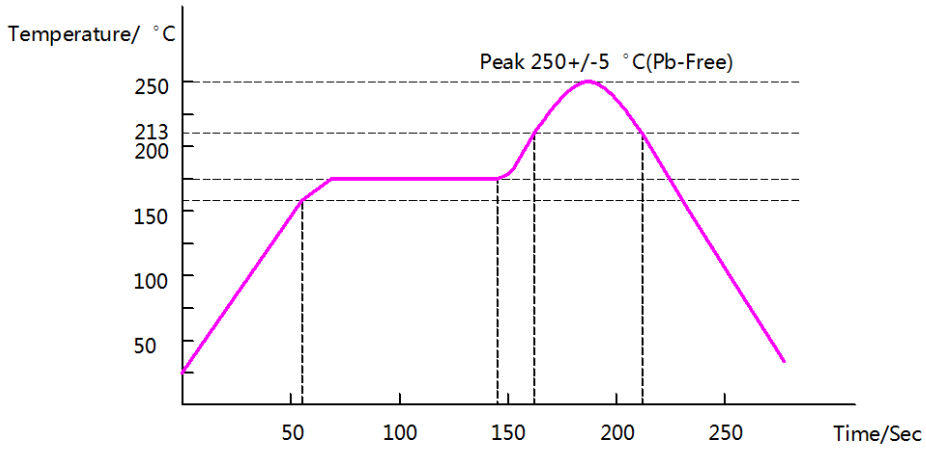
4000Pcs/Reel



Unit:mm



Recommended Reflow Profile



For more information, please contact: sales@rofsmicro.com

Notes:

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