EPCOS

# SAW Components

## SAW GPS filter

**Series/type:** **B9037**
**Ordering code:** **B39162-B9037-E910**

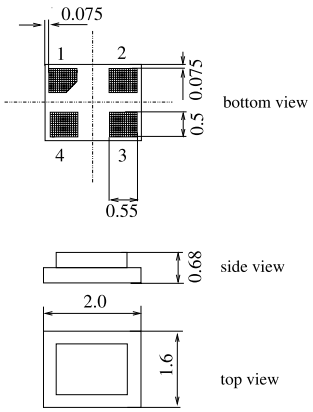
Date: April 26, 2007
Version: 2.0

## Application

- Low-loss RF filter GPS filter
- Usable passband: 2 MHz
- Very low insertion attenuation
- Unbalanced to unbalanced operation
- No matching network required for operation at 50 Ω

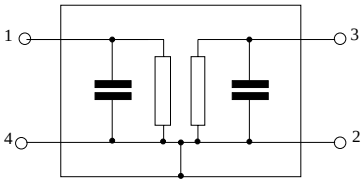
## Features

- Package size 2.0 x 1.6 x 0.68 mm³
- Package code DCS4G
- RoHS compatible
- Approximate weight 0.007 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
- 3 Output
- 2,4 Case ground



## Characteristics of Filter

Temperature range for specification: T = –30 ˚C to +85˚C
Terminating source impedance: $Z_S$ = 50 Ω
Terminating load impedance: $Z_L$ = 50 Ω

| | | B9037[1] | | | DGL[2] | |
|---|---|---|---|---|---|---|
| | | min. | typ. @ 25 ˚C | max. | min./ max. | |
| **Center frequency** | $f_C$ | — | 1575.42 | — | | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | | |
| 1574.42 ... 1576.42 MHz | | — | 0.9 | 1.4 | | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | | |
| 1574.42 ... 1576.42 MHz | | — | 0.05 | 0.5 | | dB |
| **Return loss (Input and Output)** | | | | | | |
| 1574.42 ... 1576.42 MHz | | 10 | 18 | — | | dB |
| **Attenuation** | $\alpha$ | | | | | |
| 0.3 ... 1522.42 MHz | | 30 | 35 | — | | dB |
| 1628.42 ... 1750.0 MHz | | 30 | 38 | — | | dB |
| 1750.0 ... 1990.0 MHz | | 32 | 39 | — | | dB |
| 1990.0 ... 3000.0 MHz | | 30 | 38 | — | | dB |
| 3000.0 ... 4000.0 MHz | | 20 | 33 | — | | dB |
| 4000.0 ... 6000.0 MHz | | 17 | 28 | — | | dB |

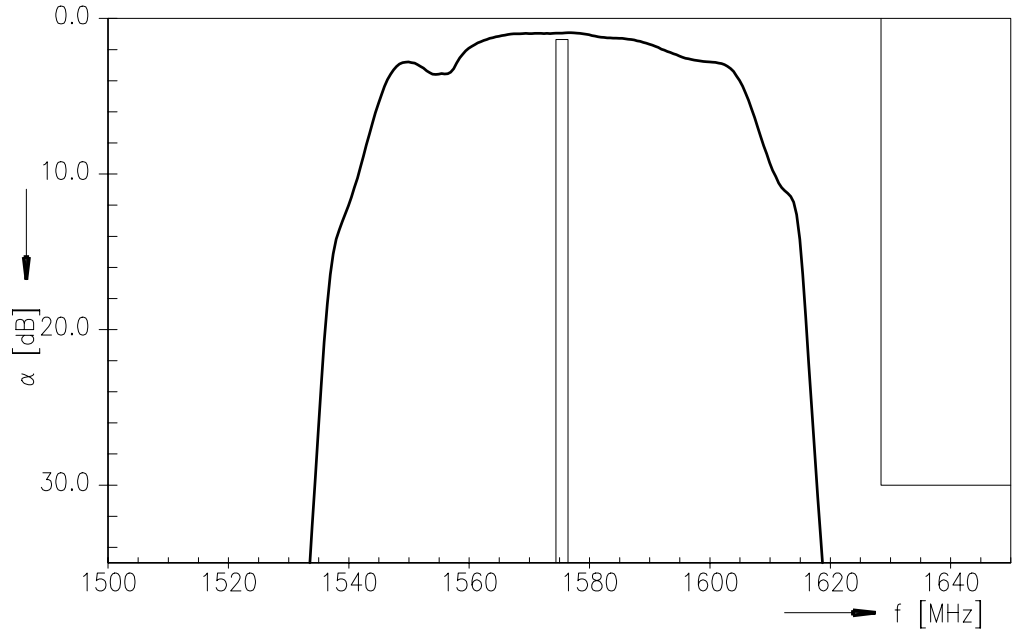
1) Values in columns min, typ and max indicate the development status of the current version.
2) Values in column DesignGoal (DGL) indicate the target performance.

**Maximum ratings of Filter**

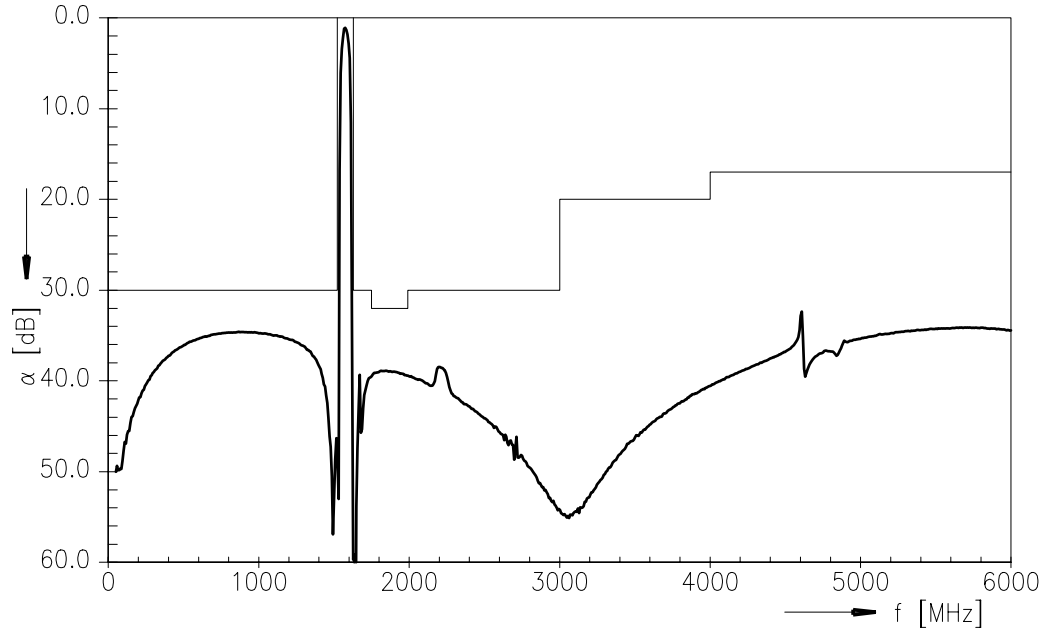
| | | | | |
|---|---|---|---|---|
| Operable temperature range | T | –40/+85 | ˚C | |
| Storage temperature range | $T_{stg}$ | –40/+85 | ˚C | |
| DC voltage | $V_{DC}$ | 5 | V | |
| ESD voltage | $V_{ESD}$ | 50[1)] | V | machine model, 10 pulses |
| Input power | $P_{IN}$ | 0 | dBm | cw |

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

**Transfer function (passband)**

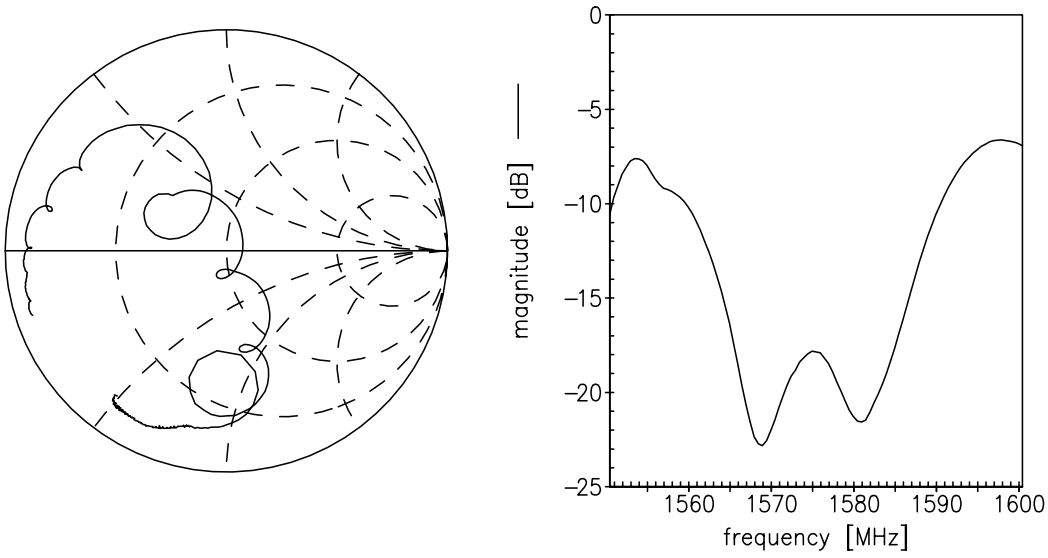



**Transfer function**

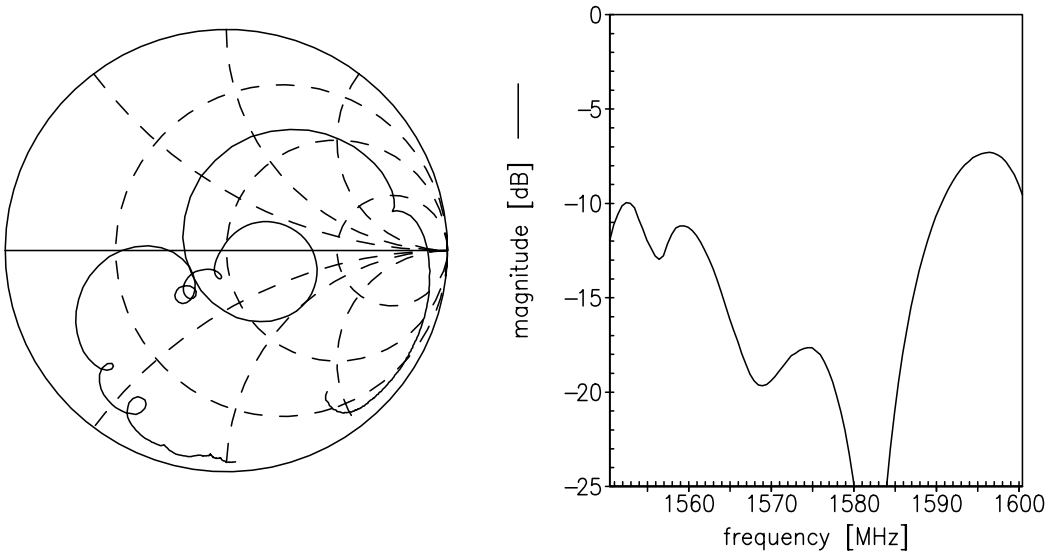


**Smith chart / Return loss**

**$S_{11}$ function**




**$S_{22}$ function**



**References**

| | |
|---|---|
| **Type** | B9037 |
| **Ordering code** | B39162-B9037-E910 |
| **Marking and package** | C61157-A7-A105 |
| **Packaging** | F61074-V8152-Z000 |
| **Date codes** | L_1126 |
| **S-parameters** | B9037_NB.s2p<br>B9037_WB.s2p |
| **Soldering profile** | S_6001 |
| **RoHS compatible** | defined as compatible with the following documents:<br>"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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