

Absorptive Coaxial SP8T Switch 0.5GHz-43.5GHz



Product Description

RFSP8TA5M43GA is an absorptive coaxial single pole eight throw switch with a frequency range of 0.5 to 43.5GHz.

The max power input of this switch is 23dBm. The insertion loss is 7.0dB with a typical isolation of 70dB.

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

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

Features

- TTL compatible driver included
- Low Power Cold Switching
- Fast Switching Speed
- Insertion Loss 7.0dB
- Isolation 70dB
- 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	Min	Typ	Max	Units
Frequency Range	0.5		8	8		26.5	26.5		43.5	GHz
Insertion Loss		4.5	5.0		6.8	7.5		8.0	9.0	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/ °C
Isolation (Adjacent channels)	60	70		50	58		48	55		dB
Isolation (Between any channels)	60	70		50	58		42	50		dB
Input VSWR		2	3		1.9	3		1.8	2.5	: 1
Output VSWR		2	3		1.9	3		1.8	2.5	: 1
RF Input Power			23			23			23	dBm
DC Power Dissipation		0.8			0.8			0.8		W
0.1dB Compression Point(P0.1dB)		23			23			23		dBm
IIP3		42			43			36		dBm
Switching Speed					50 Typ. 100 Max.					ns
Bias Current (+5V/-5V)					200/50 Max.					mA
Weight					0.16 Max.					lbs
Impedance					50					Ω
Input / Output Connectors					2.92mm-Female(Input) – 2.92mm-Female(Output)					
Interface and Control Connector					MICRO-D9 (Female)					
Package					Epoxy Sealed (Standard)					
					Hermetically Sealed (Optional)					

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.

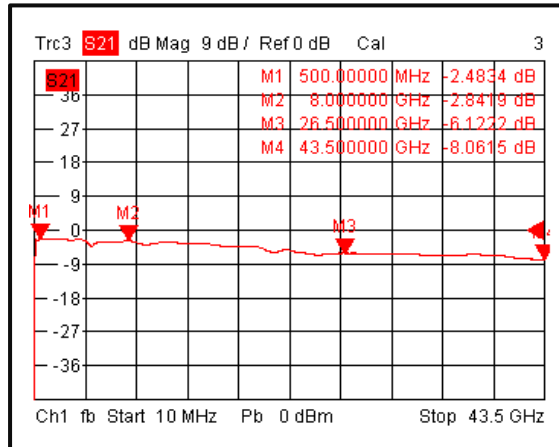
Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40°C to +85°C (Case Temperature)
Storage Temperature	-50°C to +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)

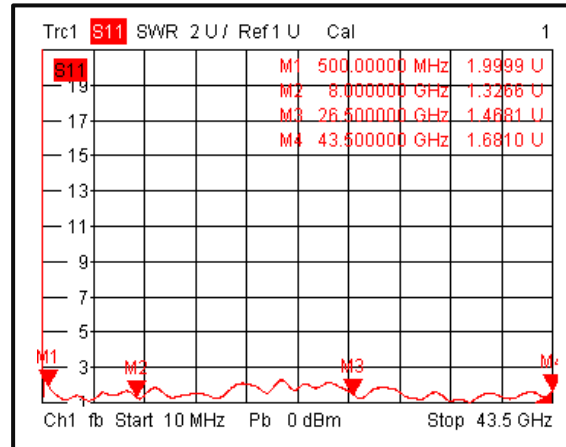
**For vibration testing details please see additional information section.

Typical Performance Plots

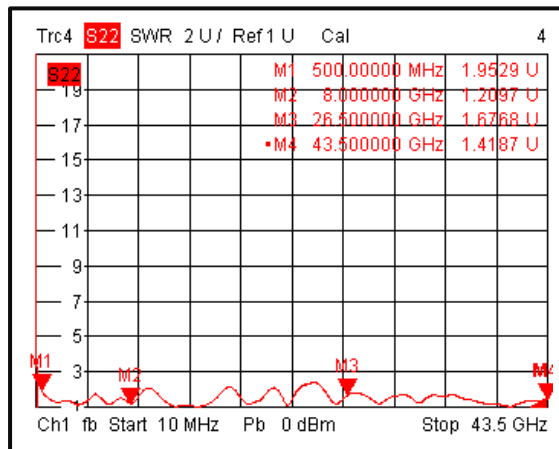
Insertion Loss @+25°C



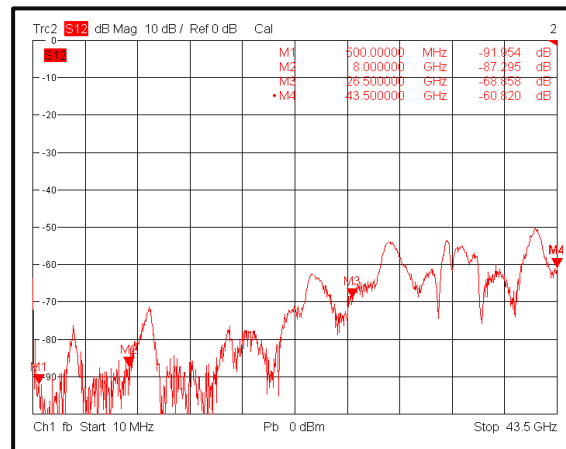
Input VSWR @+25°C



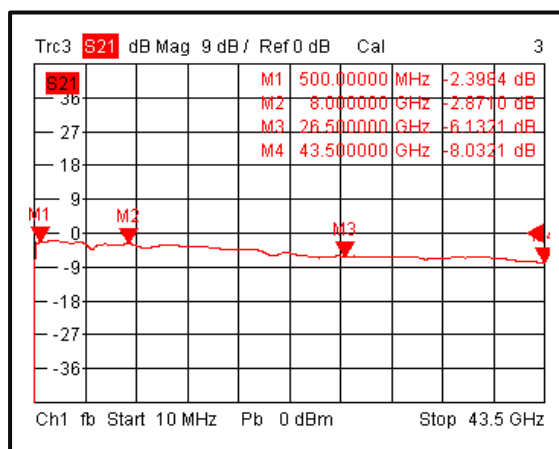
Output VSWR @+25°C



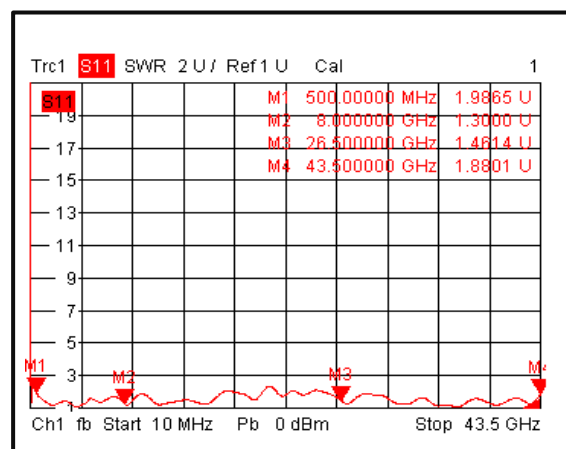
Isolation @+25°C



Insertion Loss @-40°C

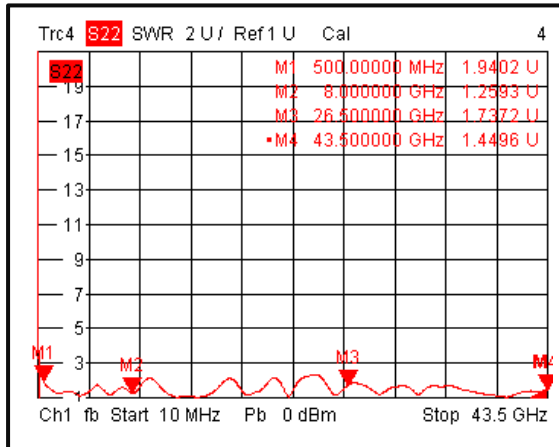


Input VSWR @-40°C

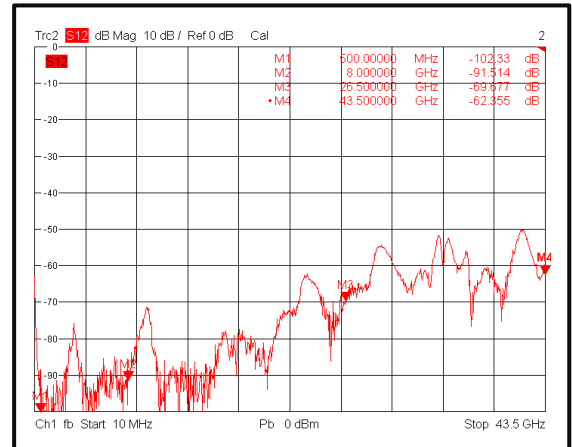


Typical Performance Plots

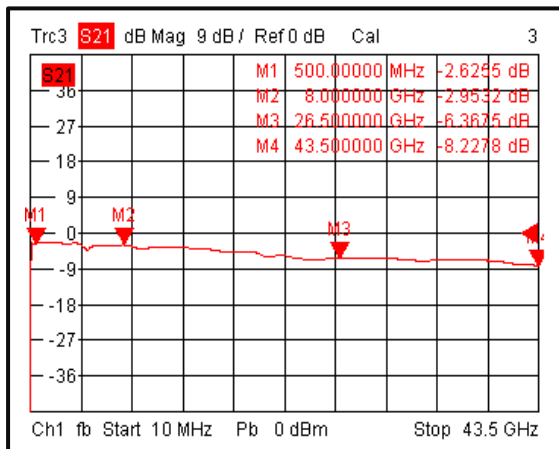
Output VSWR @-40°C



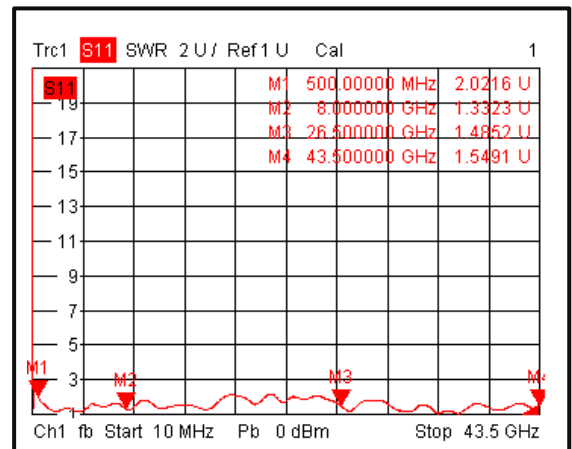
Isolation @-40°C



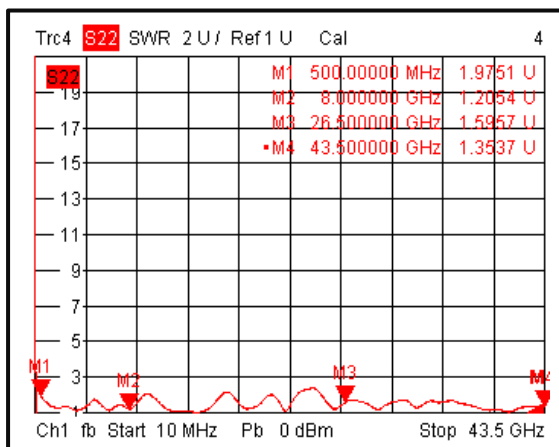
Insertion Loss @+85°C



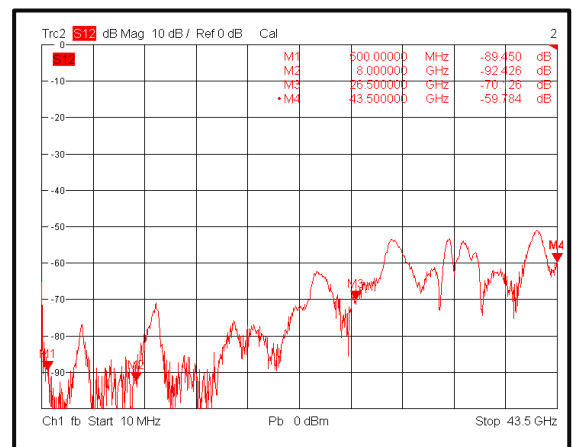
Input VSWR @+85°C



Output VSWR @+85°C

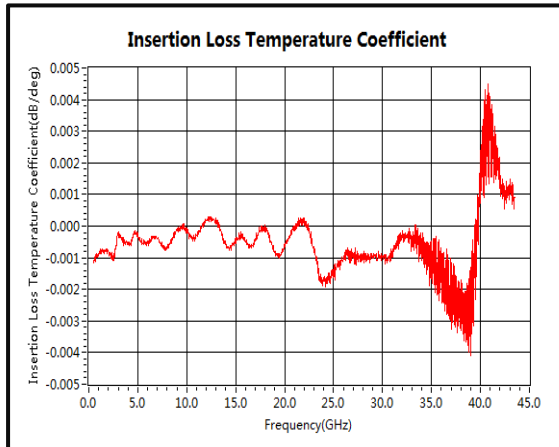


Isolation @+85°C

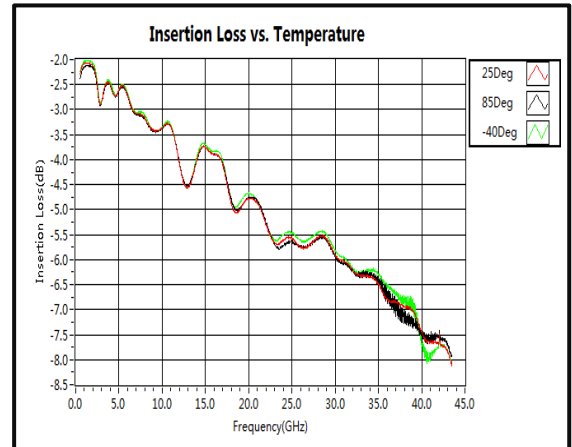


Typical Performance Plots

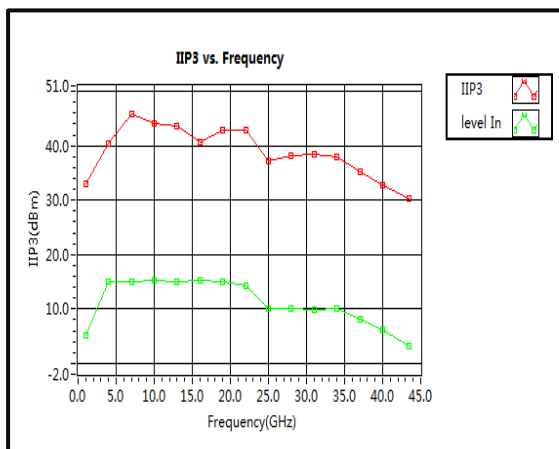
Insertion Loss Temperature Coefficient



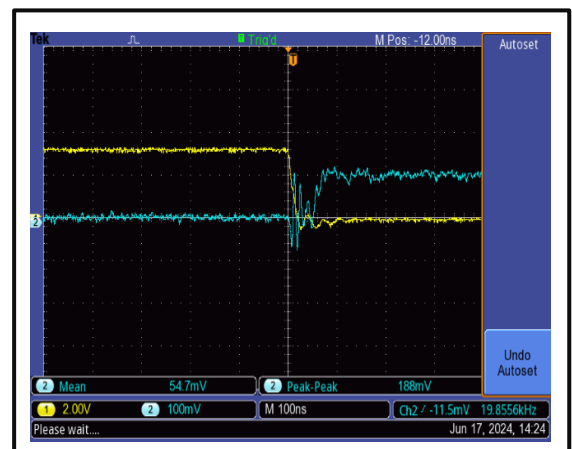
Insertion Loss vs. Temperature



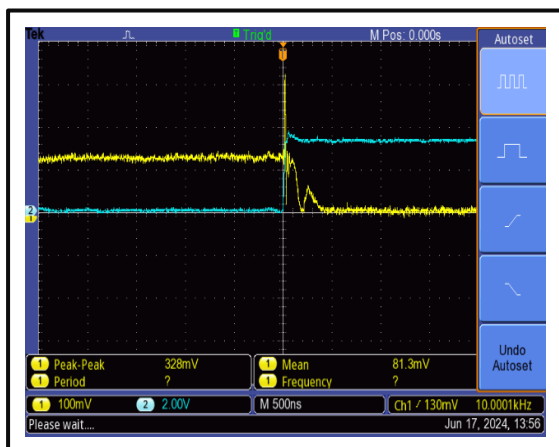
IIP3



Switching Speed

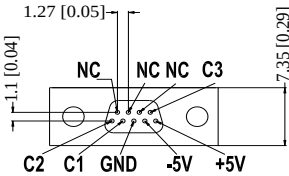
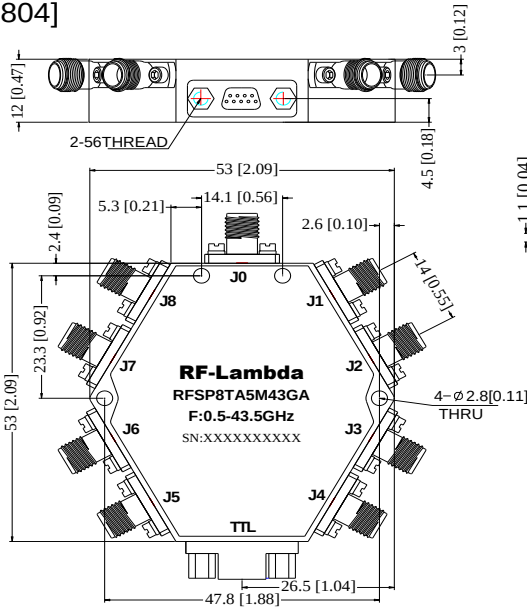


Switching Speed



Outline Drawing

[X804]

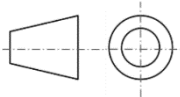


MICRO-D9(Female)

Truth Table				
TTL Control Voltage THRESHOLD			Low(0)=0~0.8V	
			High(1)=2.8~5V	
Control Input TTL			Signal Path State	
C3	C2	C1		
0	0	0	J0-J1	
0	0	1	J0-J2	
0	1	0	J0-J3	
0	1	1	J0-J4	
1	0	0	J0-J5	
1	0	1	J0-J6	
1	1	0	J0-J7	
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
RFSP8TA5M43GA	Connectors 2.92mm-Female	0.5GHz-43.5GHz SP8T PIN Diode Switch

Important Notice

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