

BAW Components

BAW Filter

Cellular / LTE / Band 40-50MHz

Series type: QGBA2G34AASP1

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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

- LTE B40-50MHz Tx/Rx bandpass filter for In-building Distribution System
- Low insertion attenuation
- Low amplitude ripple

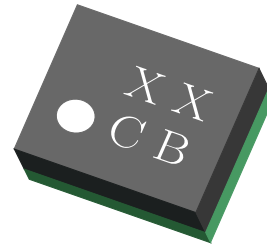
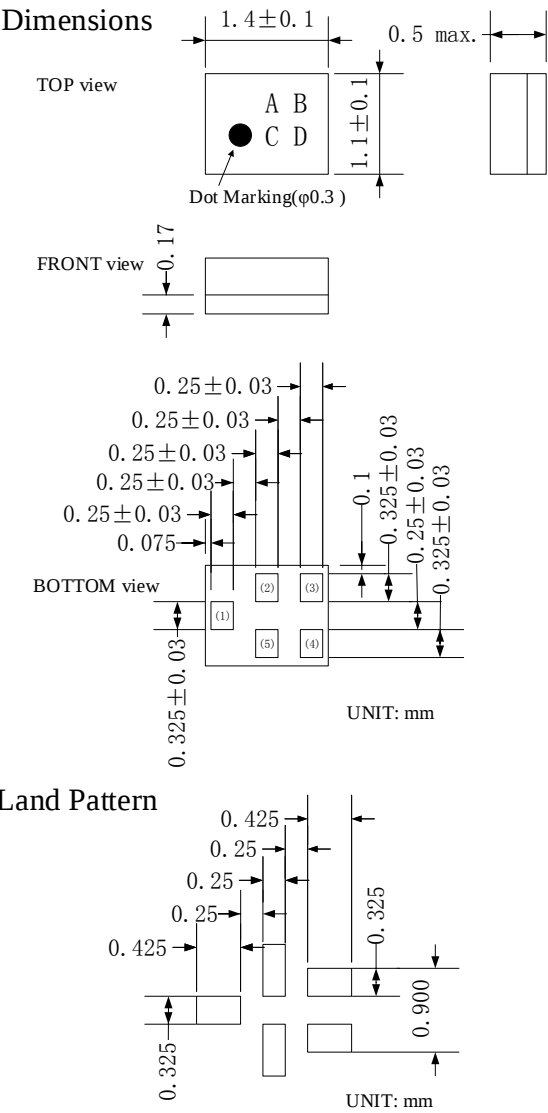


Figure 1: Picture of component with example of product marking.

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

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

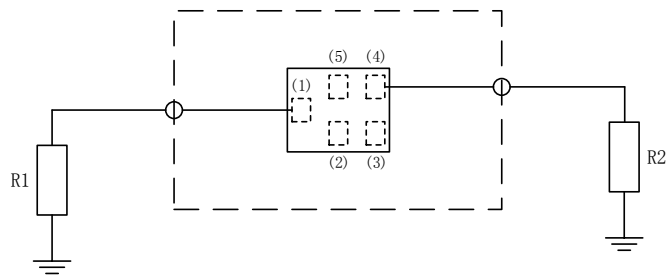


Figure 3: Schematic of matching circuit.

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		2345			MHz	
Insertion Loss	2320 to 2370 MHz		2.4	3.0		
Ripple Deviation	2320 to 2370 MHz		0.5	1.2	dB	
VSWR	2320 to 2370 MHz		1.5	2.2		Ant
	2320 to 2370 MHz		1.5	2.2		Tx
Absolute Attenuation	10 to 2170 MHz	40	45		dB	
	1559 to 1563 MHz	40	45		dB	
	1563 to 1573 MHz	40	45		dB	
	1573 to 1577 MHz	40	45		dB	
	1577 to 1585 MHz	40	45		dB	
	1598 to 1606 MHz	40	45		dB	
	2440 to 2500 MHz	42	49		dB	
	2496 to 2690 MHz	42	46		dB	
	4600 to 4800 MHz	45	50		dB	
	5725 to 5825 MHz	50	56		dB	

8 Transmission coefficients

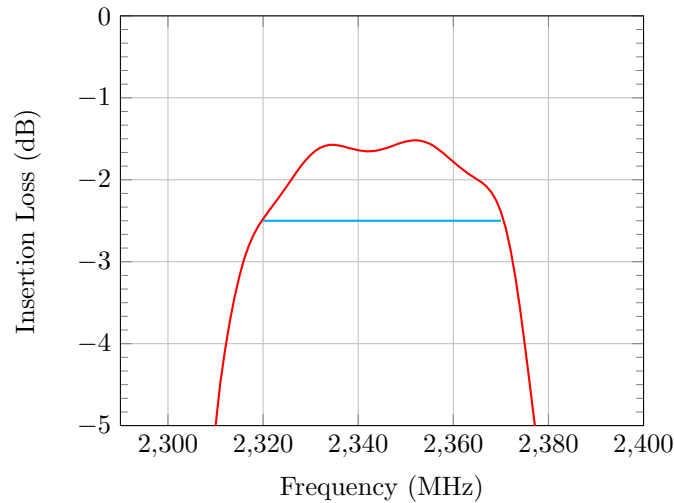


Figure 4: Passband

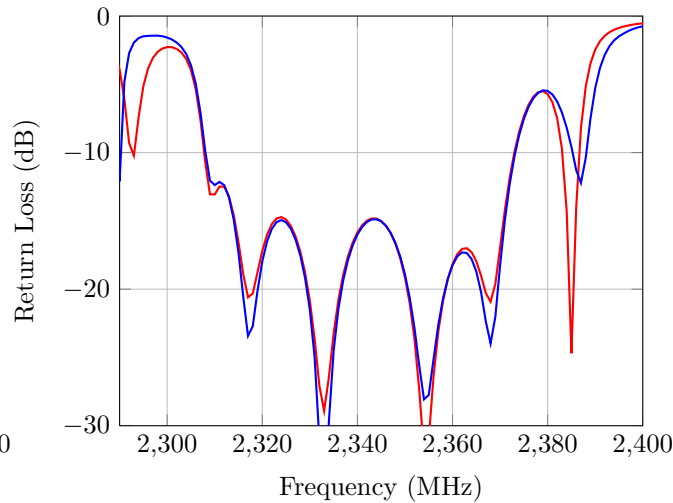


Figure 5: Input/Output Return Loss

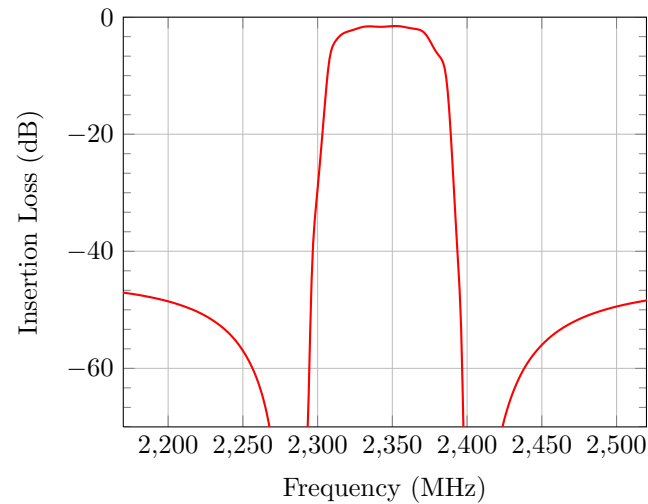


Figure 6: Narrowband

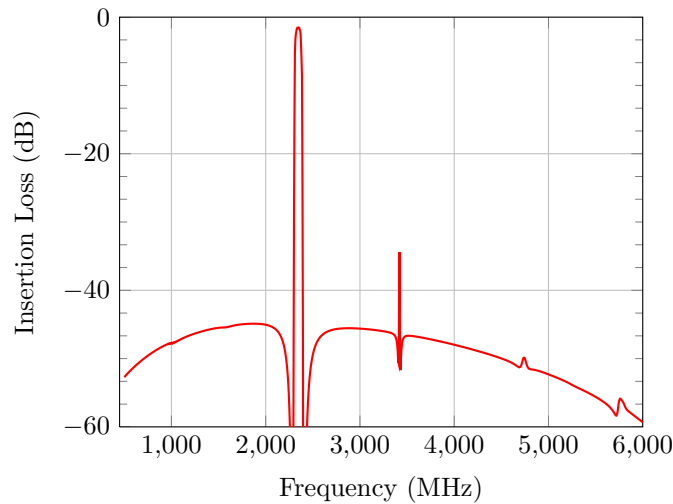


Figure 7: Wideband

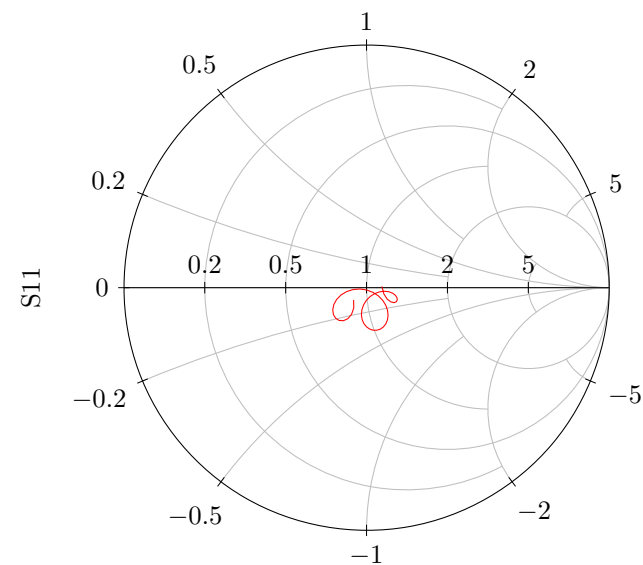


Figure 8: Input Smith Chart ($Z_0 = 50\Omega$)

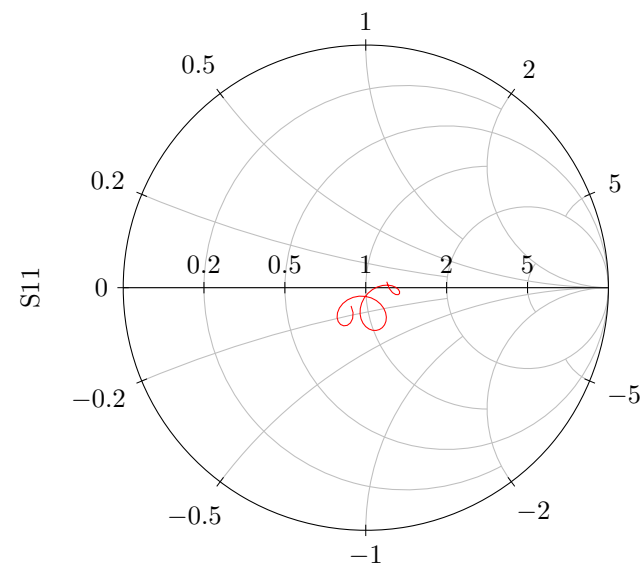


Figure 9: Output Smith Chart ($Z_0 = 50\Omega$)

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

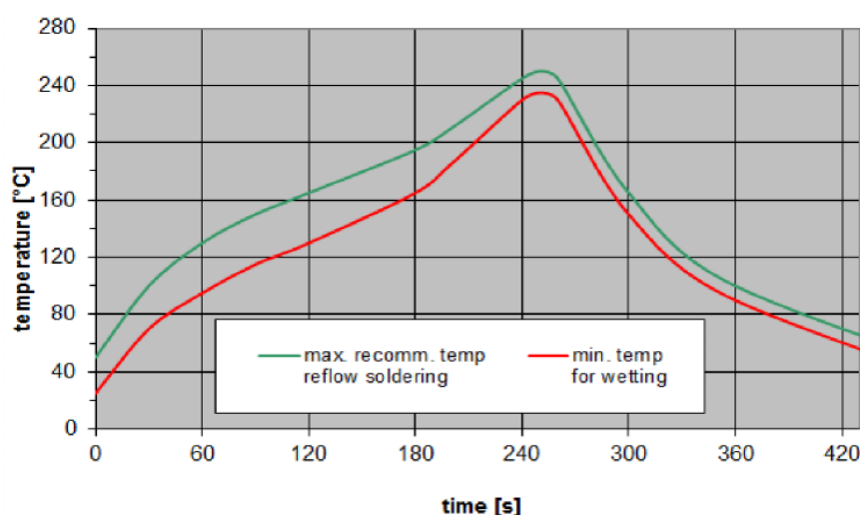


Figure 10: Drawing of reel (Recommended reflow profile for convection and infrared soldering – lead-free solder)

10 Tape and Reel

10.1 Tape

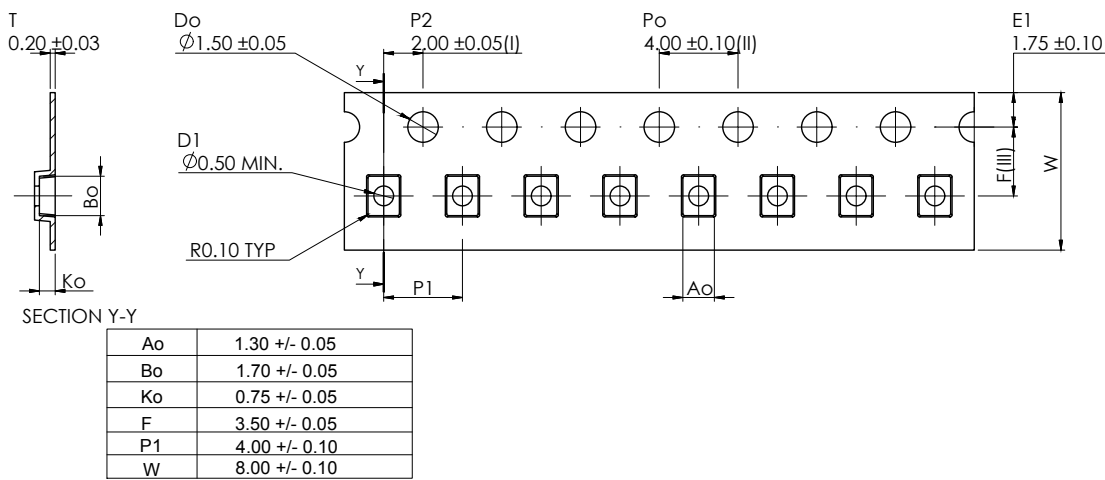


Figure 11: Drawing of tape (first-angle projection) with tape dimensions

10.2 Reel with diameter of 178 mm

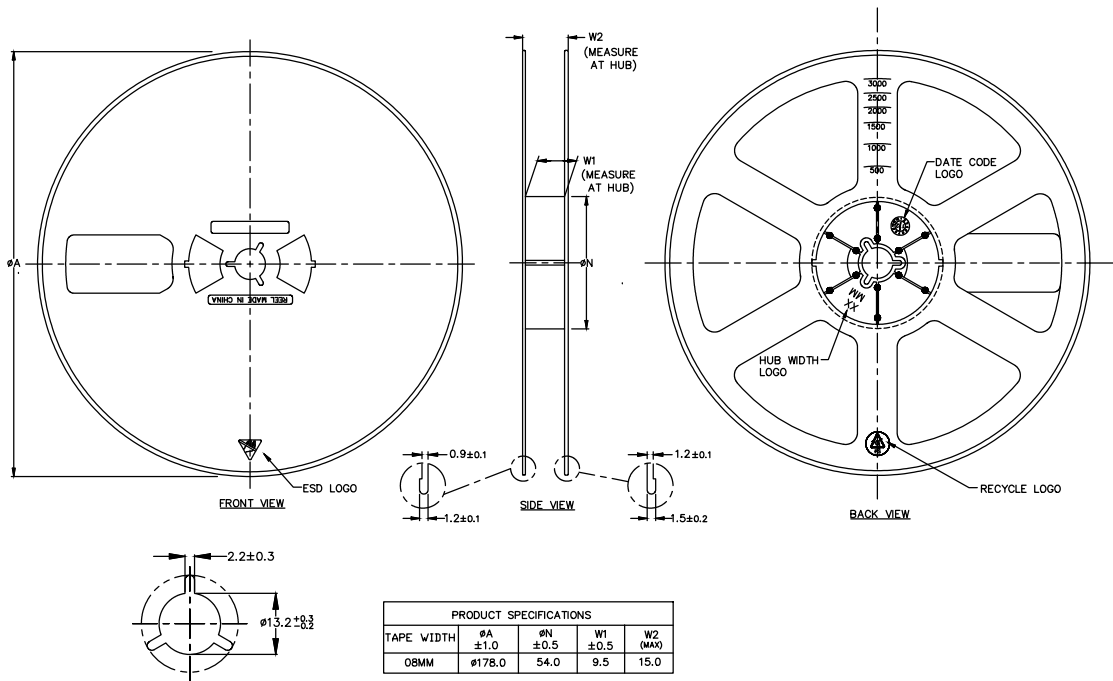


Figure 12: Drawing of reel (first-angle projection) with diameter of 180 mm