



SAW Components

SAW GPS Filter

Series/type:	B9080
Ordering code:	B39162B9080L310
Date:	May 12, 2009
Version:	2.5



SAW Components

B9080

SAW GPS Filter

1575.42 MHz

Data Sheet



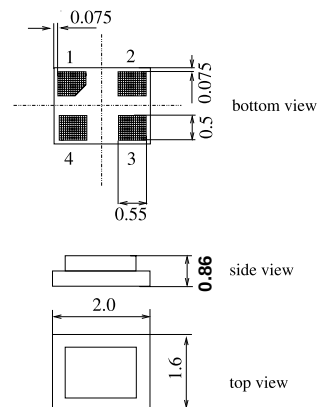
Application

- ESD robust low-loss RF GPS filter
- High ESD protection at the filter input
- Usable passband: 4 MHz
- Very low insertion attenuation
- Very high out of band selectivity
- Unbalanced to unbalanced operation
- No matching network required for operation at 50 Ω



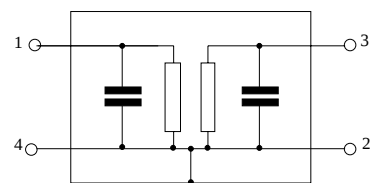
Features

- Package size 2.0 x 1.6 x 0.86. mm³
- Package code DCS4M
- RoHS compatible
- Approximate weight 0.007 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**



Pin configuration

- 1 Input
- 3 Output
- 2,4 Case ground





SAW Components

B9080

SAW GPS Filter

1575.42 MHz

Data Sheet



Characteristics of Filter

Temperature range for specification: $T = -30\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
Terminating source impedance: $Z_S = 50\ \Omega$
Terminating load impedance: $Z_L = 50\ \Omega$

		B9080			
		min.	typ. @ 25 °C	max.	
Center frequency	f _C	—	1575.42	—	MHz
Maximum insertion attenuation	α _{max}	—	1.2	1.5	dB
1573.42 ... 1577.42 MHz					
Amplitude ripple (p-p)	Δα	—	0.1	0.4	dB
1573.42 ... 1577.42 MHz					
VSWR (Input and Output)		—	1.35	1.8	
1573.42 ... 1577.42 MHz					
IIP2 (2 nd order Input Intercept Point)					
2 tone (cw) method:					
P1@+22.5dBm @F1=824MHz..915MHz					
P2 @-0.5dBm @F2=F1+1575.42MHz	110.5	117.8	—	dBm	
P1@+21dBm @F1=824MHz..915MHz					
P2 @+14dBm @F2=F1+1575.42MHz	98.0	115	—	dBm	
P1@+20dBm @F1=1710MHz..1785MHz					
P2 @-13.3dBm @F2=F1+1575.42MHz	95	111	—	dBm	
P1@+20dBm @F1=1850MHz..1910MHz					
P2 @-13.3dBm @F2=F1+1575.42MHz	95	110	—	dBm	
IIP3 (3 rd order Input Intercept Point)					
2 tone (cw) method:					
P1@+20dBm @F1=1710MHz..1785MHz					
P2 @+11dBm @F2=2*F1+1575.42MHz	95	110	—	dBm	
P1@+21dBm @F1=824MHz..915MHz					
P2@-13.3dBm @F2=2*F1+1575.42MHz	90	105	—	dBm	
P1@+20dBm @F1=2500MHz..2570MHz					
P2@-13.3dBm @F2=2*F1-1575.42MHz	85	100	—	dBm	
Group delay ripple (p-p)	Δτ	—	8	20	ns
1573.42 ... 1577.42 MHz					



SAW Components	B9080
SAW GPS Filter	1575.42 MHz

Data Sheet



					B9080			
					min.	typ. @ 25 °C	max.	
Attenuation				α				
	0.1	...	824.0	MHz	48	57	—	dB
	824.0	...	849.0	MHz	50	57	—	dB
	849.0	...	915.0	MHz	50	56	—	dB
	915.0	...	1400.0	MHz	48	55	—	dB
	1611.0	...	1648.0	MHz	6	13	—	dB
	1648.0	...	1710.0	MHz	45	61	—	dB
	1710.0	...	1785.0	MHz	53	61	—	dB
	1785.0	...	1850.0	MHz	46	61	—	dB
	1850.0	...	1910.0	MHz	46	62	—	dB
	1910.0	...	1980.0	MHz	46	61	—	dB
	1980.0	...	2400.0	MHz	43	51	—	dB
	2400.0	...	2484.0	MHz	43	50	—	dB
	2484.0	...	2570.0	MHz	42	48	—	dB
	2570.0	...	3900.0	MHz	33	41	—	dB
	3900.0	...	4400.0	MHz	30	41	—	dB
	4400.0	...	5150.0	MHz	15	27	—	dB
	5150.0	...	5400.0	MHz	14	20	—	dB
	5400.0	...	6000.0	MHz	10	15	—	dB
	$((824 - 849) + (2400 - 2484))/2$			MHz	45	53.5	—	dB
	$((849 - 915) + (2400 - 2484))/2$			MHz	45	53	—	dB



SAW Components

B9080

SAW GPS Filter

1575.42 MHz

Data Sheet



Maximum ratings of Filter

Operable temperature range	T	−30/+85	°C	
Storage temperature range	T _{stg}	−40/+85	°C	
DC voltage	V _{DC}	5	V	
ESD voltage @ Input				
Contact Discharge	V _{ESD}	± 8 ¹⁾	kV	at input pin 1
Air Discharge	V _{ESD}	± 15 ²⁾	kV	at input pin 1
Machine Model	V _{ESD}	± 1000 ³⁾	V	at input pin 1
Machine Model	V _{ESD}	± 100 ²⁾	V	at output pin 3
Charge Device Model	V _{ESD}	± 500 ⁴⁾	V	at input and output (pin 1 and 3)
Human Body Model	V _{ESD}	± 200 ⁵⁾	V	at input and output (pin 1 and 3)
Input power				
WCDMA systems	P _{IN}	30	dBm	Average, cw
TDMA systems	P _{IN}	36	dBm	Peak, max. duty cycle 1:2

¹⁾ acc. to IEC61000-4-2 (Contact discharge, R_s = 330 R, C_s = 150 pF), 10 negative & 10 positive pulses.

²⁾ acc. to IEC61000-4-2 (Air discharge, R_s = 330 R, C_s = 150 pF), 10 negative & 10 positive pulses.

³⁾ acc. to JESD22-A115A (Machine model, R_s = 0 R, C_s = 200 pF), 10 negative & 10 positive pulses.

⁴⁾ acc. to JESD22-C101 (Charge device model)

⁵⁾ acc. to JESD22-A114 (Human body model, R_s = 1500 R, C_s = 100 pF), 1 negative & 1 positive pulse.



SAW Components

B9080

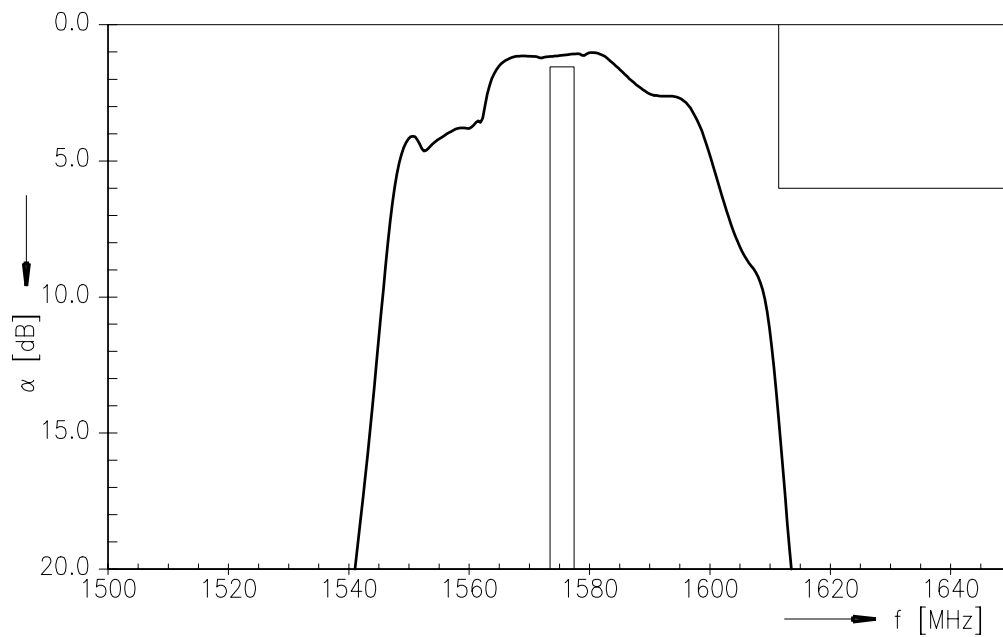
SAW GPS Filter

1575.42 MHz

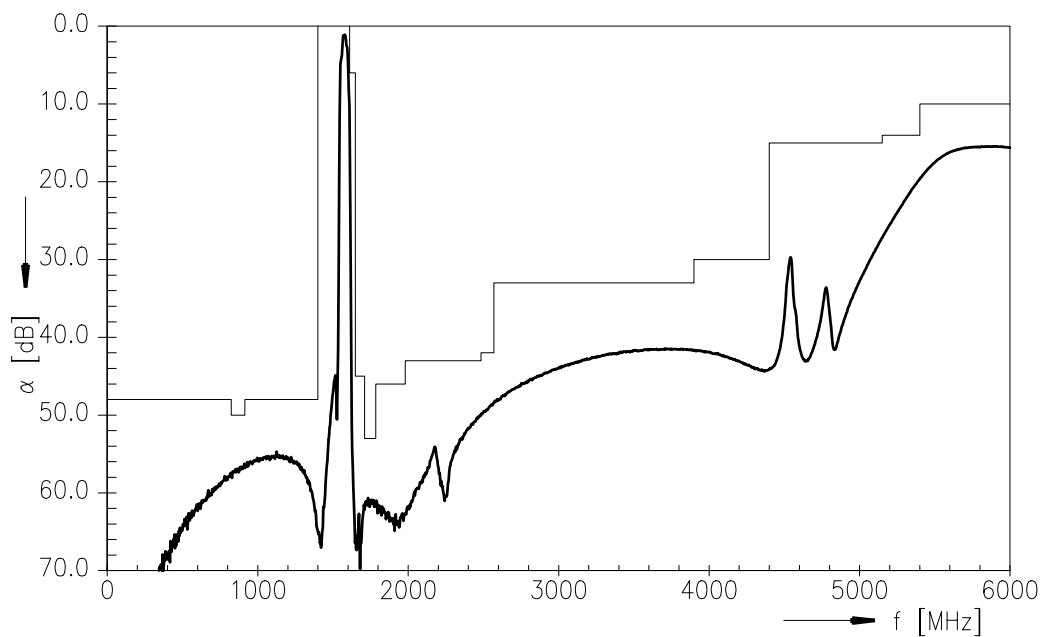
Data Sheet



Transfer function (passband)



Transfer function



Please read *cautions and warnings* and *important notes* at the end of this document.



SAW Components

B9080

SAW GPS Filter

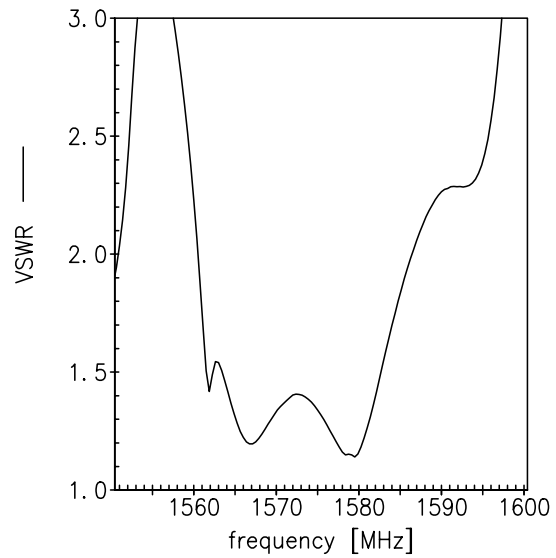
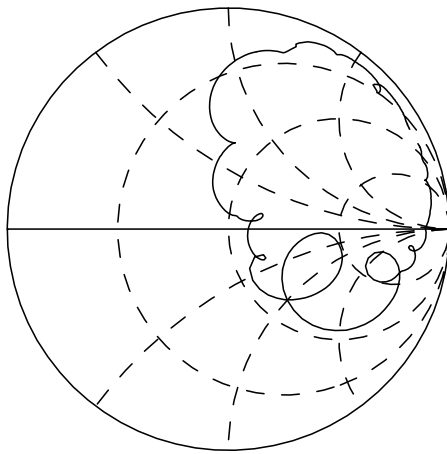
1575.42 MHz

Data Sheet

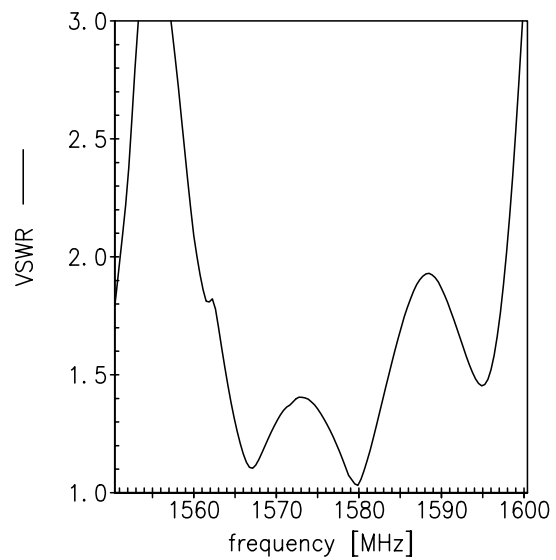
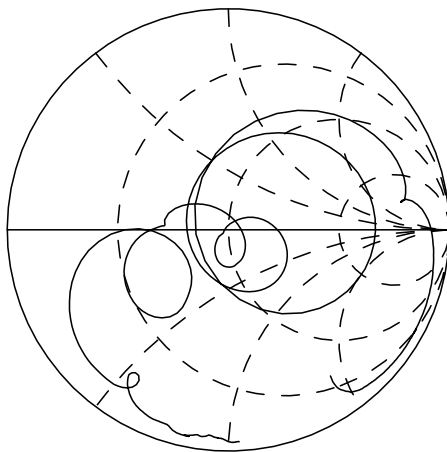


Smith chart / VSWR

S_{11} function



S_{22} function



Please read *cautions and warnings* and *important notes* at the end of this document.

**SAW Components****B9080****SAW GPS Filter****1575.42 MHz**

Data Sheet

**References**

Type	B9080
Ordering code	B39162B9080L310
Marking and package	C61157-A7-A151
Packaging	F61074-V8224-Z000
Date codes	L_1126
S-parameters	B9080_NB.s2p, B9080_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."
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 .

Published by EPCOS AG

Surface Acoustic Wave Components Division

P.O. Box 80 17 09, 81617 Munich, GERMANY

© EPCOS AG 2009. This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.

Please read *cautions and warnings and important notes* at the end of this document.



Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule, EPCOS is either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether an EPCOS product with the properties described in the product specification is suitable for use in a particular customer application.
2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.
3. **The warnings, cautions and product-specific notes must be observed.**
4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet (www.epcos.com/material). Should you have any more detailed questions, please contact our sales offices.
5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.
We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available.
The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.
6. Unless otherwise agreed in individual contracts, **all orders are subject to the current version of the "General Terms of Delivery for Products and Services in the Electrical Industry" published by the German Electrical and Electronics Industry Association (ZVEI)**.
7. The trade names EPCOS, BAOKE, Alu-X, CeraDiode, CSSP, CTVS, DSSP, MiniBlue, MKK, MLSC, MotorCap, PCC, PhaseCap, PhaseMod, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SIMID, SineFormer, SIOV, SIP5D, SIP5K, ThermoFuse, WindCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at www.epcos.com/trademarks.