Absorptive Coaxial SP6T Switch
0.5GHz - 43.5GHz

Product Description

RFSP6TA5M43G is an absorptive coaxial single pole six throw switch with a frequency range of 0.5 to 43.5GHz.

The power input of this switch is 23dBm Max. The insertion loss is 4.2dB 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 - 45℃ and +85℃

Features

- Ultra Wide Band Operation 0.5-43.5GHz
- TTL compatible driver included
- Fast Switching Speed
- Low Insertion Loss and High Isolation

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		4.2	4.5		6.5	7		7.5	8.5	dB
Insertion Loss Temperature Coefficient		0.003			0.003			0.003		dB/ °C
Isolation	60	70		50	58		48	55		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 (CW)			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		40			43			35		dBm
Switching Speed		50	100		50	100		50	100	ns
Bias Current (+5V/-5V)					200/50 Max.					mA
Weight					0.085 Max.					lbs
Impedance					50					Ω
Input / Output Connectors					2.92mm - 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%/-5V±10%

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

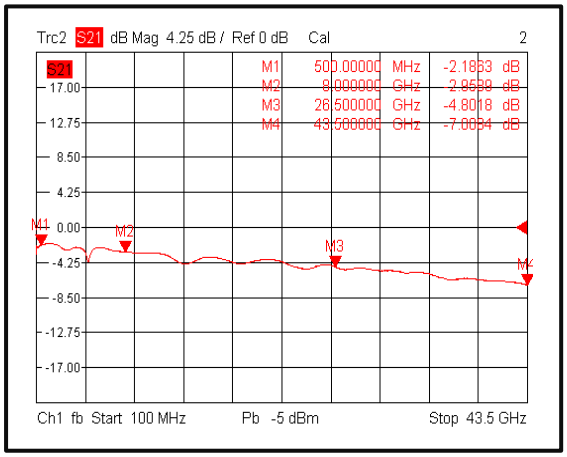
Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-45ºC to +85ºC (Case Temperature)
Storage Temperature	-50ºC to +125ºC
Thermal Shock	-45ºC → +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)

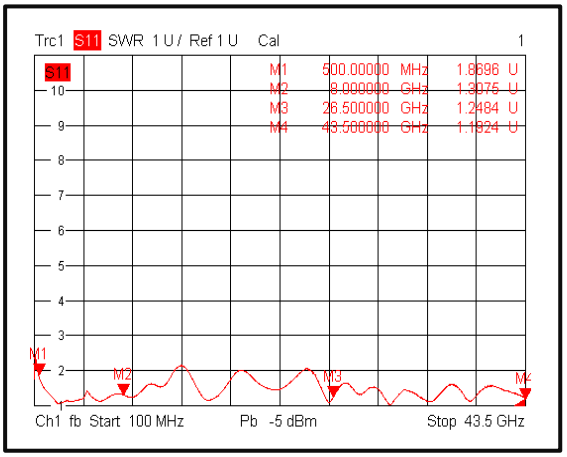
*For vibration testing details please see additional information section.

Typical Performance Plots

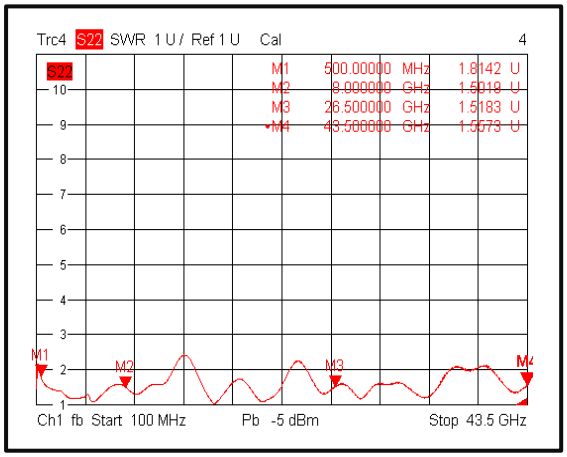
Insertion Loss @+25℃



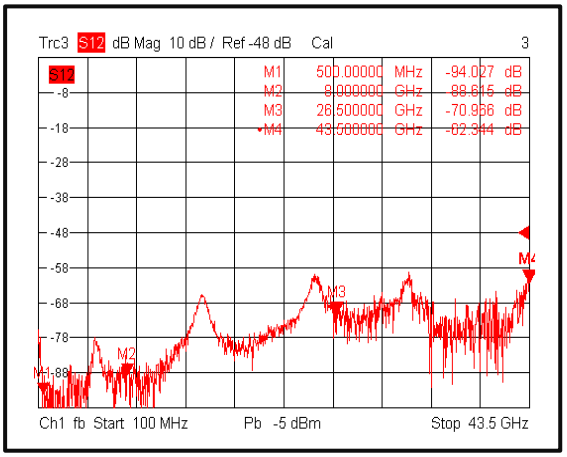
Input VSWR @+25℃



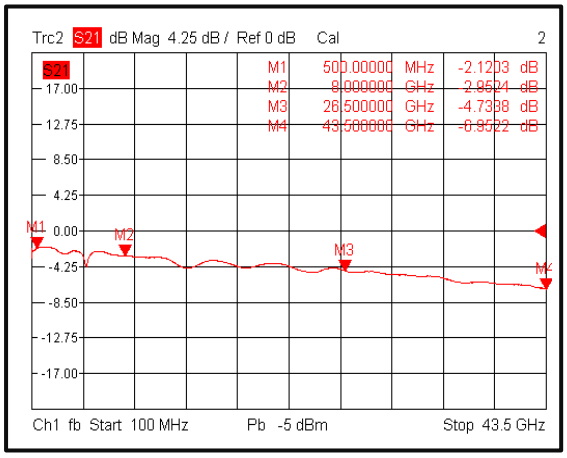
Output VSWR @+25℃



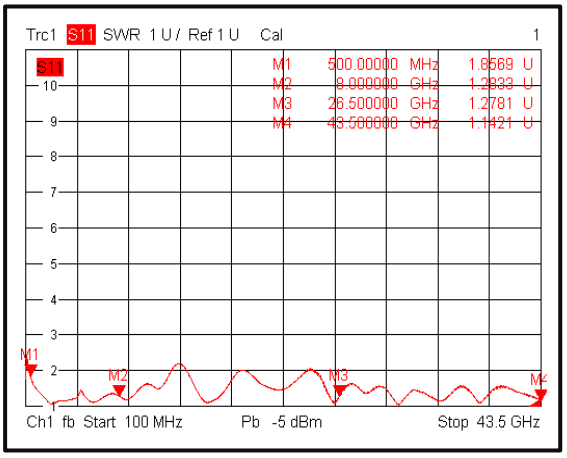
Isolation @+25℃



Insertion Loss @-45℃

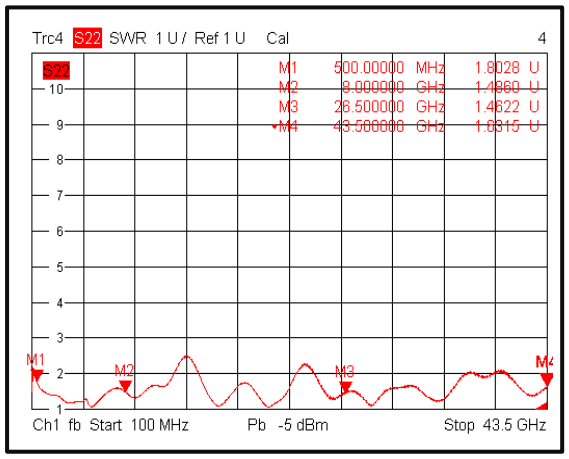


Input VSWR @-45℃

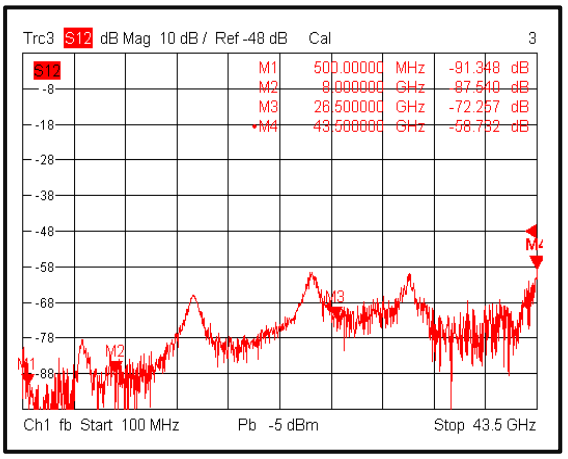


Typical Performance Plots

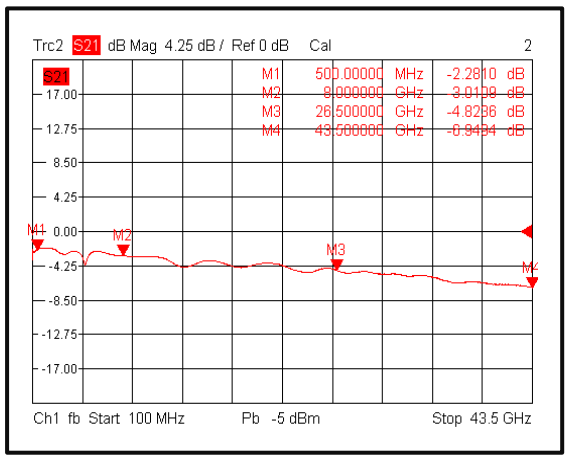
Output VSWR @-45℃



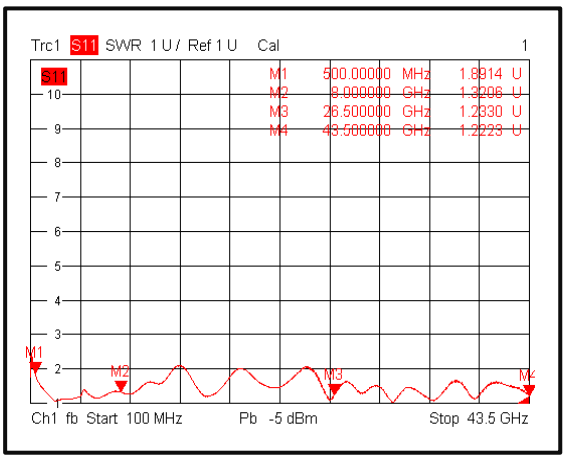
Isolation @-45℃



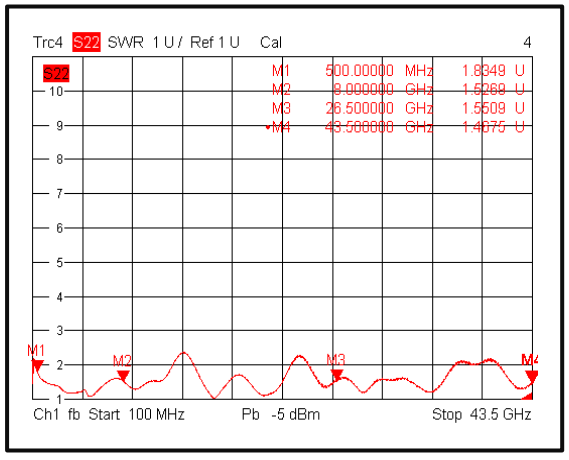
Insertion Loss @+85℃



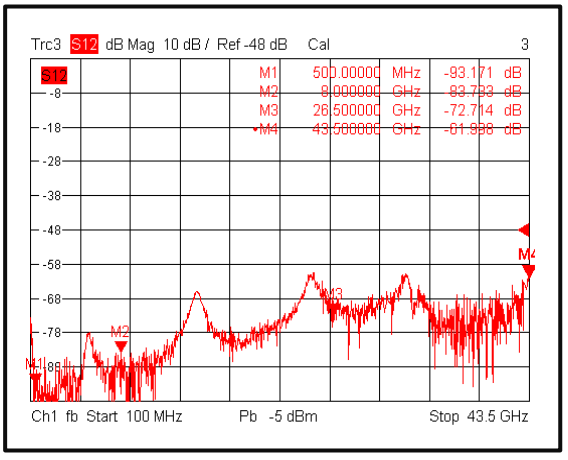
Input VSWR @+85℃



Output VSWR @+85℃

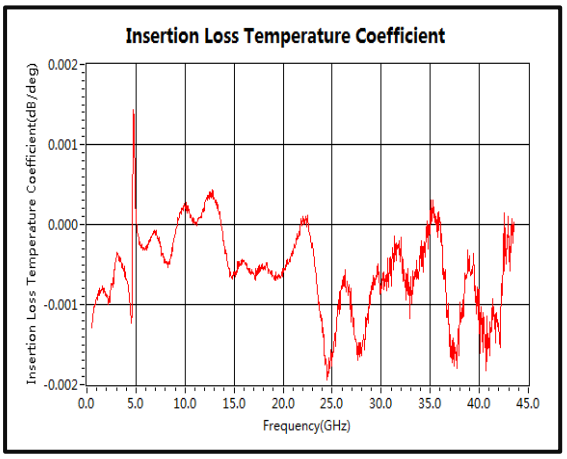


Isolation @+85℃

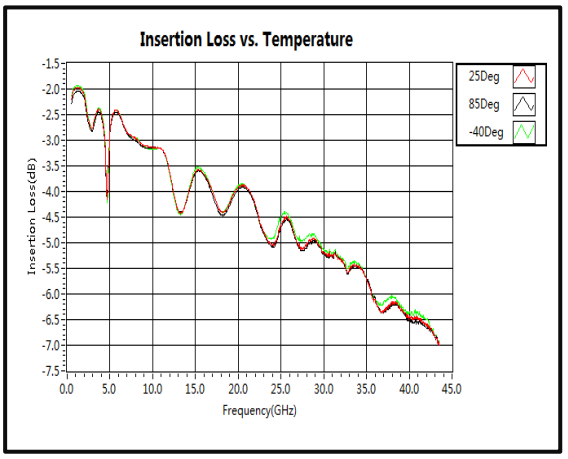


Typical Performance Plots

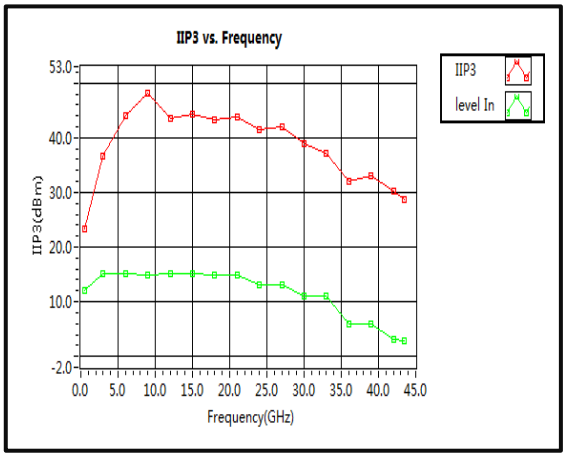
Insertion Loss Temperature Coefficient



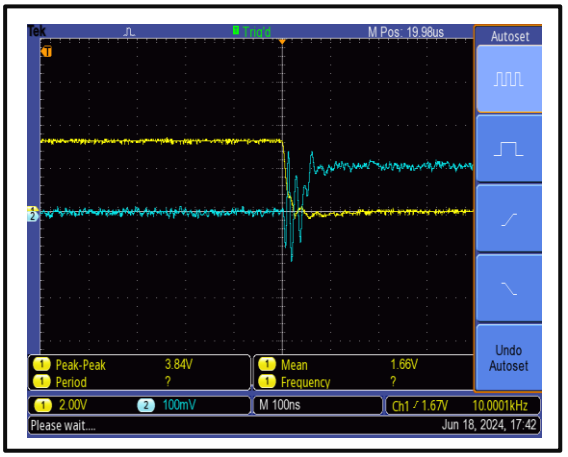
Insertion Loss vs. Temperature



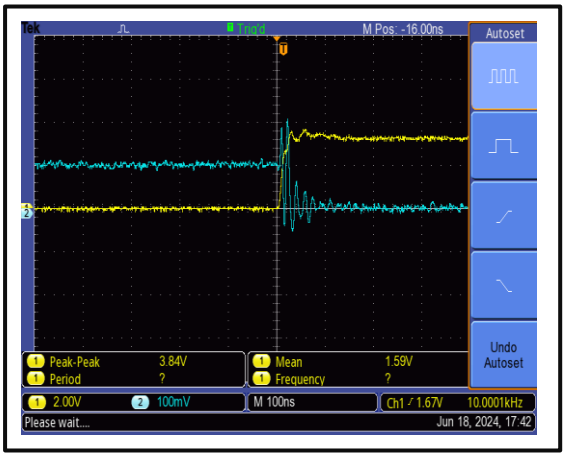
IIP3



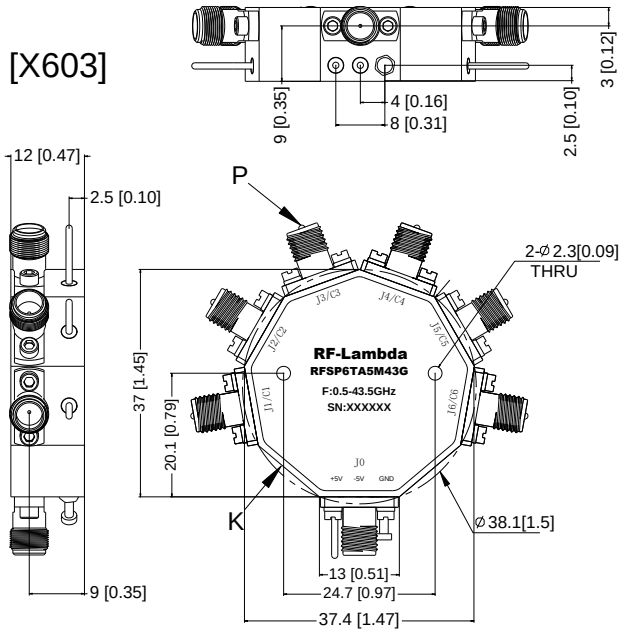
Switching Speed



Switching Speed

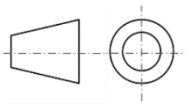


Outline Drawing



Truth Table

TTL Control Voltage	Low(0)=0~0.8V High(1)=2.8~5V					
Control Input TTL						Signal Path State
C6	C5	C4	C3	C2	C1	
1	1	1	1	1	0	J0-J1
1	1	1	1	0	1	J0-J2
1	1	1	0	1	1	J0-J3
1	1	0	1	1	1	J0-J4
1	0	1	1	1	1	J0-J5
0	1	1	1	1	1	J0-J6
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
RFSP6TA5M43G	Standard	0.5GHz-43.5GHz SP6T PIN Diode Switch

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