

## **SAW Single Filter**

**for B8 / Unbalanced / 5pin /1109**

**Pinnacle PN: SA081109942MAT**

**Key Feature:**

**✓ LTE B8 RX**

## 1 Description

SA081109942MAT is a high-performance Surface Acoustic Wave (SAW) Bandpass filter optimized for FDD LTE Band 8 applications operating in the range of 0.925-0.960GHz. It is designed to provide both low insertion loss in the Band 8 and high rejection in the adjacent cellular Bands for mobile devices.

SA081109942MAT uses advanced Chip Scale Package (CSP) technology and is housed in an industry-standard, 5-pin 1.1mm x 0.9mm package with a low profile of 0.6mm max.

## 2 Features

- Low Insertion Loss: 1.30dB at Mid-Band
- High Rejection in B8 TX
- Small Footprint: 1.1mm x 0.9mm x 0.6mm Max.
- 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:

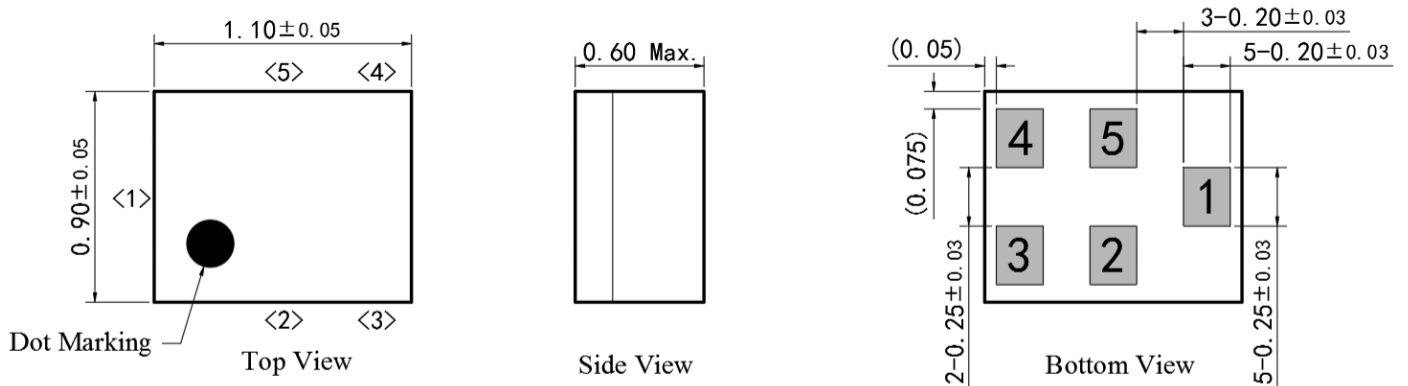


Figure 1: Drawing of Package with each tolerance range

### 4 Pin configuration

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

### 5 Matching Circuit(recommended)

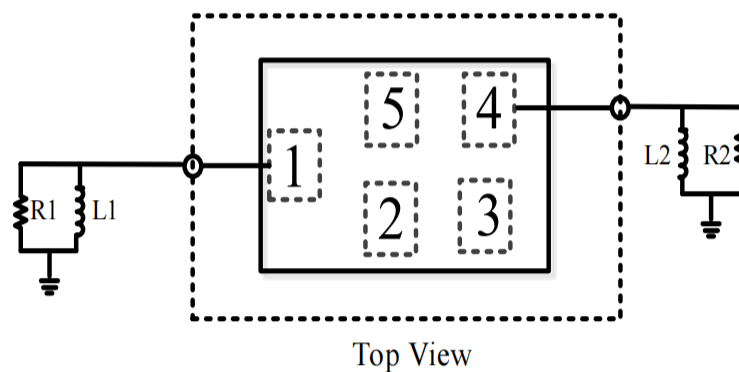


Figure 2: Schematic of matching circuit.

R1: 50 Ohm	L1: 10 nH ( $Q \approx 15 @ 950\text{Mhz}$ )
R2: 50 Ohm	L2: 27 nH ( $Q \approx 15 @ 950\text{Mhz}$ )

## 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

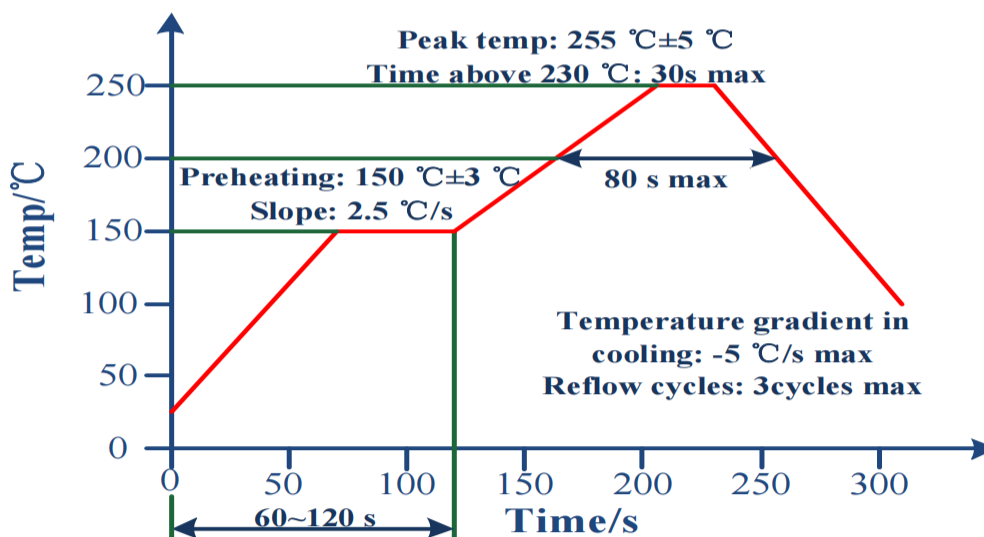


Figure 3: Recommended Reflow profile for convection and infrared soldering -lead-free solder.

**8 Electrical Specifications**

<b>Parameter</b>	<b>Conditions</b>	<b>Min</b>	<b>Typ.</b>	<b>Max</b>	<b>Unit</b>
Insertion Loss	925 - 960 MHz	-	2.0	2.5	dB
Passband Ripple	925 - 960 MHz	-	1.8	2.0	dB
Attenuation	0.2–880 MHz	30	36	-	dB
	45 - 45 MHz (RX-TX)	42	45	-	dB
	880–915 MHz	36	45	-	dB
	902.5 - 910 MHz	45	48	-	dB
	980 - 1045 MHz	30	40	-	dB
	1045-6000 MHz	22	25		dB
	1427-1448 MHz	50	52		dB
	1710-1785 MHz	45	46		dB
	1805-1920 MHz	41	45		dB
	1920-1980 MHz	40	42		dB
	2500-2570 MHz	33	35		dB
VSWR(input)	925 - 960 MHz	-	1.7	2	-
VSWR(output)	925 - 960 MHz	-	1.7	2	-

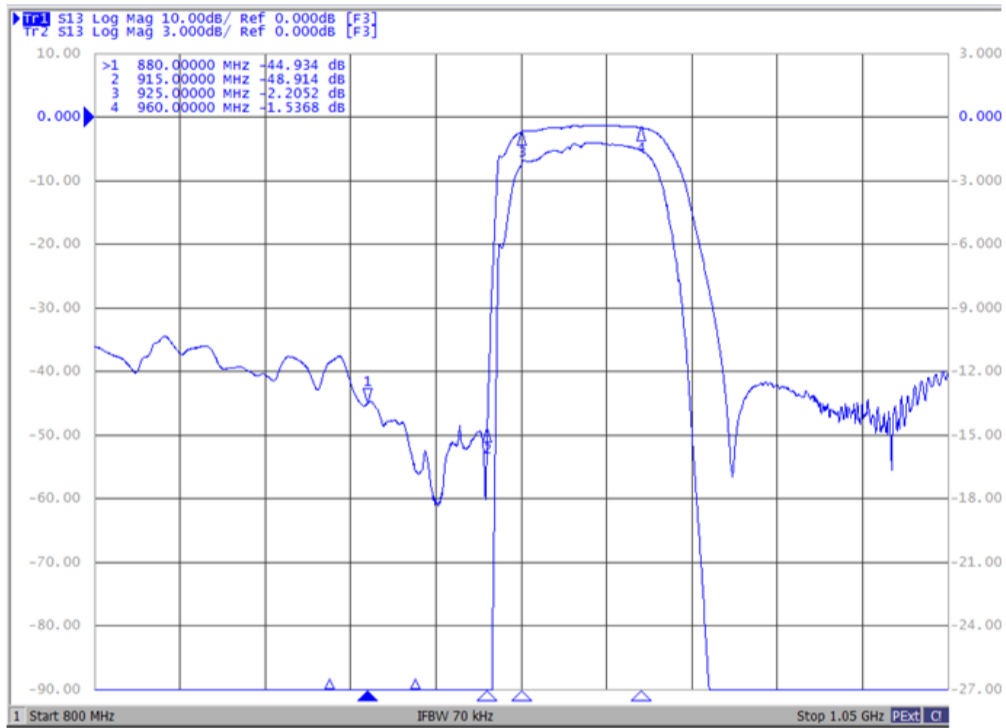
**9 Transmission coefficient**


Figure 4: |S21|

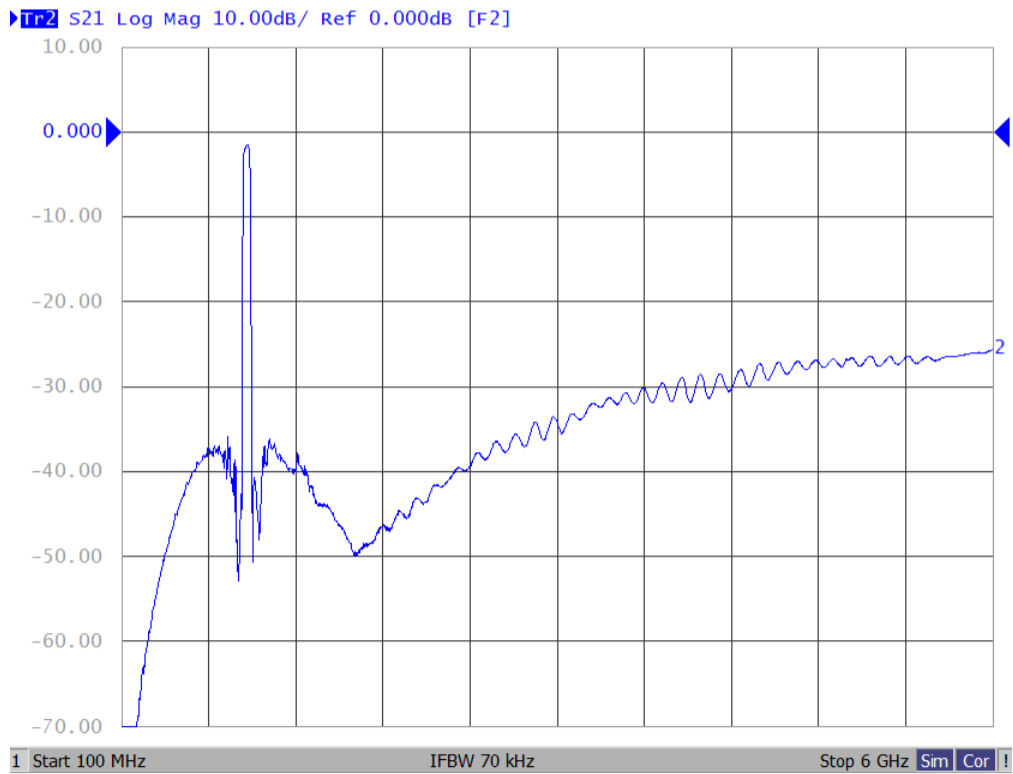


Figure 5: Wide Band |S21|

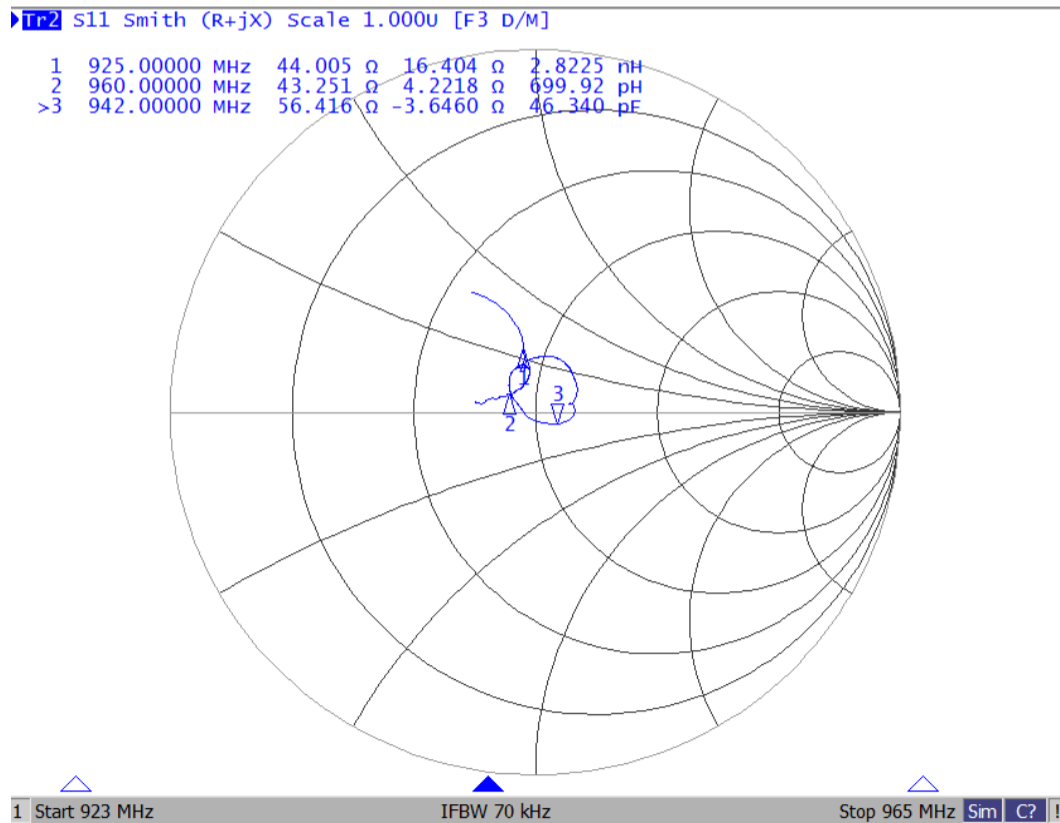
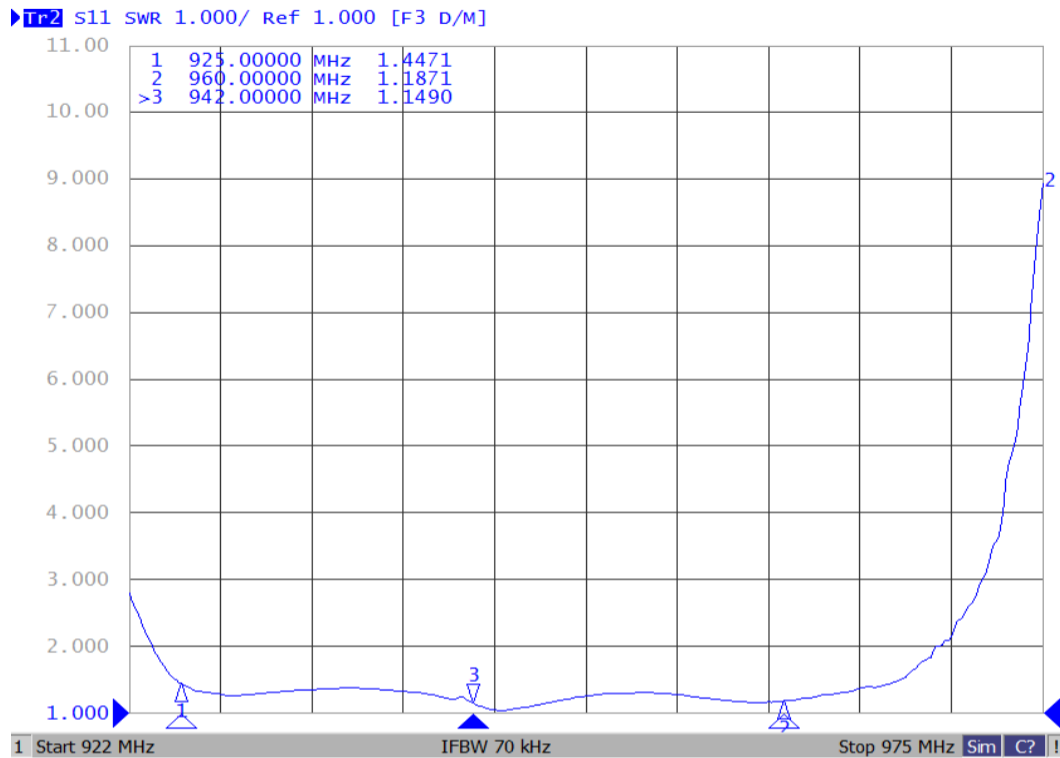
**10 Reflection coefficients**


Figure 6: Reflection coefficient (S11)

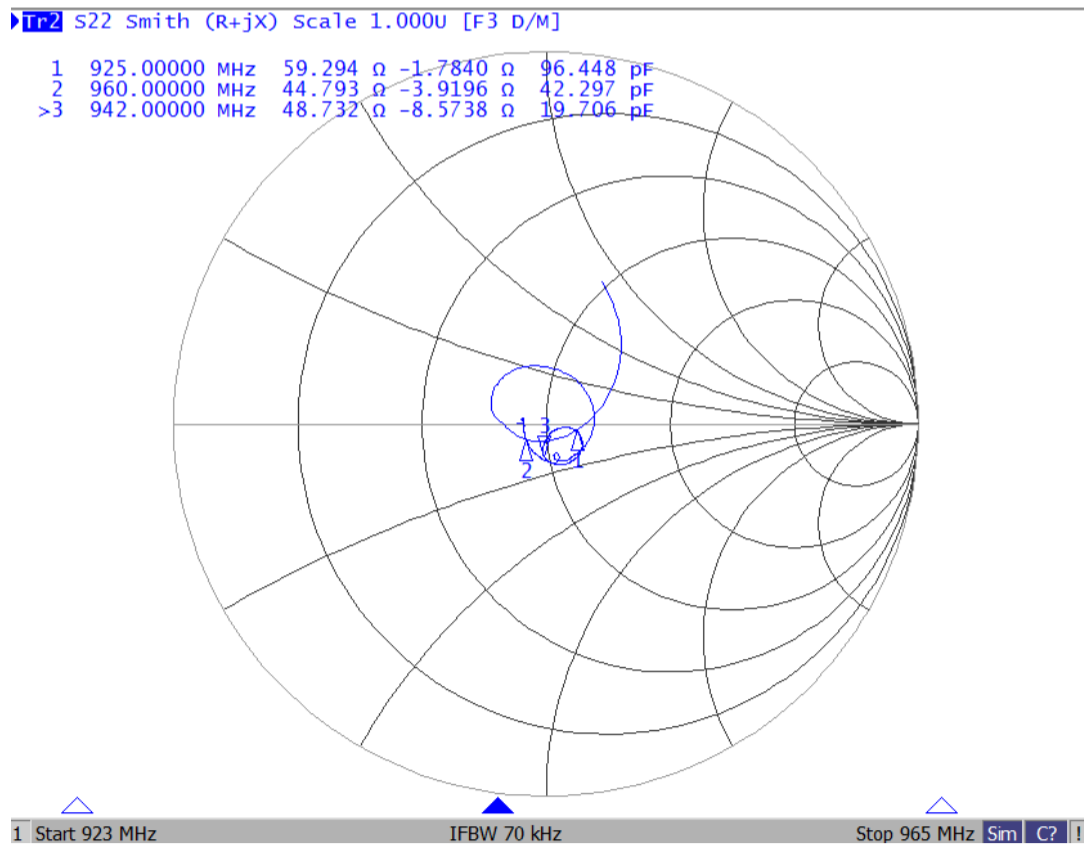
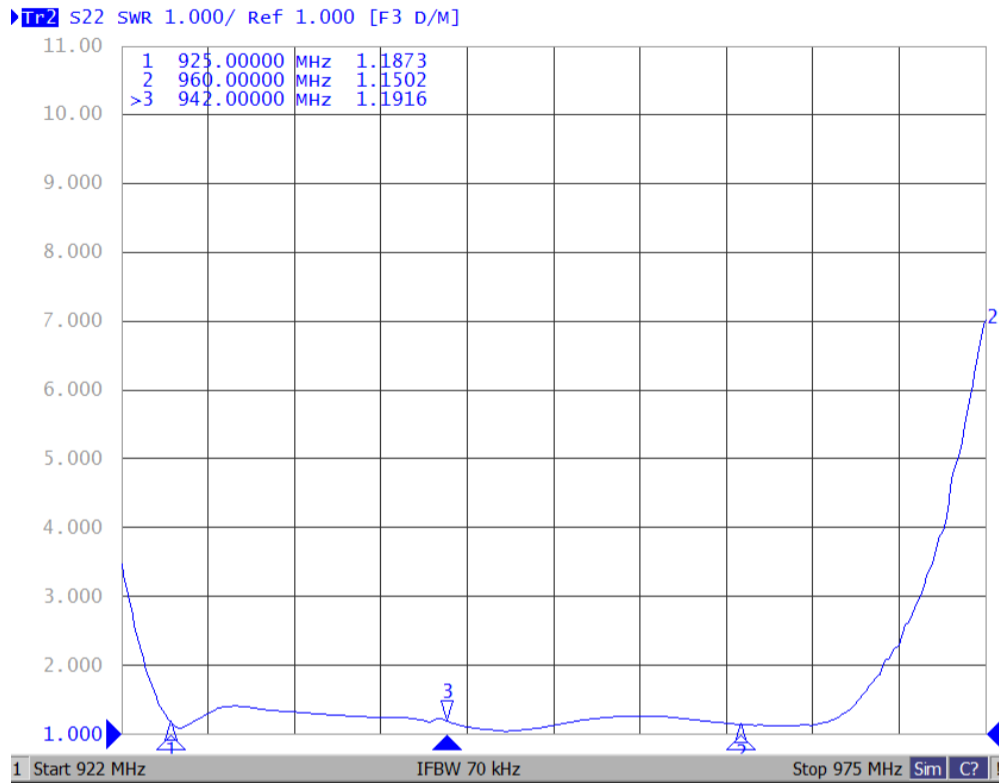


Figure 7: Reflection coefficient (S22)



## 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.

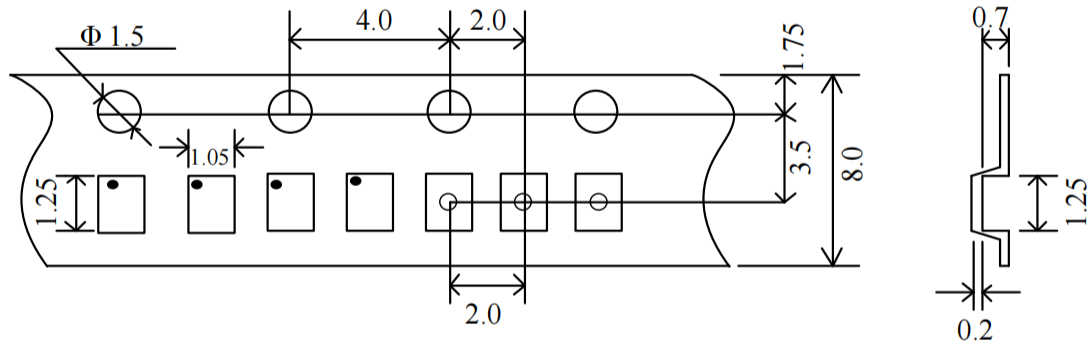


Figure 8: Drawing of tape with tape dimensions according above.

### 10.2 Reel with diameter of 178mm

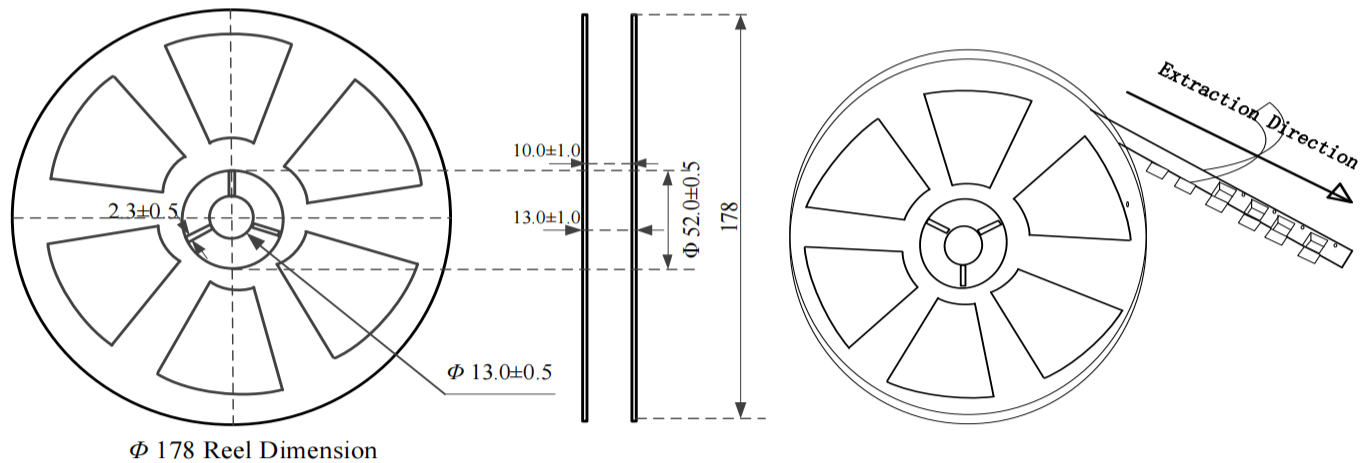


Figure 9: Drawing of reel with diameter of 178mm.

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