

## **SAW Single Filter**

**for B41 / Unbalanced / 5pin /1109**

- **Full Band 41 TX SAW Filter(2496-2690MHz)**
- **Low Insertion Loss**

## 1 Description

SA4111092G59AT is a high-performance Surface Acoustic Wave (SAW) bandpass filter optimized for operating in the range of 2.496-2.690 GHz. It is designed to provide both low insertion loss in the Band 41 and high rejection in the adjacent cellular Bands for mobile devices.

SA4111092G59AT 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: 1.2dB at Mid-Band
- High Rejection in WIFI
- 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

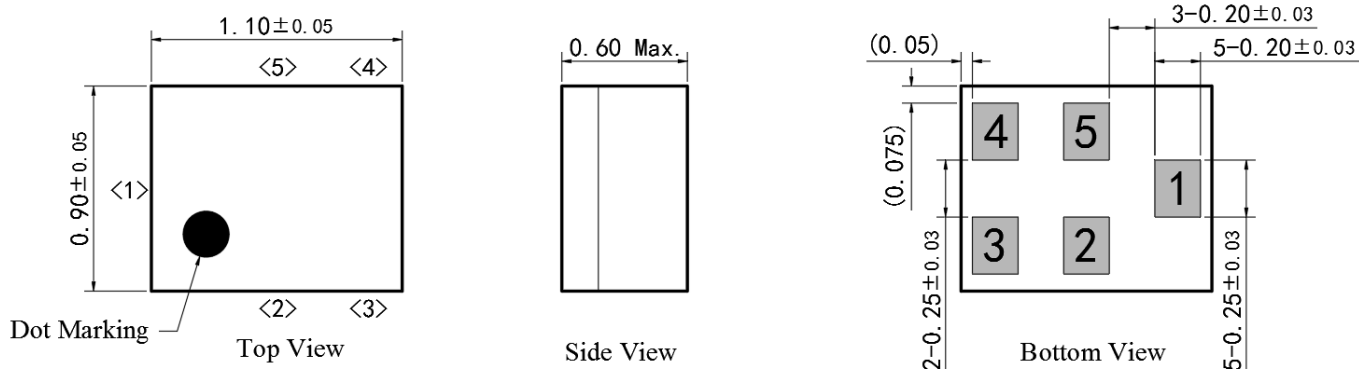


Figure 1: Drawing of Package with each tolerance range

### 4 Pin configuration

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

### 5 Matching Circuit(recommended)

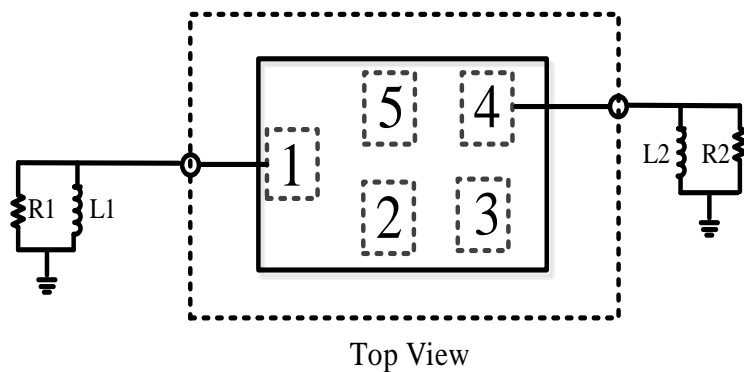


Figure 2: Schematic of matching circuit.

R1: 50 Ohm	L1: 2.0 nH (Q≈50 @2.600GHz)
R2: 50 Ohm	L2: 2.0 nH (Q≈50 @2.600GHz)

## 6 Absolute Maximum Ratings

Parameter	Rating	Unit
Operating Temperature	-20 to +85	°C
Storage Temperature	-40 to +85	°C
Maximum DC Voltage	5	V
Input terminating impedance	50	Ω
Output terminating impedance	50	Ω
Maximum Input Power@ input port	32dBm CW 5000h@50° C	

## 7 Electrical Specifications

(At  $T_a=25^{\circ}\text{C}$ , unless otherwise specified, as measured on the evaluation board of SA4111092G59AT with feed line loss de-embedded.)

Parameter	Conditions	Min	Typ.	Max	Unit
Insertion Loss	2496 - 2500 MHz	-	2.9	3.4	dB
	2500 - 2680 MHz		2.7	3.2	dB
	2555 - 2655 MHz		2.4	2.8	dB
	2545 - 2575 MHz	-	2.2	2.6	dB
	2620 - 2690 MHz	-	2.4	2.9	dB
Passband Ripple	2496 - 2690 MHz	-	1.0	2.5	dB
Attenuation	925 - 960 MHz	30	35	-	dB
	1226.57 - 1228.63 MHz	20	28	-	dB
	1242.42 - 1249.14 MHz	20	27	-	dB
	1248 - 1564 MHz	15	20	-	dB
	1565 - 1605 MHz	12	17	-	dB
	1710 - 1785 MHz	10	13	-	dB
	1805 - 1920 MHz	8	10	-	dB
	1920 - 1980 MHz	6	8	-	dB
	2110 - 2170 MHz	5	7	-	dB <sub>INT</sub>
	2401 - 2468 MHz	22	32	-	dB <sub>INT</sub>
	2451 - 2473 MHz	18	25	-	dB <sub>INT</sub>
	4992 - 5380 MHz	20	25	-	dB
VSWR(in)	2496 - 2690 MHz	-	1.5	2.0	-
VSWR(out)	2496 - 2690 MHz	-	1.5	2.0	-

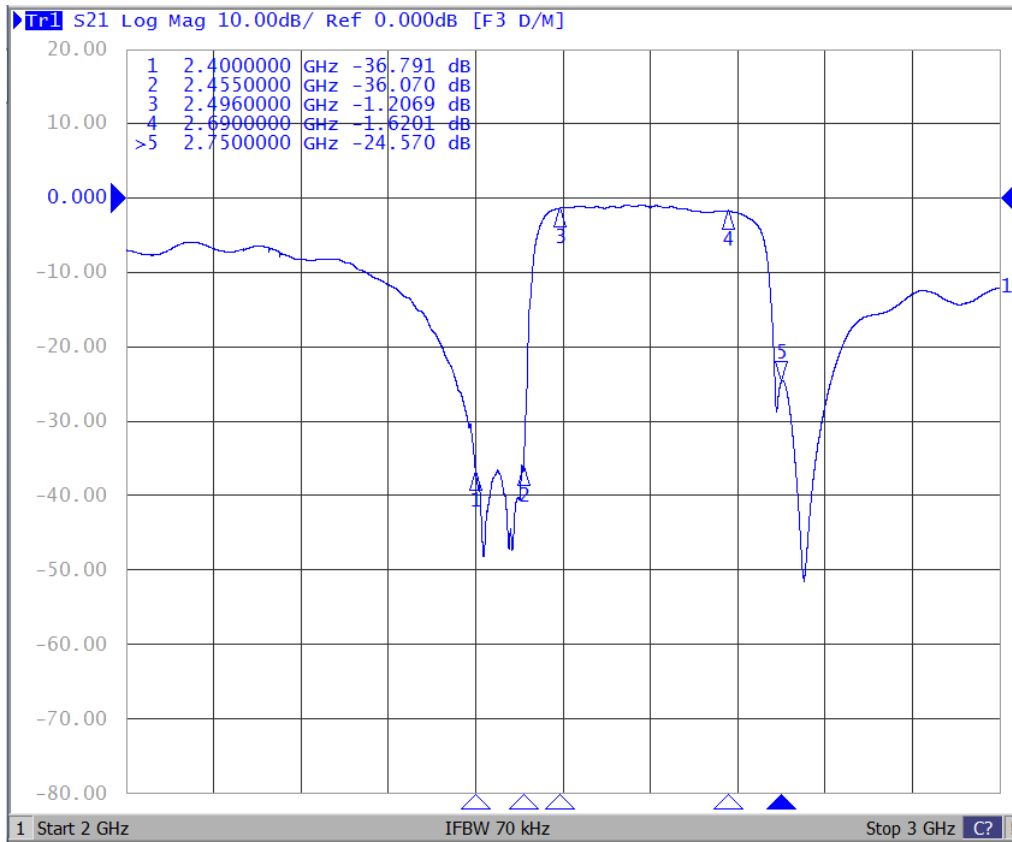
**8 Transmission coefficient**


Figure 3: |S21|

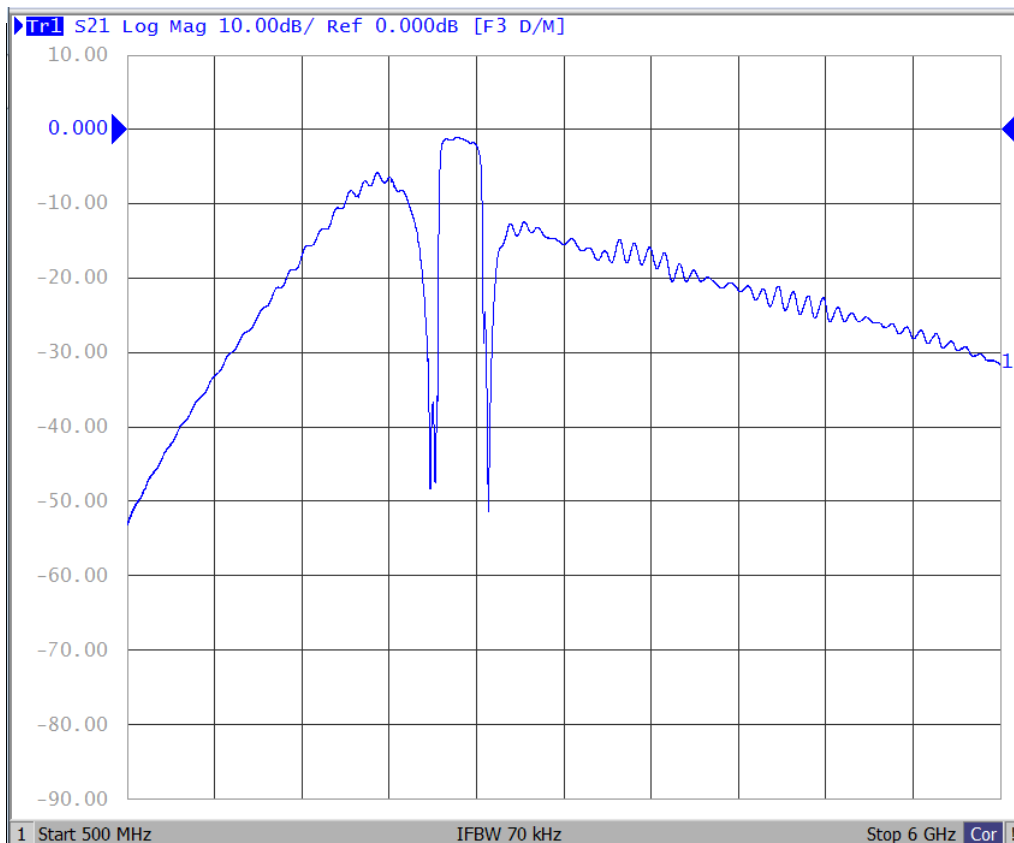
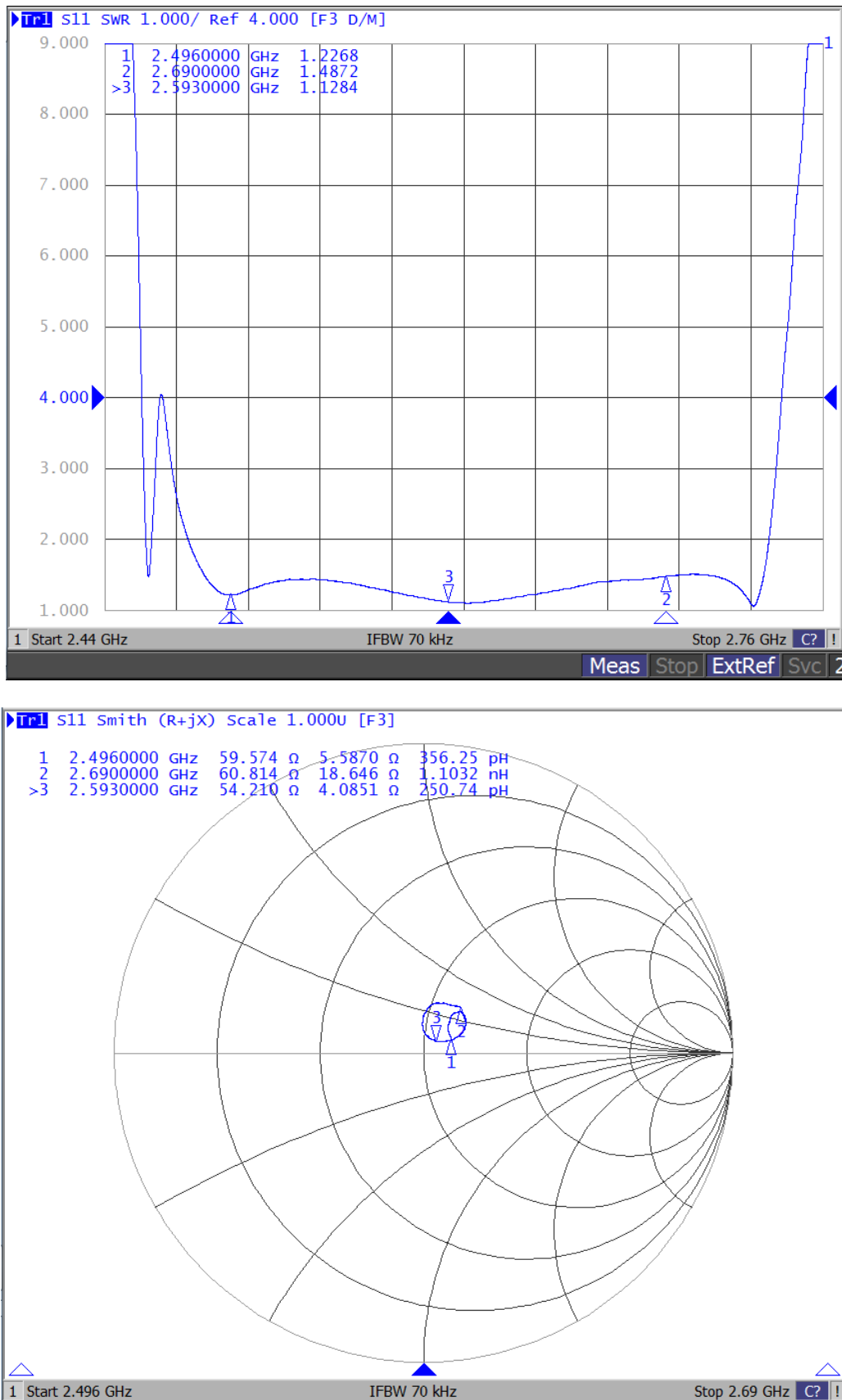


Figure 4: Wide Band |S21|

**9 Reflection coefficients**

**Figure 5: Reflection coefficient (S11)**

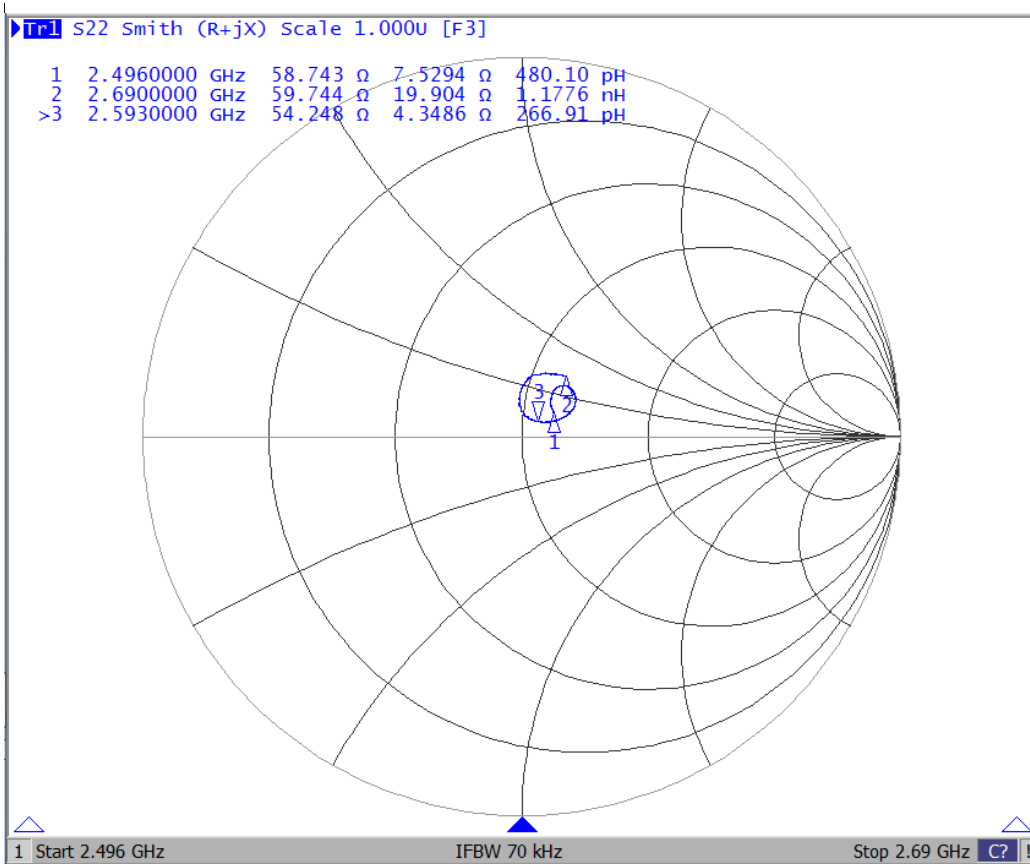
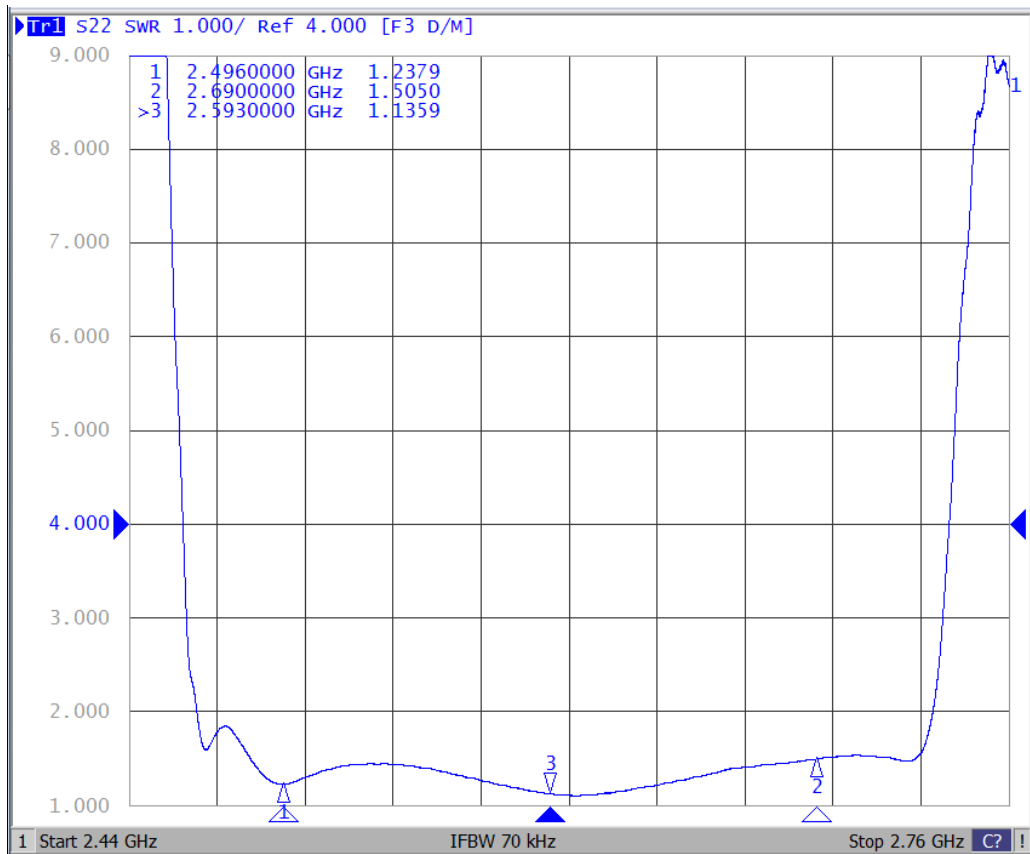


Figure 6: Reflection coefficient (S22)



## 10 Packing material

### 10.1 Tape

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

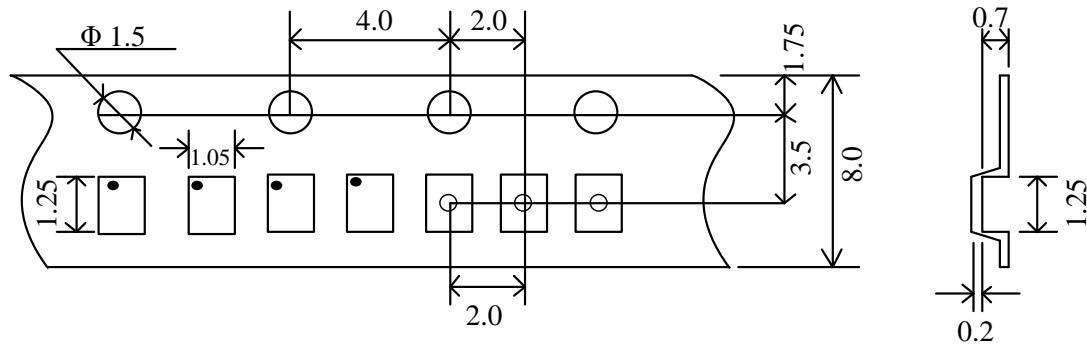


Figure 7: Drawing of tape with tape dimensions according above.

### 10.2 Reel with diameter of 178mm

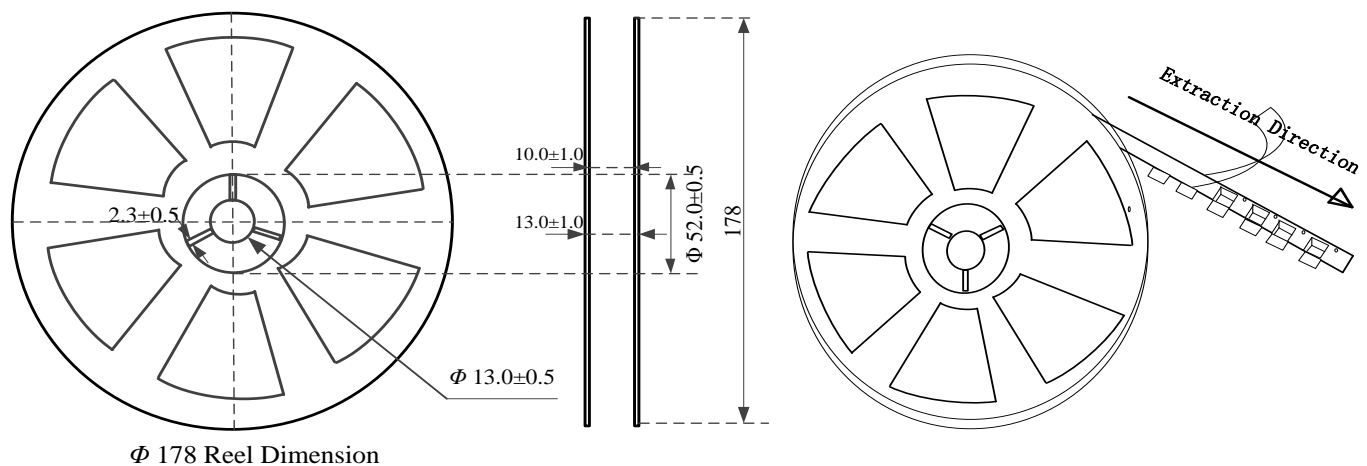


Figure 8: Drawing of reel with diameter of 178mm.