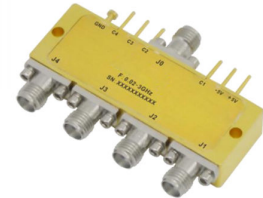




# Absorptive 0.02-3GHz Coaxial SP4T Switch

## Features

- Wide Band Operation 0.02-3GHz
- TTL compatible driver included
- Fast Switching Speed
- Low Insertion Loss and High Isolation
- Customization available upon request



## Typical Applications

- Wireless Infrastructure
- 5G communication
- Test and measurement Instrument

RF Microwave & VSAT  
Fiber Optics

| Parameters                             | Min.                           | Typ.  | Max. | Min.  | Typ.  | Max. | Units  |
|----------------------------------------|--------------------------------|-------|------|-------|-------|------|--------|
| Frequency Range                        | 0.02-0.2                       |       |      | 0.2-3 |       |      | GHz    |
| Insertion Loss                         |                                | 0.5   | 1.2  |       | 1.5   | 1.8  | dB     |
| Insertion Loss Temperature Coefficient |                                | 0.003 |      |       | 0.003 |      | dB/ °C |
| Isolation                              | 60                             | 70    |      | 70    | 85    |      | dB     |
| Input VSWR                             |                                | 1.3   | 1.5  |       | 1.3   | 1.5  | : 1    |
| Output VSWR                            |                                | 1.3   | 1.5  |       | 1.3   | 1.5  | : 1    |
| RF Input power                         |                                |       | 30   |       |       | 30   | dBm    |
| DC Power Dissipation                   |                                | 0.8   |      |       | 0.8   |      | W      |
| 0.1dB Compression Point<br>( P0.1dB )  |                                | 30    |      |       | 30    |      | dBm    |
| IIP3                                   |                                | 55    |      |       | 55    |      | dBm    |
| Switching Speed                        |                                |       | 1    |       |       | 1    | us     |
| Weight                                 | 1.06                           |       |      |       |       |      | Ounces |
| Impedance                              | 50                             |       |      |       |       |      | Ω      |
| Bias Current ( +5V / -5V )             | 160/50                         |       |      |       |       |      | mA     |
| Input / Output Connectors              | SMA-Female                     |       |      |       |       |      |        |
| Finish                                 | Gold Plated                    |       |      |       |       |      |        |
| Material                               | Aluminum                       |       |      |       |       |      |        |
| Sealing                                | Hermetically Sealed (optional) |       |      |       |       |      |        |



### Absolute Maximum Ratings

|         |                             |
|---------|-----------------------------|
| Biasing | +5V $\pm$ 10%/-5V $\pm$ 10% |
|---------|-----------------------------|

### Ordering Information

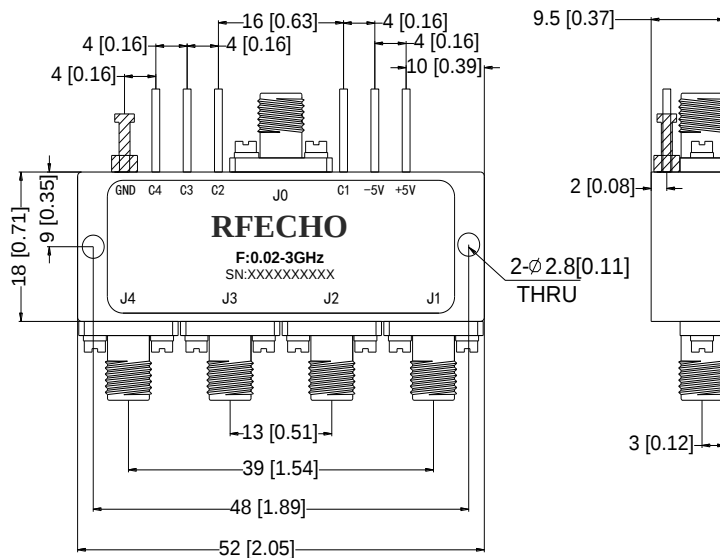
| Part No.        | Description                     |
|-----------------|---------------------------------|
| DBSA0400020300A | SP4T 0.02-3GHz PIN Diode Switch |

### Environmental Specifications

|                         |                                                                                  |
|-------------------------|----------------------------------------------------------------------------------|
| Operational Temperature | -40°C ~ +85°C (Case Temperature)                                                 |
| Storage Temperature     | -50°C ~ +105°C                                                                   |
| Altitude                | 30,000 ft. (Epoxy Sealed Controlled environment)                                 |
|                         | 60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional) |
| Vibration               | 25g RMS (15 degrees 2KHz) endurance, 1 hour per axis                             |
| Humidity                | 100% RH at 35°C, 95%RH at 40°C                                                   |
| Shock                   | 20G for 11msec half sine wave, 3 axis both directions                            |

### Outline Drawing:

All Dimensions in mm (inches)

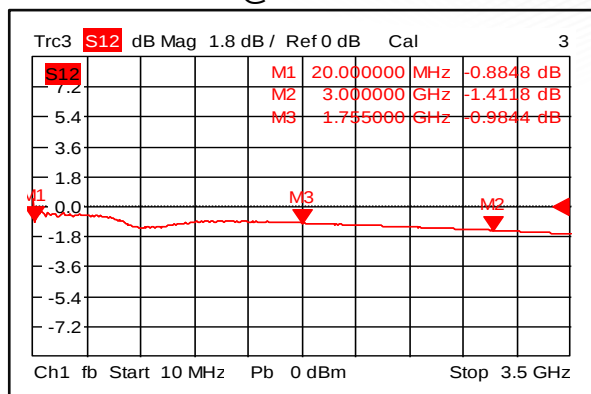


### Truth Table

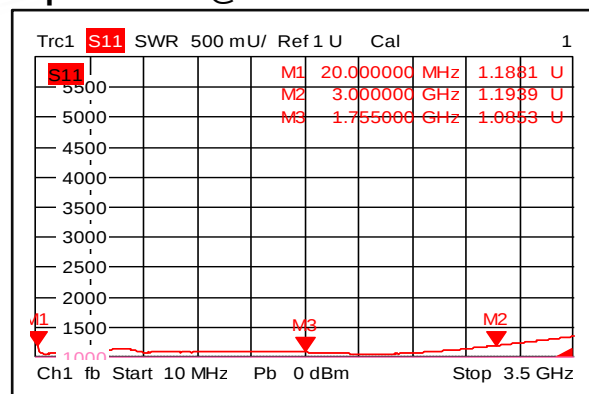
| TTL Control Voltage THRESHOLD                    |    |    |    | Low(0)=0~0.8V     |
|--------------------------------------------------|----|----|----|-------------------|
|                                                  |    |    |    | High(1)=2.8~5V    |
| Control Input TTL                                |    |    |    | Signal Path State |
| C4                                               | C3 | C2 | C1 |                   |
| 1                                                | 1  | 1  | 1  | OFF               |
| 1                                                | 1  | 1  | 0  | J0-J1             |
| 1                                                | 1  | 0  | 1  | J0-J2             |
| 1                                                | 0  | 1  | 1  | J0-J3             |
| 0                                                | 1  | 1  | 1  | J0-J4             |
| 0                                                | 0  | 0  | 0  | not used          |
| Control Pin Customization available upon request |    |    |    |                   |



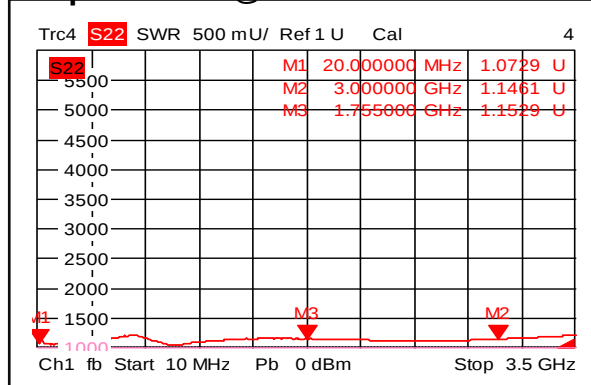
## Insertion Loss @+25°C



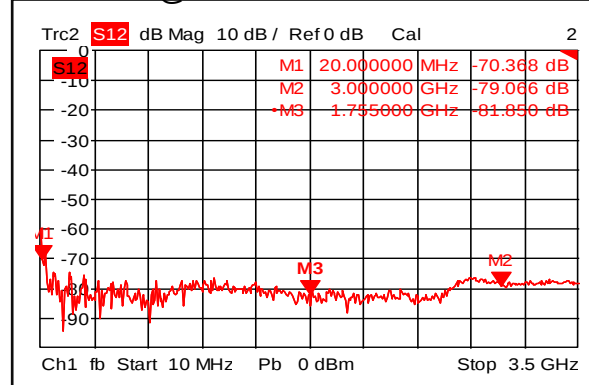
## Input VSWR @+25°C



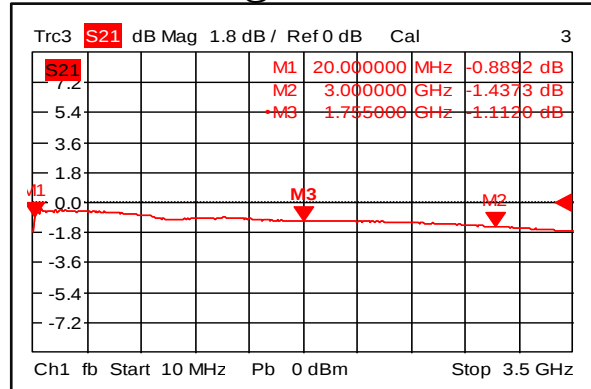
## Output VSWR @+25°C



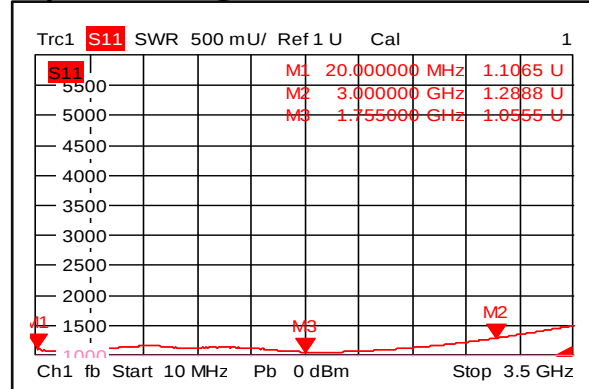
## Isolation @+25°C



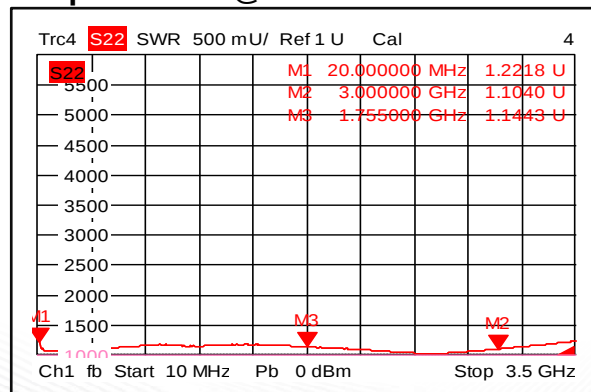
## Insertion Loss @-40°C



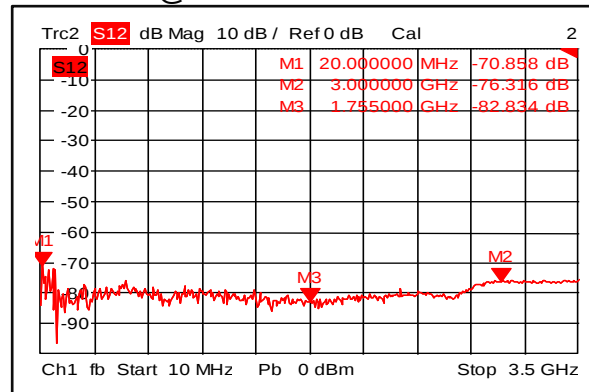
## Input VSWR @-40°C



## Output VSWR @-40°C

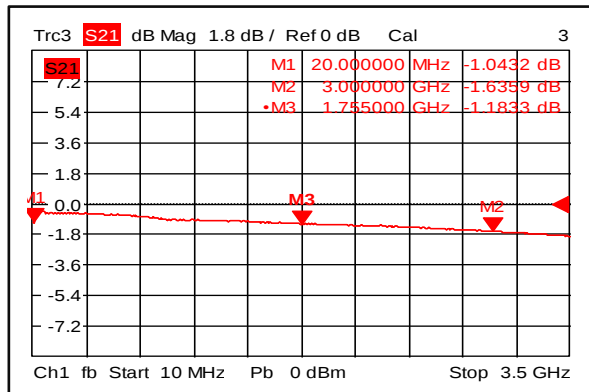


## Isolation @-40°C

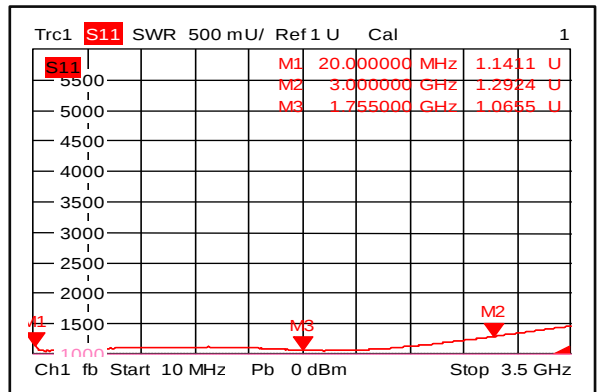




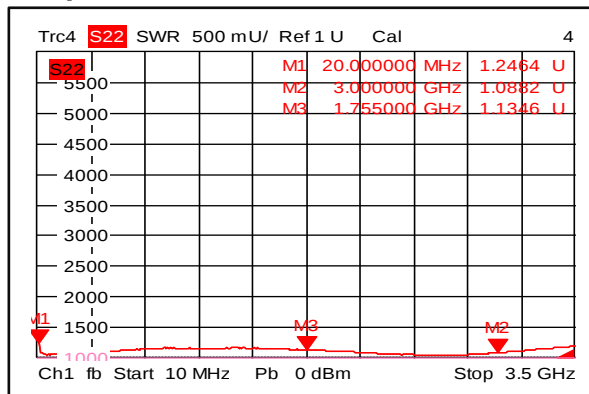
## Insertion Loss @+85°C



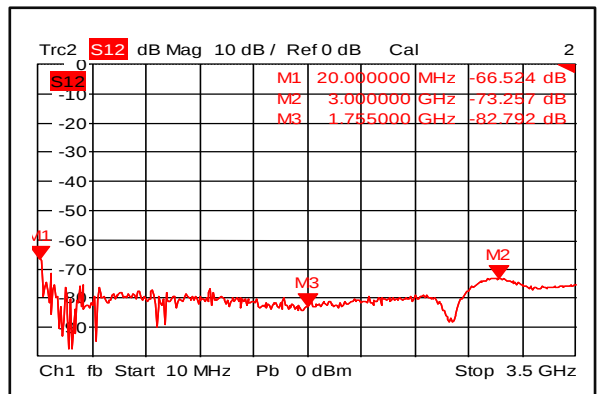
## Input VSWR @+85°C



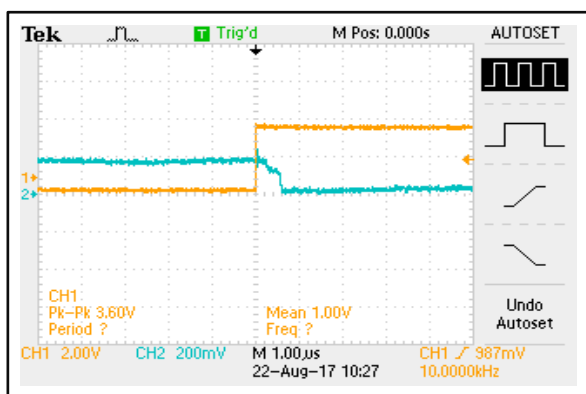
## Output VSWR @+85°C



## Isolation @+85°C



## Switching Speed



## Switching Speed

