



## **SAW Components**

### **BAW Bluetooth/WLAN Filter**

<b>Series/type:</b>	<b>B8328</b>
<b>Ordering code:</b>	<b>B39242B8328P810</b>
<b>Date:</b>	<b>December 01, 2014</b>
<b>Version:</b>	<b>2.1</b>

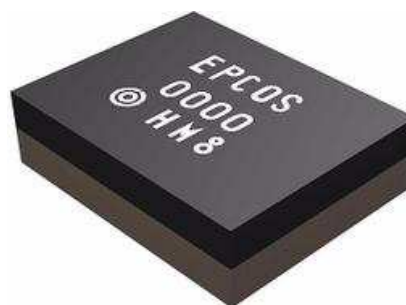


Datasheet



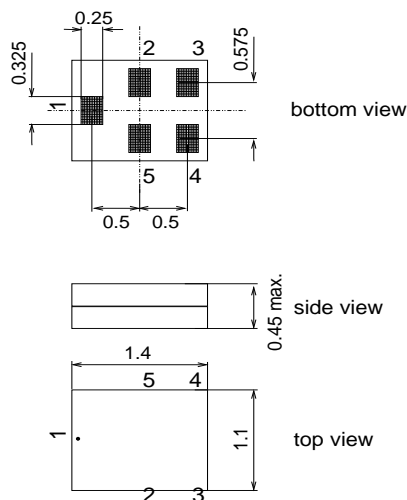
Application

- 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 mm<sup>2</sup>
- Package height 0.45 mm max
- RoHS compatible
- Approximate weight 0.0012 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitivity Level 3 (MSL 3)**



Pin configuration

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



<b>SAW Components</b>	<b>B8328</b>
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Datasheet



**Characteristics of Filter**

Temperature range for specification: T = -20 °C to +85 °C  
 Terminating source impedance: Z<sub>S</sub> = 50 Ω shunt coil 6.8 nH  
 Terminating load impedance: Z<sub>L</sub> = 50 Ω shunt coil 6.8 nH

Characteristics	B8328			
	min.	typ. @ 25 °C	max.	
<b>Center frequency</b> f <sub>C</sub>		2442.0		MHz
<b>Maximum insertion attenuation - WLAN<sup>1)</sup></b> α <sub>max</sub>				
2403.1 ... 2420.9 MHz (channel 1) <sup>1)</sup>		1.4	2.1	dB
2408.1 ... 2425.9 MHz (channel 2) <sup>1)</sup>		1.25	1.8	dB
2413.1 ... 2470.9 MHz (channel 3-11) <sup>1)</sup>		1.1	1.7	dB
2458.1 ... 2475.9 MHz (channel 12) <sup>1)</sup>		1.3	2.2	dB
2463.1 ... 2480.9 MHz (channel 13) <sup>1)</sup>		1.65	2.9	dB
<b>Maximum insertion attenuation - BT<sup>2)</sup></b> α <sub>max</sub>				
2401.5 ... 2480.5 MHz		1.3 <sup>2)</sup>	2.0 <sup>2)</sup>	dB
<b>VSWR (Input and Output)</b>				
2403.1 ... 2475.9 MHz		1.7	2.4	
2463.1 ... 2480.9 MHz		1.85		
<b>Attenuation</b> α				
100.0...1805.0MHz	34	37		dB
1805.0...2170.0MHz	35	38		dB
2300.0...2360.0MHz <sup>3)</sup>	34	41		dB
2360.0...2365.0MHz <sup>3)</sup>	40	46		dB
2365.0...2370.0MHz <sup>3)</sup>	40	48		dB
2500.0...2505.0MHz <sup>3)</sup>	43 <sup>4)</sup>	62		dB
2505.0...2570.0MHz <sup>3)</sup>	42	49		dB
2570.0...2620.0MHz <sup>3)</sup>	40	45		dB
2620.0...2690.0MHz <sup>3)</sup>	40	45		dB
4800.0...5805.0MHz	18	31		dB
<b>2nd Harmonics</b>				
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



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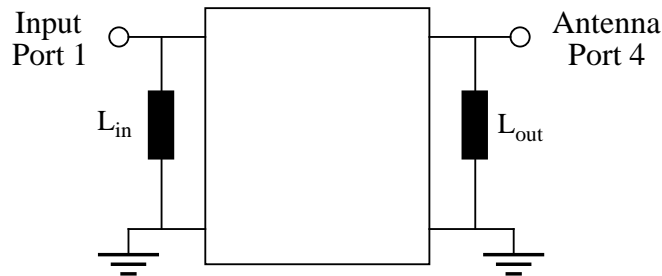
**Maximum ratings**

Operable temperature range	T	-30/+85	°C	
Storage temperature range	T <sub>stg</sub>	-40/+90	°C	
DC voltage	V <sub>DC</sub>	5 <sup>1)</sup>	V	
ESD voltage	V <sub>ESD</sub>	50 <sup>2)</sup>	V	Machine Model
		300 <sup>3)</sup>	V	Human Body Model
		600 <sup>4)</sup>	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<sub>in</sub> = 6.8 nH
- L<sub>out</sub> = 6.8 nH
- Recommendation to use TDK MLG0603 P-series

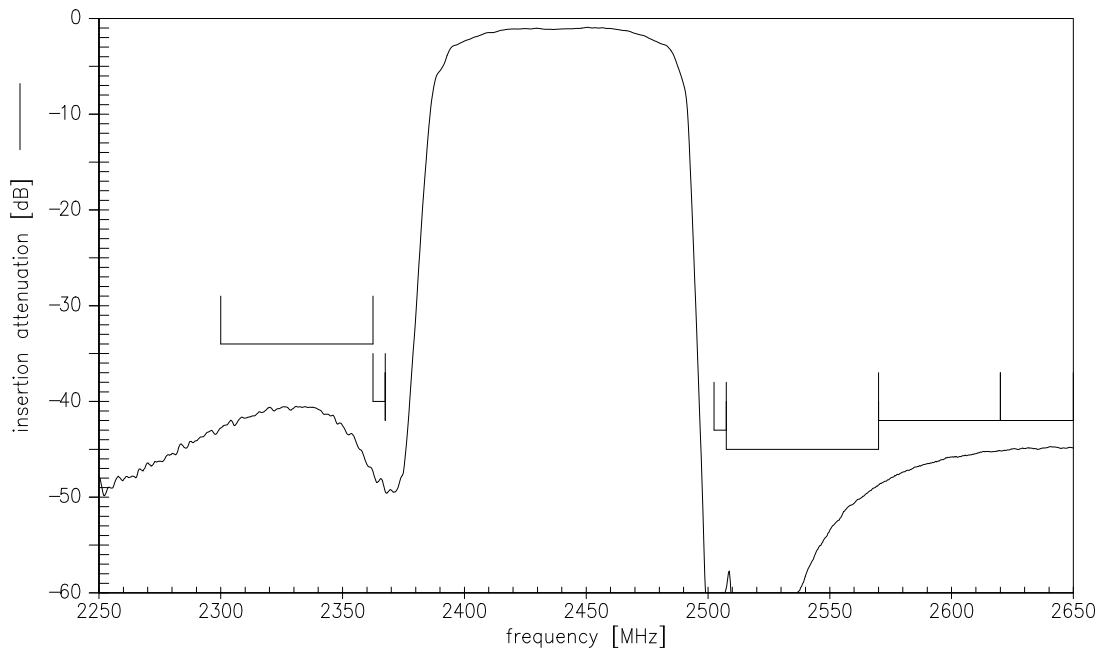




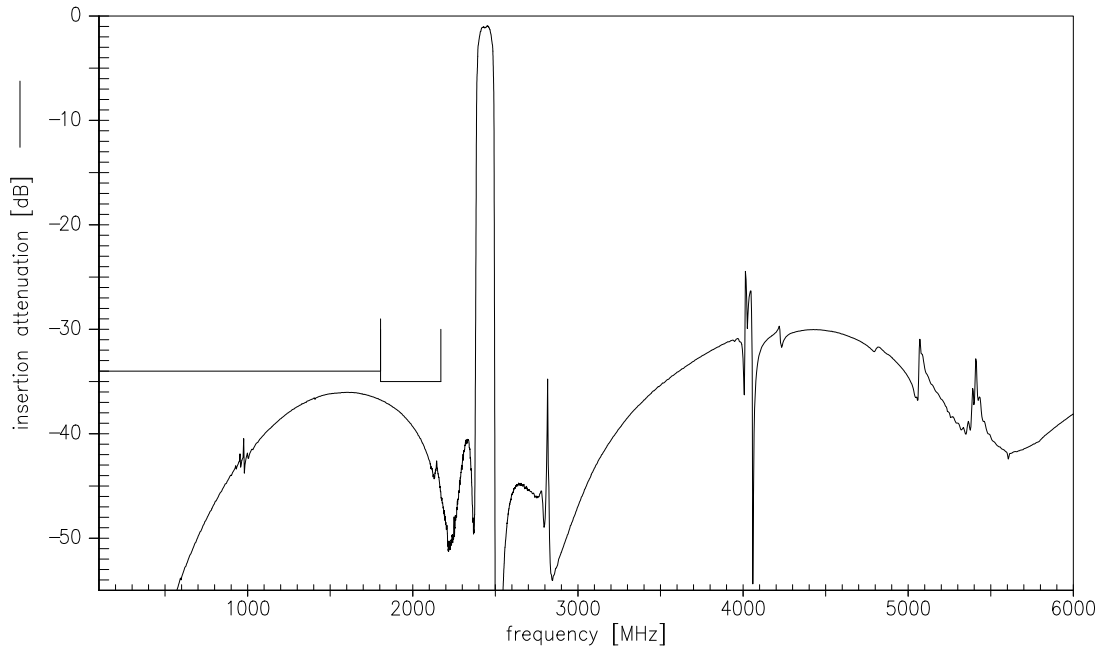
Datasheet



Transfer function



Transfer function



Please read *cautions and warnings* and *important notes* at the end of this document.



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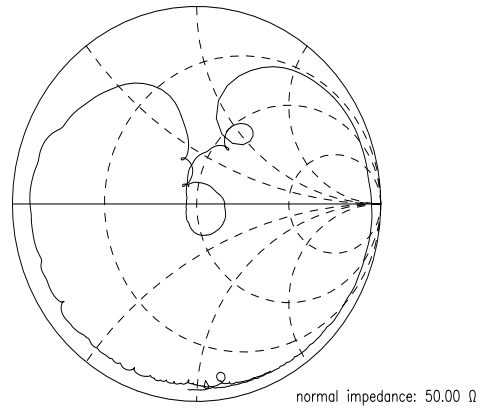
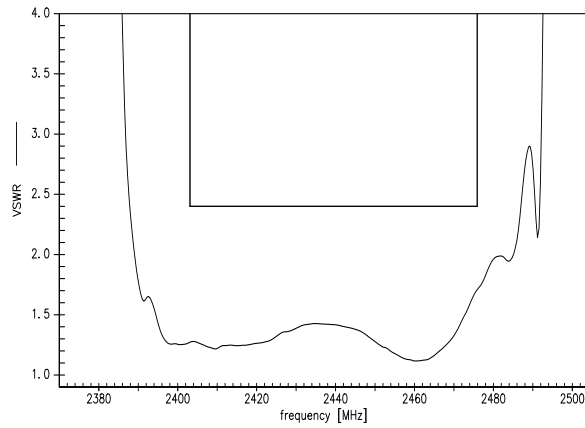
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2442.0 MHz

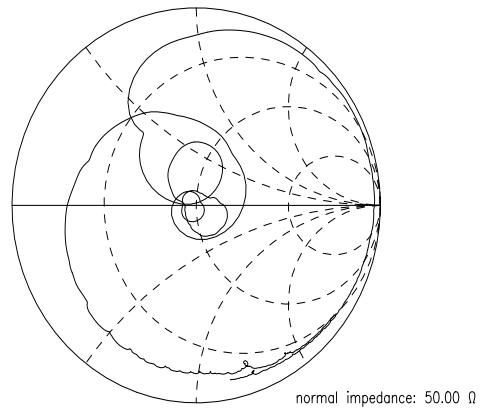
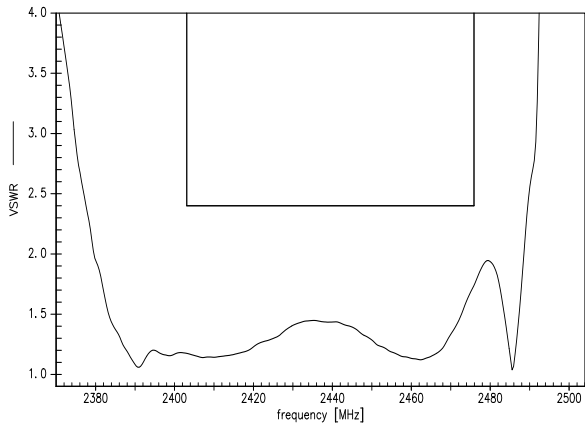
Datasheet

**SMD**

**S11VSWR**



**S22VSWR**



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Datasheet



References

<b>Type</b>	B8328
<b>Ordering code</b>	B39242B8328P810
<b>Marking and package</b>	C61157-A8-A116
<b>Packaging</b>	F61074-V8237-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B8328_NB.s2p, B8328_WB.s2p See file header for port/pin assignment table.
<b>Soldering profile</b>	S_6001
<b>RoHS compatible</b>	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 8 <sup>th</sup> , 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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<b>Matching coils</b>	See Inductor pdf-catalog <a href="http://www.tdk.co.jp/tefe02/coil.htm#aname1">http://www.tdk.co.jp/tefe02/coil.htm#aname1</a> and Data Library for circuit simulation <a href="http://www.tdk.co.jp/etvcl/index.htm">http://www.tdk.co.jp/etvcl/index.htm</a>

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