SAW Components

GPS/GLONASS Extractor Filter

GPS/GLONASS Extractor

Series/type:	**B9839**
Ordering code:	**B39162B9839P810**
Date:	October 05, 2012
Version:	2.4

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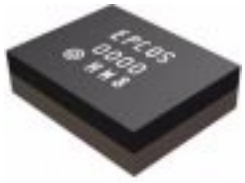
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GPS/GLONASS Extractor Filter 832 / 1469.4 / 1575.42 / 1601.72 / 2200

Data Sheet SMD

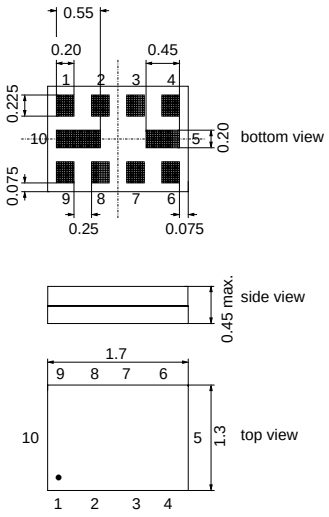
Application

- Low loss GPS/GLONASS Extractor
- Using common antenna for GPS/GLONASS and NON-GPS/GLONASS bands (Cellular, PCS, WiFi, WCDMA bands)
- Placed between antenna and cellular front-end switches and filters
- Usable passbands 1574.42-1576.42, 1565.42 - 1585.42, 1597.55-1605.89, 704-960,1427.9-1510.9,1710-2690 MHz
- No switches and control lines required
- Integrated low loss GPS/GLONASS filter with single ended output 50 Ω
- Low insertion attenuation in GPS/GLONASS and NON-GPS/GLONASS bands



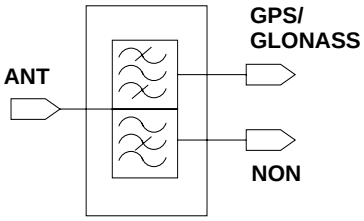
Features

- Package size 1.7 x 1.3 mm^2
  package height 0.45 mm max.
- RoHS compliant
- Approx. weight 0.003 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- **M**oisture **S**ensitivity **L**evel 3



Pin configuration

- 1 ANT input
- 4 GPS/GLONASS output
- 9 NON-GPS/GLONASS output
- 2,3,5,6,7,8,10 To be grounded



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Characteristics

Temperature range for specification: T = –30 ˚C to +85 ˚C
ANT terminating impedance: Z_{ANT}= 50 Ω || 15 nH (external matching)
GPS/GLONASS terminating impedance: Z_{GPGL}= 50Ω
NON-GPS/GLONASS terminating imped.: Z_{NON}= 50 Ω serial 3 nH (external matching)

				B9839			
				min.	typ. @ 25 ˚C	max.	
Maximum insertion attenuation			α_{max}				
ANT-GPS	1574.42	... 1576.42	MHz	—	0.9	1.4	dB
ANT-GPS	1565.42	... 1585.42	MHz	—	2.0	3.7	dB
ANT-GLONASS	1597.55	... 1605.89	MHz	—	1.3	2.0	dB
ANT-NON	704.0	... 824.0	MHz	—	0.75	1.4	dB
ANT-NON	824.0	... 960.0	MHz	—	0.55	0.9	dB
ANT-NON	1427.9	... 1462.9	MHz	—	0.55	0.9	dB
ANT-NON	1475.9	... 1510.9	MHz	—	0.65	1.1	dB
ANT-NON	1710.0	... 1995.0	MHz	—	1.0	1.4	dB
ANT-NON	2110.0	... 2170.0	MHz	—	1.0	1.4	dB
ANT-NON	2400.0	... 2483.5	MHz	—	0.85	1.2	dB
ANT-NON	2500.0	... 2690.0	MHz	—	0.75	1.1	dB
Amplitude ripple (p-p)			$\Delta\alpha$				
ANT-GPS	1574.42	... 1576.42	MHz	—	0.05	0.7	dB
ANT-GPS	1565.42	... 1585.42	MHz	—	1.2	2.9	dB
ANT-GLONASS	1597.55	... 1605.89	MHz	—	0.20	1.2	dB
Attenuation ANT-GPS/GLONASS							
	0.1	... 824.0	MHz	34	37	—	dB
	824.0	... 960.0	MHz	35	38	—	dB
	1427.9	... 1510.9	MHz	35	41	—	dB
	1710.0	... 1995.0	MHz	35	38	—	dB
	2110.0	... 2170.0	MHz	35	39	—	dB
	2400.0	... 2500.0	MHz	35	40	—	dB
	2500.0	... 2690.0	MHz	35	41	—	dB
VSWR (Antenna port)							
GPS	1574.42	... 1576.42	MHz	—	1.3	1.8	
GPS	1565.42	... 1585.42	MHz	—	1.4	1.9	
GLONASS	1597.55	... 1605.89	MHz	—	1.3	1.9	
NON	704.0	... 824.0	MHz	—	1.2	1.8	
NON	824.0	... 960.0	MHz	—	1.2	1.8	
NON	1427.9	... 1462.9	MHz	—	1.5	1.9	
NON	1475.9	... 1510.9	MHz	—	1.6	2.0	
NON	1710.0	... 1995.0	MHz	—	1.25	1.8	
NON	2110.0	... 2170.0	MHz	—	1.2	1.8	

				B9839			
				min.	typ. @ 25 °C	max.	
NON	2400.0	... 2483.5	MHz	—	1.2	1.8	
NON	2500.0	... 2690.0	MHz	—	1.3	1.8	
VSWR (GPS/GLONASS port)							
GPS	1574.42	...1576.42	MHz	—	1.3	1.8	
GPS	1565.42	...1585.42	MHz	—	1.5	2.7	
GLONASS	1597.55	...1605.89	MHz	—	1.3	1.9	
VSWR (NON port)							
	704.0	... 824.0	MHz	—	1.4	1.8	
	824.0	... 960.0	MHz	—	1.25	1.8	
	1427.9	... 1462.9	MHz	—	1.5	1.9	
	1475.9	... 1510.9	MHz	—	1.6	2.0	
	1710.0	... 1995.0	MHz	—	1.4	1.8	
	2110.0	... 2170.0	MHz	—	1.2	1.8	
	2400.0	... 2483.5	MHz	—	1.2	1.8	
	2500.0	... 2690.0	MHz	—	1.3	1.8	
Group delay ripple[1)] (p-p) **ANT-GPS/GLONASS**			$\Delta\tau$				
	1597.55	...1605.89	MHz	—	4	12	ns
Isolation between NON and GPS/GLONASS path			α				
	704.0	... 824.0	MHz	35	38	—	dB
	824.0	... 960.0	MHz	35	38	—	dB
	1427.9	... 1510.9	MHz	35	41	—	dB
	1710.0	... 1995.0	MHz	35	39	—	dB
	2110.0	... 2170.0	MHz	35	39	—	dB
	2400.0	... 2483.5	MHz	35	42	—	dB
	2500.0	... 2690.0	MHz	35	43	—	dB

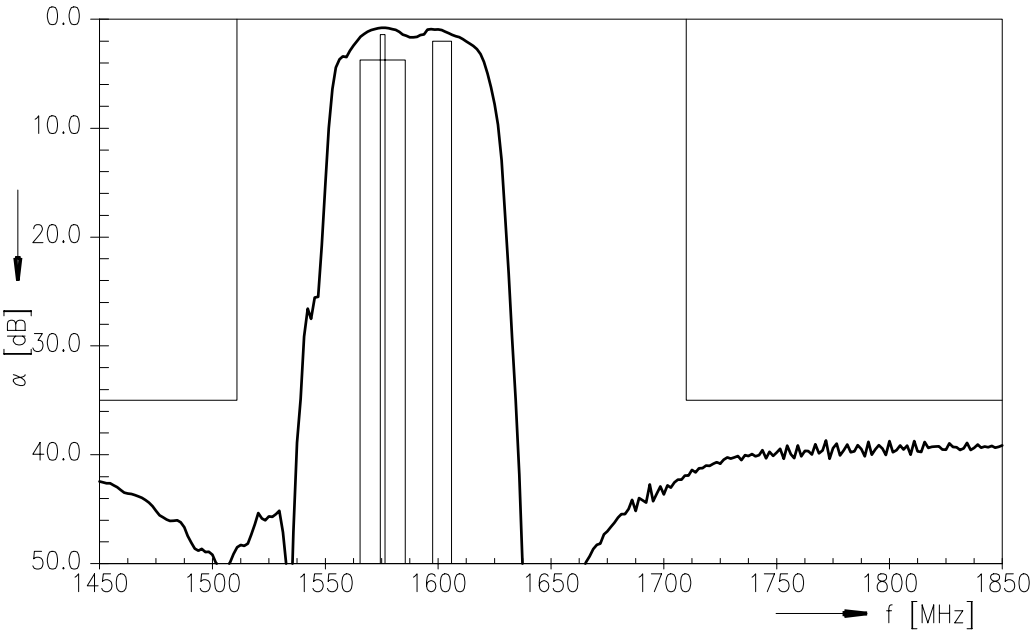
1) Measured with aperture 2 MHz.

Maximum ratings

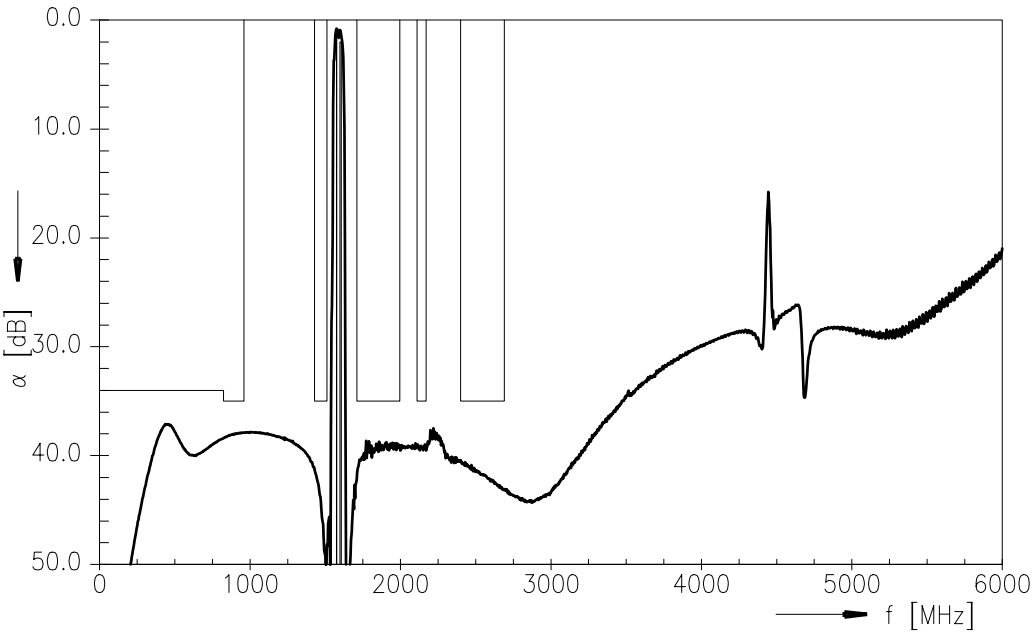
Storage temperature range	T_{stg}	–40/+85	°C	
DC voltage	V_{DC}	3	V	
ESD voltage				
Machine Model	V_{ESD}	50[1)]	V	
Human Body Model	V_{ESD}	±250[2)]	V	at pin 1, 4 and 9 (ANT,GPS,NON) source and load impedance 50 Ω
Input power at	P_{IN}			
704 ... 915 MHz	P_{IN}	31	dBm	effective power in the on-state
1427.9 ... 1462.9 MHz	P_{IN}	31	dBm	effective power in the on-state
1710 ... 2690 MHz	P_{IN}	31	dBm	continuous wave signal

1) acc. to JESD22-A115A (machine model)
2) acc. to JESD22-A114 (Human body model, Rs = 1500 R, Cs = 100 pF)

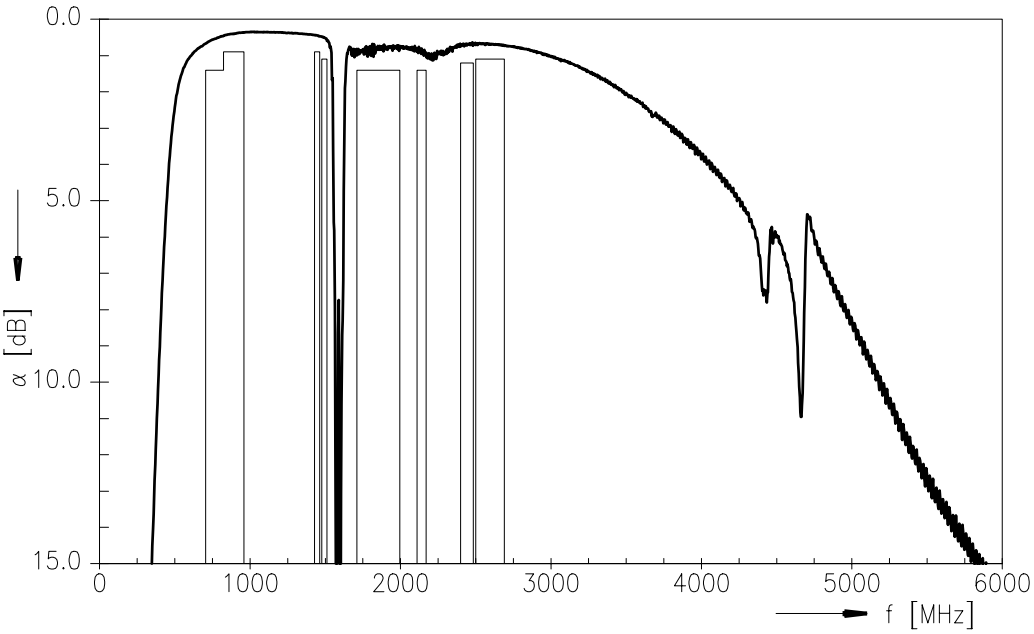
ANT - GPS/GLONASS (transfer function passband):



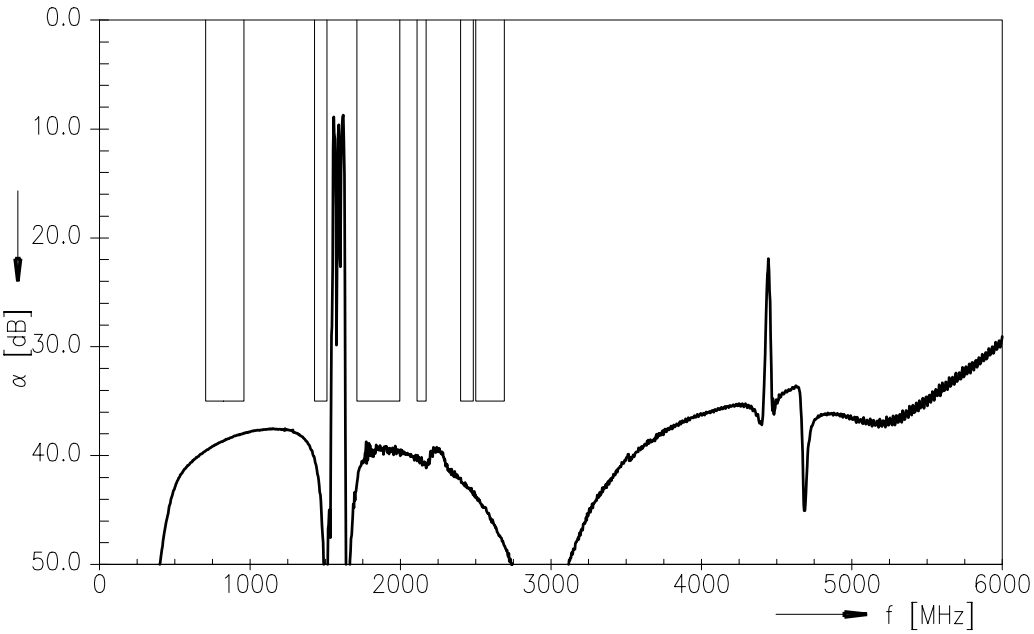
ANT - GPS/GLONASS (transfer function wideband):



ANT - NON (transfer function):

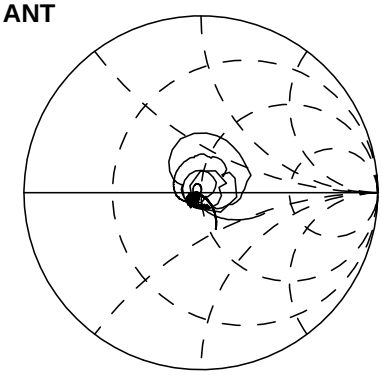


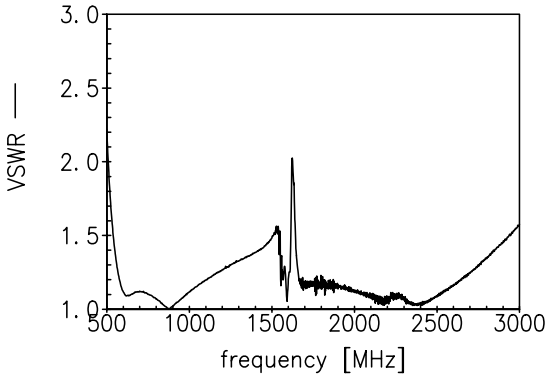
GPS - NON (isolation, transfer function):



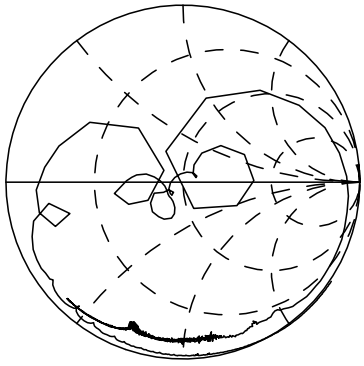
Smith charts / VSWR

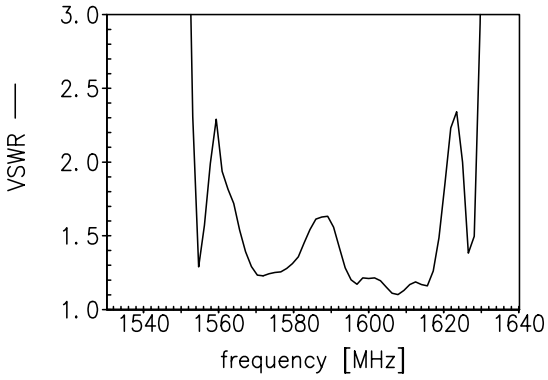
S_{11} ANT



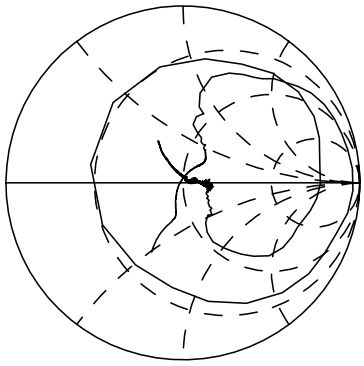


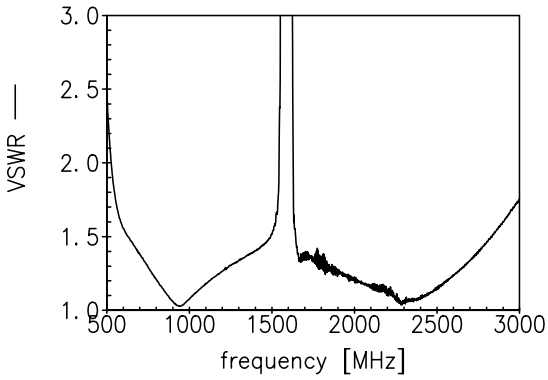
S_{22} GPS/GLONASS





S_{33} NON





References

Type	B9839
Ordering code	B39162B9839P810
Marking and package	C61157-A8-A49
Packaging	F61074-V8222-Z000
Date codes	L_1126
S-parameters	B9839_NB_UN.s3p, B9839_WB_UN.s3p 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.
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