



# SAW Components

## SAW Rx Filter

Trunked Radio

<b>Series/type:</b>	<b>B5046</b>
<b>Ordering code:</b>	<b>B39821B5046U510</b>
<b>Date:</b>	<b>March 13, 2007</b>
<b>Version:</b>	<b>2.0</b>

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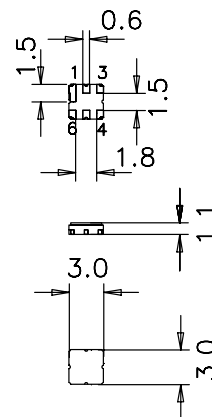
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**Application**

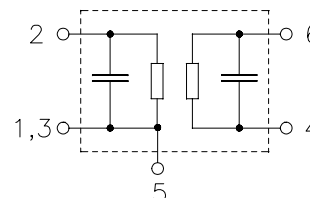
- Low-loss filter (RX) for Trunked Radio
- Usable bandwidth 19 MHz
- No matching required for operation at 50 Ω
- Unbalanced to unbalanced or unbalanced to balanced operation
- Filter impedance 50 Ω


**Features**

- Package size 3.0 x 3.0 x 1.1 mm<sup>3</sup>
- Package code DCC6D
- Approx. weight 0.037 g
- Package for **Surface Mount Technology (SMT)**
- Hermetically sealed ceramic package
- RoHS compliant
- Ni, gold-plated
- **Electrostatic Sensitive Device (ESD)**


**Pin configuration**

- 2 Input
- 6 Output / Output balanced
- 4 Output ground / Output balanced
- 1, 3, 5 Input ground / Case ground



**Data Sheet**

**Characteristics**

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

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	815.5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	2.6	4.5 <sup>1)</sup>	dB
806.0 ... 825.0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0.9	2.5 <sup>2)</sup>	dB
806.0 ... 825.0 MHz					
<b>Input VSWR</b>		—	1.3	2.0	
806.0 ... 825.0 MHz					
<b>Output VSWR</b>		—	1.3	2.0	
806.0 ... 825.0 MHz					
<b>Attenuation</b>	$\alpha$				
0.1 ... 663.0 MHz		44	47	—	dB
663.0 ... 789.0 MHz		30	39	—	dB
789.0 ... 796.0 MHz		13	32	—	dB
850.0 ... 900.0 MHz		20	26	—	dB
900.0 ... 1600.0 MHz		30	33	—	dB
1600.0 ... 2313.0 MHz		24	27	—	dB
2313.0 ... 3500.0 MHz		20	23	—	dB
3500.0 ... 4000.0 MHz		7	23	—	dB
<b>Amplitude balance</b>	$( S_{31}/S_{21} )$	—	-0.1 / +1.0	-0.8 / +1.2	dB
806.0 ... 825.0 MHz					
<b>Phase balance</b>	$(\phi(S_{31}) - \phi(S_{21}) + 180^\circ)$	—	-/+ 3	-/+ 10	°
806.0 ... 825.0 MHz					
<b>Temperature coefficient of frequency</b>	$TC_f$	—	-36	—	ppm/K

<sup>1)</sup> 3.5 dB at +15 to +35 °C.

<sup>2)</sup> 1.5 dB at +15 to +35 °C.

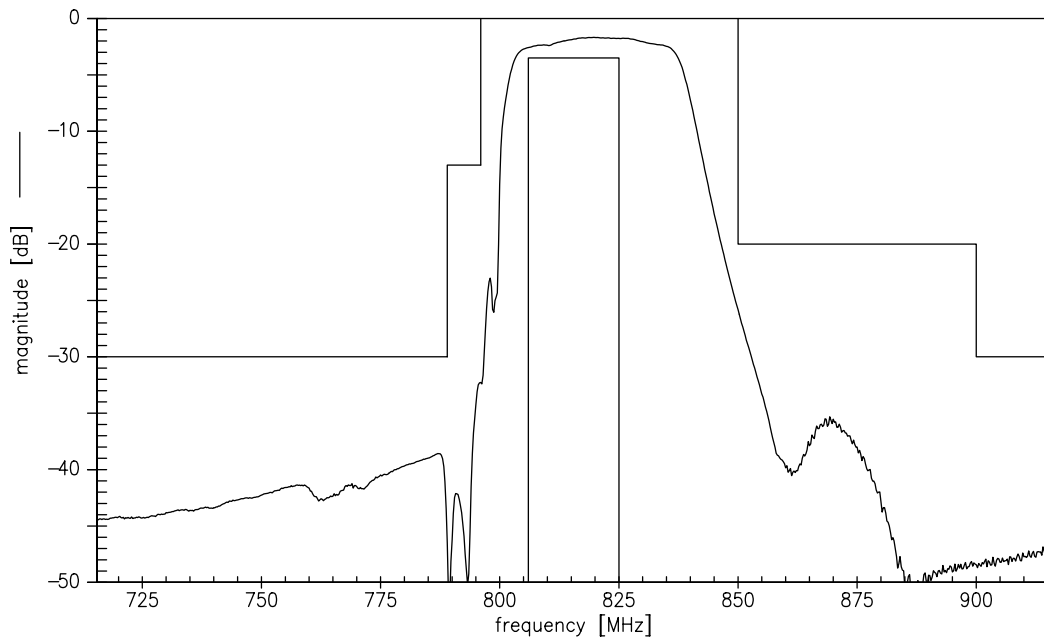

**Maximum ratings**

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, 10 pulses
Input Power at 806.0 ... 825.0 MHz	P <sub>IN</sub>	15	dBm	continuous wave

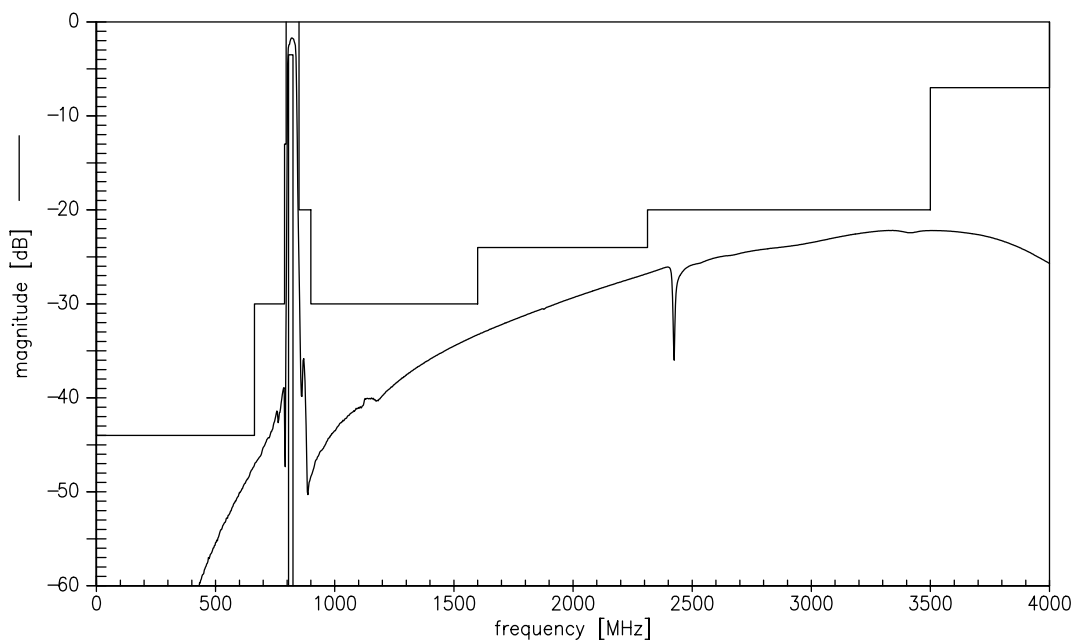
<sup>1)</sup> acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



Transfer function (narrowband)



Transfer function (wideband)

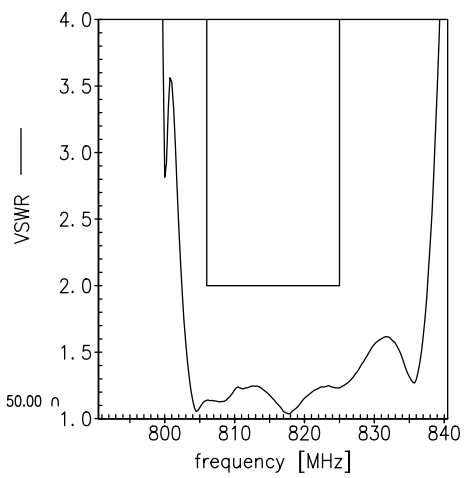
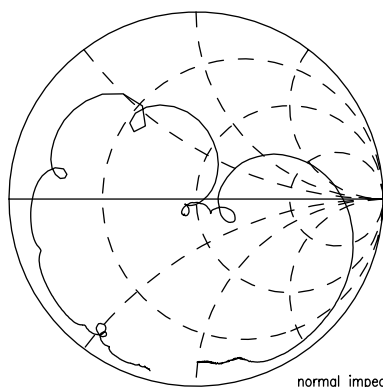


Data Sheet

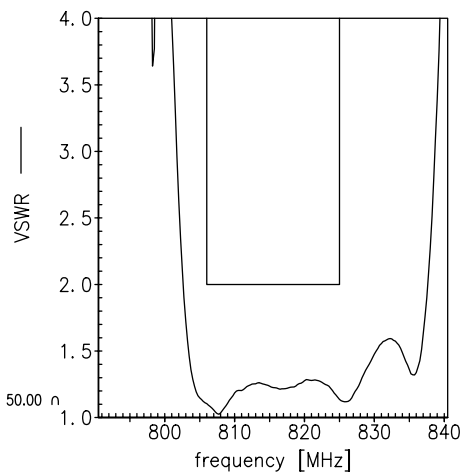
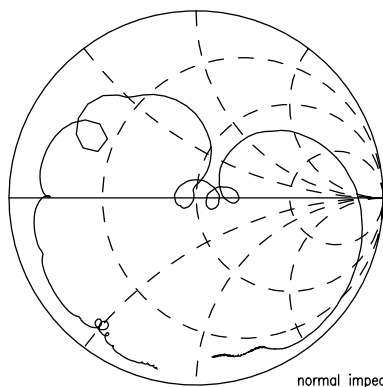


Smith chart

$S_{11}$  function

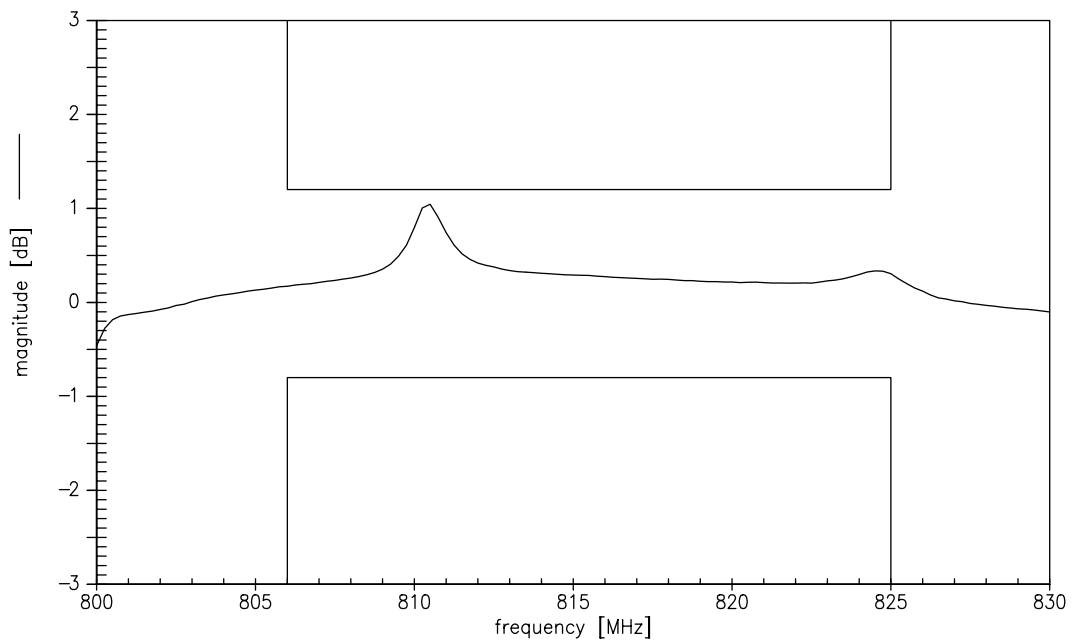


$S_{22}$  function

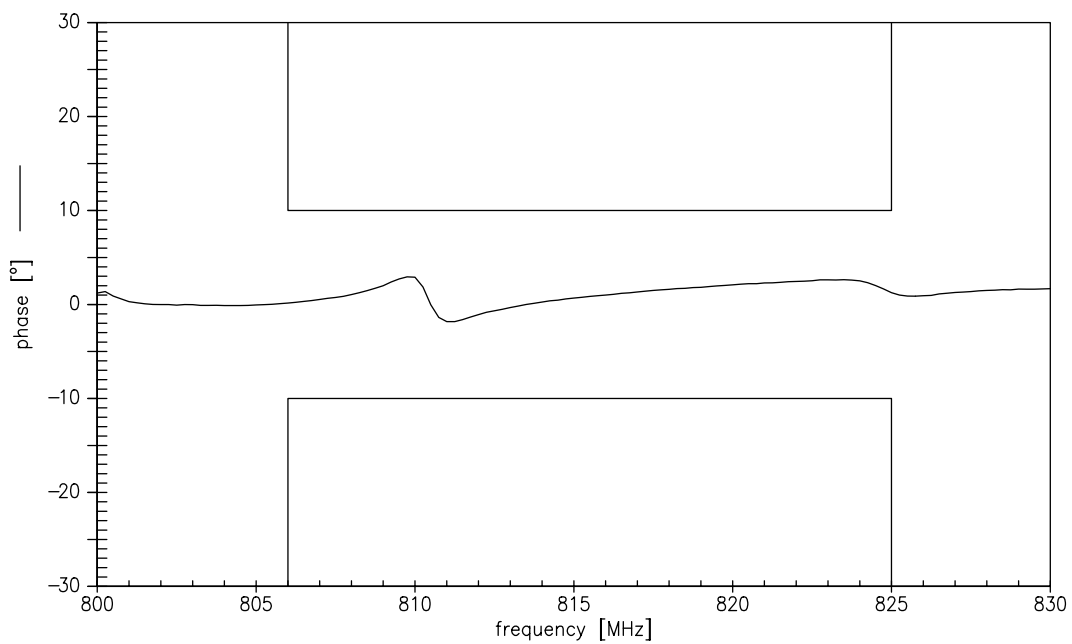




**Amplitude balance**



**Phase balance**



**SAW Components**
**B5046**
**SAW Rx Filter**
**815.5 MHz**

Data Sheet


**References**

<b>Type</b>	B5046
<b>Ordering code</b>	B39821B5046U510
<b>Marking and package</b>	C61157-A7-A68
<b>Packaging</b>	F61074-V8168-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B5046_NB.s3p B5046_WB.s3p
<b>Soldering profile</b>	S_6001
<b>RoHS compatible</b>	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."

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