# ❒ Electrical Characteristics



## Maximum Ratings

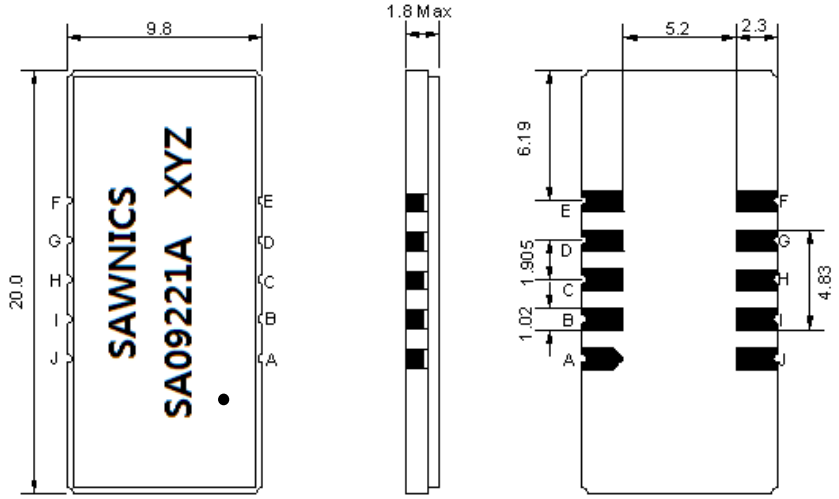
| Parameters Description | Unit | Minimum | Typical | Maximum |
|---|---|---|---|---|
| **Operation Temperature Range** | °C | - | 25 | - |
| **Storage Temperature Range** | °C | -40 | - | +85 |
| **Maximum DC Voltage** | V | - | - | 10 |
| **Maximum Input Power** | dBm | - | - | 10 |
| **Source Impedance (single ended)(1)** | Ω | - | 50 | - |
| **Load Impedance (single ended)(1)** | Ω | - | 50 | - |
| **Package type & size** | D1 | | | |
| **Length x Width** | mm² | - | 20.0 x 9.8 | - |
| **Height** | mm | - | - | 1.8 |

## Electrical Specification

| Parameters Description | Unit | Minimum | Typical | Maximum |
|---|---|---|---|---|
| **Center Frequency (Fo)** | MHz | - | 92.20 | - |
| **Insertion Loss at Fo** | dB | - | 21.80 | 23.50 |
| **Group Delay Variation (Fo±10.30MHz)** | nsec | - | 43 | 80 |
| **Absolute Delay at Fo** | usec | - | 2.17 | 2.30 |
| **Passband Ripple Variation(Fo±10.30MHz)** | dB | - | 0.55 | 1.00 |
| **Bandwidth at -1dB** | MHz | 20.85 | 21.12 | - |
| **Bandwidth at -3dB** | MHz | - | 21.47 | - |
| **Bandwidth at -20dB** | MHz | - | 22.38 | - |
| **Bandwidth at -40dB** | MHz | - | 22.79 | 22.95 |
| **Ultimate Rejection** | dB | 50 | 55 | - |
| **Temperature Coefficient** | ppm/°C | - | -72 | - |

**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.

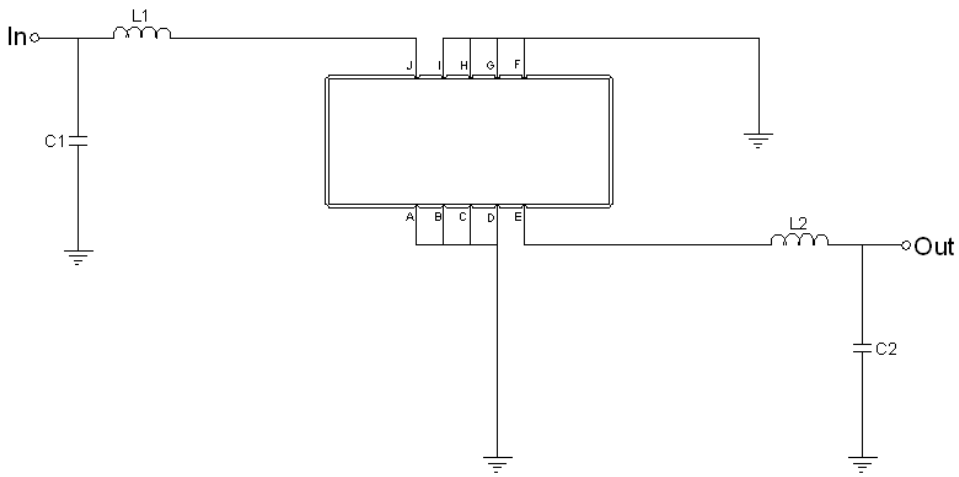
## ❒ Package Dimensions




① SAWNICS: Brand
② SA09221A: 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 = 100 nH, C1=12 pF |
| **Output** | L2 = 100 nH, C2=10 pF |
| **Source/Load Impedance** | 50 Ω |

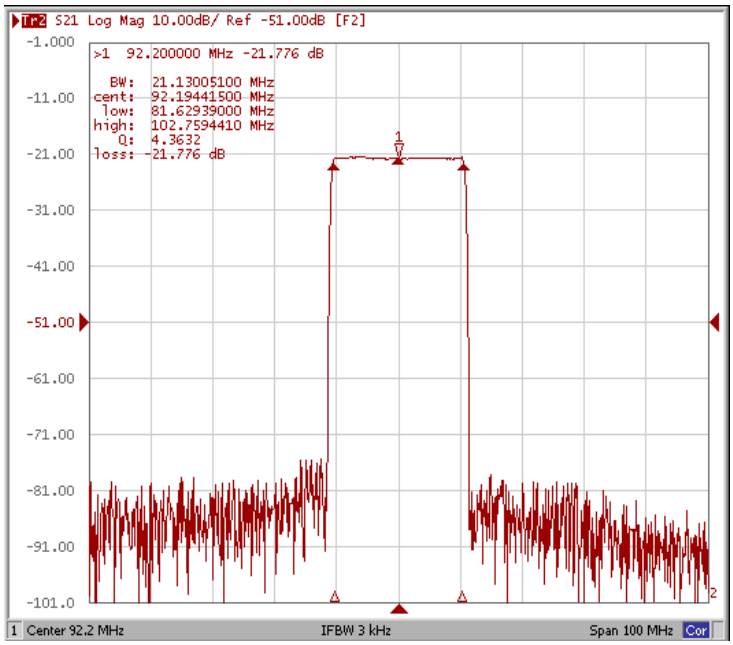
# ❒ Frequency Characteristics



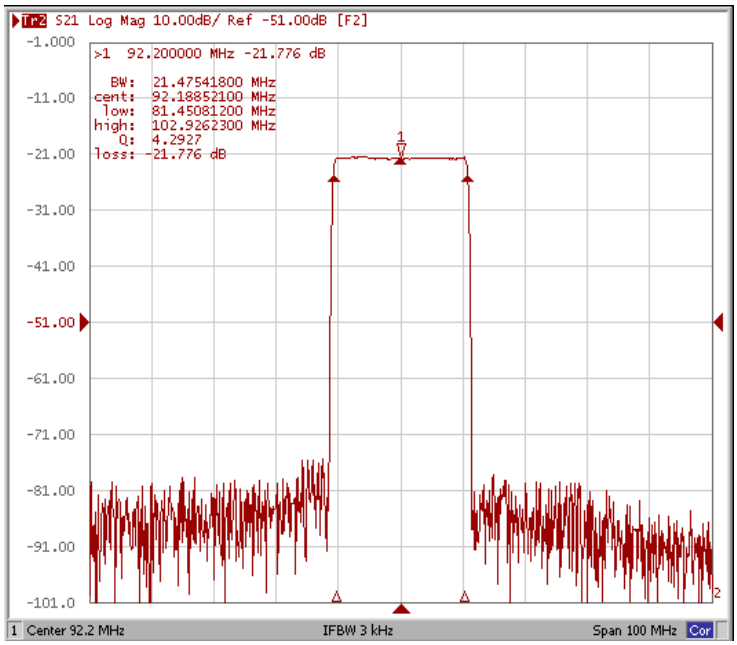
## Frequency Response

**Operating Temperature : +25 ℃**

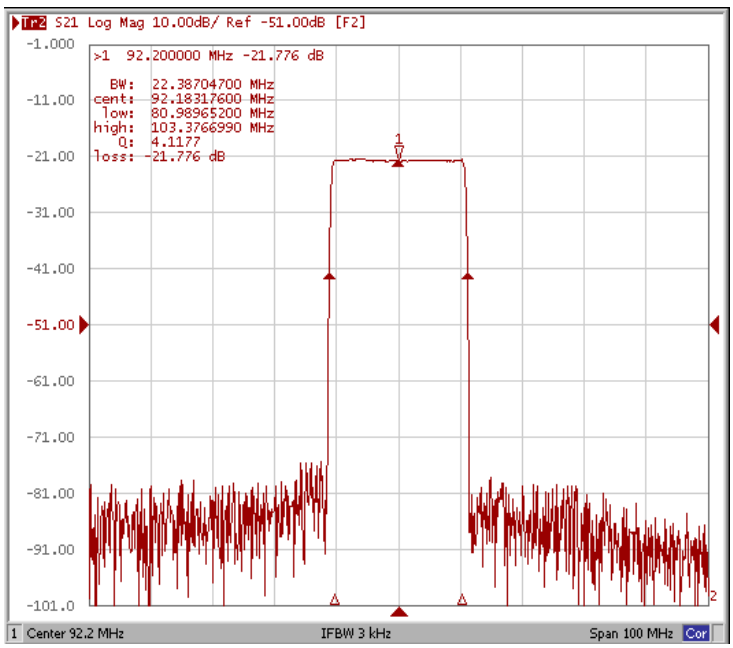
### Bandwidth at –1.0 dB



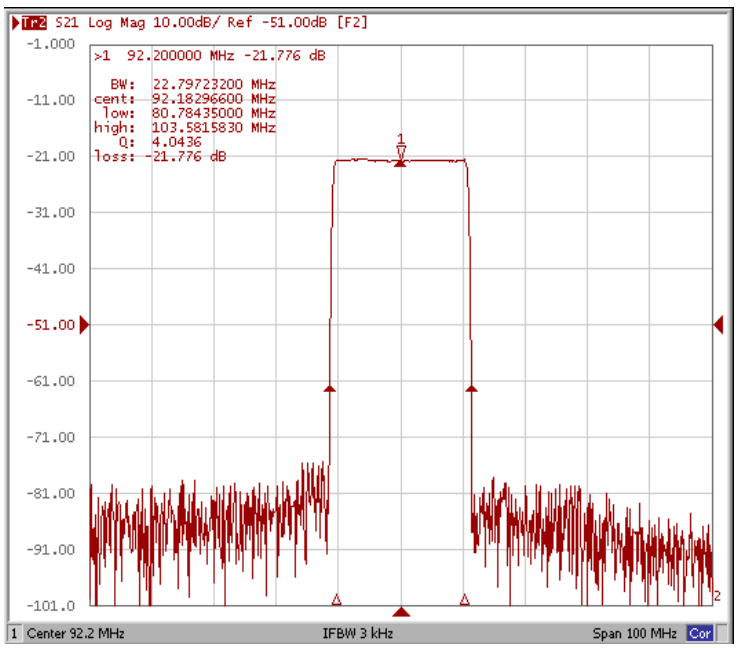

### Bandwidth at –3.0 dB




### Bandwidth at –20.0 dB




### Bandwidth at –40.0 dB

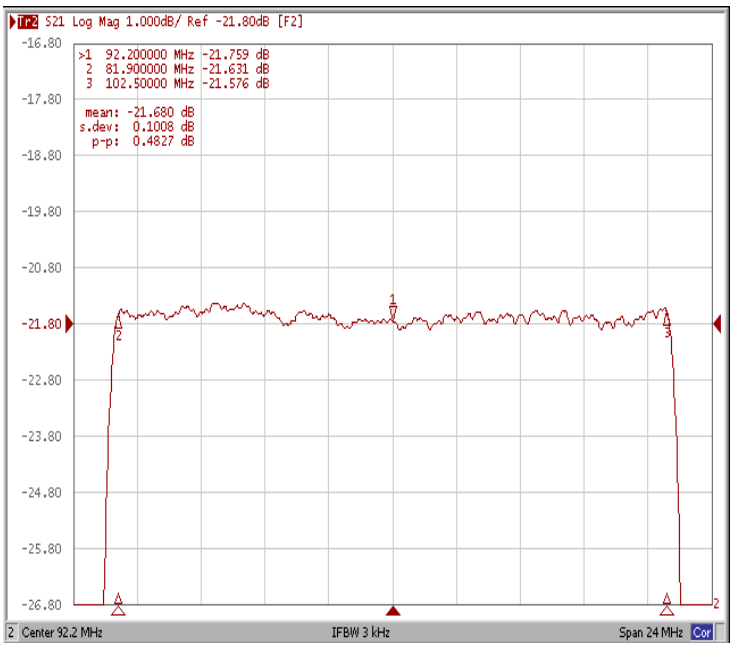


# ❒ Frequency Characteristics

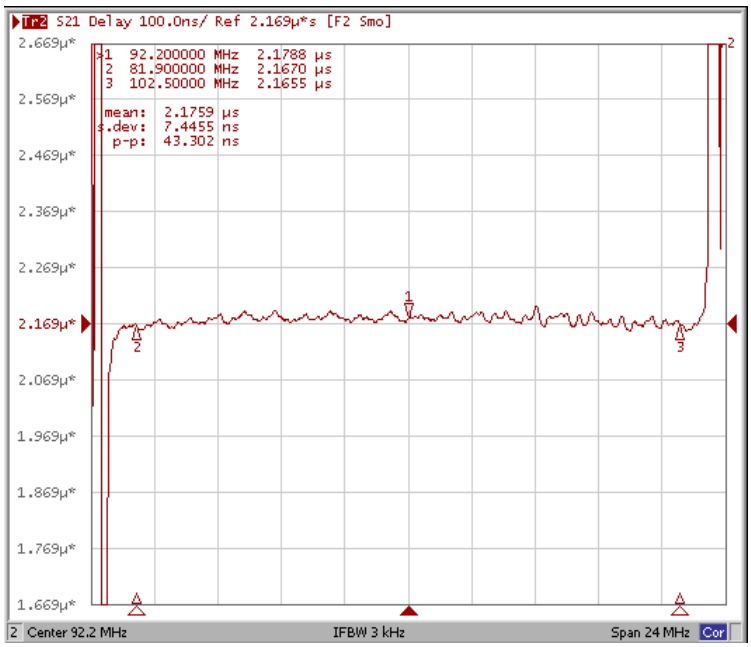


## Frequency Response

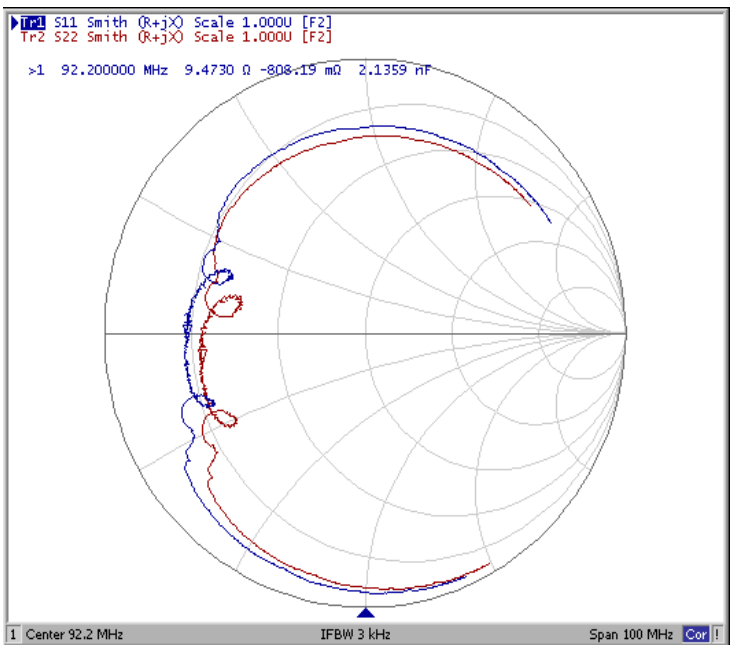
### Ripple Variation Fo±10.30MHz




### Group Delay Variation Fo±10.30MHz




### Smith Chart




### VSWR