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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





SAW filters for mobile communications

Series/Type: B9410

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B39242B9410K610		2009-07-31	2009-11-30	2010-02-28

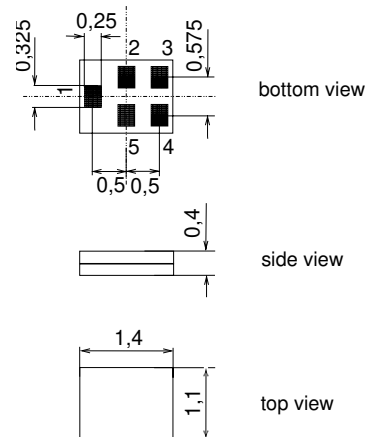
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Application

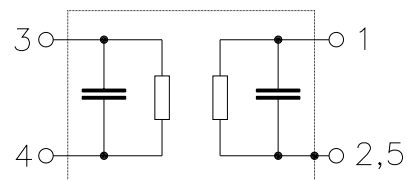
- Low-loss RF filter for mobile telephone bluetooth systems
- Impedance transformation from 50 Ω to 150 Ω
- Unbalanced to balanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 83.5 MHz


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



Data Sheet

Characteristics

Temperature range for specification: $T = -20\text{ °C to }+75\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 150\ \Omega \parallel 11\text{ nH (balanced)}$

		min.	typ. @ 25 °C	max.	
Center frequency	f_C	—	2441.75	—	MHz
Maximum insertion attenuation	α_{\max}	—	2.0	2.6	dB
2400.0 ... 2483.5 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	0.6	1.5	dB
2400.0 ... 2483.5 MHz					
Input VSWR		—	1.8	2.1	
2400.0 ... 2483.5 MHz					
Output VSWR		—	1.7	2.1	
2400.0 ... 2483.5 MHz					
Common mode suppression		22	25	—	dB
2400.0 ... 2483.5 MHz					
Output amplitude balance (S_{31}/S_{21})		-1.5	-0.5/0.8	1.5	dB
2400.0 ... 2483.5 MHz					
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)		-10	-4/+4	10	°
2400.0 ... 2483.5 MHz					
Attenuation	α	55	58	—	dB
0.0 ... 960.0 MHz					
960.0 ... 1850.0 MHz		40	47	—	dB
1850.0 ... 1990.0 MHz		40 ¹⁾	45	—	
1990.0 ... 2170.0 MHz		40	45	—	dB
2170.0 ... 2250.0 MHz		20	40	—	
2650.0 ... 2800.0 MHz		20	31	—	dB
2800.0 ... 4000.0 MHz		25	36	—	
4000.0 ... 6000.0 MHz		30	46	—	dB

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

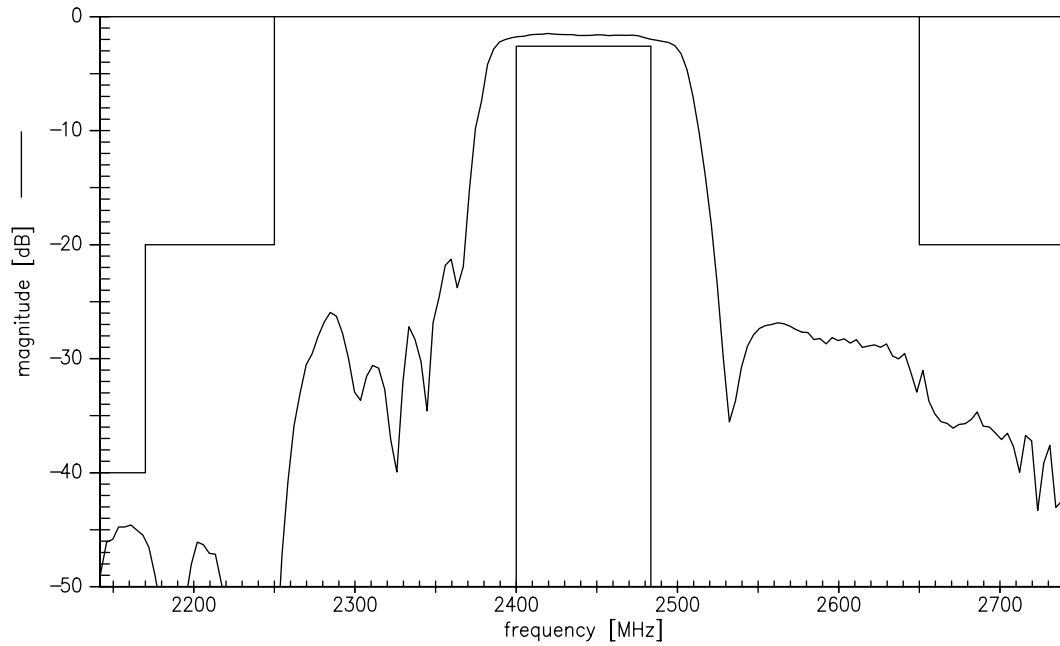

Maximum ratings

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, 1 pulse
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

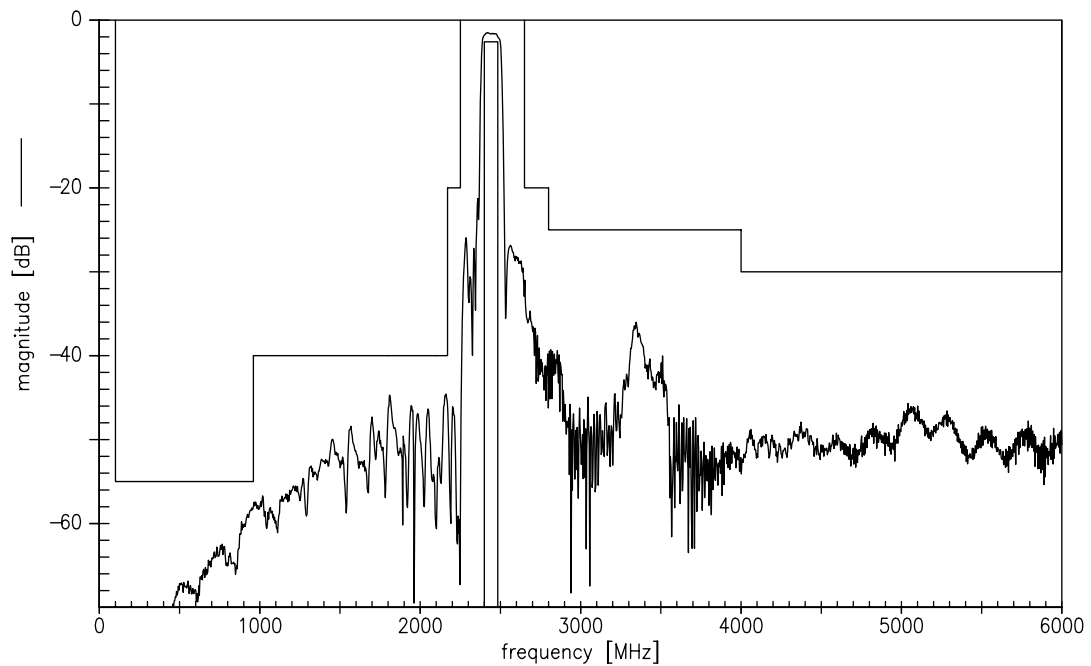
¹⁾ acc. to JEESD22-A115A (machine model), 1 negative & 1 positive pulse.



Transfer function (narrow band)



Transfer function (wide band)

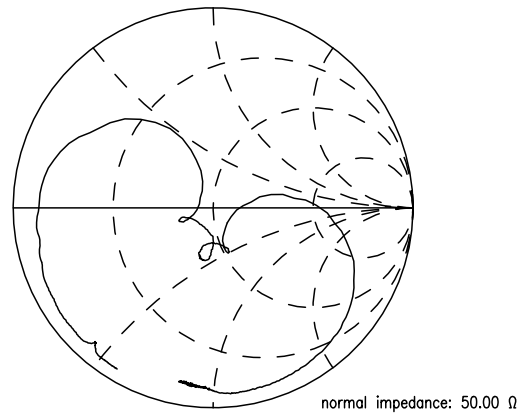
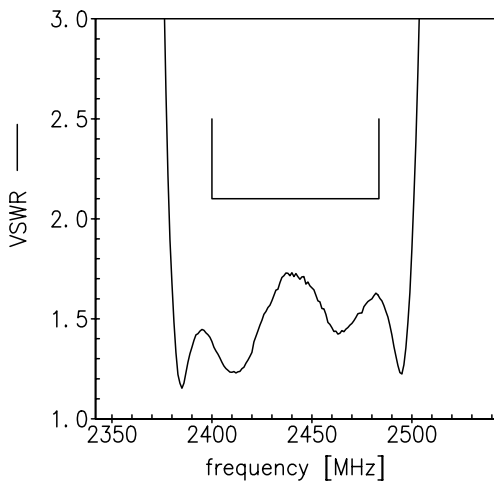


Data Sheet

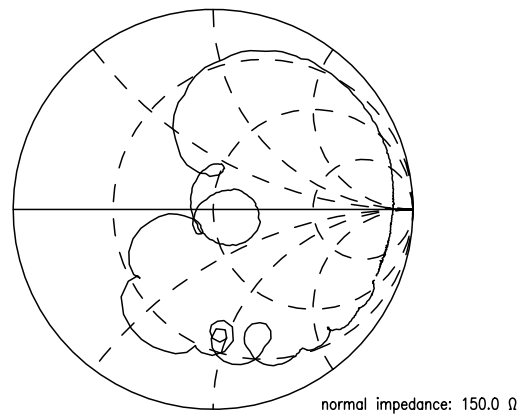
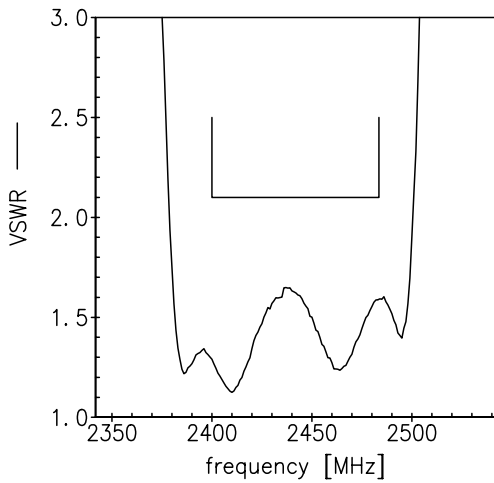


Smith charts

S₁₁ function



S₂₂ function



SAW Components	B9410
SAW filter	2441.75 MHz
Data Sheet	

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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