

BAW Components

BAW Filter

Cellular / LTE / Band 3 RX-25MHz

Series type: QGBA1G72AASP1

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1 Applications

- LTE B3-25MHz Rx bandpass filter for In-building Distribution System
- Low insertion attenuation
- Low amplitude ripple

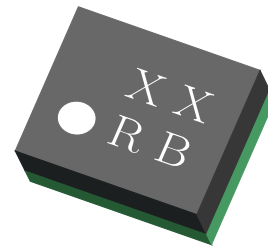
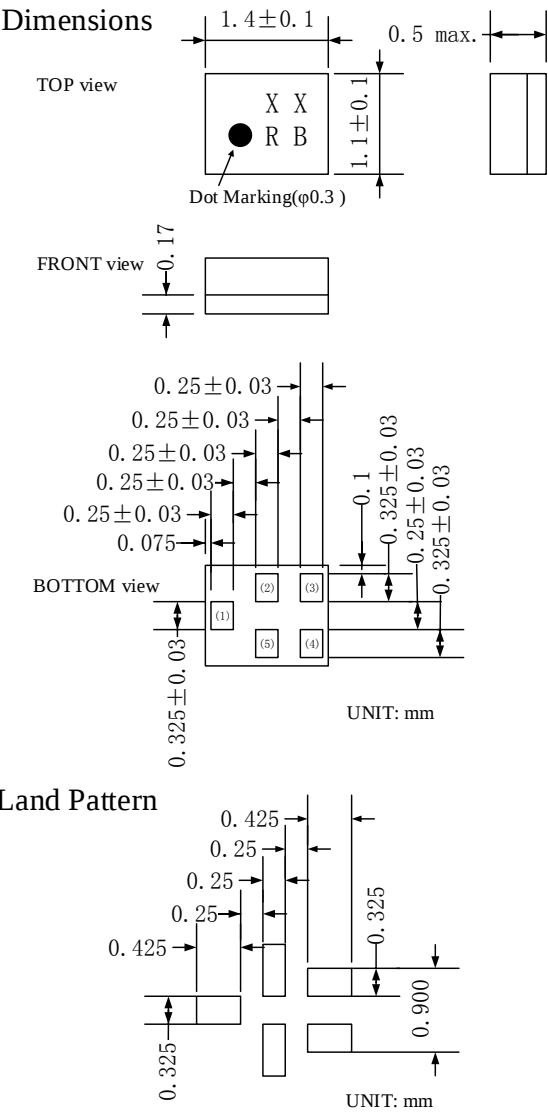


Figure 1: Picture of component with example of product marking.

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

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

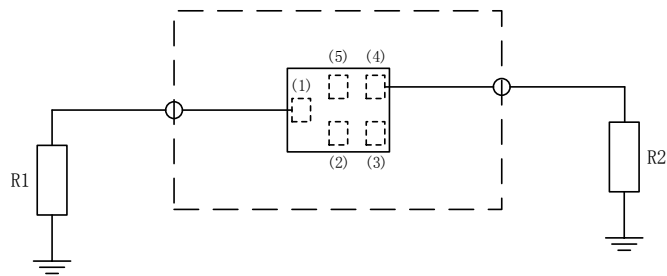


Figure 3: Schematic of matching circuit.

6 Absolute Maximum Ratings

Table 1: Absolute Maximum Ratings of Example Data Sheet

Parameter	Rating
Storage temperature	$T_{STG} = -40^{\circ}C$ to $+95^{\circ}C$
Operating temperature	$T_{opt} = -40^{\circ}C$ to $+95^{\circ}C$
DC voltage	$V_{DC} = 3.0V(max)$
Input power ¹	$P_{IN} = +32dBm$ 5000h $+55^{\circ}C$

¹Input signal shall be applied to TX port.

7 Characteristics

Temperature range for specification $T_{SPEC} = -40^{\circ}C \dots +95^{\circ}C$

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

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

Item		min.	typ.	max.	Unit	Note
Center Frequency		1722			MHz	
Insertion Loss	1710 to 1735 MHz		2.2	2.8		
Ripple Deviation	1710 to 1735 MHz		0.6	1.2	dB	Any 5MHz
VSWR	1710 to 1735 MHz		1.5	2.2		Ant
	1710 to 1735 MHz		1.5	2.2		Tx
Absolute Attenuation	10 – 1574.2 MHz	38	45		dB	
	1574.3 to 1576.5 MHz	40	45		dB	GPS L1
	1597.6 to 1605.9 MHz	40	45		dB	GLONASS
	1805 to 1880 MHz	40	46		dB	LTE Band 3 RX
	2110 to 2170 MHz	39	44		dB	LTE Band 1 RX
	2400 to 2500 MHz	40	45		dB	ISM Band
	2620 to 2690 MHz	40	45		dB	LTE Band 7 RX
	3420 to 3570 MHz	42	48		dB	2 rd harmonic
	5130 to 5355 MHz	50	55		dB	3 rd harmonic

8 Transmission coefficients

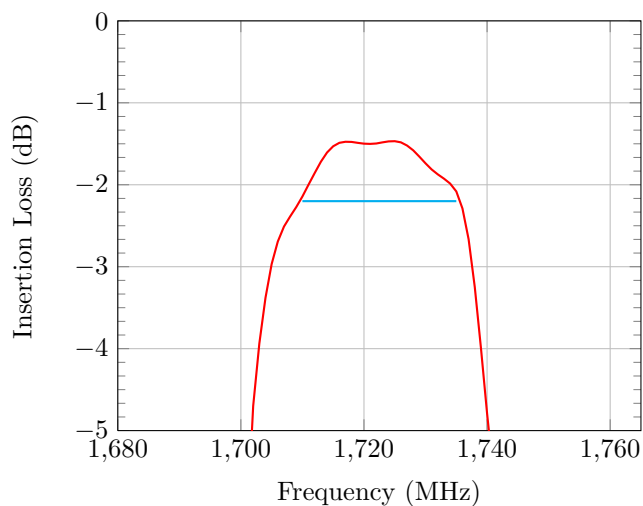


Figure 4: Passband

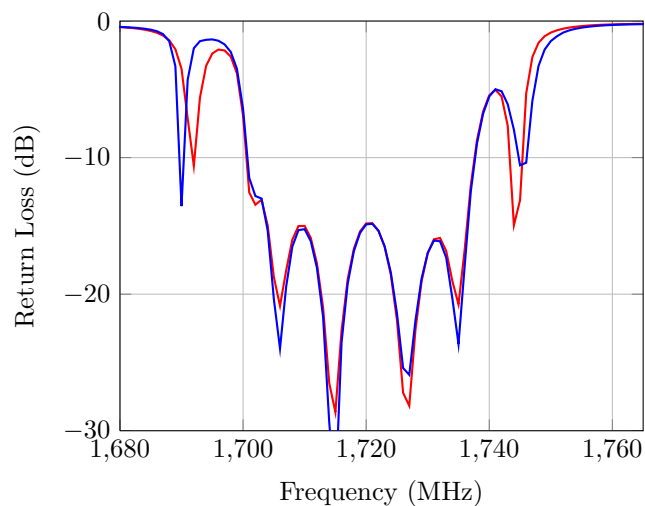


Figure 5: Input/Output Return Loss

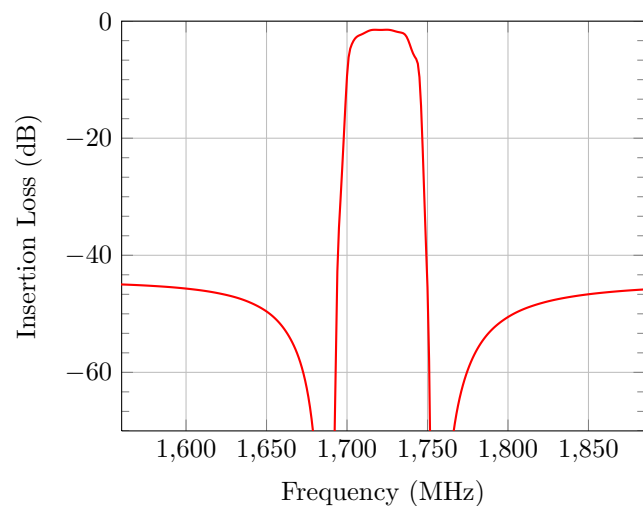


Figure 6: Narrowband

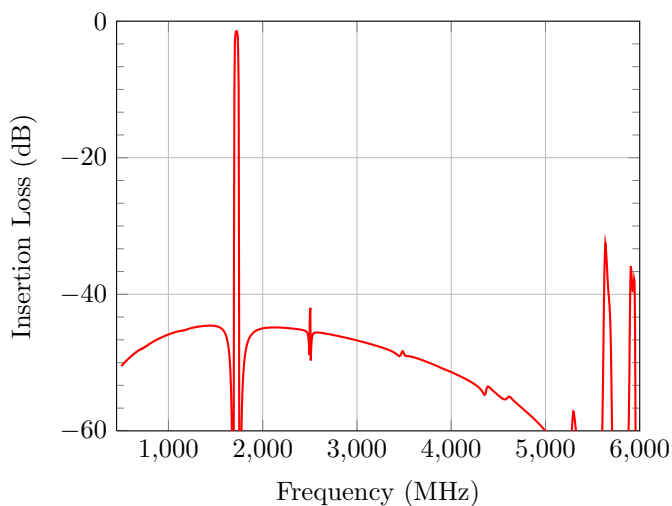
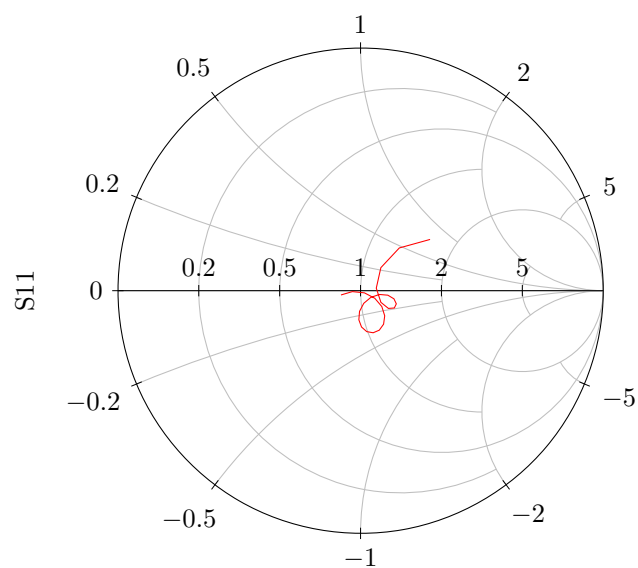
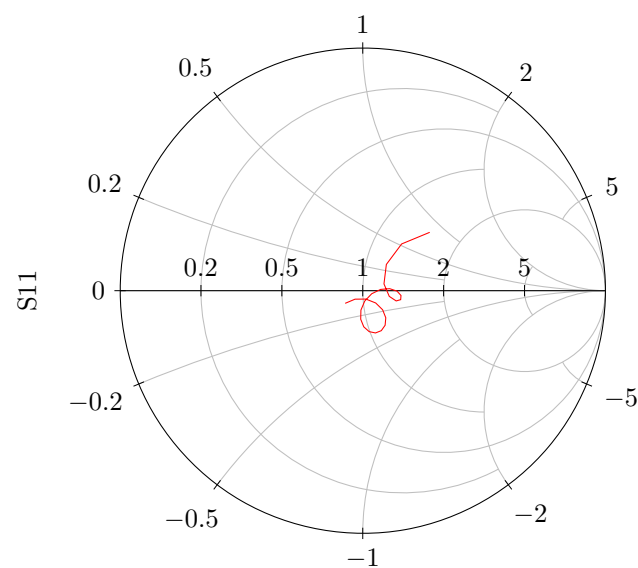


Figure 7: Wideband

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

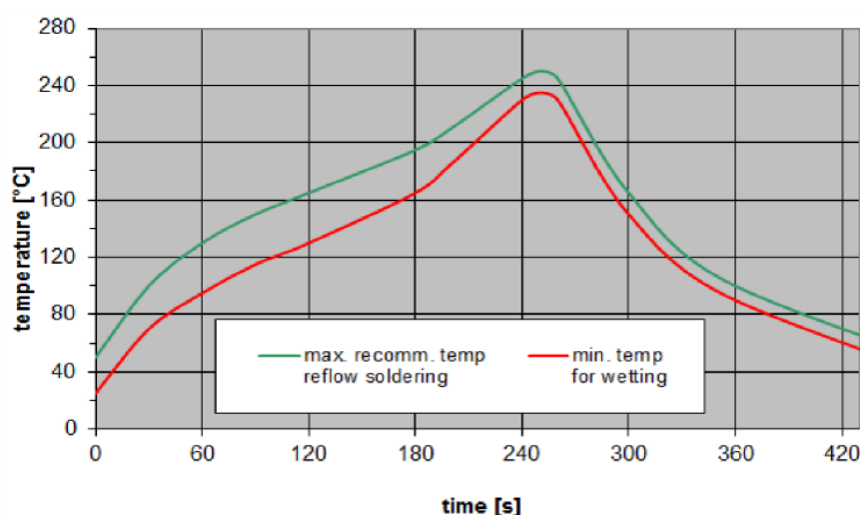


Figure 10: Drawing of reel (Recommended reflow profile for convection and infrared soldering – lead-free solder)

10 Tape and Reel

10.1 Tape

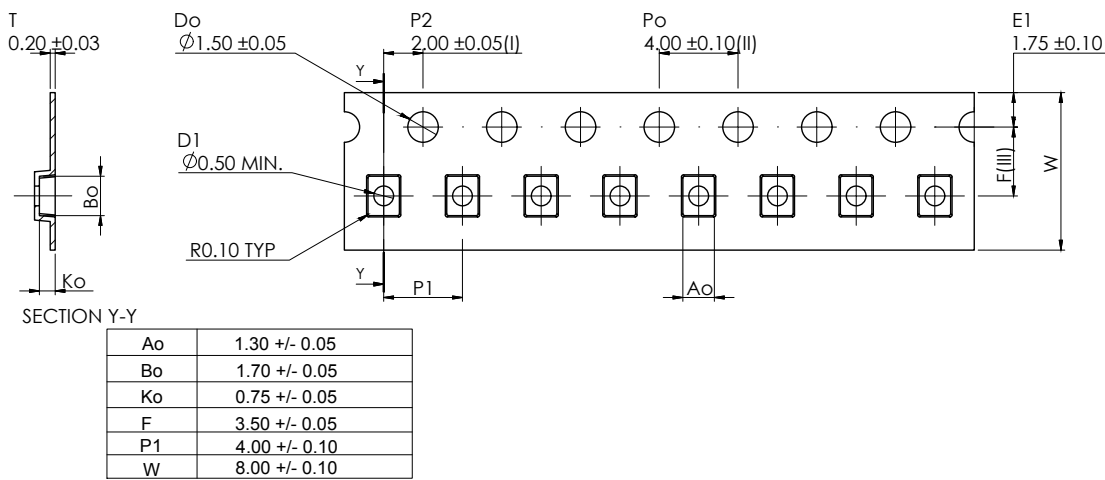


Figure 11: Drawing of tape (first-angle projection) with tape dimensions

10.2 Reel with diameter of 178 mm

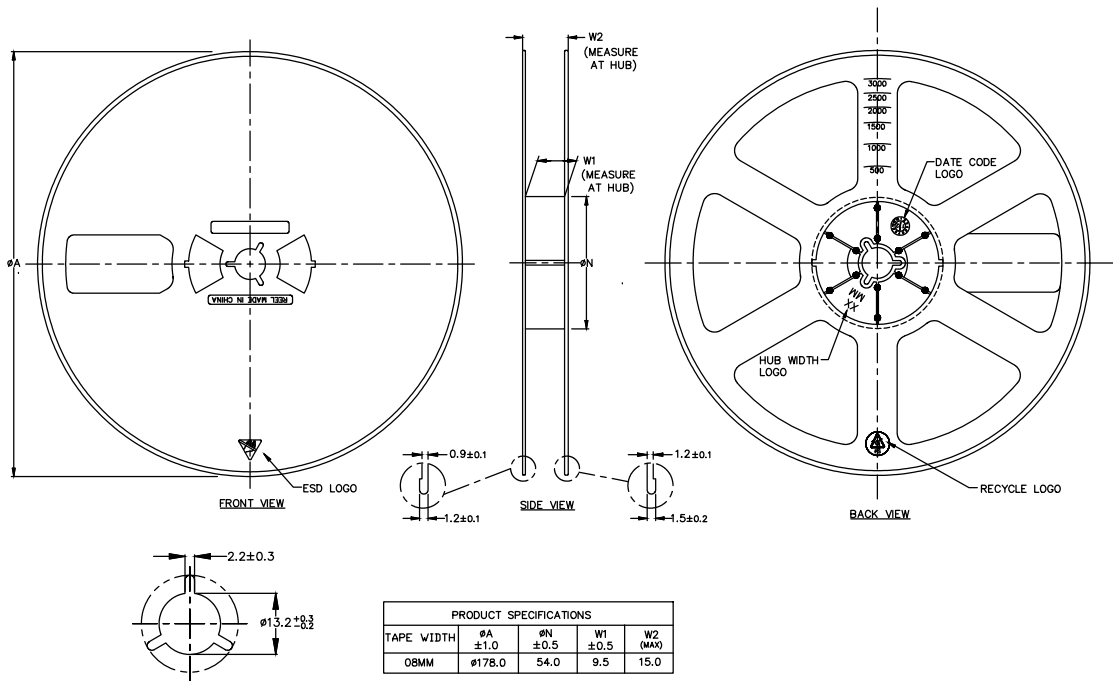


Figure 12: Drawing of reel (first-angle projection) with diameter of 180 mm