



# Reflective 0.5-4 GHz Coaxial SPST Switch

## Features

- Wide Band Operation 0.5-4GHz
- 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.	Units
Frequency Range	0.5~4			GHz
Insertion Loss		1.0	1.5	dB
Insertion Loss Temperature Coefficient		0.003		dB/ ° C
Isolation (J0→J1)	80	85		dB
Input VSWR		1.2	1.5	: 1
Output VSWR		1.2	1.5	: 1
RF Input Power (CW)			30	dBm
DC Power Dissipation		0.3		W
0.1dB Compression Point (P0.1dB)		30		dBm
IIP3		55		dBm
Switching Speed			100	ns
Weight	0.35			ounces
Impedance	50			Ω
Bias Current (+5V/-5V)	80/50			mA
Input / Output Connectors	SMA-Female			
Finish	Gold Plated			
Material	Aluminum			
Sealing	Hermetically Sealed (Optional)			



### Absolute Maximum Ratings

Biasing	+5V ± 10%/-5V ± 10%
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### Ordering Information

Part No.	Description
DBSR0100500400A	SPST 0.5-4GHz PIN Diode Switch

### Environmental Specifications

Operational Temperature	-40°C~+85°C
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-down view of the component with the following dimensions and labels:

- Top-left connector: 9.5 [0.37] mm height, 2 [0.08] mm offset.
- Top-right connector: 3 [0.12] mm height.
- Main body width: 24 [0.94] mm, with a central section of 20 [0.79] mm.
- Bottom-left connector: 20 [0.79] mm height, 15 [0.59] mm offset.
- Bottom-right connector: 4-Ø 2.8 [0.11] THRU holes.
- Bottom pins: 6 [0.24] mm total length, with 4 [0.16] mm spacing between the two pairs of pins.
- Labels on the component: RFECHO, J0, F:0.5-4GHz, J1, SN:XXXXXXXXXX, +5V, -5V, TTL, GND.

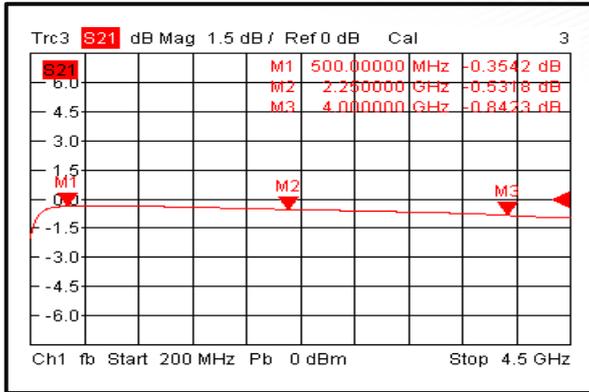
**Notes:**  
**J0: Absorptive Port**  
**J1: Reflective port**

**Truth Table**

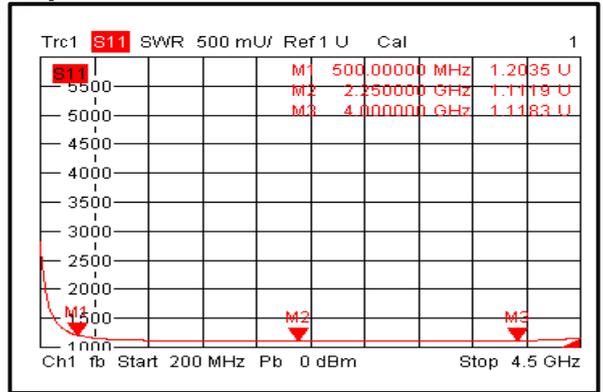
TTL Control Voltage THRESHOLD	Low(0)=0~0.8V
	High(1)=2.8~5V
Control Input TTL	State
0	OFF
1	ON
Control Pin Customization available upon request	



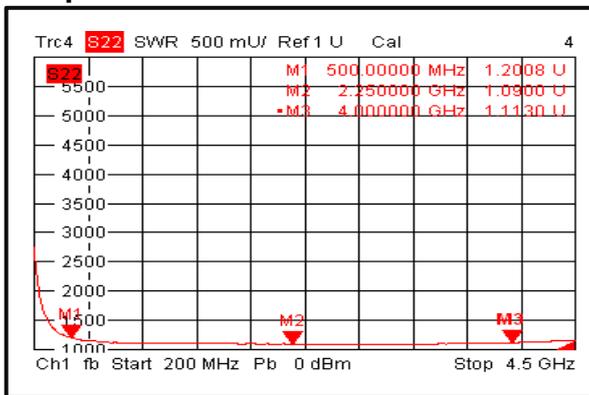
### Insertion Loss @+25°C



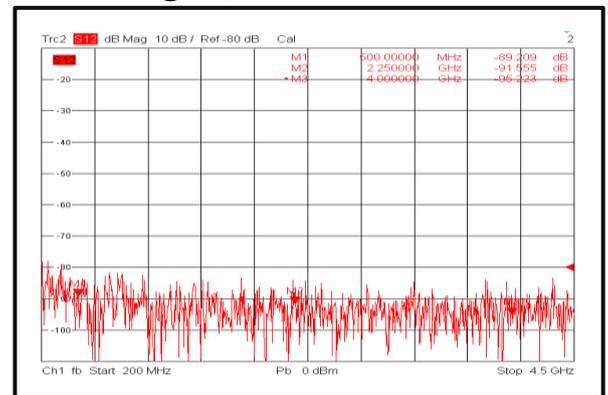
### Input VSWR @+25°C



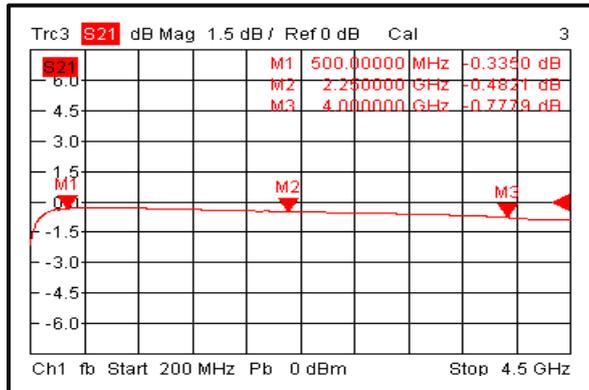
### Output VSWR @+25°C



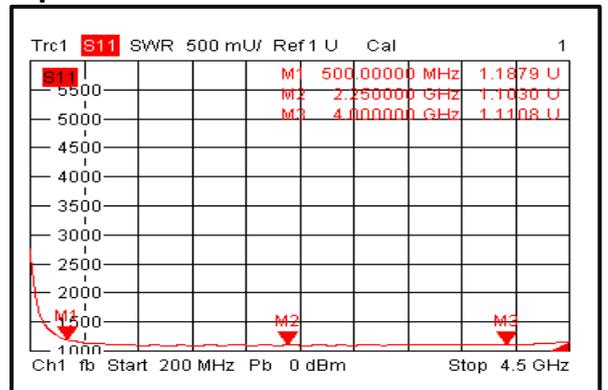
### Isolation @+25°C



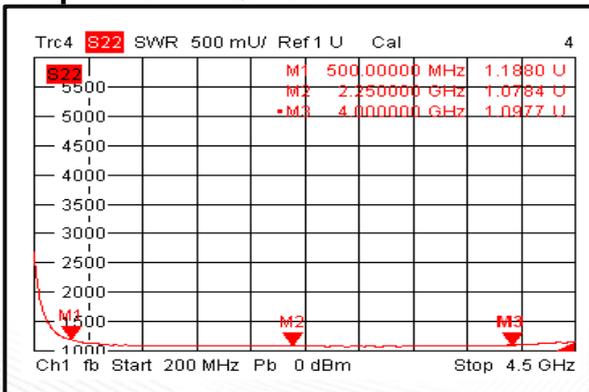
### Insertion Loss @-40°C



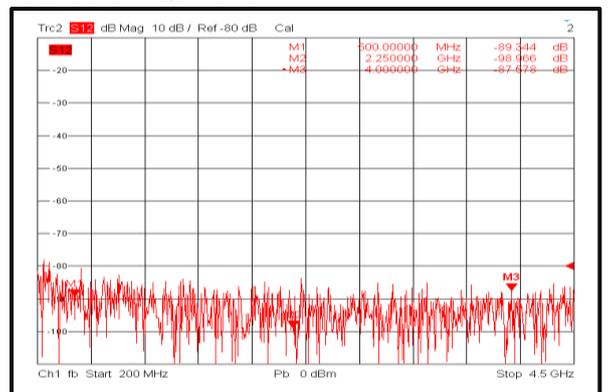
### Input VSWR @-40°C



### Output VSWR @-40°C

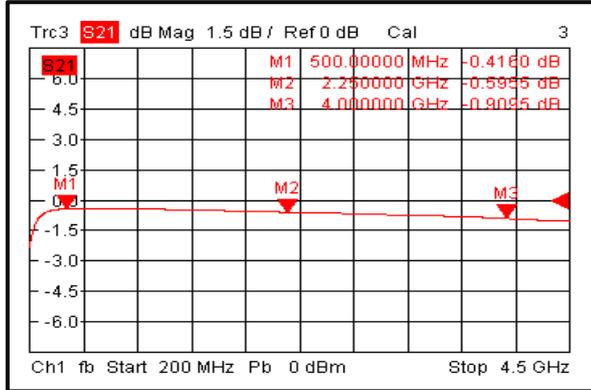


### Isolation @-40°C

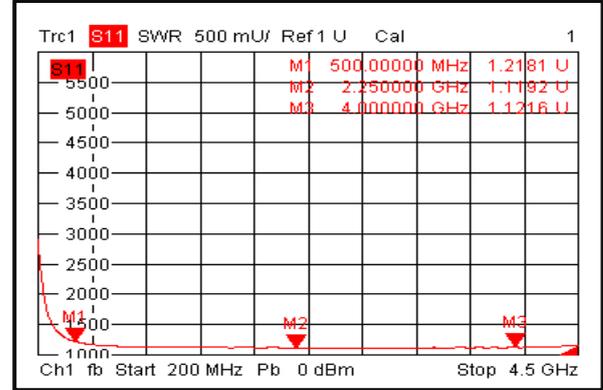




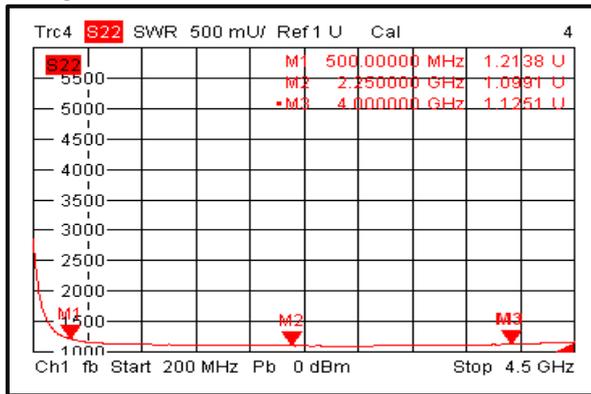
### Insertion Loss @+85°C



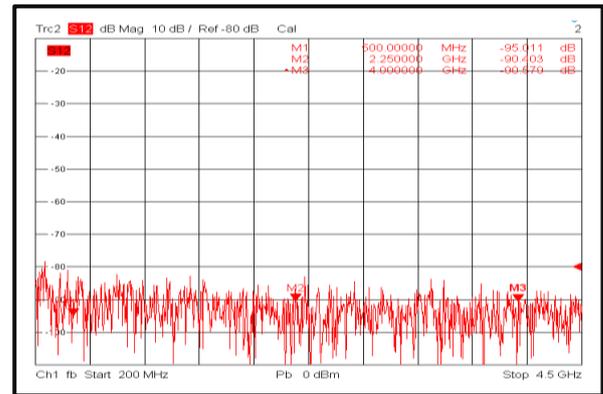
### Input VSWR @+85°C



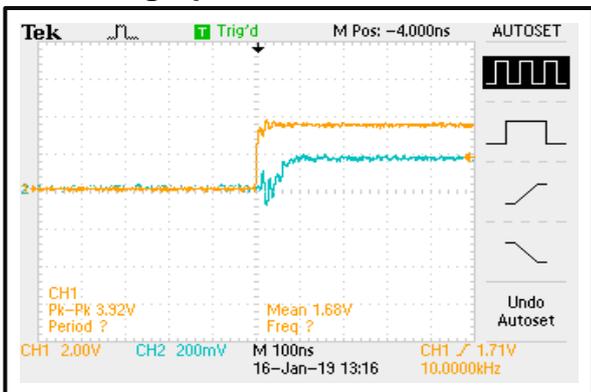
### Output VSWR @+85°C



### Isolation @+85°C



### Switching Speed



### Switching Speed

