SAW Components

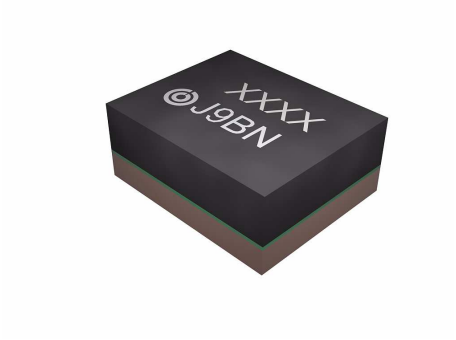
BAW Bluetooth/WLAN Filter

Datasheet

Series/type:	**B8831**
Ordering code:	**B39242B8831P810**
Date:	August 18, 2014
Version:	2.0

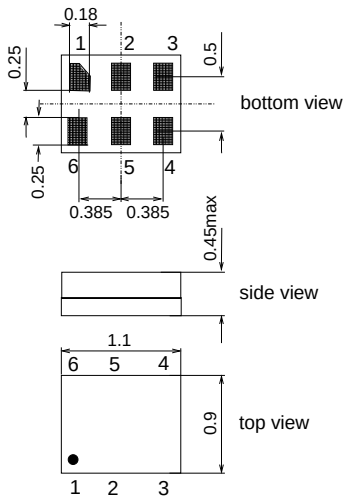
Application

- Low-loss BAW RF single filter for Bluetooth/WLAN with LTE Band 7 / Band 40 / Band 41 coexistence
- Usable passband 79.0 MHz
- Unbalanced to unbalanced operation
- Excellent insertion loss
- High out of band selectivity
- Filter impedance 50 Ω



Features

- Package size 1.1 x 0.9 x 0.4 mm³
- RoHS compatible
- Approximate weight 0.0012 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- **M**oisture **S**ensitivity **L**evel 3 (**MSL 3**)



Pin configuration

1	Input (unbalanced)
4	Output (unbalanced)
2,3,5,6	To be grounded

Characteristics of Filter

Temperature range for specification: T = –30 ˚C to +85 ˚C
Terminating source impedance: Z_S = 50 Ω shunt coil 6.8 nH
Terminating load impedance: Z_L = 50 Ω shunt coil 6.8 nH

		B8831			
Characteristics		**min.**	**typ. @ 25 ˚C**	**max.**	
Center frequency	f_C	—	2442.0	—	MHz
Maximum insertion attenuation - WLAN[1)]	α_{max}				
2403.1 ... 2420.9 MHz (channel 1) [1)]		—	1.35	2.1	dB
2408.1 ... 2425.9 MHz (channel 2) [1)]		—	1.2	1.8	dB
2413.1 ... 2465.9 MHz (channel 3-10) [1)]		—	1.1	1.7	dB
2453.1 ... 2470.9 MHz (channel 11) [1)]		—	1.1	1.9	dB
2458.1 ... 2475.9 MHz (channel 12) [1)]		—	1.3	2.2	dB
2463.1 ... 2480.9 MHz (channel 13) [1)]		—	1.65	2.9	dB
VSWR (Input and Output)					
2403.1 ... 2475.9 MHz (channel 1-12)		—	1.8	2.4	
2463.1 ... 2480.9 MHz (channel 13)		—	1.8	—	
Attenuation	α				
100.0 ... 1805.0 MHz		34	36	—	dB
1805.0 ... 2170.0 MHz		35	37	—	dB
2300.0 ... 2360.0 MHz [2)]		34	38	—	dB
2360.0 ... 2365.0 MHz [2)]		38	45	—	dB
2365.0 ... 2370.0 MHz [2)]		40	47	—	dB
2496.0 ... 2501.0 MHz [2)]		17[3)]	43	—	dB
2500.0 ... 2505.0 MHz [2)]		43[3)]	60	—	dB
2505.0 ... 2550.0 MHz [2)]		50	57	—	dB
2550.0 ... 2570.0 MHz [2)]		47	50	—	dB
2570.0 ... 2620.0 MHz [2)]		44	48	—	dB
2620.0 ... 2690.0 MHz [2)]		44	47	—	dB
4800.0 ... 5805.0 MHz		20	27	—	dB
7200.0 ... 7500.0 MHz		20	28	—	dB
2nd Harmonics					
CW tone at input, 2442 MHz, 22 dBm		—	-63	—	dBc

1) Averaged values within each WiFi channel width of 17.8 MHz
2) Averaged value of linear S-parameter over 5 MHz
3) +25˚C to +85˚C

Maximum ratings

Operable temperature range	T	–30/+85	˚C	
Storage temperature range	T_{stg}	–40/+90	˚C	
DC voltage	V_{DC}	5[1)]	V	
ESD voltage	V_{ESD}	50[2)]	V	Machine Model
		300[3)]	V	Human Body Model
		600[4)]	V	Charged Device Model
Input power at PIN1 channel 1 to channel 13		26	dBm	20 MHz OFDM signal, 65˚C, 5000 hr

1) 168h Damp Heat Steady State acc. to IEC60068-2-67 Cy

2) acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses

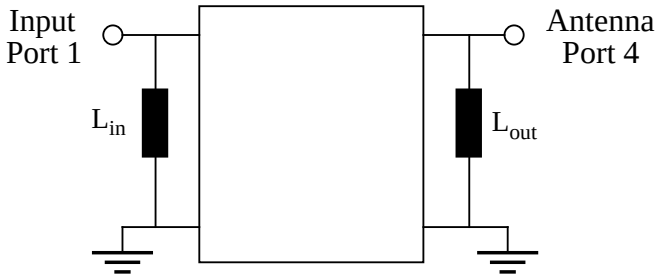
3) acc. to JESD22-A114F (HBM - Human Body Model), 1 negative & 1 positive pulses

4) acc. to JESD22-C101C (CDM - Field Induced Charged Device Model), 3 negative & 3 positive pulses

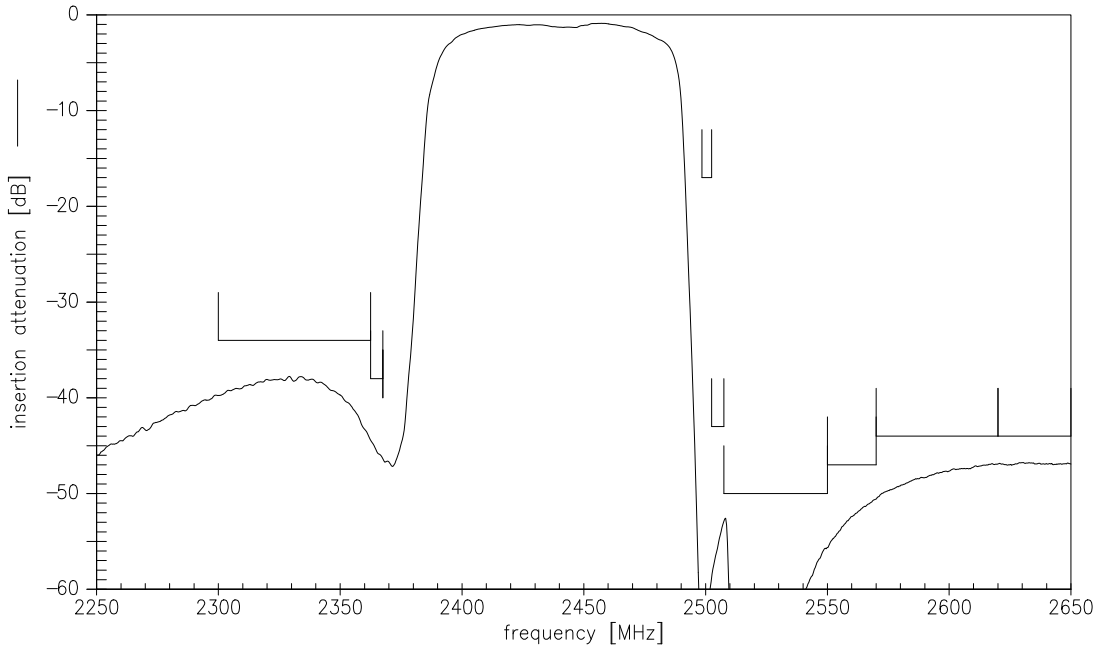
Matching network

- L_{in} = 6.8 nH
- L_{out} = 6.8 nH

Recommendation to use TDK MLG0603 P-series



Transfer function



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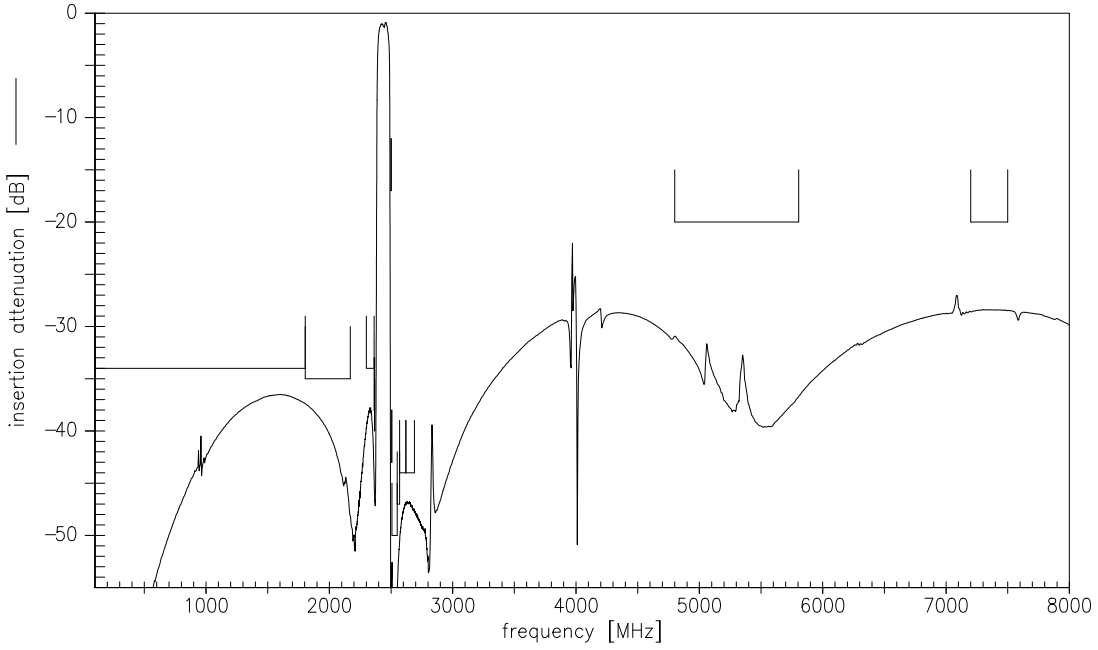
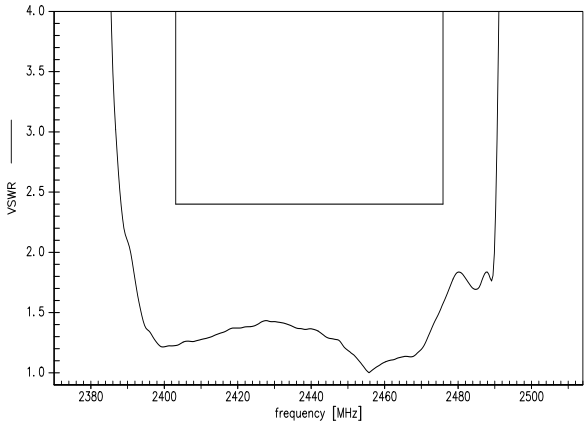
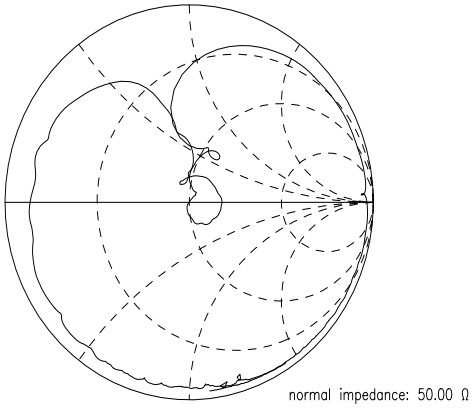
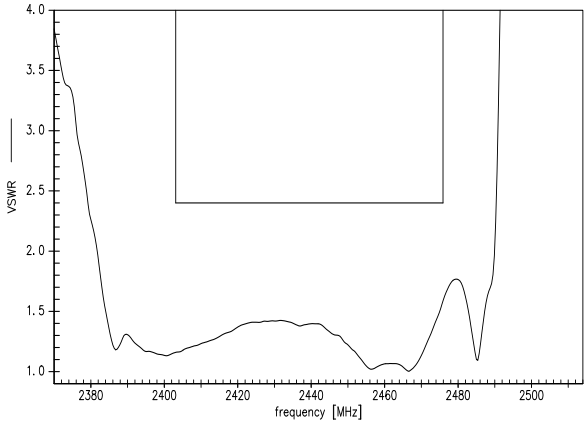


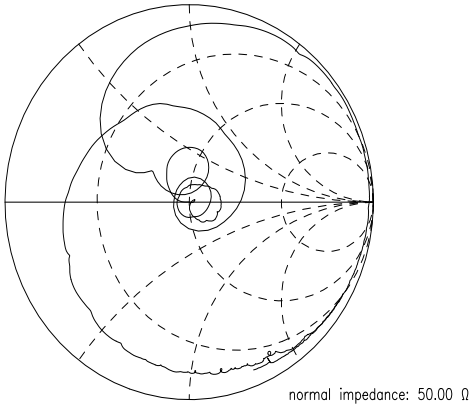
S11 VSWR





S22 VSWR





References

Type	B8831
Ordering code	B39242B8831P810
Marking and package	C61157-A8-A162
Packaging	F61074-V8255-Z000
Date codes	L_1126
S-parameters	B8831_HD_WB_UN.s2p See file header for port/pin assignment table.
Soldering profile	S_6001
RoHS compatible	RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8th, 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases.
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.
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