QuantGrav Technology Co., Ltd.

BAW Components

BAW Filter

Cellular / Beidou /S Band Filter(BW 8MHz)

Series type: QGBA2G49AASP9

Ordering code: QGBA2G49AASP9

Date: May 2024

Version: 1.0

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1 Applications

- Beidou S Band application
- Low Insertion Loss
- High rejection at LTE and Wi-Fi bands
- Low TCF($< 3ppm/^oC$)
- Low amplitude ripple

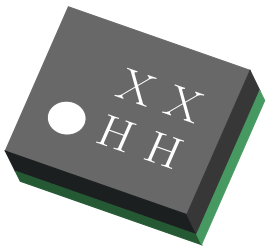


Figure 1: Picture of component with example of product marking.

2 Features

- Package size 3.0 mm x 3.0 mm
- Package height 0.75 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

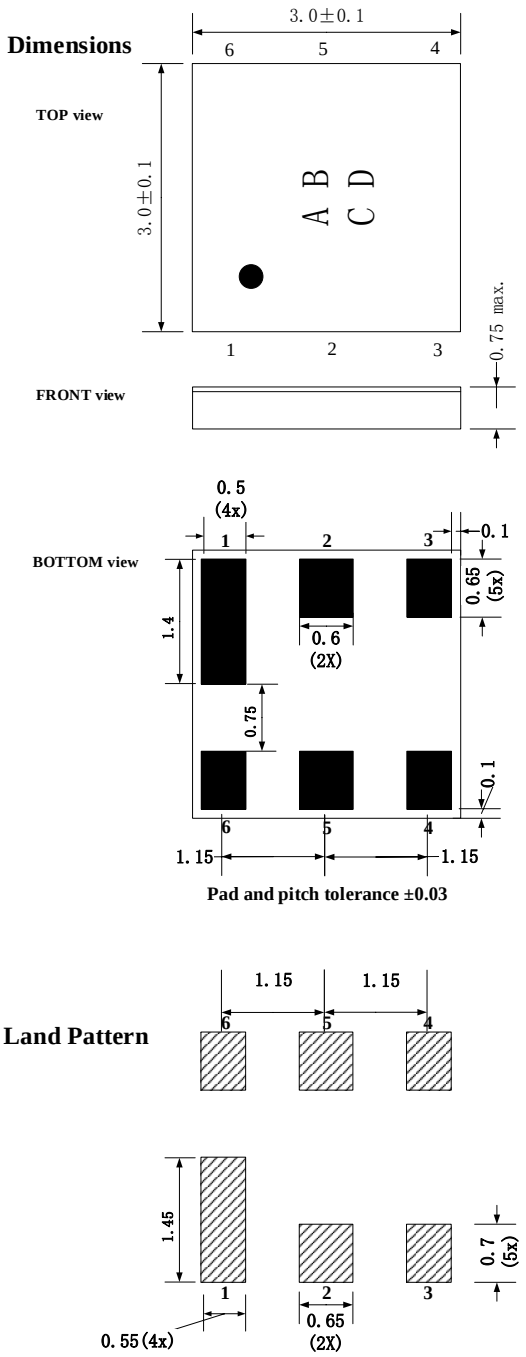


Figure 2: Drawing of package with package height A = 0.6 mm (max.)

4 Pin configuration

- 2 Input
- 5 Output
- 1,3,4,6 Ground

5 Matching circuit

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

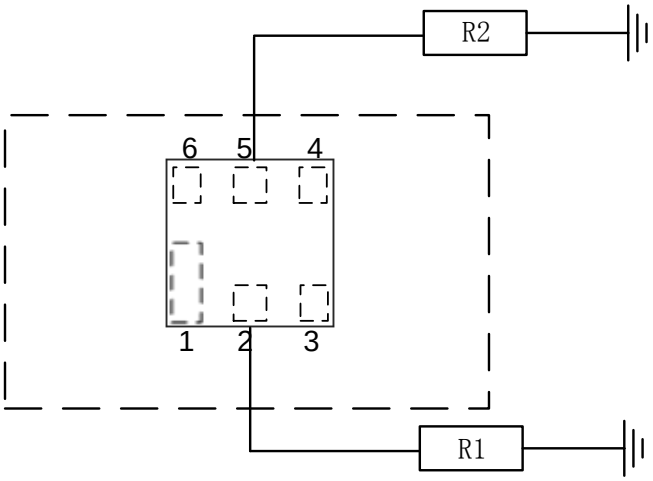


Figure 3: Schematic of matching circuit.

6 Absolute Maximum Ratings

Table 1: Absolute Maximum Ratings of Example Data Sheet

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

[1]Input signal shall be applied to TX port.

7 Characteristics

Temperature range for specification $T_{SPEC} = -40°C \ldots +95°C$

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

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

Item		min.	typ.	max.	Unit	Note
Center Frequency			2492		MHz	
Insertion Loss	2488 to 2496 MHz		3	4		
Ripple Deviation	2488 to 2496 MHz		0.8	1.2	dB	
VSWR	2488 to 2496 MHz		1.2	1.7		
Return Loss	2488 to 2496 MHz	10	15			
Absolute Attenuation	1000 to 2470 MHz	40	42		dB	
	2470 to 2480 MHz	10	20		dB	
	2510 to 2700 MHz	40	45		dB	
	2700 to 3000 MHz	40	55		dB	

8 Transmission coefficients

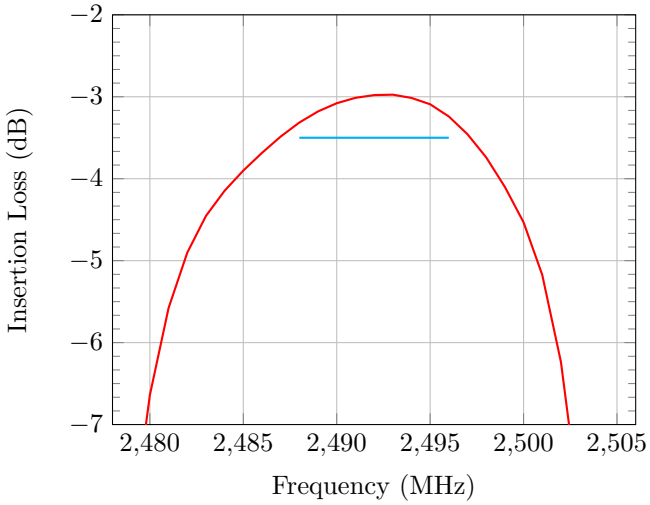


Figure 4: Passband

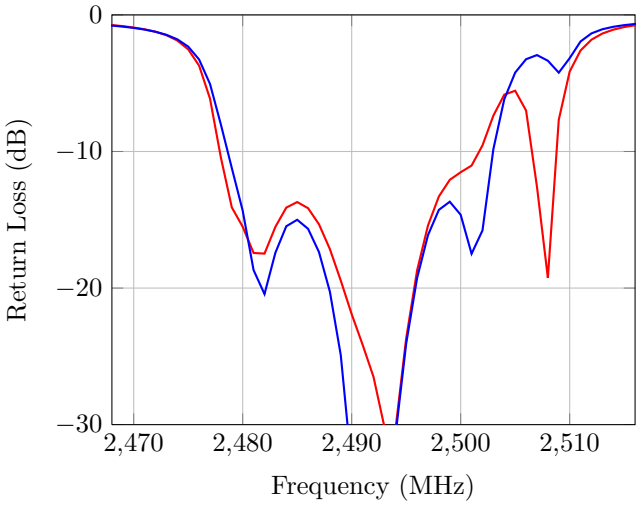


Figure 5: Input/Output Return Loss

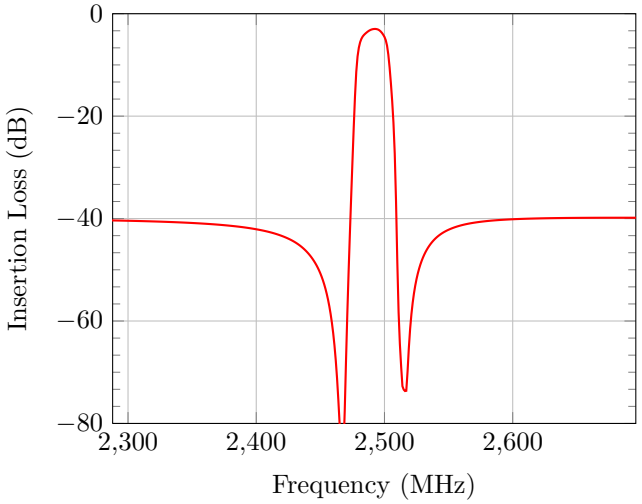


Figure 6: Narrowband

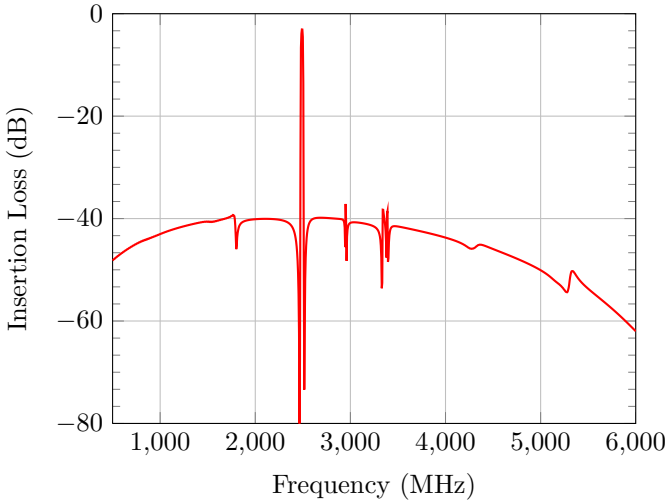


Figure 7: Wideband

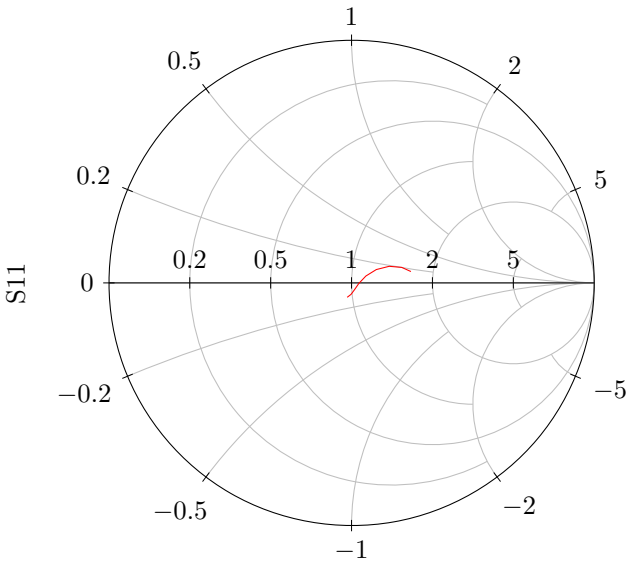


Figure 8: Input Smith Chart ($Z0 = 50\Omega$)

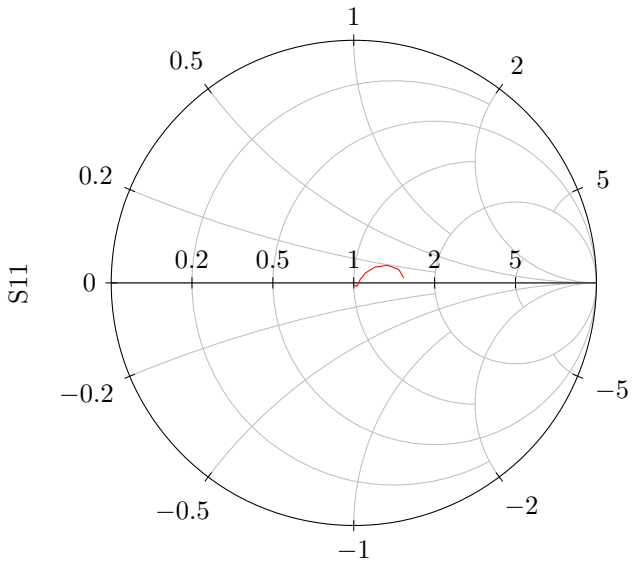
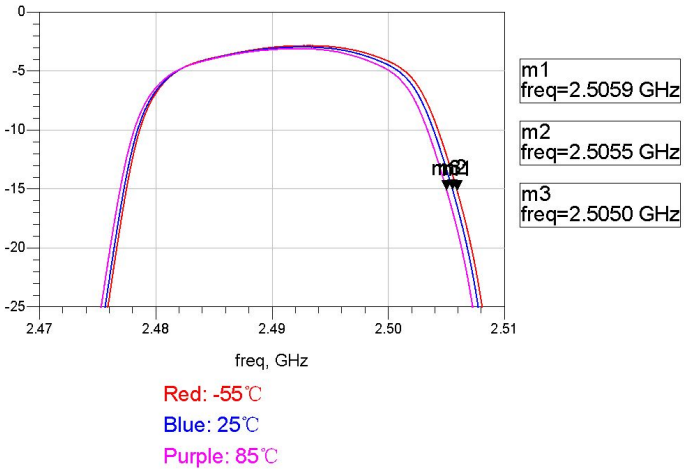


Figure 9: Output Smith Chart ($Z0 = 50\Omega$)

9 Temperature Response



10 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	$\geq$ 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	$\geq$ 3 K/s
Soldering temperature T	Measured at solder pads

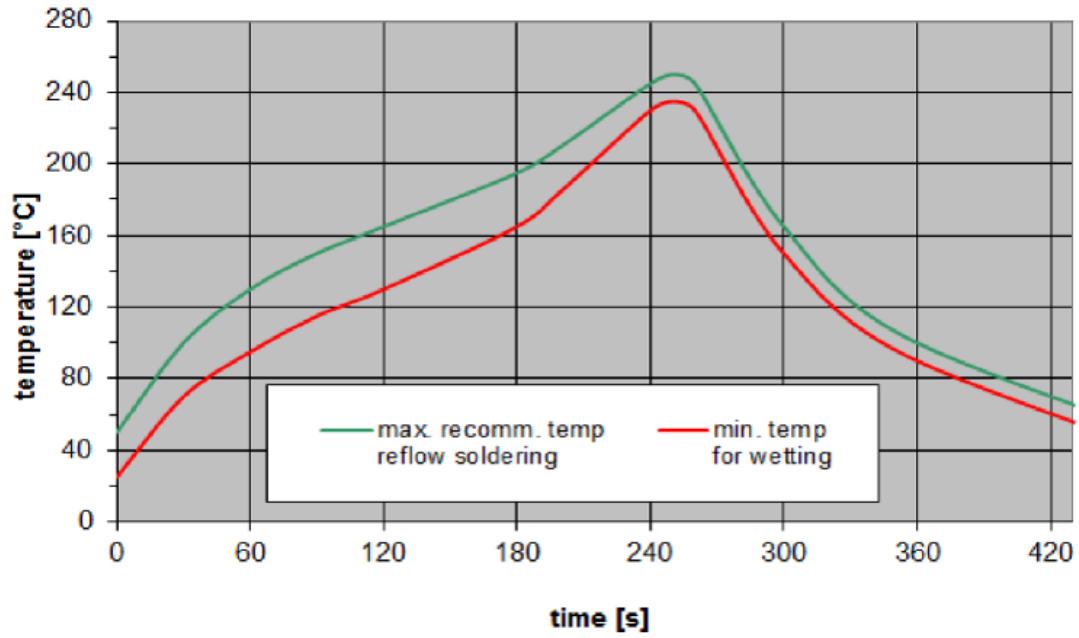
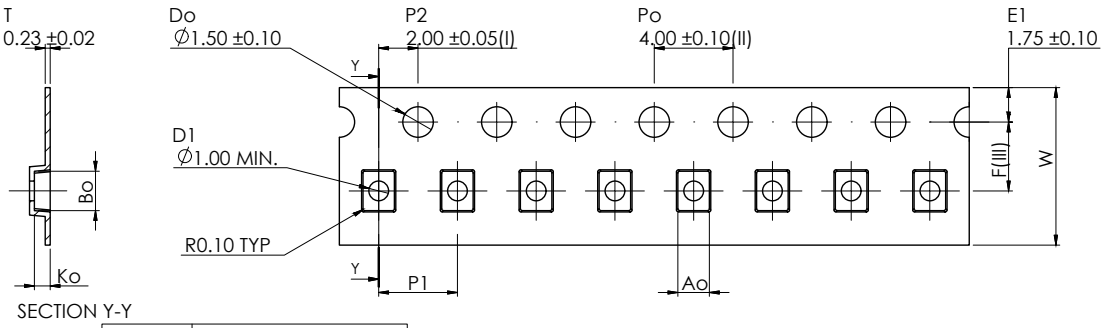


Figure 10: Drawing of reel (Recommended reflow profile for convection and infrared soldering – lead-free solder

11 Tape and Reel

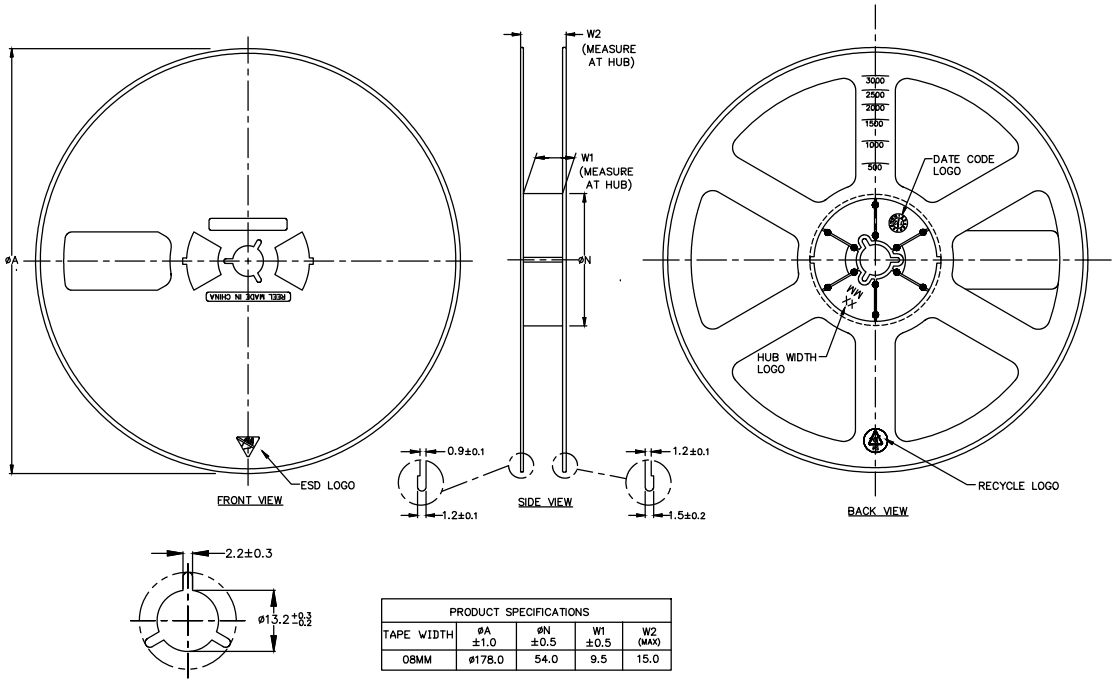
11.1 Tape



Ao	3.20 +/- 0.10
Bo	3.20 +/- 0.10
Ko	1.00 +/- 0.10
F	3.50 +/- 0.05
P1	4.00 +/- 0.10
W	8.00 +/- 0.10

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

11.2 Reel with diameter of 178 mm



PRODUCT SPECIFICATIONS				
TAPE WIDTH	øA ±1.0	øN ±0.5	W1 ±0.5	W2 (MAX)
08MM	ø178.0	54.0	9.5	15.0

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