

SP4T Latching Electro-Mechanical Relay Switch From DC to 22 GHz, 20 Watts with Self Cut Off, Diodes, SMA

The FMSW6305 is an SP4T Terminated Electromechanical Relay Switch that operates over a wide frequency band from DC to 22 GHz and has a rating of 20 Watts input power (CW). Rated for 1M life cycles for high reliability operation, this design uses a Latching Actuator with a break before make configuration, self cut off circuitry, internal terminations and suppression diodes. The switch exhibits exceptional electrical performance specified from 0.3 dB max for insertion loss and 75 dB min for isolation, and guaranteed over -25°C to +65°C. The assembly requires an operating voltage of +12Vdc and is certified as RoHS compliant. External connectors include solder terminals and SMA female connectors.

Electrical Specifications

| | |
|--------------------|----------------------|
| Switch Type | SP4T, Absorptive |
| Actuator Type | Latching |
| Switching Sequence | Break Before Make |
| Actuator Options | Self Cut Off, Diodes |
| Polarity | Positive |

| Description | Min | Typ | Max | Units |
|---------------------------------|-----|-----|-------|-------|
| Frequency Range | DC | | 22 | GHz |
| Impedance | | 50 | | Ohms |
| Operating Voltage | | 12 | | Volts |
| Actuating Current @ 12 Volts | | 300 | | mA |
| VSWR | | | 1.6:1 | |
| Insertion Loss | | | 0.6 | dB |
| Isolation | 60 | | | dB |
| Input Power (CW) (at 22 GHz) | | | 20 | Watts |

Performance by Frequency

| Description | F1 | F2 | F3 | F4 | F5 | Units |
|---------------------|--------|-------|--------|---------|---------|-------|
| Frequency Range | DC - 4 | 4 - 8 | 8 - 12 | 12 - 18 | 18 - 22 | GHz |
| VSWR, Max | 1.2:1 | 1.3:1 | 1.4:1 | 1.5:1 | 1.6:1 | |
| Insertion Loss, Max | 0.3 | 0.35 | 0.4 | 0.5 | 0.6 | dB |
| Isolation, Min | 75 | 70 | 65 | 60 | 60 | dB |

Mechanical Specifications

| | |
|---------------------------|----------------------|
| Size | |
| Length | 2.13 in [54.1 mm] |
| Width/Diameter | 2.13 in [54.1 mm] |
| Height | 2.33 in [59.18 mm] |
| Weight | 0.625 lbs [283.5 g] |
| Body Material and Plating | Aluminum |
| Package Type | Connectorized Module |
| Operating Life | 1,000,000 Cycles |
| Switching Time | 20 ms Max |



Features:

- Single Pole Four Throw Terminated Relay Switch
- DC to 22 GHz Frequency Range
- 1M Cycle Operating Life Min
- Latching Actuator
- Self Cut Off, Suppression Diodes
- Insertion Loss 0.6 dB max
- Isolation 60 dB min
- 20 Watts Avg Power Max
- Switching Sequence Break Before Make

Applications:

- Test & Measurement
- Communications System
- Instrumentation

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Connectors

| | |
|---|----------------------------|
| RF Connector Type | SMA Female |
| RF Connector Contact Material & Plating | Beryllium Copper, Gold |
| RF Connector Body Material & Plating | Passivated Stainless Steel |
| Control Connector | Solder Pins |

Environmental Specifications

Temperature

| | |
|-----------------|--|
| Operating Range | -25 to +65 deg C |
| ESD Sensitivity | ESD Sensitive Material. Transport material in Approved ESD bags. Handle in approved ESD Workstation. |



Environmental Specification Notes:
Designed to meet MIL-DTL-3928

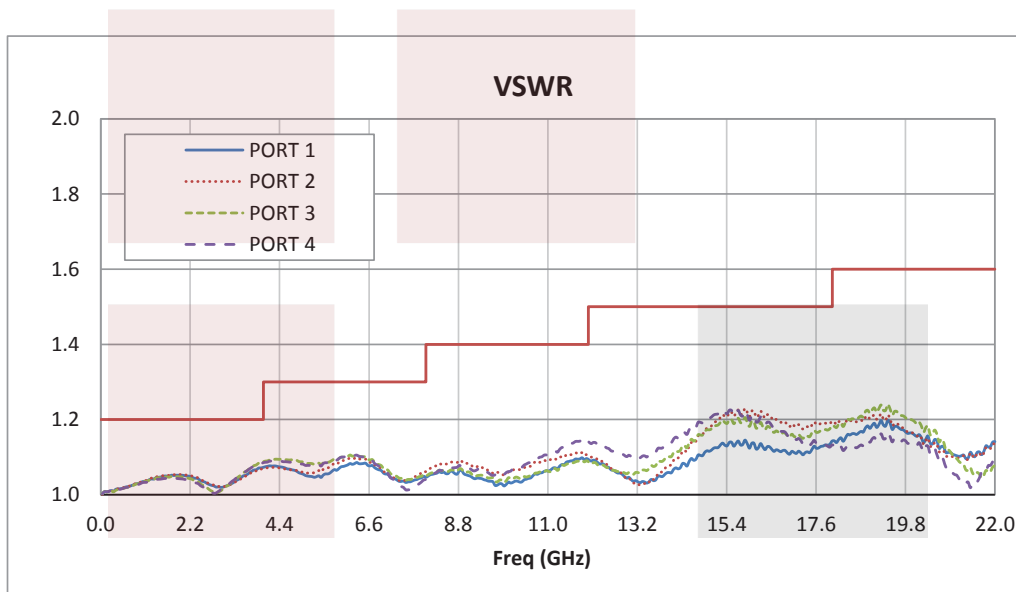
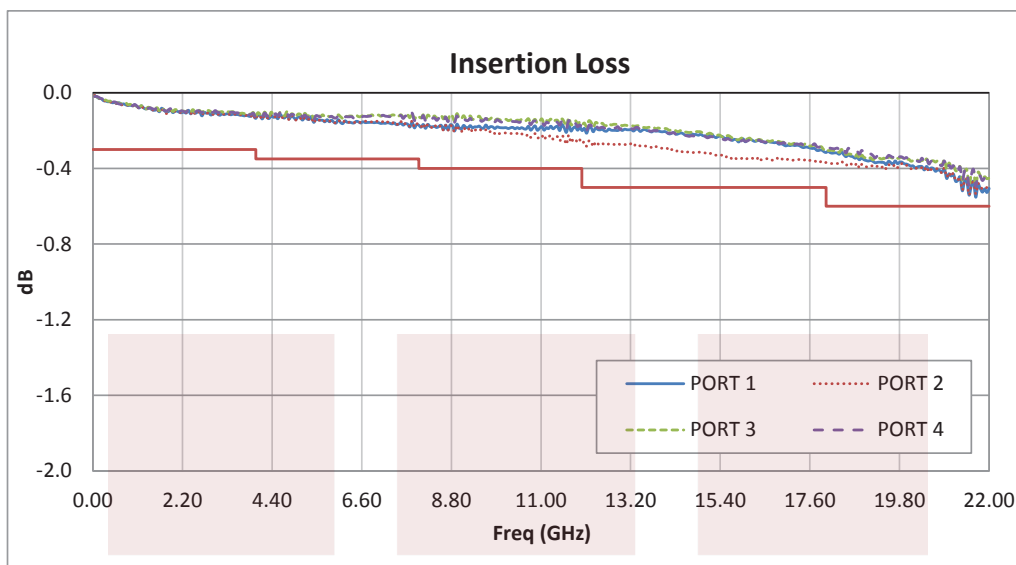
Compliance Certifications (visit www.FairviewMicrowave.com for current document)

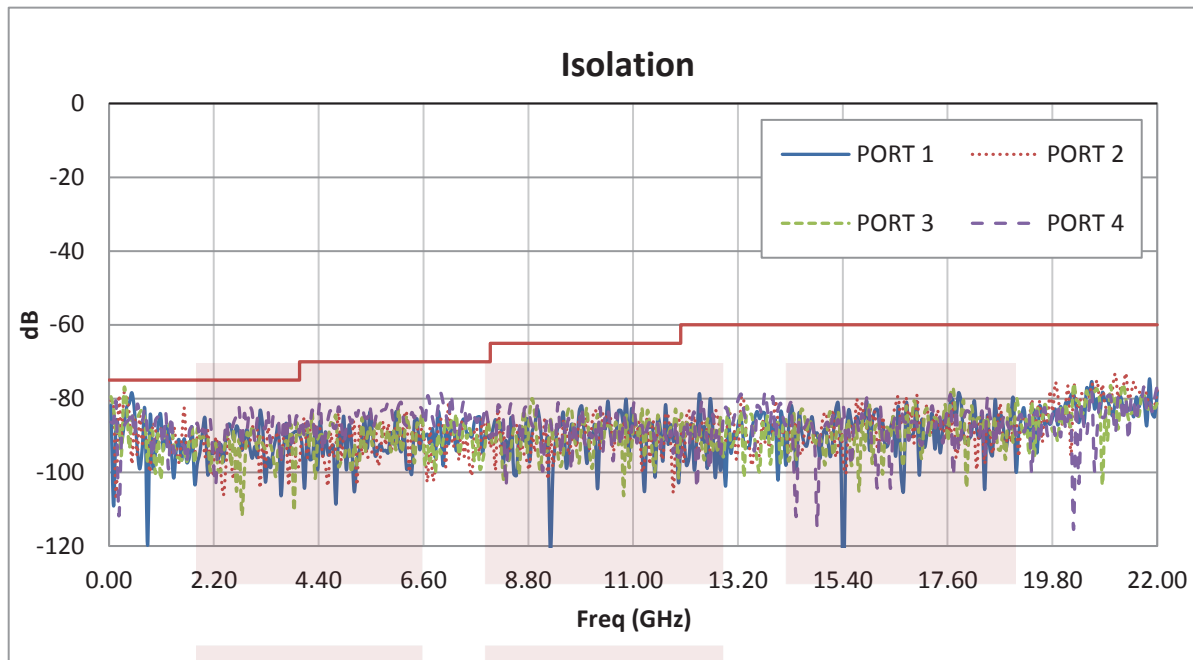
RoHS Compliant

Plotted and Other Data

Notes:

Typical Performance Data



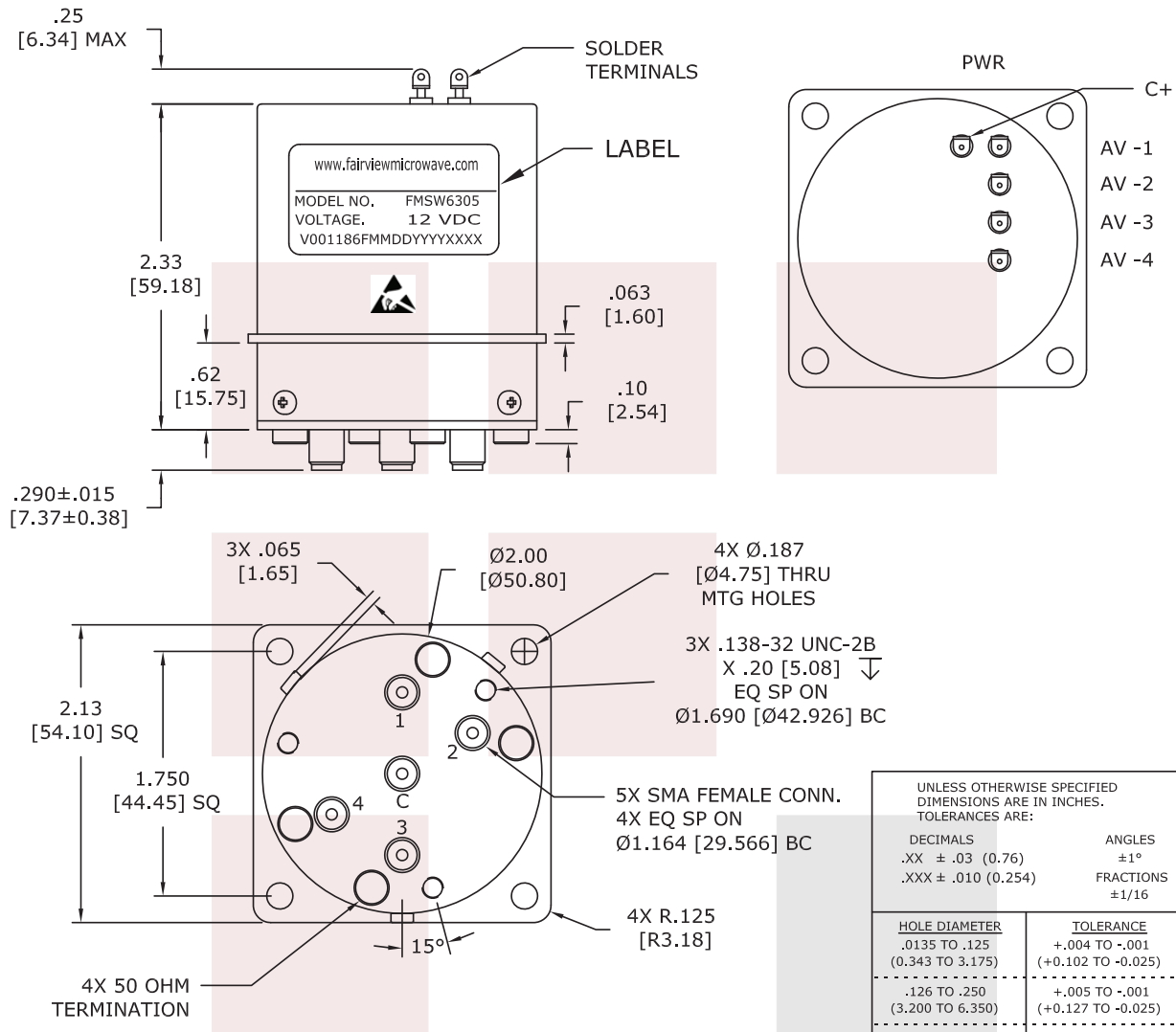


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For additional information on this product, please click the following link: [SP4T Latching Electro-Mechanical Relay Switch From DC to 22 GHz, 20 Watts with Self Cut Off, Diodes, SMA FMSW6305](http://www.fairviewmicrowave.com/sp4t-latching-electro-mechanical-relay-switch-self-cut-off-fmsw6305-p.aspx)

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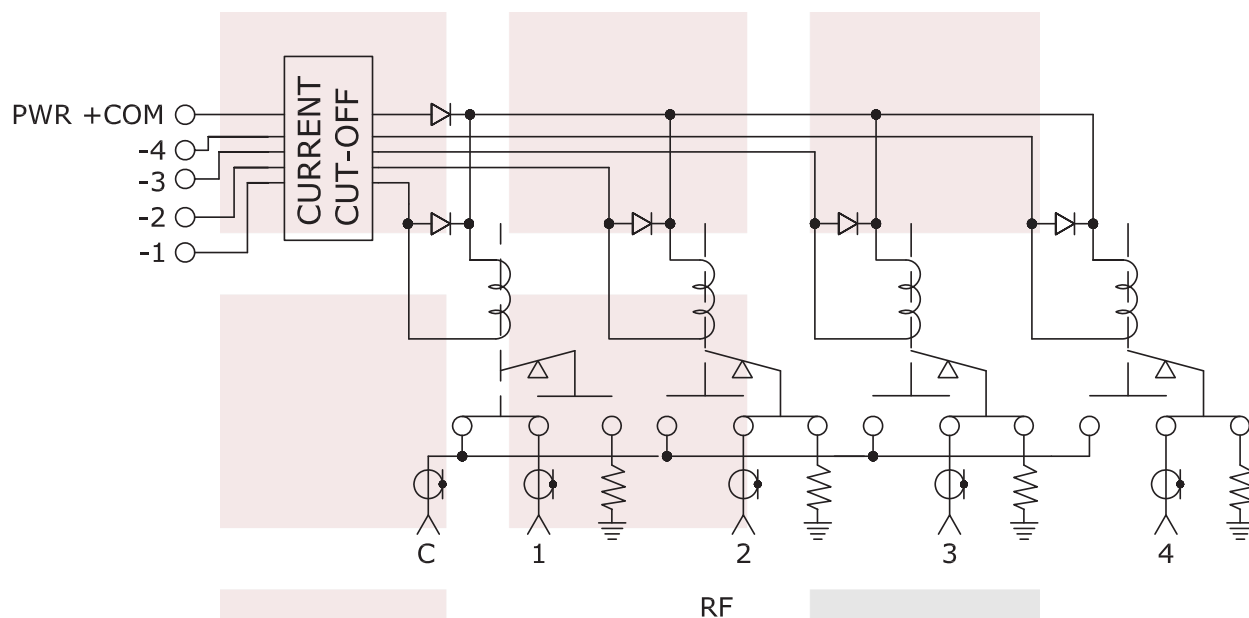
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| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: | |
|--|--------------------------------------|
| DECIMALS .XX ± .03 (0.76) .XXX ± .010 (0.254) | ANGLES ±1° FRACTIONS ±1/16 |
| HOLE DIAMETER | TOLERANCE |
| .0135 TO .125 (0.343 TO 3.175) | +.004 TO -.001 (+.0102 TO -.0025) |
| .126 TO .250 (3.200 TO 6.350) | +.005 TO -.001 (+.0127 TO -.0025) |
| .251 TO .500 (6.375 TO 12.700) | +.006 TO -.001 (+.0152 TO -.0025) |
| .501 TO .750 (12.725 TO 19.050) | +.008 TO -.001 (+.0203 TO -.0025) |
| .751 TO 1.000 (19.075 TO 25.400) | +.010 TO -.001 (+.0254 TO -.0025) |
| 1.001 TO 2.000 (25.425 TO 50.800) | +.012 TO -.001 (+.0305 TO -.0025) |

* THESE DIMENSIONS AND TOLERANCES
SUPERSEDE NOTE #1 ON TITLE BLOCK.

| | | | | | |
|---|---------------------------|---|---------------------------|-----------|------|
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| TITLE SP4T Latching Electro-Mechanical Relay Switch From DC to 22 GHz, 20 Watts with Self Cut Off, Diodes, SMA | DWG NO FMSW6305 | | CAGE CODE 3FKR5 | | |
| | CAD FILE 090815 | SHEET | SCALE N/A | SIZE A | 2233 |



SCHEMATIC LATCHING SELF CUT-OFF SHOWN IN POSITION 1

| | | | | | |
|---|---------------------------|---|---------------------------|--------|------|
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