



*Total Solution Provider in Saw Device*

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# SA05509CD1

55.0MHz IF SAW Filter  
9.79 MHz Bandwidth  
Revision 0: 10. MAR. 2009



- Electrical Characteristics**
  - Package Dimensions**
  - Testing Environment**
  - Frequency Characteristics**
- 

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**Electrical Characteristics**

**Maximum Ratings**

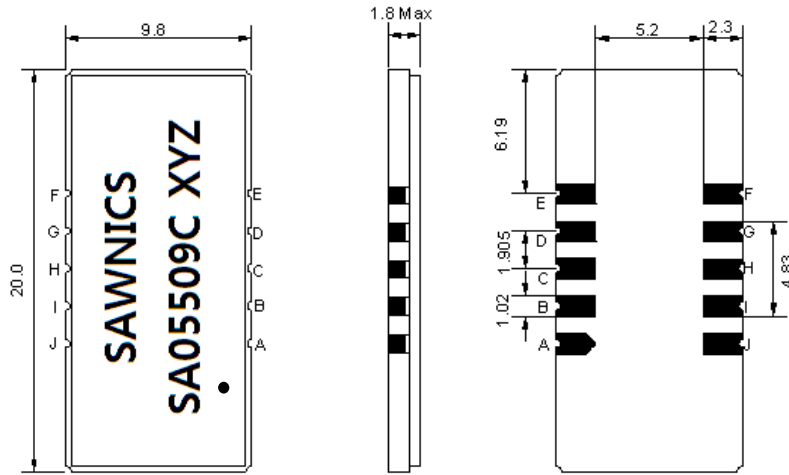
| Parameters Description                         | Unit            | Minimum | Typical    | Maximum |
|--|-----------------|---------|------------|---------|
| Operation Temperature Range                    | °C              | -10     | -          | 70      |
| Storage Temperature Range                      | °C              | -40     | -          | 85      |
| Maximum DC Voltage                             | V               | -       | -          | 10      |
| Maximum Input Power                            | dBm             | -       | -          | 10      |
| Source Impedance (single ended) <sup>(1)</sup> | Ω               | -       | 50         | -       |
| Load Impedance (single ended) <sup>(1)</sup>   | Ω               | -       | 50         | -       |
| Package type & size                            | D1              |         |            |         |
| Length x Width                                 | mm <sup>2</sup> | -       | 20.0 x 9.8 | -       |
| Height   | mm              | -       | -          | 1.8     |

**Electrical Specification**

| Parameters Description             | Unit   | Minimum | Typical | Maximum |
|------------------------------------|--------|---------|---------|---------|
| Center Frequency (Fo)              | MHz    | -       | 55.0    | -       |
| Insertion Loss at Fo               | dB     | -       | 24.0    | 26.0    |
| Group Delay Variation (Fo±4.52MHz) | ns     | -       | 30      | 60      |
| Absolute Delay Time at Fo          | us     | -       | 2.34    | -       |
| Temperature Coefficient            | ppm/°C | -       | -72     | -       |
| Amplitude Ripple (Fo±4.52MHz)      | dB     | -       | 0.38    | 0.90    |
| Bandwidth at -1dB                  | MHz    | 9.60    | 9.79    | -       |
| Bandwidth at -3dB                  | MHz    | -       | 10.10   | -       |
| Bandwidth at -40dB                 | MHz    | -       | 11.50   | 11.65   |
| Bandwidth at -50dB                 | MHz    | -       | 11.62   | -       |
| Ultimate Rejection                 | dB     | 50      | 53      | -       |

**Notes :** (1) With Matching Network (Ref. Testing Environment Circuit as shown below).  
Those impedances could be modified with different impedance values and/or structures, if necessary.

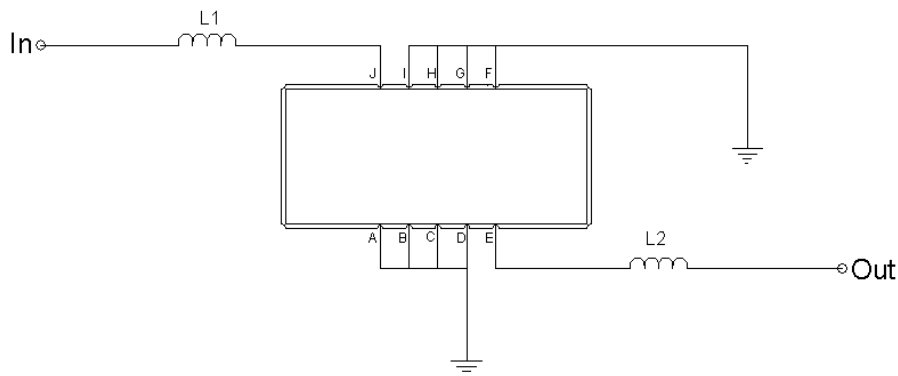
**Package Dimensions**



- ① SAWNICS: Brand
- ② SA05509C: Model Name
- ③ X : Date Code (Year)
- ④ Y : Date Code (Month)
- ⑤ Z : Date Code (Date)
- : Index Dot

| Pin Description        |        |
|------------------------|--------|
| A, B, C, D, F, G, H, I | Ground |
| J                      | Input  |
| E                      | Output |

**Testing Environment**



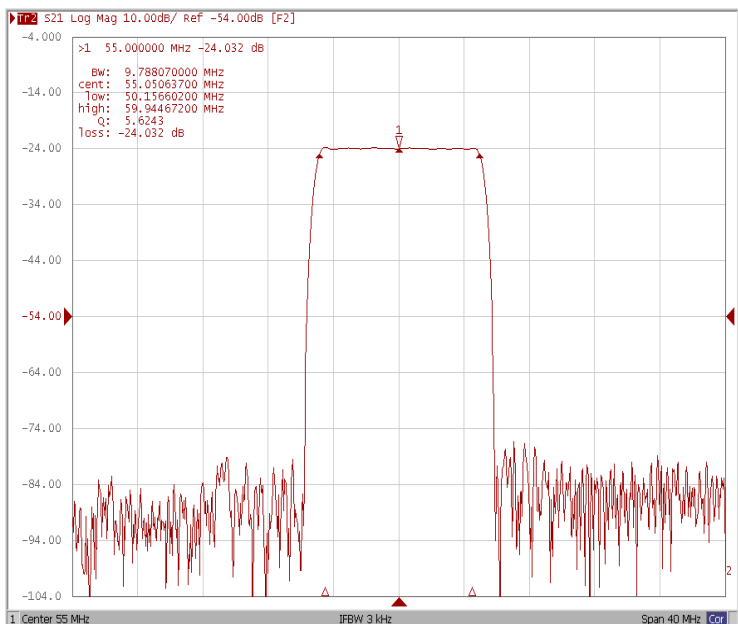
| Test Fixture & Values |          |
|-----------------------|----------|
| Input                 | L1=22nH  |
| Output                | L2=22 nH |
| Source/Load Impedance | 50 Ω     |



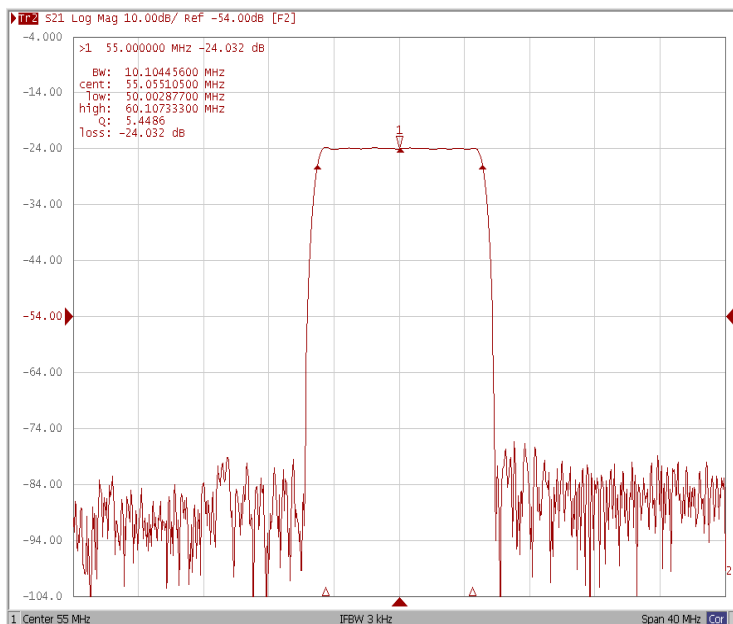
# Frequency Characteristics

## Frequency Response

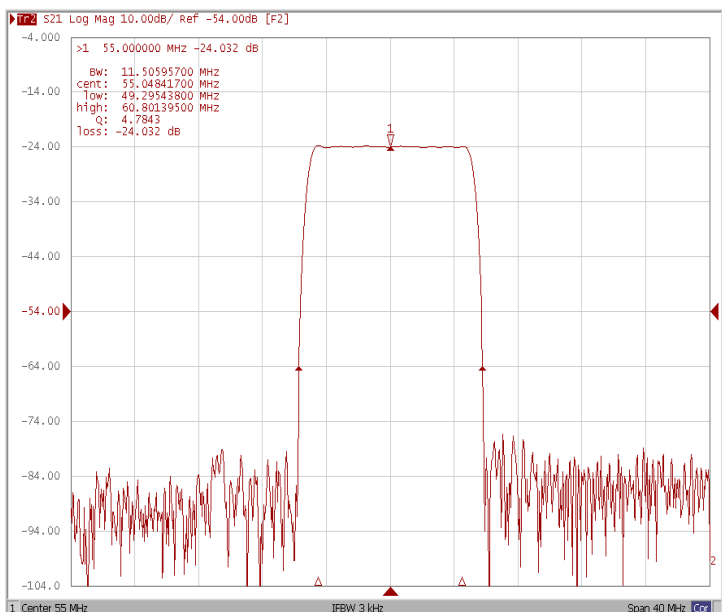
Bandwidth at -1.0 dB



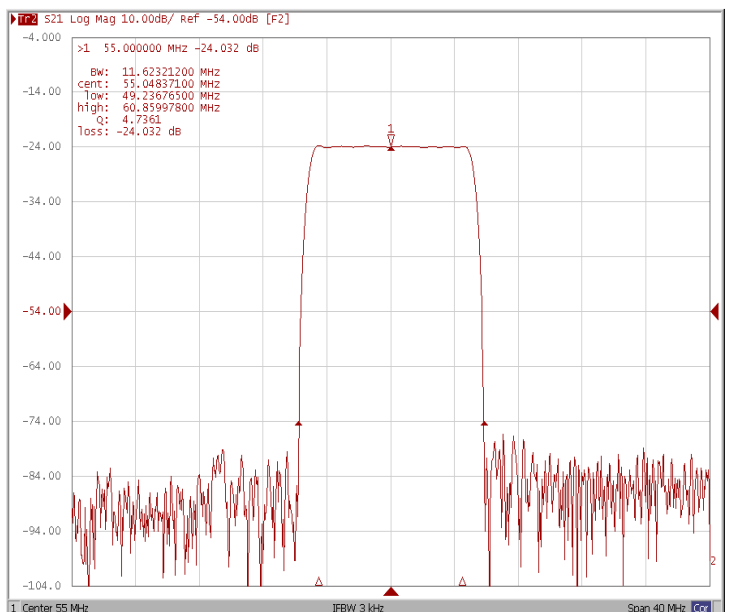
Bandwidth at -3.0 dB



Bandwidth at -40.0 dB



Bandwidth at -50.0 dB

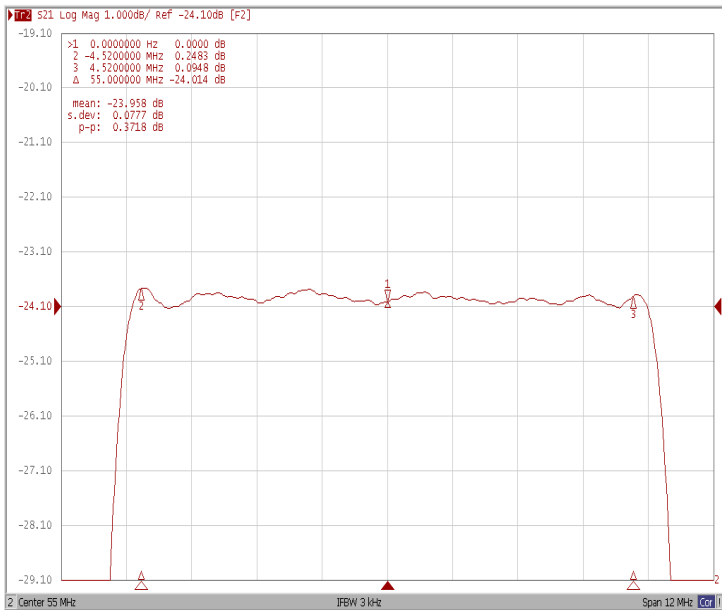




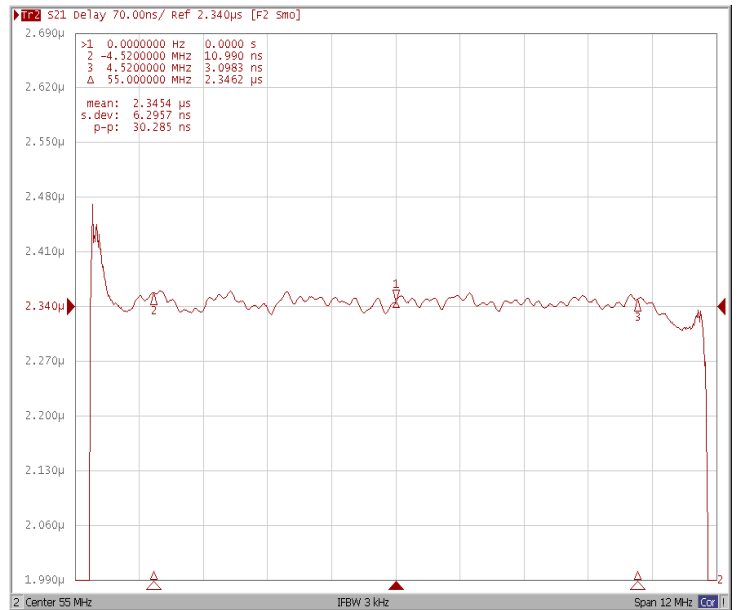
# Frequency Characteristics

## Frequency Response

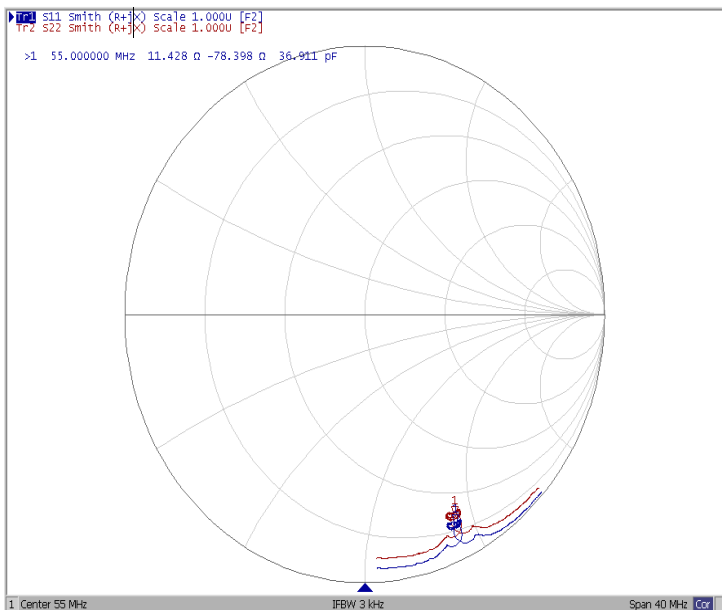
Ripple Variation  $Fo \pm 4.52\text{MHz}$



Group Delay Variation  $Fo \pm 4.52\text{MHz}$



Smith Chart



VSWR

