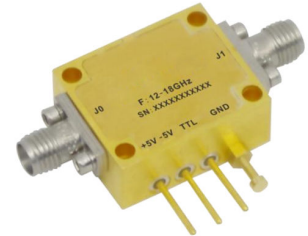




# Absorptive 12-18GHz Coaxial SPST Switch

## Features

- Wide Band Operation 12-18GHz
- 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		12~18		GHz
Insertion Loss		1.9	2.2	dB
Insertion Loss Temperature Coefficient		0.003		dB/ ° C
Isolation (J0→J1)	80	85		dB
Input VSWR		1.3	1.5	: 1
Output VSWR		1.3	1.5	: 1
RF Input Power			30	dBm
DC Power Dissipation		0.3		W
0.1dB Compression Point (P0.1dB)		30		dBm
IIP3		43		dBm
Switching Speed		100 Max.		ns
Weight		0.5 Max.		Ounces
Impedance		50		Ω
Bias Current (+5V / -5V)		80 / 50 Max.		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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### 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

### Ordering Information

Part No.	Description
DBSA0112001800A	SPST 12-18GHz PIN Diode Switch

### Outline Drawing:

All Dimensions in mm (inches) Housing Tolerances ±0.1 [0.004]

The drawing shows a top-down view of the device 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.
- Bottom-left connector: 20 [0.79] mm height, 15 [0.59] mm offset.
- Bottom-right connector: 6 [0.24] mm height.
- Bottom pins: 4 [0.16] mm spacing between the two groups of four pins.
- Central dimensions: 24 [0.94] mm total width, 20 [0.79] mm width to the center of the right connector.
- Through holes: 4-∅ 2.8 [0.11] THRU.
- Labels: J0, J1, +5V, -5V, TTL, GND, RFECHO, F:12-18GHz, SN:XXXXXXXXXX.

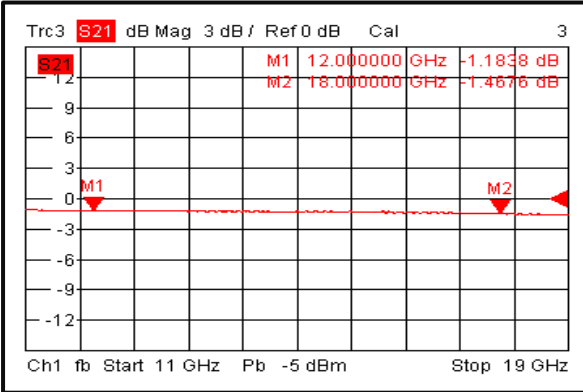
**Notes:**  
**J0: Absorptive Port**  
**J1: Reflective port**

**Truth Table**

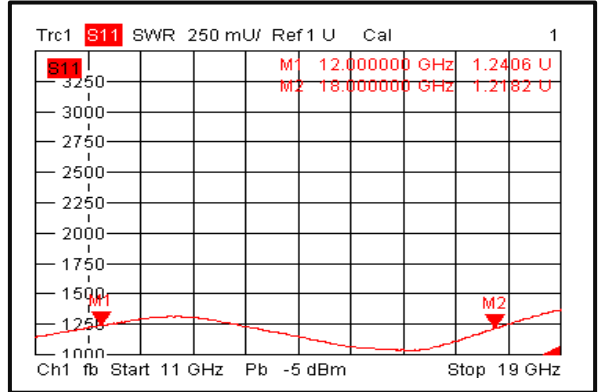
TTL Control Voltage THRESHOLD	Low(0)=0~0.8V
	High(1)=2.8~5V
Control Input TTL	State
0	ON
1	OFF
Control Pin Customization available upon request	



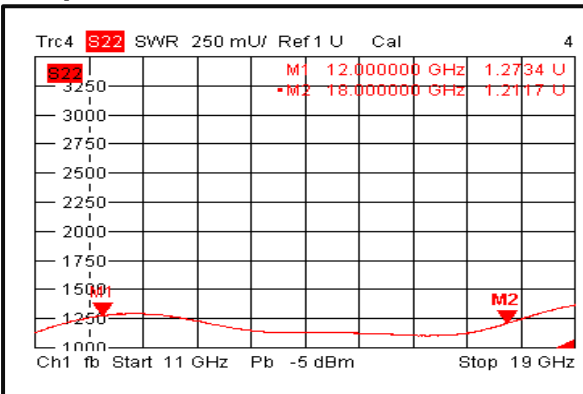
### Insertion Loss @+25°C



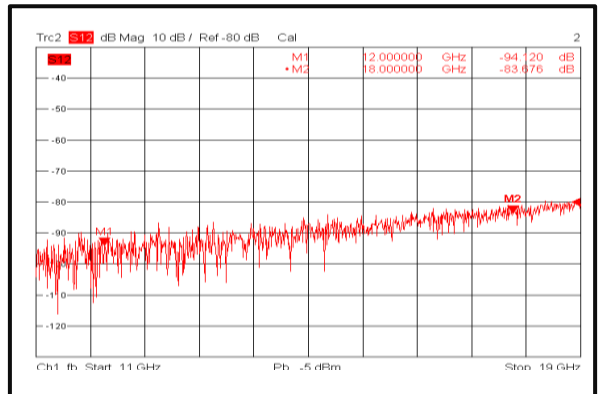
### Input VSWR @+25°C



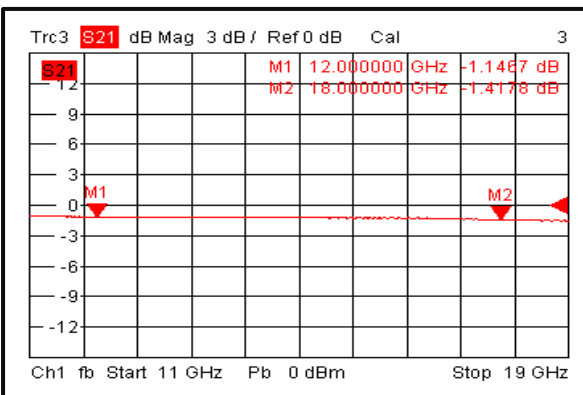
### Output VSWR @+25°C



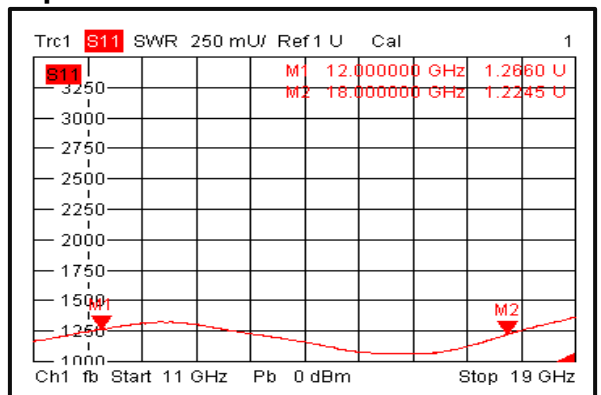
### Isolation @+25°C



### Insertion Loss @-40°C

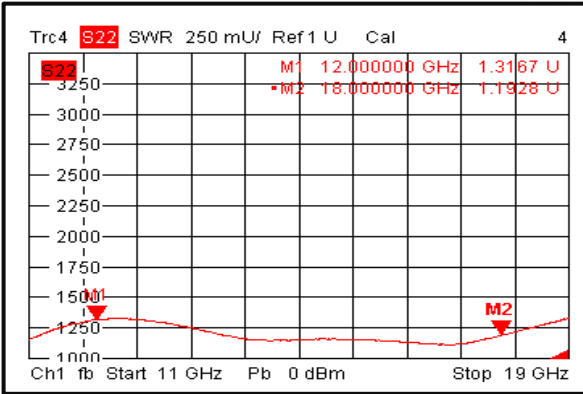


### Input VSWR @-40°C

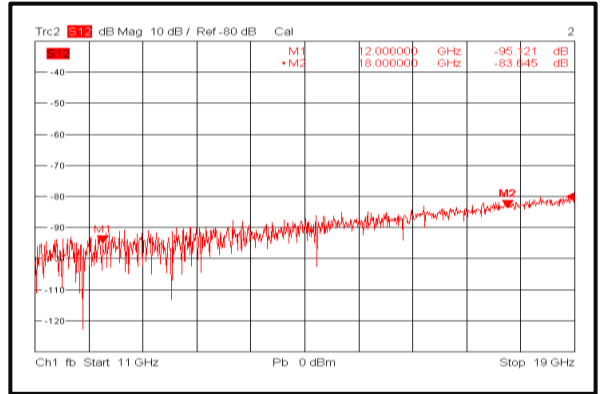




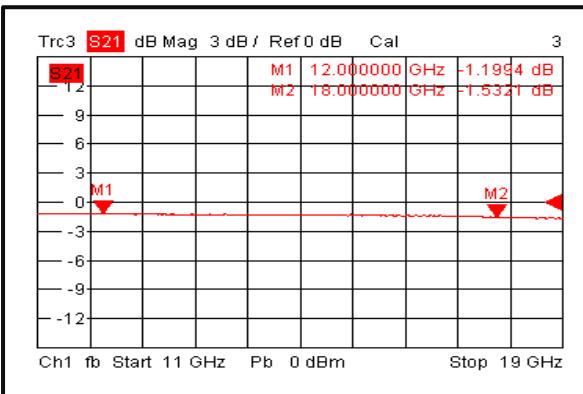
### Output VSWR @-40°C



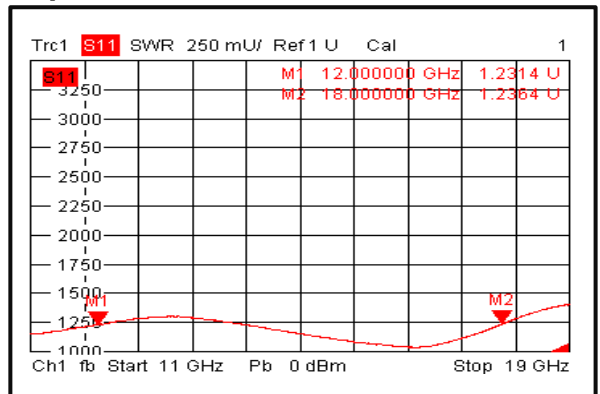
### Isolation @-40°C



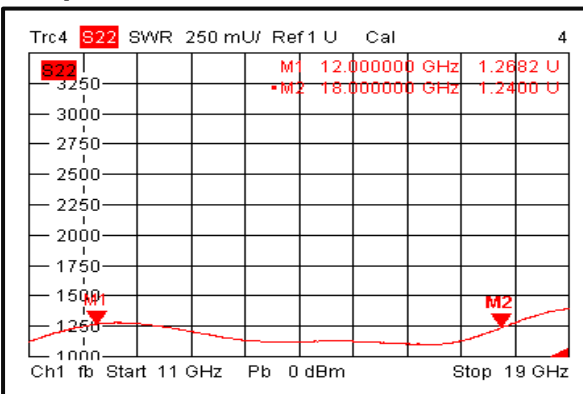
### Insertion Loss @+85°C



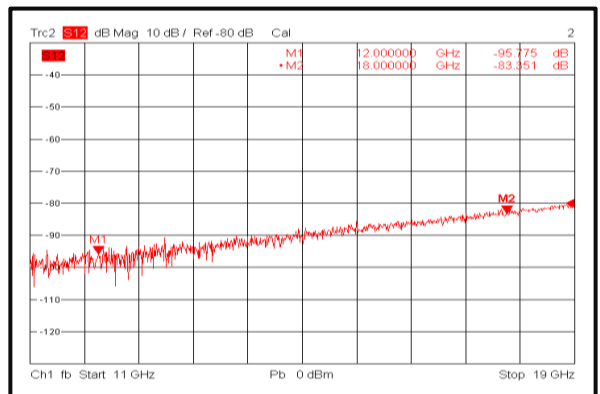
### Input VSWR @+85°C



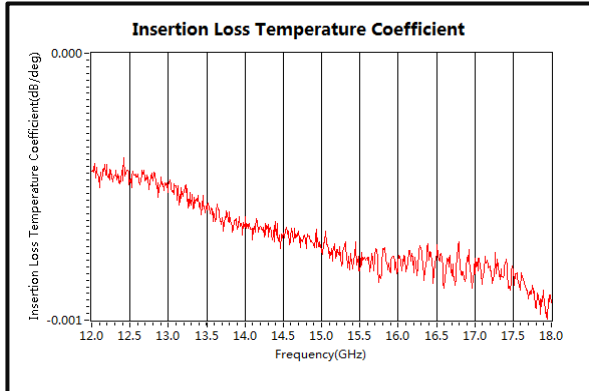
### Output VSWR @+85°C



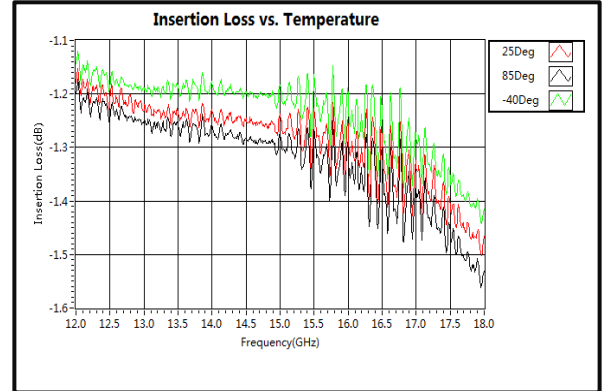
### Isolation @+85°C



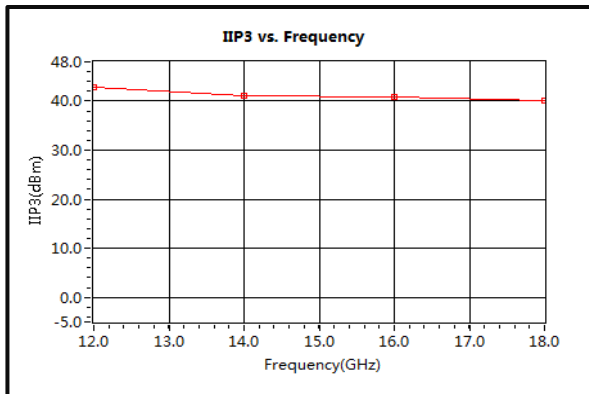
### Insertion Loss Temperature Coefficient



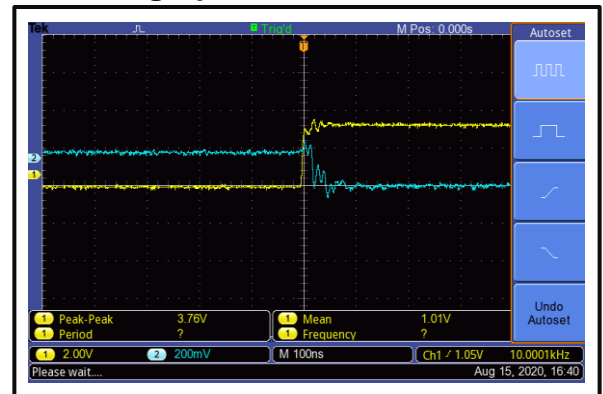
### Insertion Loss vs. Temperature



### IIP3



### Switching Speed



### Switching Speed

