SAW Components

SAW filter

GPS

Series/type: **B9415**
Ordering code: **B39162B9415K610**

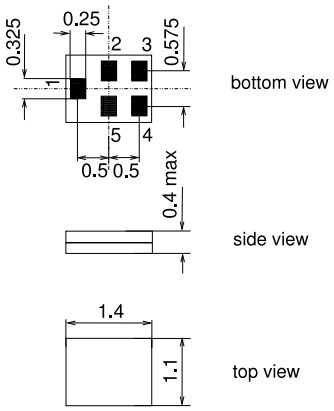
Date: March 16, 2006
Version: 2.0

Application

- Low-loss RF filter for mobile telephone GPS systems
- Filter impedance 50 Ω
- Unbalanced to unbalanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 2.0 MHz

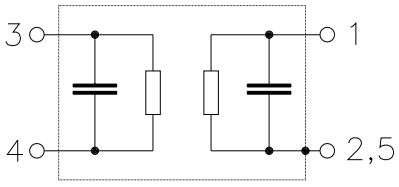
Features

- Package size 1.4 x1.1 x 0.4 mm³
- Package code QCS5F
- RoHS compatible
- Approximate weight 0.003 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)



Pin configuration

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



Data sheet

Characteristics

Operating temperature range: T = –40 ˚C to +85 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	1575.42	—	MHz
Maximum insertion attenuation	α_{max}				
1574.42 ... 1576.42 MHz		—	0.6	1.0[1)]	dB
					dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1574.42 ... 1576.42 MHz		—	0.0	0.3	dB
Input VSWR					
1574.42 ... 1576.42 MHz		—	1.2	1.6[2)]	
Output VSWR					
1574.42 ... 1576.42 MHz		—	1.2	1.6[3)]	
Attenuation	α				
500.0 ... 894.0 MHz		16	18	—	dB
894.0 ... 1500.0 MHz		15	17	—	dB
1650.0 ... 4000.0 MHz		17	19	—	dB
4000.0 ... 6000.0 MHz		15	20	—	dB

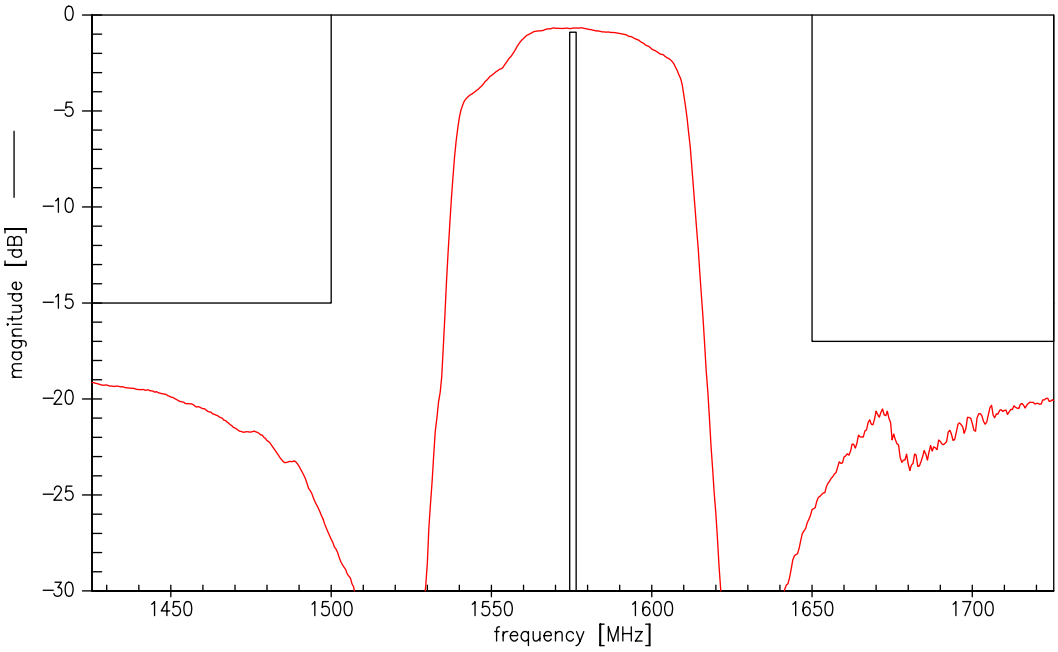
1) 0.9dB max. at -30 ˚C ... 75 ˚C
2) 1.5 max. at -30 ˚C ... 75 ˚C
3) 1.5 max. at -30 ˚C ... 75 ˚C

Maximum ratings

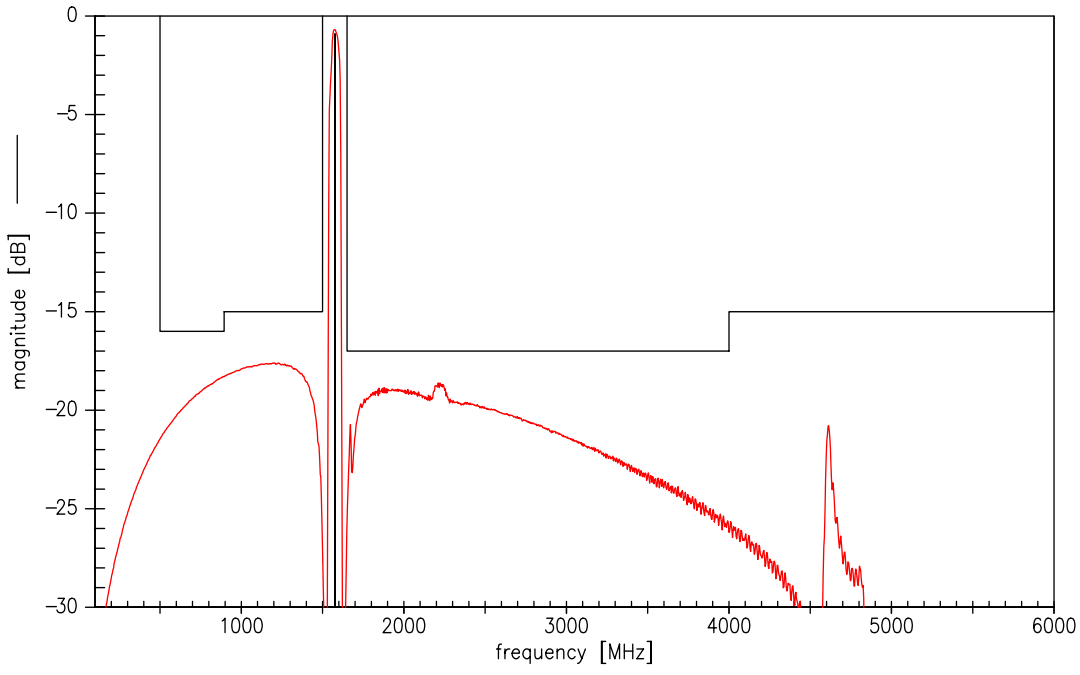
Operable temperature range	T	–40/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	3	V	
ESD voltage	V_{ESD}	50[1)]	V	machine model, 10 pulses
Input power at				source/load impedance 50Ω/50Ω
1574.42 ... 1576.42 MHz	P_{IN}	10	dBm	cw
2400 ... 2483.5 MHz	P_{IN}	20	dBm	cw
824...849, 1710...2170 MHz	P_{IN}	25	dBm	cw

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

Transfer function (narrow band)

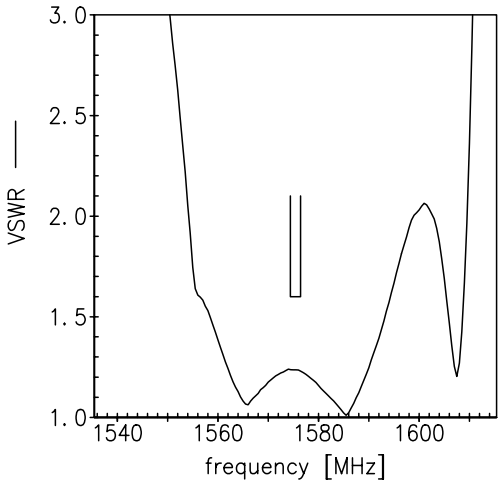


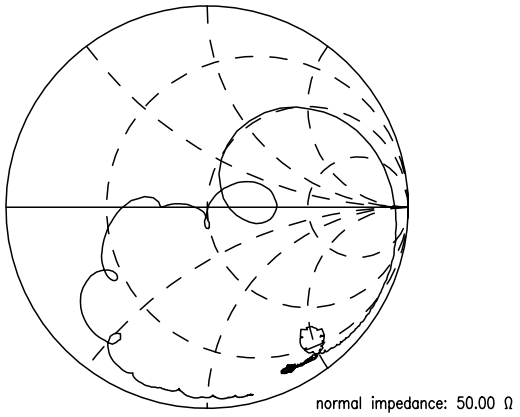
Transfer function (wide band)



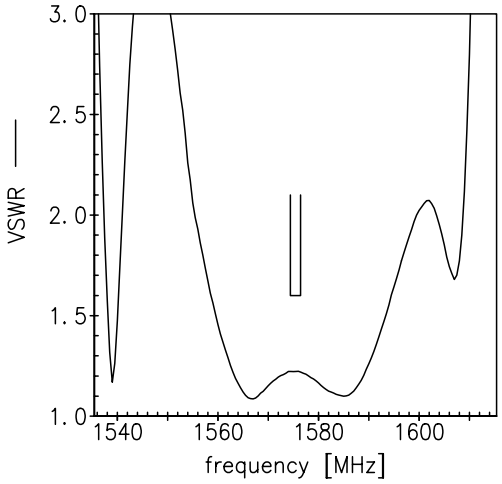
Smith charts

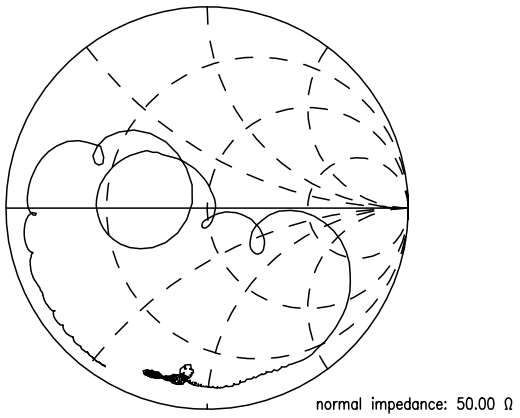
S_{11} function





S_{22} function





References

Type	B9415
Ordering code	B39162B9415K610
Marking and package	C61157-A8-A1
Packaging	F61074-V8212-Z000
Date codes	L_1126
S-parameters	B9415_NB.s2p B9415_WB.s2p
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."

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