

SAW Single Filter

for WIFI / Bluetooth / Unbalanced / 5pin /1109

Pinnacle PN: SAD311092G45AT

Key Feature:

- ✓ **Co-existence of 4G LTE & WIFI signals**
- ✓ **High Rejection in B7/B41/B40 bands**

1 Description

SAD311092G45AT is a high-performance Surface Acoustic Wave (SAW) Bandpass filter optimized for co-existence between cellular 4G/LTE-TDD Band B40, B41, LTE-FDD Band B7, and Wi-Fi/Bluetooth applications operating in the range of 2.4-2.5 GHz license-free ISM band. It is designed to provide both low insertion loss in the Wi-Fi/BT Band and high rejection in the cellular Bands, in order to enable simultaneous operation of Wi-Fi/BT and 4G/LTE within the same device, such as smartphones.

SAD311092G45AT uses advanced Chip Scale Package (CSP) technology and is housed in an industry-standard, 5-pin 1.1mmx0.9mm package with a low profile of 0.6mm max.

2 Features

- Low Insertion Loss: 1.3dB at Mid-Band
- High Rejection in B40/B41/B7
- 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:

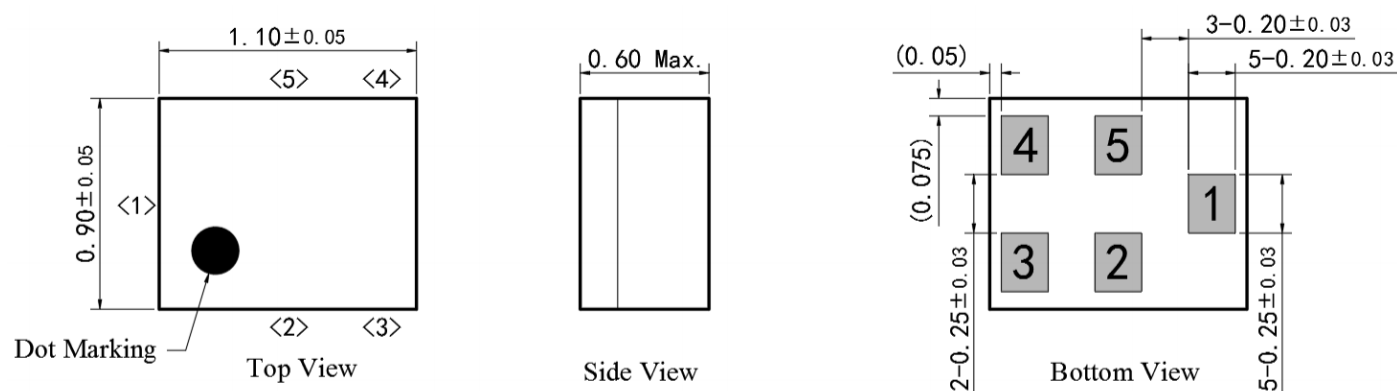


Figure 1: Drawing of Package with each tolerance range

4 Pin configuration

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

5 Matching Circuit(recommended)

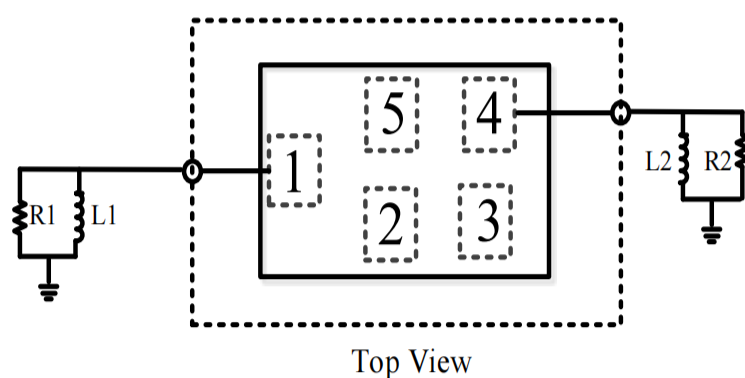


Figure 2: Schematic of matching circuit.

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	+24	dBm
Maximum DC Voltage	5	V
Input terminating impedance	50	Ω
Output terminating impedance	50	Ω
Input Power@input port	Pin=24dBm Continuous wave for 2000h@+55°C	

7 Recommended Soldering Profile

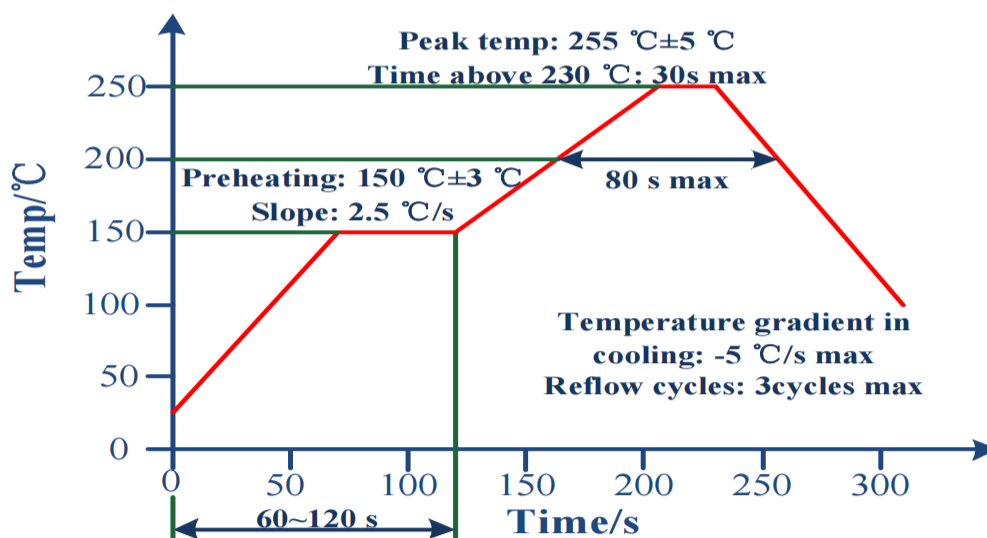


Figure 3: Recommended Reflow profile for convection and infrared soldering -lead-free solder.

8 Electrical Specifications

Parameter	Conditions	Min	Typ.	Max	Unit	Note
Insertion Loss	2403 - 2471 MHz	-	1.9	2.8	dB	
	2458 - 2476 MHz	-	1.8	2.4	dB	
	2463 - 2481 MHz	-	2.2	2.8	dB	
Passband Ripple	2403 - 2481 MHz	-	1.2	1.6	dB	
Attenuation	800 - 2300 MHz	25	29	-	dB	
	2300 - 2370 MHz	29	35	-	dB	
	2370 - 2380 MHz	10	15	-	dB	
	2510 - 2570 MHz	36	41	-	dB	
	2570 - 2620 MHz	30	33	-	dB	
	2620 - 2690 MHz	30	32	-	dB	
VSWR Input	2403 - 2481 MHz	-	1.7	2.0	-	
VSWR Output	2403 - 2481 MHz	-	1.7	2.0	-	

9 Transmission coefficient

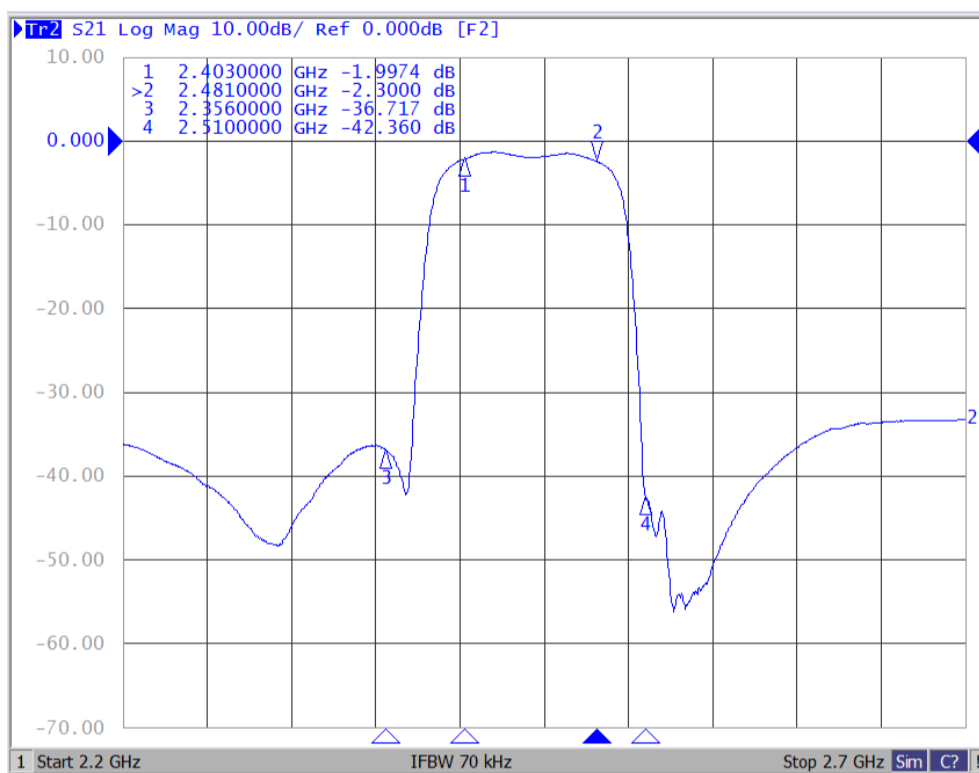


Figure 4: $|S_{21}|$

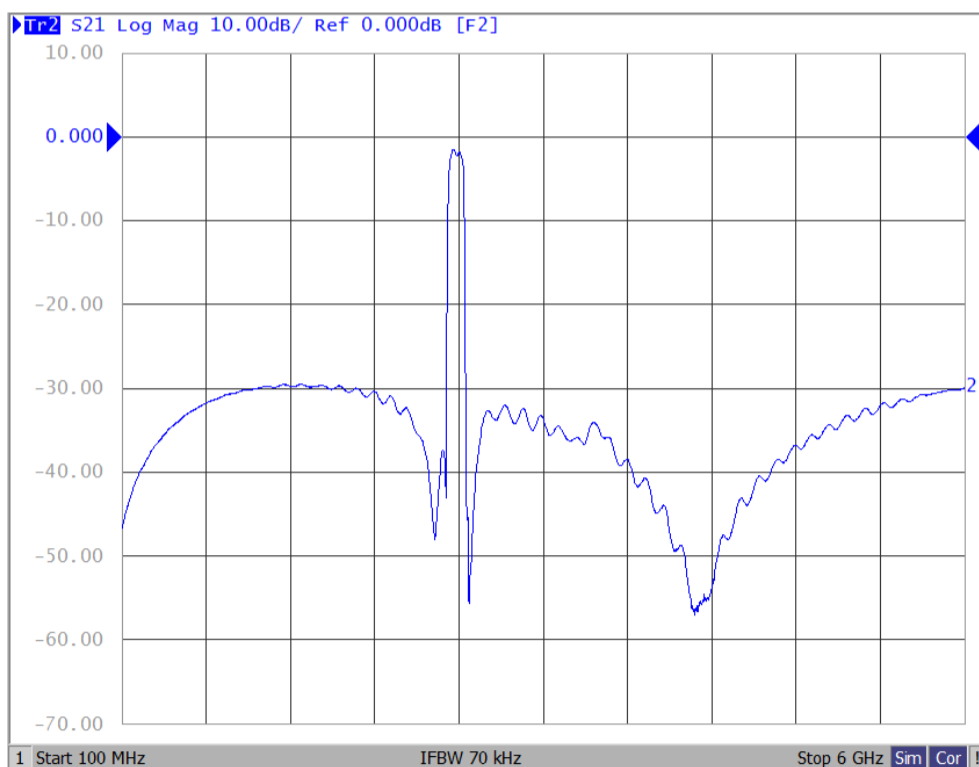


Figure 5: Wide Band $|S_{21}|$

10 Reflection coefficients

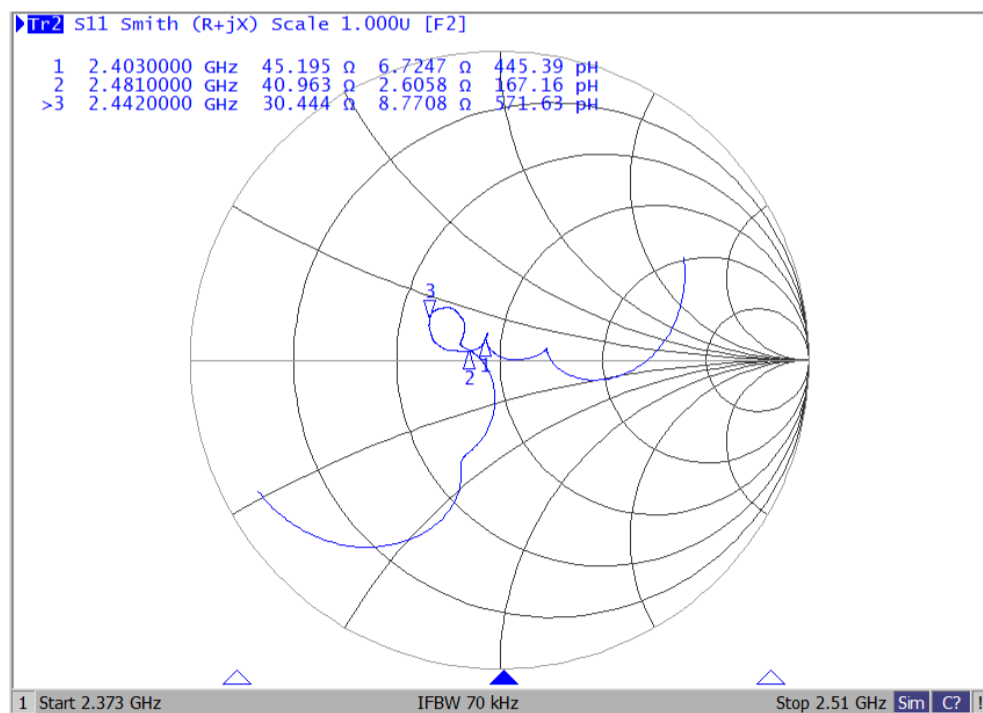
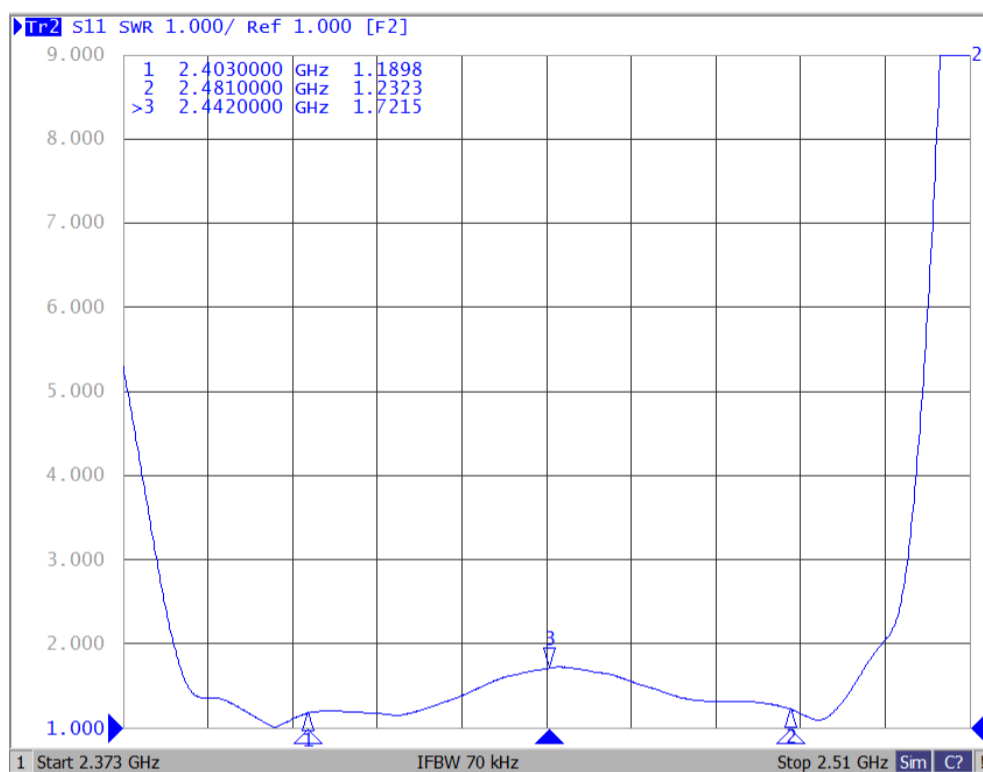


Figure 6: Reflection coefficient (S11)

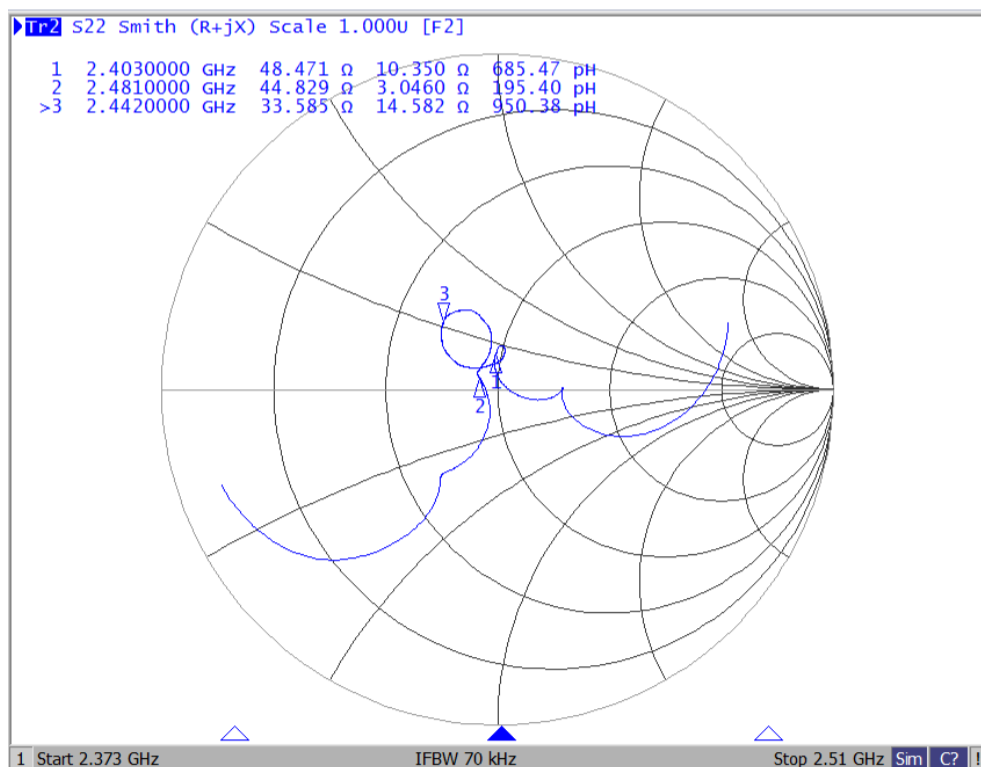
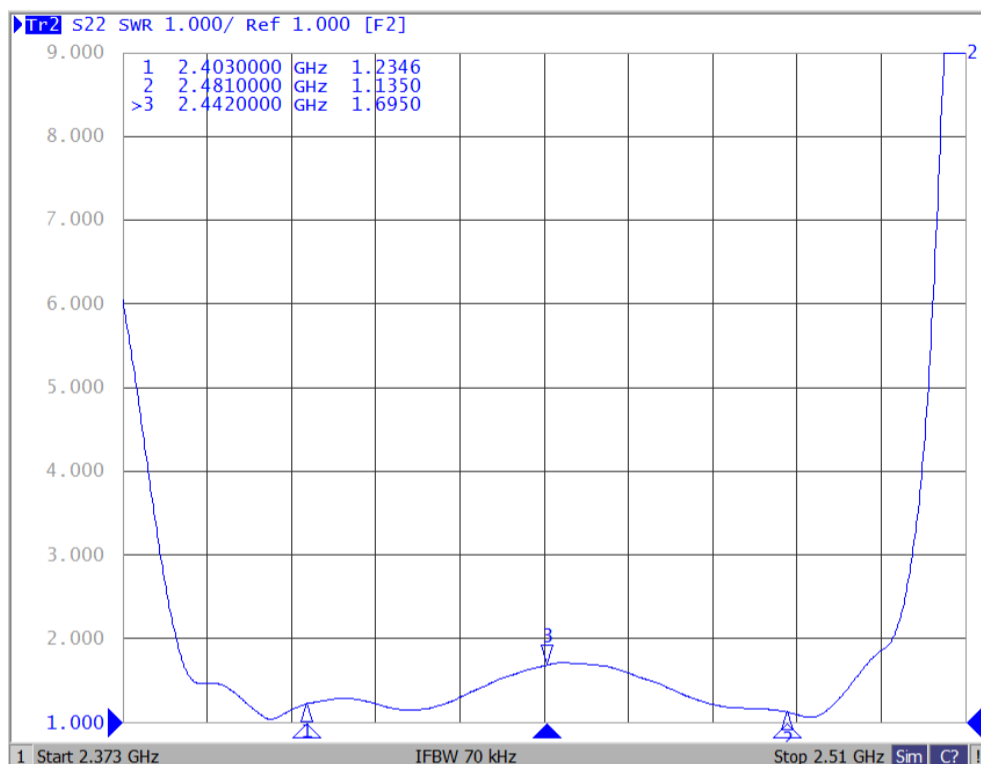


Figure 7: Reflection coefficient (S22)

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.

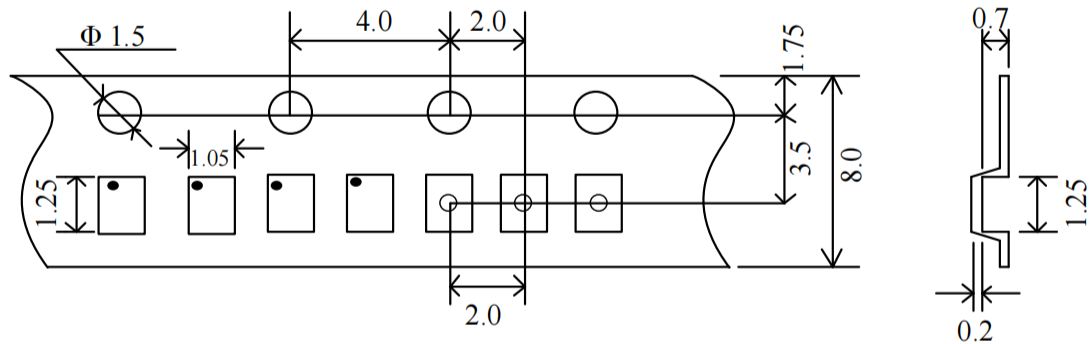


Figure 8: Drawing of tape with tape dimensions according to above.

11.2 Reel with diameter of 178mm

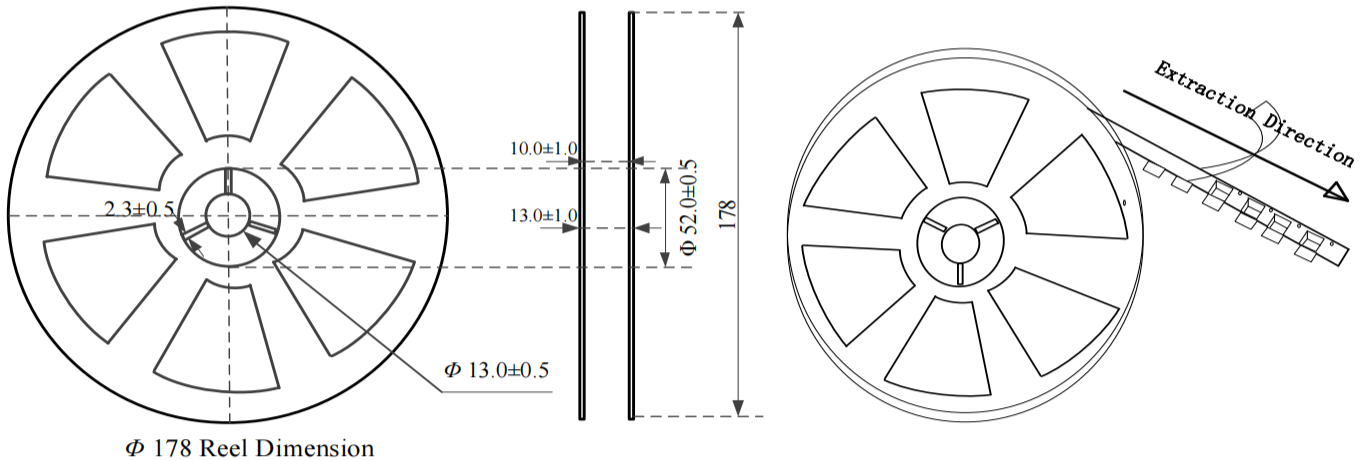


Figure 9: Drawing of reel with diameter of 178mm.