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SAW Components

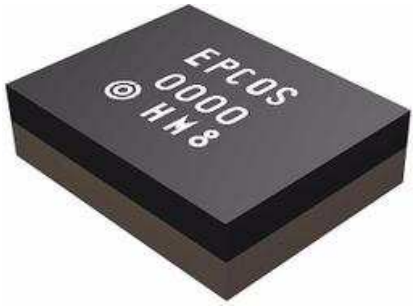
BAW Bluetooth/WLAN Filter

Series/type:	**B8328**
Ordering code:	**B39242B8328P810**
Date:	December 01, 2014
Version:	2.1

Datasheet SMD

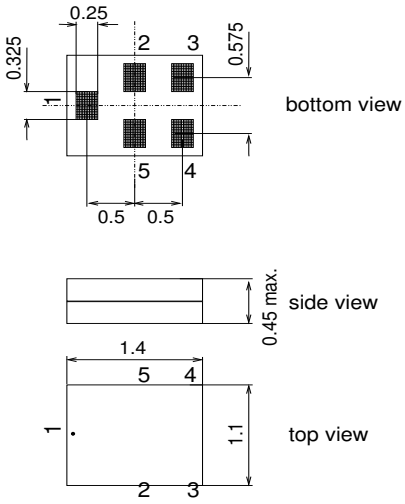
Application

- 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
- Excellent B7 attenuation
- Superior 2nd harmonic suppression



Features

- Package size 1.4 x 1.1 mm²
- Package height 0.45 mm max
- 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	To be grounded

Characteristics of Filter

Temperature range for specification: T = –20 ˚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

		B8328			
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)]			1.4	2.1	dB
2408.1 ... 2425.9 MHz (channel 2)[1)]			1.25	1.8	dB
2413.1 ... 2470.9 MHz (channel 3-11)[1)]			1.1	1.7	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
Maximum insertion attenuation - BT[2)]	α_{max}				
2401.5 ... 2480.5 MHz			1.3[2)]	2.0[2)]	dB
VSWR (Input and Output)					
2403.1 ... 2475.9 MHz			1.7	2.4	
2463.1 ... 2480.9 MHz			1.85		
Attenuation	α				
100.0...1805.0MHz		34	37		dB
1805.0...2170.0MHz		35	38		dB
2300.0...2360.0MHz[3)]		34	41		dB
2360.0...2365.0MHz[3)]		40	46		dB
2365.0...2370.0MHz[3)]		40	48		dB
2500.0...2505.0MHz[3)]		43[4)]	62		dB
2505.0...2570.0MHz[3)]		42	49		dB
2570.0...2620.0MHz[3)]		40	45		dB
2620.0...2690.0MHz[3)]		40	45		dB
4800.0...5805.0MHz		18	31		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 values over whole passband due to frequency hopping in Bluetooth mode
3) Averaged value of linear S-parameter over 5 MHz
4) +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	20M MHz OFDM signal, 65˚C, 5000 hr

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

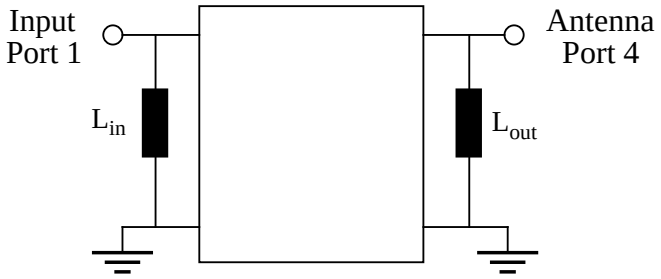
2) acc. to JESD22-A115B (MM - Machine Model), 10 negative and 10 positive pulses

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

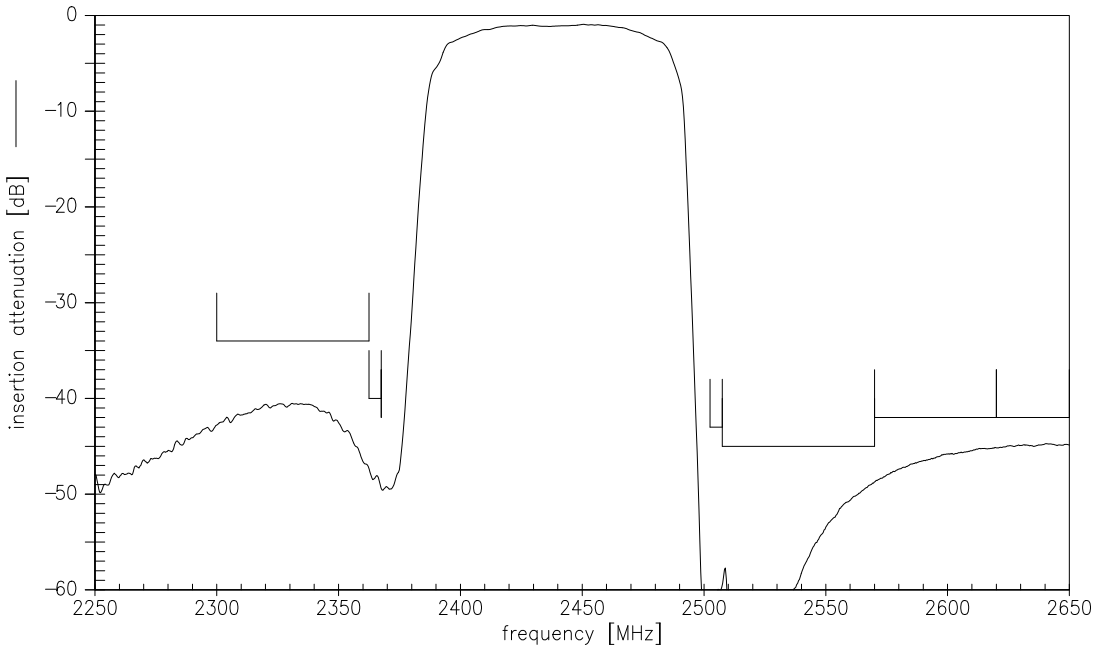
4) acc. to JESD22-C101C (CDM - Field Induced Charged Device Model), 3 negative and 3 positive pulses

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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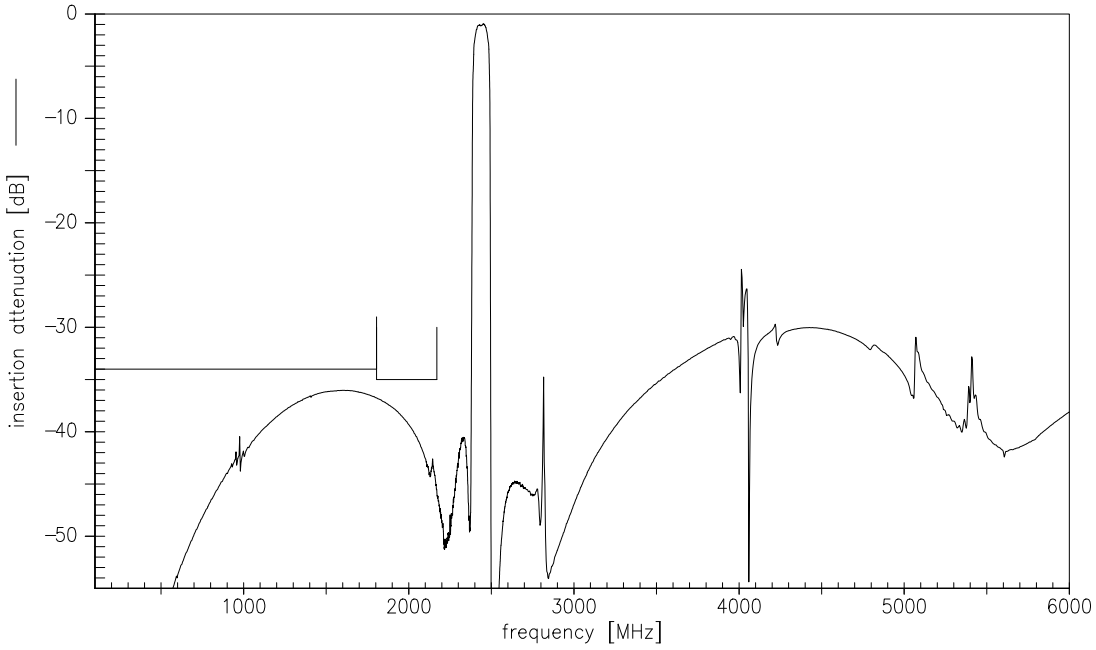
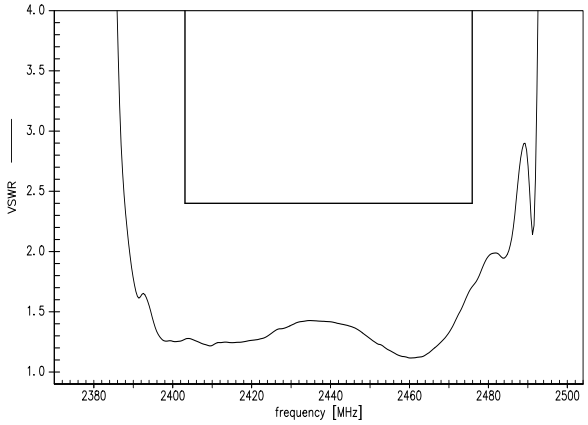
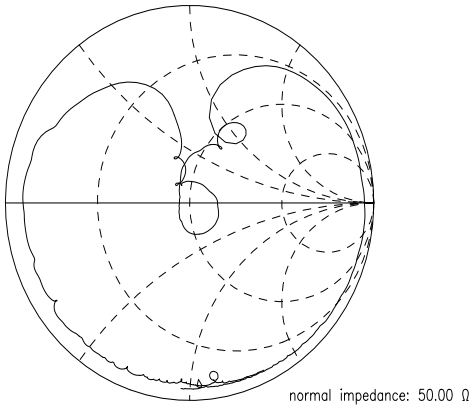
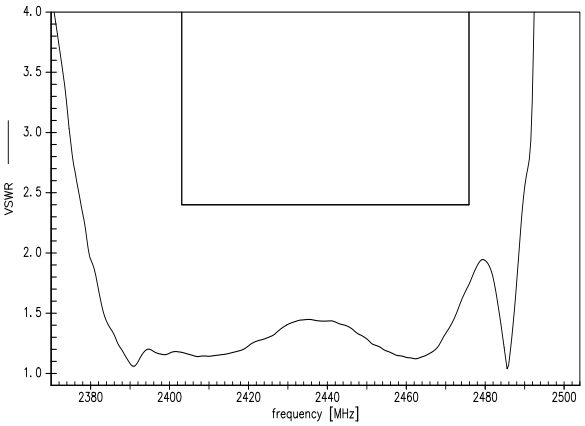


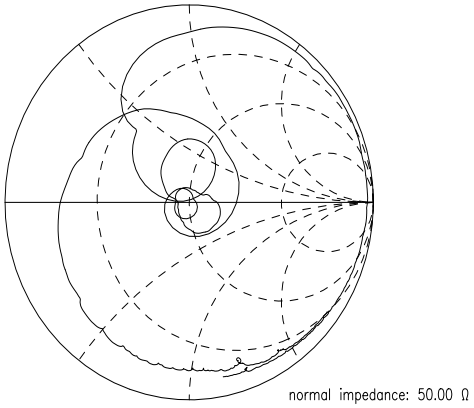
S11VSWR





S22VSWR





References

Type	B8328
Ordering code	B39242B8328P810
Marking and package	C61157-A8-A116
Packaging	F61074-V8237-Z000
Date codes	L_1126
S-parameters	B8328_NB.s2p, B8328_WB.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.
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Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm

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