

SAW Components

SAW Filter

Cellular / LTE / Band 39

Series type: QGSA1G90AASP1

Ordering code: QGSA1G90AASP1

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Contents

1	Applications	3
2	Features	3
3	Package	4
4	Pin configuration	4
5	Matching circuit	5
6	Absolute Maximum Ratings	5
7	Characteristics	6
8	Transmission coefficients	7
9	Soldering profile	8
10	Tape and Reel	9
10.1	Tape	9
10.2	Reel with diameter of 178 mm	9

1 Applications

- Low-loss SAW RF filter for Cellular/Cordless phone (Terminal)relevant market only.
- Post-PA,SAW for B39
- 1880-1920MHz

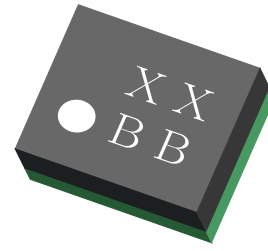
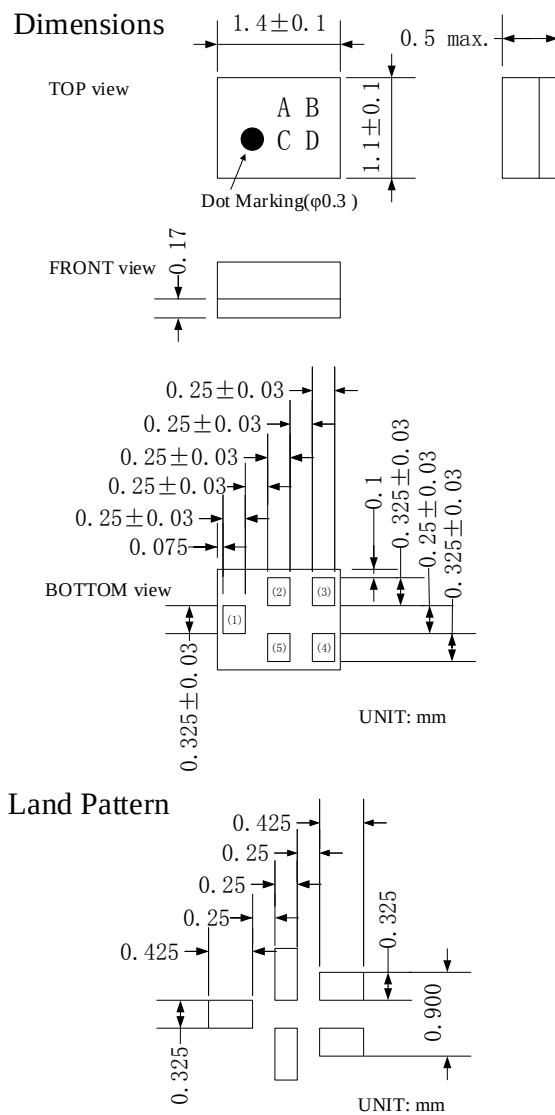


Figure 1: Picture of component with example of product marking.

2 Features

- Package size 1.4 mm x 1.1 mm
- Package height 0.5 mm (max.)
- RoHS compatible
- Package for Surface Mount Technology (SMT)
- Ni/Au-plated terminals
- Electrostatic Sensitive Device (ESD)
- Moisture Sensitivity Level 3 (MSL3)

3 Package



4 Pin configuration

- 1 Input
- 4 Output
- 2,3,5 Ground

Figure 2: Drawing of package with package height A = 0.6 mm (max.)

5 Matching circuit

- $R_1 : 50\Omega$ $R_2 : 50\Omega$

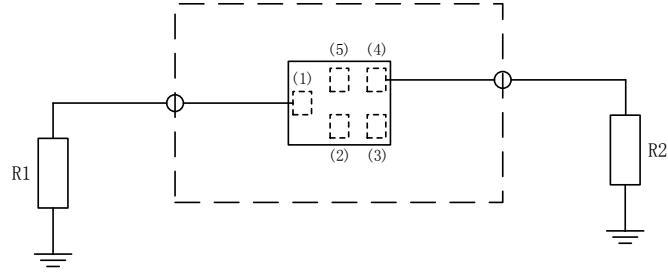


Figure 3: Schematic of matching circuit.

6 Absolute Maximum Ratings

Table 1: Absolute Maximum Ratings of Example Data Sheet

Parameter	Rating
Storage temperature	$T_{STG} = -40^{\circ}C$ to $+85^{\circ}C$
Operating temperature	$T_{opt} = -30^{\circ}C$ to $+85^{\circ}C$
DC voltage	$V_{DC} = 3.0V(max)$
Input power ¹	$P_{IN} = +28dBm$ 5000h $+55^{\circ}C$

¹Input signal shall be applied to TX port.

7 Characteristics

Temperature range for specification $T_{SPEC} = -30^{\circ}C \dots +85^{\circ}C$

Input terminating impedance $Z_{IN} = 50\Omega$

Output terminating impedance $Z_{OUT} = 50\Omega$

Item		min.	typ.	max.	Unit	Note
Center Frequency		1900			MHz	
Insertion Loss	1880 to 1920 MHz		1.7	2.3		
Ripple Deviation	1880 to 1920 MHz		0.7	1.4	dB	
VSWR	1880 to 1920 MHz		1.5	2.0		Ant
	1880 to 1920 MHz		1.5	2.0		Tx
Absolute Attenuation	450 to 1605.89 MHz	32	37		dB	
	880 to 960 MHz	33	36		dB	
	1805 to 1830 MHz	45	54		dB	
	1830 to 1850 MHz	14	35		dB	
	2010 to 2025 MHz	38	42		dB	
	2300 to 2400 MHz	37	40		dB	
	2400 to 2500 MHz	37	41		dB	
	2500 to 2690 MHz	37	41		dB	
	2690 to 2790 MHz	37	41		dB	
	2790 to 6000 MHz	32	43		dB	

8 Transmission coefficients

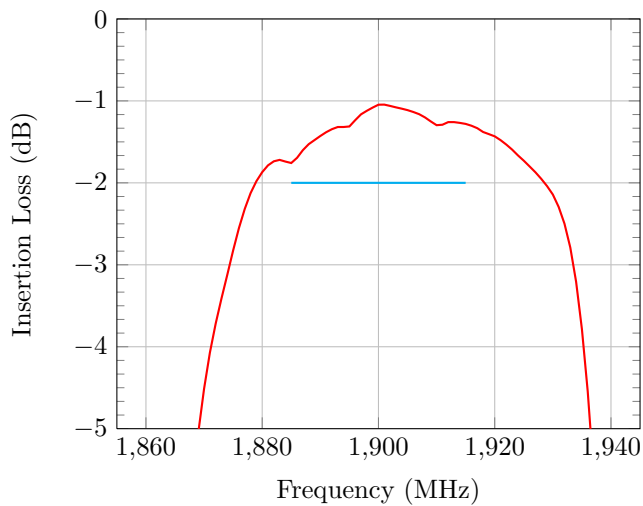


Figure 4: Passband

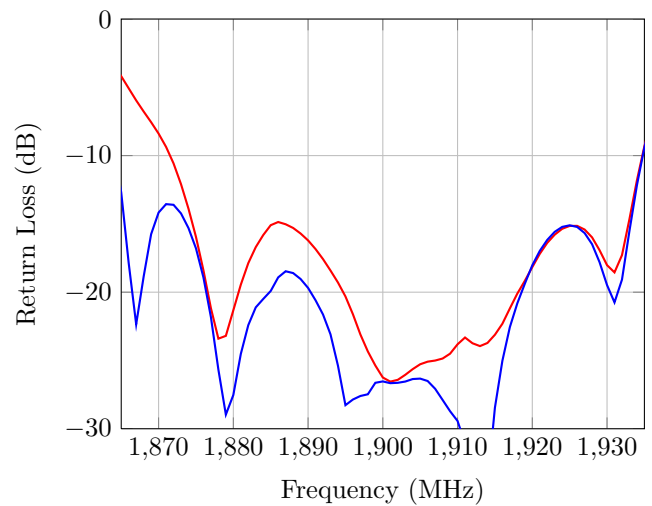


Figure 5: Input/Output Return Loss

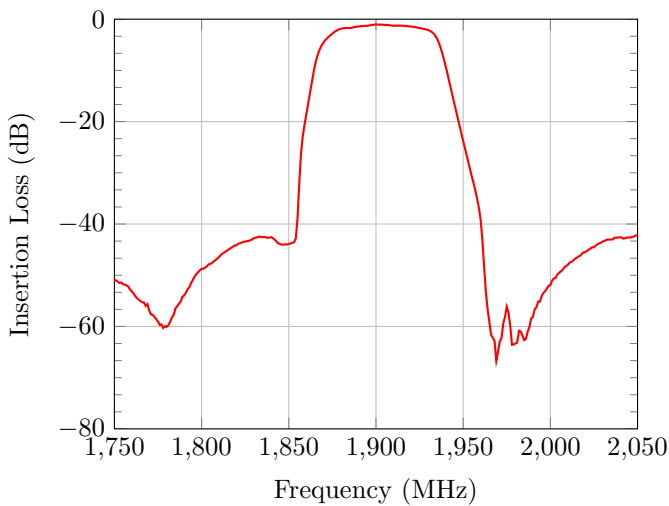


Figure 6: Narrowband

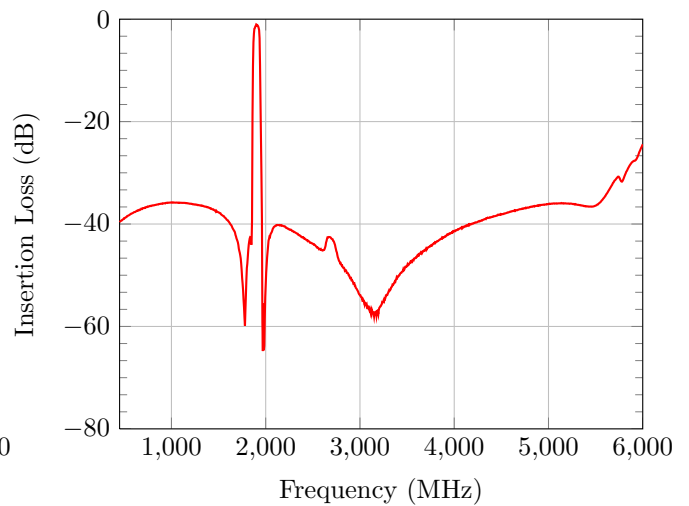
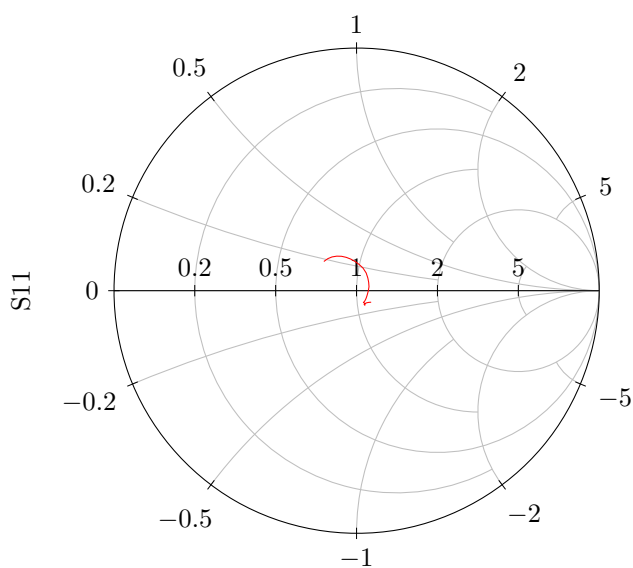
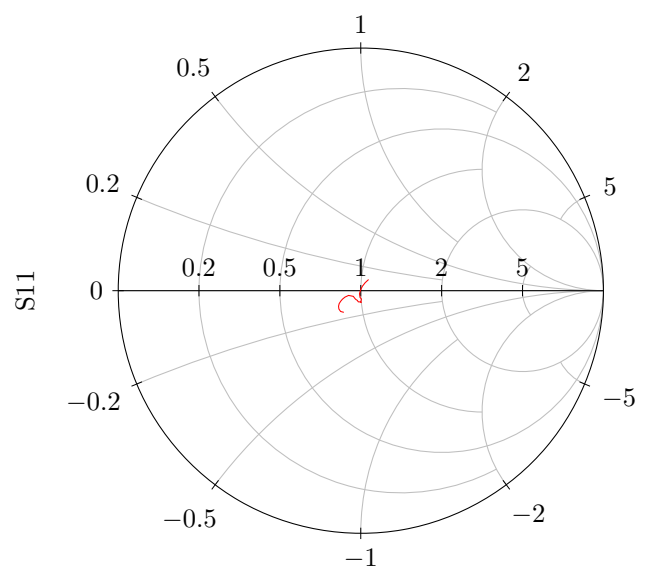


Figure 7: Wideband

Figure 8: Input Smith Chart ($Z_0 = 50\Omega$)Figure 9: Output Smith Chart ($Z_0 = 50\Omega$)

9 Soldering profile

The recommended soldering process is in accordance with IEC 60068-2-58-3rd edit and IPC/JEDECJ-STD-020B.

Table 2: Characteristics of recommended soldering profile for lead-free solder (Sn95.5Ag3.8Cu0.7).

Parameter	Rating
Ramp rate	≥ 3 K/s
Preheat	125 °C to 220 °C, 150 s to 210 s, 0.4 K/s to 1.0 K/s
T >220 °C	30 s to 70 s
T >230 °C	Min. 10 s
T >245 °C	Max. 20 s
T $\leq$ 255 °C	-
Peak temperature T_{peak}	220 °C $\pm$ 5°C
Wetting temperature T_{min}	230 °C $\pm$ 5°C for 10s $\pm$ 1s
Cooling rate	≥ 3 K/s
Soldering temperature T	Measured at solder pads

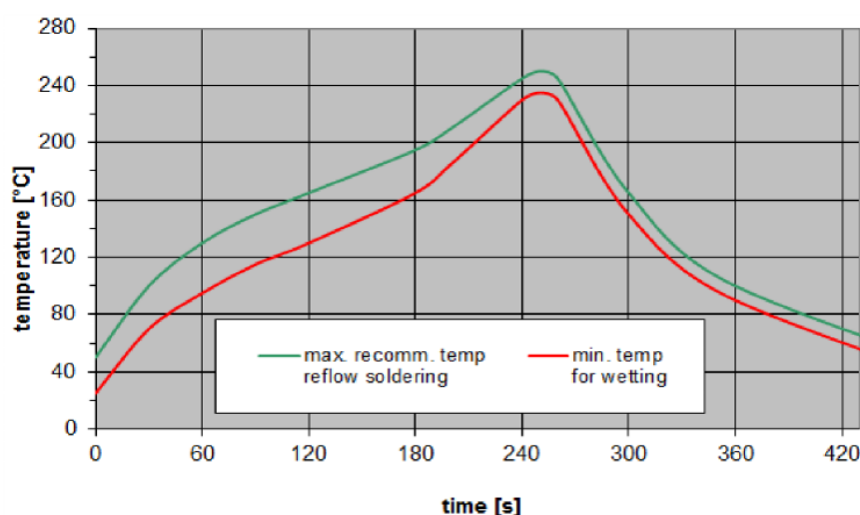


Figure 10: Drawing of reel (Recommended reflow profile for convection and infrared soldering – lead-free solder

10 Tape and Reel

10.1 Tape

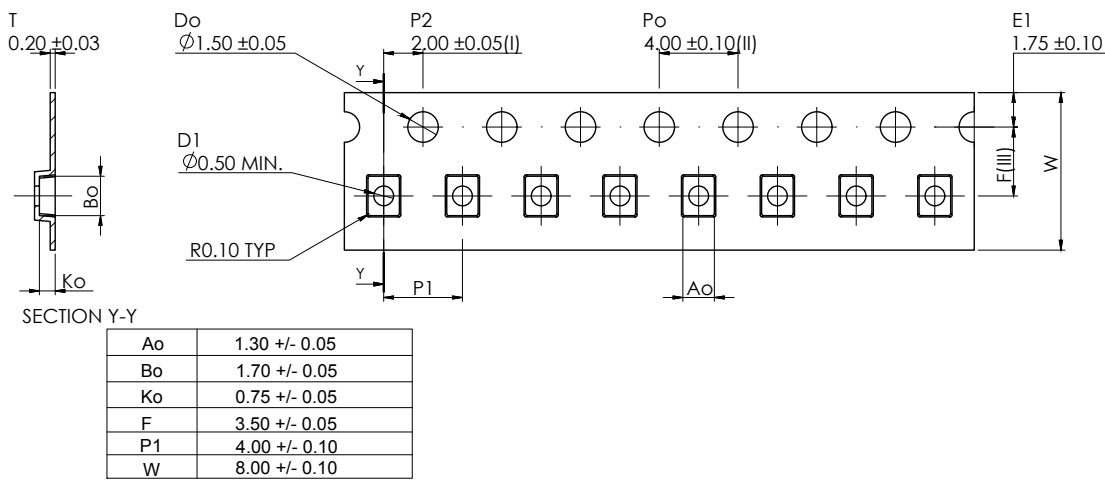


Figure 11: Drawing of tape (first-angle projection) with tape dimensions

10.2 Reel with diameter of 178 mm

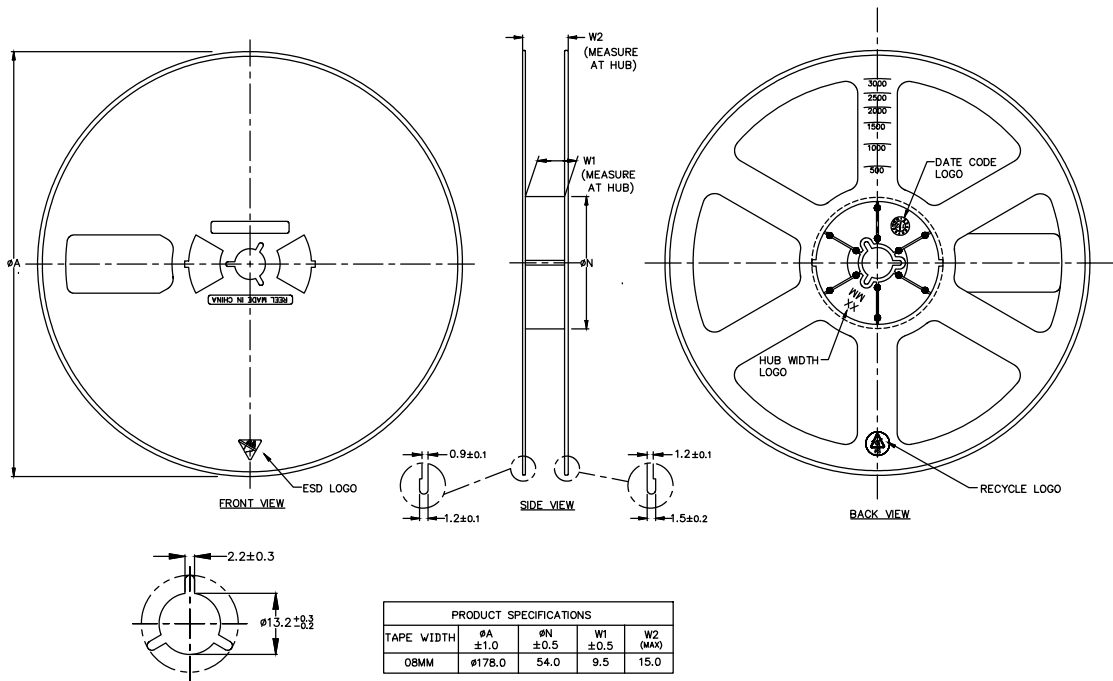


Figure 12: Drawing of reel (first-angle projection) with diameter of 180 mm