

## **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:

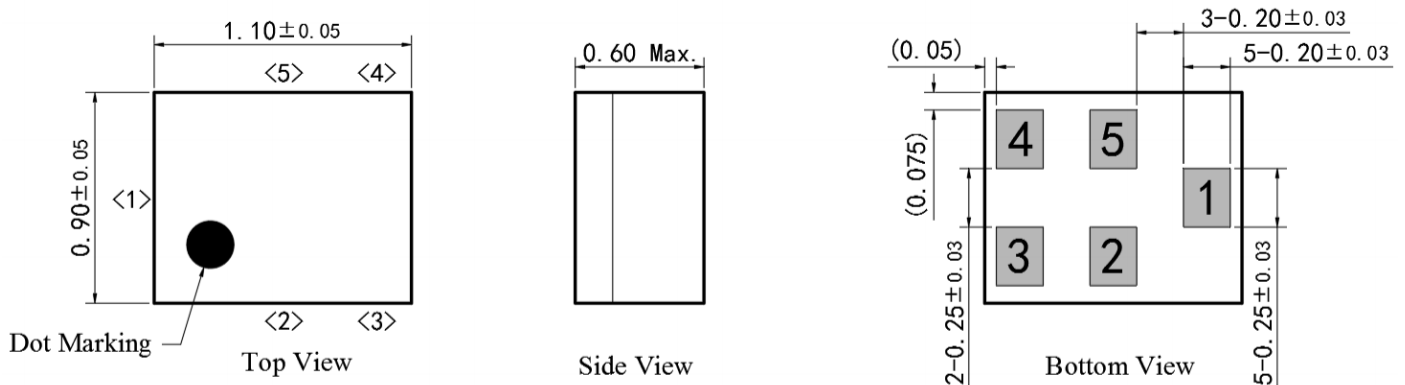


Figure 1: Drawing of Package with each tolerance range

### 4 Pin configuration

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

### 5 Matching Circuit(recommended)

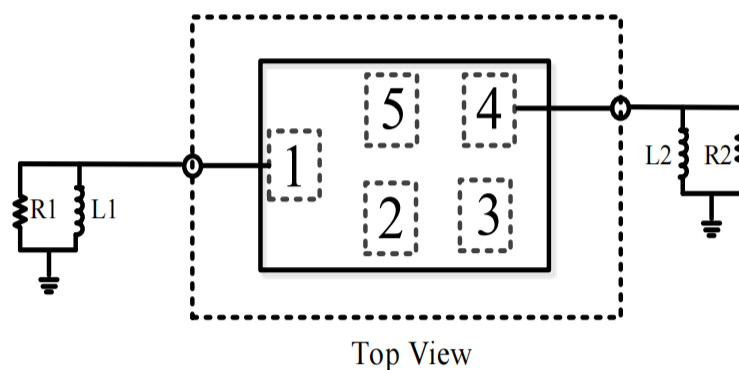


Figure 2: Schematic of matching circuit.

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

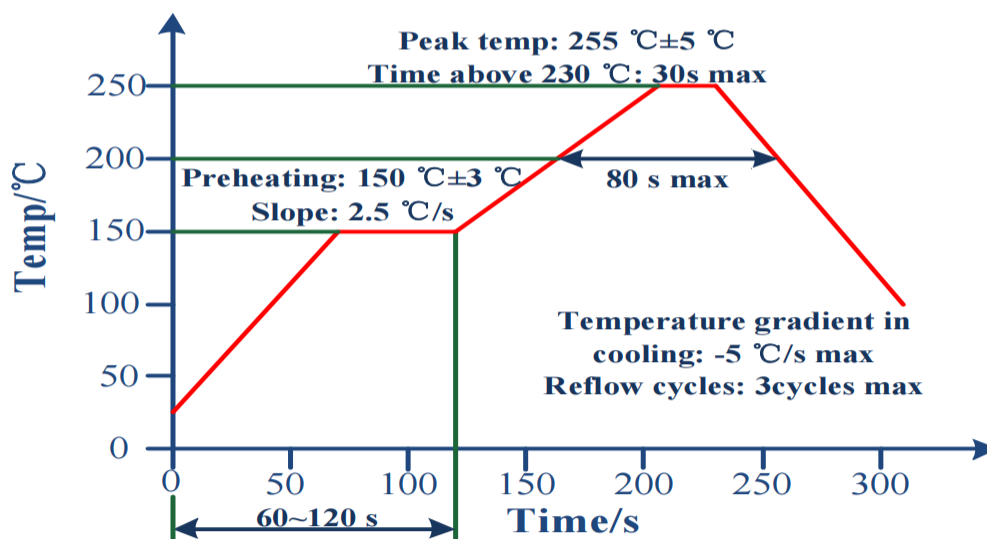


Figure 3 : Recommended Reflow profile for convection and infrared soldering lead-free solder.

**8 Electrical Specifications**

<b>Parameter</b>	<b>Conditions</b>	<b>Min</b>	<b>Typ.</b>	<b>Max</b>	<b>Unit</b>	
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	-	

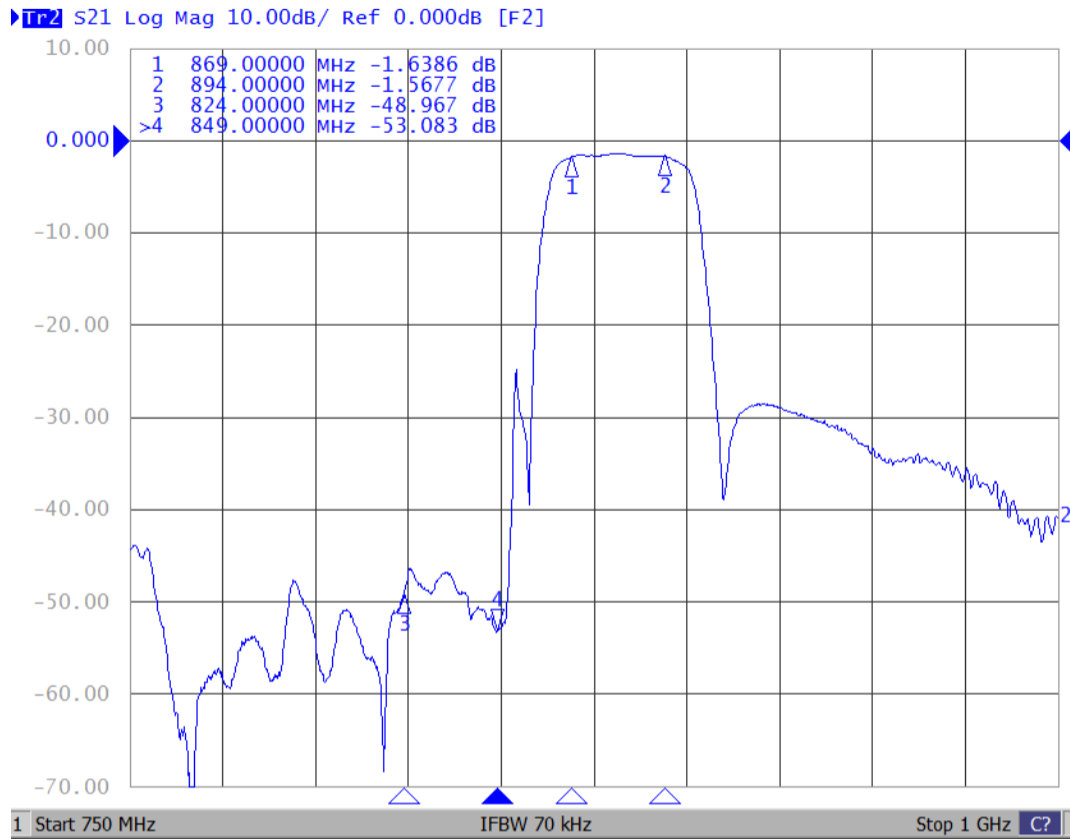
**9 Transmission coefficient**


Figure 4: |S21|

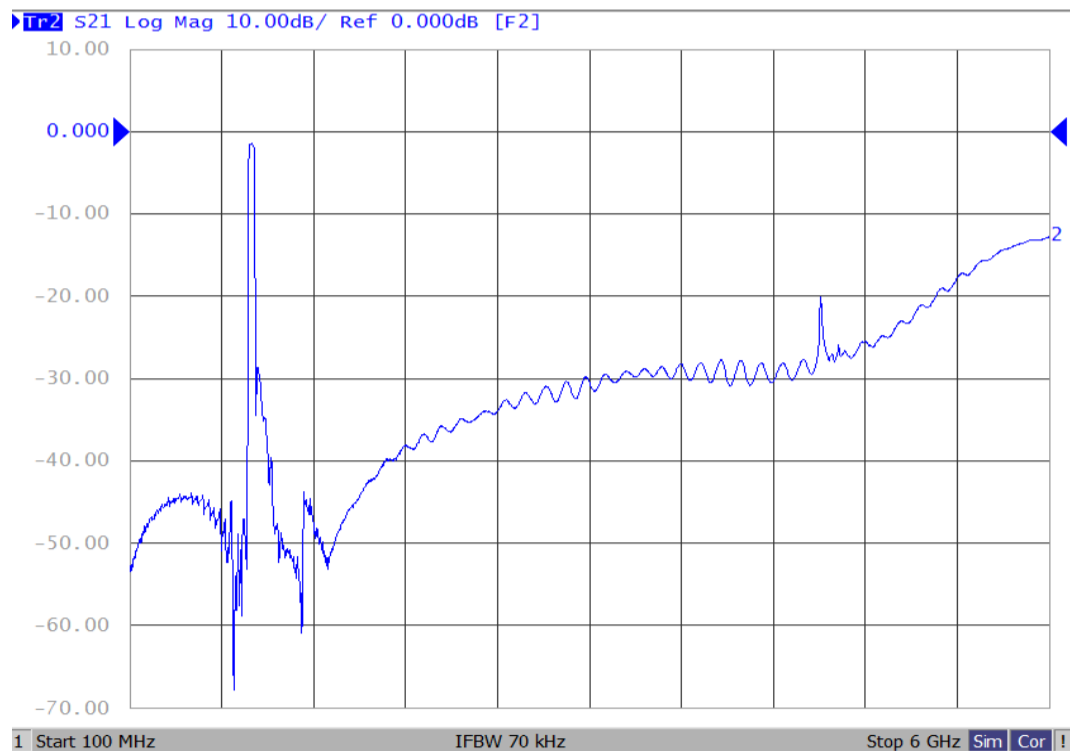
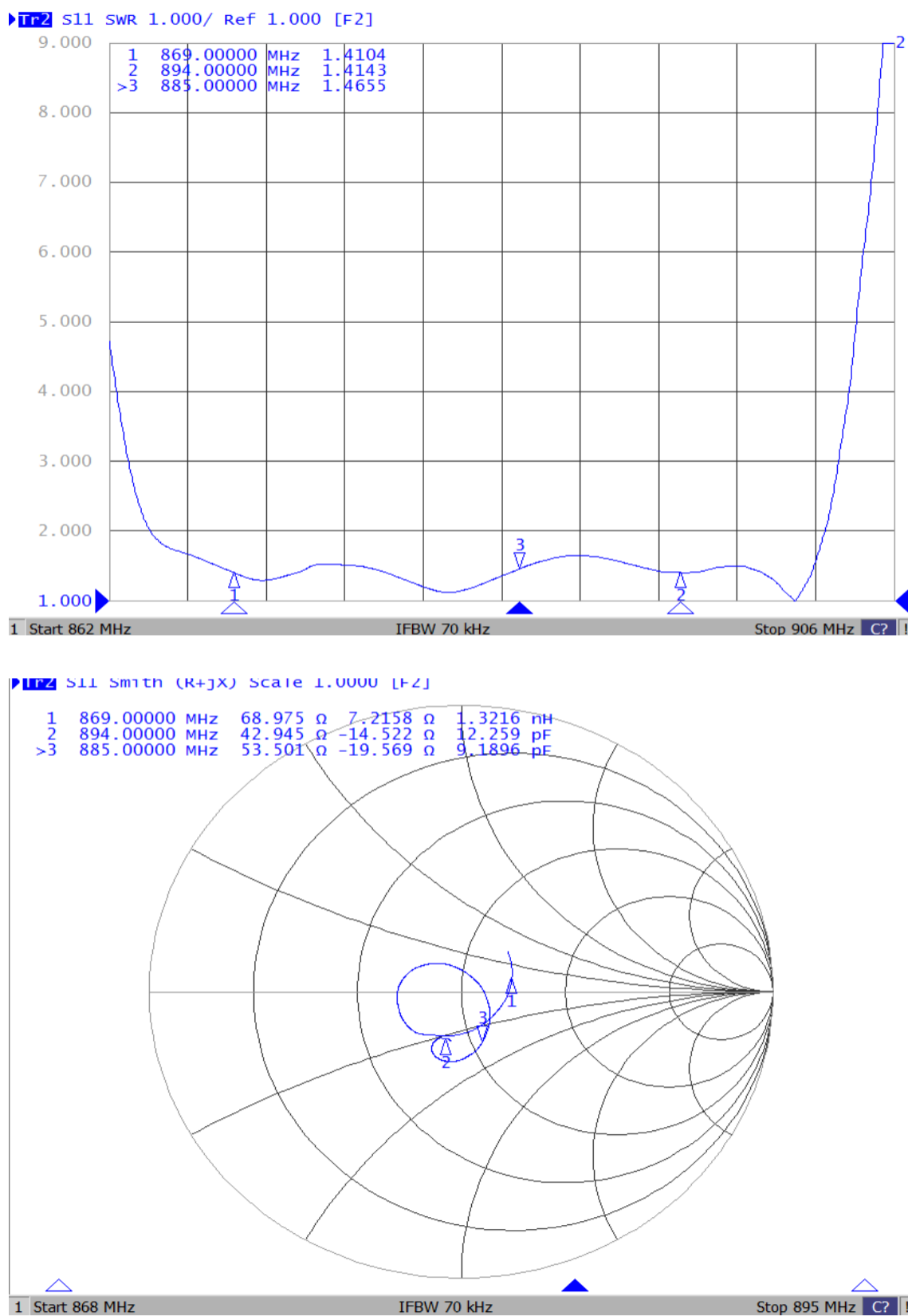


Figure 5: Wide Band |S21|

**10 Reflection coefficients**

**Figure 6: Reflection coefficient (S11)**

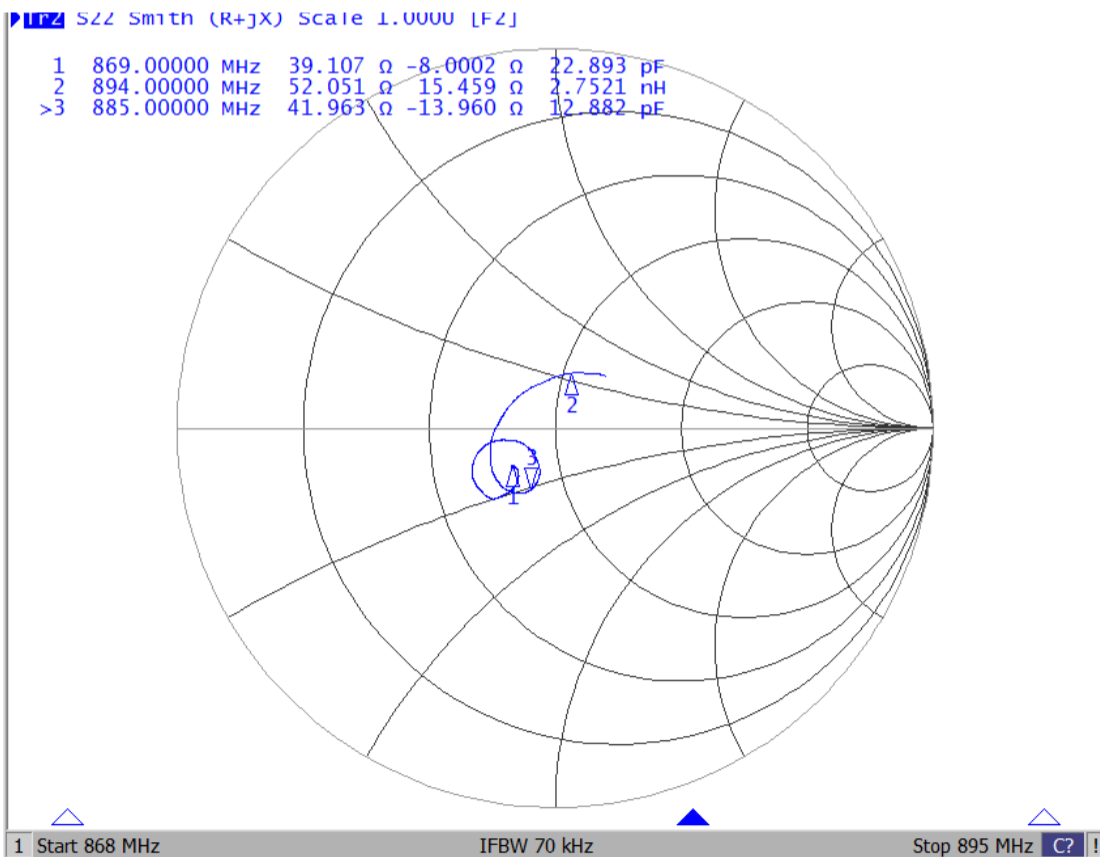
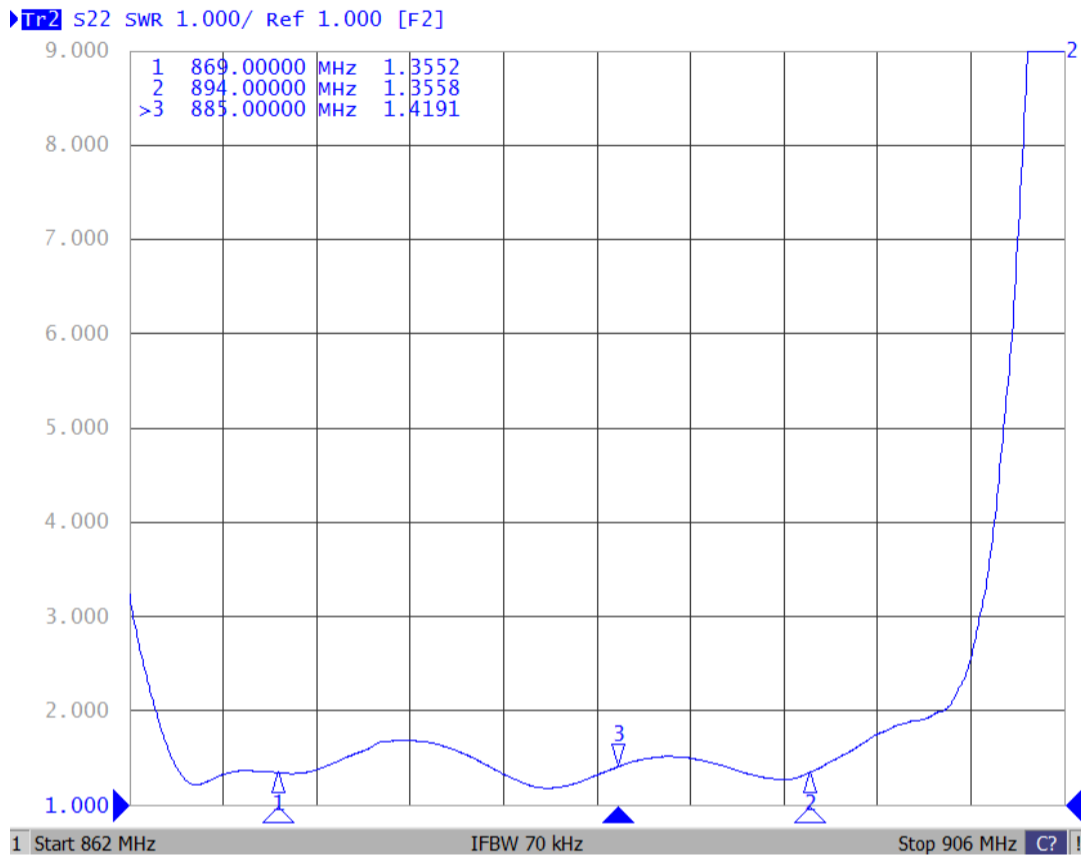


Figure 7: Reflection coefficient (S22)



## 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.

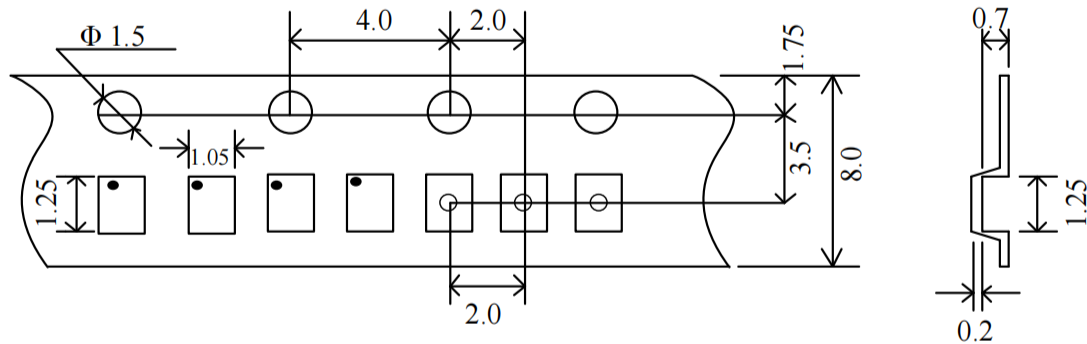


Figure 8: Drawing of tape with tape dimensions according above.

### 11.2 Reel with diameter of 178mm

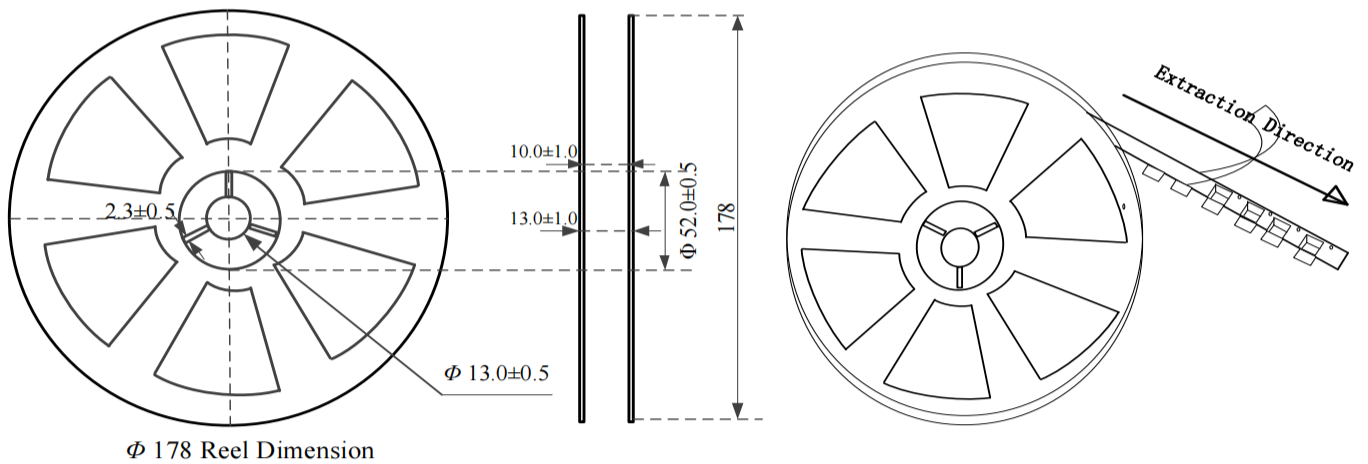


Figure 9: Drawing of reel with diameter of 178mm.

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