

## SPDT Latching Electro-Mechanical Relay Switch From DC to 40 GHz, 5 Watts with Self Cut Off, Diodes, 2.92mm

The FMSW6107 is an SPDT Electromechanical Relay Switch that operates over a wide frequency band from DC to 40 GHz and has a rating of 5 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 and suppression diodes. The switch exhibits exceptional electrical performance specified from 0.2 dB max for insertion loss and 70 dB min for isolation, and guaranteed over -35°C to +85°C. The assembly requires an operating voltage of +28Vdc. External connectors include solder terminals and 2.92mm female connectors.

### Electrical Specifications

|                    |                      |
|--------------------|----------------------|
| Switch Type        | SPDT, Reflective     |
| Actuator Type      | Latching             |
| Switching Sequence | Break Before Make    |
| Actuator Options   | Self Cut Off, Diodes |
| Polarity           | Positive Common      |

| Description                  | Min | Typ | Max | Units |
|------------------------------|-----|-----|-----|-------|
| Frequency Range              | DC  |     | 40  | GHz   |
| Impedance                    |     | 50  |     | Ohms  |
| Operating Voltage            | 24  | 28  | 30  | Volts |
| Actuating Current @ 28 Volts |     |     | 100 | mA    |
| VSWR                         |     |     | 2:1 |       |
| Insertion Loss               |     |     | 0.9 | dB    |
| Isolation                    | 50  |     |     | dB    |
| Input Power (CW)             |     |     | 5   | Watts |

### Performance by Frequency

| Description         | F1     | F2     | F3        | F4          | F5        | Units |
|---------------------|--------|--------|-----------|-------------|-----------|-------|
| Frequency Range     | DC - 6 | 6 - 12 | 12 - 18.5 | 18.5 - 26.5 | 26.5 - 40 | GHz   |
| VSWR, Max           | 1.3:1  | 1.4:1  | 1.5:1     | 1.7:1       | 2:1       |       |
| Insertion Loss, Max | 0.2    | 0.4    | 0.5       | 0.7         | 0.9       | dB    |
| Isolation, Min      | 70     | 60     | 60        | 55          | 50        | dB    |

### Mechanical Specifications

|                           |                      |
|---------------------------|----------------------|
| <b>Size</b>               |                      |
| Length                    | 1.62 in [41.15 mm]   |
| Width/Diameter            | 1.5 in [38.1 mm]     |
| Height                    | 0.5 in [12.7 mm]     |
| Weight                    | 0.126 lbs [57.15 g]  |
| Body Material and Plating | Aluminum             |
| Package Type              | Connectorized Module |
| Operating Life            | 1,000,000 Cycles     |
| Switching Time            | 15 ms Max            |



### Features:

- Single Pole Double Throw Relay Switch
- DC to 40 GHz Frequency Range
- 1M Cycle Operating Life Min
- Latching Actuator
- Self Cut Off, Suppression Diodes
- Insertion Loss 0.9 dB max
- Isolation 50 dB min
- 5 Watts Avg Power Max
- Switching Sequence Break Before Make

### Applications:

- Test & Measurement
- Communications System
- Instrumentation
- Suitable for Aircraft

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**Connectors**

|                                         |                            |
|-----------------------------------------|----------------------------|
| RF Connector Type                       | 2.92mm Female              |
| RF Connector Contact Material & Plating | Beryllium Copper, Gold     |
| RF Connector Body Material & Plating    | Passivated Stainless Steel |
| Control Connector                       | Solder Pin                 |

**Environmental Specifications**

**Temperature**

|                 |                                                                                                      |
|-----------------|------------------------------------------------------------------------------------------------------|
| Operating Range | -35 to +85 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-E-5400 and MIL-S-3928

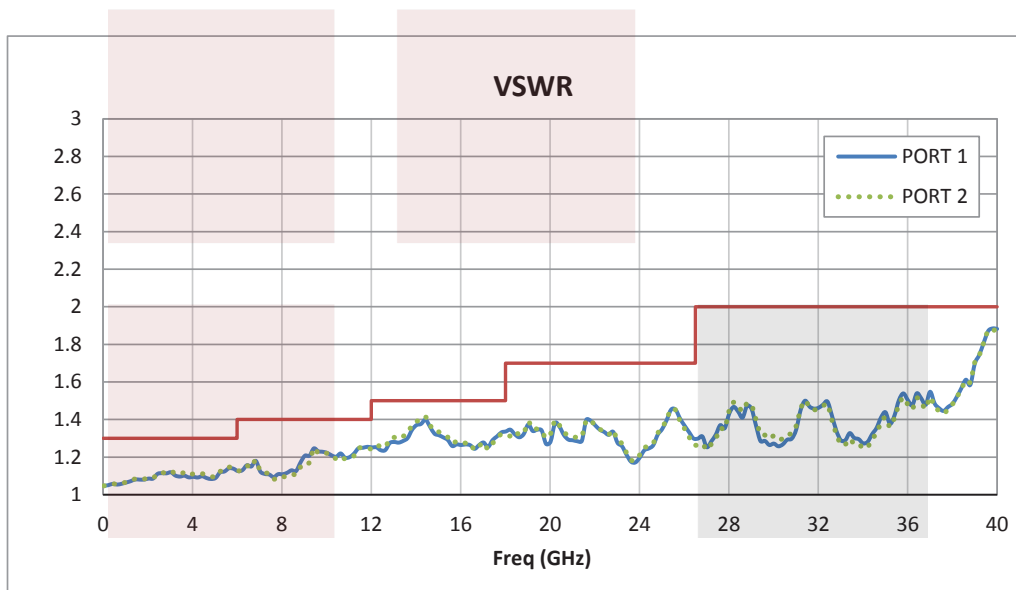
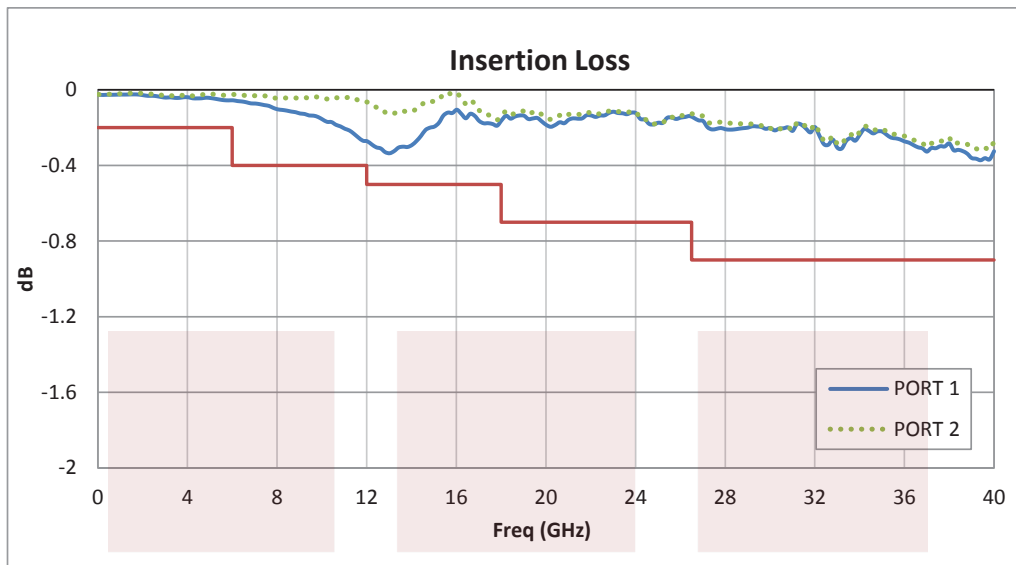
**Compliance Certifications** (visit [www.FairviewMicrowave.com](http://www.FairviewMicrowave.com) for current document)

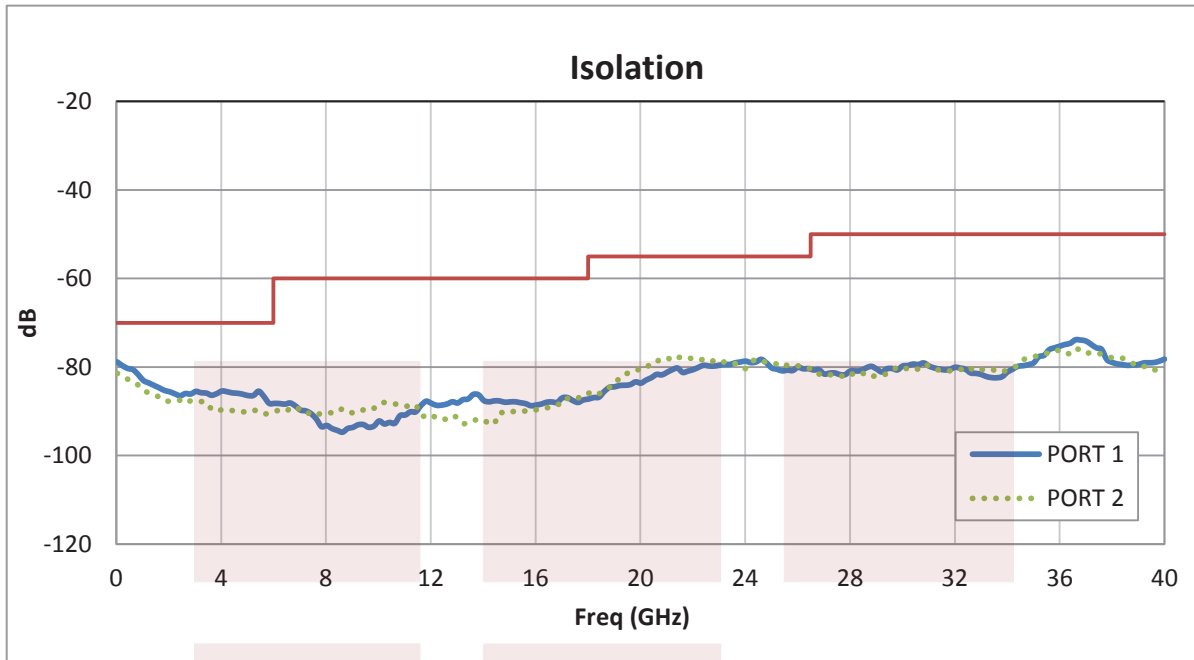
Not RoHS Compliant

**Plotted and Other Data**

Notes:

**Typical Performance Data**



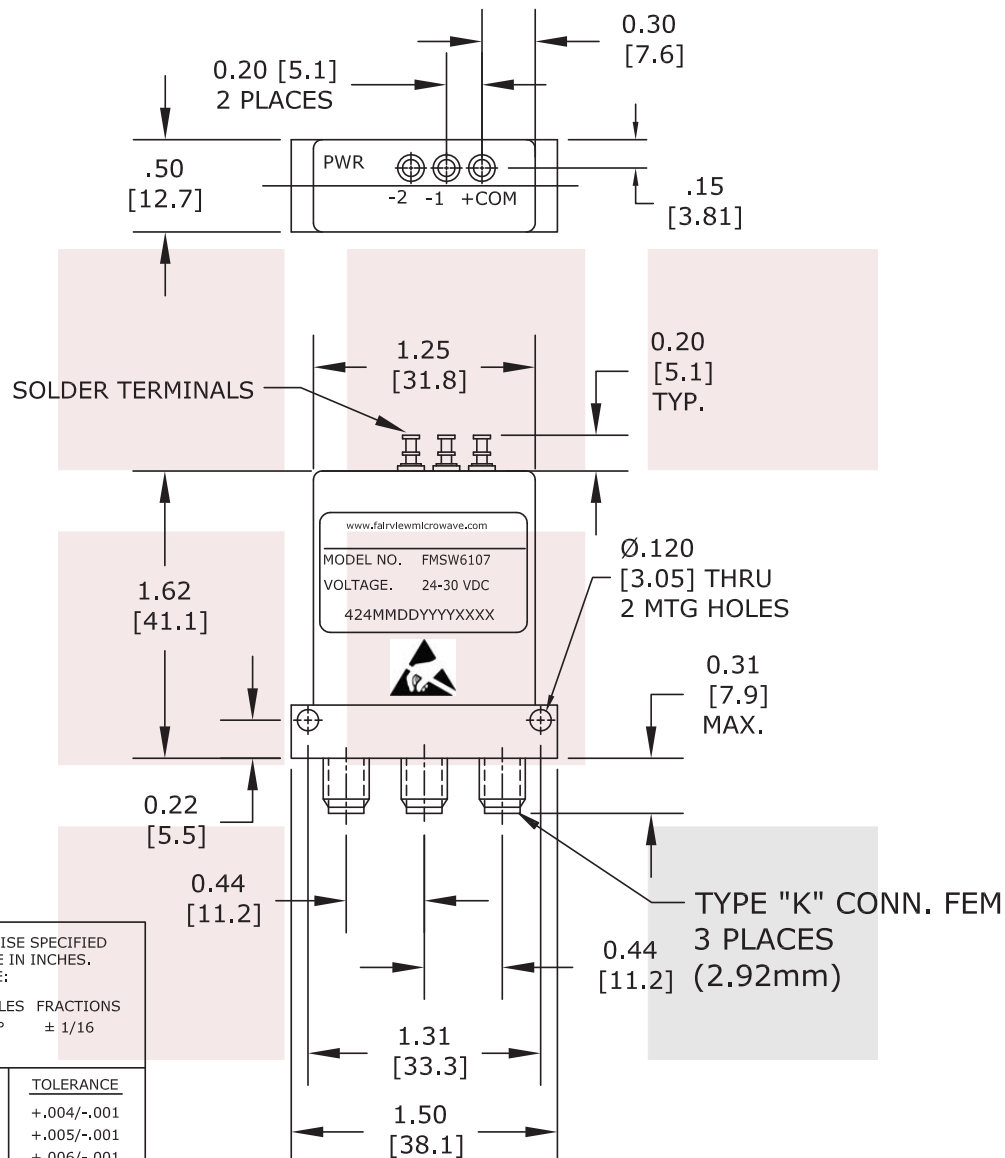


SPDT Latching Electro-Mechanical Relay Switch From DC to 40 GHz, 5 Watts with Self Cut Off, Diodes, 2.92mm from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SPDT Latching Electro-Mechanical Relay Switch From DC to 40 GHz, 5 Watts with Self Cut Off, Diodes, 2.92mm FMSW6107](http://www.fairviewmicrowave.com/spdt-latching-electro-mechanical-relay-switch-self-cut-off-fmsw6107-p.aspx)

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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.



UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES.  
TOLERANCES ARE:

DECIMALS ANGLES FRACTIONS  
.XX ± .03 ± 1° ± 1/16  
.XXX ± .010

| HOLE DIAMETER  | TOLERANCE    |
|----------------|--------------|
| .0135 TO .125  | +.004/-0.001 |
| .126 TO .250   | +.005/-0.001 |
| .251 TO .500   | +.006/-0.001 |
| .501 TO .750   | +.008/-0.001 |
| .751 TO 1.000  | +.010/-0.001 |
| 1.001 TO 2.000 | +.012/-0.001 |

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

## FAIRVIEW MICROWAVE INC.

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TITLE

SPDT Latching Electro-Mechanical Relay Switch From  
DC to 40 GHz, 5 Watts with Self Cut Off, Diodes,  
2.92mm

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].

DWG NO

FMSW6107

CAGE CODE

3FKR5

CAD FILE

030915

SHEET

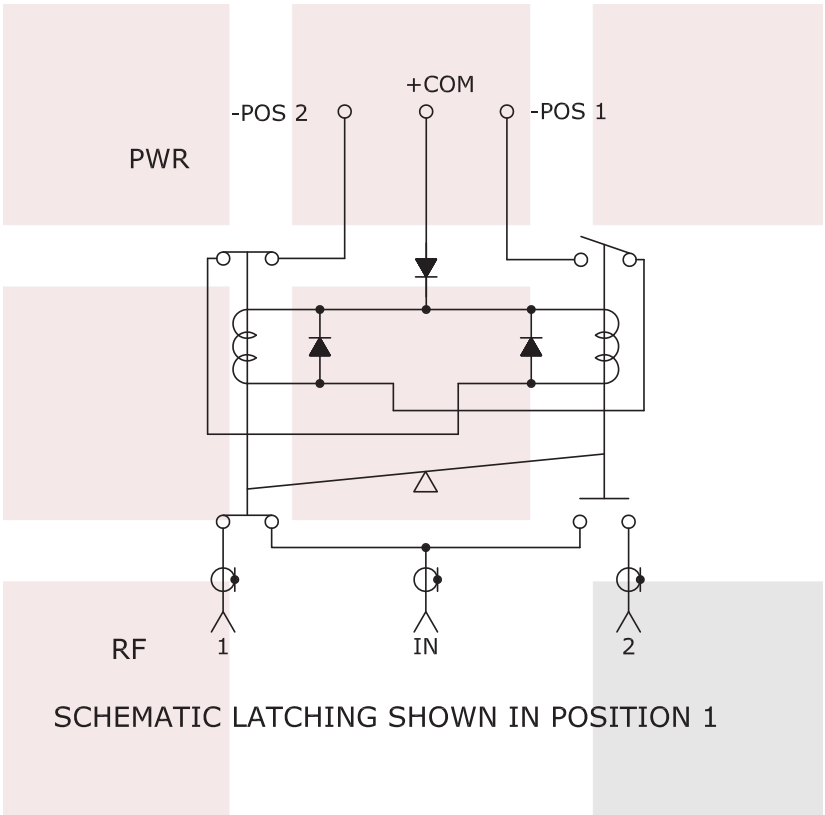
SCALE

N/A

SIZE

A

200



|                                                                                                                                        |  |                                                                                                                                                                                                                        |        |           |     |
|----------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|-----|
| <div>FAIRVIEW MICROWAVE INC.</div> <div>ALLEN, TX 75013 WWW.FAIRVIEWMICROWAVE.COM</div>                                                |  | <div>NOTES:</div> <div>1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.</div> <div>2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.</div> <div>3. DIMENSIONS ARE IN INCHES [mm].</div> |        |           |     |
| <div>TITLE</div> <div>SPDT Latching Electro-Mechanical Relay Switch From DC to 40 GHz, 5 Watts with Self Cut Off, Diodes, 2.92mm</div> |  | DWG NO                                                                                                                                                                                                                 |        | CAGE CODE |     |
|                                                                                                                                        |  | FMSW6107                                                                                                                                                                                                               |        | 3FKR5     |     |
|                                                                                                                                        |  | CAD FILE                                                                                                                                                                                                               | 021715 | SHEET     |     |
|                                                                                                                                        |  | SCALE                                                                                                                                                                                                                  | N/A    | SIZE      | A   |
|                                                                                                                                        |  |                                                                                                                                                                                                                        |        |           | 200 |