



SAW Components

SAW filter

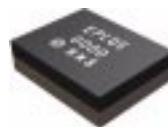
GPS

Series/type:	B9417
Ordering code:	B39162B9417K610

Date:	March 05, 2007
Version:	2.3

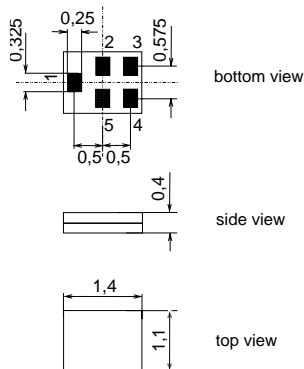
Application

- Low-loss RF filter for mobile telephone GPS systems
- Impedance transformation from 50 Ω to 100 Ω
- Unbalanced to balanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 2.0 MHz



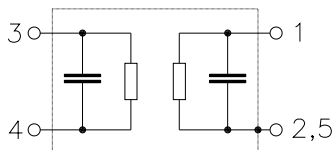
Features

- 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:	$T = -30\text{ °C to }+85\text{ °C}$
Terminating source impedance:	$Z_S = 50\ \Omega$
Terminating load impedance:	$Z_L = 100\ \Omega$

	min.	typ. @ 25 °C	max.	
Center frequency f_C	—	1575.42	—	MHz
Maximum insertion attenuation α_{\max}				
1574.42 ... 1576.42 MHz	—	1.1	1.4 ¹⁾	dB
Amplitude ripple (p-p) $\Delta\alpha$				
1574.42 ... 1576.42 MHz	—	0.1	0.3	dB
Input VSWR				
1574.42 ... 1576.42 MHz	—	1.3	1.8	
Output VSWR				
1574.42 ... 1576.42 MHz	—	1.3	1.8	
Output amplitude balance ($ S_{31}/S_{21} $)				
1574.42 ... 1576.42 MHz	-1.0	0.6	1.0	dB
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)				
1574.42 ... 1576.42 MHz	-10	4	10	°
Attenuation α				
100.0 ... 960.0 MHz	40	48	—	dB
960.0 ... 1425.0 MHz	35	42	—	dB
1425.0 ... 1475.0 MHz	30	42	—	dB
1475.0 ... 1515.0 MHz	20	32	—	dB
1515.0 ... 1525.0 MHz	17	27	—	dB
1625.0 ... 1635.0 MHz	12	30	—	dB
1635.0 ... 1675.0 MHz	20	30	—	dB
1675.0 ... 1710.0 MHz	27	32	—	dB
1710.0 ... 1850.0 MHz	30	32	—	dB
1850.0 ... 1900.0 MHz	33	38	—	dB
1900.0 ... 1980.0 MHz	36	43	—	dB
1980.0 ... 2400.0 MHz	32	36	—	dB
2400.0 ... 3155.0 MHz	40	46	—	dB
3155.0 ... 4000.0 MHz	35	39	—	dB
4000.0 ... 6000.0 MHz	33	37	—	dB

¹⁾ 1.3 dB max. at 25 °C

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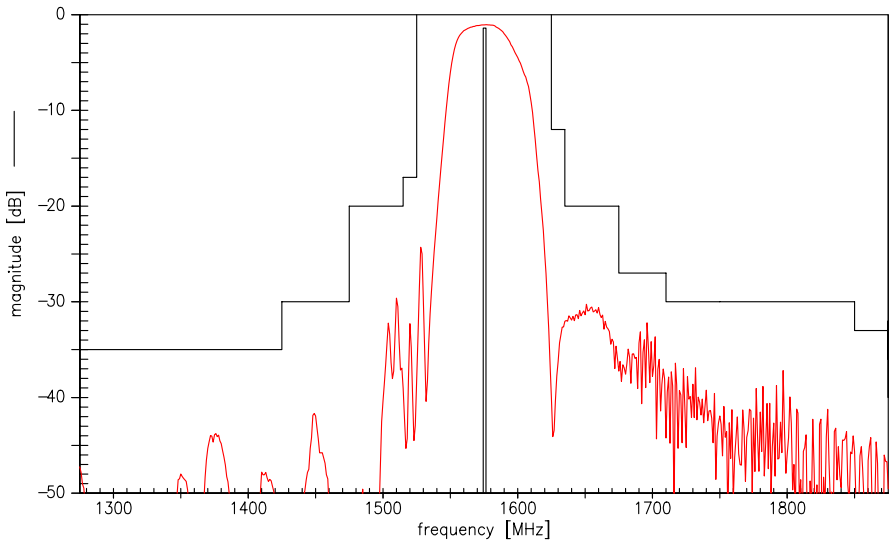


Maximum ratings

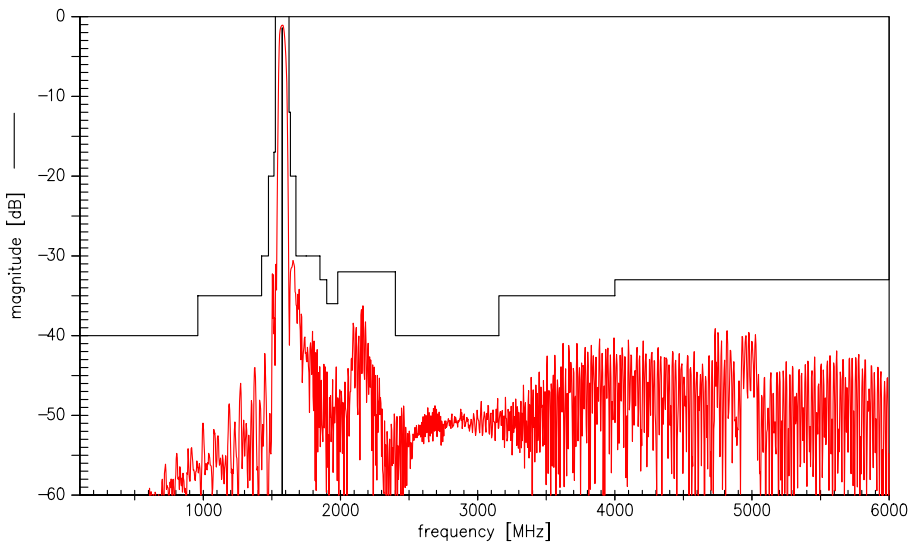
Operable temperature range	T	−40/+85	°C	
Storage temperature range	T _{stg}	−40/+85	°C	
DC voltage	V _{DC}	3	V	
ESD voltage	V _{ESD}	50 ¹⁾	V	machine model, 10 pulses
Input power at				source 50Ω, load 100Ω
1574.42 ... 1576.42 MHz	P _{IN}	5	dBm	cw
2400 ... 2483.5 MHz	P _{IN}	20	dBm	cw
824...960, 1710...2170 MHz	P _{IN}	25	dBm	cw
960...1525 MHz	P _{IN}	10	dBm	cw

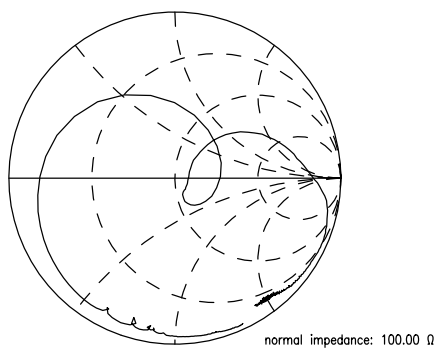
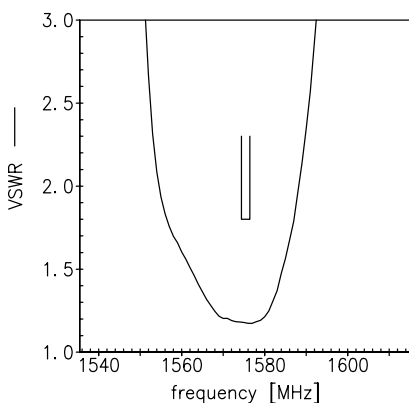
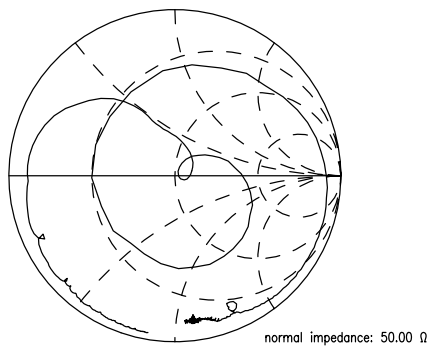
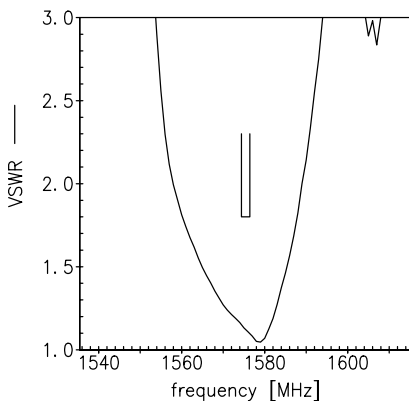
¹⁾ acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.

Transfer function (narrow band)



Transfer function (wide band)







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References

Type	B9417
Ordering code	B39162B9417K610
Marking and package	C61157-A8-A1
Packaging	F61074-V8212-Z000
Date codes	L_1126
S-parameters	B9417_NB.s3p B9417_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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