



SAW Components

SAW filter

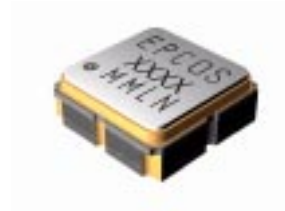
EGSM 900 Rx

Series/type:	B4124
Ordering code:	B39941B4124U410
Date:	September 07, 2012
Version:	2.2



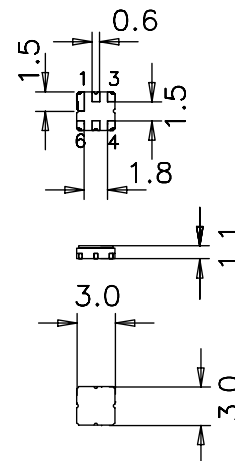
Application

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



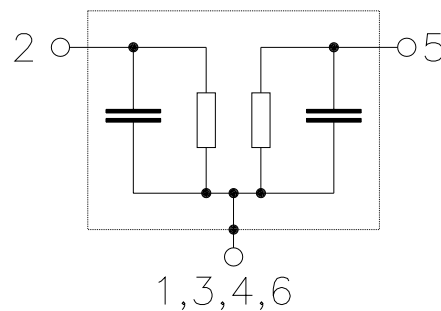
Features

- Package size 3.0 x 3.0 x 1.1 mm³
- 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





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.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	α_{max}				
	925,0 ... 960,0 MHz	—	3,0	4,0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
	925,0 ... 960,0 MHz	—	1,3	2,3	dB
Input VSWR					
	925,0 ... 960,0 MHz	—	2,3	2,5	
Output VSWR					
	925,0 ... 960,0 MHz	—	2,3	2,5	
Attenuation	α				
	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 ... 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
Input reflection coefficient @1842,5 MHz					
	Phase	-150	-140	-130	°



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B4124

SAW filter

942.5 MHz

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.	
Center frequency	f_C		—	942,5	—	MHz
Maximum insertion attenuation	α_{max}	925,0 ... 960,0 MHz	—	3,2	4,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$	925,0 ... 960,0 MHz	—	1,5	2,8 ¹⁾	dB
Input VSWR		925,0 ... 960,0 MHz	—	2,3	2,5	
Output VSWR		925,0 ... 960,0 MHz	—	2,3	2,5	
Attenuation	α					
		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 ²⁾
		980,0 ... 1005,0 MHz	23	27	—	dB ³⁾
		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 ... 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
Input reflection coefficient @ 1842,5 MHz						
	Phase		-150	-140	-130	°

1) 2,5dB_{max} 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.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	α_{max}				
	925,0 ... 960,0 MHz	—	3,2	4,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
	925,0 ... 960,0 MHz	—	1,5	2,8	dB
Input VSWR					
	925,0 ... 960,0 MHz	—	2,3	2,5	
Output VSWR					
	925,0 ... 960,0 MHz	—	2,3	2,5	
Attenuation	α				
	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 ¹⁾
	980,0 ... 1005,0 MHz	23	27	—	dB ²⁾
	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 ... 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
Input reflection coefficient @1842,5 MHz					
	Phase	-150	-140	-130	°

1) Specification valid for $T < 25$ °C
 2) Specification valid for $T \geq 25$ °C



Data sheet



Characteristics

Operating temperature range: $T = -30$ to $+85$ °C
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 50 \Omega$

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	α_{max}				
	925,0 ... 960,0 MHz	—	3,2	4,8	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
	925,0 ... 960,0 MHz	—	1,5	3,1	dB
Input VSWR					
	925,0 ... 960,0 MHz	—	2,3	2,6	
Output VSWR					
	925,0 ... 960,0 MHz	—	2,3	2,6	
Attenuation	α				
	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	13	28	—	dB
	980,0 ... 1005,0 MHz	20	23	—	dB ¹⁾
	980,0 ... 1005,0 MHz	23	27	—	dB ²⁾
	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 ... 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
Input reflection coefficient @1842,5 MHz					
	Phase	-150	-140	-130	°

¹⁾ Specification valid for $T < 25$ °C
²⁾ Specification valid for $T \geq 25$ °C



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942.5 MHz

Data sheet



Maximum ratings

Operable temperature range	T	-40/+85	°C	
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	3	V	
ESD voltage	V _{ESD}	100 ¹⁾	V	machine model, 10 pulses
ESD voltage	V _{ESD}	700 ²⁾	V	charged device model, 3 pulses
Input power				source and load impedance 50 Ω
925.0 ... 960.0 MHz	P _{IN}	11	dBm	CW

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

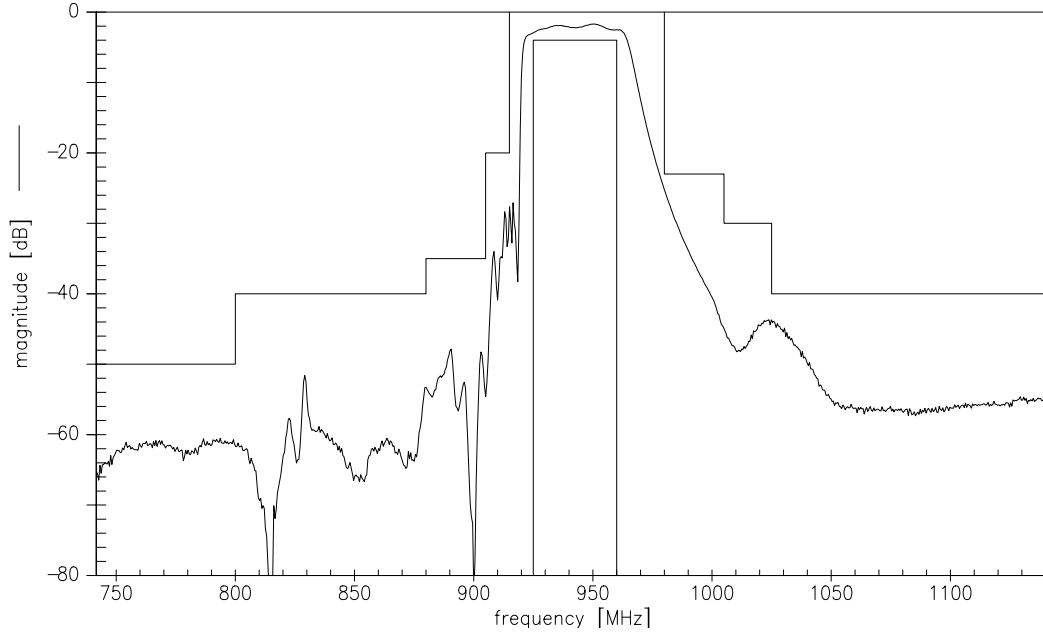
2) acc. to JESD22-C101E (charged device model), 3 negative & 3 positive pulses.



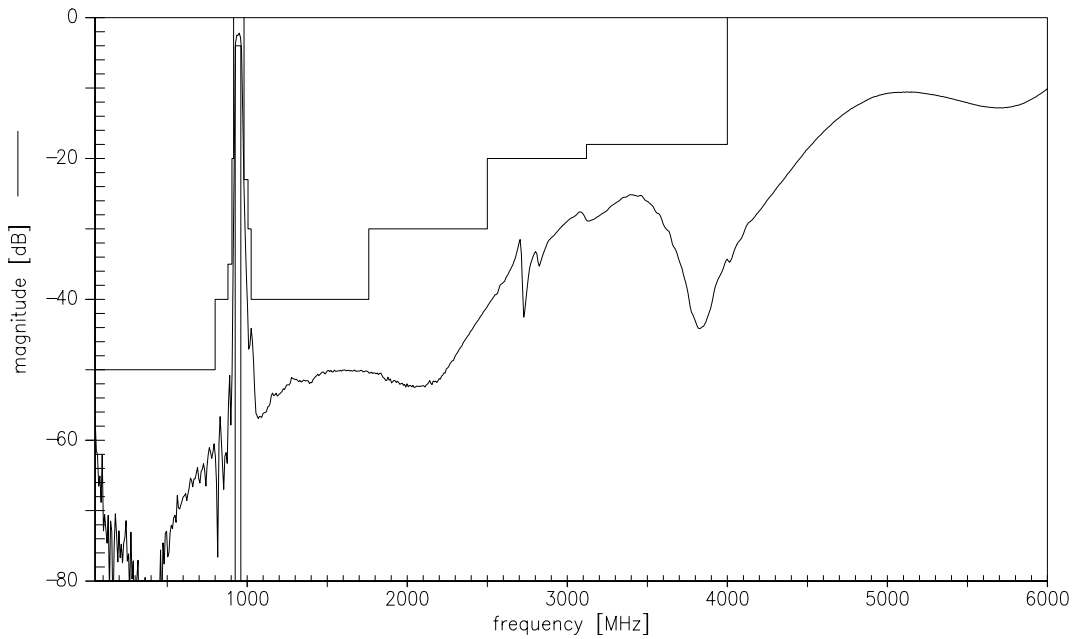
Data sheet



Transfer function



Transfer function (wideband)



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



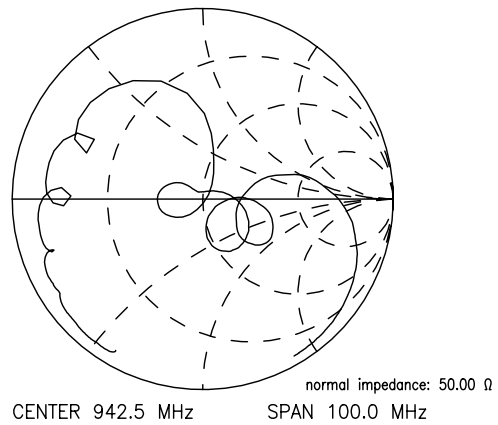
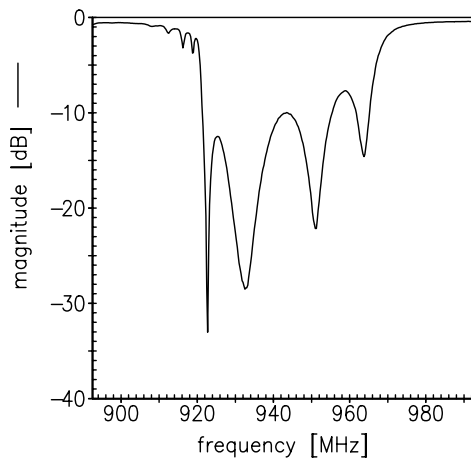
Data sheet



Smith charts

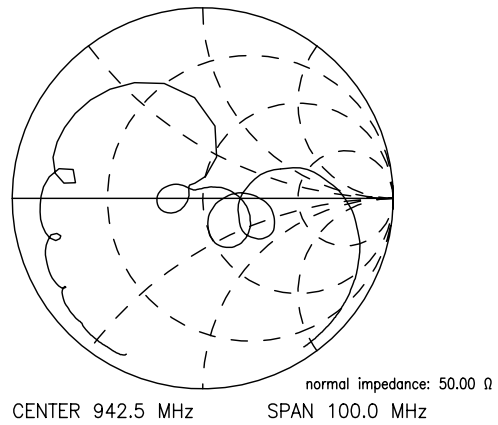
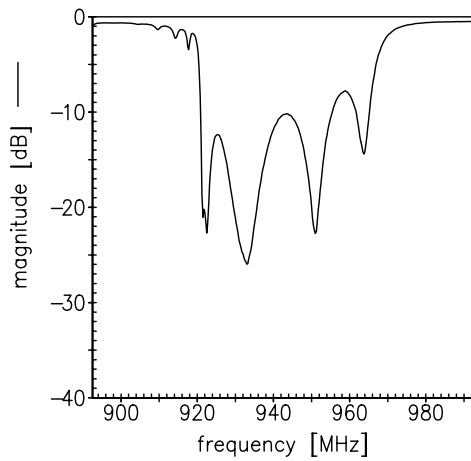
S₁₁ function

S₁₁



S₂₂ function

S₂₂





SAW Components	B4124
SAW filter	942.5 MHz
Data sheet	

References

Type	B4124
Ordering code	B39941B4124U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8088-Z000
Date codes	L_1126
S-parameters	B4124_NB.s2p B4124_WB.s2p See file header for port/pin assignment table
Soldering profile	S_6001
RoHS compatible	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."
Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm

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