



# SAW Components

## SAW RF filter for base stations

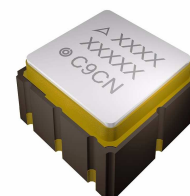
<b>Series/type:</b>	<b>B5335</b>
<b>Ordering code:</b>	<b>B39421B5335Z810</b>
<b>Date:</b>	<b>Feb 26, 2015</b>
<b>Version:</b>	<b>2.2</b>

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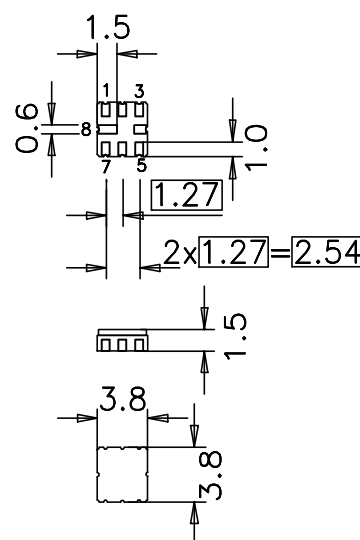
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**Application**

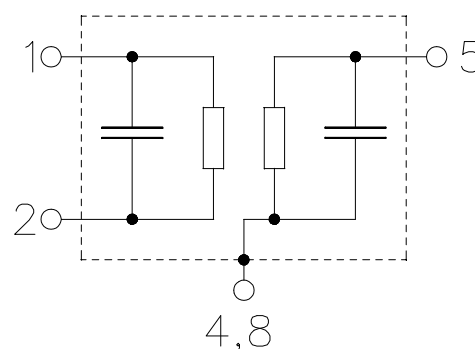
- RF filter for trunked radio
- Unbalanced to balanced operation
- Low amplitude ripple
- Usable passband 25 MHz
- No matching required for operation at 50 Ω


**Features**

- Package size 3.8 x 3.8 x 1.5 mm<sup>3</sup>
- Package code QCC8B
- RoHS compatible
- Approximate weight 0.070 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitivity Level 1**
- Filter surface passivated


**Pin configuration**

- 5                    Input unbalanced
- 1, 2                Output balanced
- 3, 4, 6, 7, 8      To be grounded



Data sheet


**Characteristics**

Temperature range for specification:  $T = -30\text{ °C to }+70\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	417.5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	3.0	4.0	dB
405.0 ... 430.0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1.0	2.0	dB
405.0 ... 430.0 MHz					
<b>Input return loss</b>		10	16	—	dB
405.0 ... 430.0 MHz					
<b>Output return loss</b>		10	15	—	dB
405.0 ... 430.0 MHz					
<b>Group delay ripple (p-p)</b>	$\Delta\tau$	—	55	100	ns
405.0 ... 430.0 MHz					
<b>Absolute attenuation</b>	$\alpha_{\text{abs}}$				
10.0 ... 150.0 MHz		35	56	—	dB
150.0 ... 330.0 MHz		25	55	—	dB
330.0 ... 390.0 MHz		15	25	—	dB
390.0 ... 397.0 MHz		7	13	—	dB
438.0 ... 486.0 MHz		5	9	—	dB
486.0 ... 512.0 MHz		15	40	—	dB
512.0 ... 567.0 MHz		10	45	—	dB
567.0 ... 593.0 MHz		40	49	—	dB
593.0 ... 1200.0 MHz		20	38	—	dB
1200.0 ... 1945.0 MHz		15	33	—	dB
1945.0 ... 2046.0 MHz		10	32	—	dB
2046.0 ... 2500.0 MHz		5	31	—	dB
2500.0 ... 4000.0 MHz		3	20	—	dB
<b>Symmetry in band<sup>1)</sup></b>					
$ S_{31} / S_{21} $	405.0 ... 430.0 MHz	-1.5	1.2/-0.5	1.5	dB
$\arg S_{31} / S_{21} $	405.0 ... 430.0 MHz	-15	7.5/-6.0	15	deg

<sup>1)</sup> Value in columns min, typ and max applies only for balanced operation

**Maximum ratings**

Operable temperature range	T	-45/+125	°C	
Storage temperature range	T <sub>stg</sub>	-45/+125	°C	
DC voltage	V <sub>DC</sub>	6	V	
ESD voltage	V <sub>ESD</sub>	150 <sup>1)</sup>	V	Machine Model
		350 <sup>2)</sup>	V	Human Body Model
Input power 405.0 ... 430.0 MHz	P <sub>IN</sub>	15	dBm	cw, 100000 h, 70 °C

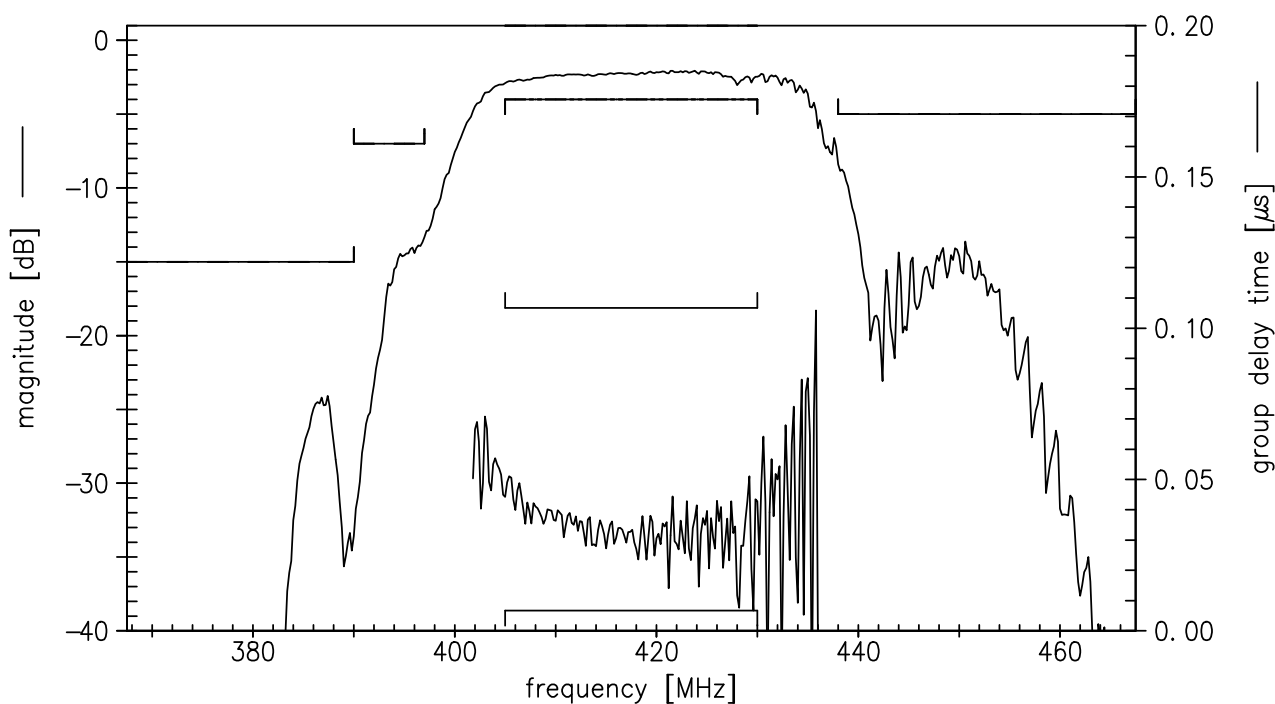
1) acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses

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

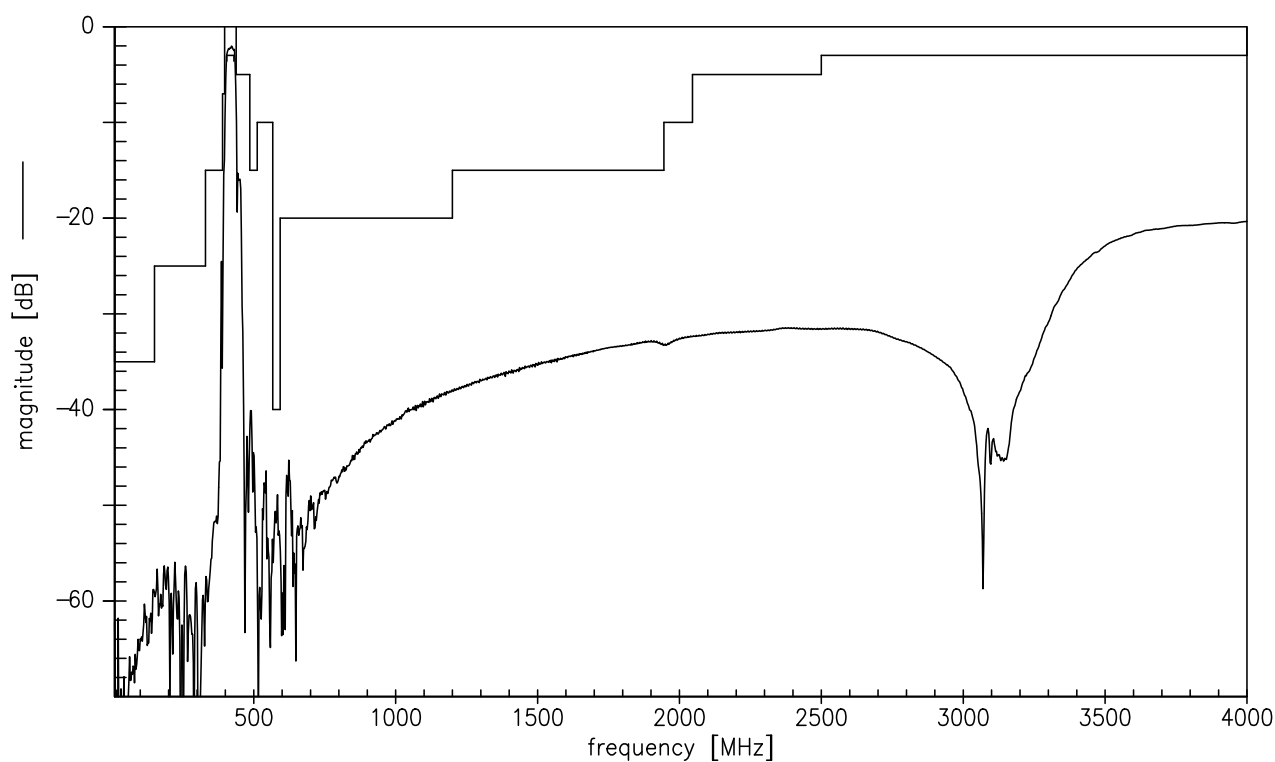
Data sheet

**SMD**

**Transfer function (S21, narrowband)**



**Transfer function (S21, wideband)**

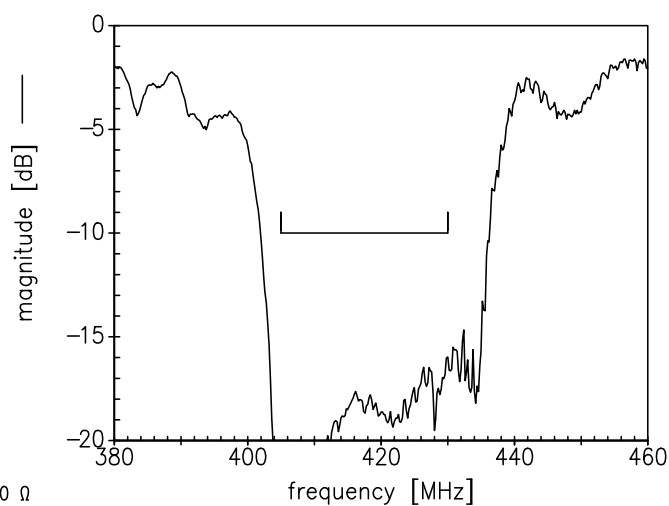
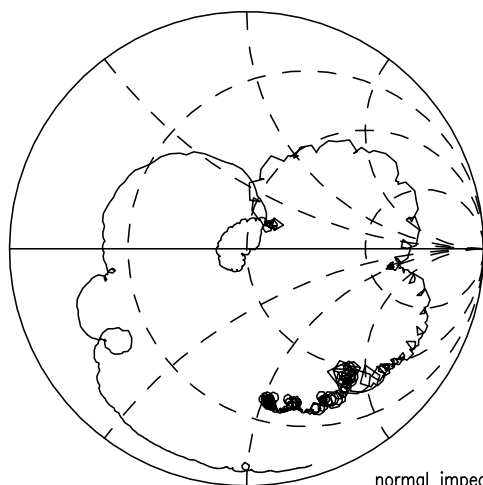


Data sheet

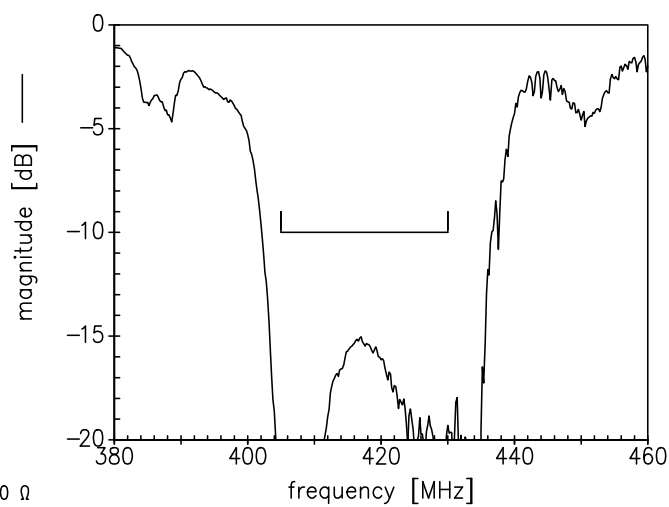
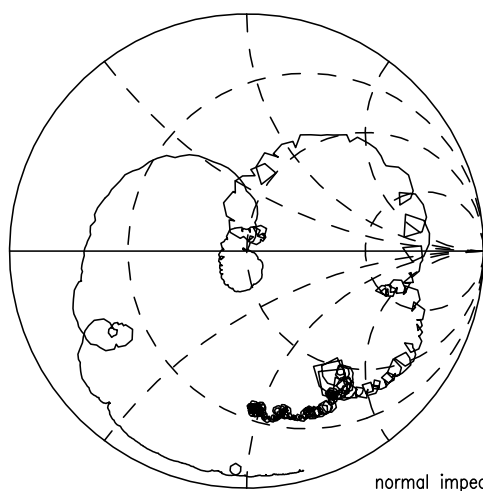


Smith charts

**S<sub>11</sub> function**



**S<sub>22</sub> function**



**References**

<b>Type</b>	B5335
<b>Ordering code</b>	B39421B5335Z810
<b>Marking and package</b>	C61157-A7-A46
<b>Packaging</b>	F61074-V8229-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B5335_NB.s3p B5335_WB.s3p 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 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.
<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> for a large variety of matching coils.

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