



SAW Components

SAW filter

Bluetooth

Series/type: B9410
Ordering code: B39242B9410K610

Date: May 30, 2006
Version: 2.1

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SAW filter

2441.75 MHz

Data Sheet



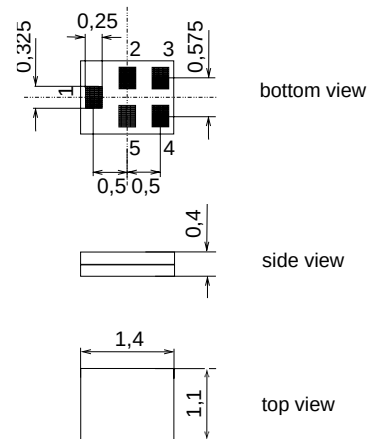
Application

- Low-loss RF filter for mobile telephone bluetooth systems
- Impedance transformation from 50 Ω to 150 Ω
- Unbalanced to balanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 83.5 MHz



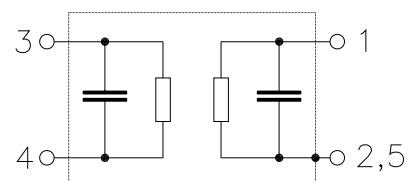
Features

- Package size 1.4 x 1.1 x 0.4 mm³
- Package code QCS5F
- RoHS compatible
- Approximate weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**



Pin configuration

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





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Characteristics

Temperature range for specification:	T = -20 °C to +75 °C
Terminating source impedance:	Z _S = 50 Ω
Terminating load impedance:	Z _L = 150 Ω 11 nH (balanced)

	min.	typ. @ 25 °C	max.	
Center frequency f _C	—	2441.75	—	MHz
Maximum insertion attenuation α _{max} 2400.0 ... 2483.5 MHz	—	2.0	2.6	dB
Amplitude ripple (p-p) Δα 2400.0 ... 2483.5 MHz	—	0.6	1.5	dB
Input VSWR 2400.0 ... 2483.5 MHz	—	1.8	2.1	
Output VSWR 2400.0 ... 2483.5 MHz	—	1.7	2.1	
Output amplitude balance (S ₃₁ /S ₂₁) 2400.0 ... 2483.5 MHz	-1.5	-0.5/0.8	1.5	dB
Output phase balance (φ(S ₃₁) - φ(S ₂₁)+180°) 2400.0 ... 2483.5 MHz	-10	-4/+4	10	°
Attenuation α				
0.0 ... 960.0 MHz	55	58	—	dB
960.0 ... 1850.0 MHz	40	47	—	dB
1850.0 ... 1990.0 MHz	40 ¹⁾	45	—	dB
1990.0 ... 2170.0 MHz	40	45	—	dB
2170.0 ... 2250.0 MHz	20	40	—	dB
2650.0 ... 2800.0 MHz	20	31	—	dB
2800.0 ... 4000.0 MHz	25	36	—	dB
4000.0 ... 6000.0 MHz	30	46	—	dB

¹⁾ except 1 narrow spike at ~1886 MHz with typical 41 dB



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Maximum ratings

Operable temperature range	T	−40/+85	°C	
Storage temperature range	T _{stg}	−40/+85	°C	
DC voltage	V _{DC}	3.5	V	
ESD voltage	V _{ESD}	50 ¹⁾	V	machine model, 10 pulses
Input power at				source/load impedance 50Ω/50Ω
2400 ... 2483.5 MHz	P _{IN}	8	dBm	bluetooth signal
824 ... 849, 880 ... 915 MHz	P _{IN}	15	dBm	cw
1710... 785,1850...1910 MHz	P _{IN}	15	dBm	cw

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



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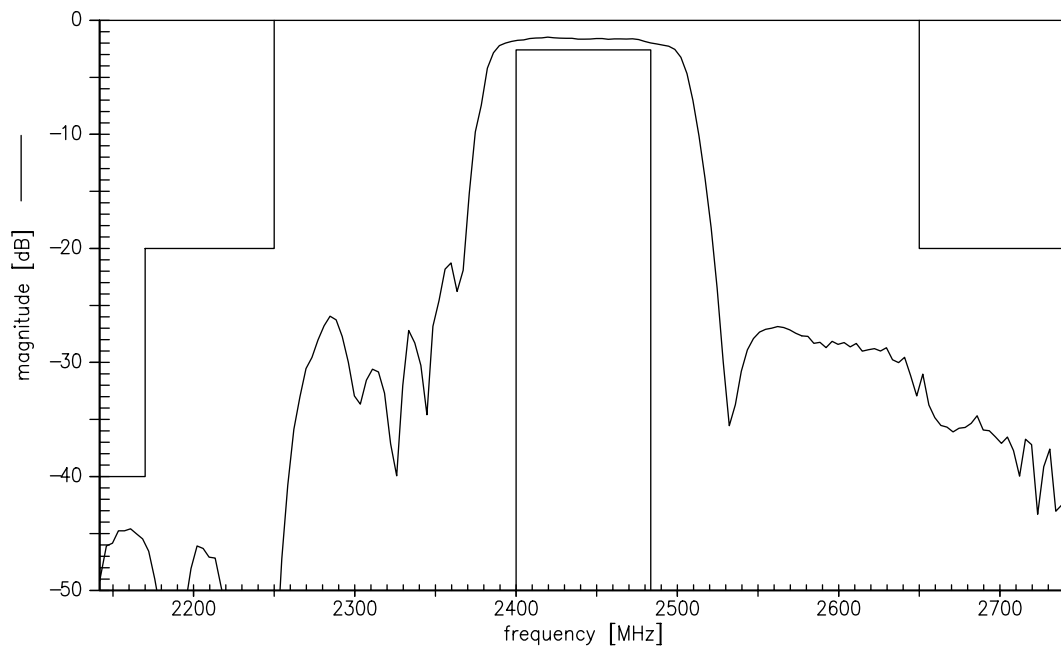
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2441.75 MHz

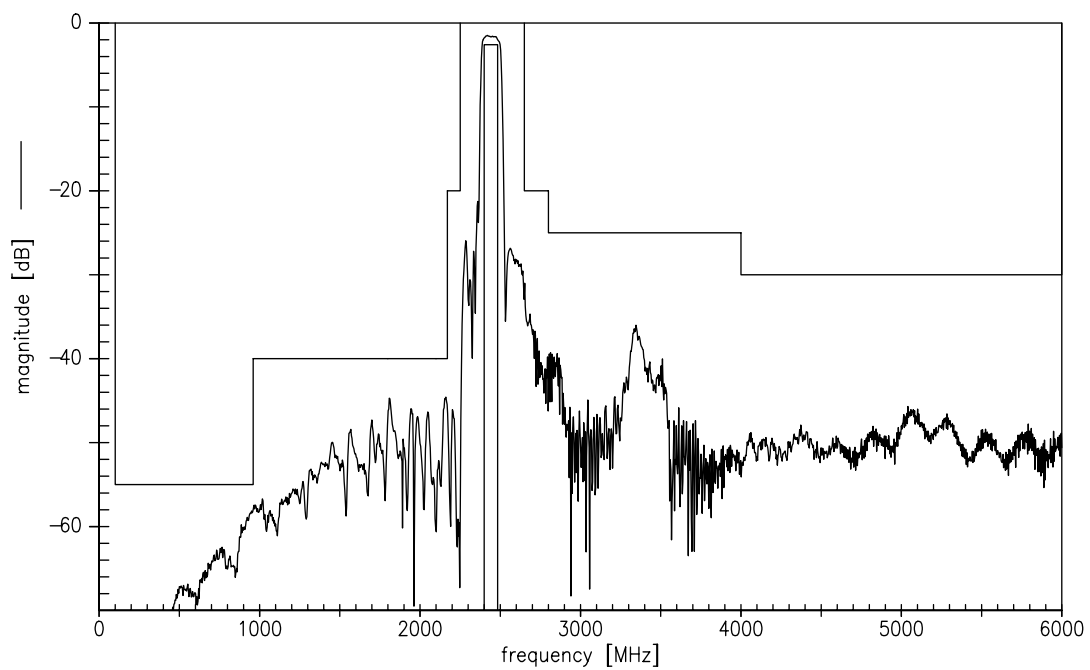
Data Sheet



Transfer function (narrow band)



Transfer function (wide band)





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SAW filter

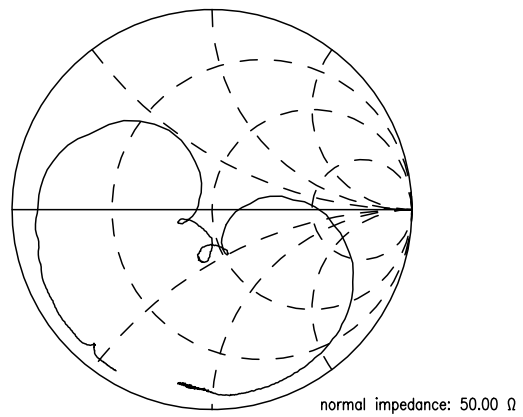
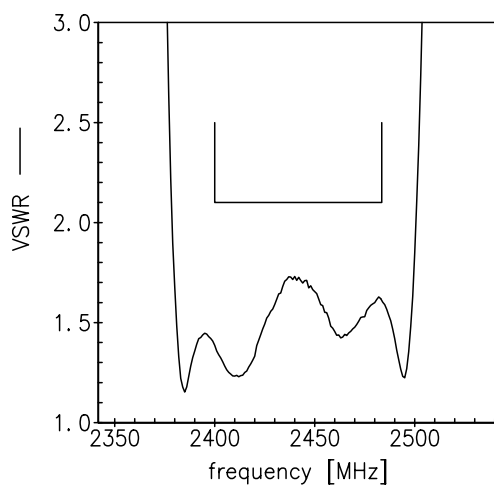
2441.75 MHz

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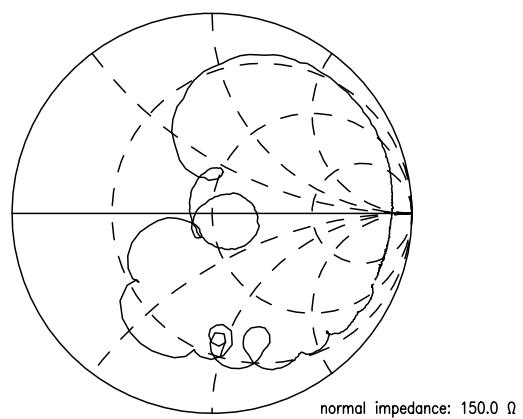
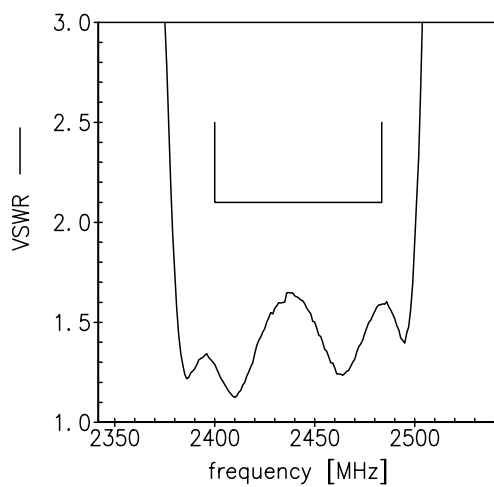


Smith charts

S_{11} function



S_{22} function





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References

Type	B9410
Ordering code	B39242B9410K610
Marking and package	C61157-A8-A1
Packaging	F61074-V8212-Z000
Date codes	L_1126
S-parameters	LP14E_NB.s3p LP14E_WB.s3p
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."
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.

For further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com .

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