QuantGrav Technology Co., Ltd.

SAW Components

For Band2/Unbalanced/5pin/1109

Series type: QGSA1G96AASP2

Ordering code: QGSA1G96AASP2

Date: July 2021

Version: 2.0

Contents

1 Applications

- Saw filter for Celluar/Cordless phone(Terminal) relevant market

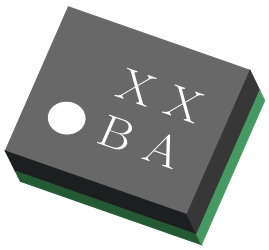


Figure 1: Picture of component with example of product marking.

2 Features

- Package size 1.1 mm x 0.9 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

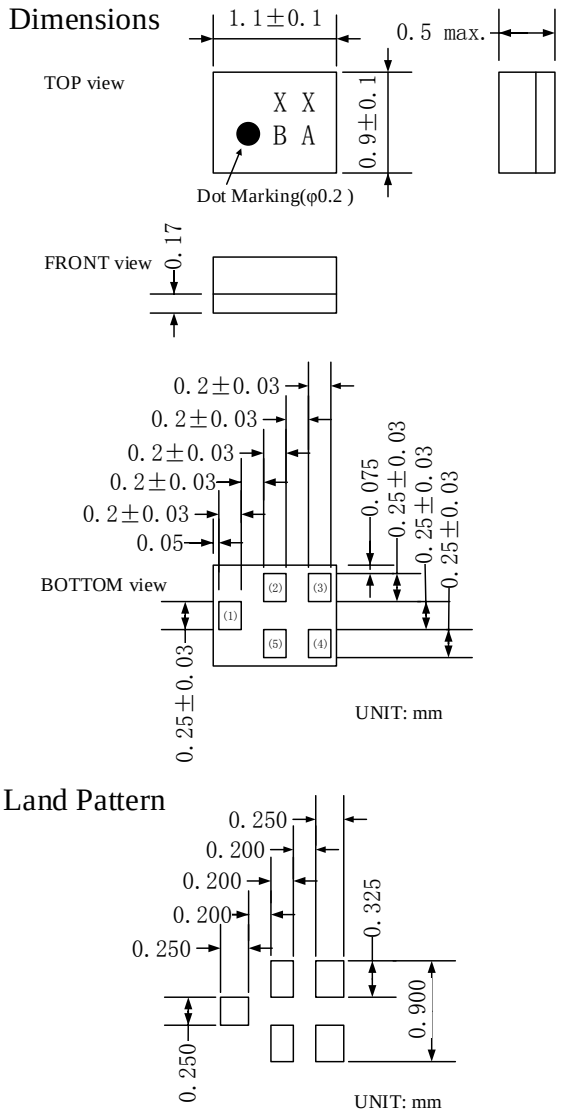


Figure 2: Drawing of package with package height A = 0.5 mm (max.)

4 Pin configuration

- 1 Unbalance Port
- 4 Unbalance Port
- 2,3,5 Ground

5 Matching circuit

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

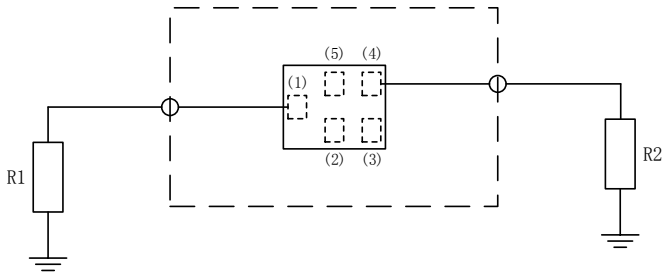


Figure 3: Schematic of matching circuit.

6 Absolute Maximum Ratings

Table 1: Absolute Maximum Ratings of Example Data Sheet

Parameter	**Rating**
Storage temperature	$T_{STG} = -40°C$ to $+85°C$
Operating temperature	$T_{opt} = -30°C$ to $+85°C$
DC voltage	$V_{DC} = 3.0V(max)$
Input power	$P_{IN} = +13dBm$ 5000h
Minimum Resistance between the terminals	$10Mohm$

7 Characteristics

Temperature range for specification $T_{SPEC} = -30°C \ldots +85°C$

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

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

Item		min.	typ.	max.	Unit	Note
Center Frequency			1960		MHz	
Insertion Loss	1930 to 1990 MHz		1.9	2.7	dB	
Ripple Deviation	1930 to 1990 MHz		1.0	1.8	dB	
	1930 to 1990 MHz		1.0	1.6	dB	+23 to +27deg.C
VSWR	1930 to 1990 MHz		1.5	2.1		
Absolute Attenuation	450 to 824 MHz	31	34		dB	
	824 to 849 MHz	31	34		dB	
	849 to 1850 MHz	26	30		dB	
	1852.4 to 1907.6 MHz	38	46		dB	Any 3.84MHz
	2065 to 2150 MHz	25	28		dB	
	2150 to 2400 MHz	25	28		dB	
	2400 to 2500 MHz	33	38		dB	
	2150 to 6000 MHz	25	28		dB	

8 Transmission coefficients

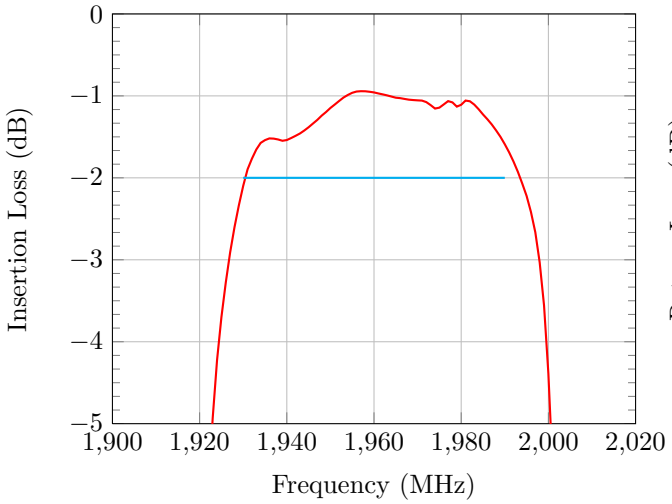


Figure 4: Passband

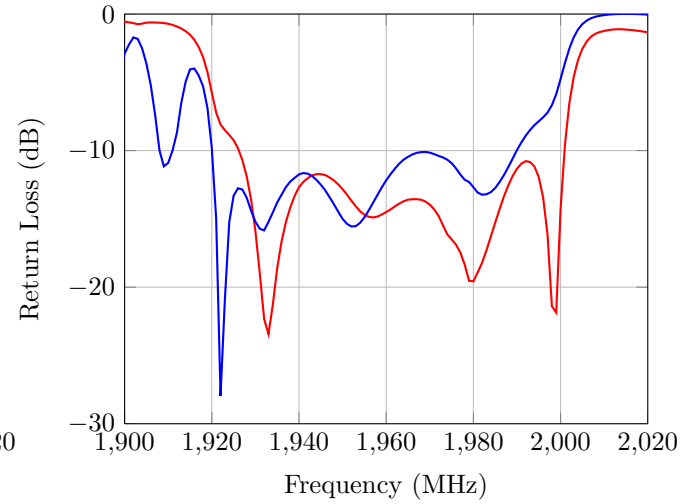


Figure 5: Input/Output Return Loss

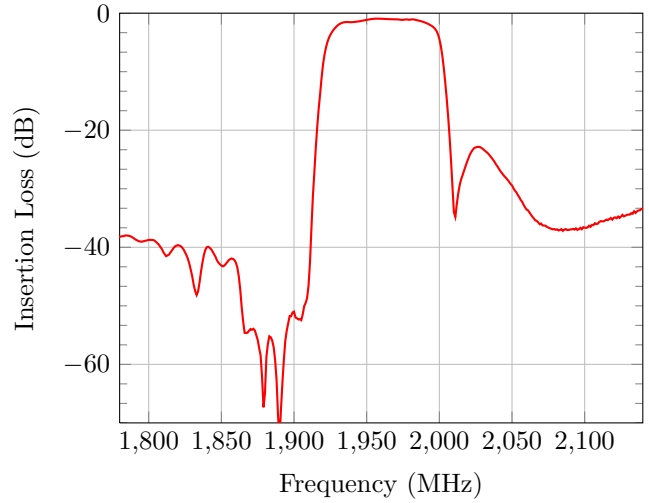


Figure 6: Narrowband

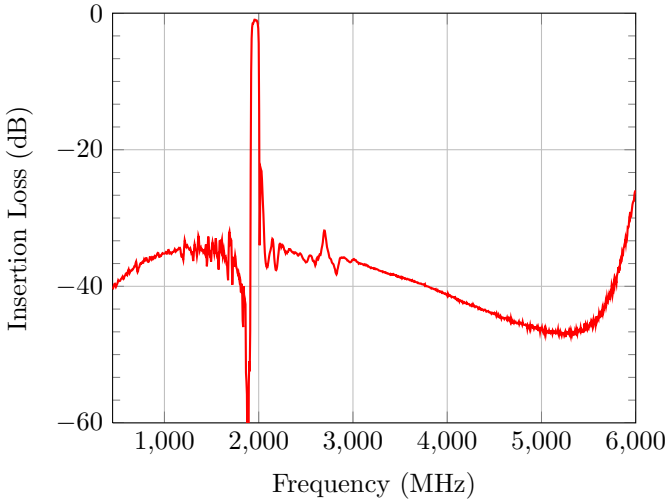


Figure 7: Wideband

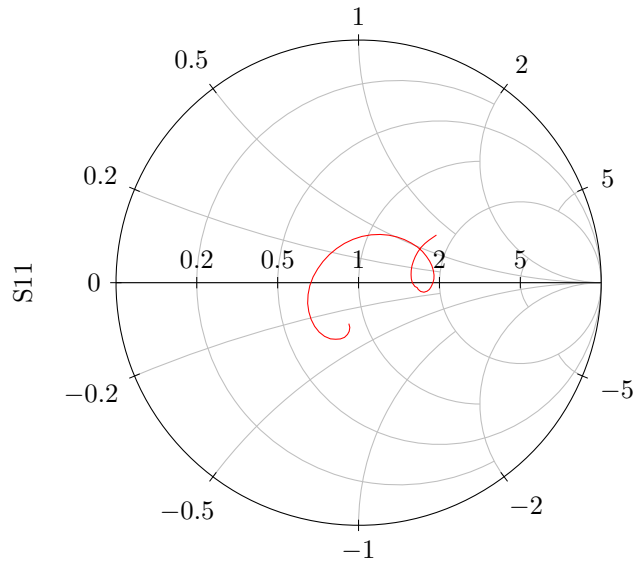


Figure 8: Input Smith Chart ($Z0 = 50\Omega$)

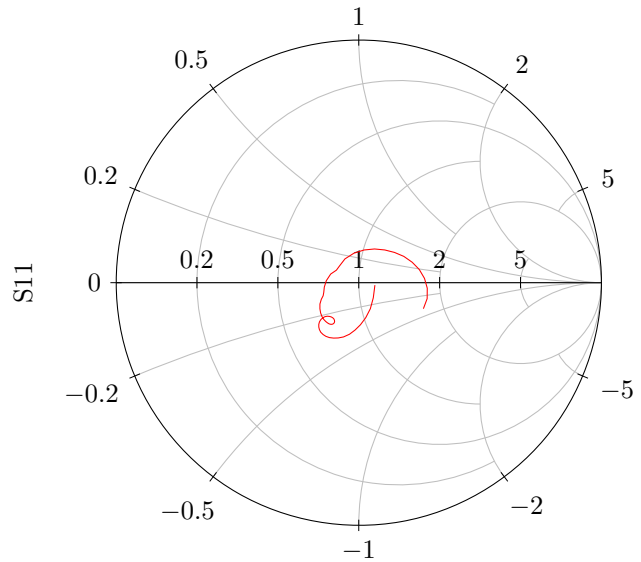


Figure 9: Output Smith Chart ($Z0 = 50\Omega$)

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	$\geq$ 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	$\geq$ 3 K/s
Soldering temperature T	Measured at solder pads

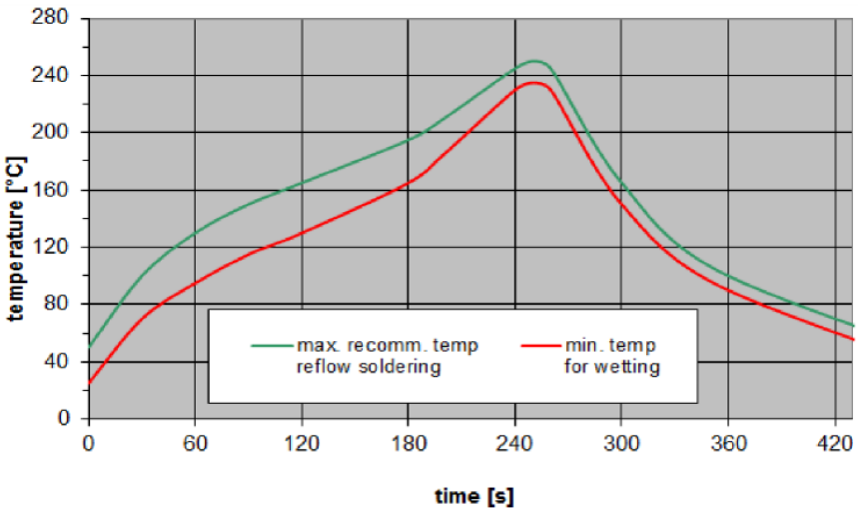
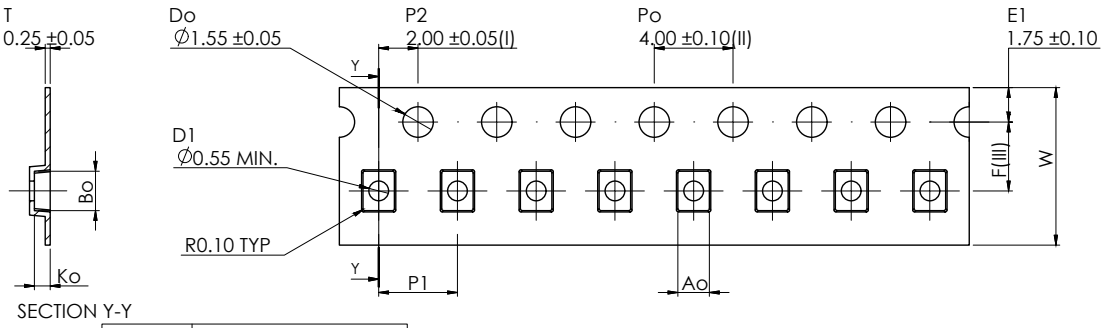


Figure 10: Drawing of reel (Recommended reflow profile for convection and infrared soldering – lead-free solder

10 Tape and Reel

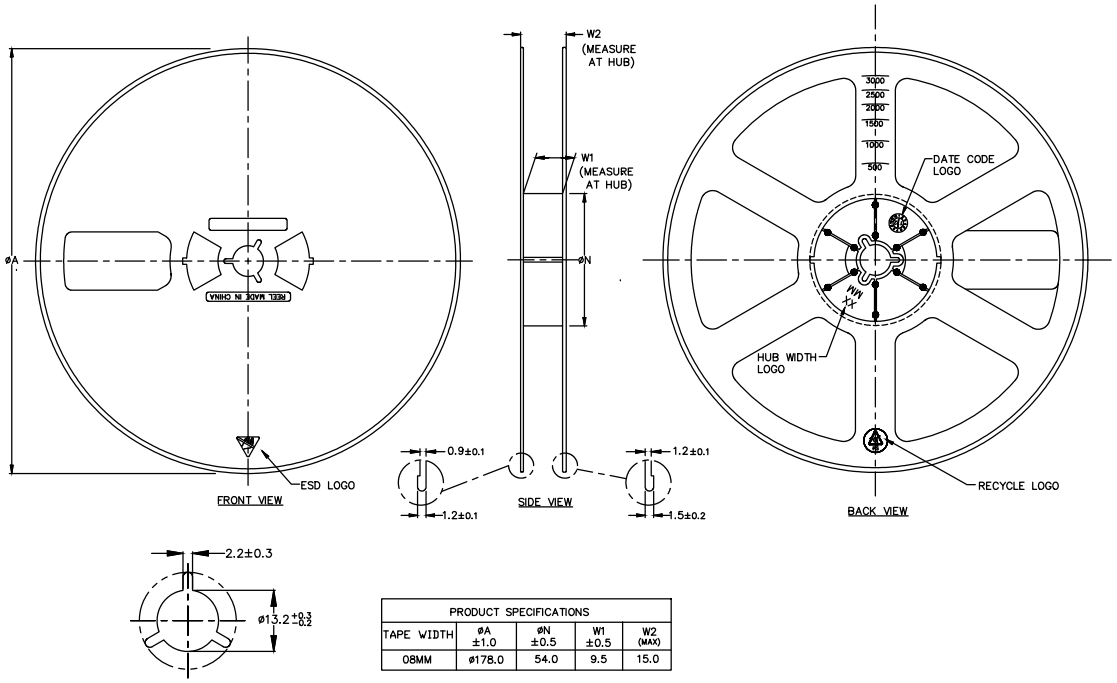
10.1 Tape



Ao	1.02 +/- 0.05
Bo	1.22 +/- 0.05
Ko	0.60 +/- 0.05
F	3.50 +/- 0.05
P1	4.00 +/- 0.10
W	8.00 +/- 0.10

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

10.2 Reel with diameter of 178 mm



PRODUCT SPECIFICATIONS				
TAPE WIDTH	øA ±1.0	øN ±0.5	W1 ±0.5	W2 (MAX)
08MM	ø178.0	54.0	9.5	15.0

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