

BAW Components

BAW Filter

Cellular / LTE / Band 41-160M

Series type: QGBA2G59AASP1

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1 Applications

- LTE B41-160M Tx/Rx bandpass filter for HPUE
- Low insertion attenuation
- Low amplitude ripple

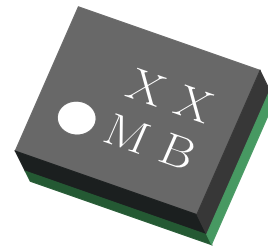


Figure 1: Picture of component with example of product marking.

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)

5 Matching circuit

- $R_1 : 50\Omega$ $R_2 : 50\Omega$ $L_{p1} : 18nH$ $L_{p2} : 10nH$

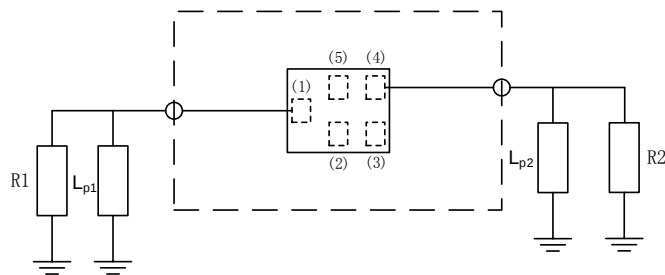


Figure 3: Schematic of matching circuit.

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 $L_{p1} = 18nH$

Output terminating impedance $L_{p2} = 10nH$

Item		min.	typ.	max.	Unit	Note
Center Frequency		2595			MHz	
Insertion Loss	2515 to 2675 MHz		1.2	3.3		
Ripple Deviation	2515 to 2675 MHz		0.6	1.2	dB	
VSWR	2515 to 2675 MHz		1.5	2.2		Ant
	2515 to 2675 MHz		1.5	2.2		Tx
Absolute Attenuation	10 to 2170 MHz	32	39		dB	
	2300 to 2370 MHz	45	55		dB	
	2400 to 2440 MHz	48	52		dB	
	2440 to 2483.5 MHz	40	55		dB	
	2700 to 2745 MHz	23	51		dB	
	2745 to 2900 MHz	48	54		dB	
	3300 to 3600 MHz	40	58		dB	
	4700 to 5000 MHz	45	47		dB	
	5030 to 5350 MHz	40	60		dB	
	5500 to 5850 MHz	38	44		dB	

8 Transmission coefficients

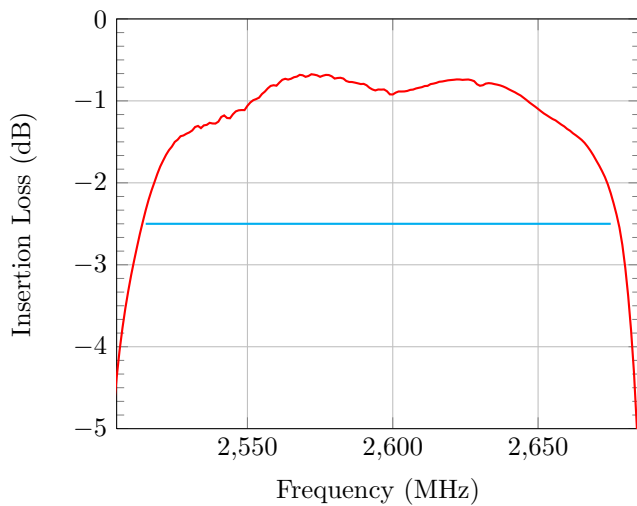


Figure 4: Passband

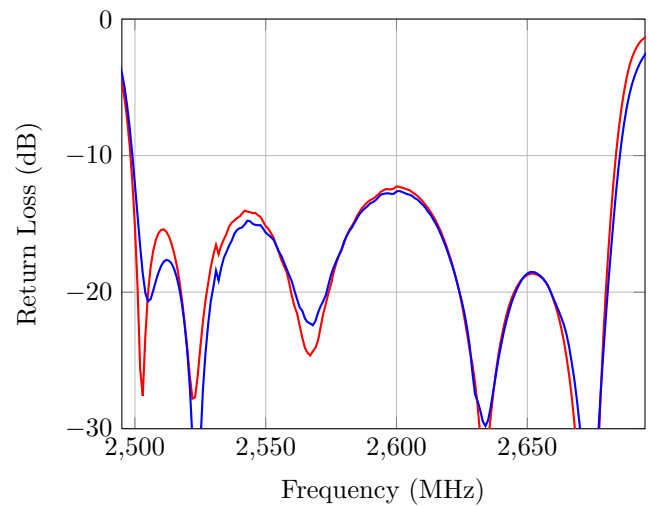


Figure 5: Input/Output Return Loss

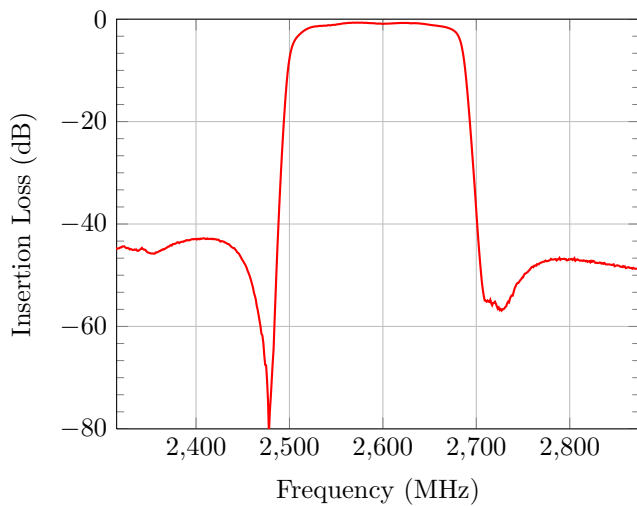


Figure 6: Narrowband

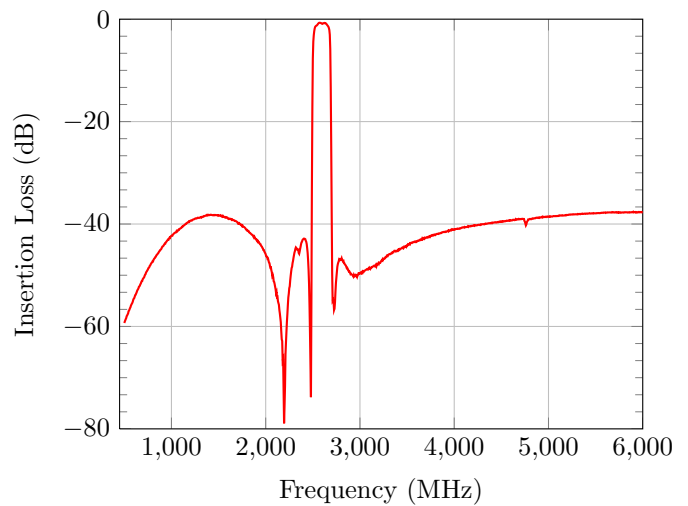
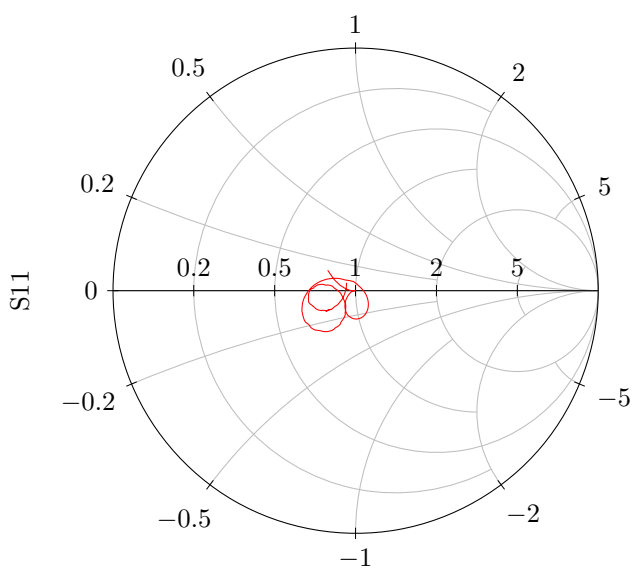
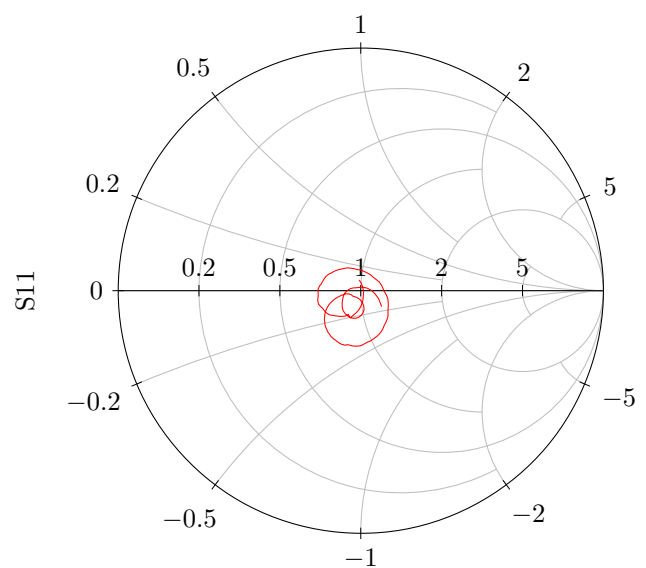


Figure 7: Wideband

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

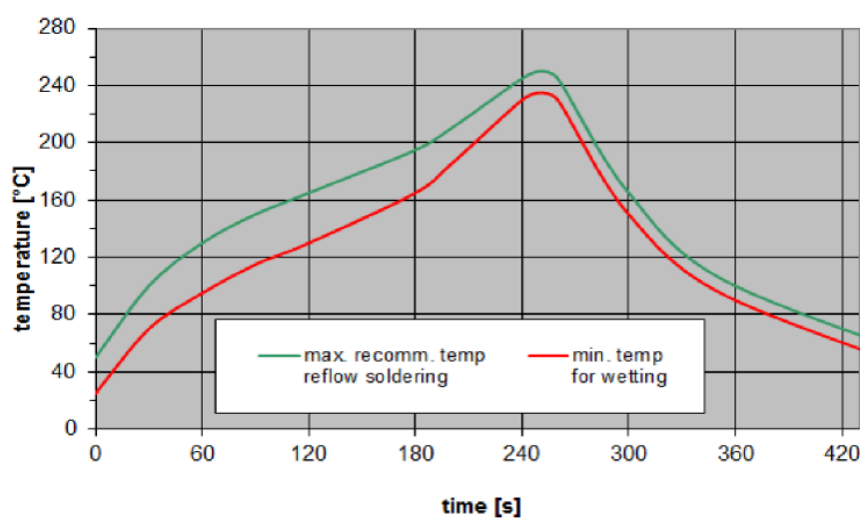


Figure 10: Drawing of reel (Recommended reflow profile for convection and infrared soldering – lead-free solder)

10 Tape and Reel

10.1 Tape

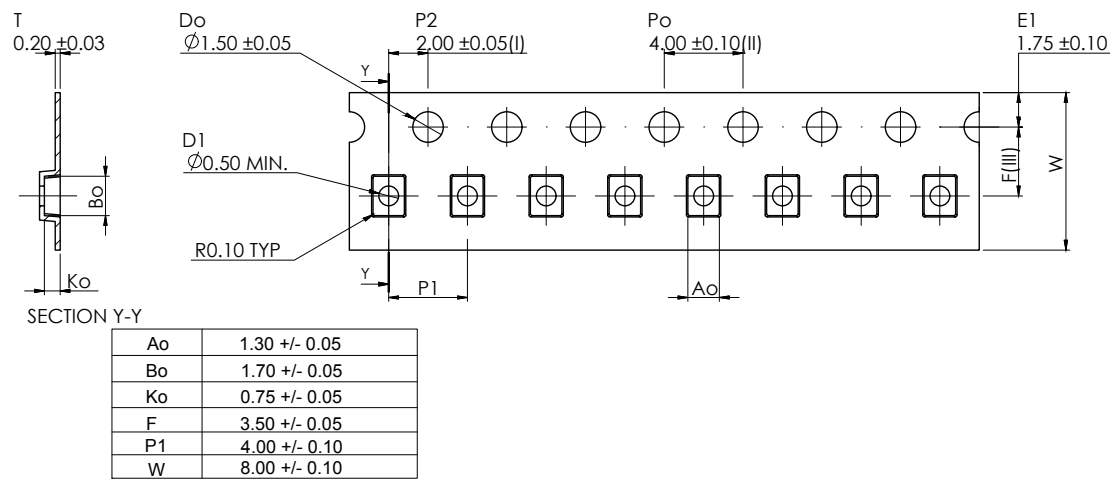


Figure 11: Drawing of tape (first-angle projection) with tape dimensions

10.2 Reel with diameter of 178 mm

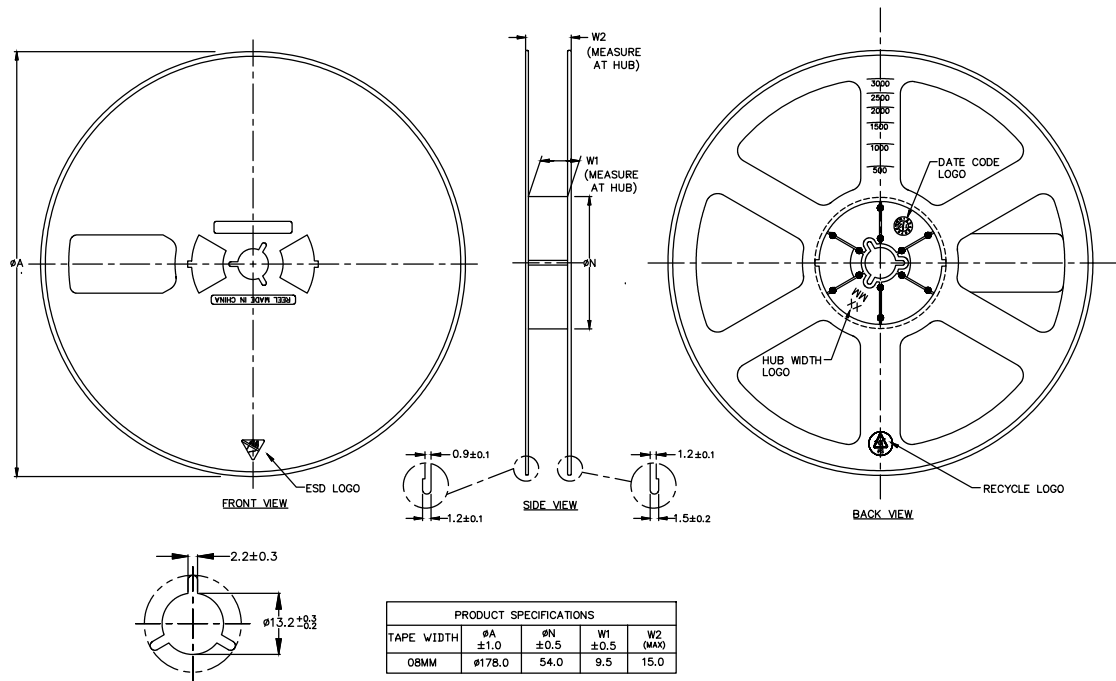


Figure 12: Drawing of reel (first-angle projection) with diameter of 180 mm