



# SAW Components

## SAW RF filter for base stations

TETRA

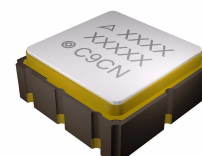
<b>Series/type:</b>	<b>B5052</b>
<b>Ordering code:</b>	<b>B39471B5052Z810</b>
<b>Date:</b>	<b>Nov 11, 2014</b>
<b>Version:</b>	<b>2.1</b>

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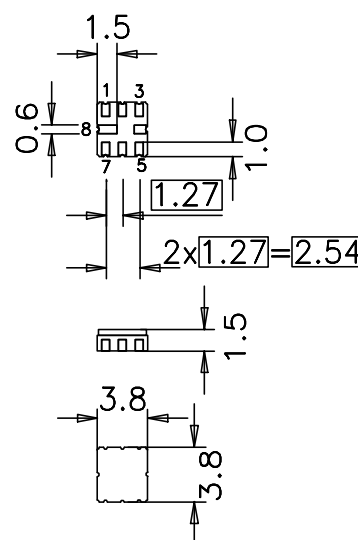
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**Application**

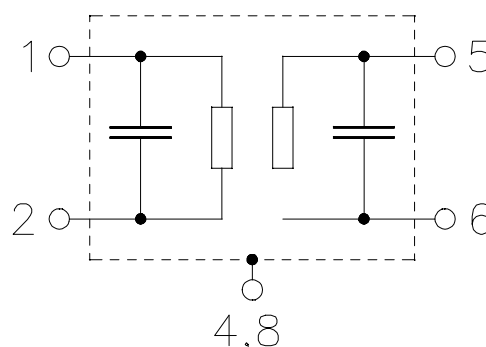
- Low-loss filter for base stations  
TETRA systems, receive path(RX)
- Unbalanced to unbalanced or unbalanced to balanced operation
- Low amplitude ripple
- Usable passband 10 MHz
- No matching required for operation at 50 Ω


**Features**

- Package size 3.8 x 3.8 x 1.35 mm<sup>3</sup>
- Package code QCC8B
- RoHS compatible
- Approximate weight 0.07 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
- 1 Output / Output balanced
- 2 Output ground / Output balanced
- 3, 6, 7 To be grounded
- 4, 8 Case ground



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>	$f_c$	—	465.0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	—	2.3	3.0 <sup>1)</sup>	dB
460.0 ... 470.0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0.9	2.0 <sup>2)</sup>	dB
460.0 ... 470.0 MHz					
<b>Input VSWR</b>		—	2.0:1	2.2:1	
460.0 ... 470.0 MHz					
<b>Output VSWR</b>		—	2.0:1	2.2:1	
460.0 ... 470.0 MHz					
<b>Absolute attenuation</b>	$\alpha_{abs}$				
50.0 ... 82.0 MHz		31	73	—	dB
82.0 ... 352.0 MHz		27	54	—	dB
352.0 ... 455.0 MHz		10	17	—	dB
478.0 ... 500.0 MHz		10	21	—	dB
500.0 ... 622.0 MHz		27	50	—	dB
622.0 ... 633.0 MHz		45	47	—	dB
633.0 ... 1001.0 MHz		19	36	—	dB
1001.0 ... 1542.0 MHz		26	31	—	dB
1542.0 ... 1736.0 MHz		34	37	—	dB
1736.0 ... 2100.0 MHz		24	27	—	dB

1) 2.5 dB max at +15 °C to +35 °C

2) 1.5 dB max at +15 °C to +35 °C

**Characteristics**

**SAW Components**
**B5052**
**SAW RF filter**
**465.0 MHz**
**Data sheet**
**SMD**

Temperature range for specification:  $T = -40\text{ °C to }+85\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	465.0	—	MHz
<b>Maximum insertion attenuation</b> 462.5 ... 467.5 MHz	$\alpha_{\max}$	—	2.0	2.5	dB
<b>Amplitude ripple (p-p)</b> 462.5 ... 467.5 MHz	$\Delta\alpha$	—	0.9	1.5	dB
<b>Input VSWR</b> 462.5 ... 467.5 MHz		—	2.0:1	2.2:1	
<b>Output VSWR</b> 462.5 ... 467.5 MHz		—	2.0:1	2.2:1	
<b>Absolute attenuation</b>	$\alpha_{\text{abs}}$				
50.0 ... 82.0 MHz		31	73	—	dB
82.0 ... 352.0 MHz		27	54	—	dB
352.0 ... 455.0 MHz		8	17	—	dB
478.0 ... 500.0 MHz		8	21	—	dB
500.0 ... 622.0 MHz		27	50	—	dB
622.0 ... 633.0 MHz		45	47	—	dB
633.0 ... 1001.0 MHz		19	36	—	dB
1001.0 ... 1542.0 MHz		26	31	—	dB
1542.0 ... 1736.0 MHz		34	37	—	dB
1736.0 ... 2100.0 MHz		24	27	—	dB

**Maximum ratings**

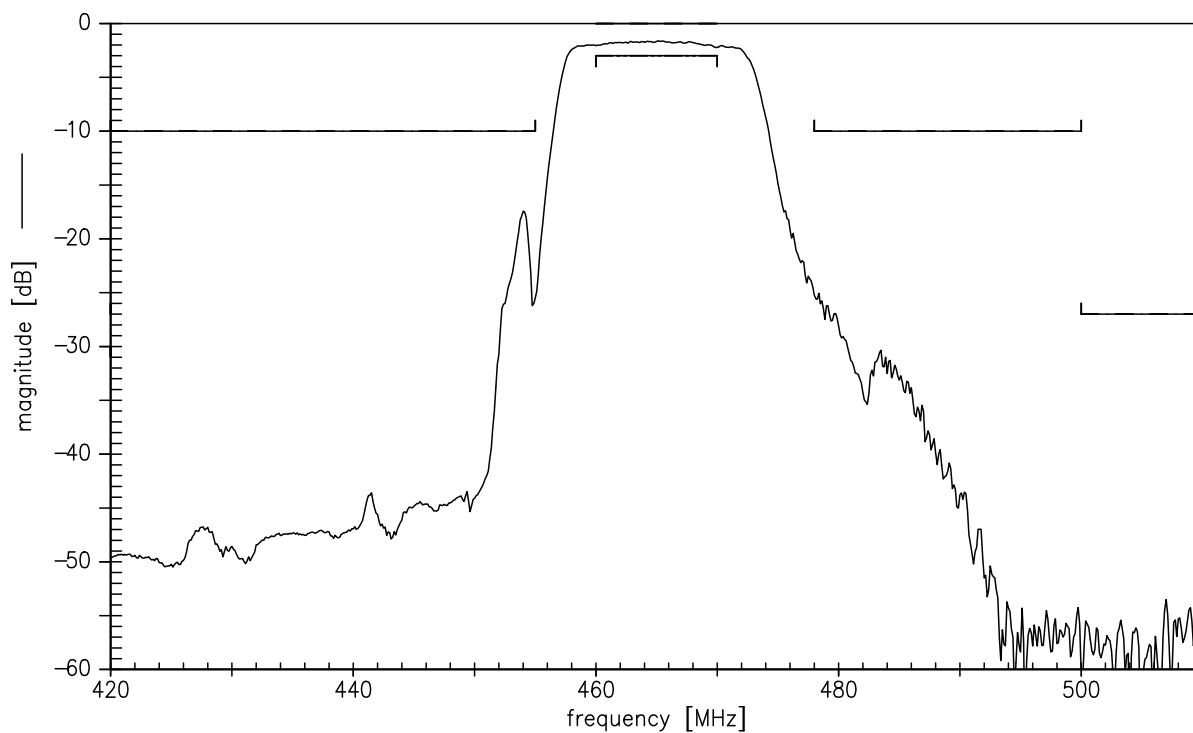
Operable temperature range	T	-40/+85	°C	
Storage temperature range	T <sub>stg</sub>	-40/+85	°C	
DC voltage	V <sub>DC</sub>	5	V	
ESD voltage	V <sub>ESD</sub>	100 <sup>1)</sup>	V	Machine Model
Input power 460.0 ... 470.0 MHz	P <sub>IN</sub>	15	dBm	Continuous Wave

<sup>1)</sup> acc. to JESD22-A115A (MM - Machine Model), 1 negative & 1 positive pulses

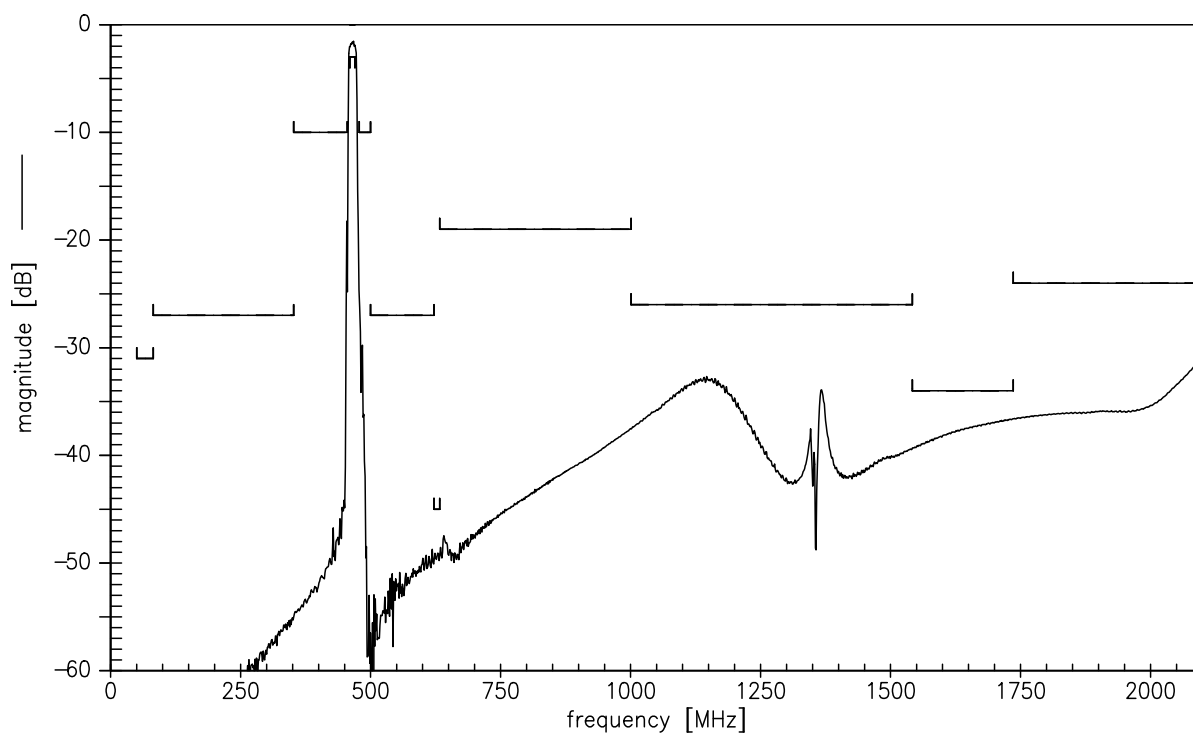
Data sheet



Transfer function (S21, narrowband)



Transfer function (S21, wideband)

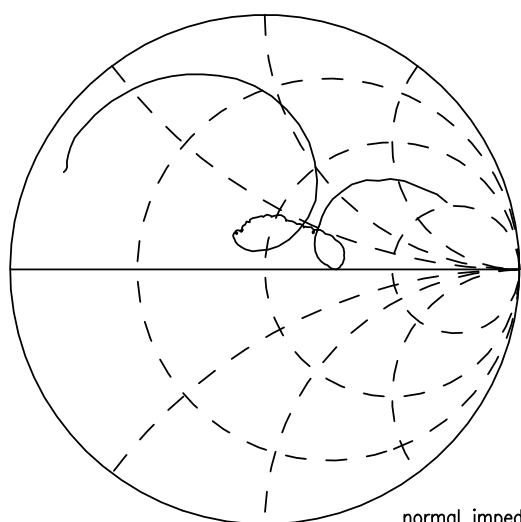


Data sheet

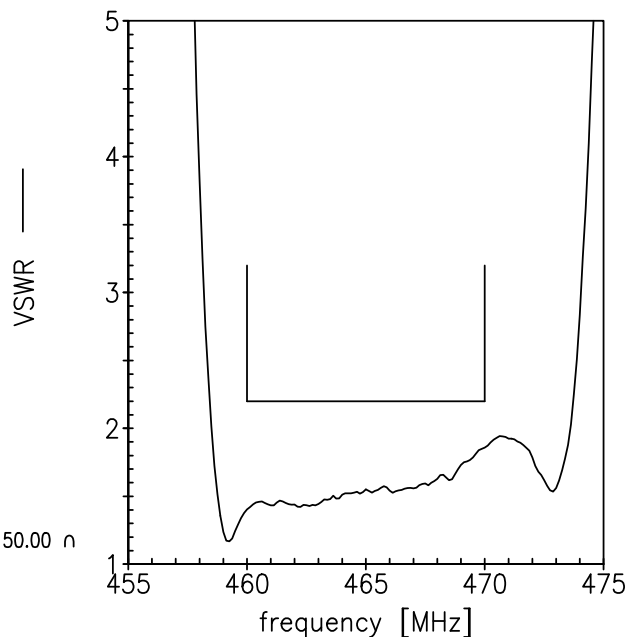


Smith charts

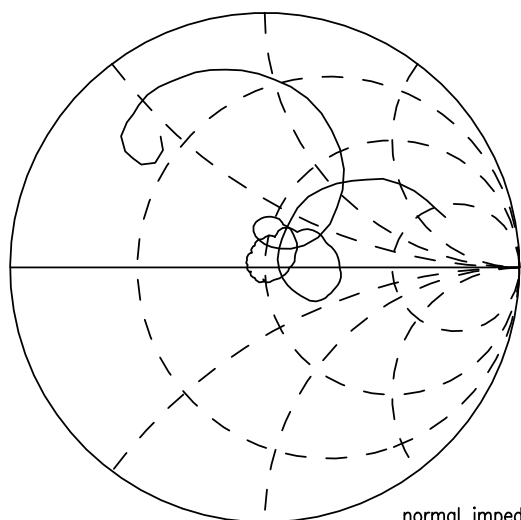
**S<sub>11</sub> function**



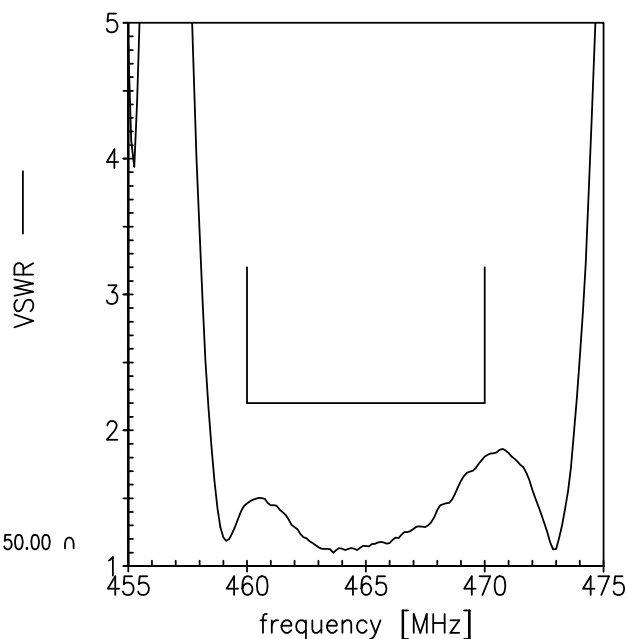
normal impedance: 50.00  $\Omega$



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



normal impedance: 50.00  $\Omega$



**References**

<b>Type</b>	B5052
<b>Ordering code</b>	B39471B5052Z810
<b>Marking and package</b>	C61157-A7-A46
<b>Packaging</b>	F61074-V8167-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B5052_NB.s2p B5052_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 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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