

SPDT Latching Electro-Mechanical Relay Switch From DC to 18 GHz, 100 Watts with Indicators, Self Cut Off, SMA

The SEMS-4053-SPDT-SMA is an SPDT Electromechanical Relay Switch that operates over a wide frequency band from DC to 18GHz with up to 240 Watts of input power (CW) handling capability. Rated for 10M life cycles for high reliability operation, this design uses a Latching Actuator with a break before make configuration, position indicators, and self cut off circuitry. The switch exhibits exceptional electrical performance specified from 0.2 dB max for insertion loss and from 80 dB min for isolation, and guaranteed over -40°C to +85°C. The assembly requires an operating voltage of +12Vdc and is certified as RoHS and REACH compliant. External connectors include solder terminals and SMA female connectors.



Electrical Specifications

Switch Type	SPDT, Reflective
Actuator Type	Latching
Switching Sequence	Break before Make
Actuator Options	Indicators, Self Cut Off
Polarity	Negative Common
Indicator Rating	1 Watts / 30 Volts / 100 mA
Self Cut-Off Time	40 ms < CT < 120 ms

Features:

- Single Pole Double Throw Relay Switch
- DC to 18 GHz Frequency Range
- 10M Cycle Operating Life Min
- 100 Watt Avg Power Max
- -40 to +85 Deg C Operating Temperature
- Insertion Loss 0.5 dB Max
- VSWR 1.5:1 Max

Applications:

- General Purpose High Performance Relay Switch
- Military Communications
- Communications Systems
- Test & Measurement

Description	Min	Typ	Max	Units
Frequency Range	DC		18	GHz
Impedance		50		Ohms
Operating Voltage	10.2	12	13	Volts
Actuating Current @ 12 Volts		210		mA
VSWR			1.5:1	
Insertion Loss			0.5	dB
Isolation	60			dB
Input Power (CW)			100	Watts

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 3	3 - 8	8 - 12.4	12.4 - 18		GHz
VSWR, Max	1.2:1	1.3:1	1.4:1	1.5:1		
Insertion Loss, Max	0.2	0.3	0.4	0.5		dB
Isolation, Min	80	70	60	60		dB
Power In, Max (CW)	240	150	120	100		Watts

Electrical Specification Notes:
Average Power and Actuating Current values at 25°C.

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Mechanical Specifications

Size

Length 1.5 in [38.1 mm]
 Width/Diameter 1.5 in [38.1 mm]
 Height 0.5 in [12.7 mm]
 Weight 0.1 lbs [45.36 g]
 Package Type Connectorized Module
 Operating Life 10,000,000 Cycles
 Switching Time 10 ms Max

Connectors

RF Connector Type SMA Female
 RF Connector Specification MIL C 39012
 Control Connector Solder Pins

Mechanical Specification Notes:
 Solder Pins: 250°C max/30sec.

Environmental Specifications

Temperature

Operating Range -40 to +85 deg C
 Storage Range -55 to +85 deg C

Construction Splashproof
 Shock MIL-STD-202, Method 213B, Cond.C
 Vibration MIL-STD-202, Method 204D, Cond.D
 ESD Sensitivity ESD Sensitive Material. Transport material in approved ESD bags. Handle in approved ESD Workstation.



Environmental Specification Notes:
 Environmental specifications are guaranteed but not tested.

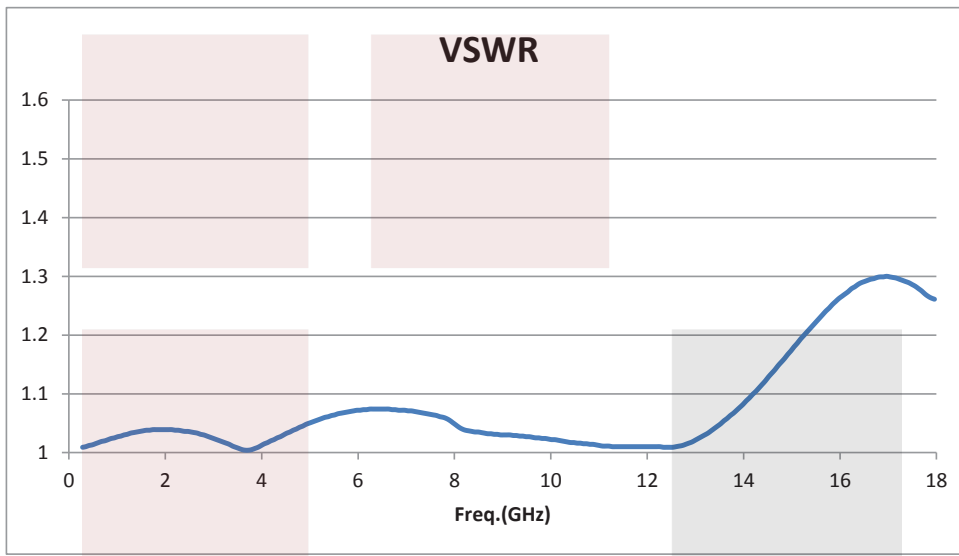
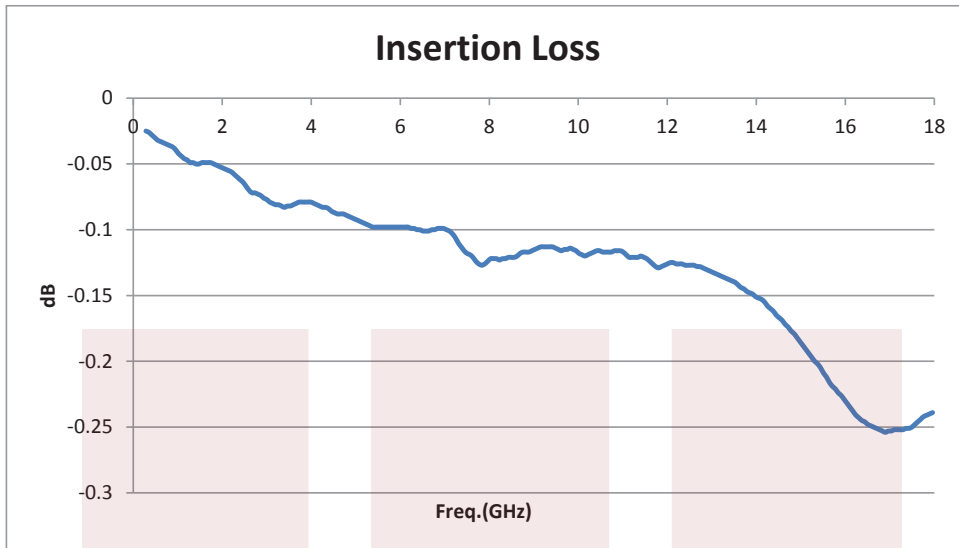
Compliance Certifications (visit www.FairviewMicrowave.com for current document)

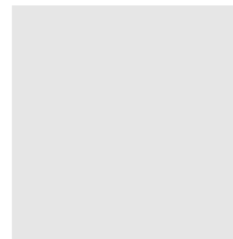
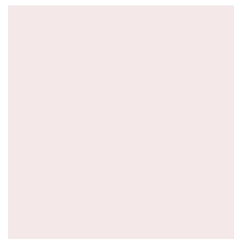
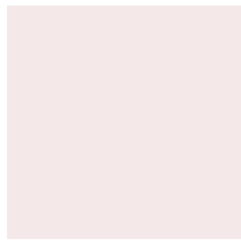
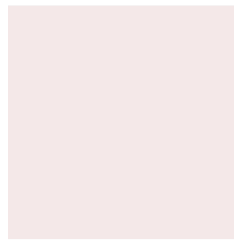
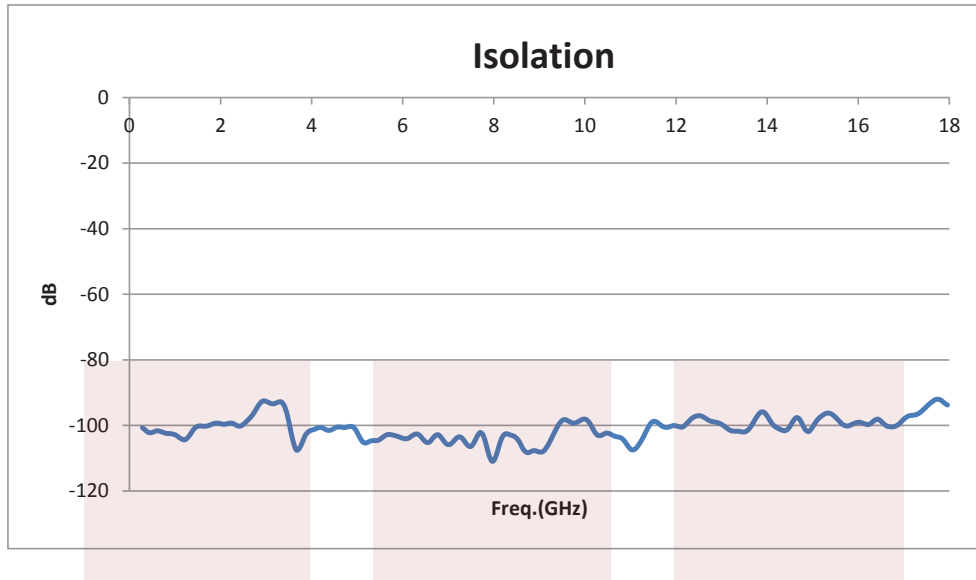
RoHS Compliant
 REACH Compliant 12/17/2014

Plotted and Other Data

Notes:
 • Values shown are typical at 25°C.

Typical Performance Data





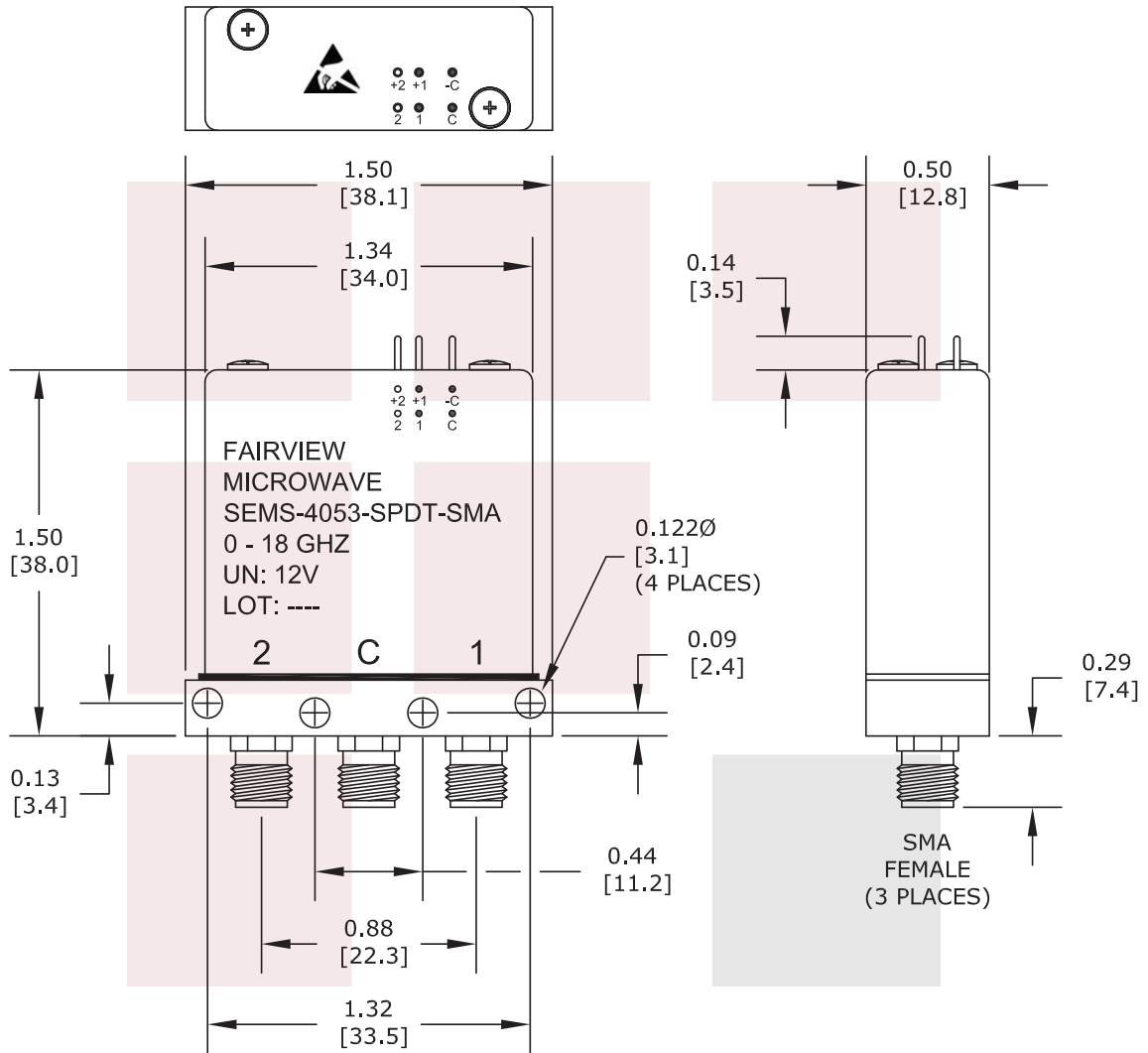
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For additional information on this product, please click the following link: [SPDT Latching Electro-Mechanical Relay Switch From DC to 18 GHz, 100 Watts with Indicators, Self Cut Off, SMA SEMS-4053-SPDT-SMA](#)

URL: <http://www.fairviewmicrowave.com/spdt-latching-electro-mechanical-relay-switch-indicators-sems-4053-spdt-sma-p.aspx>

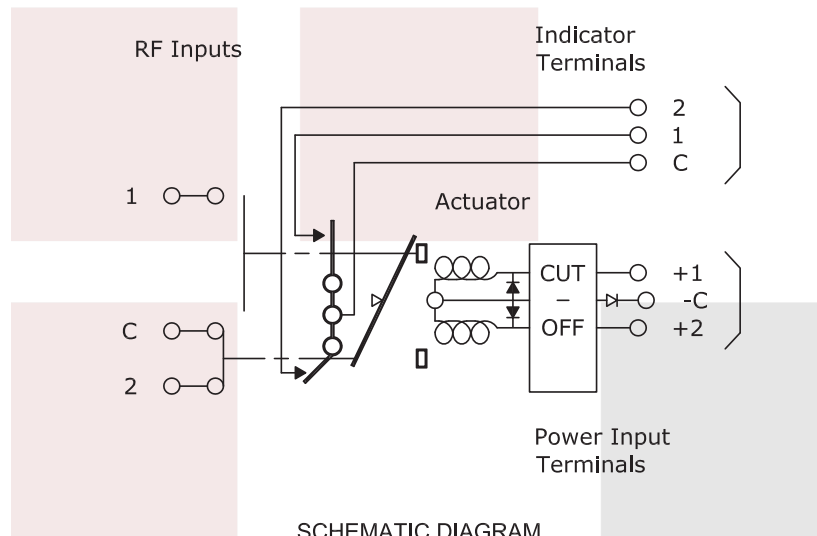
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TITLE SPDT Latching Electro-Mechanical Relay Switch From DC to 18 GHz, 100 Watts with Indicators, Self Cut Off, SMA		DWG NO SEMS-4053-SPDT-SMA		CAGE CODE 3FKR5	
CAD FILE	092614	SHEET	SCALE	N/A	SIZE A 150

Voltage	RF Continuity	Indicator
- C + 1	C ↔ 1	C . 1
- C + 2	C ↔ 2	C . 2



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