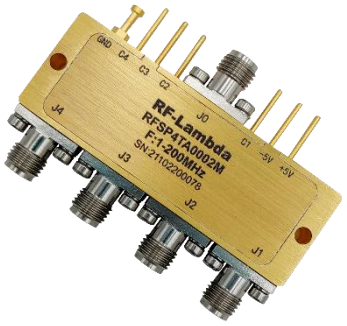
Absorptive Coaxial SP4T Switch
1MHz-200MHz



Product Description

RFSP4TA0002M is an absorptive coaxial single pole four throw switch with a frequency range of 1 to 200MHz.

The power input of this switch is 30dBm Max. The Insertion Loss is 2.0dB Max with a typical isolation of 75dB

The product features fast switching speed, low insertion loss and high isolation.

The working temperature of this product is between -40 ℃ and + 85 ℃

Features

- TTL compatible driver included
- Fast Switching Speed
- Low Power Cold Switching
- Insertion Loss 2.0dB
- Isolation 75dB
- 50 Ohm Matched

Typical Applications

- Wireless Infrastructure
- Military and Aerospace Applications
- Test Instrumentation
- Radar Systems
- 5G Wireless Communications
- Microwave Radio Systems
- TR Modules
- Research and Development
- Cellular Base Stations

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

Parameter	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range		1~2			2~200		MHz
Insertion Loss		2.0	4.5		0.6	1.2	dB
Insertion Loss Temperature Coefficient		0.003			0.003		dB/ °C
Isolation	70	75		70	80		dB
Input VSWR		1.25	2.0		1.18	1.4	: 1
Output VSWR		1.25	2.0		1.18	1.4	: 1
RF Input Power			30			30	dBm
DC Power Dissipation		0.9			0.9		W
0.1dB Compression Point (P0.1dB)		30			30		dBm
IIP3		43			43		dBm
Switching Speed	7 Typ. 13 Max.						us
Bias Current (+5V / -5V)	160/50 Max.						mA
Weight	0.07 Max.						lbs
Impedance	50						Ω
Input / Output Connectors	SMA – Female(Input) - SMA – Female(Input)						
Package	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

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Absolute Maximum Ratings

Parameter	Rating
Biasing	+5V±10%/-5V±10%

* TTL pins cannot be connected to the negative voltage otherwise the internal driver will be damaged.

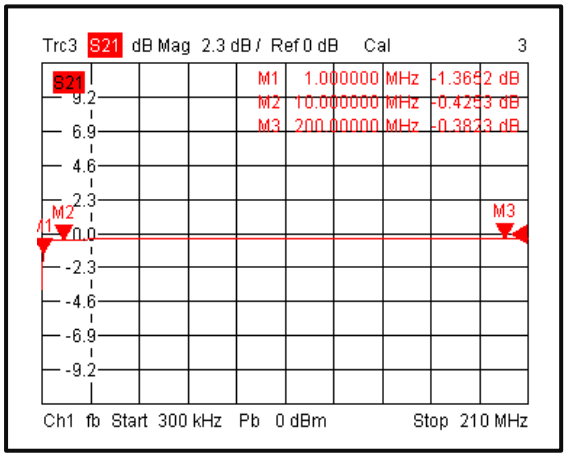
Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40ºC to +85ºC (Case Temperature)
Storage Temperature	-50ºC to +105ºC
Thermal Shock	-40ºC → +85ºC (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 +85ºC 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)

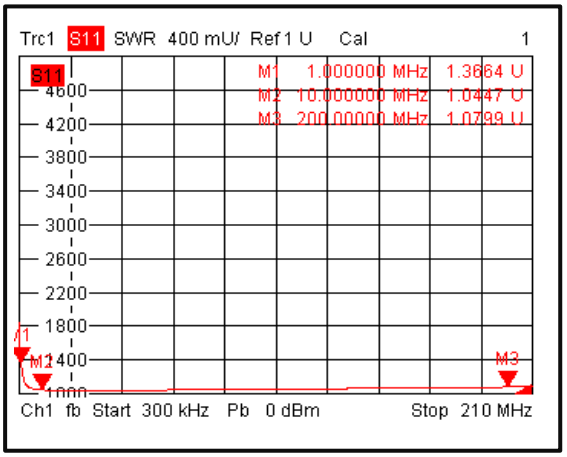
*For vibration testing details please see additional information section.

Typical Performance Plots

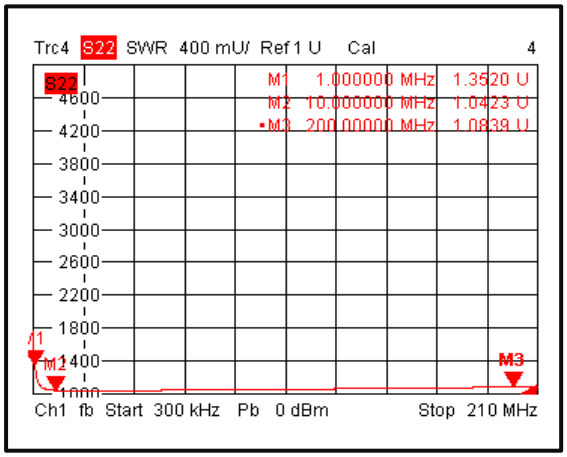
Insertion Loss @+25℃



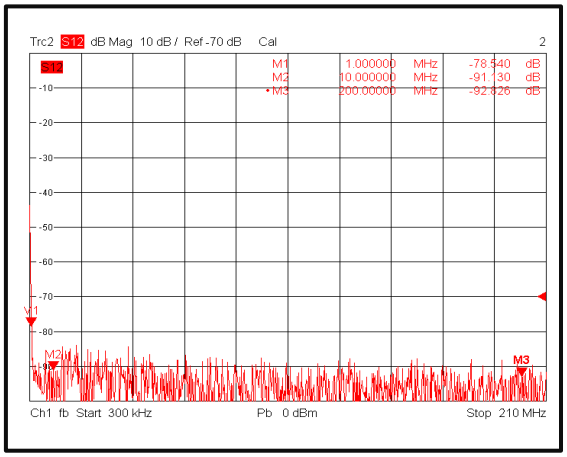
Input VSWR @+25℃



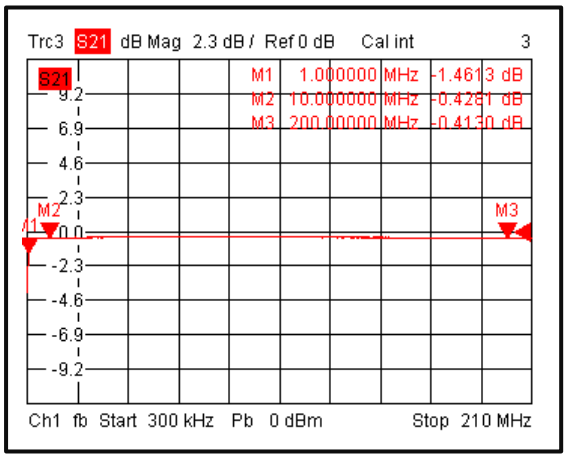
Output VSWR @+25℃



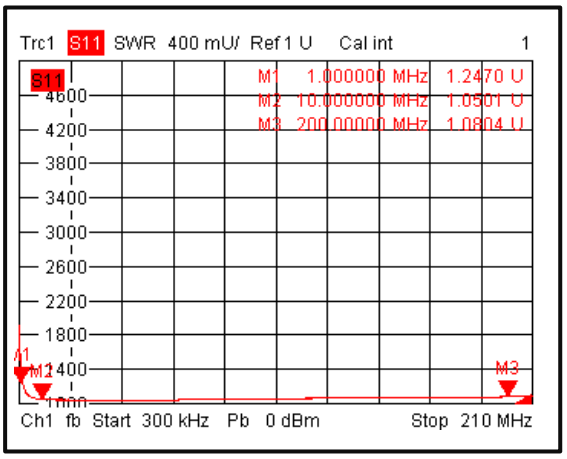
Isolation @+25℃



Insertion Loss @-40℃

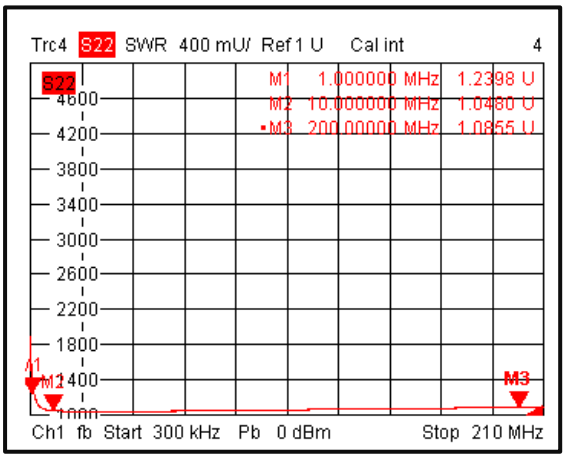


Input VSWR @-40℃

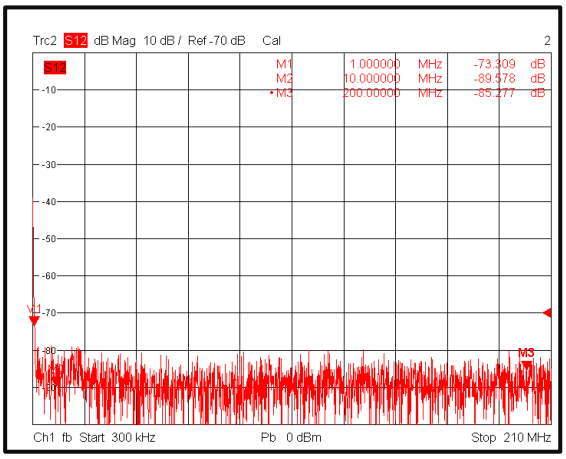


Typical Performance Plots

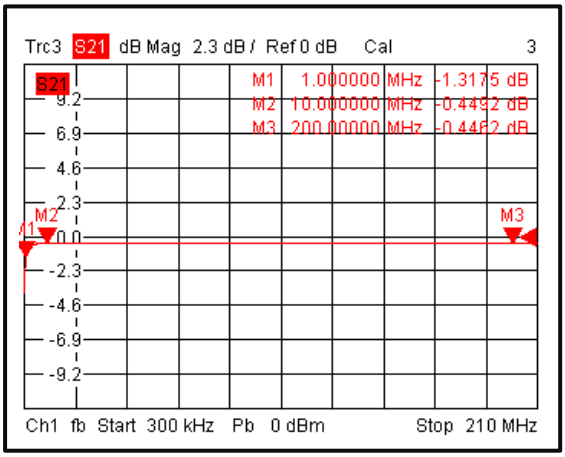
Output VSWR @-40℃



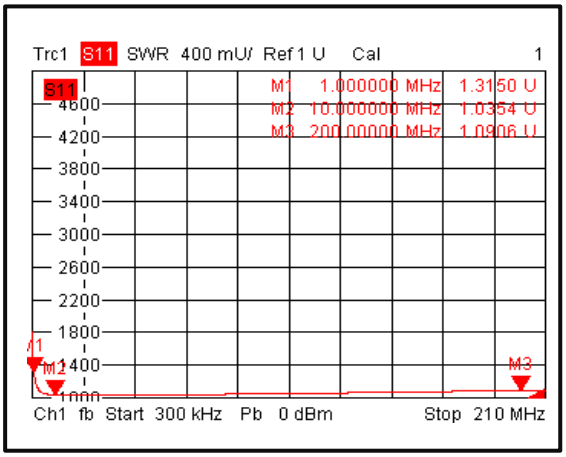
Isolation @-40℃



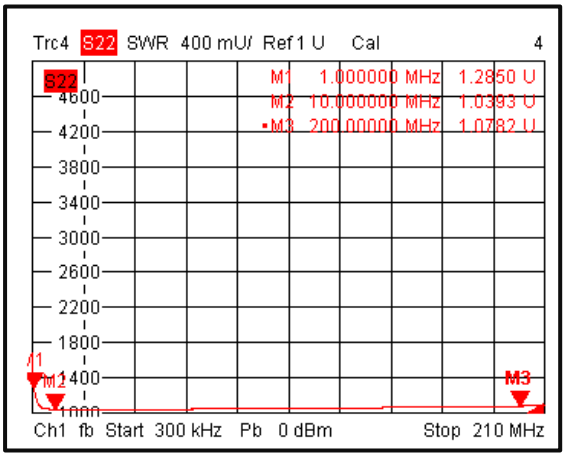
Insertion Loss @+85℃



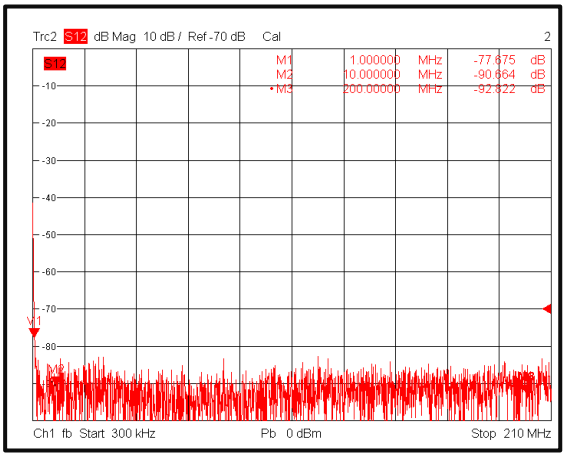
Input VSWR @+85℃



Output VSWR @+85℃

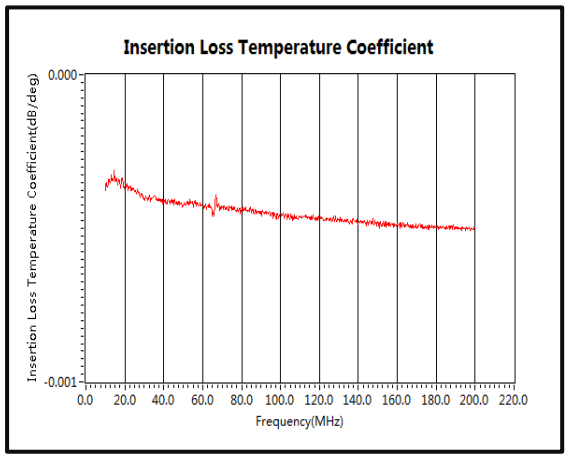


Isolation @+85℃

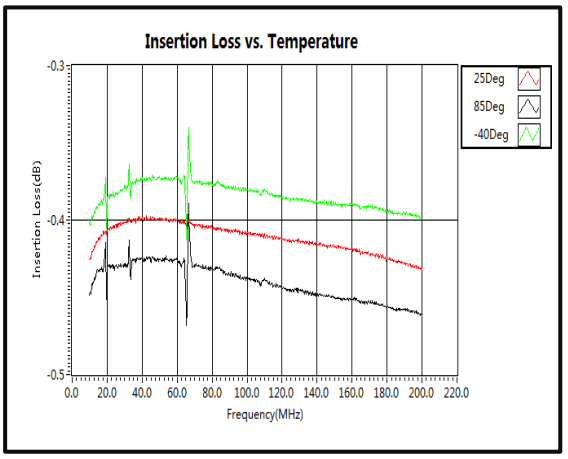


Typical Performance Plots

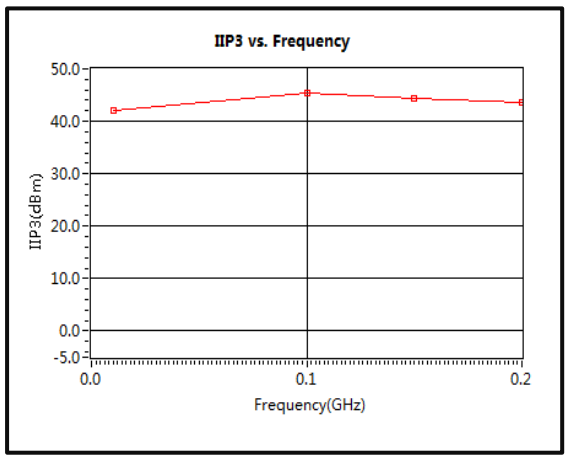
Insertion Loss Temperature Coefficient



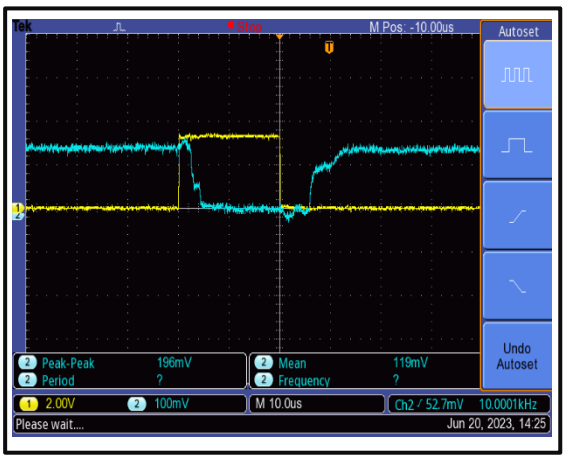
Insertion Loss vs. Temperature



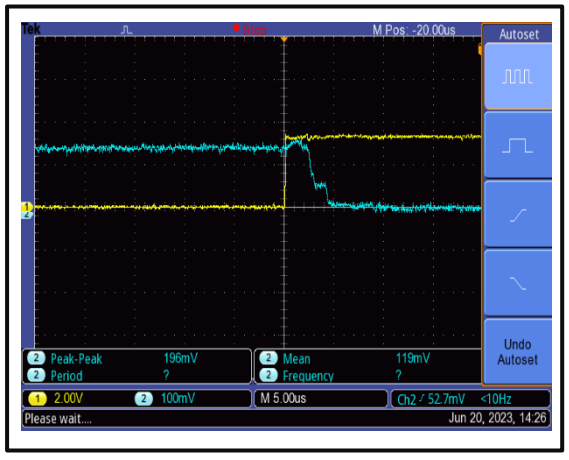
IIP3



Switching Speed

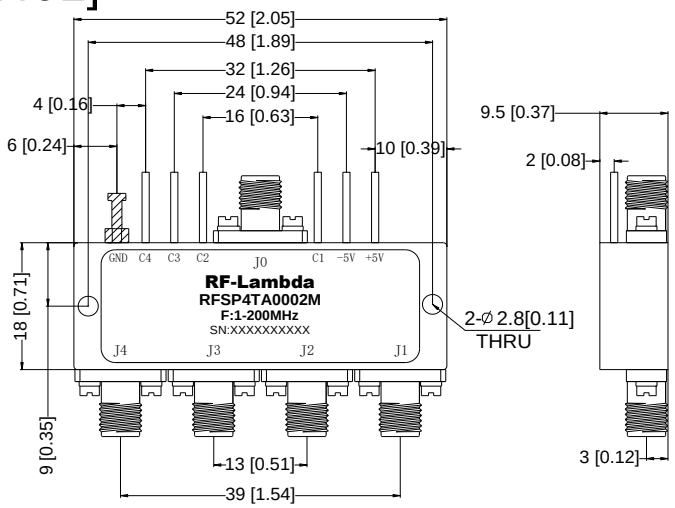


Switching Speed

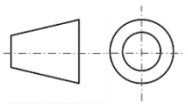


Outline Drawing

[X401]



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				



Notes:
1. Package Material: Aluminum
2. Finish: Gold Plated
3. All dimensions are in millimeters [inches].
4. Housing Tolerances±0.1 [0.004]unless otherwise specified.
5. Standard torque wrench must be used to secure RF connectors.

Additional Information

Documentation	Webpage
ESD Policy	https://rflambda.com/pdf/rflambda_esd_control.pdf
Connector Torque Specifications	https://www.rflambda.com/pdf/Torque_Specifications.pdf
Random Vibration Test Standard	https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf

Ordering Information

Part Number	Modification	Description
RFSP4TA0002M	Standard	1MHz-200MHz SP4T PIN Diode Switch

Important Notice

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