

BAW Components

BAW Filter

Cellular/LTE/Band3 RX-50MHz

Series type: QGBA1G86AASP1

Ordering code: QGBA1G86AASP1

Date: September 2025

Version: 1.0



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1 Applications

- LTE B3-50MHz Rx bandpass filter for In-building Distribution attenuation
- Low insertion attenuation
- Low amplitude ripple

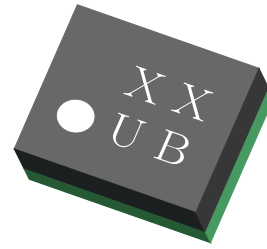
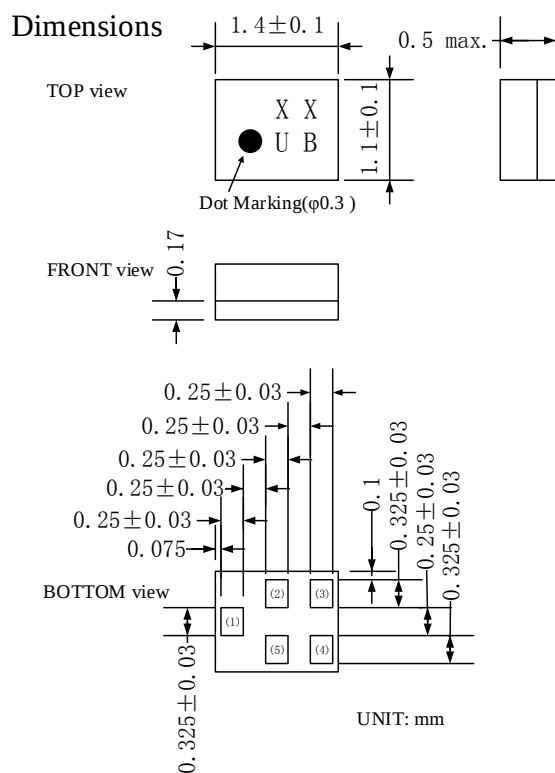


Figure 1: Picture of component with example of product marking.

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



Land Pattern

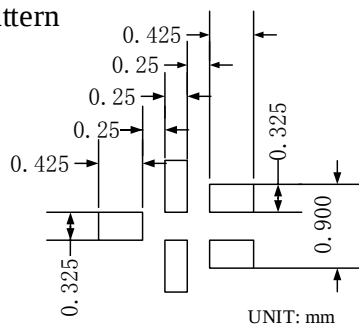


Figure 2: Drawing of package with package height $A = 0.5$ mm (max.)

4 Pin configuration

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

5 Matching circuit

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

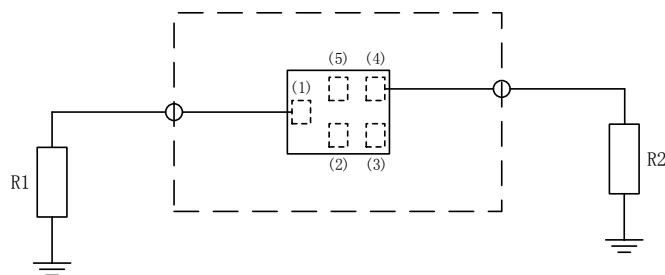


Figure 3: Schematic of matching circuit.

6 Absolute Maximum Ratings

Table 1: Absolute Maximum Ratings of Example Data Sheet

Parameter	Rating
Storage temperature	$T_{STG} = -40^{\circ}C$ to $+95^{\circ}C$
Operating temperature	$T_{opt} = -40^{\circ}C$ to $+95^{\circ}C$
DC voltage	$V_{DC} = 3.0V(max)$
Input power	$P_{IN} = +31dBm$ 5000h+ $55^{\circ}C$
Minimum Resistance between the terminals	10Mohm

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		1855			MHz	
Insertion Loss	1830 to 1880 MHz		1.2	3.3	dB	
Ripple Deviation	1830 to 1880 MHz		1.6	2.2	dB	
VSWR	1830 to 1880 MHz		1.5	2.2		
Absolute Attenuation	450 to 1735 MHz	28	28		dB	
	1735 to 1785 MHz	31	33		dB	
	1785 to 1820 MHz	20	30		dB	
	1890 to 1940 MHz	20	25		dB	
	1940 to 2400 MHz	29	30		dB	
	2400 to 2500 MHz	29	30		dB	
	2500 to 6000 MHz	30	30		dB	

8 Transmission coefficients

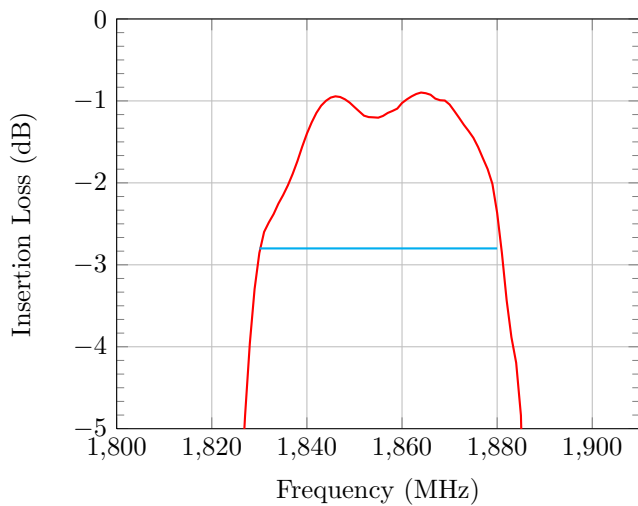


Figure 4: Passband

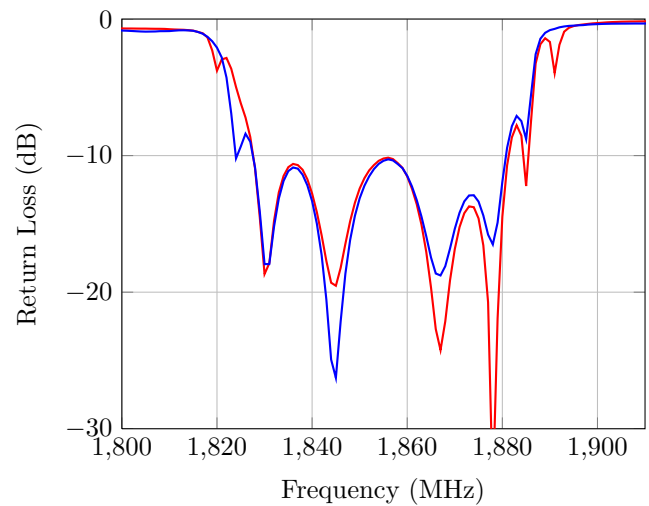


Figure 5: Input/Output Return Loss

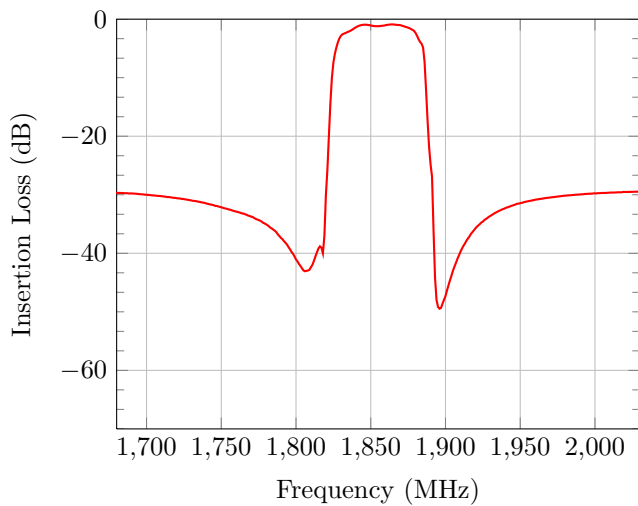


Figure 6: Narrowband

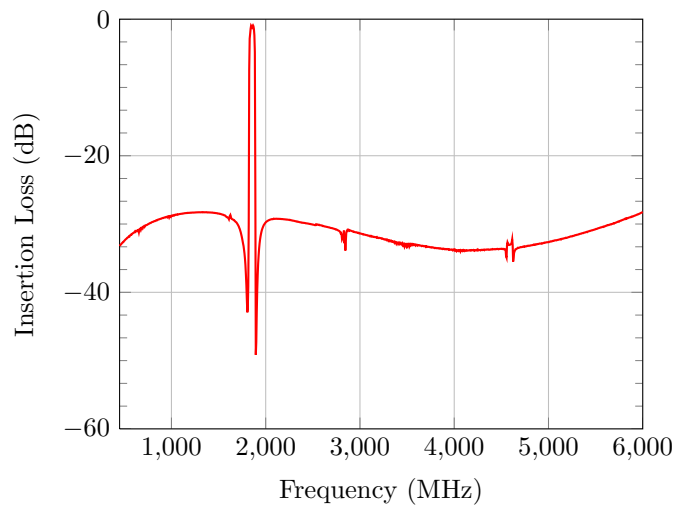
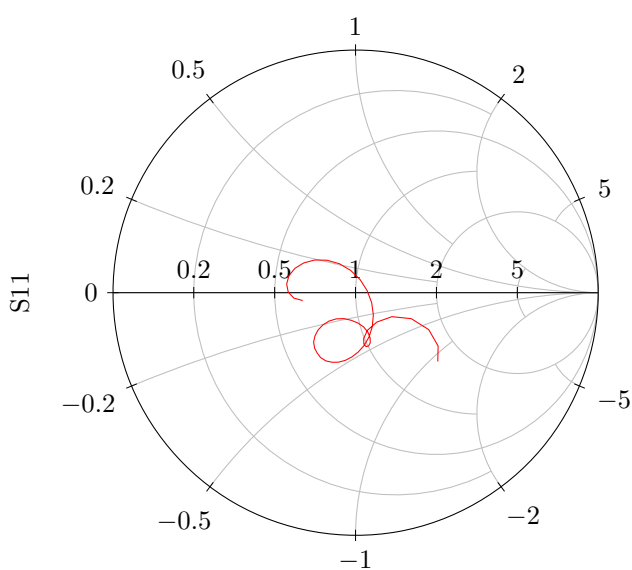
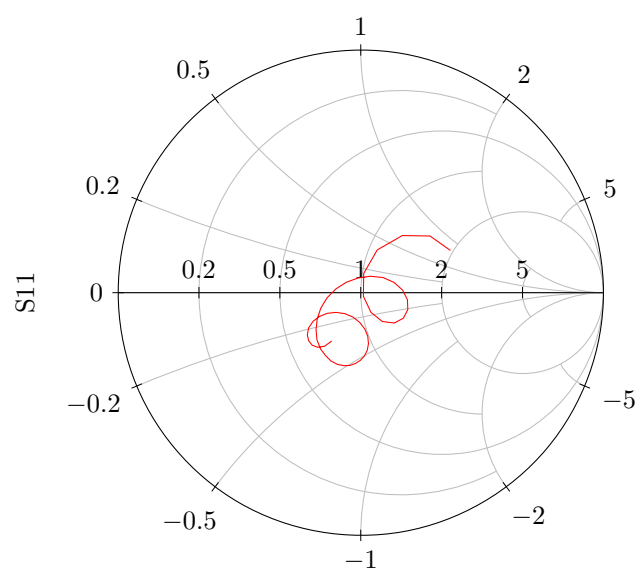


Figure 7: Wideband

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 $\pm 5^{\circ}\text{C}$
Wetting temperature T_{min}	230 °C $\pm 5^{\circ}\text{C}$ for 10s $\pm$ 1s
Cooling rate	≥ 3 K/s
Soldering temperature T	Measured at solder pads

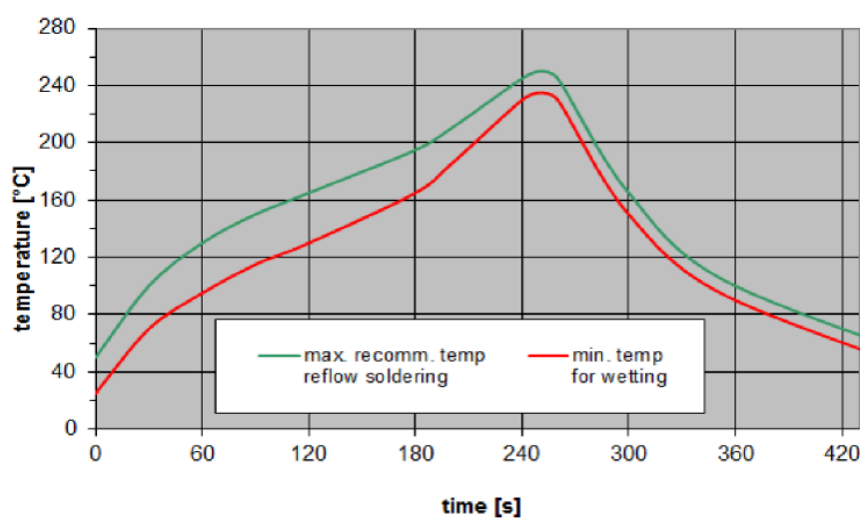


Figure 10: Drawing of reel (Recommended reflow profile for convection and infrared soldering – lead-free solder)

10 Tape and Reel

10.1 Tape

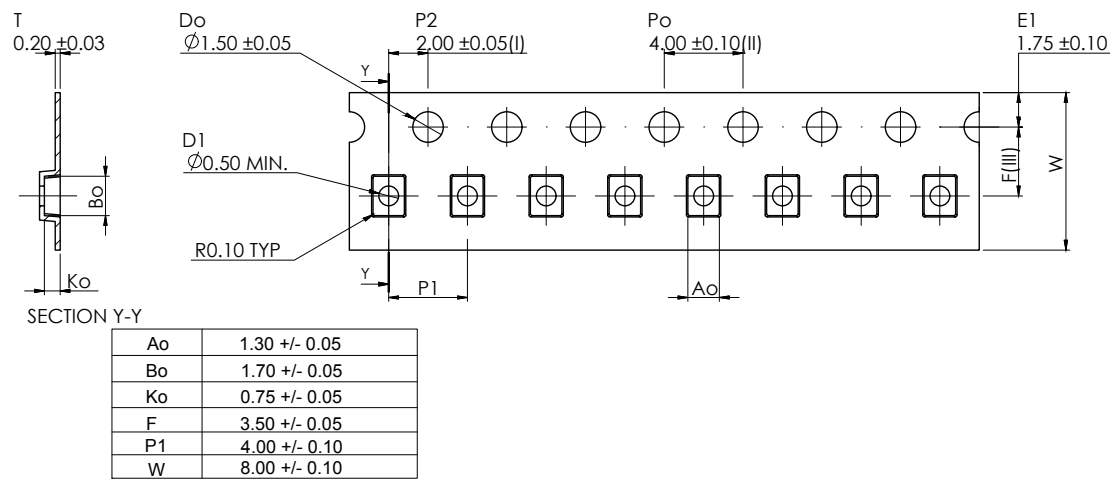


Figure 11: Drawing of tape (first-angle projection) with tape dimensions

10.2 Reel with diameter of 178 mm

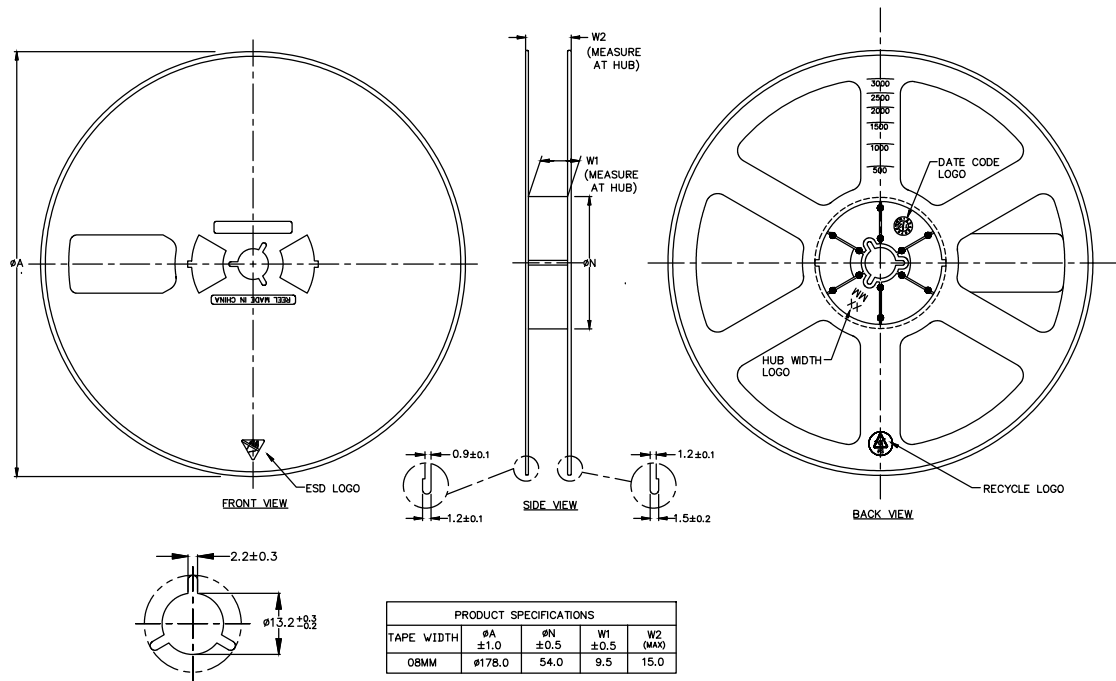


Figure 12: Drawing of reel (first-angle projection) with diameter of 180 mm