

BAW Components

BAW Filter

Cellular / LTE / Band 1 RX

Series type: QGBA2G14AASP2

Ordering code: QGBA2G14AASP2

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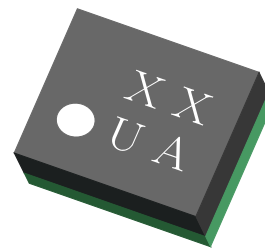
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1 Applications

- LTE B1 Rx bandpass filter for In-building Distribution System

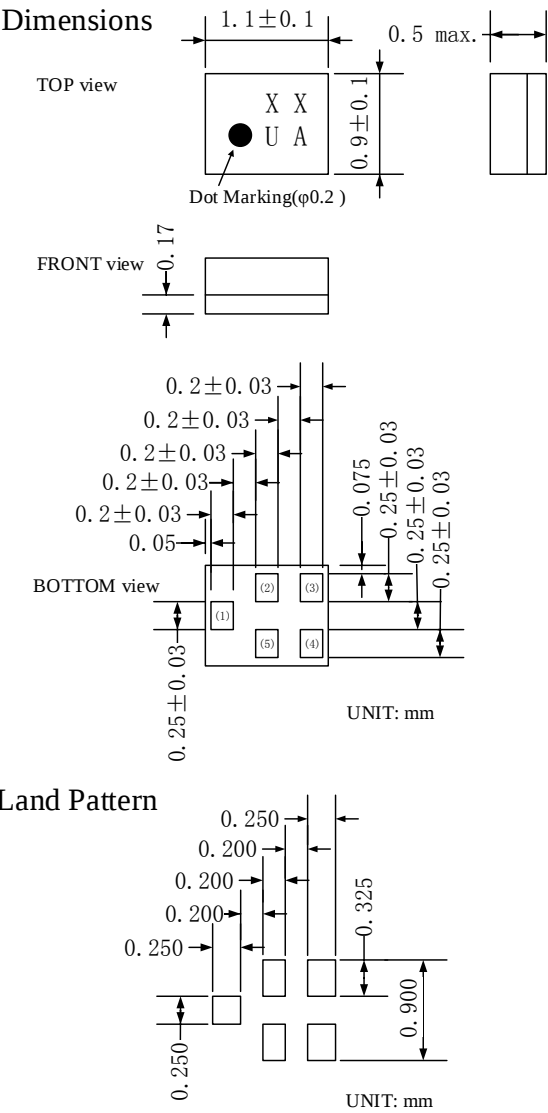


2 Features

- 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)

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

3 Package



4 Pin configuration

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

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

5 Matching circuit

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

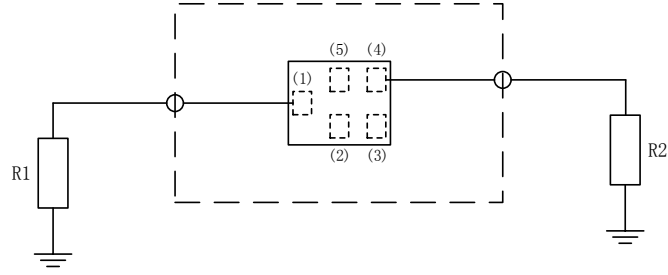


Figure 3: Schematic of matching circuit.

6 Absolute Maximum Ratings

Table 1: Absolute Maximum Ratings of Example Data Sheet

Parameter	Rating
Storage temperature	$T_{STG} = -40^{\circ}C$ to $+95^{\circ}C$
Operating temperature	$T_{opt} = -40^{\circ}C$ to $+95^{\circ}C$
DC voltage	$V_{DC} = 3.0V(max)$
Input power ¹	$P_{IN} = +31dBm$ 5000h $+55^{\circ}C$

¹Input signal shall be applied to TX port.

7 Characteristics

Temperature range for specification $T_{SPEC} = -40^{\circ}C \dots +85^{\circ}C$

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

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

Item		min.	typ.	max.	Unit	Note
Center Frequency			2140		MHz	
Insertion Loss	2110 to 2170 MHz		1.7	2.8		
Ripple Deviation	2110 to 2170 MHz		0.7	1.2	dB	Any 5MHz
VSWR	2110 to 2170 MHz		1.5	2.2		Ant
	1920 to 1980 MHz		1.5	2.0		Tx
Absolute Attenuation	450 to 1920 MHz	38	40		dB	
	699 to 716 MHz	40	45		dB	
	777 to 787 MHz	40	45		dB	
	814 to 849 MHz	40	44		dB	
	824 to 894 MHz	42	44		dB	
	880 to 915 MHz	40	45		dB	
	898 to 925 MHz	42	45		dB	
	1710 to 1755 MHz	40	46		dB	
	1730 to 1920 MHz	38	40		dB	
	1920 to 1980 MHz	41	46		dB	
	2015 to 2075 MHz	33	45		dB	
	2185 to 2300 MHz	2.0	2.6		dB	
	2300 to 2400 MHz	42	43		dB	
	2400 to 2500 MHz	36	38		dB	
	4030 to 4150 MHz	28	32		dB	
	4220 to 4340 MHz	27	30		dB	
	4900 to 5950 MHz	28	32		dB	

8 Transmission coefficients

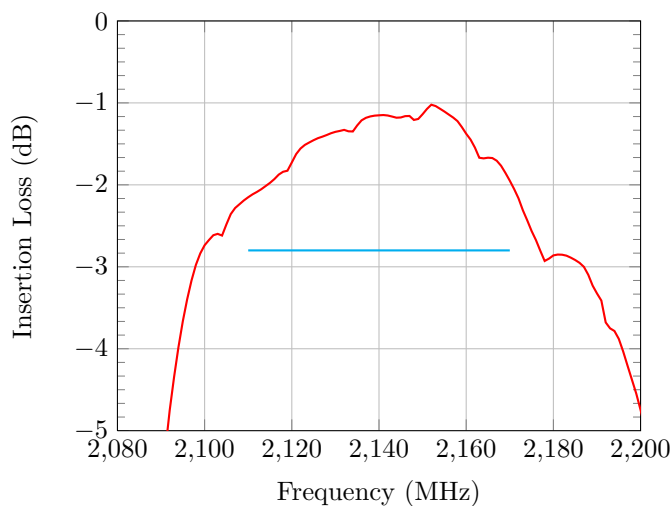


Figure 4: Passband

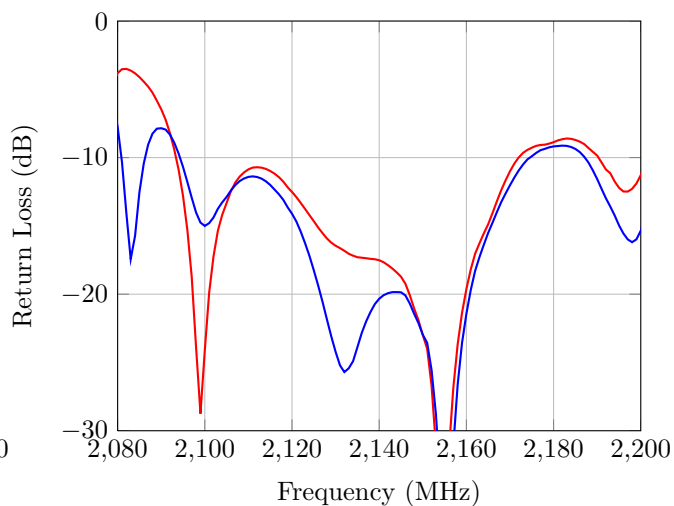


Figure 5: Input/Output Return Loss

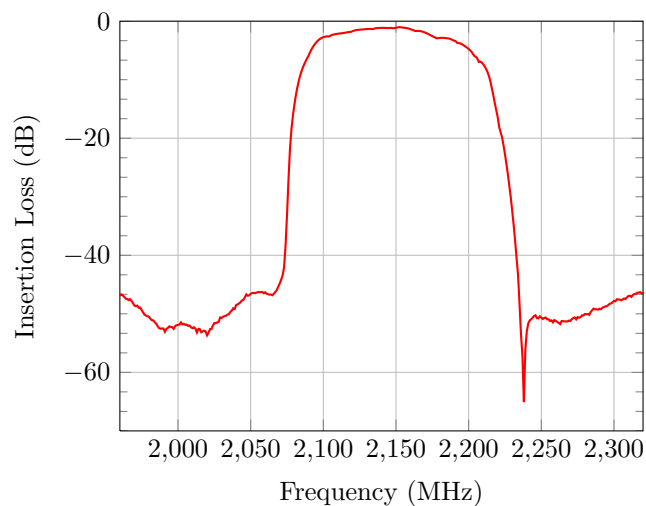


Figure 6: Narrowband

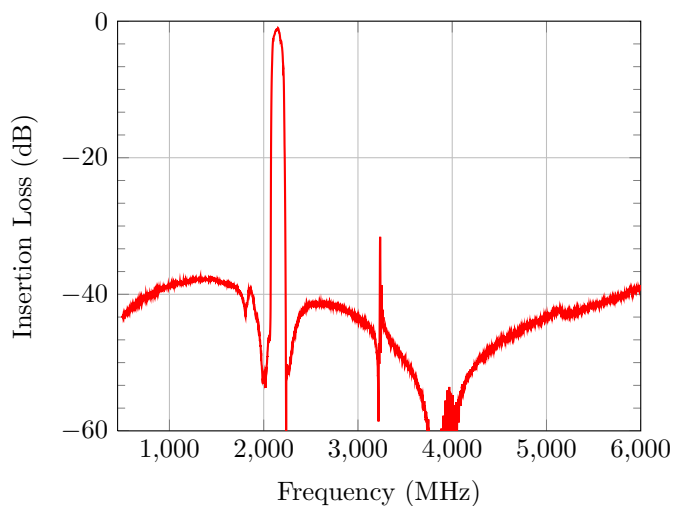
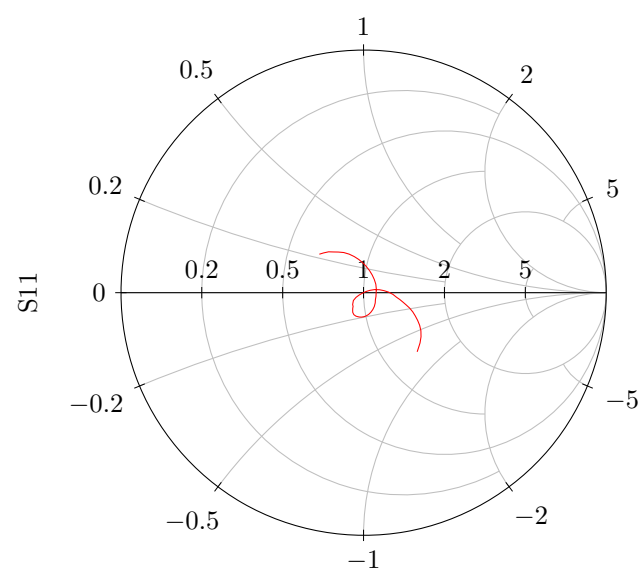
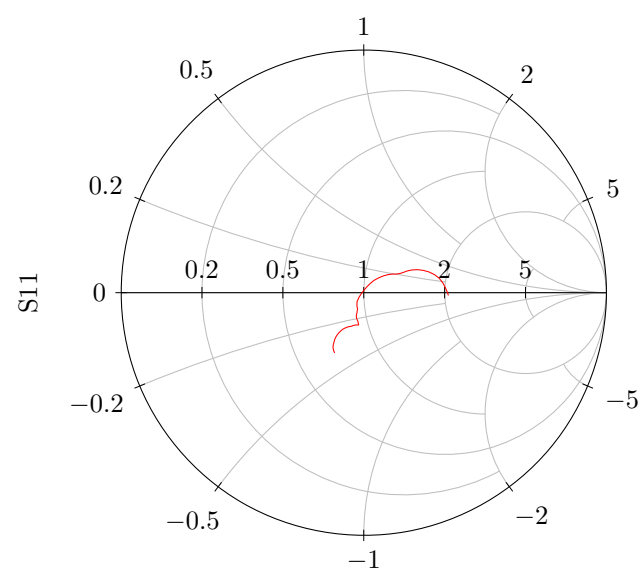


Figure 7: Wideband

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

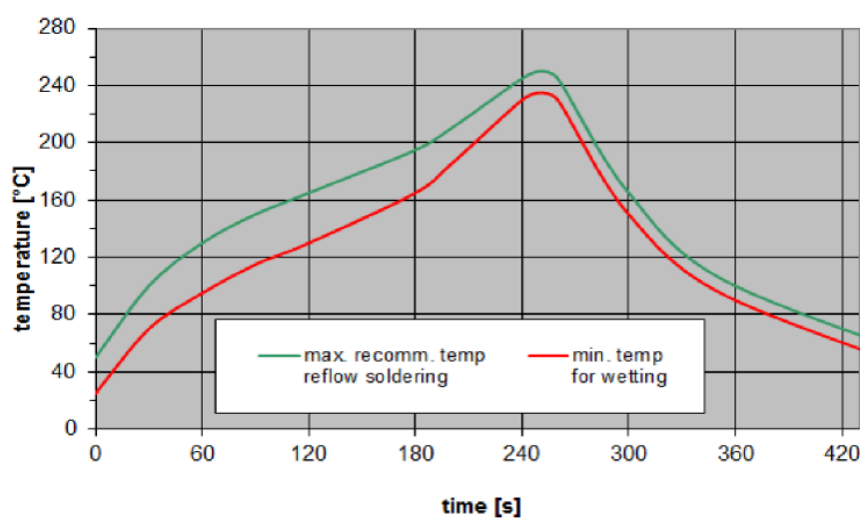


Figure 10: Drawing of reel (Recommended reflow profile for convection and infrared soldering – lead-free solder)

10 Tape and Reel

10.1 Tape

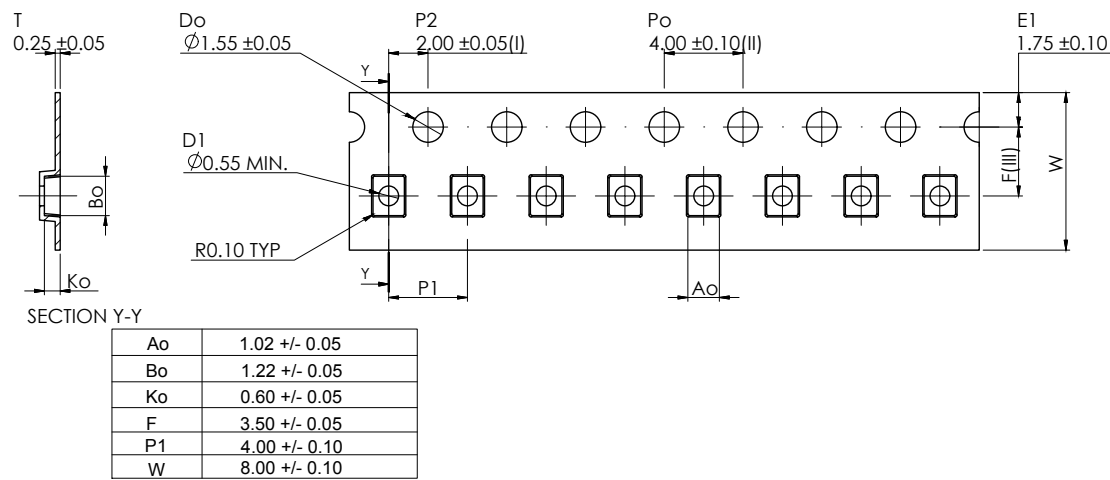


Figure 11: Drawing of tape (first-angle projection) with tape dimensions

10.2 Reel with diameter of 178 mm

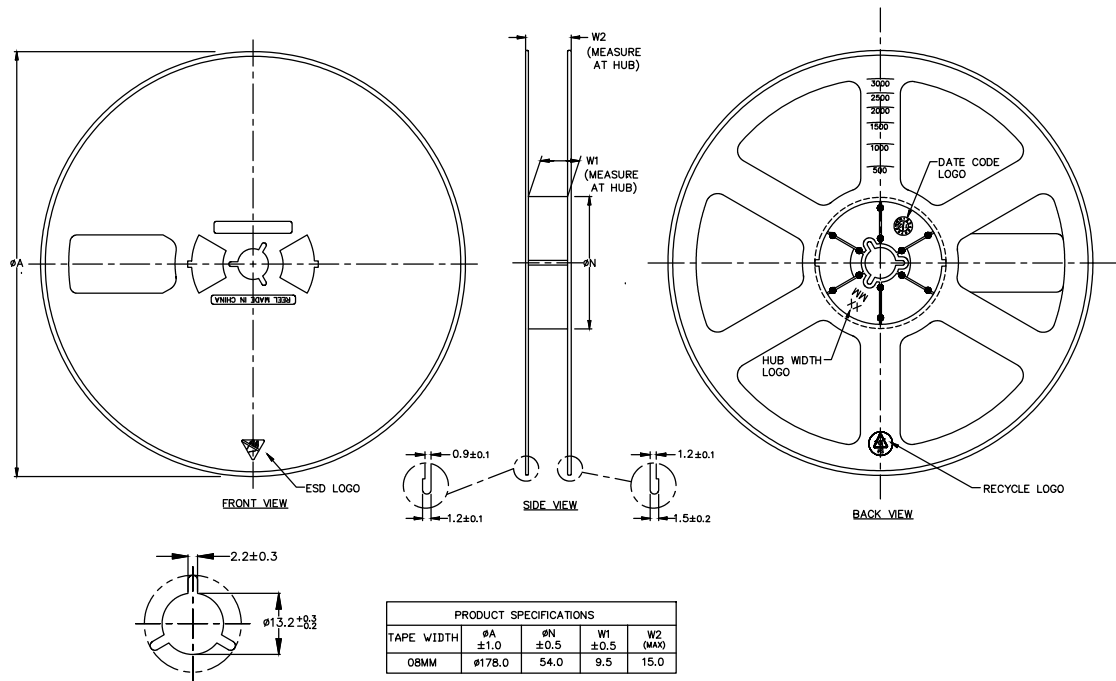


Figure 12: Drawing of reel (first-angle projection) with diameter of 180 mm