

## Electrical Characteristics

### Maximum Ratings

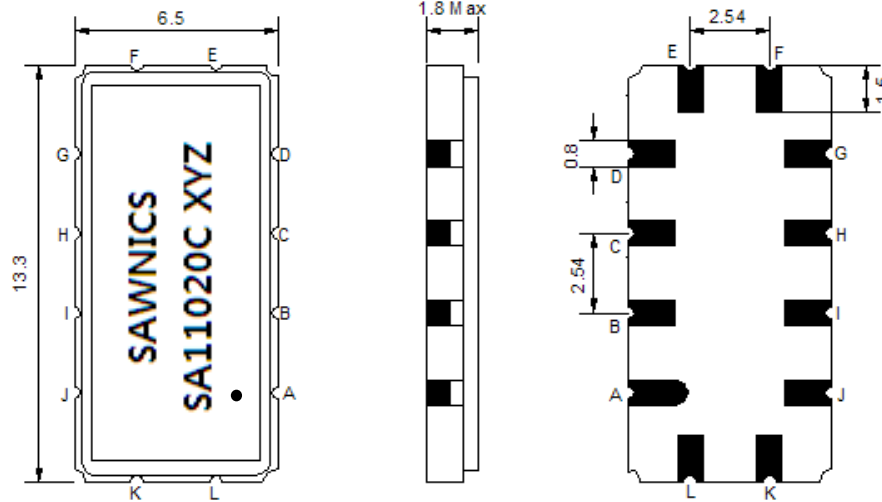
| Parameters Description                         | Unit            | Minimum | Typical    | Maximum |
|--|-----------------|---------|------------|---------|
| Operation Temperature Range                    | °C              | -       | 25         | -       |
| Storage Temperature Range                      | °C              | -20     | -          | 70      |
| 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                            | V               |         |            |         |
| Length x Width                                 | mm <sup>2</sup> | -       | 13.3 x 6.5 | -       |
| Height   | mm              | -       | -          | 1.8     |

### Electrical Specification

| Parameters Description  | Unit   | Minimum | Typical | Maximum |
|-------------------------|--------|---------|---------|---------|
| Center Frequency (Fo)   | MHz    | 110.00  | 110.10  | 110.20  |
| Insertion Loss at Fo    | dB     | -       | 21.50   | 24.00   |
| Group Delay Variation   | ns     | -       | 30      | 50      |
| Absolute Delay          | us     | -       | 1.57    | -       |
| Temperature Coefficient | ppm/°C | -       | -72     | -       |
| Passband Ripple         | dB     | -       | 0.80    | 1.00    |
| Bandwidth at -1dB       | MHz    | 20.20   | 20.35   | -       |
| Bandwidth at -30dB      | MHz    | -       | 20.74   | -       |
| Bandwidth at -40dB      | MHz    | -       | 22.39   | 22.45   |
| Ultimate Attenuation    | dB     | 50      | 52      | -       |

**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.

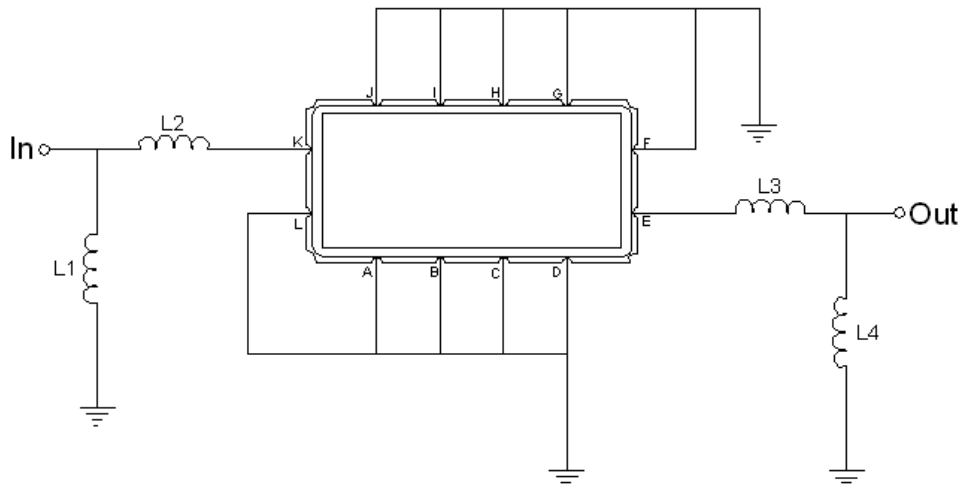
## Package Dimensions



- ① SAWNICs: Brand
- ② SA11020C: 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, J, L | Ground |
| K                            | Input  |
| E                            | Output |

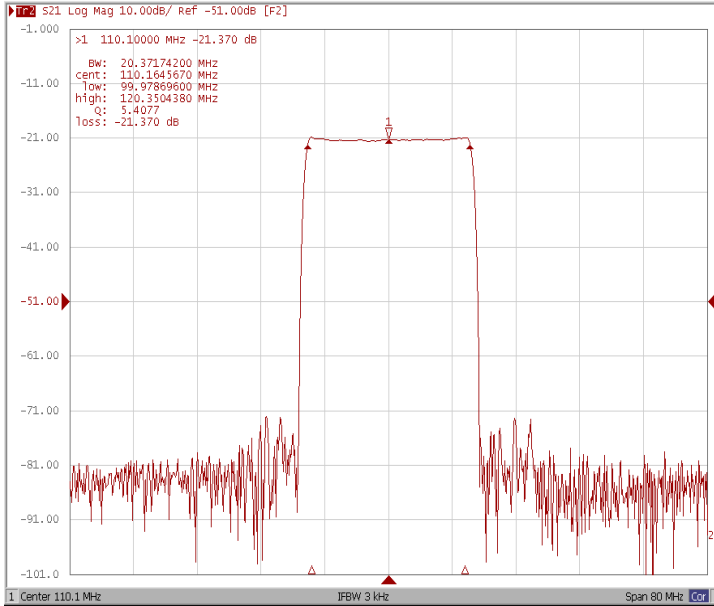
## Testing Environment



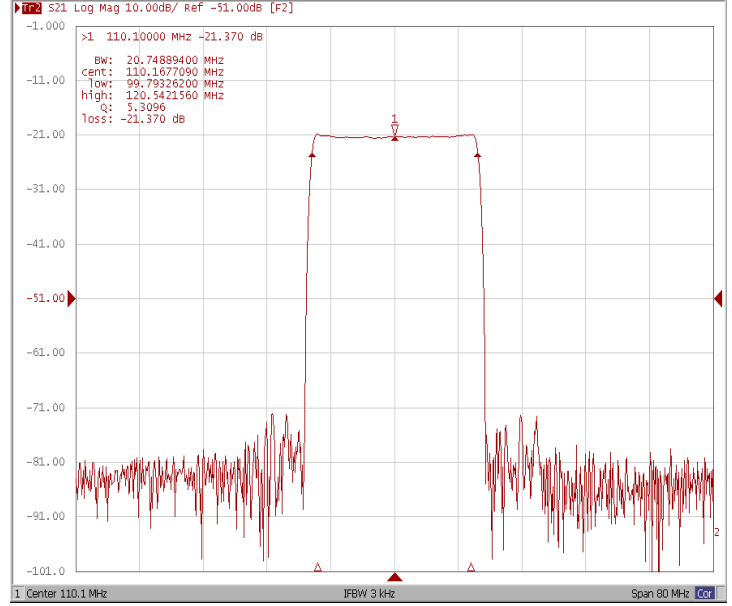
| Test Fixture & Values |                    |
|-----------------------|--------------------|
| Input                 | L1=180 nH, L2=18nH |
| Output                | L3=18nH, L4=180nH  |
| Source/Load Impedance | 50 $\Omega$        |

## Frequency Response

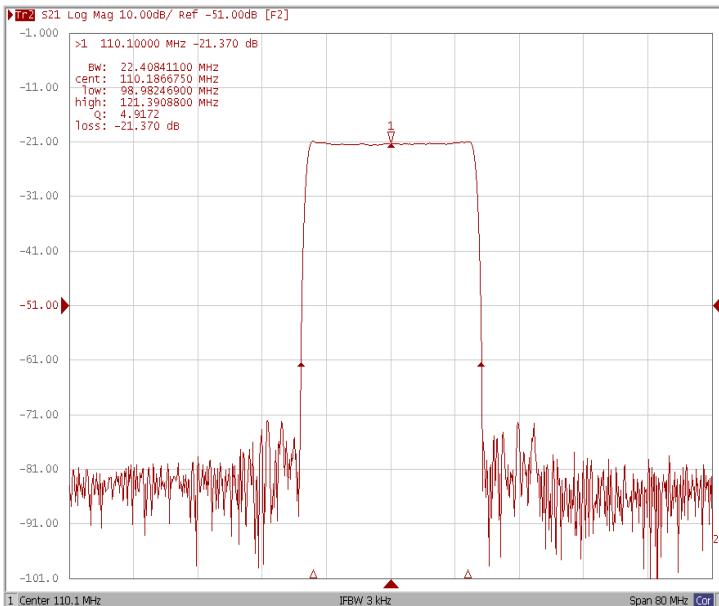
### Bandwidth at -1.0 dB



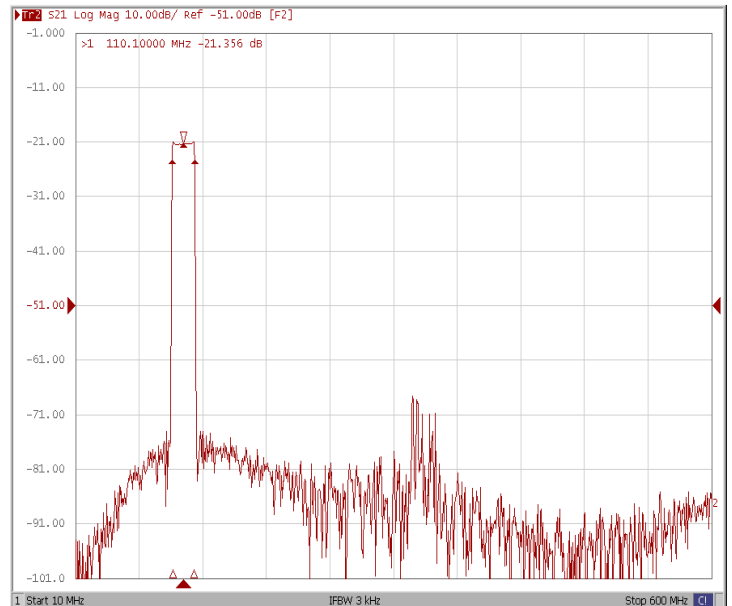
### Bandwidth at -3.0 dB



### Bandwidth at -40.0 dB

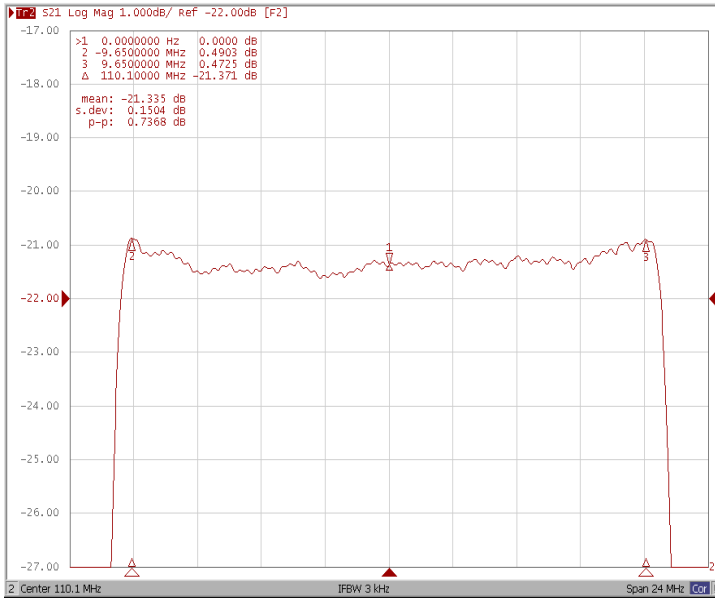


### Wide-Band

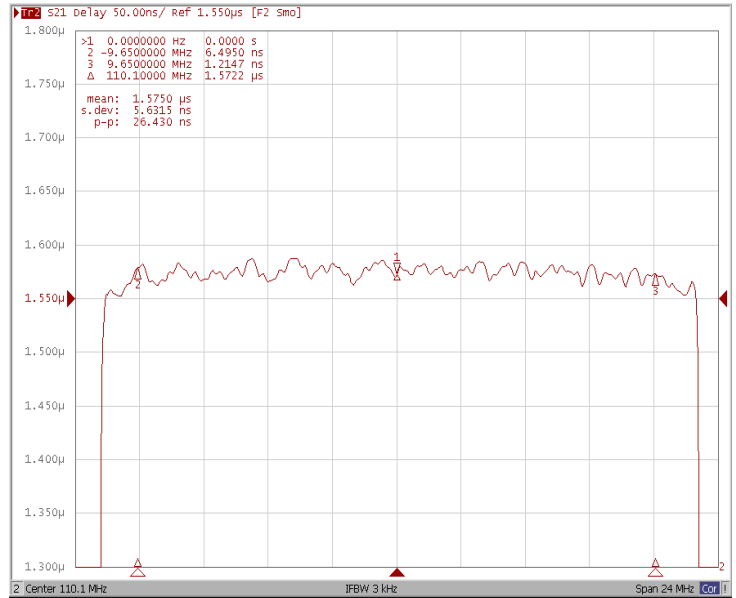


## Frequency Response

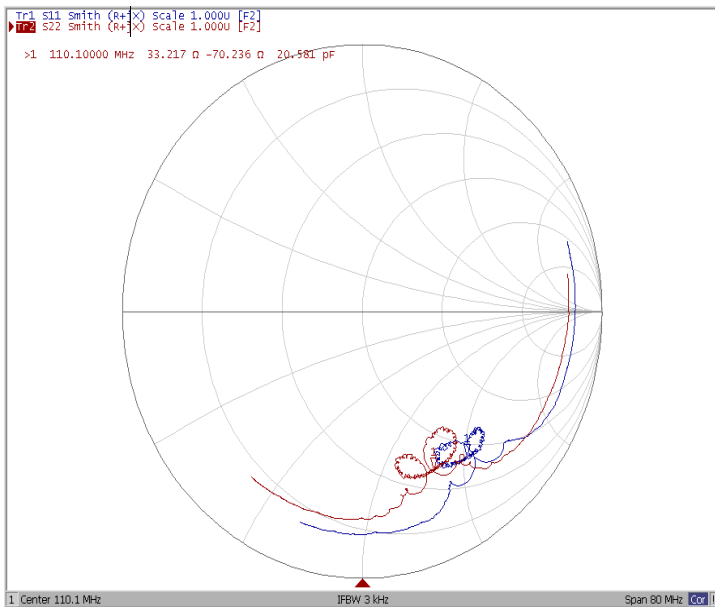
### Ripple Variation Fo±9.65MHz



### Group Delay Variation Fo±9.65MHz



### Smith Chart



### VSWR

