



## SPDT Reflective Electro-Mechanical Switch DC - 40GHz



### Features

- SPDT 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's multiport switch offers low insertion loss and high isolation, which is necessary for high 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.

Our electro-mechanical switches are made through RF-Lambda's rigorous design and tight manufacturing specifications.

Part Number	Description	Typ	Low Freq (GHz)	High Freq (GHz)	Max Power Input(Watts)
RFSPDT40EMD-T Or RFSPDT40EMD-S	Reflective Electromechanical Switches	SPDT	DC	40	2
Insert. Loss (dB)	VSWR (Max)	Isolation (dB)	Actuator Type	Switching Speed (ms Max)	Contact
0.4(DC~10GHz) 0.8 (10GHz~20GHz) 1.0(20GHz~40GHz)	1.3(DC~10GHz) 1.5 (10GHz~20GHz) 1.8(20GHz~40GHz)	70(DC~10GHz) 60(10GHz~20GHz) 60(20GHz~40GHz)	Latching	20	Break Before Make
Repeatability (dB) max.	Life Cycle	Connector	Biasing (VDC)	Current (mA dc)	Control
0.05	1,000,000 Cycles	2.9mm (f)	+5V(4.5-5V) +12V(10-16V) +24V(20-28V)	800mA dc 600mA dc 200mA dc	-T for TTL type -S for Ground type

\* Result taken at 25°C

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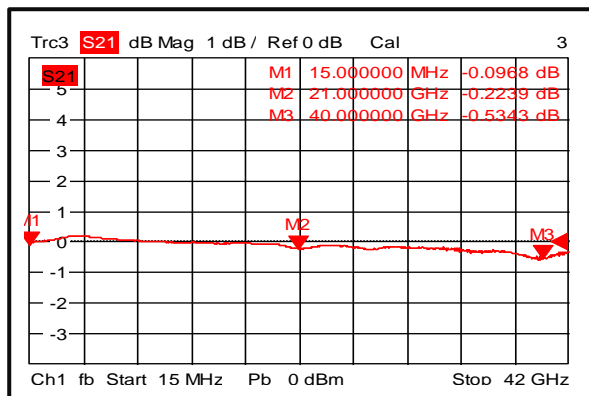


**Environmental Specifications and Test Standards**

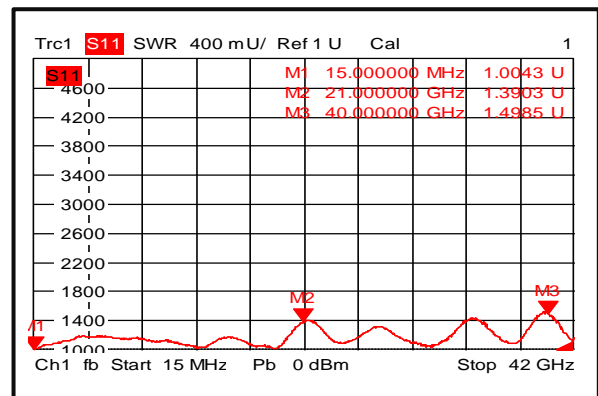
Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-25°C~+75°C
Storage Temperature		-55°C~+85°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85°C for 72 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	MIL-STD-883 (For Hermetically Sealed Units)

**Typical Performance Plots**

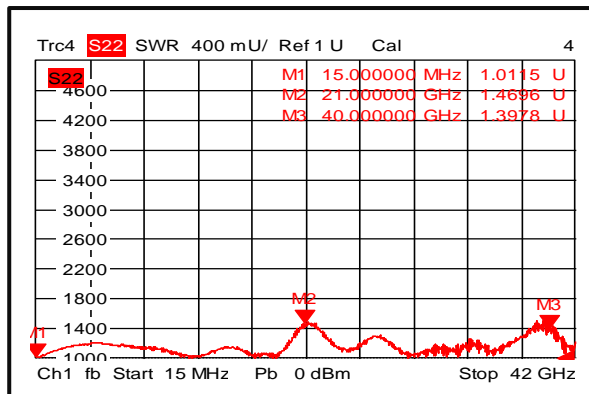
**Insertion Loss**



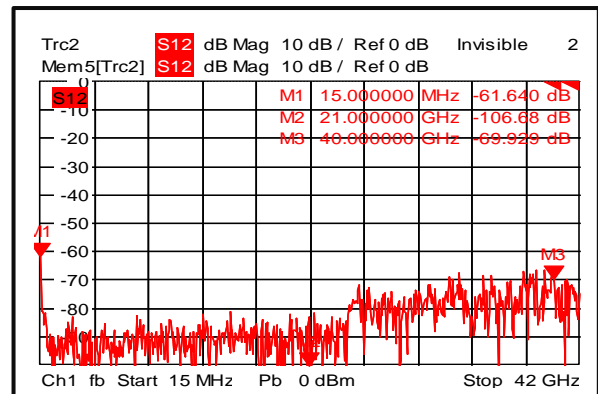
**Input VSWR**



**Output VSWR**



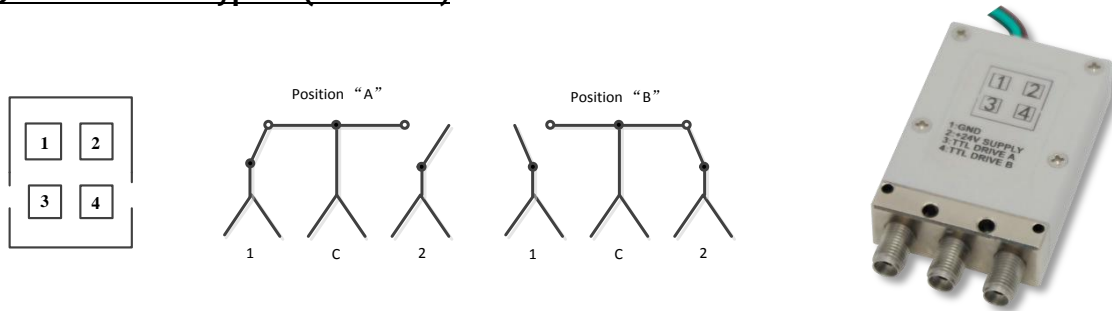
**Isolation**



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**+5V TTL Control Type -- (Standard)**



PIN 1 connect ground, PIN 2 connect +24V, PIN3 and PIN4 are control PINS.

**TTL Control Type -- (Standard)**

		TTL (3.3~5.5V)		Path
PIN1	PIN2	PIN3	PIN4	
GND	+24V/+12V/+5V	TTL	OPEN	PositionA (C↔ 1)
GND	+24V/+12V/+5V	OPEN	TTL	PositionB (C↔ 2)
GND	+24V/+12V/+5V	OPEN	OPEN	Keep the original path
GND	+24V/+12V/+5V	TTL	TTL	Forbidden

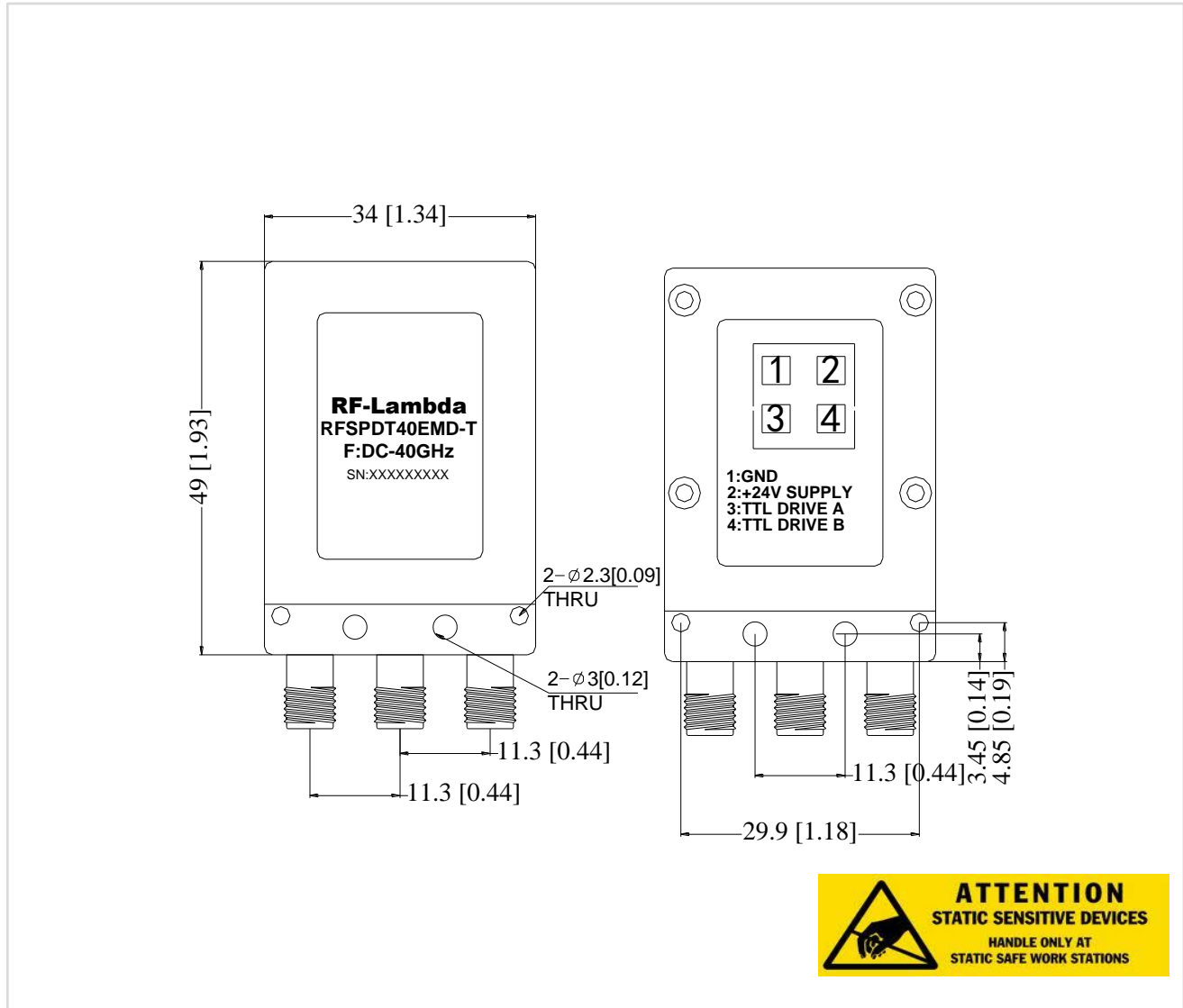
**Notes:**

- When the power path of the switch is in the off state, the switch port that is connected to the load has a max input power of 1W (CW).
- Pin 1 must always be connected to ground. if the negative pole is not connected to power supply ground, catastrophic failure will occur. sources must off
- Before switching, microwave signal must not be present.



**Outline Drawing:**

All Dimensions in mm [inches]



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