



# Absorptive 2-50GHz Coaxial SP4T Switch

## Features

- Ultra Wide Band Operation 2-50GHz
- 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.	Min.	Typ.	Max.	Units
Frequency Range	2		18	18		30	30		50	GHz
Insertion Loss		3.5	4.0		4.5	5.0		6.5	7.0	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/ ° C
Isolation	65	70		50	55		45	50		dB
Input VSWR		2	2.5		2.5	3		2.5	3	: 1
Output VSWR		2	2.5		2.5	3		2.5	3	: 1
RF Input Power			23			23			23	dBm
DC Power Dissipation		0.6			0.6			0.6		W
0.1dB Compression Point ( P0.1dB )		23			23			23		dBm
IIP3		43			38			33		dBm
Switching Speed	100 Max.									ns
Weight	1 .0 Max.									Ounces
Impedance	50									Ω
Bias Current ( +5V / -5V )	120 / 50 Max.									mA
Input / Output Connectors	2.4mm-Female									
Finish	Gold Plated									
Material	Aluminum									
Sealing	Hermetically Sealed (Optional)									



### Absolute Maximum Ratings

Biasing	+5V ± 10%/-5V ± 10% @ 25°C
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### Ordering Information

Part No.	Description
DBSA0402005000A	SP4T 2-50GHz 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)

The drawing shows a top view of the component with the following dimensions and features:

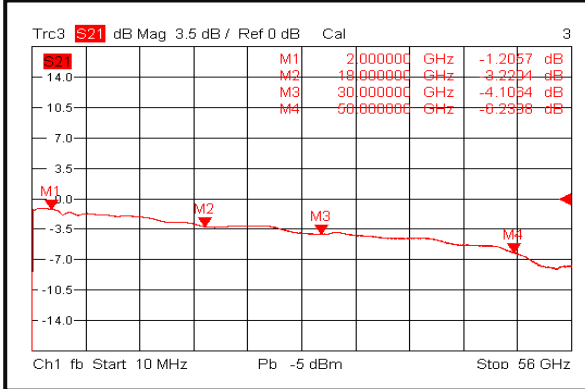
- Overall width: 31.2 [1.2] mm
- Internal width: 27.2 [1.1] mm
- Left side height: 9 [0.4] mm
- Left side offset: 1.7 [0.1] mm
- Bottom left height: 2.3 [0.1] mm
- Bottom left offset: 12 [0.5] mm
- Bottom left offset: 6.1 [0.2] mm
- Bottom left offset: 3.5 [0.1] mm
- Bottom left offset: 15 [0.6] mm
- Bottom left offset: 9 [0.4] mm
- Bottom left offset: 3 [0.1] mm
- Bottom right offset: 2.8 [0.1] mm
- Bottom right offset: 3 [0.1] mm
- Right side height: 16.3 [0.6] mm
- Right side height: 18 [0.7] mm
- Right side height: 27 [1.1] mm
- Pin 1 offset: 3-Ø 2.2 [0.09] THRU
- Pin labels: GND, C4, C3, C2, C1, -5V, +5V, J0, J1, J2, J3, J4
- Component text: RFECHO, F:2-50GHz, SN:XXXXXXXXXX

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	0	J0-J1	
1	1	0	1	J0-J2	
1	0	1	1	J0-J3	
0	1	1	1	J0-J4	

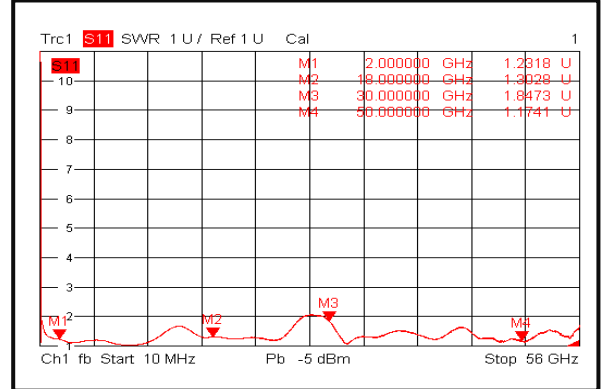
Control Pin Customization available upon request



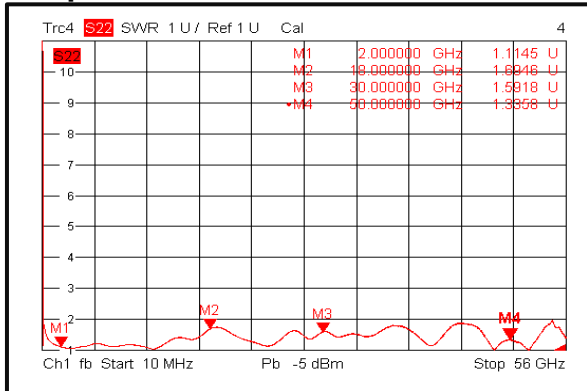
### Insertion Loss @+25°C



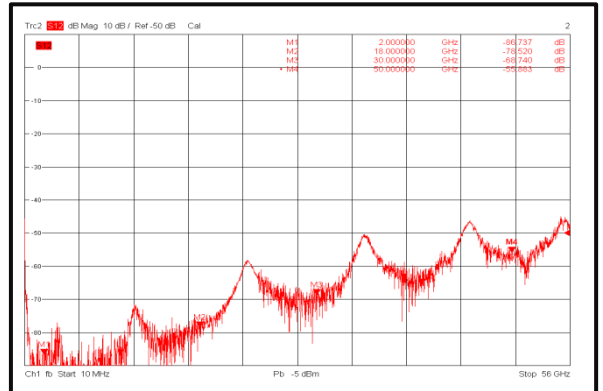
### Input VSWR @+25°C



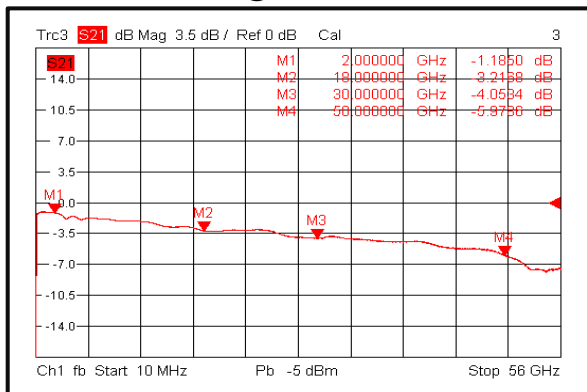
### Output VSWR @+25°C



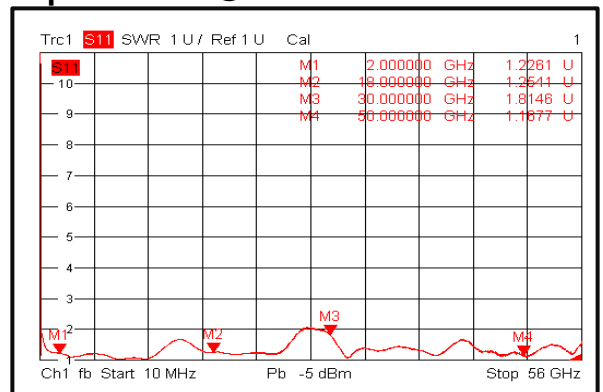
### Isolation @+25°C



### Insertion Loss @-40°C

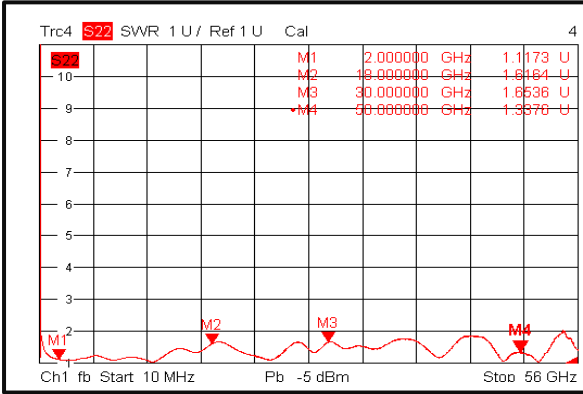


### Input VSWR @-40°C

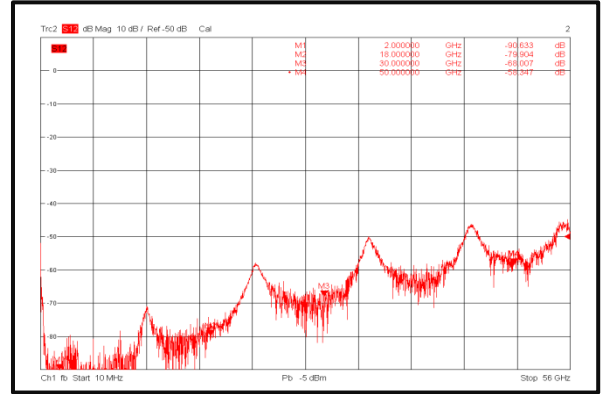




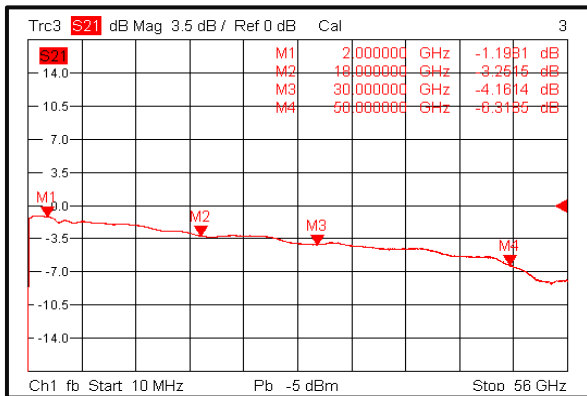
### Output VSWR @-40°C



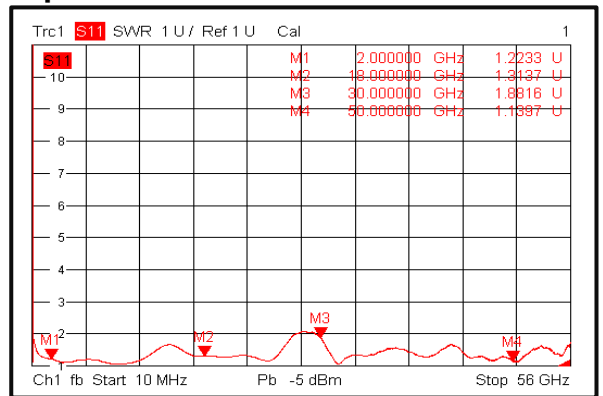
### Isolation @-40°C



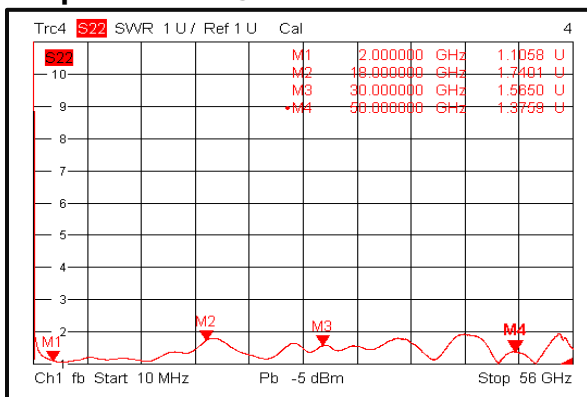
### Insertion Loss @+85°C



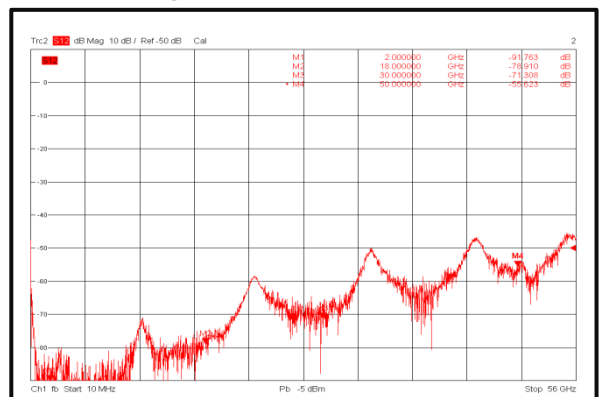
### Input VSWR @+85°C



### Output VSWR @+85°C

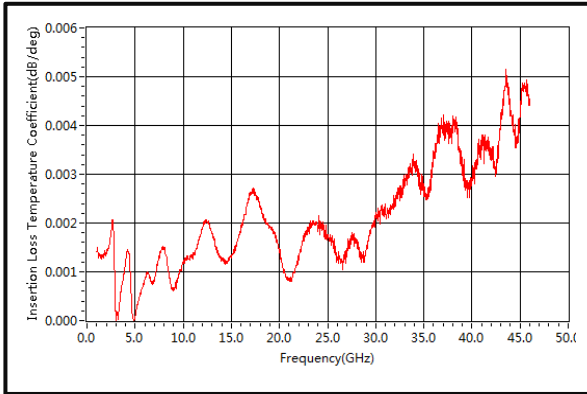


### Isolation @+85°C

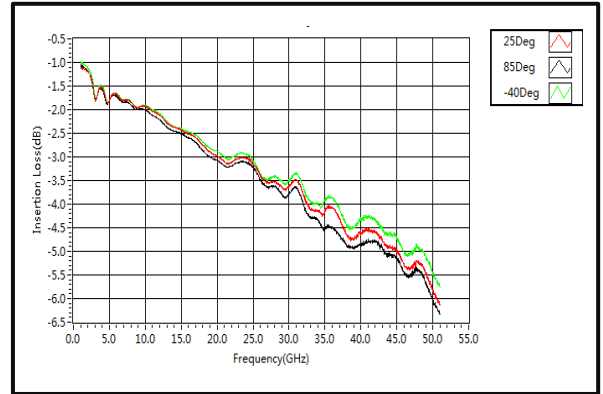




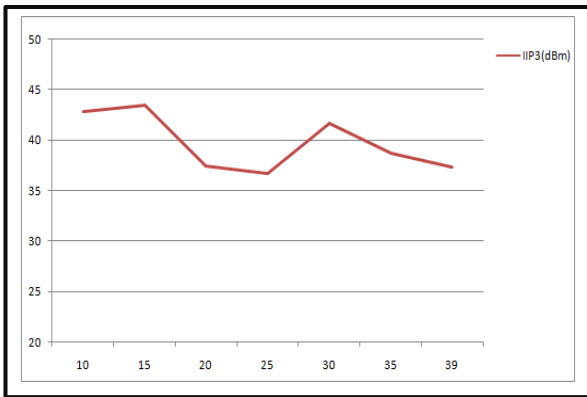
### Insertion Loss Temperature Coefficient



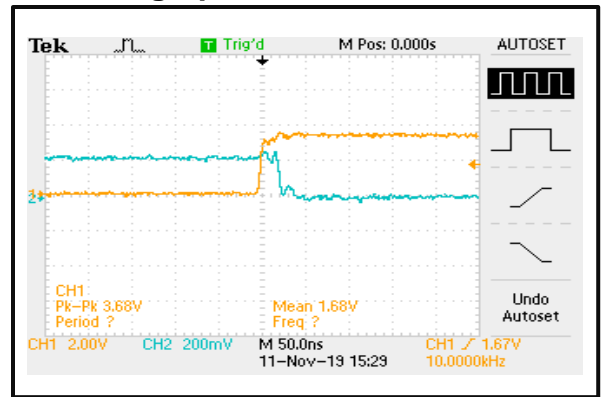
### Insertion Loss vs. Temperature



### IIP3



### Switching Speed



### Switching Speed

