

Absorptive Coaxial SP16T Switch 0.5GHz-43.5GHz



Note: Photo is for illustration purposes only.
Please refer to outline drawing.

Product Description

RFSP16TA5M43G-RS422 is an absorptive coaxial single pole sixteen throw switch with a frequency range of 0.5 to 43.5GHz.

The maximum power input of this switch is 23dBm. The insertion loss is 8dB max with a typical isolation of 60dB.

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

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

Features

- RS-422 compatible driver included
- Fast Switching Speed
- Insertion Loss 8dB
- Isolation 60dB
- 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

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		4.2	5.5		8	10.0		10.5	13.0	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/ °C
Isolation	60	70		50	60		45	50		dB
Input VSWR		2.5	3		2.5	3		2.5	3	: 1
Output VSWR		2.5	3		2.5	3		2.5	3	: 1
RF Input power (CW)			23			23			23	dBm
DC Power Dissipation		2.5			2.5			2.5		W
0.1dB Compression Point (P0.1dB)		23			23			23		dBm
IIP3		55			55			50		dBm
Switching Speed					100 Typ.					ns
Bias Current (+5V)					700 Typ.					mA
Weight					/					lbs
Impedance					50					Ω
Input / Output Connectors					2.92mm-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.

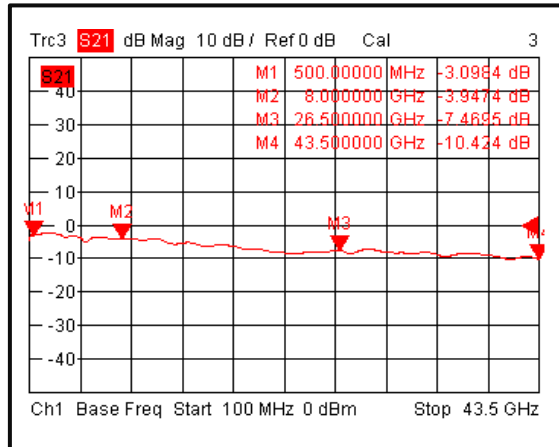
Environmental Specifications and Test Standards

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)

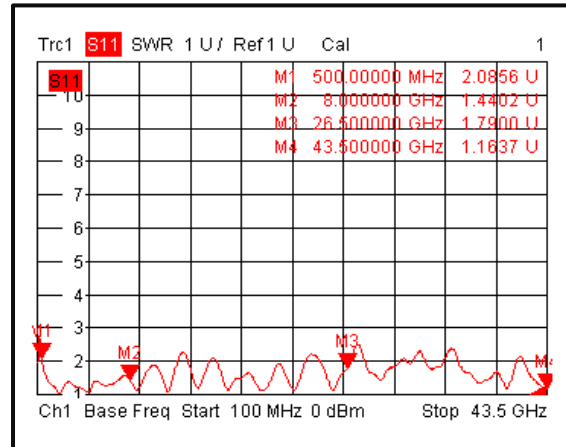
*For vibration testing details please see additional information section.

Typical Performance Plots

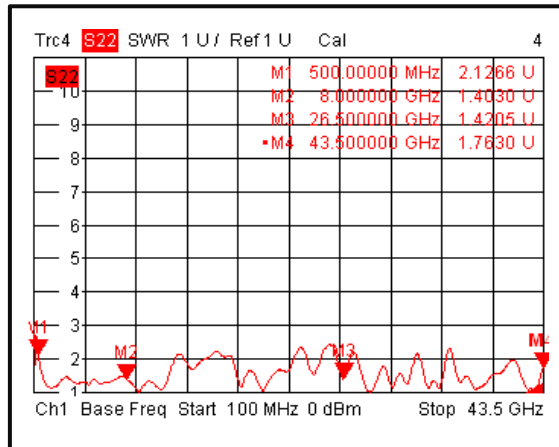
Insertion Loss @+25°C



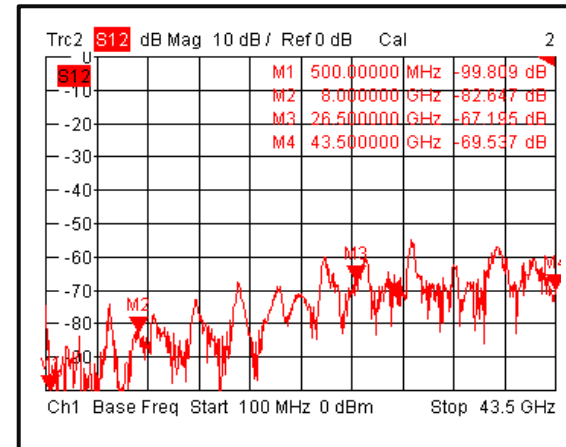
Input VSWR @+25°C



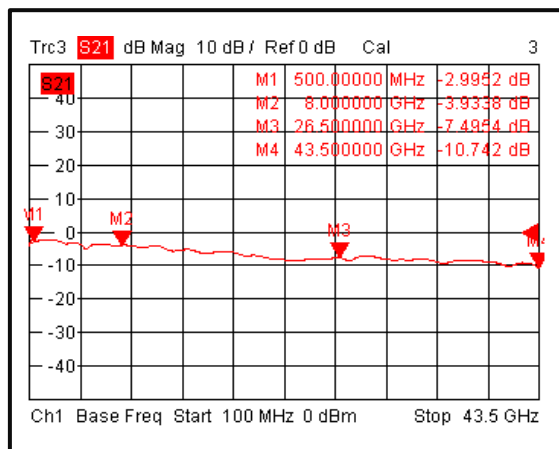
Output VSWR @+25°C



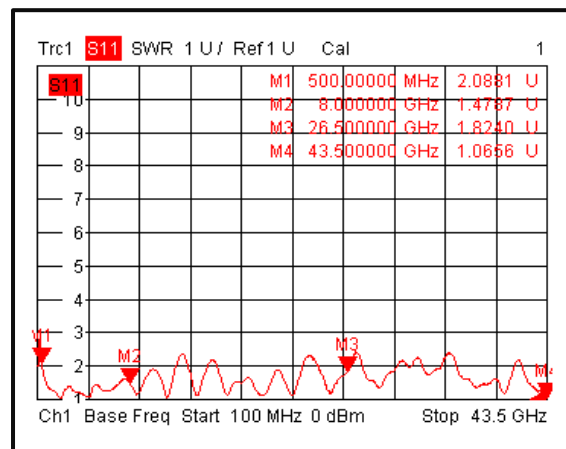
Isolation @+25°C



Insertion Loss @-45°C

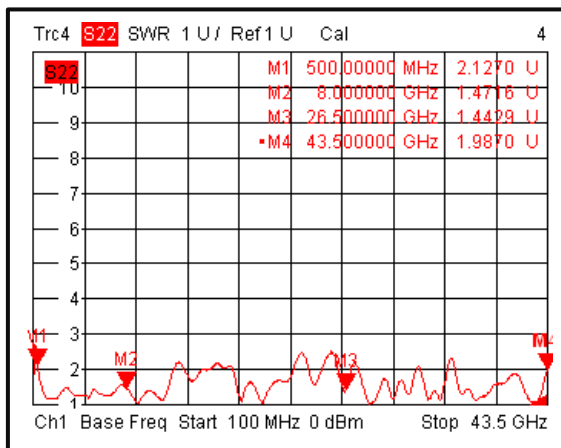


Input VSWR @-45°C

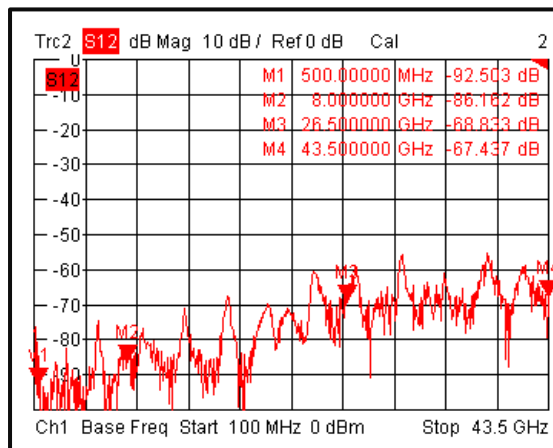


Typical Performance Plots

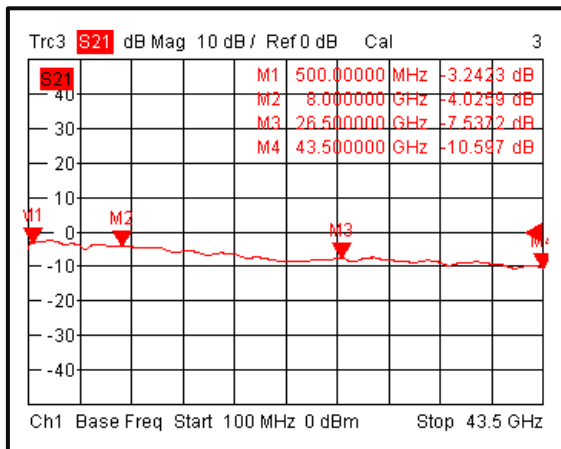
Output VSWR @-45°C



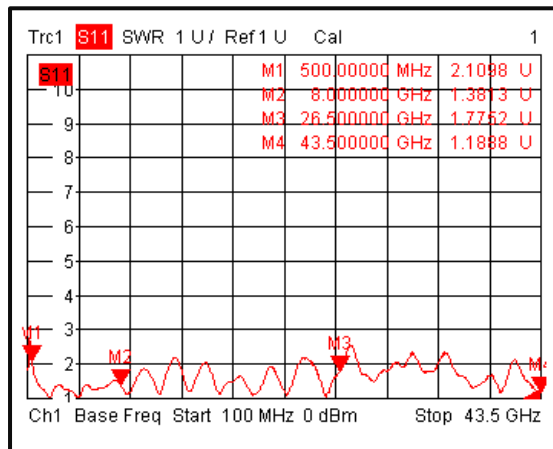
Isolation @-45°C



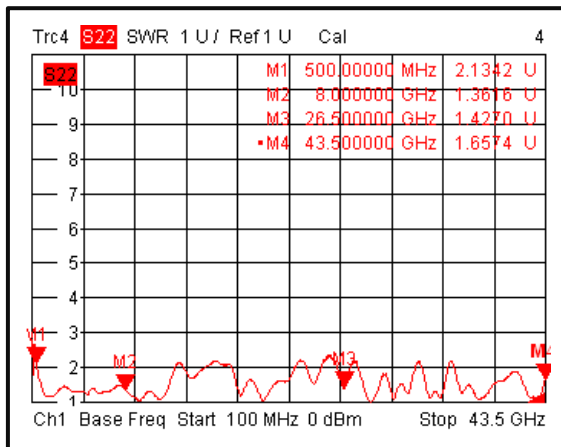
Insertion Loss @+85°C



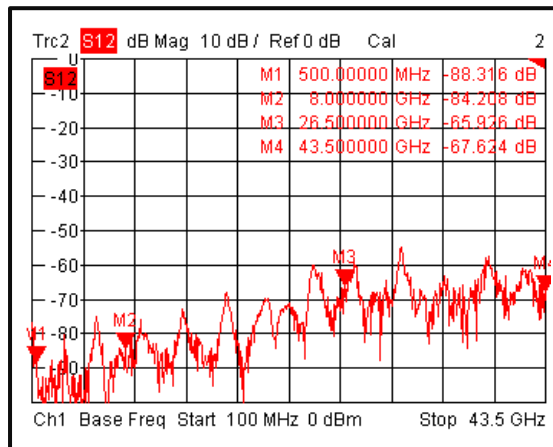
Input VSWR @+85°C



Output VSWR @+85°C

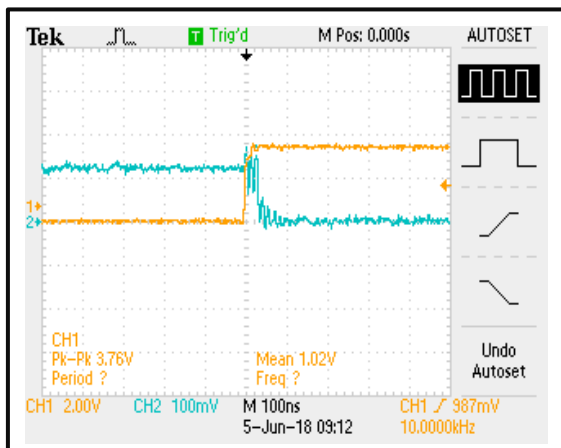


Isolation @+85°C

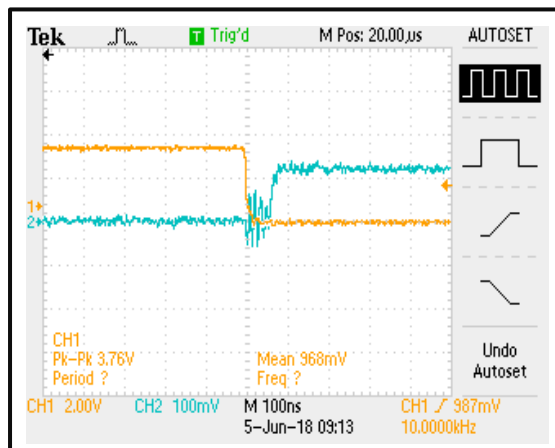


Typical Performance Plots

Switching Speed

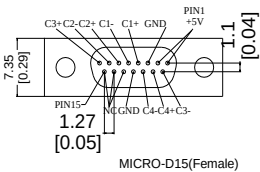
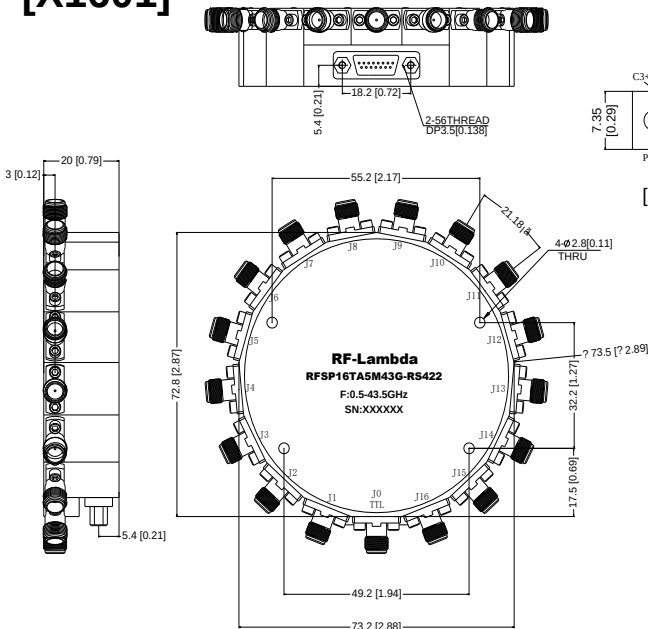


Switching Speed



Outline Drawing

[X1601]



Truth Table

Common-Mode Input Voltage	±7V (MAX)
High(1)	2V (MIN)
Low(0)	0.8V (MAX)
Control Voltage THRESHOLD	Low(0)=(C+)-(C-) ≤0.2V High(1)=(C+)-(C-) ≥0.2V
Control Input RS-422	Signal Path State
C1+ C1- C2+ C2- C3+ C3- C4+ C4-	
0 1 0 1 0 1 0 1	J0-J1
1 0 0 1 0 1 0 1	J0-J2
0 1 1 0 0 1 0 1	J0-J3
1 0 1 0 0 1 0 1	J0-J4
0 1 0 0 1 1 0 1	J0-J5
1 0 0 1 1 0 0 1	J0-J6
0 1 1 0 1 0 0 1	J0-J7
1 0 1 0 1 0 0 1	J0-J8
0 1 0 1 0 1 1 0	J0-J9
1 0 0 1 0 1 1 0	J0-J10
0 1 1 0 0 1 1 0	J0-J11
1 0 1 0 0 1 1 0	J0-J12
0 1 0 1 1 0 1 0	J0-J13
1 0 0 1 1 0 1 0	J0-J14
0 1 1 0 1 0 1 0	J0-J15
1 0 1 0 1 0 1 0	J0-J16

Control instruction Customization available upon request

- Notes:
- 1. Package Material: Aluminum
 - 2. Finish: Nickel 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
RFSP16TA5M43G-RS422	Connectors 2.92mm-Female	0.5GHz-43.5GHz SP16T PIN Diode Switch

Important Notice

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