

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

The SEMS-4052-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 +28Vdc 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 | 24 | 28 | 30 | Volts |
| Actuating Current @ 28 Volts | | 80 | | 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.

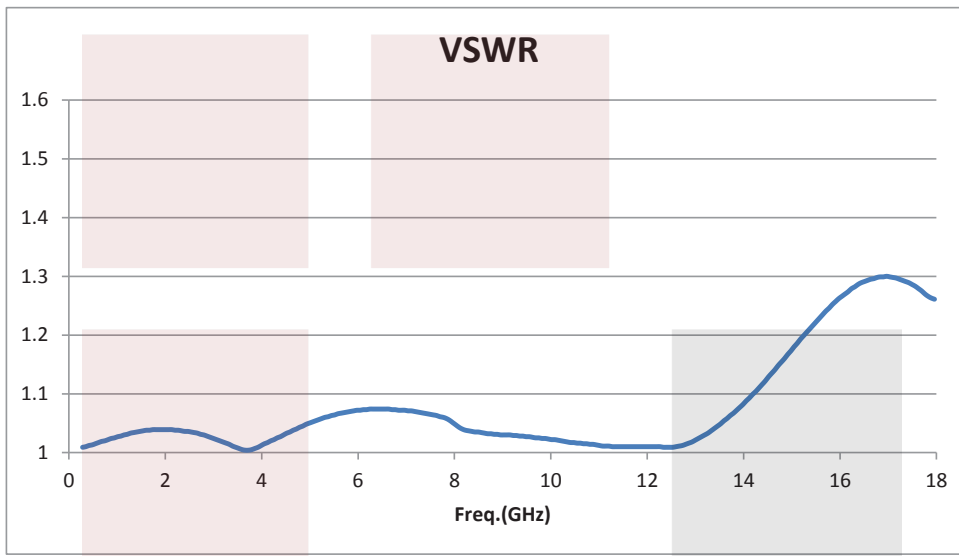
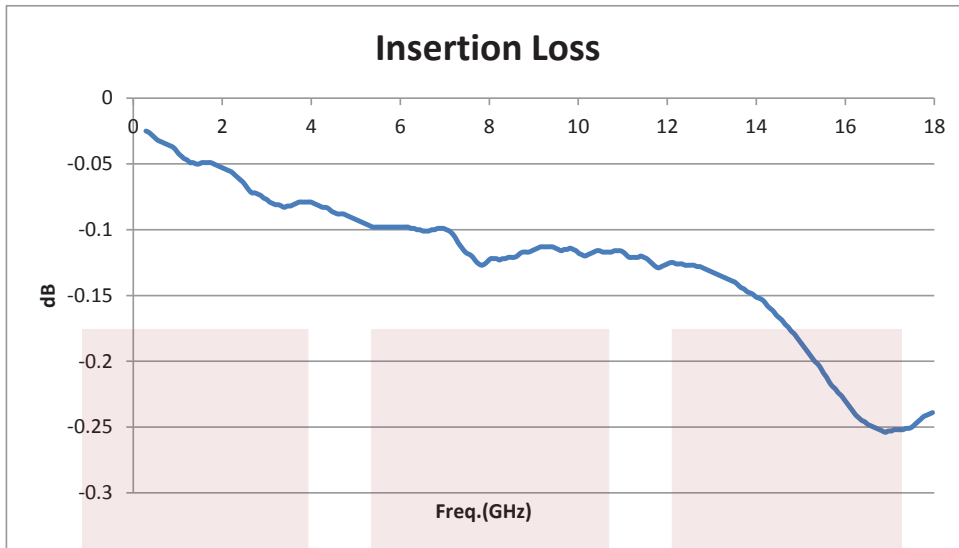
Compliance Certifications (visit www.FairviewMicrowave.com for current document)

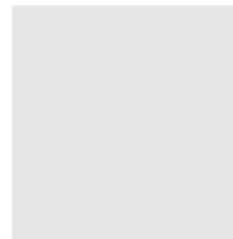
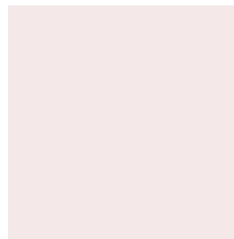
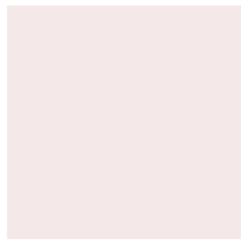
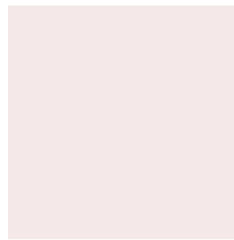
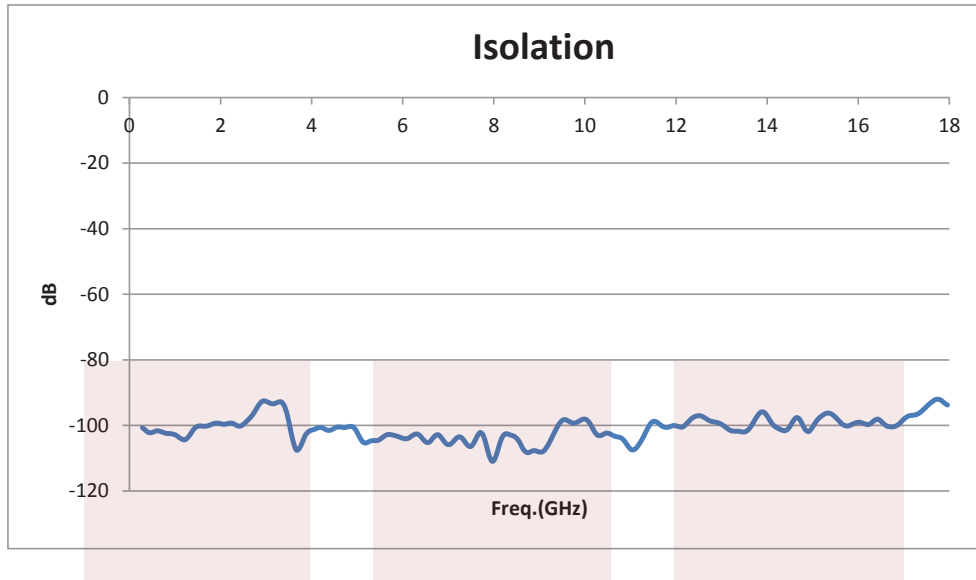
| | |
|-----------------|------------|
| RoHS Compliant | |
| REACH Compliant | 12/17/2014 |

Plotted and Other Data

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

Typical Performance Data





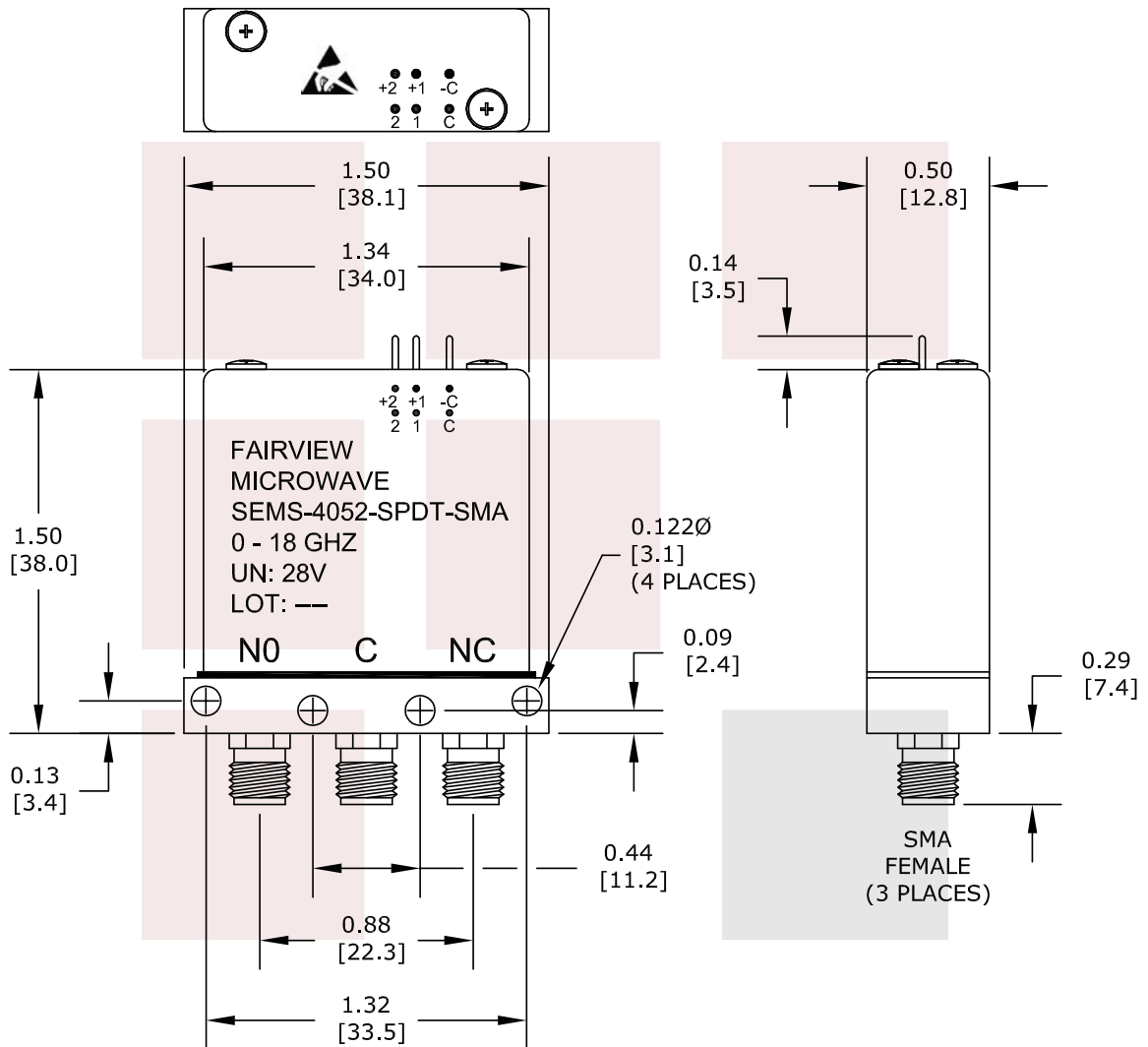
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For additional information on this product, please click the following link: [SPDT Latching Electro-Mechanical Relay Switch From DC to 18 GHz, 100 Watts with Indicators, Self Cut Off, SMA SEMS-4052-SPDT-SMA](#)

URL: <http://www.fairviewmicrowave.com/spdt-latching-electro-mechanical-relay-switch-indicators-sems-4052-spdt-sma-p.aspx>

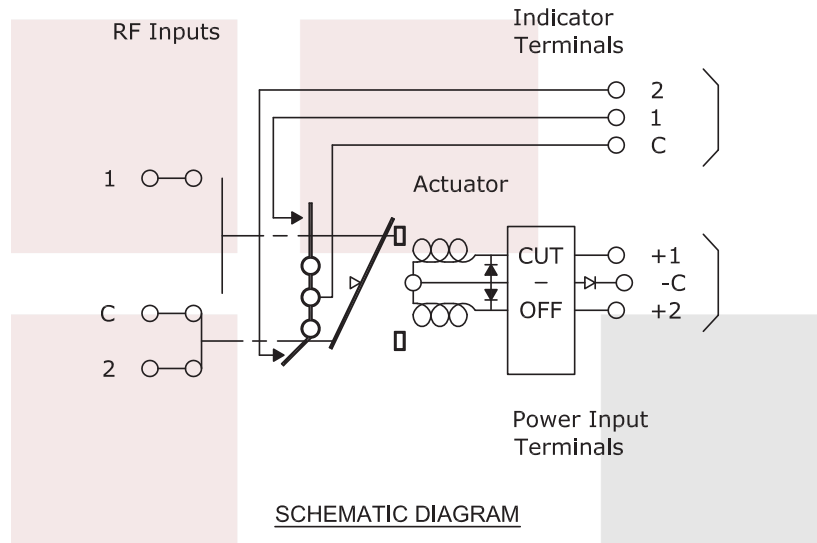
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| TITLE SPDT Latching Electro-Mechanical Relay Switch From DC to 18 GHz, 100 Watts with Indicators, Self Cut Off, SMA | | DWG NO SEMS-4052-SPDT-SMA | | CAGE CODE 3FKR5 | |
| CAD FILE | 031115 | SHEET | SCALE | N/A | SIZE A 150 |

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



| | | | | | |
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| CAD FILE | 092614 | SHEET | SCALE | N/A | SIZE A 150 |