

SAW Single Filter

for B5 / Unbalanced / 5pin / 1109

Pinnacle PN: SA051109881MAT

Key Feature:

✓ LTE B5 RX

1 Description

SA051109881MAT is a high-performance Surface Acoustic Wave (SAW) Bandpass filter optimized for TD-LTE applications operating in the range of 0.869-0.894 GHz. It is designed to provide both low insertion loss in the Band 5 and high rejection in the adjacent cellular Bands for mobile devices.

SA051109881MAT uses advanced Chip Scale Package (CSP) technology and is housed in an industry-standard, 5-pin 1.1 mm x 0.9 mm package with a low profile of 0.6mm max.

2 Features

- Low Insertion Loss: 1.2dB at Mid-Band
- High Rejection in B5 TX
- Small Footprint: $0.25 \pm 0.03\text{mm} \times 0.20 \pm 0.03\text{mm}$.
- Package size $1.1 \pm 0.05\text{mm} \times 0.9 \pm 0.05\text{mm}$
- Electrostatic Sensitive Device(ESD)
- Package height 0.6mm max.
- Single-Ended Operation
- RoHS Compliant

3 Package & Dimensions:

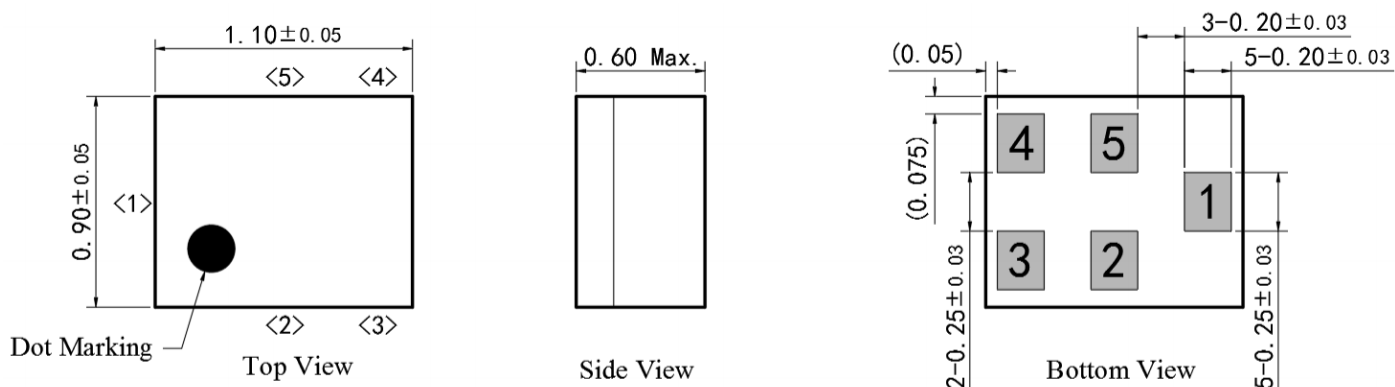


Figure 1: Drawing of Package with each tolerance range

4 Pin configuration

- 1 Input (recommended)
- 4 Output (recommended)
- 2,3,5 To be grounded

5 Matching Circuit(recommended)

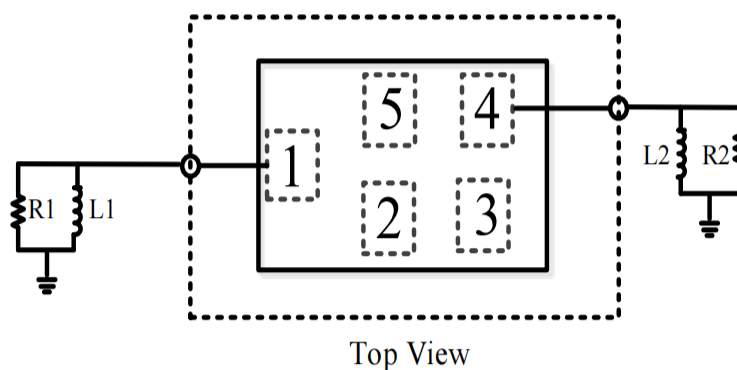


Figure 2: Schematic of matching circuit.

R1: 50 Ohm	L1: NC
R2: 50 Ohm	L2: NC

6 Absolute Maximum Ratings

Parameter	Rating	Unit
Operating Temperature	-30 to +85	°C
Storage Temperature	-40 to +85	°C
Maximum Input Power	+15	dBm
Maximum DC Voltage	5	V
Input terminating impedance	50	Ω
Output terminating impedance	50	Ω
Input Power@input port	Pin=15dBm Continuous wave for 2000h@+55°C	

7 Recommended Soldering Profile

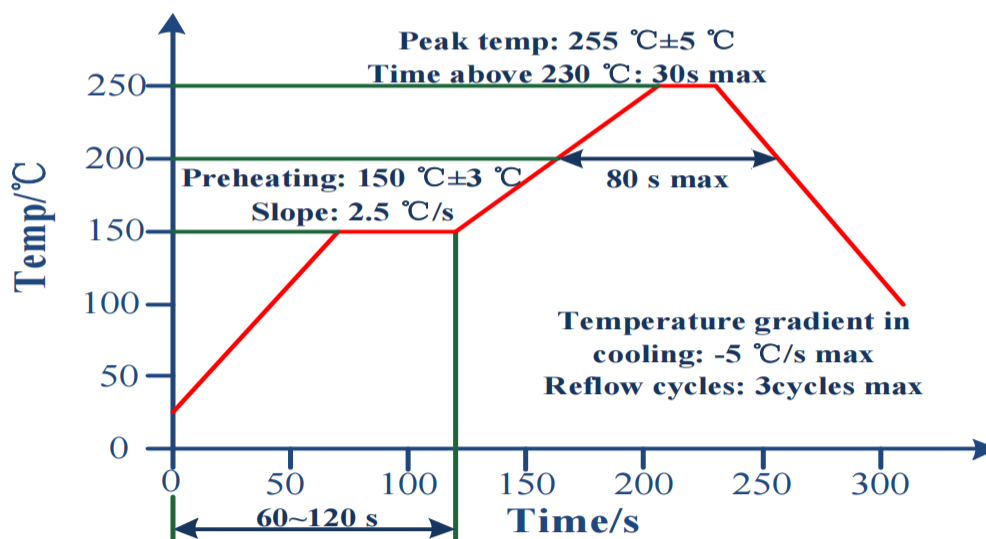


Figure 3 : Recommended Reflow profile for convection and infrared soldering lead-free solder.

8 Electrical Specifications

Parameter	Conditions	Min	Typ.	Max	Unit	
Insertion Loss	869 - 894 MHz	-	1.6	2.1	dB	
Passband Ripple	869 - 894 MHz	-	1.0	1.2	dB	
Attenuation	779 – 804 MHz	40	443	-	dB	
	824 – 849 MHz	42	46	-	dB	
	846.5 – 854 MHz	55	59	-	dB	
	1738 - 1788 MHz	30	36	-	dB	
	2400-2500 MHz	25	30	-	dB	
	2517-2592 MHz	25	30		dB	
	2607 - 2682 MHz	25	30		dB	
VSWR(input)	869 - 894 MHz	-	1.7	2	-	
VSWR(output)	869 - 894 MHz	-	1.7	2	-	

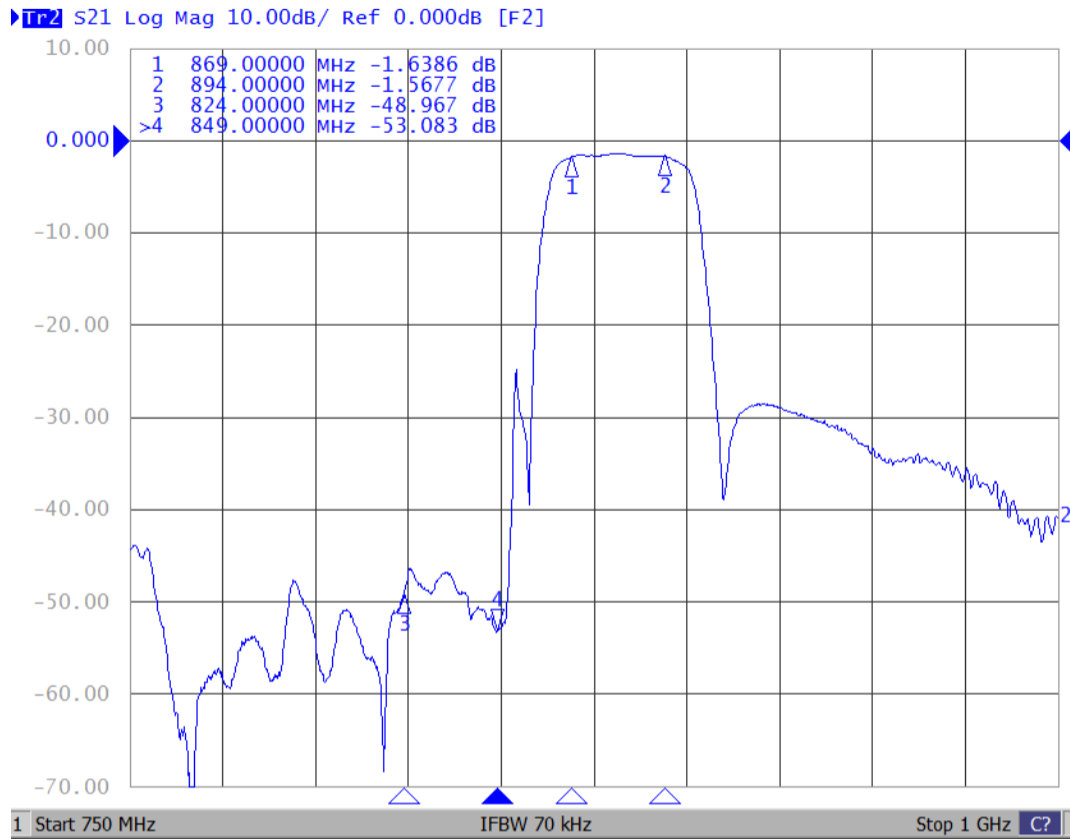
9 Transmission coefficient


Figure 4: |S21|

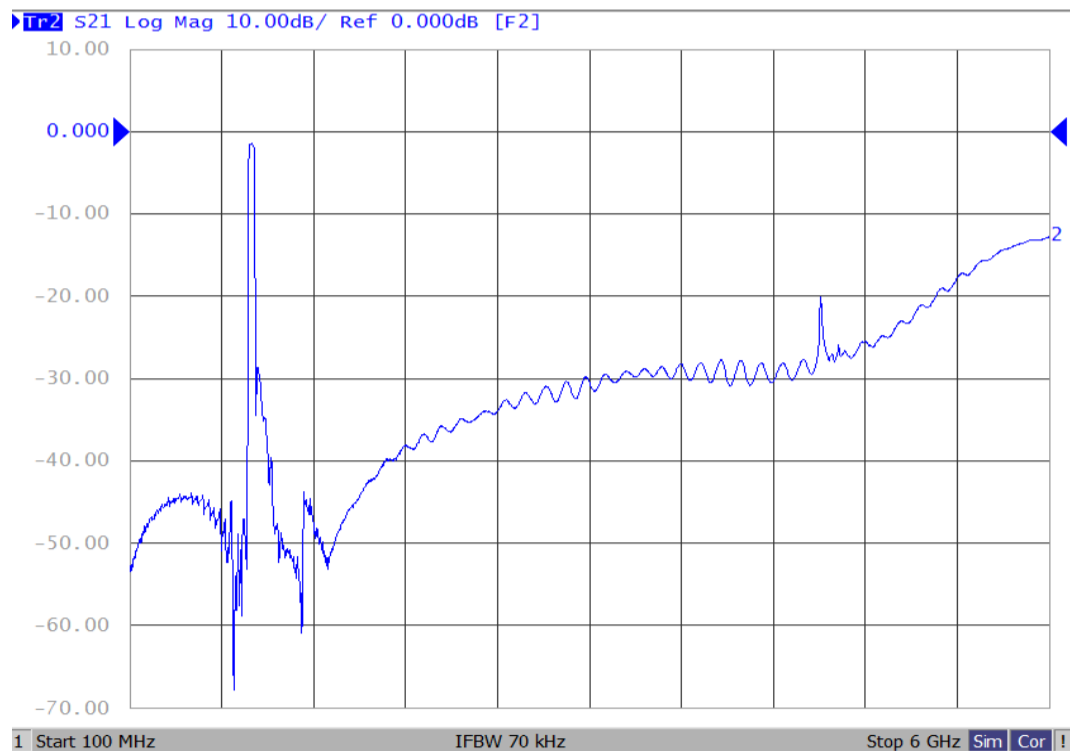
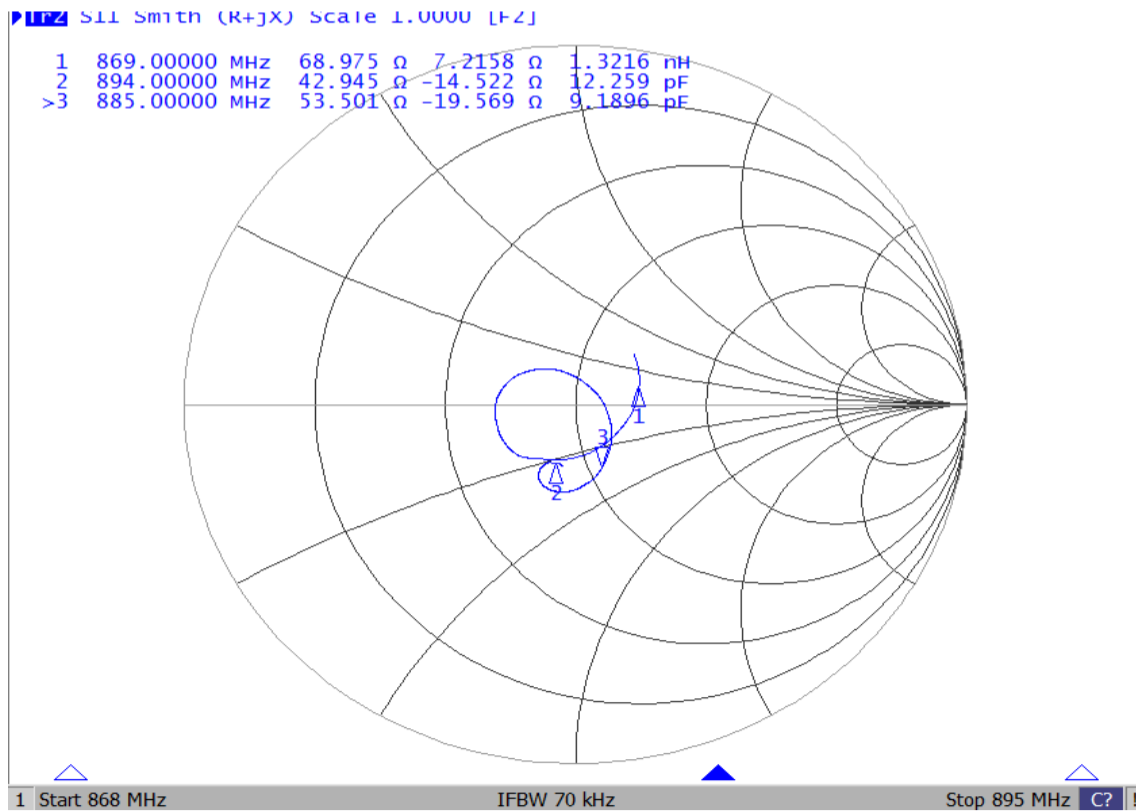
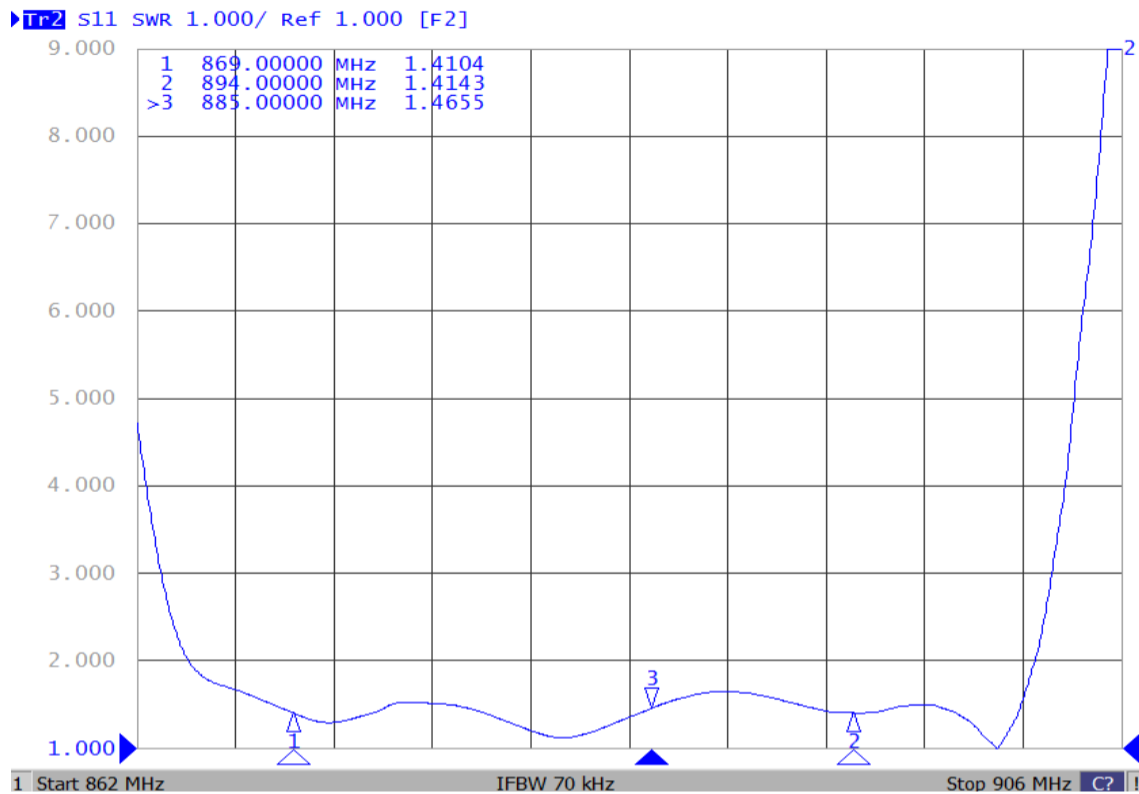


Figure 5: Wide Band |S21|

10 Reflection coefficients

Figure 6: Reflection coefficient (S11)

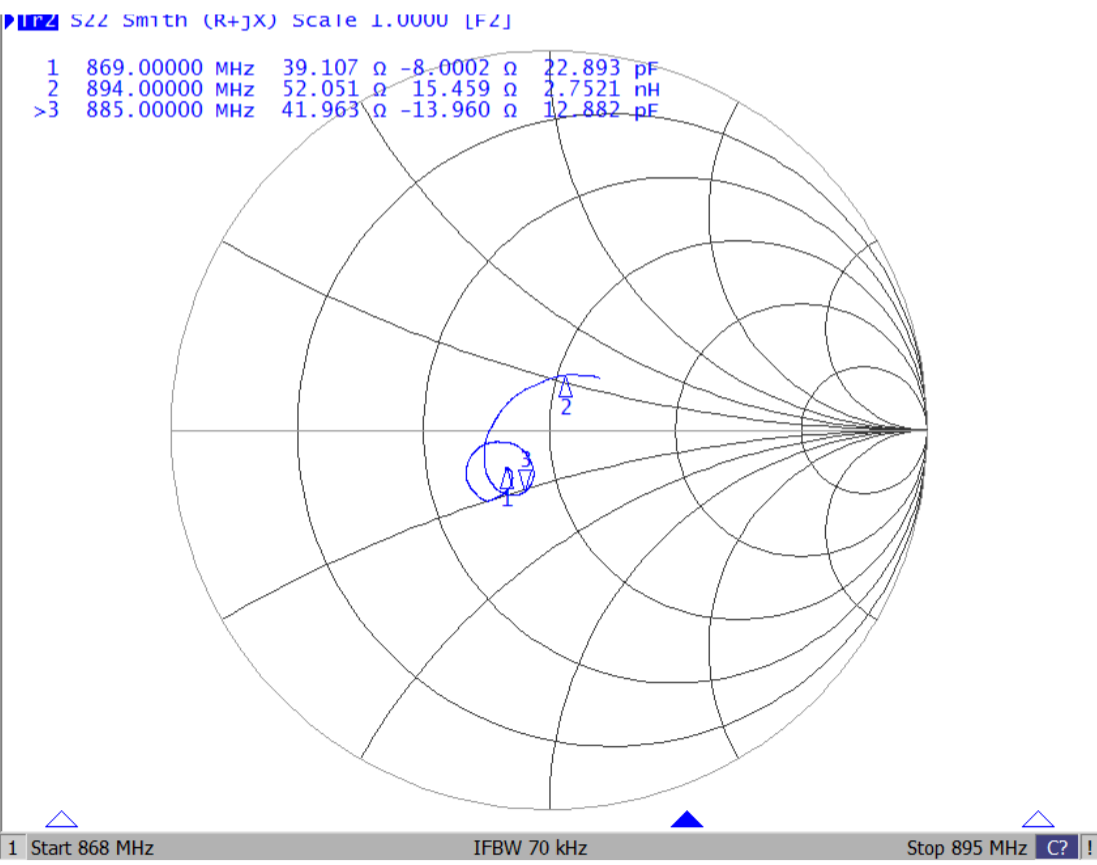
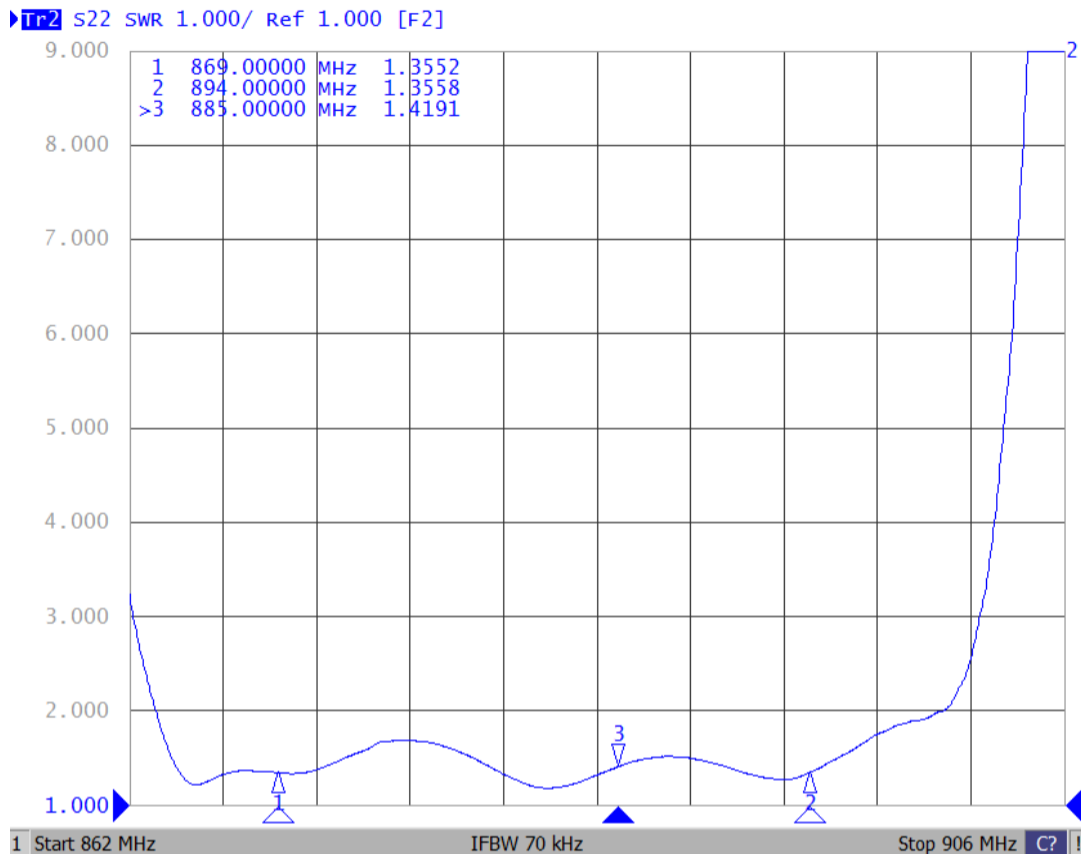


Figure 7: Reflection coefficient (S22)

11 Packing material

11.1 Tape

Tensile Strength of Carrier Tape: Carrier tape 10N or more; Cover tape 5N or more. Packaging quantities: 5000 PCS / Reel.

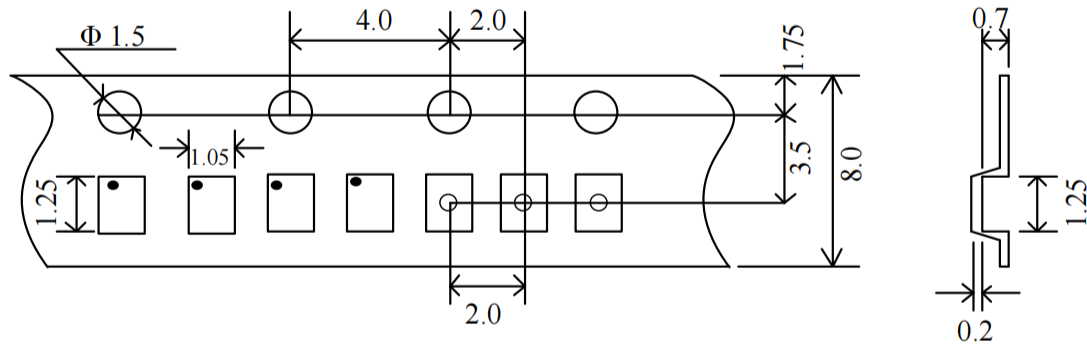


Figure 8: Drawing of tape with tape dimensions according above.

11.2 Reel with diameter of 178mm

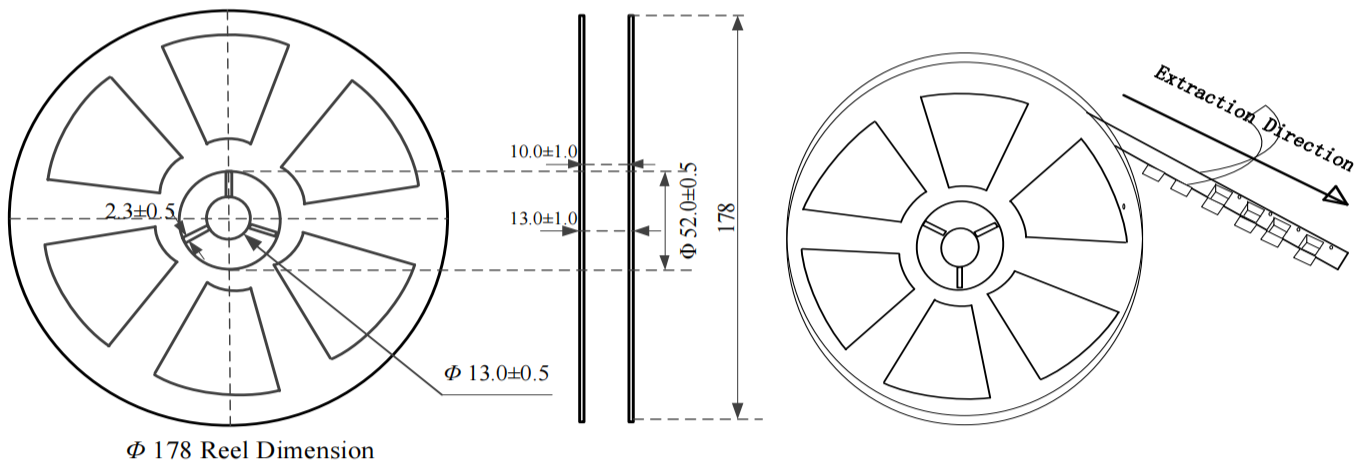


Figure 9: Drawing of reel with diameter of 178mm.