

SAW Single Filter

for B3 / Unbalanced / 5pin /1109

Pinnacle PN: SA0311091G84AT

Key Feature:

✓ LTE B3 RX

✓ Low Inband Insertion Loss

1 Description

SA0311091G84AT is a high-performance Surface Acoustic Wave (SAW) Bandpass filter optimized for FDD LTE B3 applications operating in the range of 1.805 GHz -1.880 GHz. It is designed to provide both low insertion loss in Band 3 and high rejection in the adjacent cellular Bands for mobile devices.

SA0311091G84AT 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

- High Attenuation in Tx band
- Low Inband Insertion Loss
- 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:

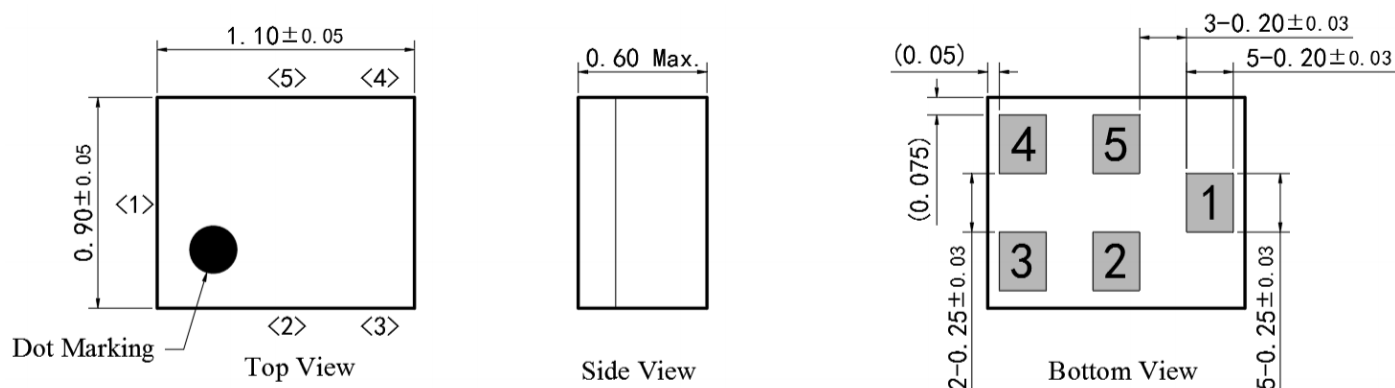


Figure 1: Drawing of Package with each tolerance range

4 Pin configuration

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

5 Matching Circuit(recommended)

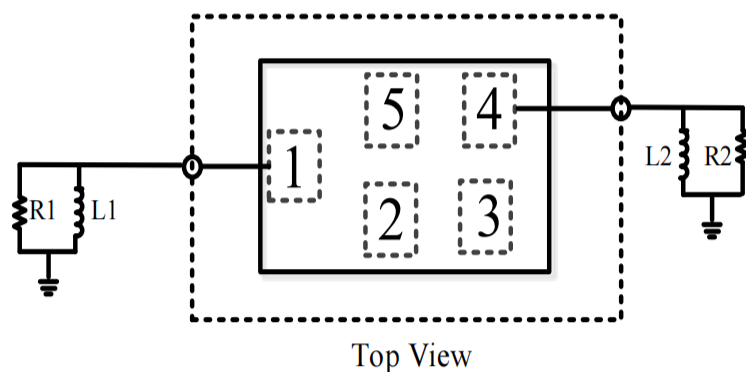


Figure 2: Schematic of matching circuit.

R1: 50 Ohm	L1: 7.5 nH (Q≈30 @ 1842.5MHz)
R2: 50 Ohm	L2: 7.5 nH (Q≈30 @ 1842.5MHz)

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

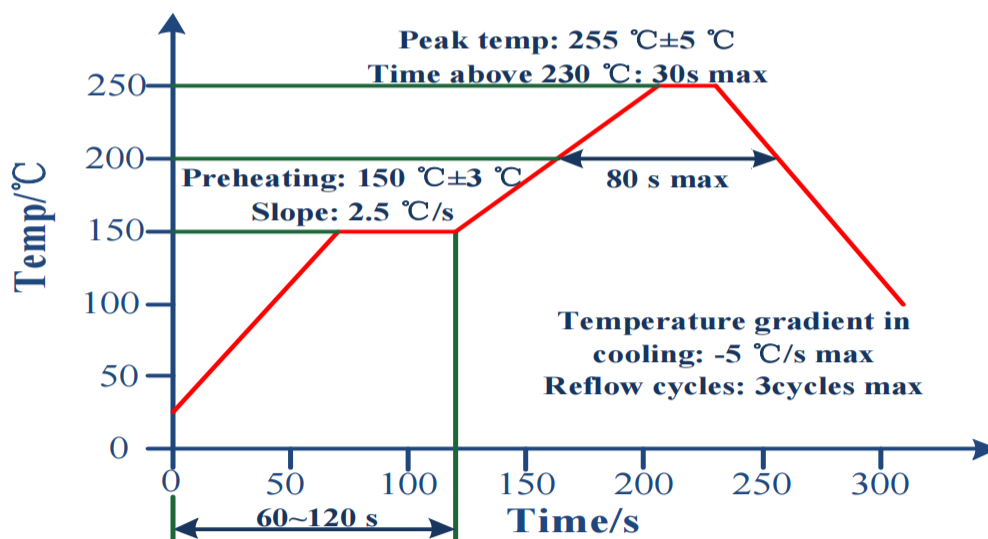


Figure 12: Recommended Reflow profile for convection and infrared soldering-lead-free solder.

8 Electrical Specifications

Parameter	Conditions	Min	Typ.	Max	Unit	Note
Insertion Loss	1805 - 1880 MHz	-	1.8	2.8	dB	
Attenuation	100 - 1710 MHz	33	37	-	dB	
	1710 - 1755 MHz	35	42	-	dB	
	1755 - 1785 MHz	30	35		dB	
	1920 - 2400 MHz	18	25	-	dB	
	2400- 4000 MHz	30	35	-	dB	
VSWR (input)	1805 - 1880 MHz	-	1.8	2.0	-	
VSWR (output)	1805 - 1880 MHz	-	1.5	2.0	-	

9 Transmission coefficient

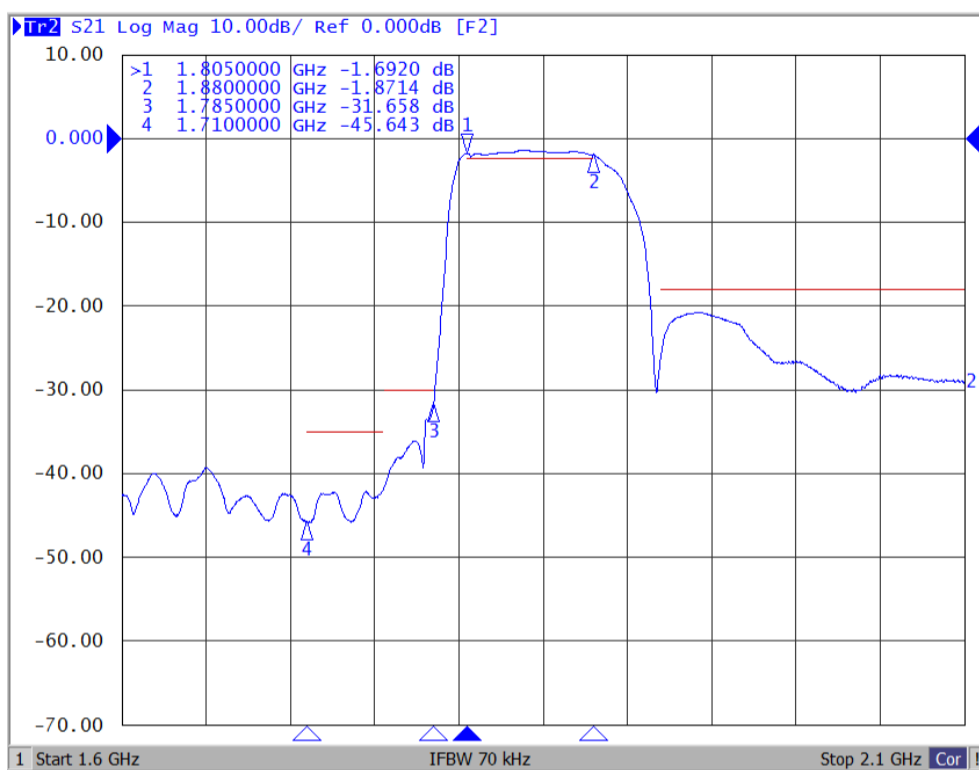


Figure 3: |S21|

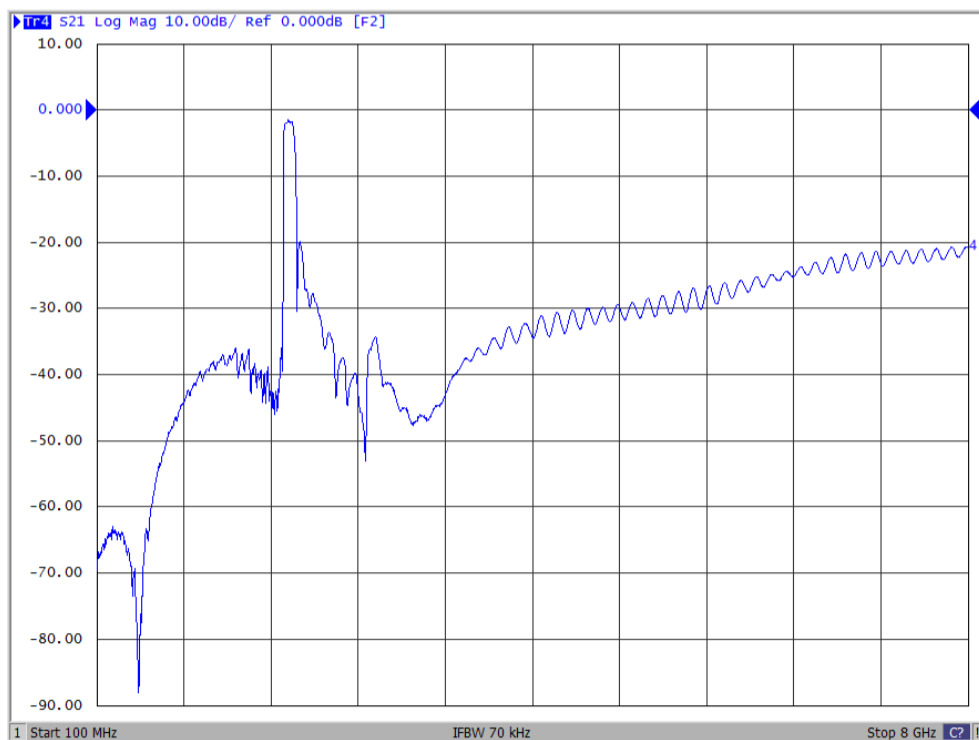


Figure 4: Wide Band |S21|

10 Reflection coefficients

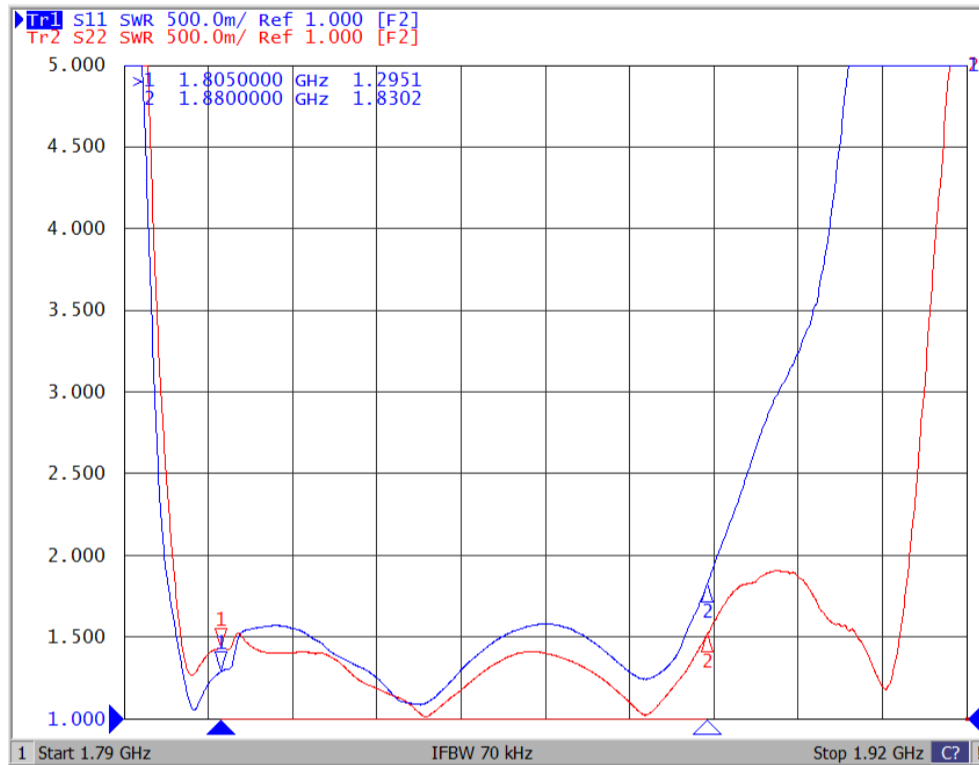


Figure 5: VSWR (Port1: blue line; Port 2: red line)

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.

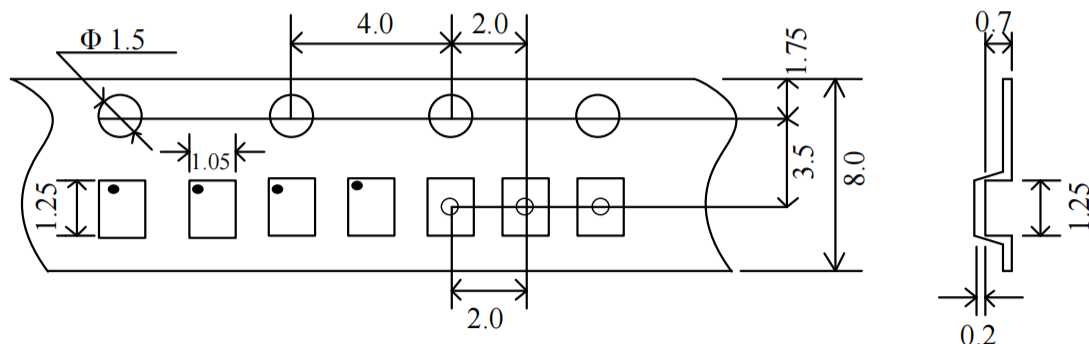


Figure 6: Drawing of tape with tape dimensions according above.

11.2 Reel with diameter of 178mm

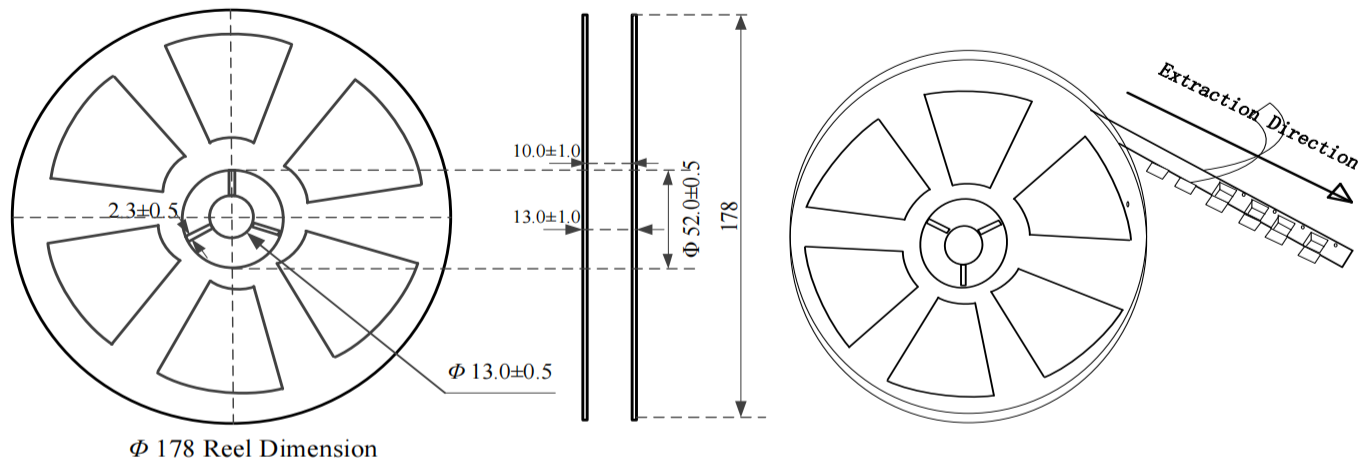


Figure 7: Drawing of reel with diameter of 178mm.