

SP12T Latching DC to 18 GHz Terminated Electro-Mechanical Relay Switch, Indicators, Reset, up to 240W, 28V, SMA

The SEMS-4081-SP12T-SMA is an SP12T Terminated 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 2M life cycles for high reliability operation, this design uses a Latching Actuator with a break before make configuration, terminations, position indicators, and reset 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 +28Vdc and is certified as RoHS and REACH compliant. External connectors include a 44 pin D-SUB male connector and SMA female connectors.

Electrical Specifications

Switch Type	SP12T, Terminated
Actuator Type	Latching
Switching Sequence	Break before Make
Actuator Options	Indicators, Reset
Polarity	Negative Common
Indicator Rating	1 Watts / 30 Volts / 100 mA
Reset Current	1,500 mA

Description	Min	Typ	Max	Units
Frequency Range	DC		18	GHz
Impedance		50		Ohms
Operating Voltage	24	28	30	Volts
Actuating Current @ 28 Volts		125		mA
VSWR			1.8:1	
Insertion Loss			0.8	dB
Isolation	50			dB
Input Power (CW)			100	Watts
Termination Input Power (CW)			1	Watts
Switching Time			15	ms

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 3	3 - 8	8 - 12.4	12.4 - 15	15 - 18	GHz
VSWR, Max	1.2:1	1.4:1	1.6:1	1.7:1	1.8:1	
Insertion Loss, Max	0.2	0.4	0.6	0.7	0.8	dB
Isolation, Min	80	70	60	60	50	dB
Power In, Max (CW)	240	150	120	110	100	Watts

Electrical Specification Notes:

Average Power and Actuating Current values at 25°C.

Termination Average Power: 1W per termination / 3W total power.

Reset: supply voltage time 1 sec max/10% duty cycle.



Features:

- Single Pole Twelve Throw Terminated Relay Switch
- DC to 18 GHz Frequency Range
- 2M Cycle Operating Life Min
- 100 Watt Avg Power Max
- -40 to +85 Deg C Operating Temperature
- Insertion Loss 0.8 dB Max
- VSWR 1.8:1 Max

Applications:

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

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Mechanical Specifications

Size

Length	2.598 in [65.99 mm]
Width/Diameter	2.68 in [68.07 mm]
Height	2.68 in [68.07 mm]
Weight	0.88 lbs [399.16 g]
Package Type	Connectorized
Operating Life	2,000,000 Cycles

Connectors

RF Connector Type	SMA Female
RF Connector Specification	MIL C 39012
Control Connector	DB-44 Male

Environmental Specifications

Temperature

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

Construction	Splashproof
Humidity	MIL-DTE-3928E, Cond.B
Shock	MIL-STD-202, Method 213B, Cond.C (survival)
Vibration	MIL-STD-202, Method 204D, Cond.D (survival)

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

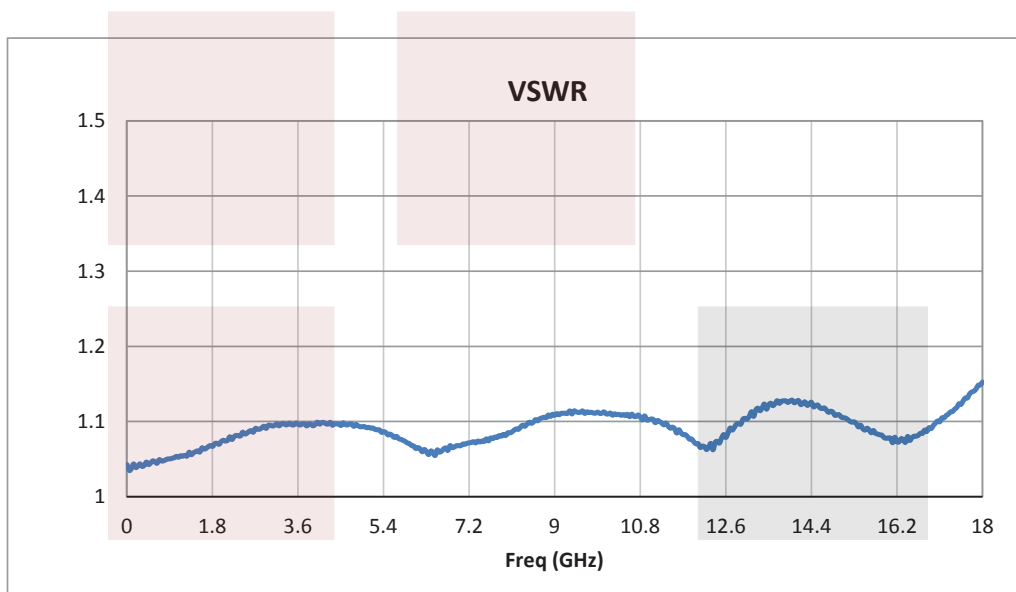
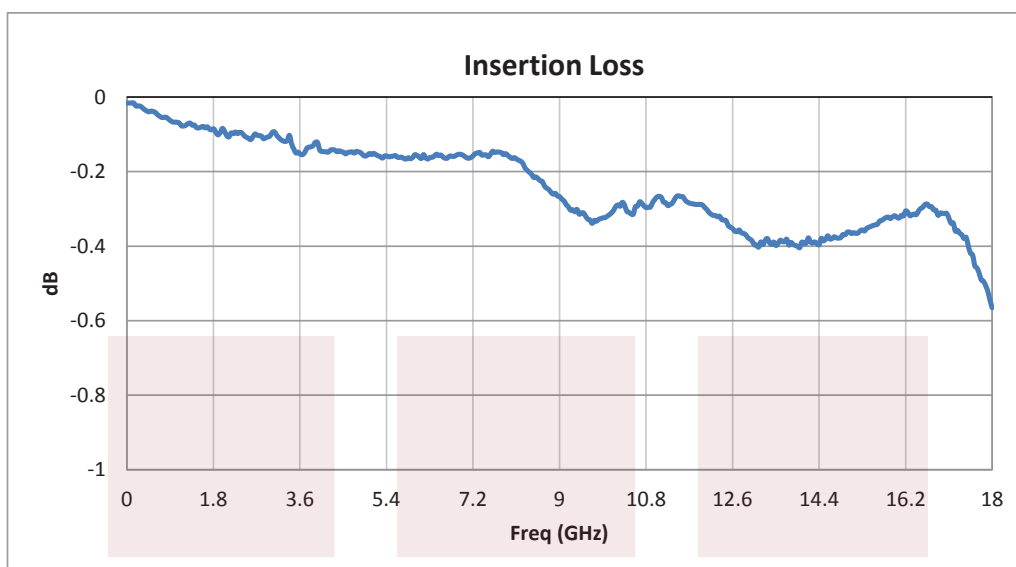
Compliance Certifications (see [product page](#) for current document)

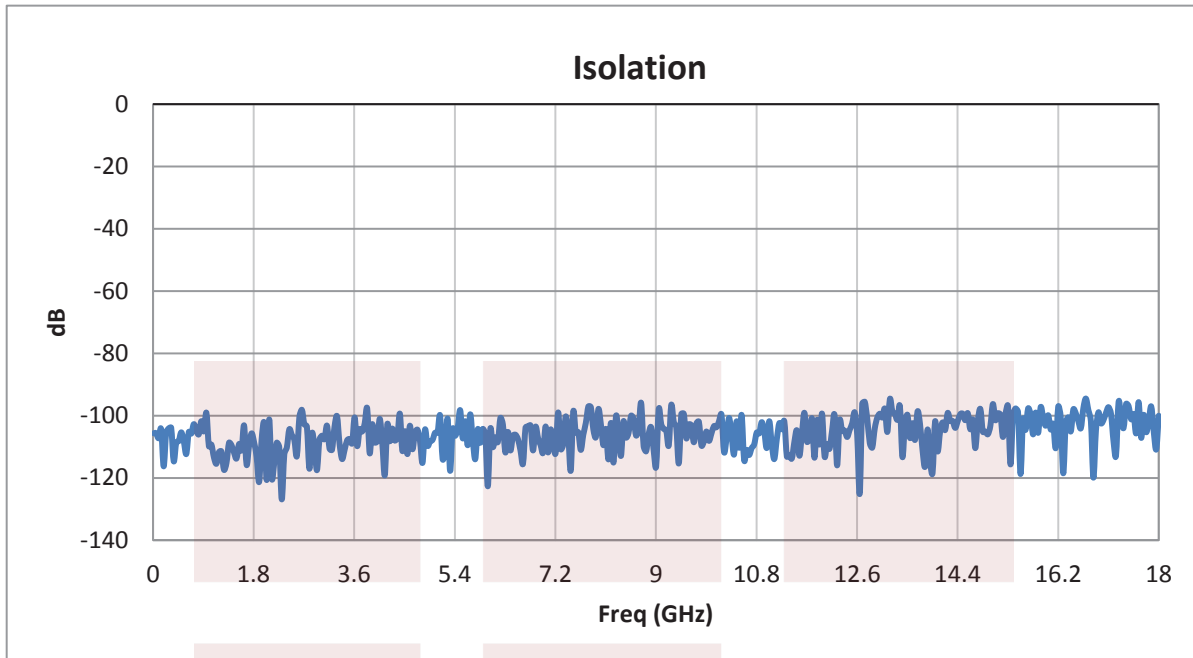
Plotted and Other Data

Notes:

- Values shown are typical at 25°C.

Typical Performance Data



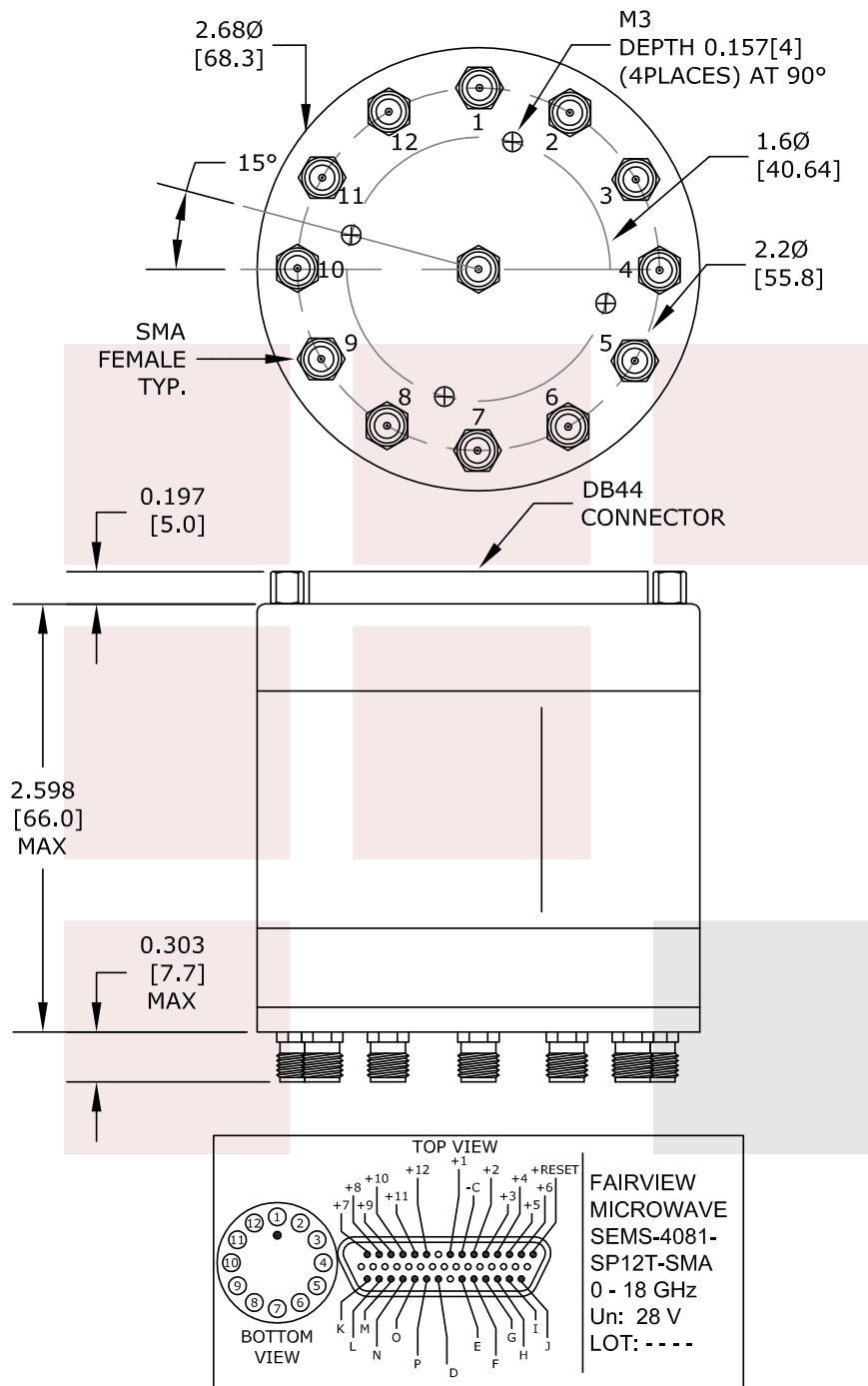


SP12T Latching DC to 18 GHz Terminated Electro-Mechanical Relay Switch, Indicators, Reset, up to 240W, 28V, SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SP12T Latching DC to 18 GHz Terminated Electro-Mechanical Relay Switch, Indicators, Reset, up to 240W, 28V, SMA SEMS-4081-SP12T-SMA](https://www.fairviewmicrowave.com/sp12t-latching-electro-mechanical-relay-switch-indicators-reset-sems-4081-sp12t-sma-p.aspx)

URL: <https://www.fairviewmicrowave.com/sp12t-latching-electro-mechanical-relay-switch-indicators-reset-sems-4081-sp12t-sma-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.



FAIRVIEW MICROWAVE INC.

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NOTES:

1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.
2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.
3. DIMENSIONS ARE IN INCHES [mm].

TITLE
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DWG NO

SEMS-4081-SP12T-SMA

CAGE CODE

3FKR5

CAD FILE

082815

SHEET

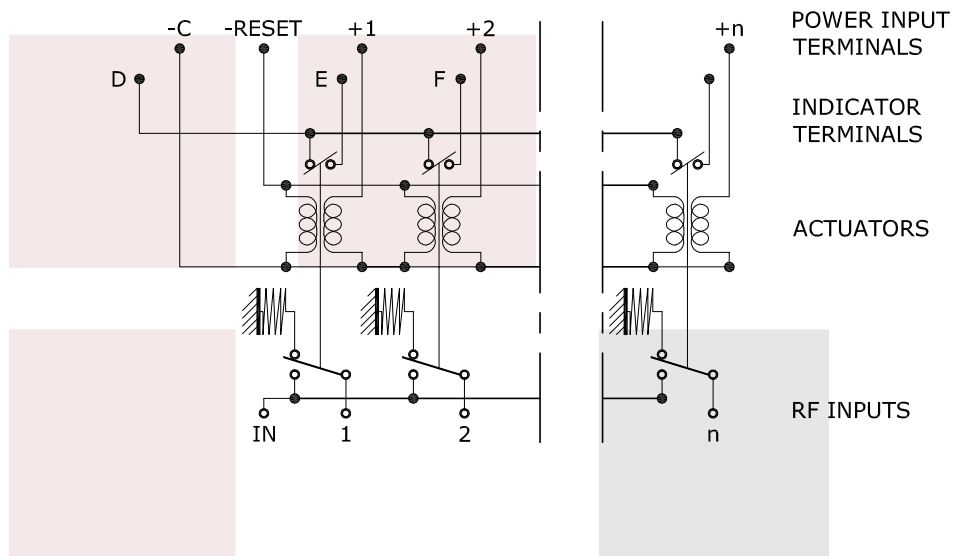
SCALE N/A

SIZE A

150

Voltage	RF Continuity	Indicator
- C + 1	IN ↔ 1	D.E
- C + 2	IN ↔ 2	D.F
- C + 3	IN ↔ 3	D.G
- C + 4	IN ↔ 4	D.H
- C + 5	IN ↔ 5	D.I
- C + 6	IN ↔ 6	D.J
- C + 7	IN ↔ 7	D.K
- C + 8	IN ↔ 8	D.L
- C + 9	IN ↔ 9	D.M
- C + 10	IN ↔ 10	D.N
- C + 11	IN ↔ 11	D.O
- C + 12	IN ↔ 12	D.P

SCHEMATIC DIAGRAM



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