



*Total Solution Provider in Saw Device*

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# SA18515BD1

185.0 MHz IF SAW Filter  
15.50 MHz Bandwidth  
Revision 0: 06. May. 2009



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- 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     |

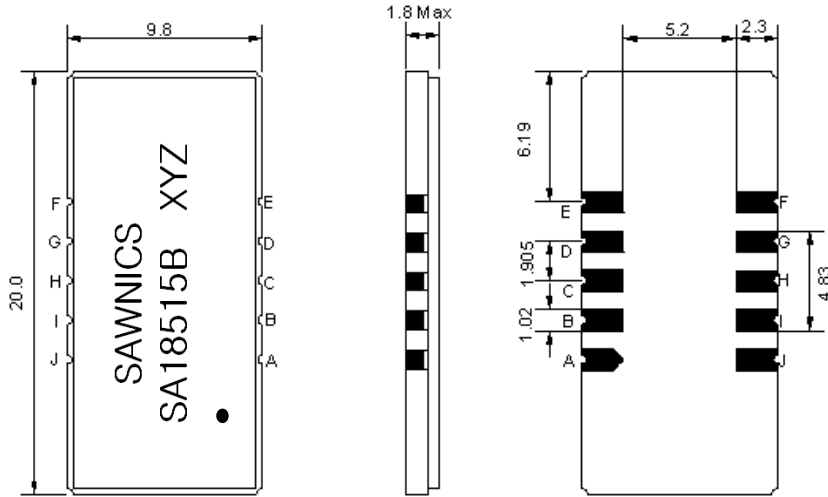
### Electrical Specification

| Parameters Description            | Unit   | Minimum | Typical | Maximum |
|-----------------------------------|--------|---------|---------|---------|
| Center Frequency (Fo)             | MHz    | -       | 185.0   | -       |
| Insertion Loss at Fo              | dB     | -       | 25.50   | 27.00   |
| Group Delay Variation (Fo±7.5MHz) | nsec   | -       | 30      | 60      |
| Absolute Delay                    | usec   | -       | 2.54    | 2.60    |
| Passband Ripple (Fo±7.5MHz)       | dB     | -       | 0.55    | 1.00    |
| Bandwidth at -1dB                 | MHz    | 15.35   | 15.50   | -       |
| Bandwidth at -3dB                 | MHz    | -       | 15.85   | -       |
| Bandwidth at -40dB                | MHz    | -       | 17.37   | 17.55   |
| Bandwidth at -50dB                | MHz    | -       | 17.50   | -       |
| Ultimate Rejection                | dB     | 50      | 55      | -       |
| Temperature coefficient           | ppm/°C | -       | -20     | -       |

**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.

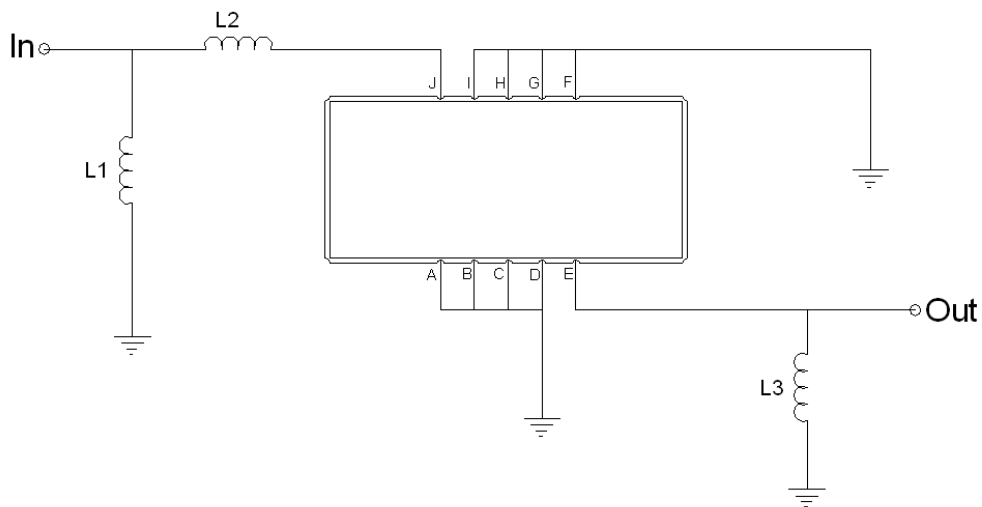
**□ Package Dimensions**



- ① SAWNICS: Brand
- ② SA18515B: 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**

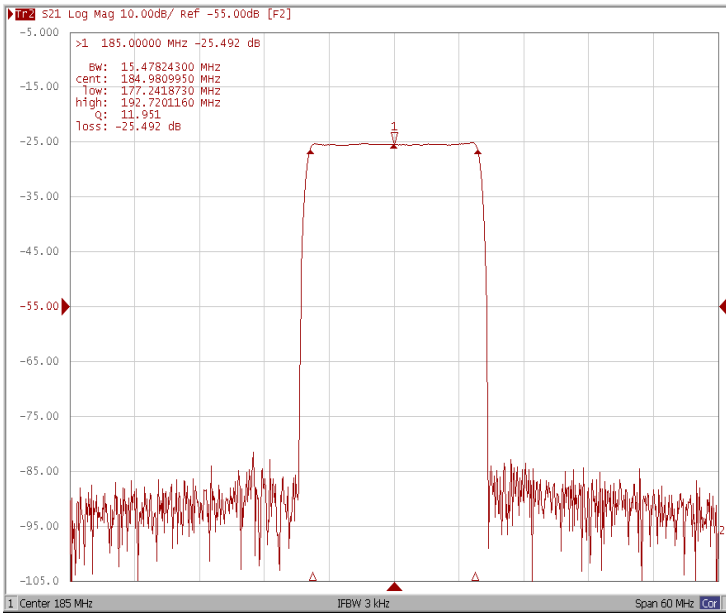


| Test Fixture & Values |                   |
|-----------------------|-------------------|
| Input                 | L1=15nH, L2=8.2nH |
| Output                | L3=22nH,          |
| Source/Load Impedance | 50 Ω              |

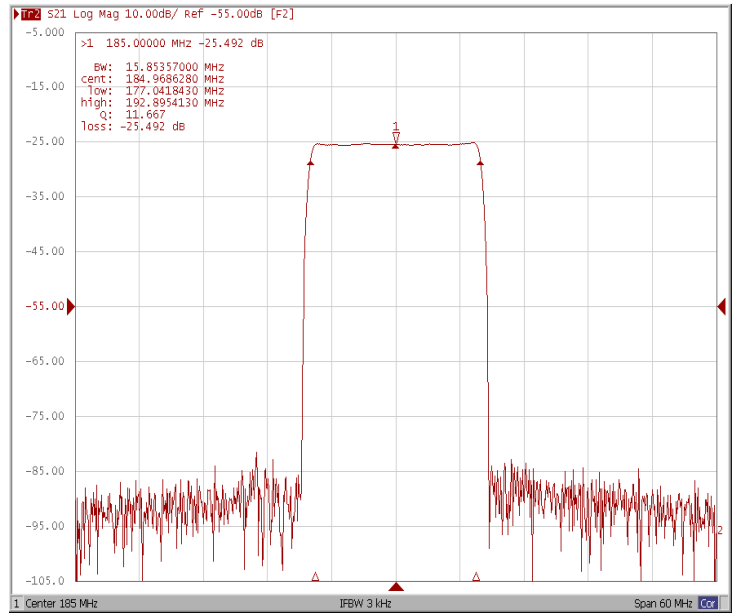
### □ Frequency Characteristics

#### Frequency Response

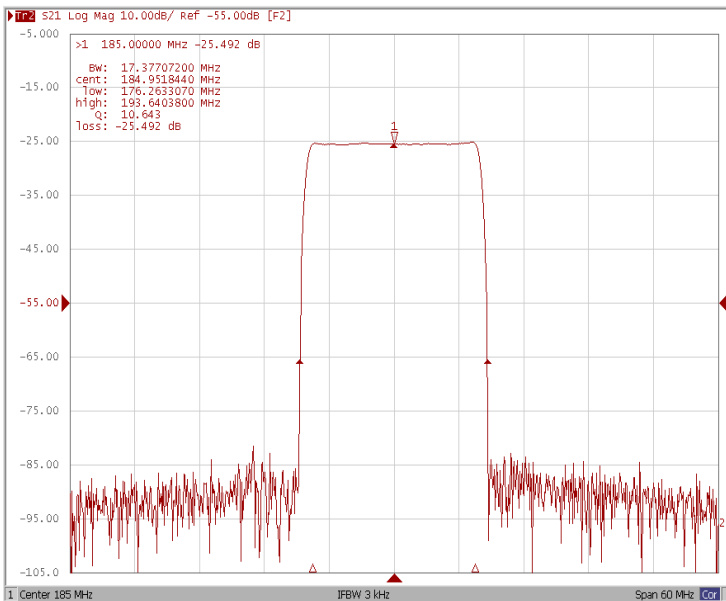
**Bandwidth at -1.0 dB**



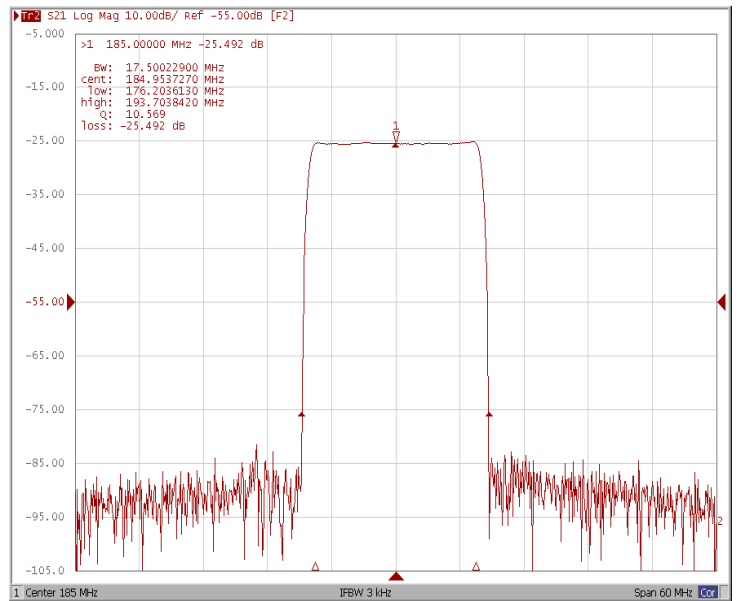
**Bandwidth at -3.0 dB**



**Bandwidth at -40.0 dB**



**Bandwidth at -50.0 dB**



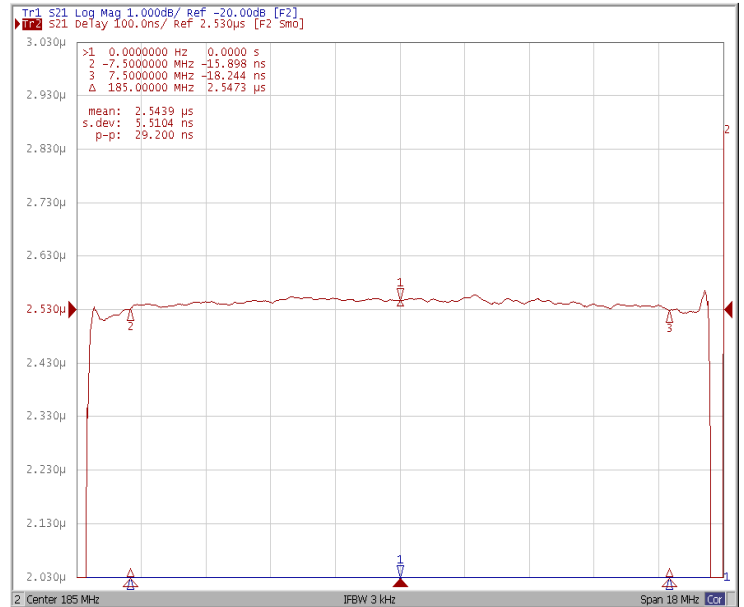
### □ Frequency Characteristics

#### Frequency Response

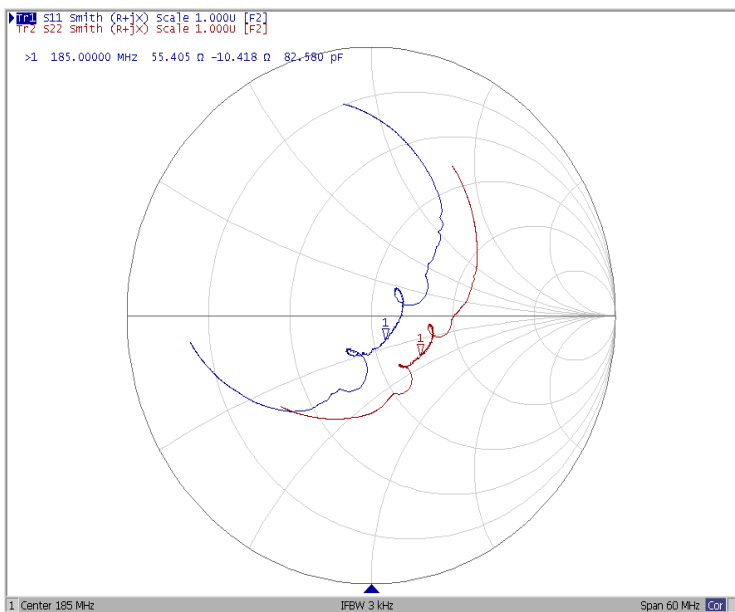
Ripple Variation  $F_0 \pm 7.5\text{MHz}$



Group Delay Variation  $F_0 \pm 7.5\text{MHz}$



Smith Chart



VSWR

