



SP4T Electro-Mechanical Switch DC-40GHz



Features

- SP4T 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 20GHz
- Terminated ports
- TTL/5V CMOS compatible (optional)

Description

RF-Lambda multiport switch improves insertion loss repeatability and isolation, which is necessary for higher performance test systems. The repeatability and reliability of this switch is vital to ATS measurement accuracy and can cut the cost of ownership by reducing calibration cycles and increasing test system up time. The RF-Lambda terminated multiport switch provides the long life and reliability required for automated test and measurement, signal monitoring, and routing applications. Highly repeatable switching capability is made possible through RF-Lambda's rigorous design and tight manufacturing specifications. Low insertion loss repeatability reduces sources of random errors in the measurement path, which improves measurement accuracy.

Part Number	description	Type	Low Freq (GHz)	High Freq (GHz)	Input Power (Watts)
RFSP4T40EMA-T RFSP4T40EMA-S	Electromechanical Switches	SP4T	DC	40	2 (Max)
Insert. Loss (dB)	VSWR (Max:1)	Isolation (dB)	Actuator Type	Switcing Speed (ms)	Contact
0.2(DC ~ 4GHz) 0.8(4 ~ 26.5GHz) 1.2(26.5 ~ 40GHz)	1.1(DC ~ 4GHz) 1.5(4 ~ 26.5GHz) 1.9(26.5 ~ 40GHz)	80(DC ~ 4GHz) 70(4 ~ 26.5GHz) 60 (26.5 ~ 40GHz)	Latching	20	Break Before Make
Repeatability (dB) max.	Life Cycles (Tims)	Connector	Biasing (VDC)	Current (A)	Control
0.05	1,000,000	2.92mm(f)	20-28 (rating : +24V)	0.2	-T for TTL type -S for Ground type

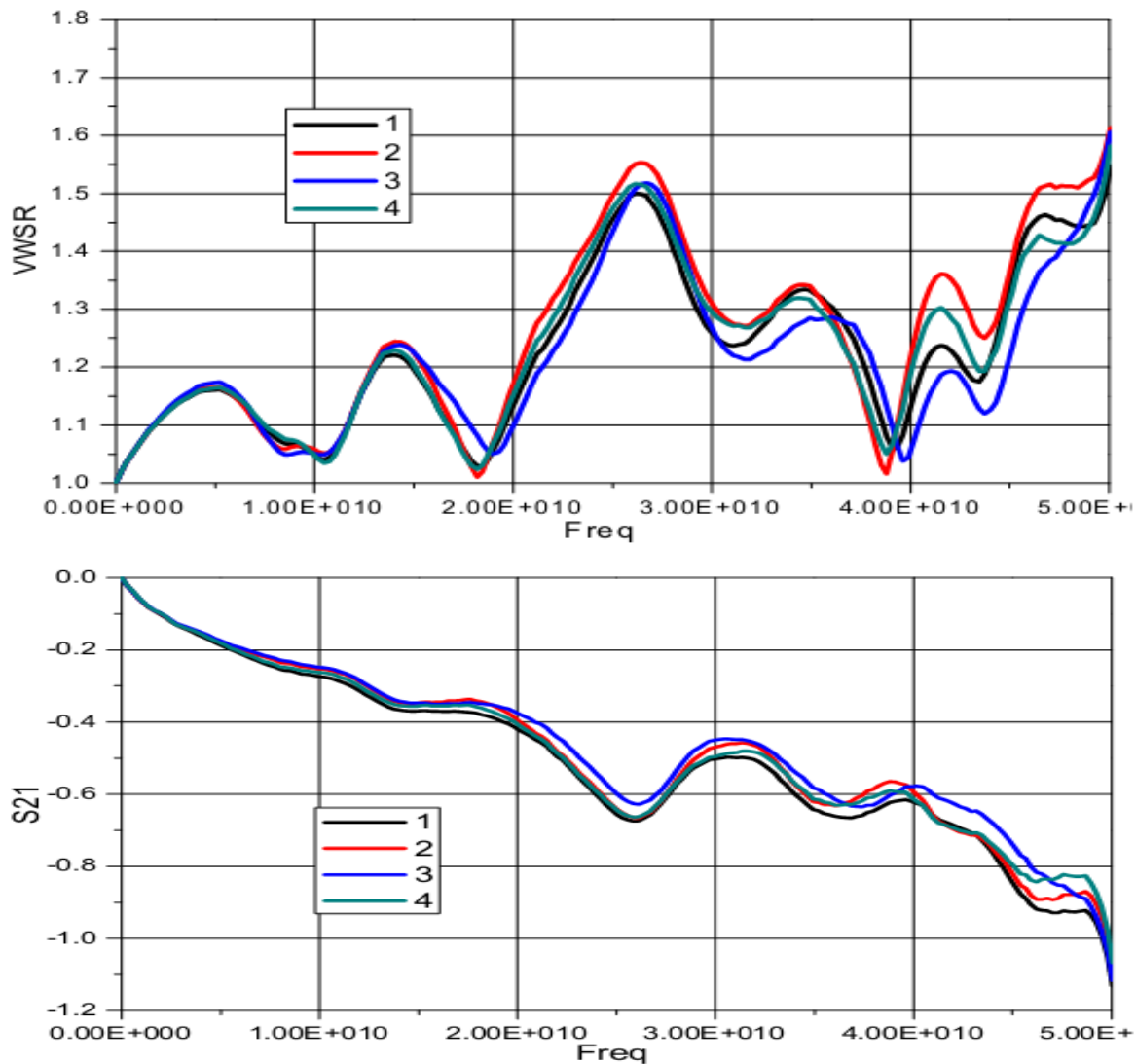
* Result taken at 25°C +15VDC



Environmental Specification

Operating temperature:	-25 to 75° C
Storage temperature:	-55 to 85° C
Thermal Shocking:	-25 to 70° C (1.5 hours holding, 10 times.)
Sine Vibration:	25 grams rms
Life Cycles:	1,000,000 times
Vibration:	20 grams rms.
Moisture resistance:	65° C, 95% RH, 10 days per MIL-STD-202F, Method 106E
Altitude storage:	30,000 feet (per MIL-STD-202F, Method 105C, Condition B)
RFI:	Per MIL-STD-461C, RE02, Part 4
Magnetic field:	<5 gauss 1/4 inch from surface
Hot switching:	2W CW 100W peak, 10us max pulse width

Typical test curve





PIN STATUS	Standard drive voltage					TTL drive voltage				
	5	7	11	13	16	5	7	11	13	16
RF to 1	GND	OPEN	OPEN	OPEN	OPEN	High	Low	Low	Low	OPEN
RF to 2	OPEN	GND	OPEN	OPEN	OPEN	Low	High	Low	Low	15V
RF to 3	OPEN	OPEN	GND	OPEN	OPEN	Low	Low	High	Low	Low
RF to 4	OPEN	OPEN	OPEN	GND	OPEN	Low	Low	Low	High	Low
Reast	OPEN	OPEN	OPEN	OPEN	GND	Low	Low	Low	Low	High

For Example

Standard drive voltage type:

First connect Pin1 to 24V, and Pin 15 to Ground.

Second connect Pin5 to Ground, Pin 7,11,13 open means connect nothing.

Then the port 1 is connected.

TTL drive voltage type:

First connect Pin1 to 24V, and Pin 15 to Ground.

Second connect Pin5 to High, TTL high voltage(3.3V-5.1V),

Pin 7,11,13 connect Low, TTL Low voltage(<0.8V)

Then the port 1 is connected.

Pin 1 to Voltage (+22VDC~+28VDC)

Pin 15 to Ground

Pin 5,7,11,13 RF Path Control

Pin 16 reset pin

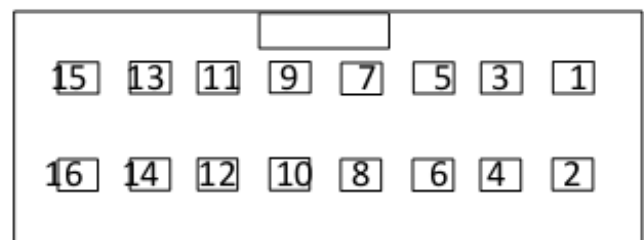
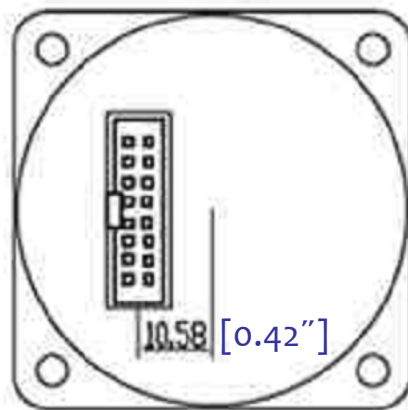
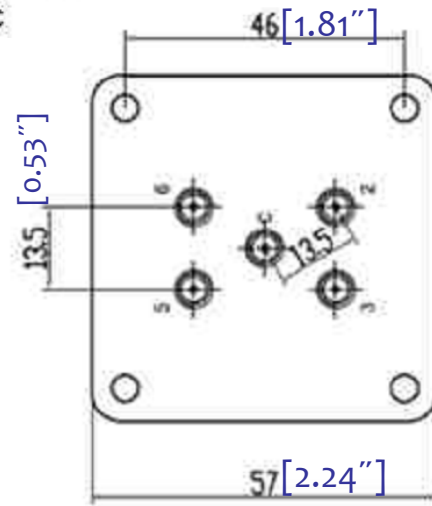
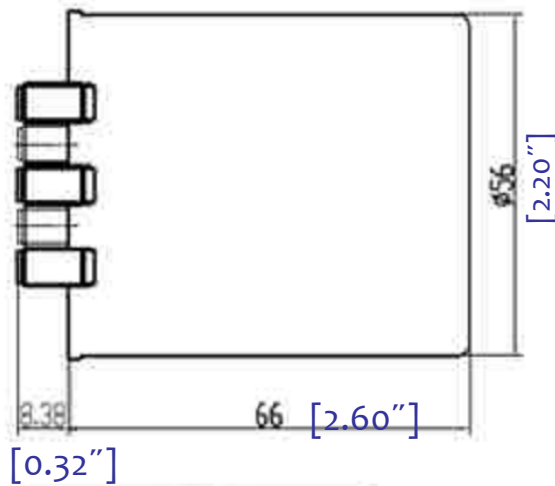
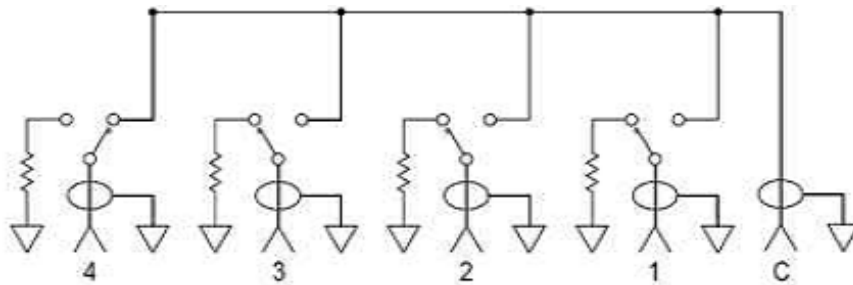


RF-LAMBDA

The power beyond expectations

RFSP4T40EMA

Schematic:



DC Connector PN: 517.066.003.016

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