



## SAW Components

SAW filter

EGSM 900 Rx

**Series/type:** B4124  
**Ordering code:** B39941B4124U410

**Date:** March 15, 2010  
**Version:** 2.2

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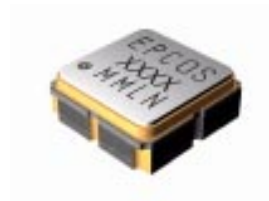
942.5 MHz

Data sheet

SMD

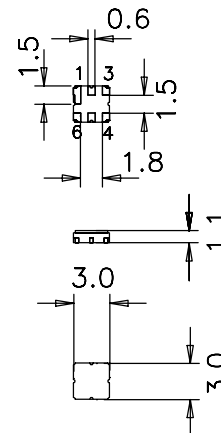
### Application

- Low-loss RF filter for EGSM mobile systems
- Low amplitude ripple
- No matching required for operation at  $50\Omega$
- Usable passband 35 MHz



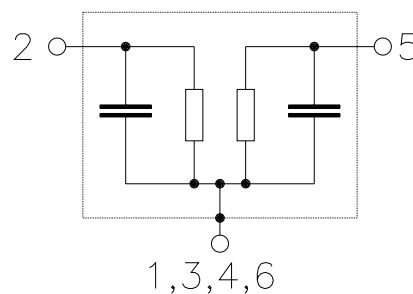
### Features

- Package size  $3.0 \times 3.0 \times 1.1 \text{ mm}^3$
- Package code DCC6C
- RoHS compatible
- Approximate weight 0.037 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**



### Pin configuration

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



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

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942.5 MHz

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**Characteristics**

Operating temperature range:  $T = +25\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	942,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
	925,0 ... 960,0 MHz	—	3,0	4,0	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
	925,0 ... 960,0 MHz	—	1,3	2,3	dB
<b>Input VSWR</b>					
	925,0 ... 960,0 MHz	—	2,3	2,5	
<b>Output VSWR</b>					
	925,0 ... 960,0 MHz	—	2,3	2,5	
<b>Attenuation</b>	$\alpha$				
	0,0 ... 800,0 MHz	50	60	—	dB
	800,0 ... 880,0 MHz	40	52	—	dB
	880,0 ... 905,0 MHz	35	45	—	dB
	905,0 ... 915,0 MHz	24	28	—	dB
	980,0 ... 1005,0 MHz	23	25	—	dB
	1005,0 ... 1025,0 MHz	30	42	—	dB
	1025,0 ... 1760,0 MHz	40	50	—	dB
	1760,0 ... 1800,0 MHz	30	40	—	dB
	1800,0 ... 2000,0 MHz	33	40	—	dB
	2000,0 ... 2500,0 MHz	30	40	—	dB
	2500,0 ... 3120,0 MHz	20	27	—	dB
	3120,0 ... 4000,0 MHz	18	25	—	dB
	4000,0 ... 6000,0 MHz	—	8	—	dB
<b>Input reflection coefficient @1842,5 MHz</b>					
	Phase	-150	-140	-130	°

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



Data sheet



Characteristics

Operating temperature range:  $T = -10$  to  $+80$  °C  
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 50 \Omega$

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	942,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
	925,0 ... 960,0 MHz	—	3,2	4,5	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
	925,0 ... 960,0 MHz	—	1,5	2,8 <sup>1)</sup>	dB
<b>Input VSWR</b>					
	925,0 ... 960,0 MHz	—	2,3	2,5	
<b>Output VSWR</b>					
	925,0 ... 960,0 MHz	—	2,3	2,5	
<b>Attenuation</b>	$\alpha$				
	0,0 ... 800,0 MHz	50	60	—	dB
	800,0 ... 880,0 MHz	40	52	—	dB
	880,0 ... 905,0 MHz	35	45	—	dB
	905,0 ... 915,0 MHz	20	28	—	dB
	980,0 ... 1005,0 MHz	20	23	—	dB <sup>2)</sup>
	980,0 ... 1005,0 MHz	23	27	—	dB <sup>3)</sup>
	980,0 ... 982,0 MHz	20	23	—	dB
	982,0 ... 1005,0 MHz	23	27	—	dB
	1005,0 ... 1025,0 MHz	30	42	—	dB
	1025,0 ... 1760,0 MHz	40	50	—	dB
	1760,0 ... 1800,0 MHz	30	40	—	dB
	1800,0 ... 2000,0 MHz	33	40	—	dB
	2000,0 ... 2500,0 MHz	30	40	—	dB
	2500,0 ... 3120,0 MHz	20	27	—	dB
	3120,0 ... 4000,0 MHz	18	25	—	dB
	4000,0 ... 6000,0 MHz	—	8	—	dB
<b>Input reflection coefficient @1842,5 MHz</b>					
	Phase	-150	-140	-130	°

1) 2,5dB<sub>max</sub> at +5°C to +70°C  
 2) Specification valid for T < 25°C  
 3) Specification valid for T ≥ 25°C



Data sheet



Characteristics

Operating temperature range:  $T = -30$  to  $+80$  °C  
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 50 \Omega$

			min.	typ.	max.	
<b>Center frequency</b>	$f_C$		—	942,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$					
	925,0 ... 960,0	MHz	—	3,2	4,5	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$					
	925,0 ... 960,0	MHz	—	1,5	2,8	dB
<b>Input VSWR</b>						
	925,0 ... 960,0	MHz	—	2,3	2,5	
<b>Output VSWR</b>						
	925,0 ... 960,0	MHz	—	2,3	2,5	
<b>Attenuation</b>	$\alpha$					
	0,0 ... 800,0	MHz	50	60	—	dB
	800,0 ... 880,0	MHz	40	52	—	dB
	880,0 ... 905,0	MHz	35	45	—	dB
	905,0 ... 915,0	MHz	15	28	—	dB
	980,0 ... 1005,0	MHz	20	23	—	dB <sup>1)</sup>
	980,0 ... 1005,0	MHz	23	27	—	dB <sup>2)</sup>
	980,0 ... 982,0	MHz	20	23	—	dB
	982,0 ... 1005,0	MHz	23	27	—	dB
	1005,0 ... 1025,0	MHz	30	42	—	dB
	1025,0 ... 1760,0	MHz	40	50	—	dB
	1760,0 ... 1800,0	MHz	30	40	—	dB
	1800,0 ... 2000,0	MHz	33	40	—	dB
	2000,0 ... 2500,0	MHz	30	40	—	dB
	2500,0 ... 3120,0	MHz	20	27	—	dB
	3120,0 ... 4000,0	MHz	18	25	—	dB
	4000,0 ... 6000,0	MHz	—	8	—	dB
<b>Input reflection coefficient @1842,5 MHz</b>						
	Phase		-150	-140	-130	°

<sup>1)</sup> Specification valid for  $T < 25$  °C

<sup>2)</sup> Specification valid for  $T \geq 25$  °C



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### 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>	3	V	
ESD voltage	V <sub>ESD</sub>	100 <sup>1)</sup>	V	machine model, 1 pulse
Input power				source and load impedance 50 Ω
925.0 ... 960.0 MHz	P <sub>IN</sub>	11	dBm	CW

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

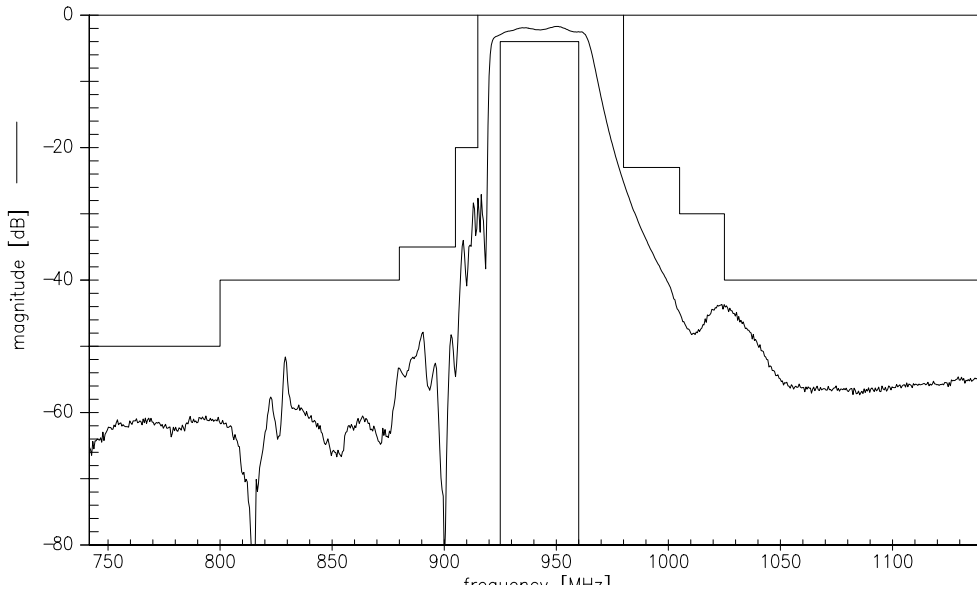
Please read *cautions and warnings and important notes* at the end of this document.



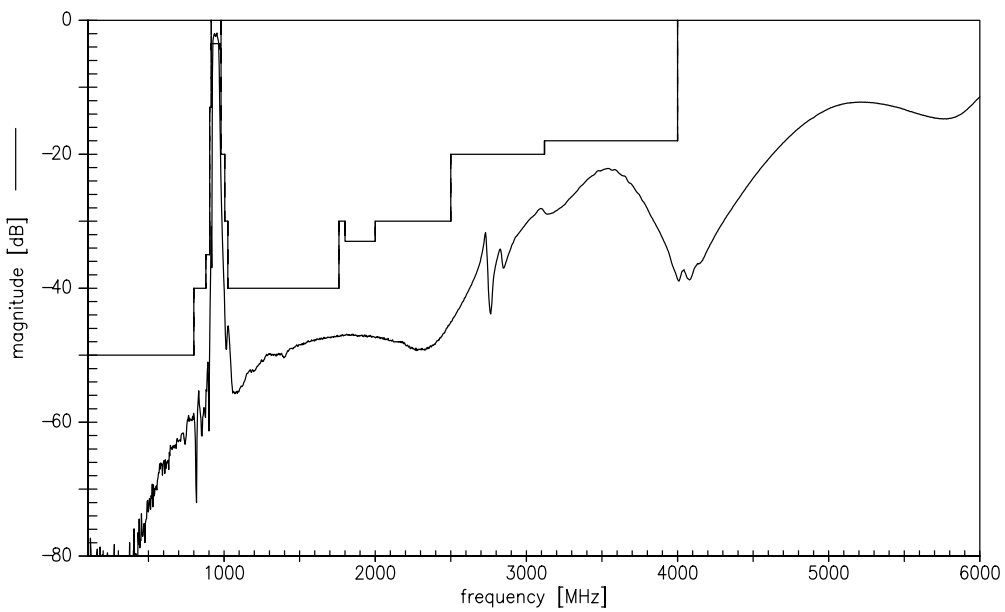
Data sheet



Transfer function



Transfer function (wideband)



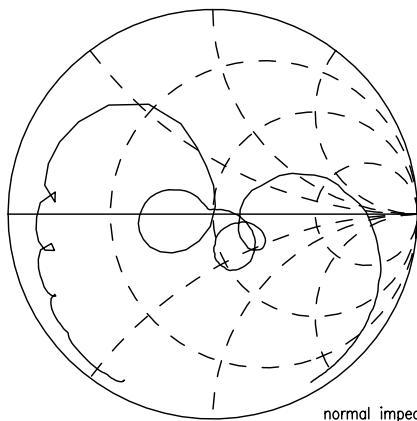
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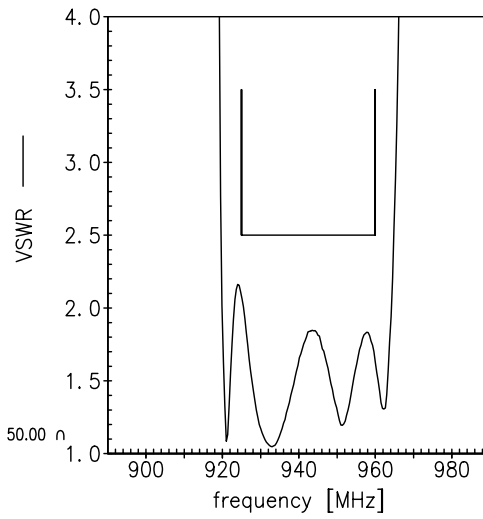


Smith charts

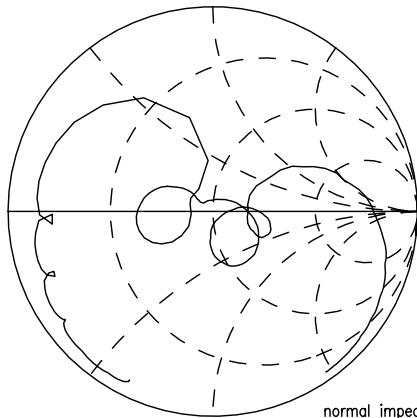
$S_{11}$  function



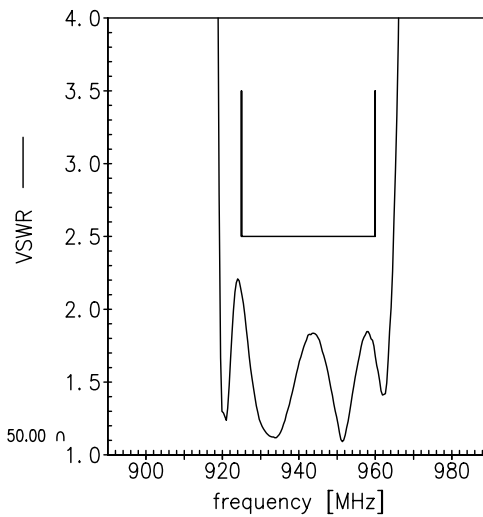
normal impedance: 50.00  $\Omega$



$S_{22}$  function



normal impedance: 50.00  $\Omega$



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#### References

<b>Type</b>	B4124
<b>Ordering code</b>	B39941B4124U410
<b>Marking and package</b>	C61157-A7-A67
<b>Packaging</b>	F61074-V8088-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B4124_NB.s2p B4124_WB.s2p See file header for port/pin assignment table
<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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