

Absorptive SP6T Electro-Mechanical Switch DC - 50GHz



Note: The photo is for illustration purposes only.
Please refer to the outline drawing.

Product Description

RFSP6T50EMA-S is an absorptive SP6T electro-mechanical switch with a frequency range of DC to 50GHz.

The power of this switch is 1W Max. The typical insertion loss is 0.8dB and the Isolation is 70dB with the speed of 20ms. This electromechanical switch works with a +24 VDC power supply.

The working temperature of this product is between - 25°C and + 70°C

Features

- SP6T configuration
- Magnetic latching
- Operating life of 1 million cycles
- Guaranteed repeatability of 0.05dB up to 1 million cycles
- Excellent isolation, typically >80 dB to 18GHz
- Terminated ports
- Standard Drive Compatible
- Control Cable Included.

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 (T_A=+25°C)

Parameter	Min	Typ	Max	Units
Frequency Range		DC – 50		GHz
Insertion Loss		@DC-4GHz	0.2	dB
		@4-26.5GHz	0.8	dB
		@26.5-50GHz	1.2	dB
VSWR		@DC-4GHz	1.2	:1
		@4-26.5GHz	1.9	:1
		@26.5-50GHz	2.2	:1
Isolation		@DC-4GHz	80	dB
		@4-26.5GHz	70	dB
		@26.5-50GHz	60	dB
Input Power			1	W
Switching Speed			20	ms
Life Cycles	1			Million
Repeatability			0.05	dB
Supply Current (VCC=+24VDC)		0.2 Typ.		A
Weight		0.5 Typ.		lbs.
Impedance		50		Ohms
Connector		2.4mm-Female		
Actuator Type		Latching		
Contact		Break Before Make		
Control		Standard Ground		
Package		Epoxy Sealed (Standard)		
		Hermetically Sealed (Optional)		

Absolute Maximum Ratings

Parameter	Rating
Supply Voltage Range	22 – 28VDC

Environmental Specifications and Test Standards

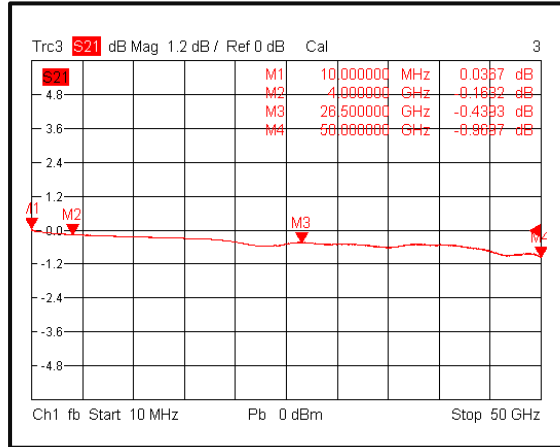
Parameter	Description
Operational Temperature	-25°C to +70°C (Case Temperature)
Storage Temperature	-50°C to +85°C
Thermal Shock	-40°C → +70°C (5 Cycles / 10 hours)
*Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +70°C for 72 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.

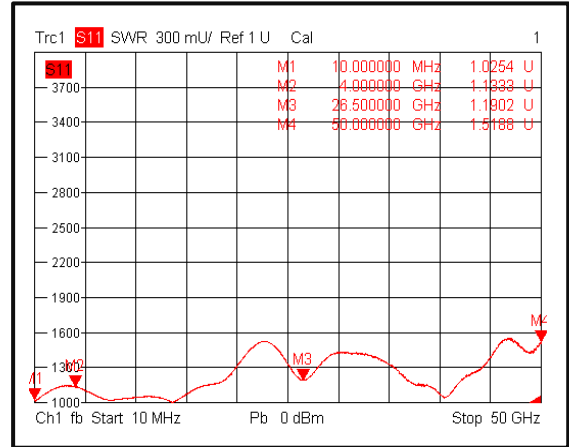
STATUS	PIN		Standard Drive Voltage					
	1	15	3	5	7	9	11	13
RF to 1	22-28V	GND	GND	OPEN	OPEN	OPEN	OPEN	OPEN
RF to 2			OPEN	GND	OPEN	OPEN	OPEN	OPEN
RF to 3			OPEN	OPEN	GND	OPEN	OPEN	OPEN
RF to 4			OPEN	OPEN	OPEN	GND	OPEN	OPEN
RF to 5			OPEN	OPEN	OPEN	OPEN	GND	OPEN
RF to 6			OPEN	OPEN	OPEN	OPEN	OPEN	GND

Typical Performance Plots

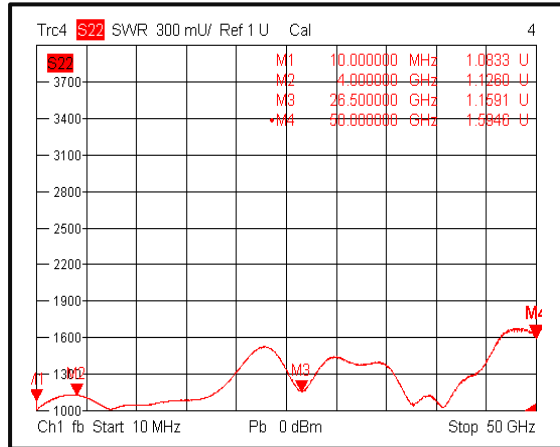
Insertion Loss @+25°C



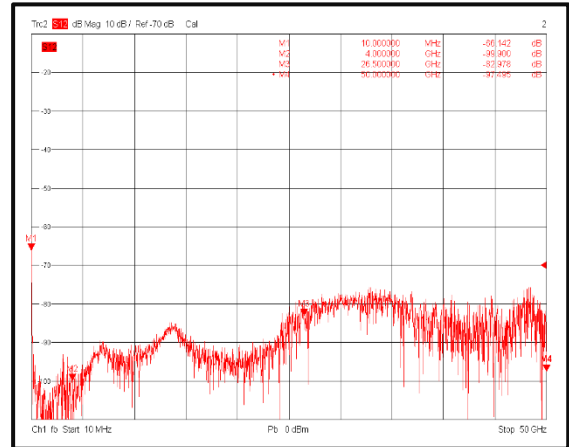
Input VSWR @+25°C



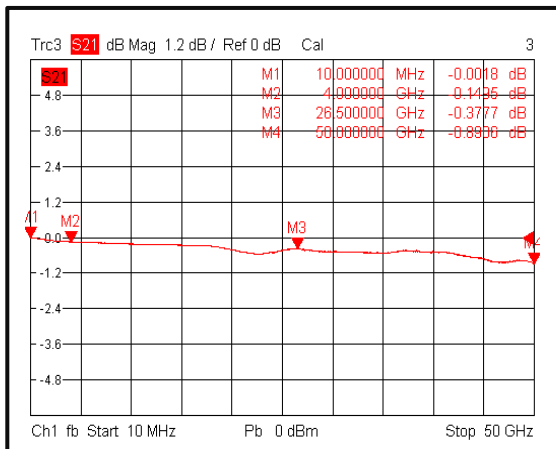
Output VSWR @+25°C



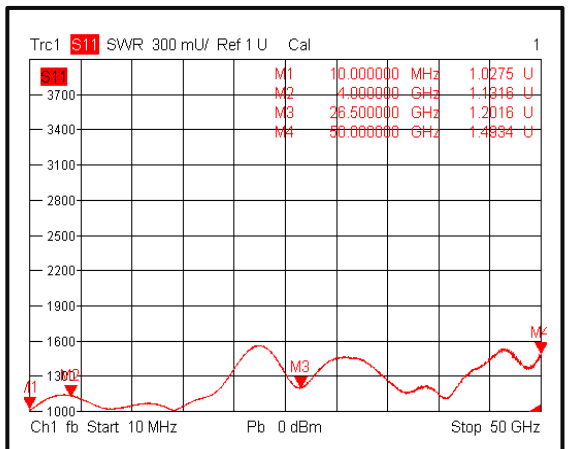
Isolation @+25°C



Insertion Loss @-25°C

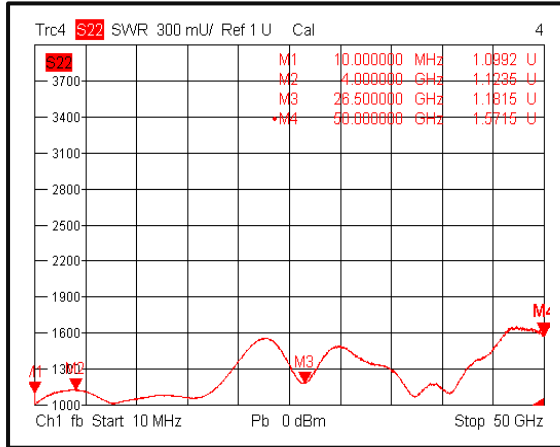


Input VSWR @-25°C

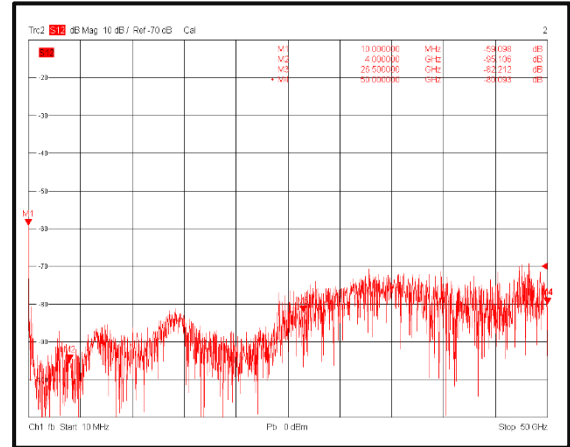


Typical Performance Plots

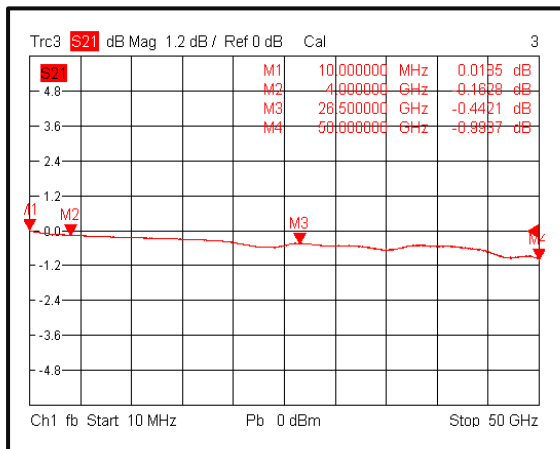
Output VSWR @-25°C



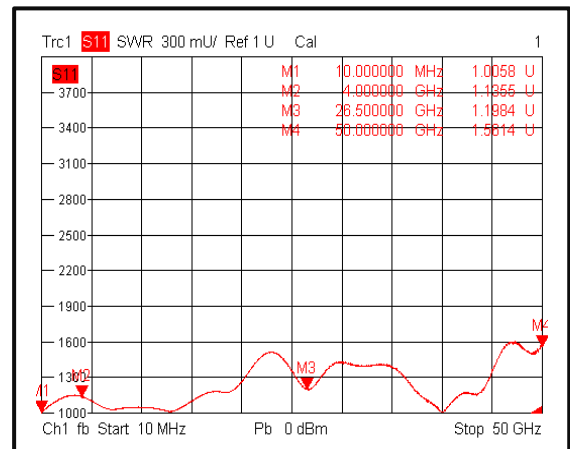
Isolation @-25°C



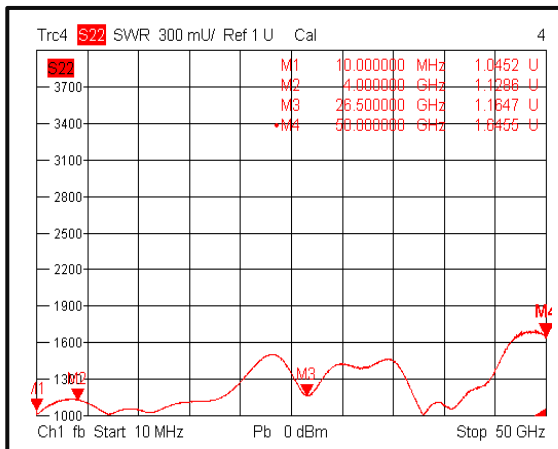
Insertion Loss @+70°C



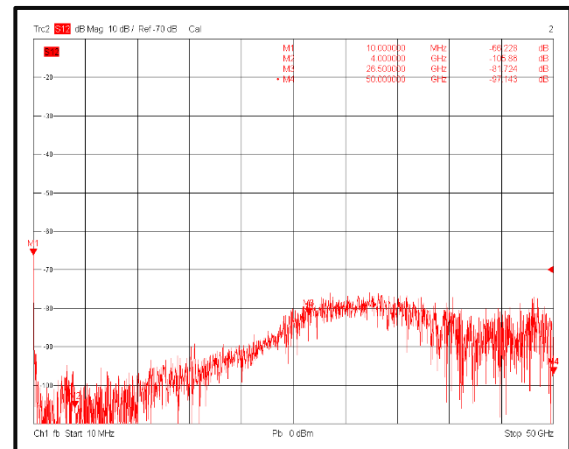
Input VSWR @+70°C



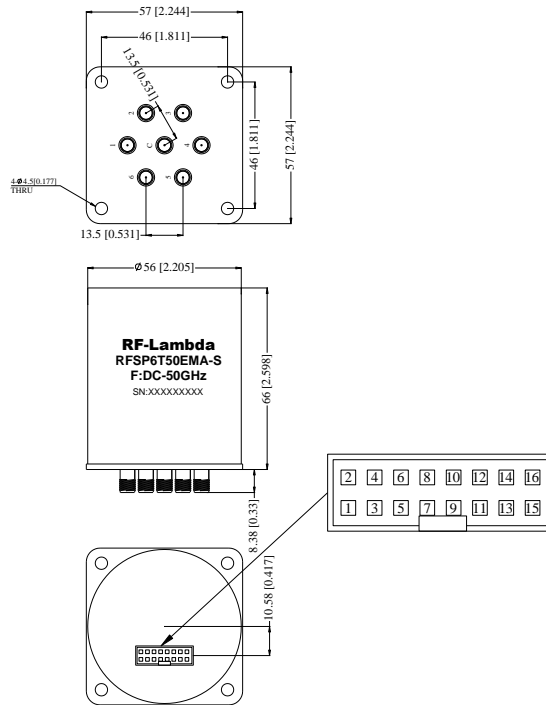
Output VSWR @+70°C



Isolation @+70°C



Outline Drawing



Notes:

1. Package Material: Aluminum
2. Finish: Gray Paint
3. All dimensions are in millimeters [inches].



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
RFSP6T50EMA-S	connectors 2.4mm-Female Ground	DC-50GHz SP6T Electromechanical Switch

Important Notice

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