

## Absorptive Coaxial SP4T Switch 0.5 - 18GHz



### Features

- Ultra Wide Band Operation 0.5-18GHz
- TTL compatible driver included
- Fast Switching Speed
- Low Insertion Loss and High Isolation
- Customization available upon request

### Typical Applications

- Wireless Infrastructure
- Military and Aerospace
- Test and Measurement

Electrical Specifications, TA = +25°C, Vdd = +5V/5V, TTL = 0 / +5V

Description	PN: RFSP4TA5M18G-C2									
	SP4T Absorptive Switch									
	Low Power Cold Switching									
Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.5~6			6~12			12~18			GHz
Insertion Loss		1.8	2.0		2.5	3.0		3.4	3.5	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/°C
Isolation	60	78		70	75		60	65		dB
Input VSWR		1.5	2.0		1.6	2.0		1.6	2.0	: 1
Output VSWR		1.5	2.0		1.6	2.0		1.6	2.0	: 1
RF Input Power			30			30			30	dBm
Power Dissipation		0.8			0.8			0.8		W
0.1dB Compression Point (Po.1dB)		30			30			30		dBm
IIP3		42			41			40		dBm
Switching Speed	100 Max.									ns
Weight	1.5 Max.									ounces
Impedance	50									Ω
Bias Current (+5V/-5V)	160/50 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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Note: TTL pins cannot be connected to the negative voltage otherwise the internal driver will be damaged.

**Ordering Information**

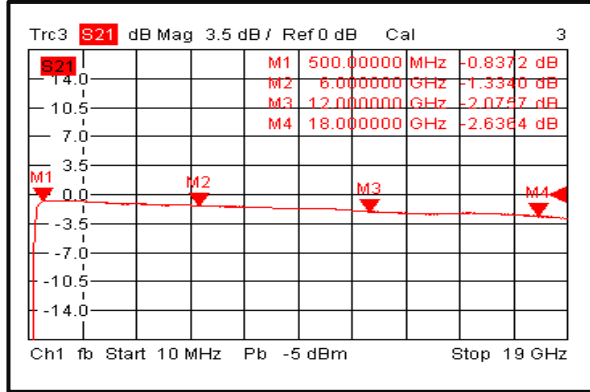
Part No.	Description
RFSP4TA5M18G-C2	SP4T 0.5-18GHz PIN Diode Switch

**Environmental Specifications and Test Standards**

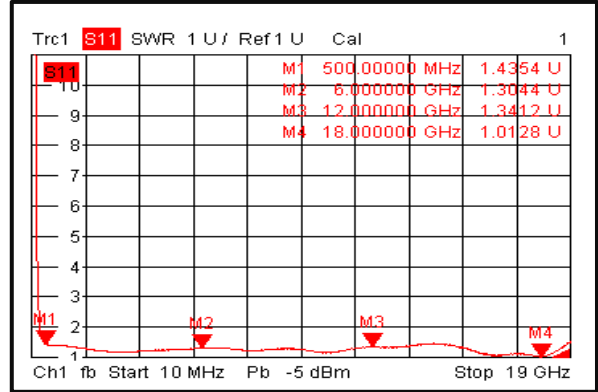
Parameter	Description
Operational Temperature	-40°C~+85°C (Case Temperature)
Storage Temperature	-50°C~+105°C
Thermal Shock	-40°C → +85°C (5 Cycles / 10 hours)
Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85°C for 72 Hours
Shock	1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude	Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883 (For Hermetically Sealed Units)

**Typical Performance Plots**

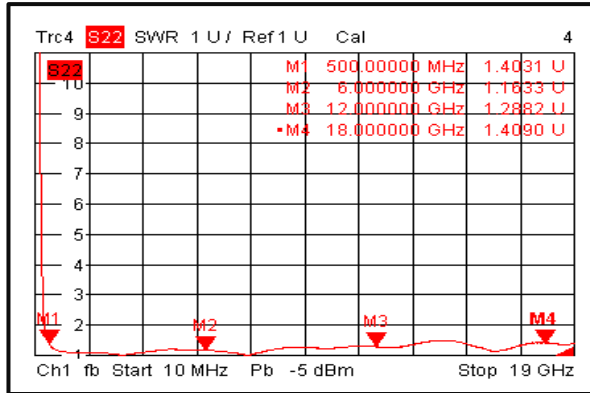
**Insertion Loss @+25°C**



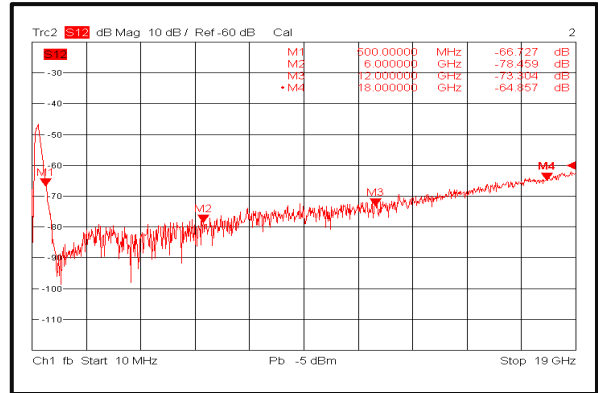
**Input VSWR @+25°C**



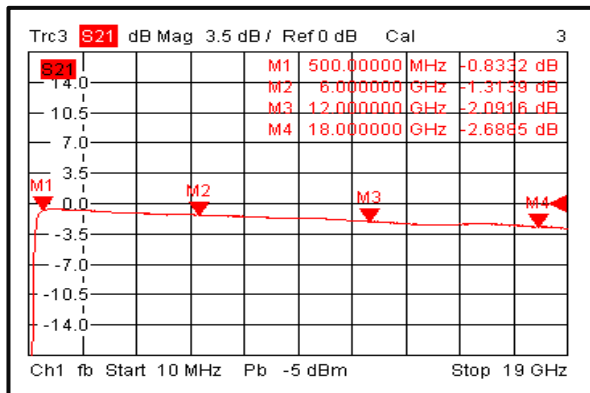
**Output VSWR @+25°C**



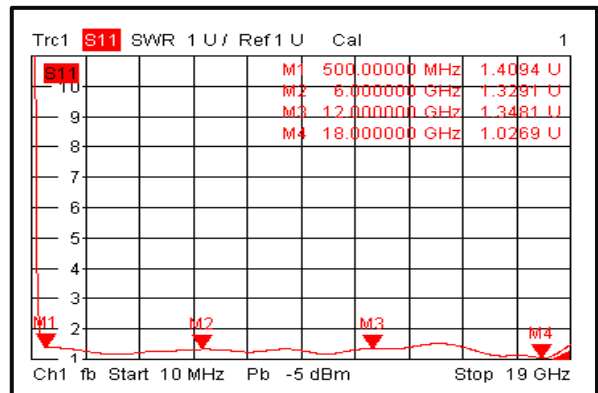
**Isolation @+25°C**



**Insertion Loss @-40°C**

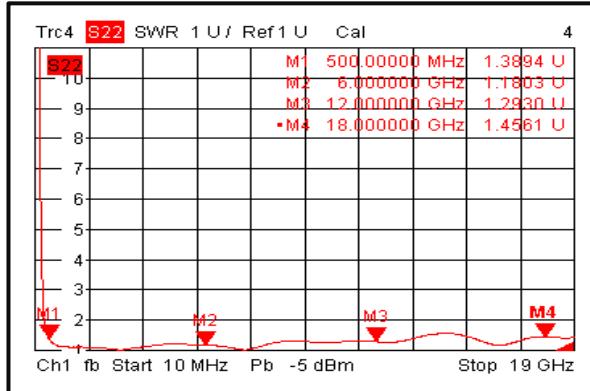


**Input VSWR @-40°C**

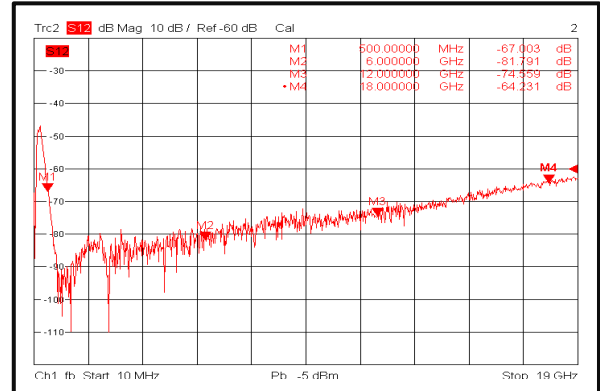


**Absorptive Coaxial Single Pole Four Throw Switch 0.5 - 18GHz**

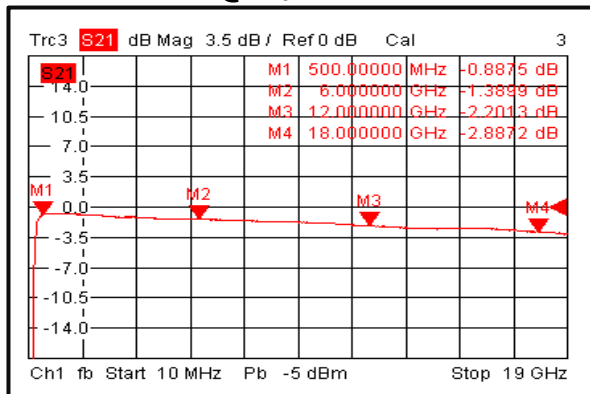
**Output VSWR @-40°C**



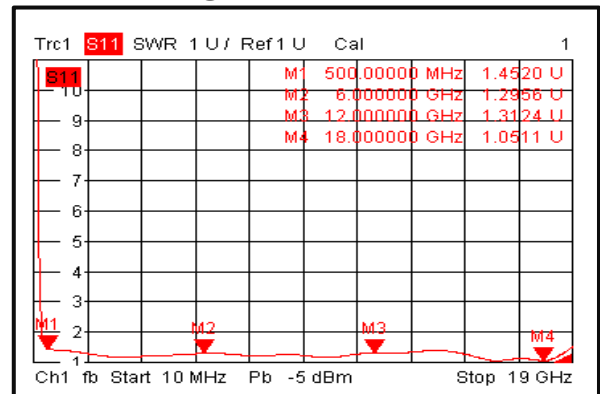
**Isolation @-40°C**



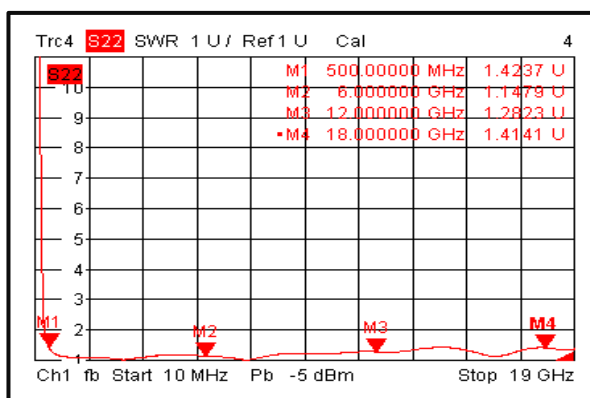
**Insertion Loss @+85°C**



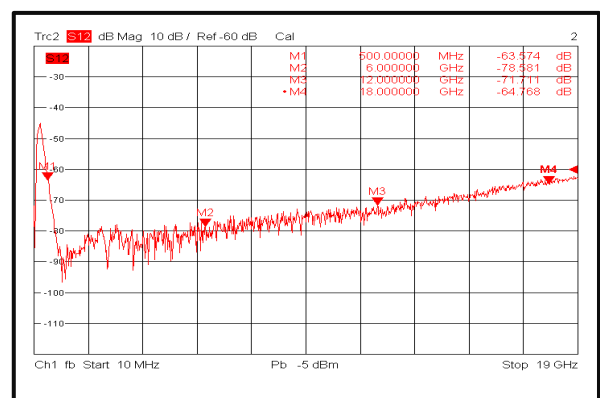
**Input VSWR @+85°C**



**Output VSWR @+85°C**

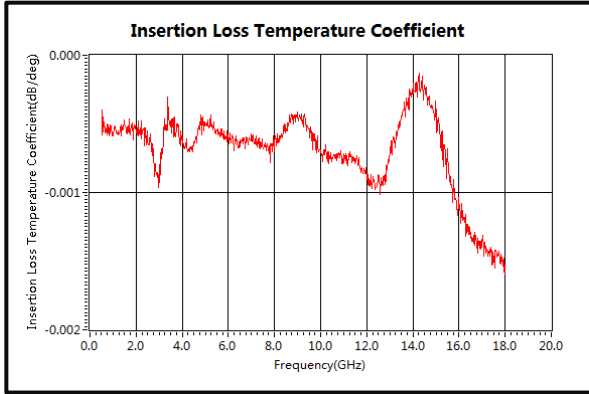


**Isolation @+85°C**

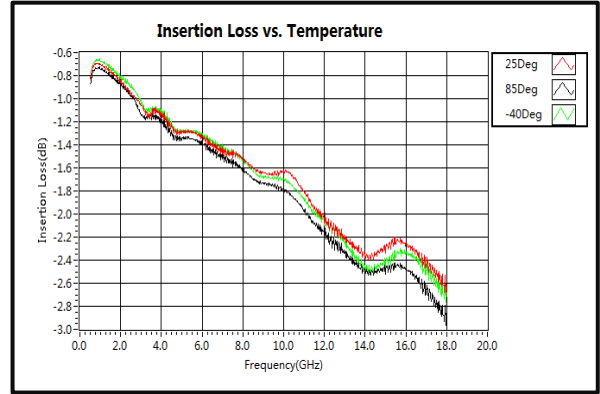


**Absorptive Coaxial Single Pole Four Throw Switch 0.5 - 18GHz**

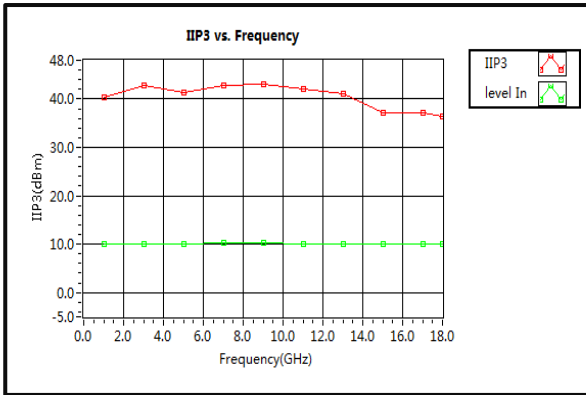
**Insertion Loss Temperature Coefficient**



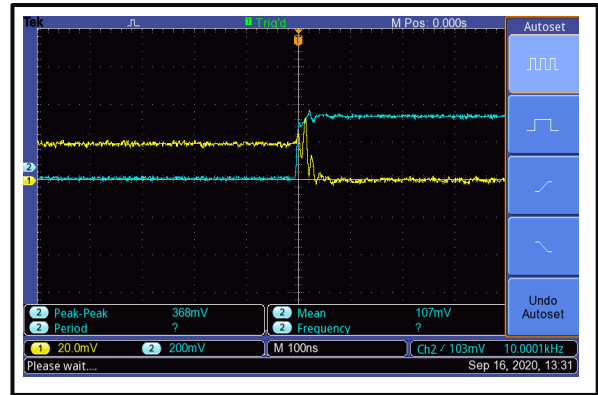
**Insertion Loss vs. Temperature**



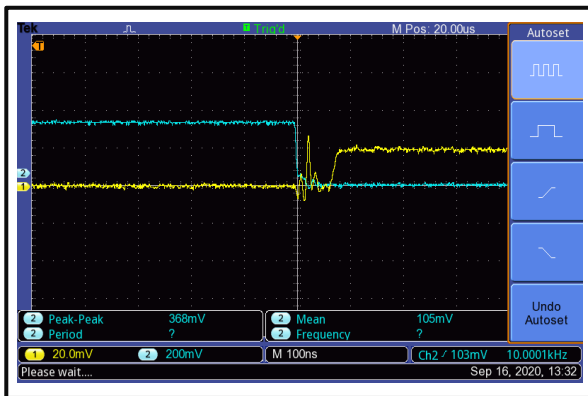
**IIP3**



**Switching Speed**



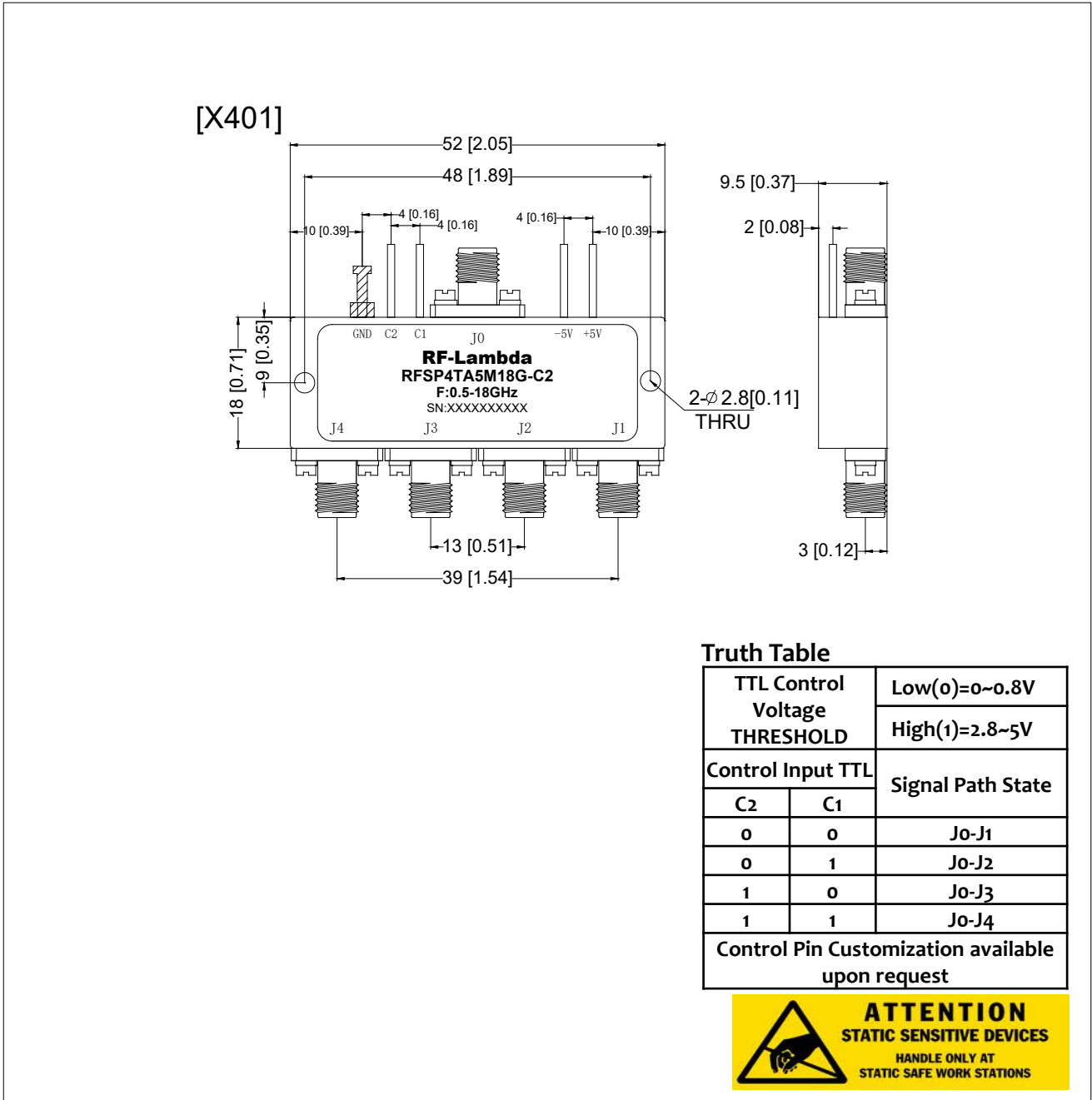
**Switching Speed**



**Outline Drawing:**

All Dimensions in mm [inches]

Housing Tolerances  $\pm 0.1$  [0.004]



**Absorptive Coaxial Single Pole Four Throw Switch 0.5 - 18GHz**

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