

Absorptive Coaxial SP6T Switch 0.5GHz-4GHz



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

Features

- TTL compatible driver included
- Fast Switching Speed
- Low Power Cold Switching
- Insertion Loss 1.8dB Typical
- Isolation 90dB Typical
- 50 Ohm Matched

Product Description

RFSP6TA5M04G is an absorptive coaxial single pole six throw switch with a frequency range of 0.5 to 4GHz.

The power input of this switch is 23dBm max. The insertion loss is 1.8dB with a typical isolation of 90dB.

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

The working temperature of this product is between - 45°C and +85°C

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	Units
Frequency Range		0.5-4		GHz
Insertion Loss	2	1.8	2.5	dB
Insertion Loss Temperature Coefficient		0.003		dB/ °C
Isolation		90		dB
Input VSWR		1.5		: 1
Output VSWR		1.5		: 1
RF Input power		23		dBm
DC Power Dissipation		1.7		W
0.1dB Compression Point (P0.1dB)		24		dBm
IIP3		40		dBm
Switching Speed		100 Typ.		us
Bias Current (+5V/-5V)		240/80 Max.		mA
Weight		0.664 Max.		lbs
Impedance		50		Ω
Input / Output Connectors	SMA-Female(Input) – SMA-Female(Output)			
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.

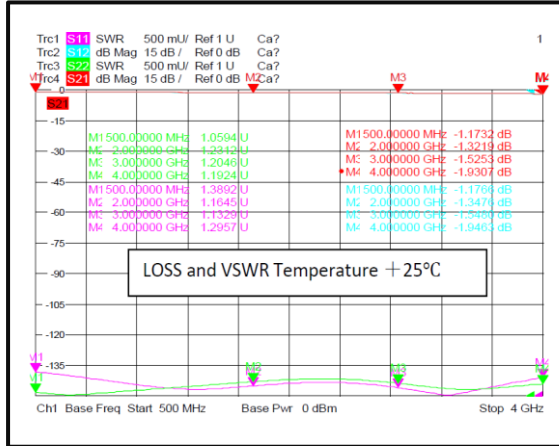
Environmental Specifications and Test Standards

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

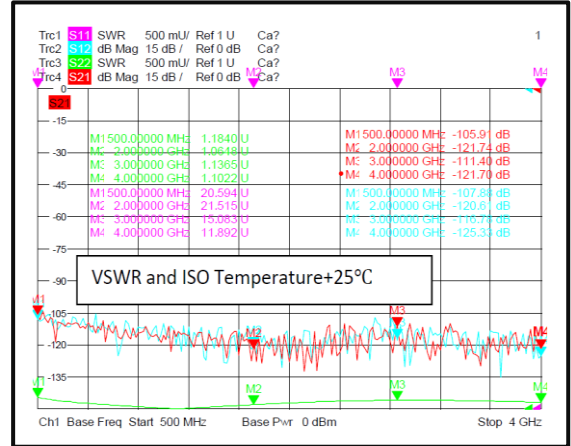
*For vibration testing details please see additional information section.

Typical Performance Plots

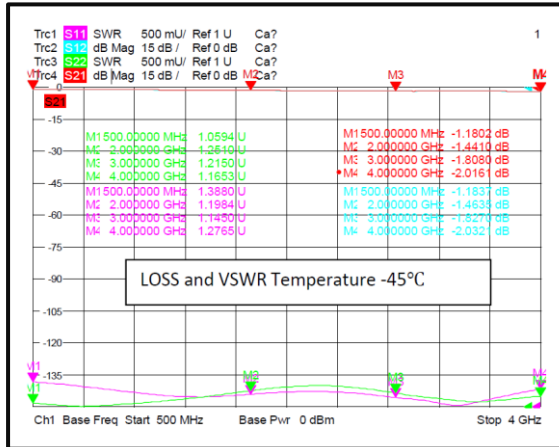
LOSS and VSWR Temperature +25 °C



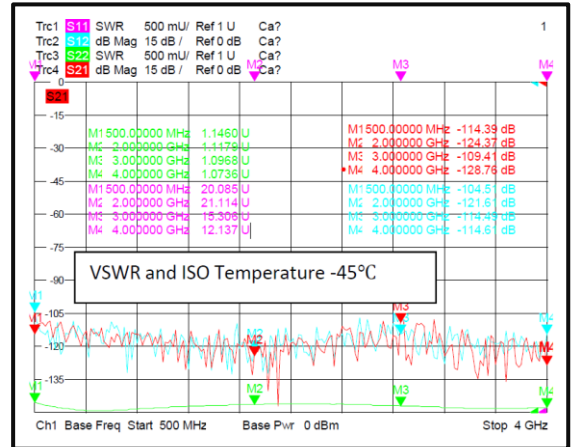
VSWR and ISO Temperature +25°C



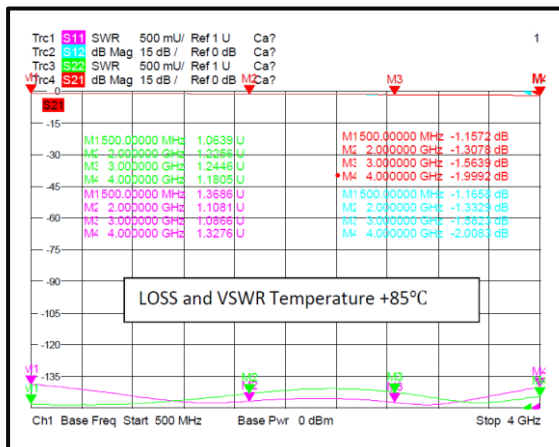
LOSS and VSWR Temperature -45°C



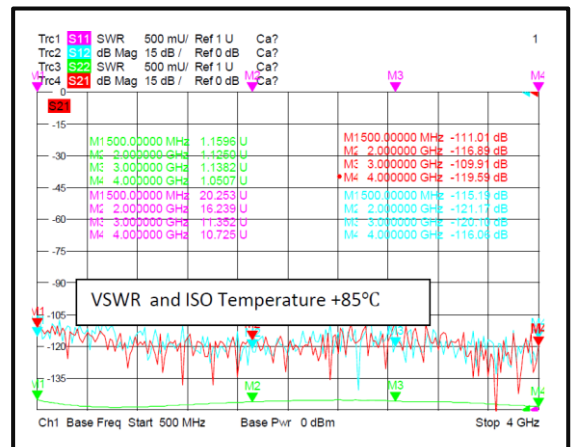
VSWR and ISO Temperature -45°C



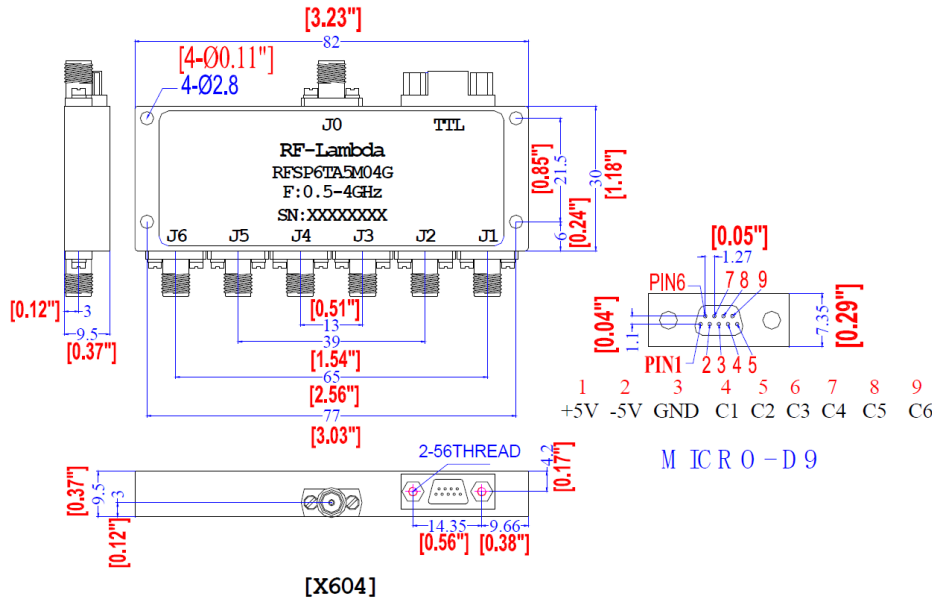
LOSS and VSWR Temperature +85°C



VSWR and ISO Temperature +85°C



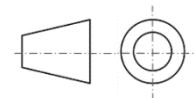
Outline Drawing



Truth Table						
TTL Control Voltage		Low(0)=0-0.8V				
THRESHOLD		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: Brass
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
RFSP6TA5M04G	Standard	0.5GHz-4GHz SP6T PIN Diode Switch

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