

Description

RSFD1954C is a high performance duplexer designed for applications in LTE Band1 (1920~1980 MHz TX, 2110~2170 MHz RX).

RSFD1954C 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 2.0 dB Typ.
 - Rx 2.3 dB Typ.
- Tx-RX Isolation:
 - Tx Pass Band 55 dB Typ.
 - Rx Pass Band 49 dB Typ.
- Tx Input Power
 - +29dBm in LTE modulation
- Moisture Sensitivity: MSL3
- Storage Temperature: -40 to +85 °C

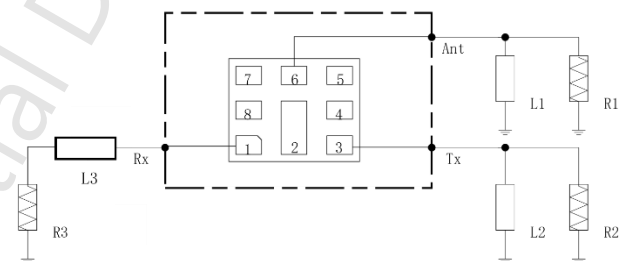
Environmental

- 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	2.4 nH	Recommended Inductor
L2	10 nH	Recommended Inductor
L3	1.0 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 ⁽²⁾	Typ ⁽¹⁾	Max ⁽²⁾	Unit
Insertion Loss (1920~1980MHz)	/	2.0	2.5	dB
Ripple (1920~1980MHz)	/	0.8	1.2	dB
VSWR (1920~1980MHz,ANT Port)	/	1.6	2.2	/
VSWR (1920~1980MHz,TX Port)	/	1.5	2.0	/
Absolute Attenuation				
(DC~1565MHz)	32	36	/	dB
(1565 ~1606MHz)	32	36	/	dB
(1805~1865MHz)	20	28	/	dB
(1865~1880MHz)	18	25	/	dB
(2110~2170MHz)	40	44	/	dB
(2400~2500MHz)	35	42	/	dB
(2620~2690MHz)	30	38	/	dB
(3840~3960MHz, <i>2fo</i>)	18	26	/	dB
(4900~5950MHz)	10	18	/	dB

Antenna Port to Receive Port				
Parameter (Operation Temperature: -20~85°C)	Min ⁽²⁾	Typ ⁽¹⁾	Max ⁽²⁾	Unit
Insertion Loss (2110~2170MHz)	/	2.3	2.8	dB
Ripple (2110~2170MHz)	/	0.8	1.2	dB
VSWR (2110~2170MHz,ANT Port)	/	1.8	2.3	/
VSWR (2110~2170MHz,RX Port)	/	1.9	2.3	/
Absolute Attenuation				
(DC~1463MHz)	32	42	/	dB
(1710~1785MHz)	37	43	/	dB
(1920~1980MHz)	48	53	/	dB
(2400~2500MHz)	38	45	/	dB
(2500~2570MHz)	38	45	/	dB
(4030~4150MHz)	45	50	/	dB
(4220~4340MHz, <i>2fo</i>)	42	52	/	dB
(4900~5950MHz)	25	43	/	dB

Transmit Port to Receive Port

Parameter (Operation Temperature: -20~85°C)	Min ⁽²⁾	Typ ⁽¹⁾	Max ⁽²⁾	Unit
Isolation				
1920~1980MHz	50	55	/	dB
2110~2170MHz	46	49	/	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

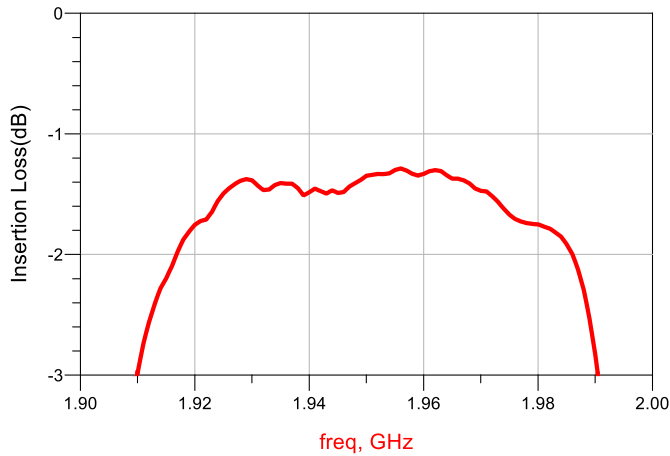


Figure1. TX-ANT Passband

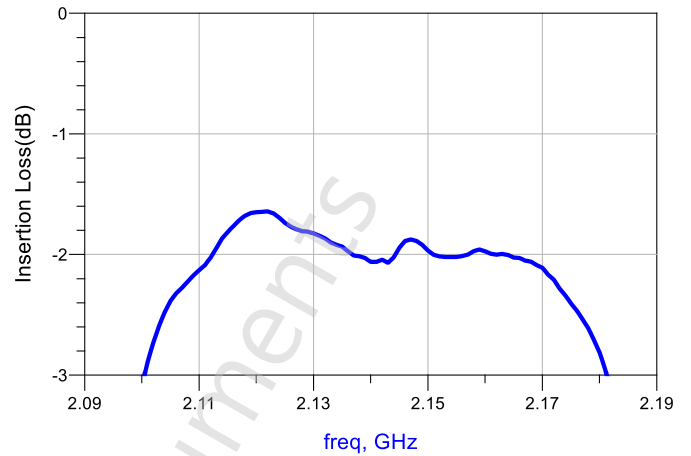


Figure2. ANT-RX Passband

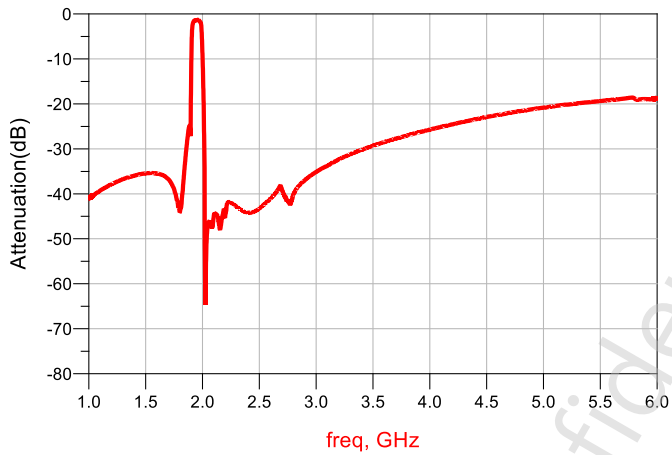


Figure3. TX-ANT Wideband

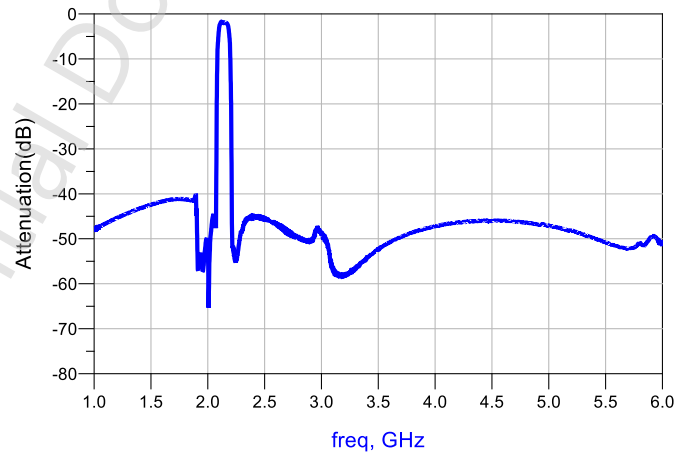


Figure4. ANT-RX Wideband

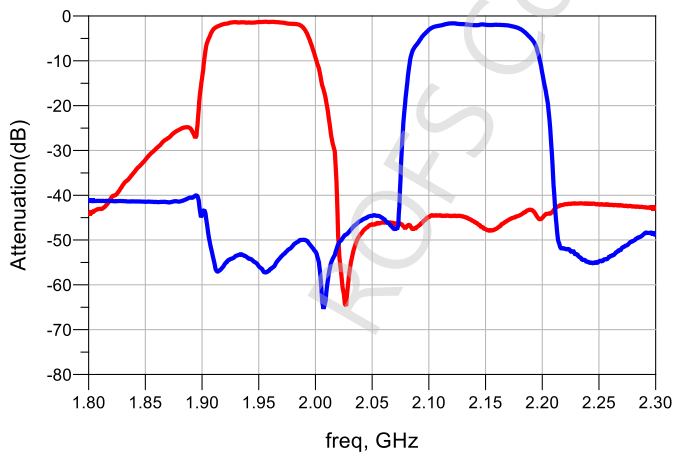


Figure5. TX-ANT/ANT-RX

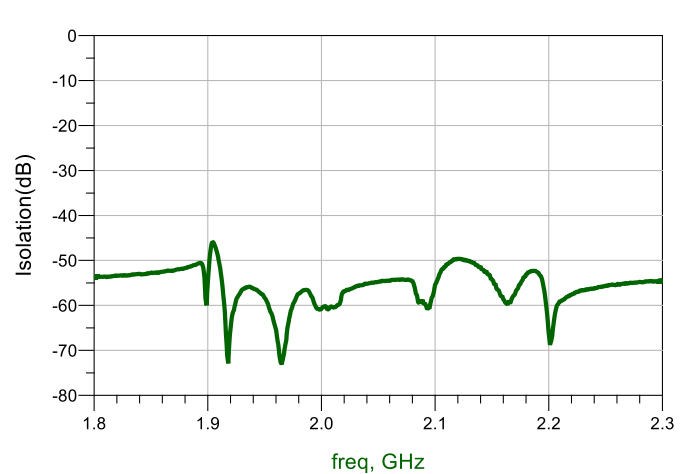


Figure6. TX - RX Isolation

Typical Performance at Tc=25°C

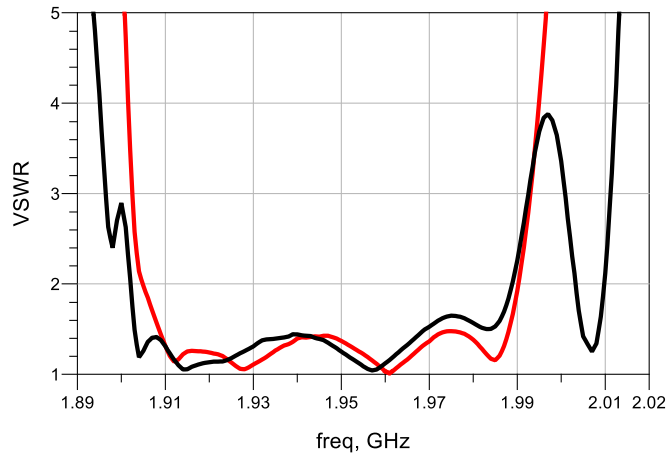


Figure7. TX/ANT Port VSWR

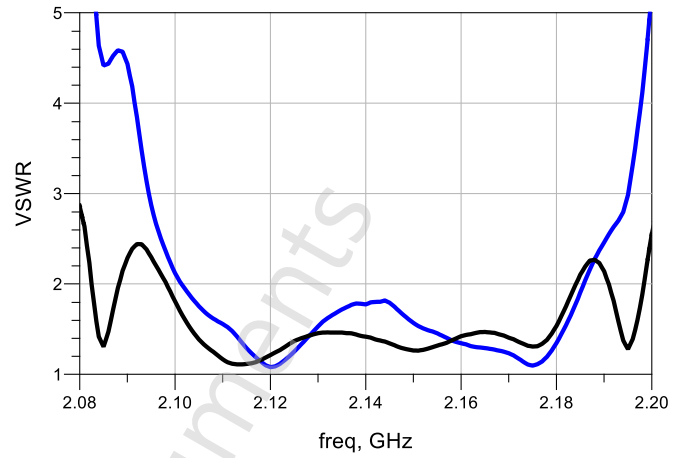
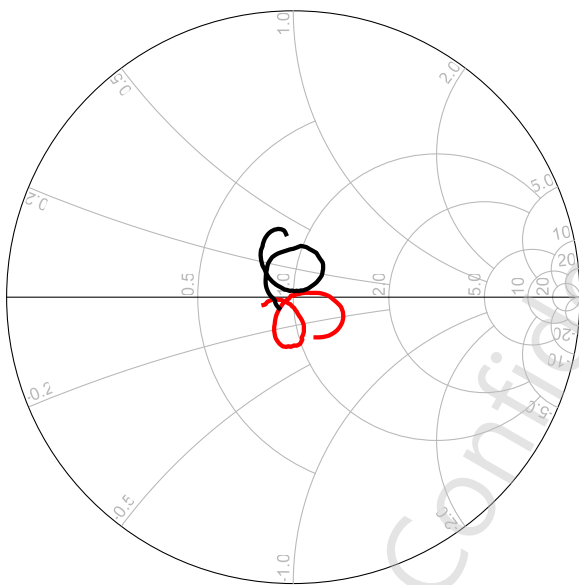
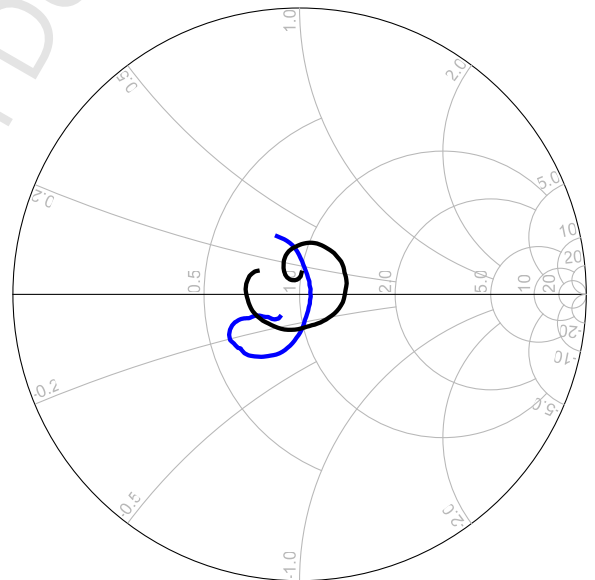


Figure8. RX/ANT Port VSWR



freq (1.920GHz to 1.980GHz)

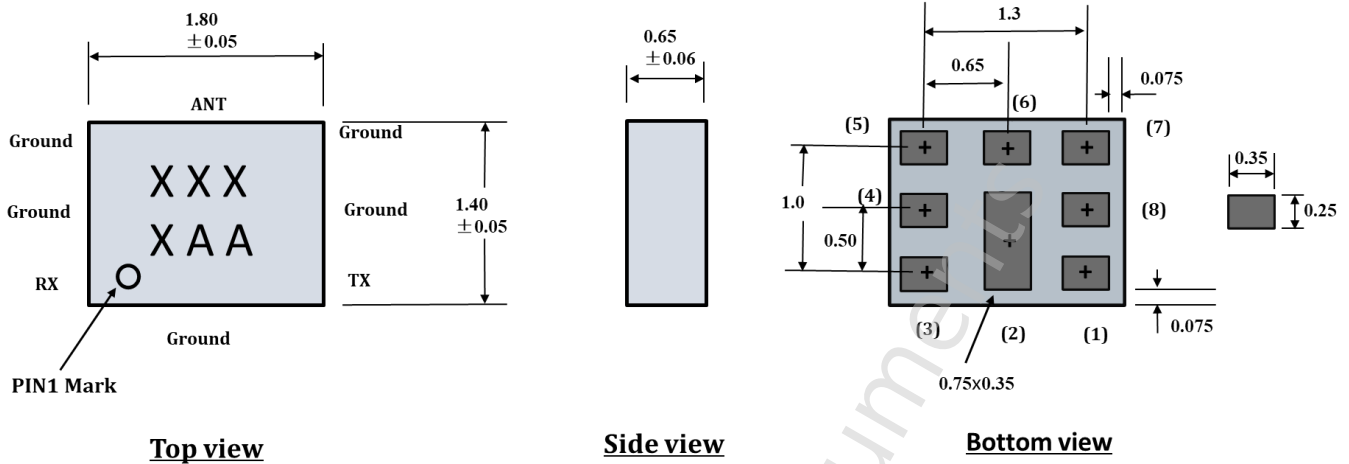
Figure9. TX/ANT Smith Chart



freq (2.110GHz to 2.170GHz)

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 date code

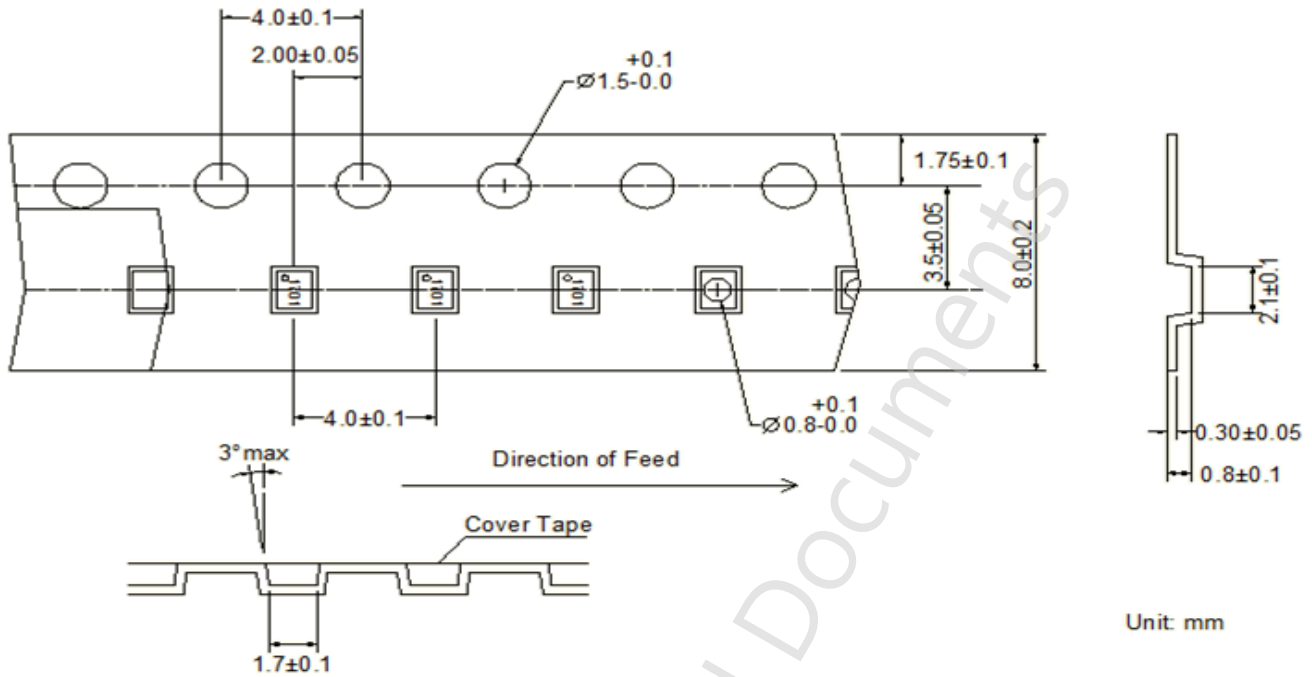
No.	Function
1	Rx
3	Tx
6	Ant
2,4,5,7,8	Ground

Order Information

P/N	Qty./Reel	Container
RSFD1954C	4000	7 inch Reel

Packing

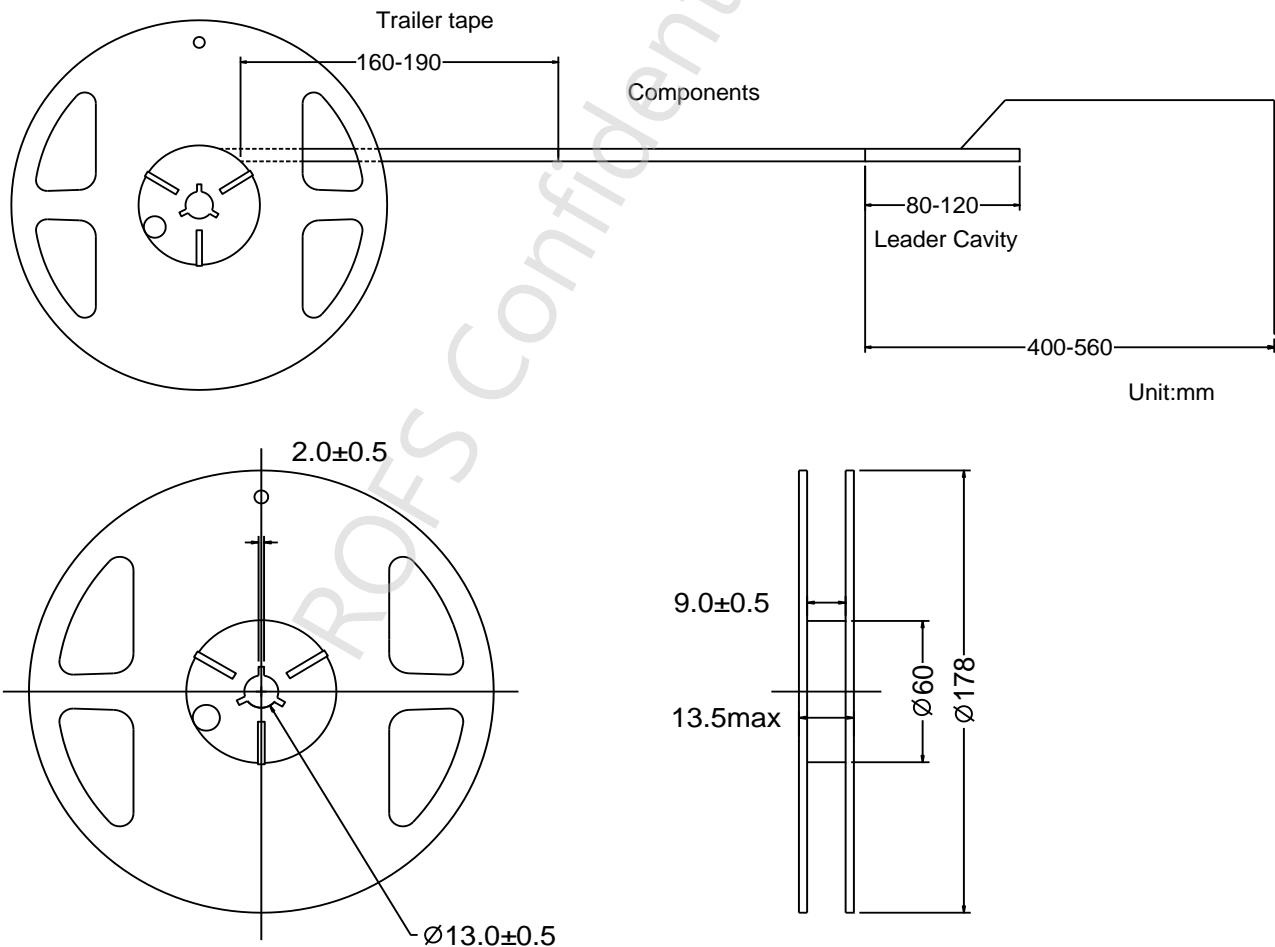
1. Tape Dimension



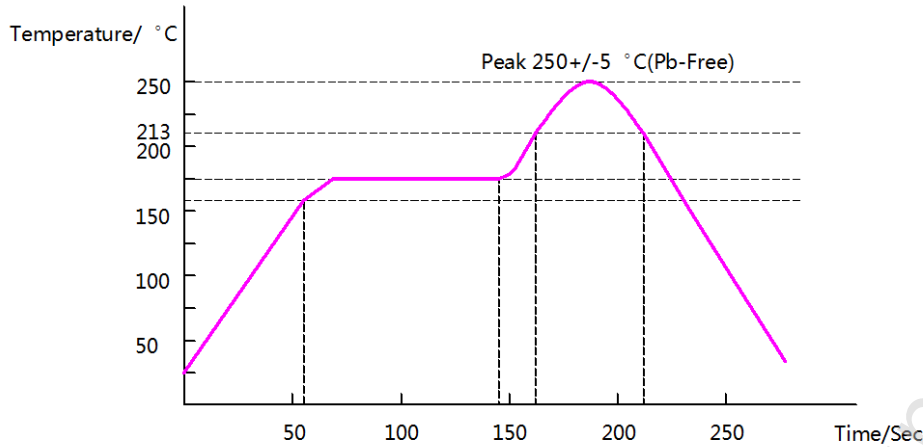
Unit: mm

2. Reel Dimension

4000Pcs/Reel



Unit:mm

Recommended Reflow Profile

For more information, please contact: 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.