SAW Components

SAW filter

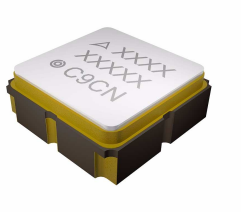
EGSM 900 Rx

Series/type:	**B4124**
Ordering code:	**B39941B4124U410**
Date:	Apirl 18, 2013
Version:	2.3

Data sheet SMD

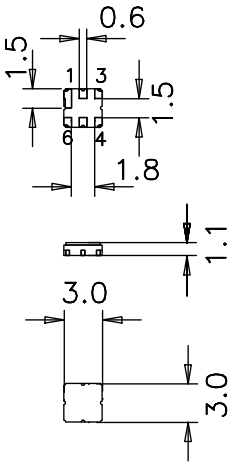
Application

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



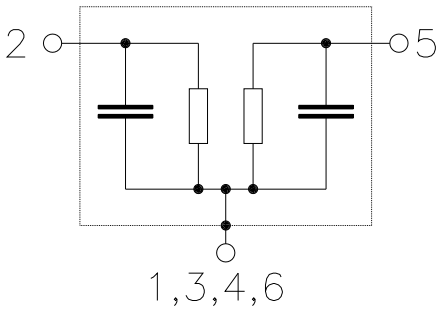
Features

- Package size 3.0 x 3.0 x 1.1 mm³
- Package code DCC6C
- RoHS compatible
- Approximate weight 0.037 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)



Pin configuration

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



Characteristics

Operating temperature range: T = +25 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		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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Characteristics

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

		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 SMD

Characteristics

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

		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 >= 25°C

Data sheet SMD

Characteristics

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

		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 >= 25°C

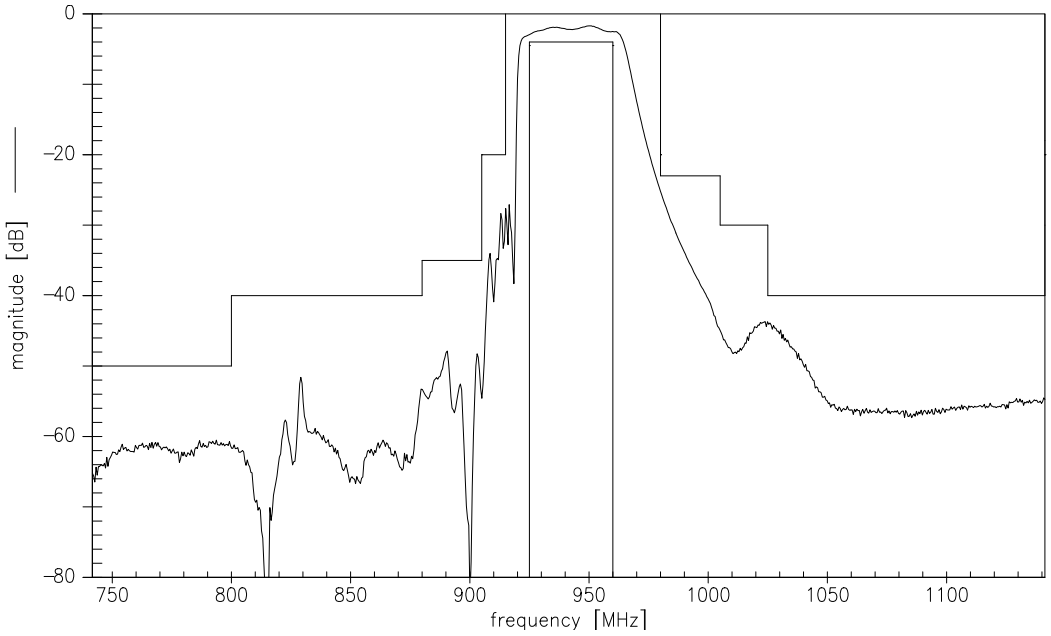
Maximum ratings

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, 100 000 hrs, 85 °C

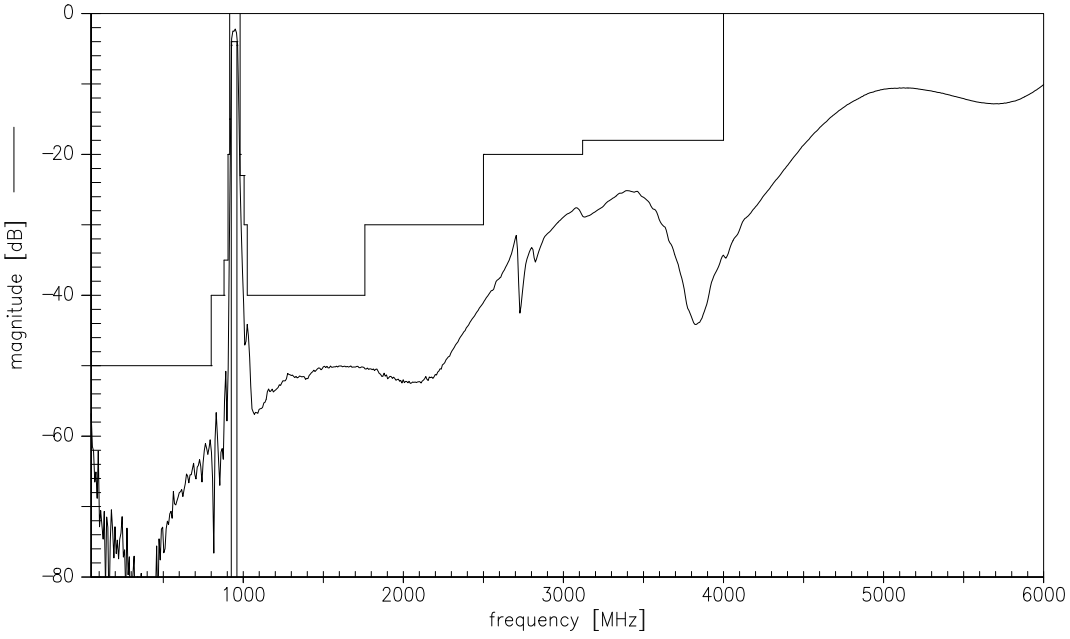
1) acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.

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

Transfer function

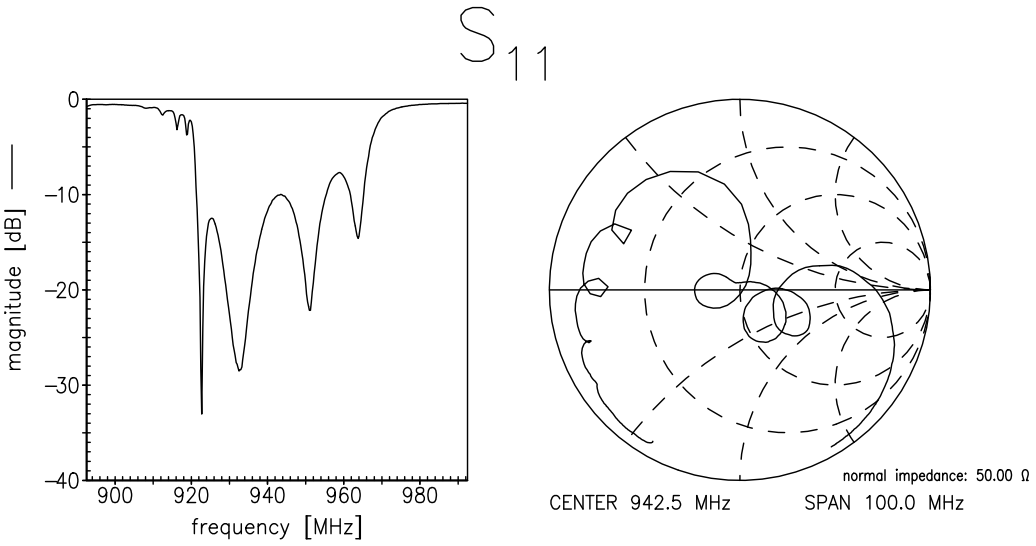


Transfer function (wideband)

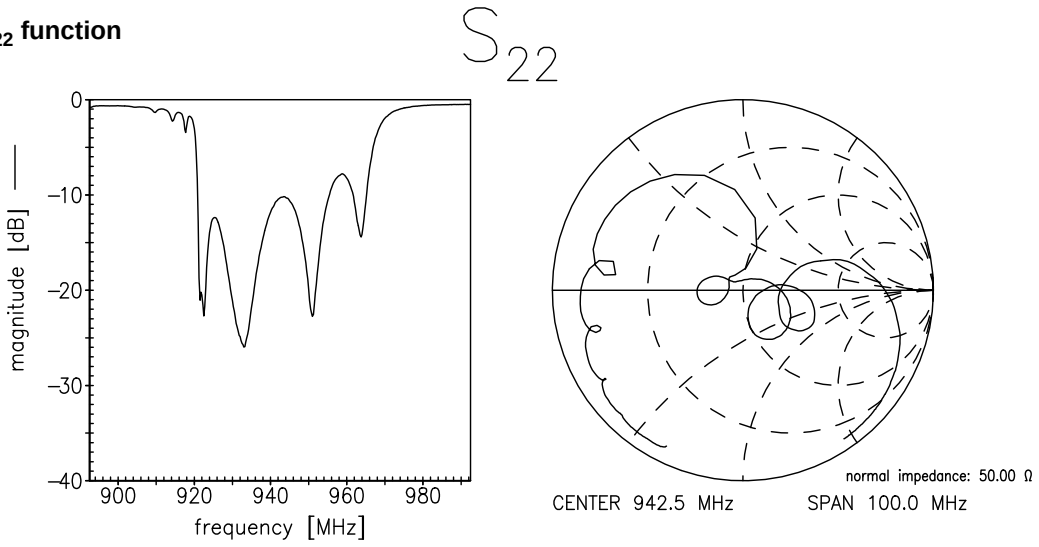


Smith charts

S_{11} function



S_{22} function



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	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.
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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