

SAW Components

SAW Filter

Cellular / LTE / Band 40

Series type: QGSA2G35BASP2

Ordering code: QGSA2G35BASP2

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Version: 1.0



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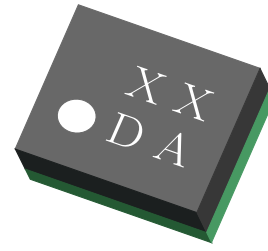
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1 Applications

- Low-loss SAW RF filter for mobile telephone
- 2300-2400MHz

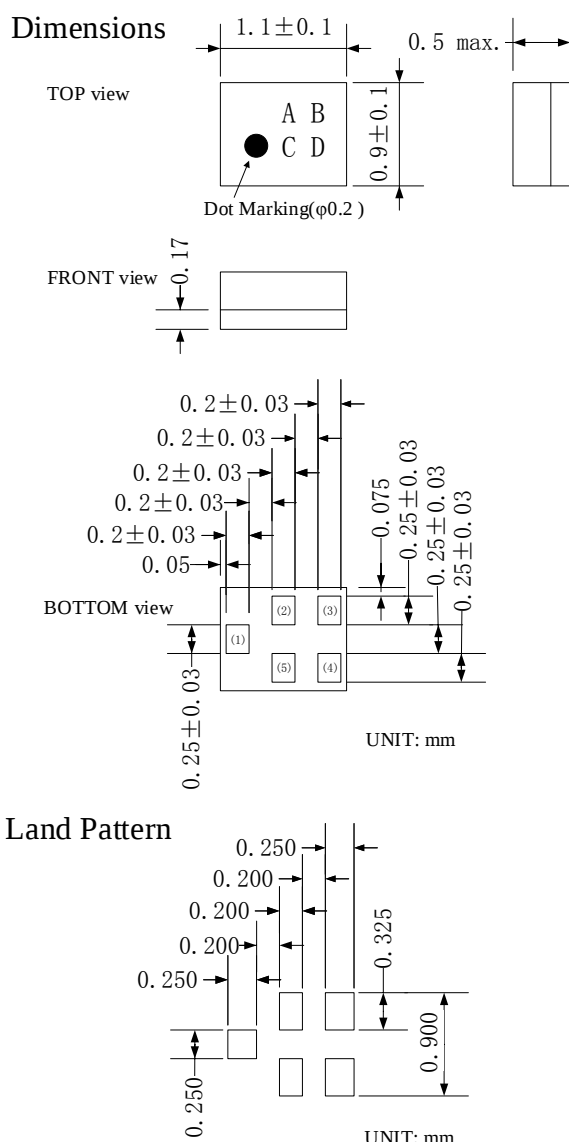


2 Features

- Package size 1.1 mm x 0.9 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)

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

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

• $R_1 : 50\Omega$ $R_2 : 50\Omega$ •

$L_{p1} : 8nH$ $L_{p2} : 8nH$

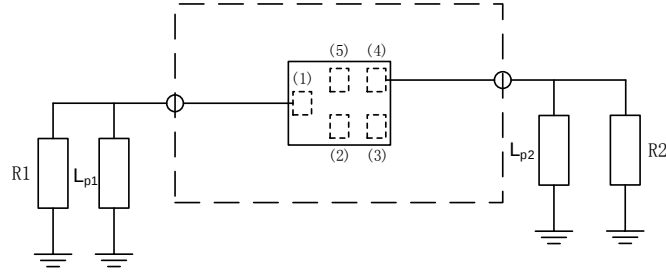


Figure 3: Schematic of matching circuit.

6 Absolute Maximum Ratings

Table 1: Absolute Maximum Ratings of Example Data Sheet

Parameter	Rating
Storage temperature	$T_{STG} = -40^{\circ}C$ to $+85^{\circ}C$
Operating temperature	$T_{opt} = -20^{\circ}C$ to $+85^{\circ}C$
DC voltage	$V_{DC} = 3.0V(max)$
Input power ¹	$P_{IN} = +30dBm$ 5000h $+55^{\circ}C$

¹Input signal shall be applied to TX port.

7 Characteristics

Temperature range for specification $T_{SPEC} = -20^{\circ}C \dots +85^{\circ}C$

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

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

Item		min.	typ.	max.	Unit	Note
Center Frequency		2350			MHz	
Insertion Loss	2300 to 2400 MHz		2.0	2.6		
Ripple Deviation	2300 to 2400 MHz		1.1	2.0	dB	Any 5MHz
VSWR	2300 to 2400 MHz		1.6	2.0		Ant
	2300 to 2400 MHz		1.5	2.2		Tx
Absolute Attenuation	450 to 1575 MHz	25	27		dB	
	1574 to 1577 MHz	25	27		dB	
	1577 to 1680 MHz	25	27		dBINT	
	1845 to 1880 MHz	25	28		dB	
	2110 to 2170 MHz	28	33		dB	
	2421 to 2443 MHz	13	35		dBINT	WLAN ch05 18MHz-BW
	2426 to 2448 MHz	27	55		dBINT	WLAN ch06 18MHz-BW
	2431 to 2483 MHz	40	44		dBINT	WLAN ch7-13 18MHz-BW
	2421 to 2443 MHz	24	35		dBINT	+23 to 85deg.C,WLAN ch05 18MHz-BW
	2426 to 2448 MHz	45	55		dBINT	+23 to 85deg.C,WLAN ch06 18MHz-BW
	2431 to 2483 MHz	40	44		dBINT	+23 to 85deg.C,WLAN ch7-13 18MHz-BW
	4600 to 4800 MHz	30	42		dB	

8 Transmission coefficients

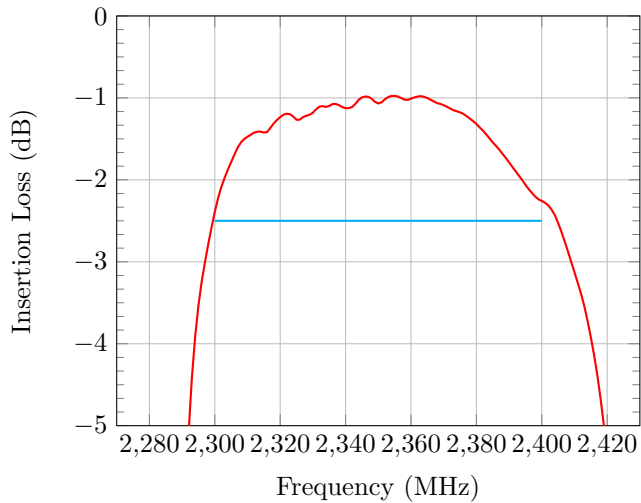


Figure 4: Passband

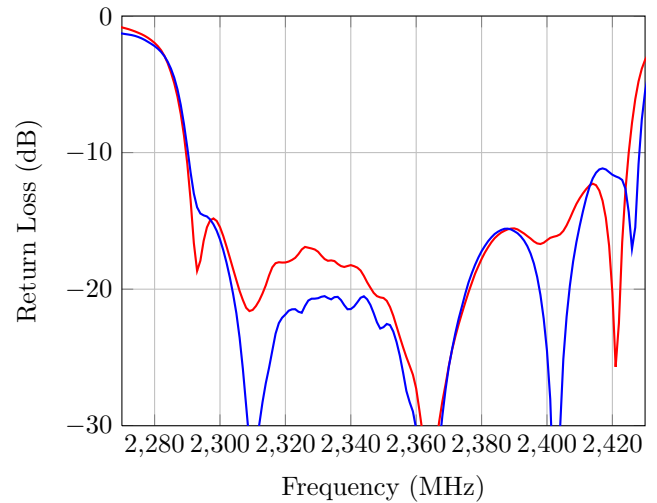


Figure 5: Input/Output Return Loss

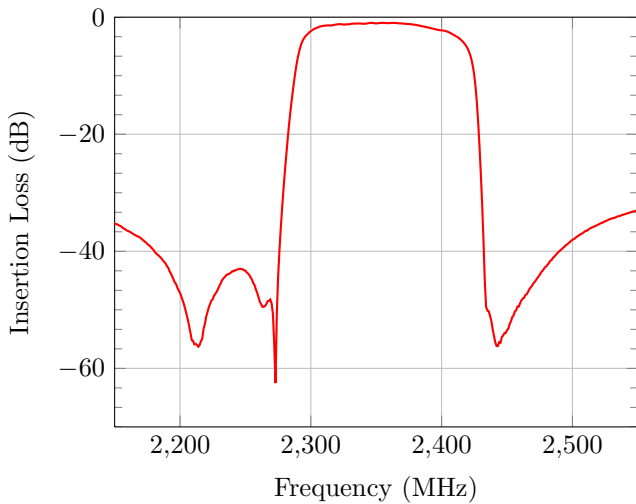


Figure 6: Narrowband

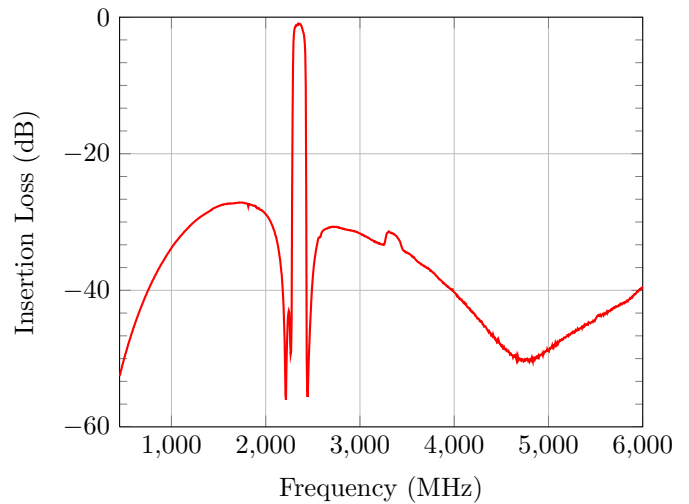
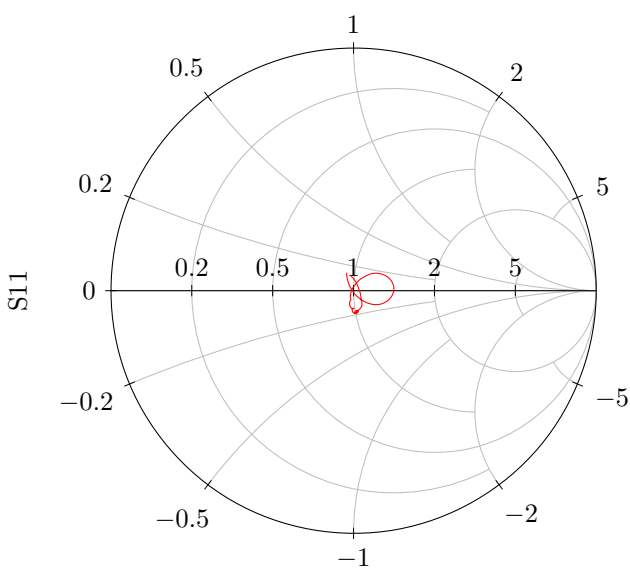
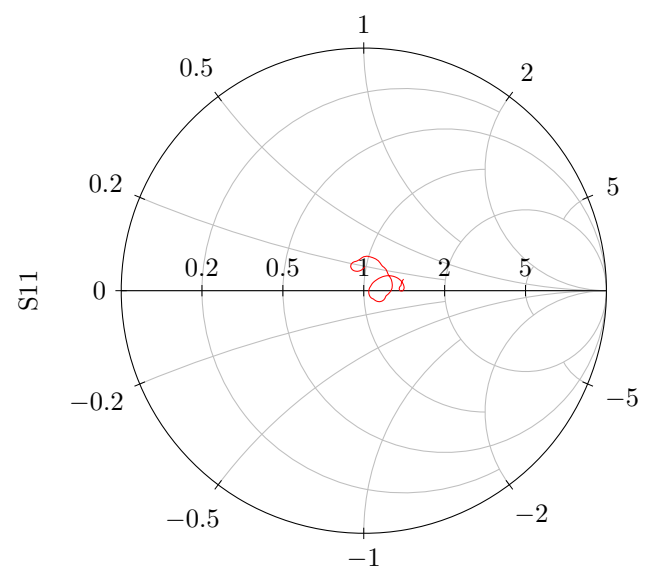


Figure 7: Wideband

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

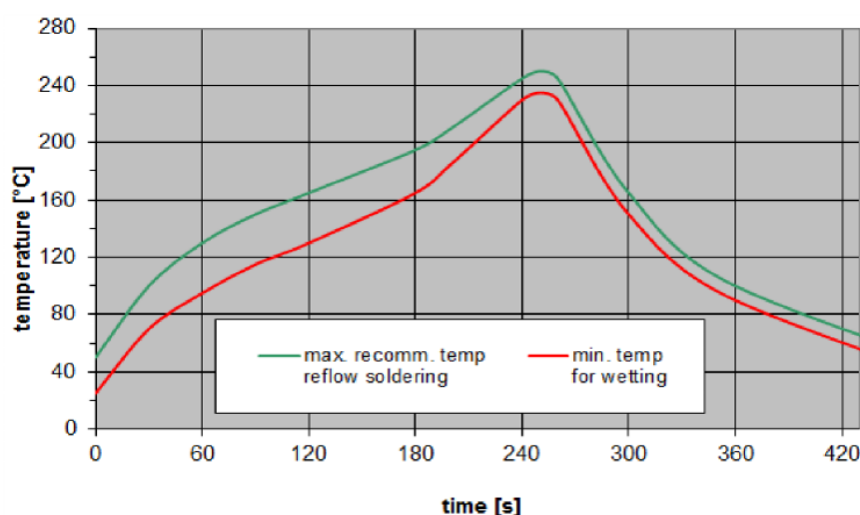


Figure 10: Drawing of reel (Recommended reflow profile for convection and infrared soldering – lead-free solder)

10 Tape and Reel

10.1 Tape

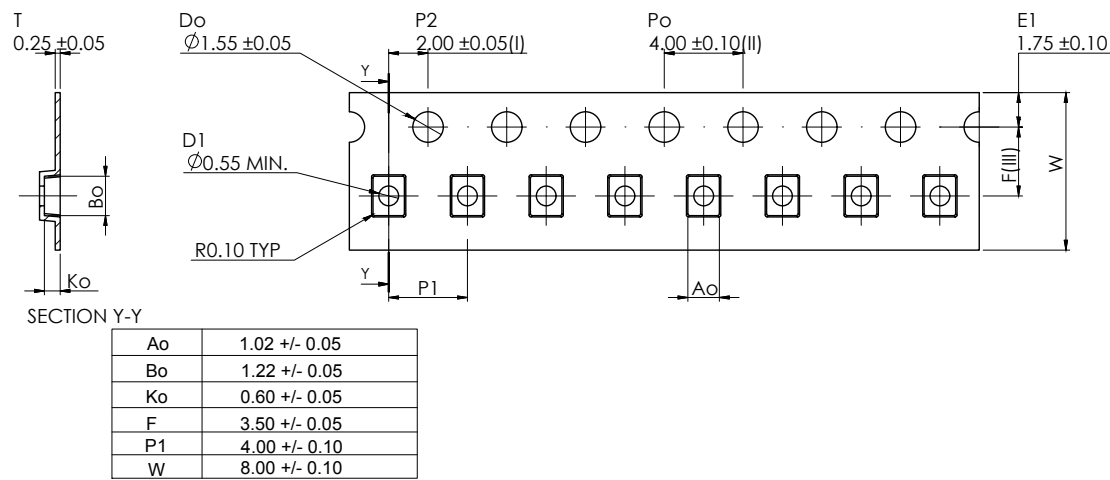


Figure 11: Drawing of tape (first-angle projection) with tape dimensions

10.2 Reel with diameter of 178 mm

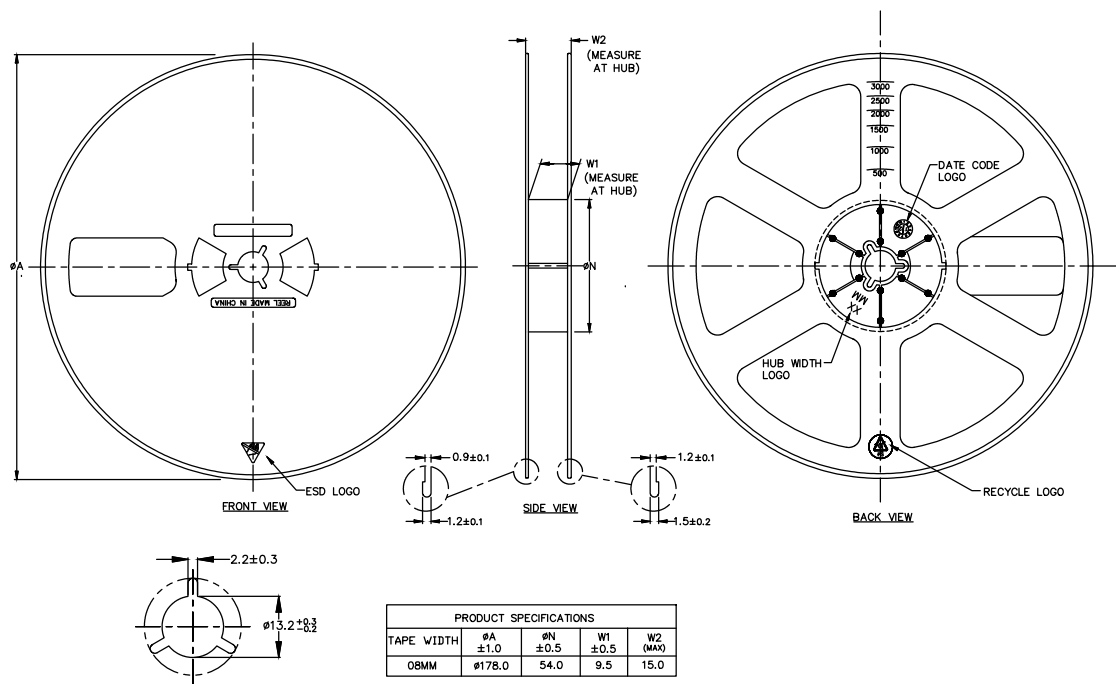


Figure 12: Drawing of reel (first-angle projection) with diameter of 180 mm