Absorptive Coaxial SP8T Switch
0.1GHz-50GHz

Product Description

RFSP8TA01M50G is an absorptive coaxial single pole eight throw switch with a frequency range of 0.1 to 50GHz.

The max power input of this switch is 23dBm. The insertion loss is 7.5dB with a typical isolation of 55dB.

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
- Low Power Cold Switching
- Fast Switching Speed
- Insertion Loss 7.5dB Typical
- Isolation 55dB Typical
- 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/-15V, TTL = 0 / +5V

Parameter	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Units
Frequency Range		0.1-18			18-43.5			43.5-50		GHz
Insertion Loss		5.5	6.5		7.5	8.5		9.5	10	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/ °C
Isolation	50	65		45	55		39	50		dB
Input VSWR		2	3		2.5	3		2	2.5	: 1
Output VSWR		2	3		2.5	3		2	2.5	: 1
RF Input Power (CW)			23			23			23	dBm
Power Dissipation		1.5			1.5			1.5		W
0.1dB Compression Point (P0.1dB)		23			23			23		dBm
IIP3		43			38			33		dBm
Switching Speed					100 Max.					ns
Bias Current (+5V/-15V)					300/50 Max.					mA
Weight					0.12 Max.					lbs
Impedance					50					Ω
Input / Output Connectors					2.4mm-Female(Input) – 2.4mm-Female(Output)					
Interface and Control Connector					MICRO-D9 (Female)					
Package					Epoxy Sealed (Standard)					
					Hermetically Sealed (Optional)					

RF-LAMBDA USA LLC: www.rflambda.com
Sales: sales@rflambda.com Technical: support@rflambda.com

Absolute Maximum Ratings

Parameter	Rating
Biasing	+5V±10%/-15V±10%

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

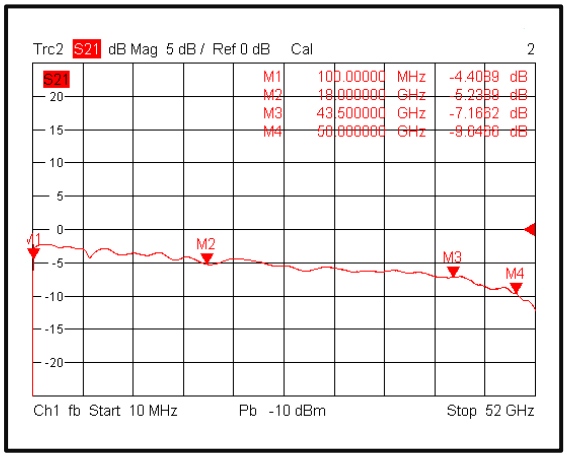
Environmental Specifications and Test Standards

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)

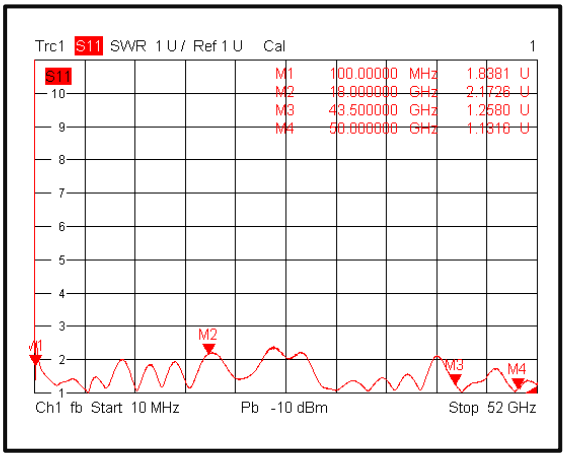
**For vibration testing details please see additional information section.

Typical Performance Plots

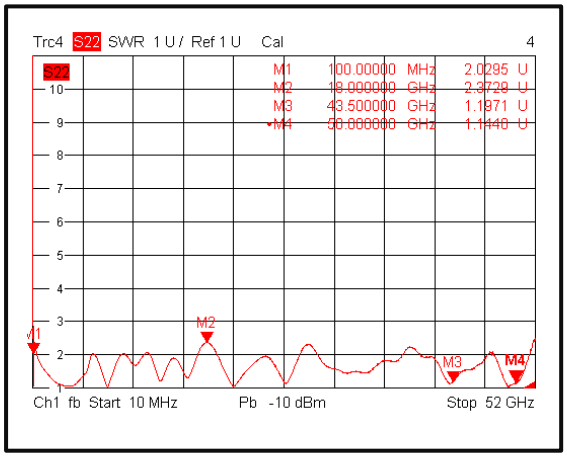
Insertion Loss @+25℃



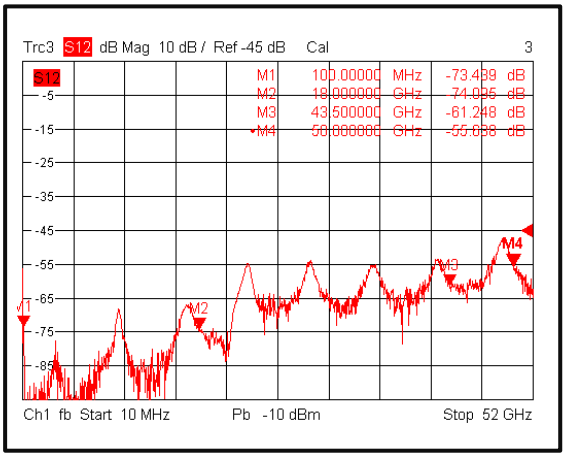
Input VSWR @+25℃



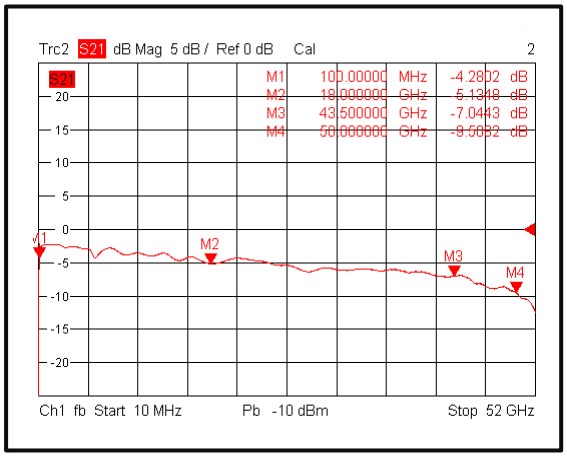
Output VSWR @+25℃



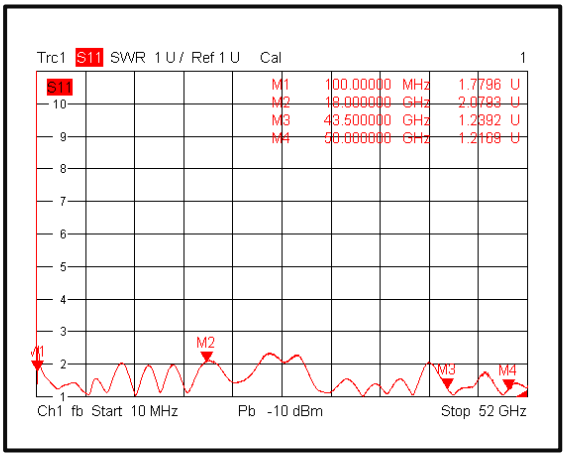
Isolation @+25℃



Insertion Loss @-40℃

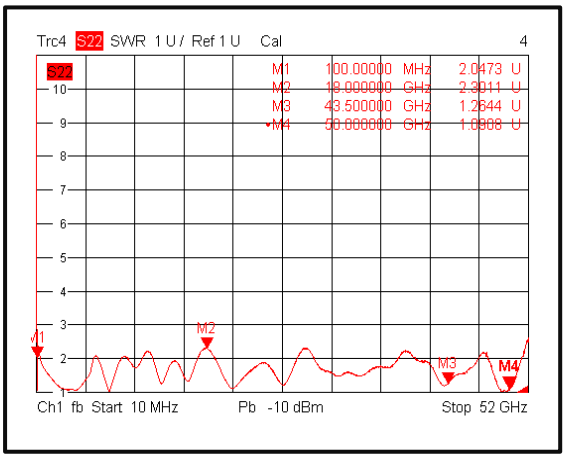


Input VSWR @-40℃

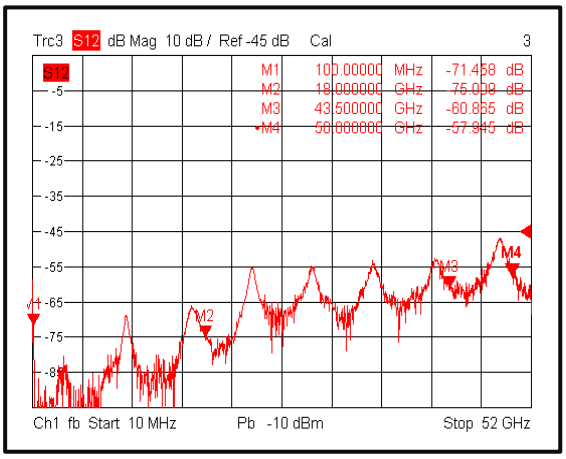


Typical Performance Plots

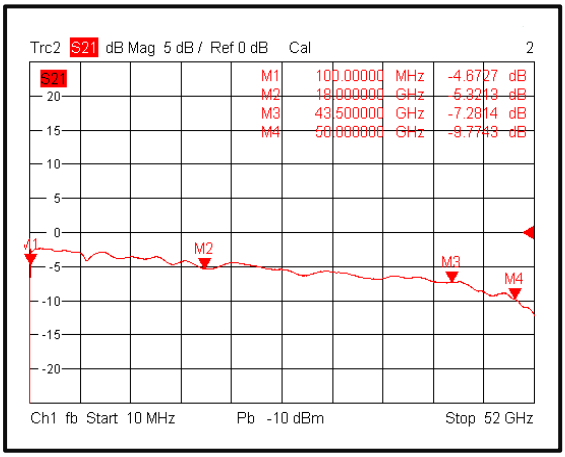
Output VSWR @-40℃



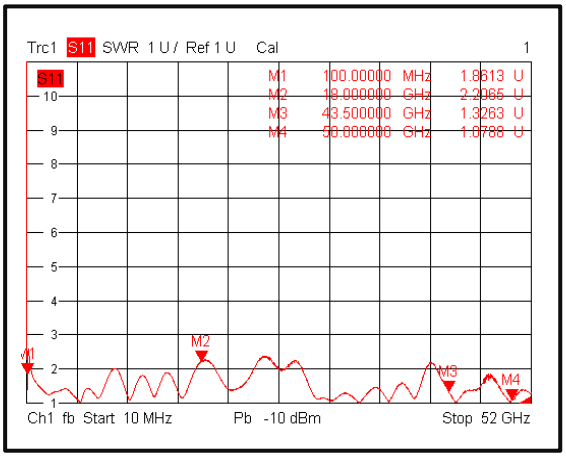
Isolation @-40℃



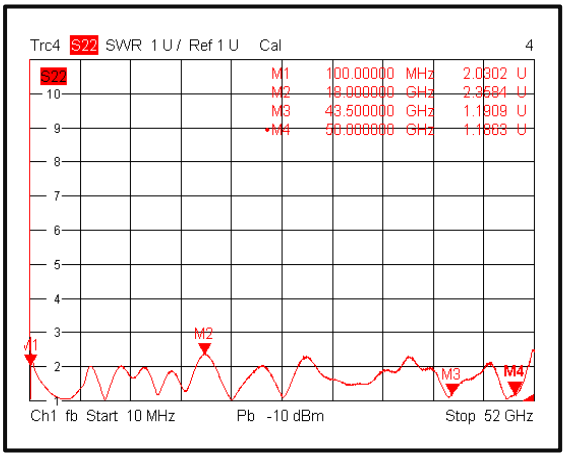
Insertion Loss @+85℃



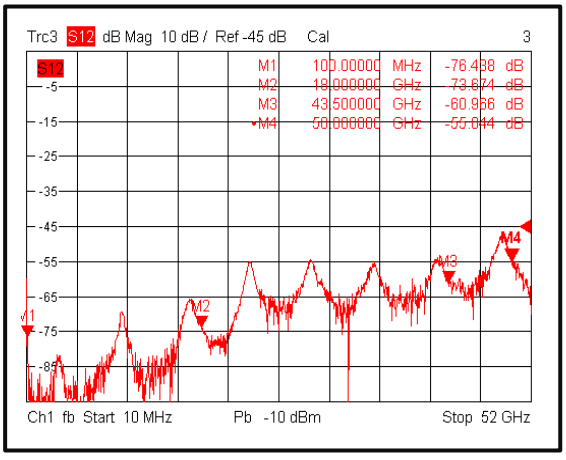
Input VSWR @+85℃



Output VSWR @+85℃

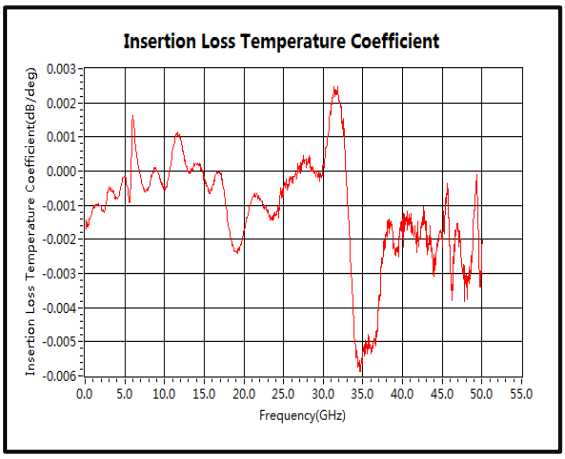


Isolation @+85℃

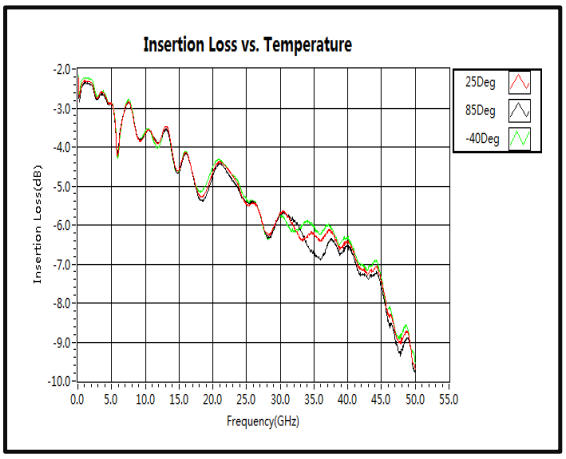


Typical Performance Plots

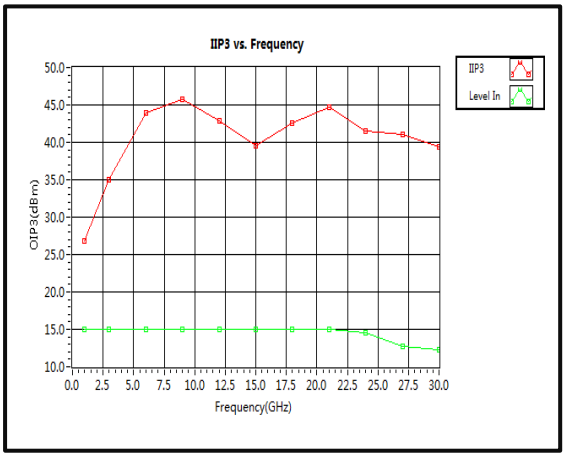
Insertion Loss Temperature Coefficient



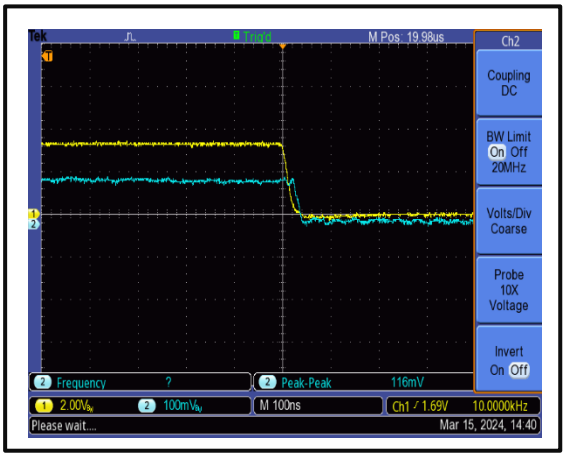
Insertion Loss vs. Temperature



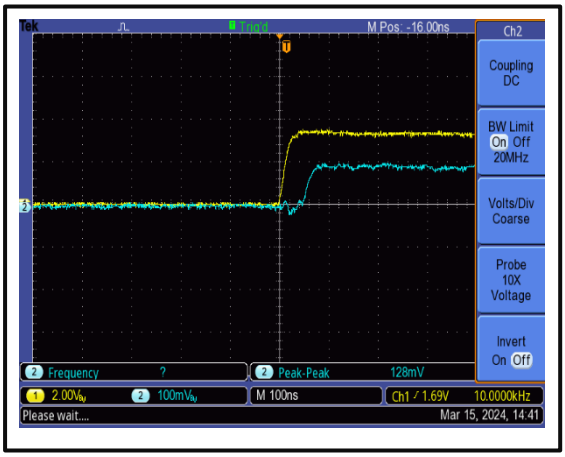
IIP3



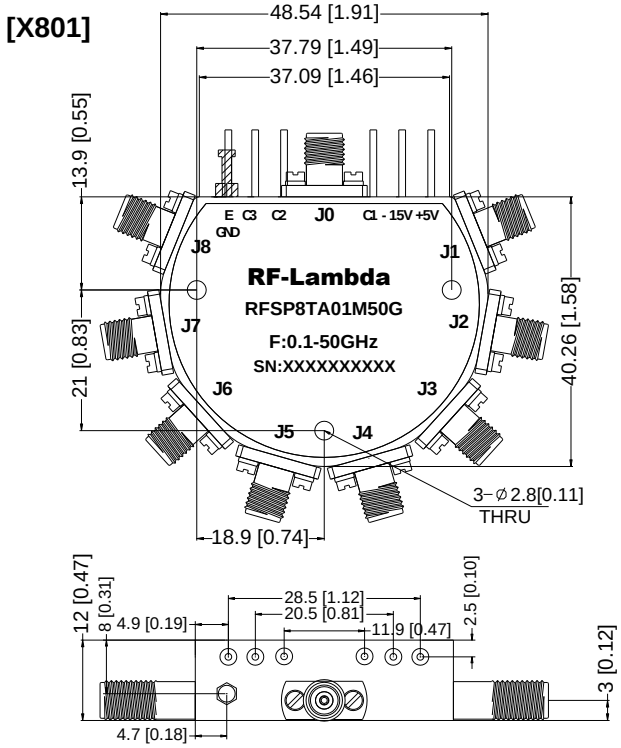
Switching Speed



Switching Speed

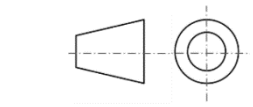


Outline Drawing



Truth Table				
TTL Control Voltage THRESHOLD				Low(0)=0~0.8V High(1)=2.8~5V
Control Input TTL				Signal Path State
E	C3	C2	C1	
1	X	X	X	ALL Ports Off (50Ω)
0	0	0	0	J0-J1
0	0	0	1	J0-J2
0	0	1	0	J0-J3
0	0	1	1	J0-J4
0	1	0	0	J0-J5
0	1	0	1	J0-J6
0	1	1	0	J0-J7
0	1	1	1	J0-J8
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
RFSP8TA01M50G	Connectors 2.4mm-Female	0.1GHz-50GHz SP8T PIN Diode Switch

Important Notice

RF-LAMBDA USA LLC: www.rflambda.com
Sales: sales@rflambda.com Technical: support@rflambda.com