DPDT Reflective Electro-Mechanical Switch
DC–26.5GHz

Product Description

RFDPDT26EMA is a reflective electromechanical switch with a frequency range of DC to 26.5GHz.

The power of this switch is 1W Max. The typical insertion loss is 1.4dB and the isolation is 70dB with the speed of 20ms. This electromechanical switch works with a +24VDC power supply.

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

Features

- Reflective Electromechanical Switch
- DPDT 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)
- 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=+25ºC)

Parameter		Min	Typ	Max	Units
Frequency Range			DC – 26.5		GHz
Insertion Loss	@DC-3GHz			0.25	dB
	@3-6GHz			0.4	
	@6-12.4GHz			0.5	
	@12.4-26.5GHz			0.7	
VSWR	@DC-3GHz			1.2	:1
	@3-6GHz			1.3	
	@6-12.4GHz			1.4	
	@12.4-26.5GHz			1.5	
Isolation	@DC-3GHz	80			dB
	@3-6GHz	70			
	@6-12.4GHz	60			
	@12.4-26.5GHz	55			
Power Input				1	W
Switching Speed				20	ms
Life Cycles		1			Million
Repeatability				0.05	dB
Supply Current (Vcc = +24VDC)			0.2		A
Weight			0.26 Max.		lbs.
Impedance			50		Ohms
Connector			SMA-Female		
Actuator Type			Latching		
Contact			Break Before Make		
Control			TTL & Ground		
Package			Epoxy Sealed (Standard)		
			Hermetically Sealed (Optional)		

Absolute Maximum Ratings

Parameter	Rating
Supply Voltage Range	22 – 32VDC

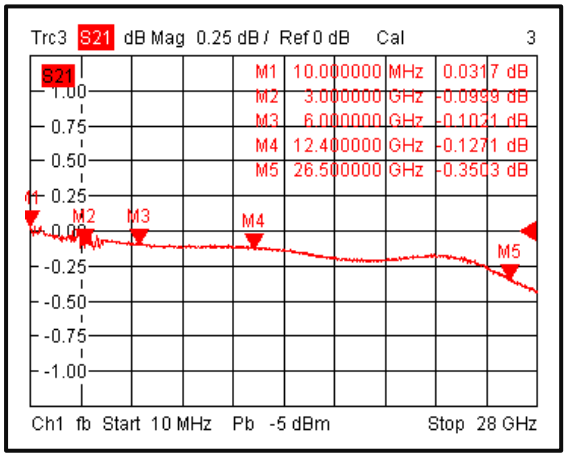
Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-25ºC to +70ºC (Case Temperature)
Storage Temperature	-55ºC to +85ºC
Thermal Shock	-40ºC → +70ºC (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 +70ºC 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)

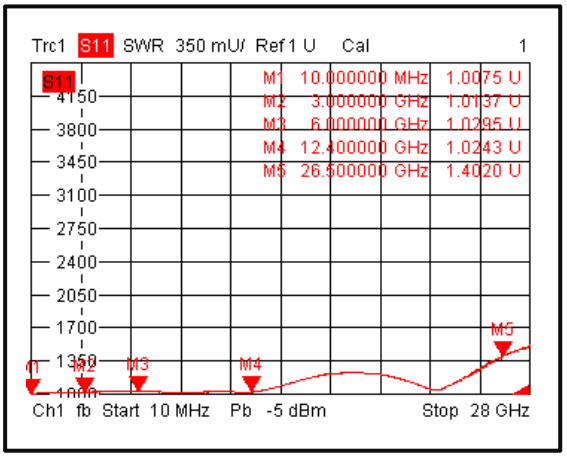
*For vibration testing details please see additional information section.

Typical Performance Plots

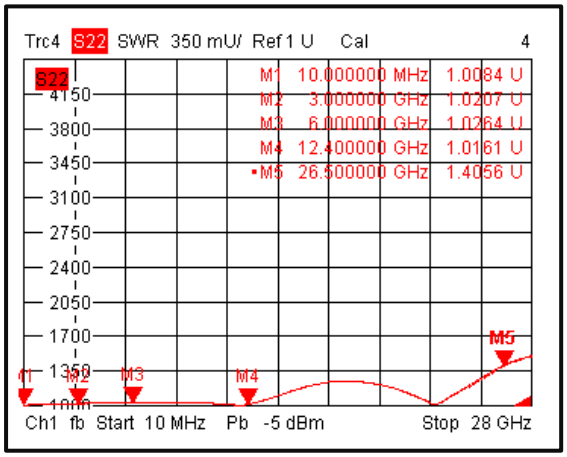
Insertion Loss@+25℃



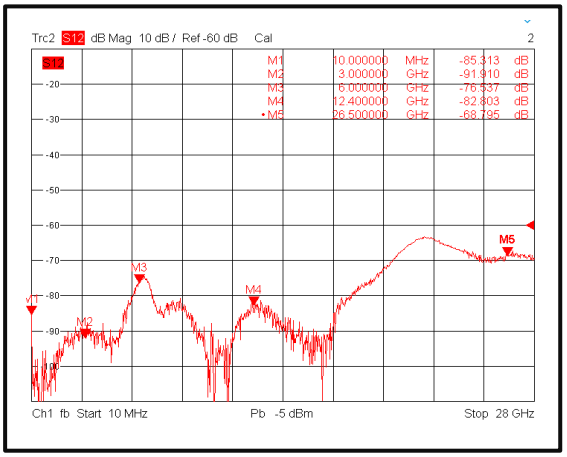
Input VSWR@+25℃



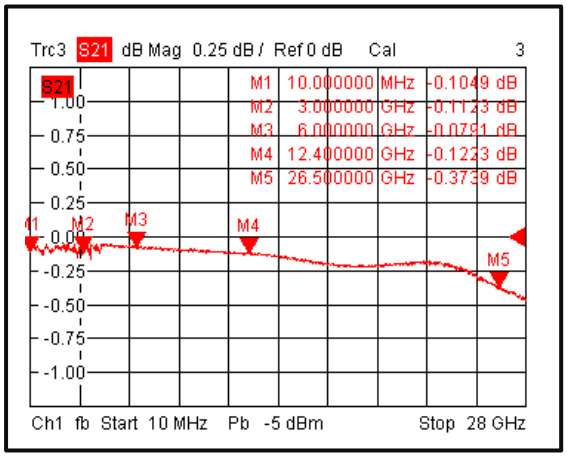
Output VSWR@+25℃



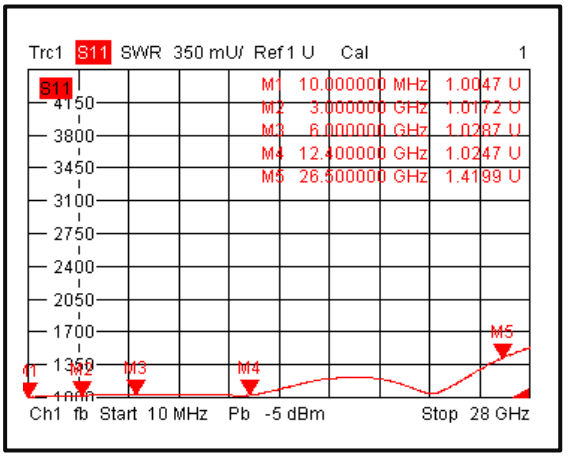
Isolation@+25℃



Insertion Loss @-40℃

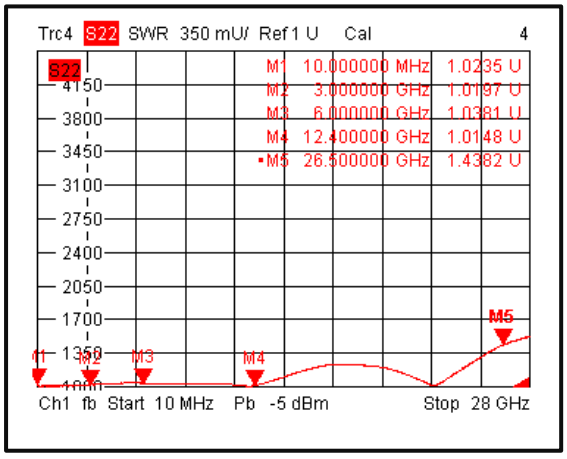


Input VSWR @-40℃

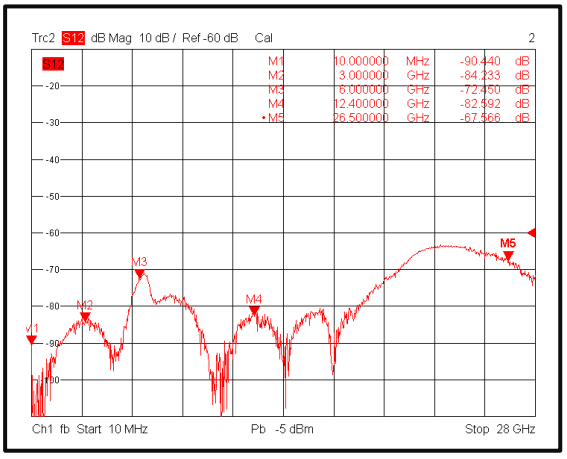


Typical Performance Plots

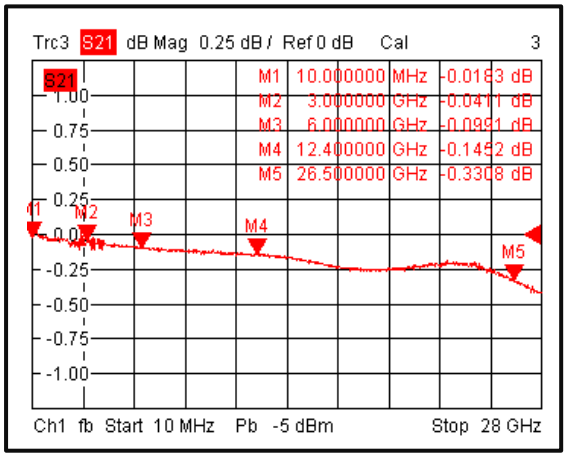
Output VSWR @-40℃



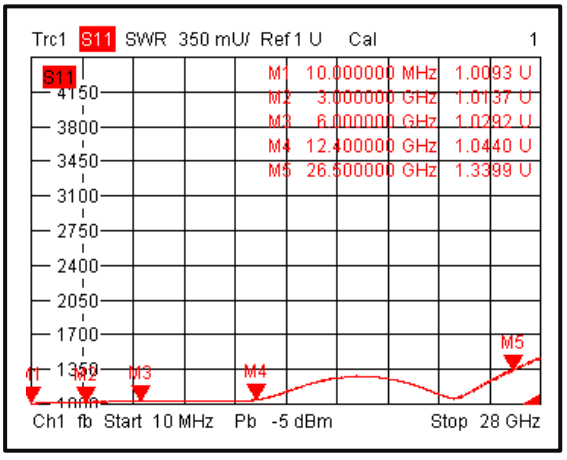
Isolation @-40℃



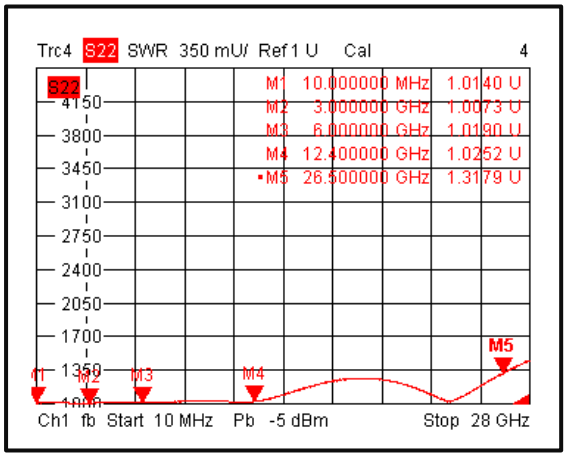
Insertion Loss @+70℃



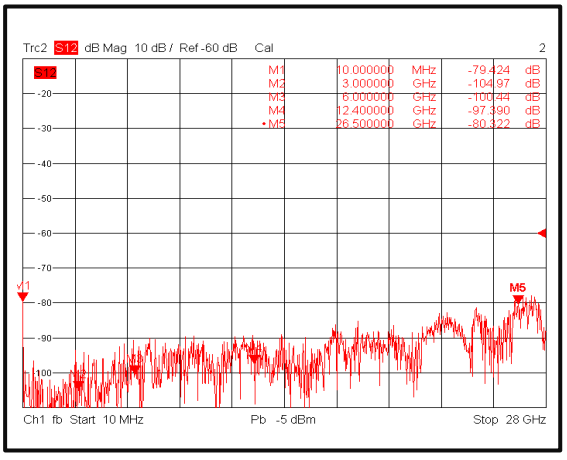
Input VSWR @+70℃



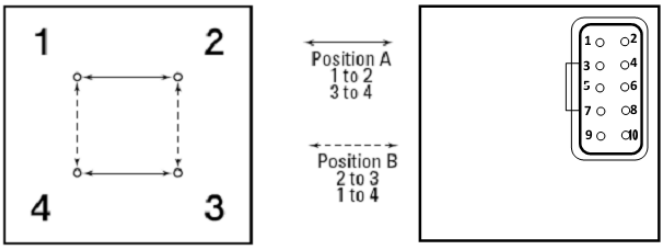
Output VSWR @+70℃



Isolation @+70℃



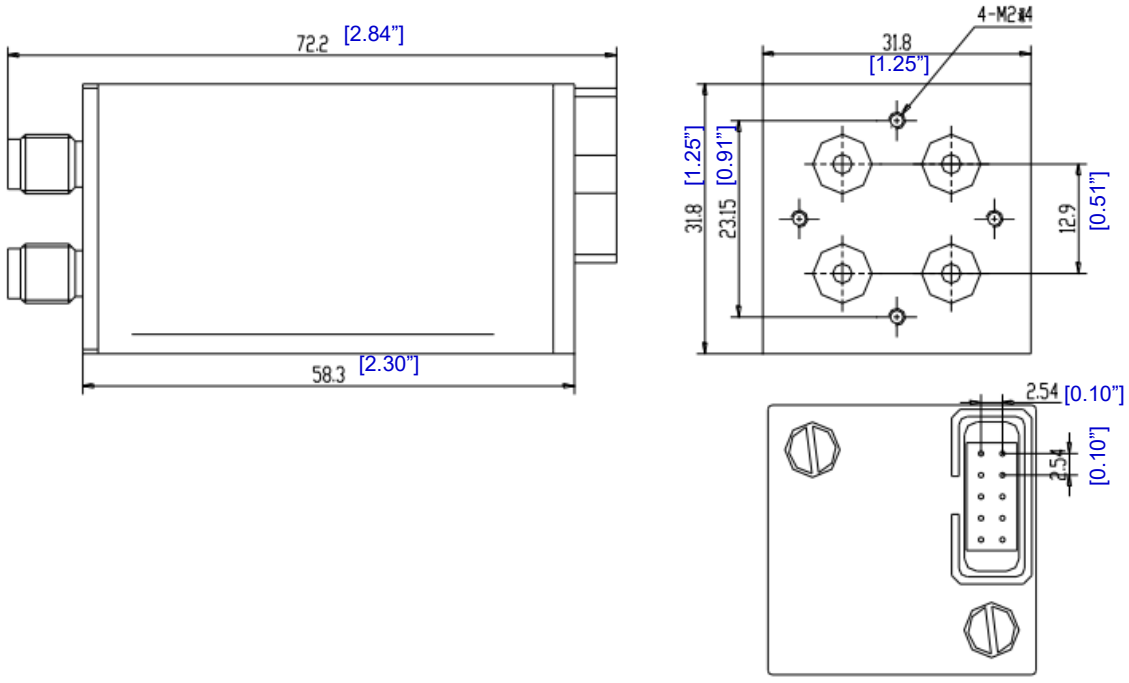
working State and Control Connector



Switch State	Pin 1	Pin 9	Standard Drive		TTL Drive	
			Pin 3	Pin 5	Pin 7	Pin 8
Position A (1 to 2 : 3 to 4)	22-28V	GND	GND	Open	High	Low
Position B (1 to 4 : 2 to 3）			Open	GND	Low	High

Note:
Logic High: 2.5~5V
Logic Low: 0~0.8V

Outline Drawing



Notes:
1. Package Material: Aluminum
2. Finish: Painted
3. All dimensions are in millimeters [inches].
4. Tolerances ±0.02 [0.008] unless otherwise specified.

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
RFDPDT26EMA	Standard	DC-26.5Hz Electromechanical Switch

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