

**SPDT Failsafe Electro-Mechanical Relay  
Switch From DC to 12.4 GHz, 160 Watts, N**

The FMSW6158 is an SPDT Electromechanical Relay Switch that operates over a wide frequency band from DC to 12.4 GHz and has a rating of 160 Watts input power (CW). Rated for 1M life cycles for high reliability operation, this design uses a Failsafe Actuator with a break before make configuration. The switch exhibits exceptional electrical performance specified from 0.2 dB max for insertion loss and 80 dB min for isolation, and guaranteed over -55°C to +85°C. The assembly requires an operating voltage of +12Vdc. External connectors include solder terminals and N female connectors.



**Electrical Specifications**

Switch Type SPDT, Reflective  
Actuator Type Failsafe  
Switching Sequence Break Before Make

Description	Min	Typ	Max	Units
Frequency Range	DC		12.4	GHz
Impedance		50		Ohms
Operating Voltage		12		Volts
Actuating Current @ 12 Volts		270		mA
VSWR			1.6:1	
Insertion Loss			0.6	dB
Isolation	60			dB
Input Power (CW) (at 12.4 GHz)			160	Watts

**Performance by Frequency**

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 2	2 - 4	4 - 12.4			GHz
VSWR, Max	1.15:1	1.2:1	1.6:1			
Insertion Loss, Max	0.2	0.25	0.6			dB
Isolation, Min	80	80	60			dB

**Mechanical Specifications**

**Size**  
Length 1.61 in [40.89 mm]  
Width/Diameter 2.46 in [62.48 mm]  
Height 0.9 in [22.86 mm]  
Weight 0.53 lbs [240.4 g]  
Body Material and Plating Aluminum  
Package Type Connectorized Module  
Operating Life 1,000,000 Cycles  
Switching Time 50 ms Max

**Features:**

- Single Pole Double Throw Relay Switch
- DC to 12.4 GHz Frequency Range
- 1M Cycle Operating Life Min
- Failsafe Actuator
- Insertion Loss 0.6 dB max
- Isolation 60 dB min
- 160 Watts Avg Power Max
- Switching Sequence Break Before Make

**Applications:**

- Test & Measurement
- Communications System
- Instrumentation

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**Connectors**

RF Connector Type	N 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	-55 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-DTL-3928

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

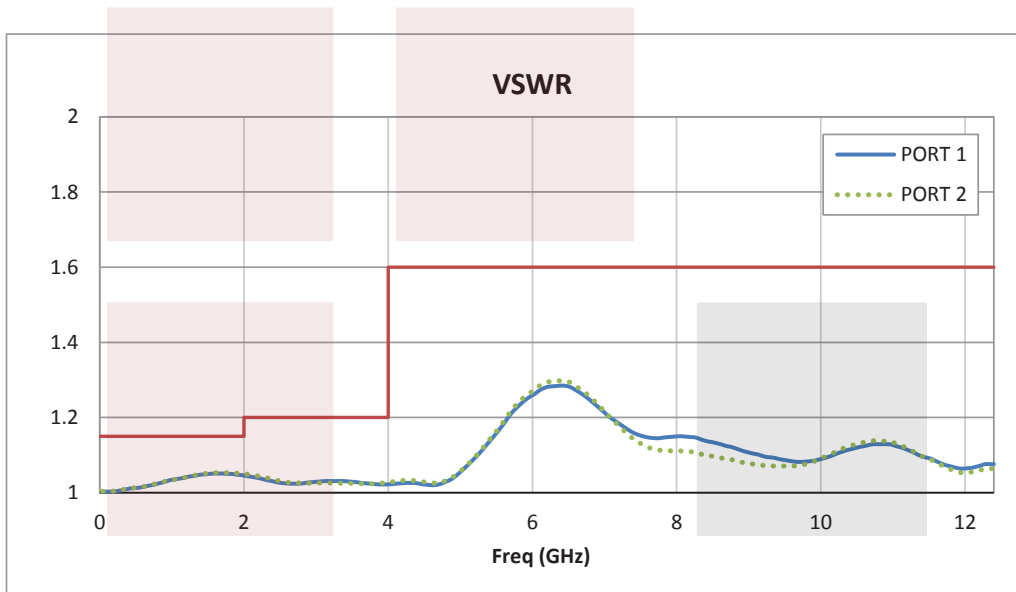
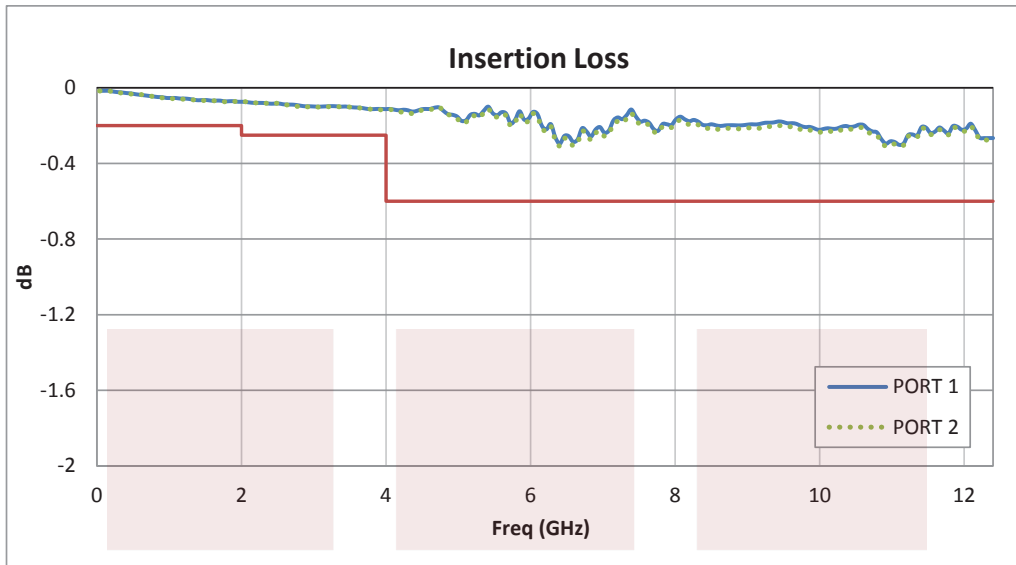
Not RoHS Compliant

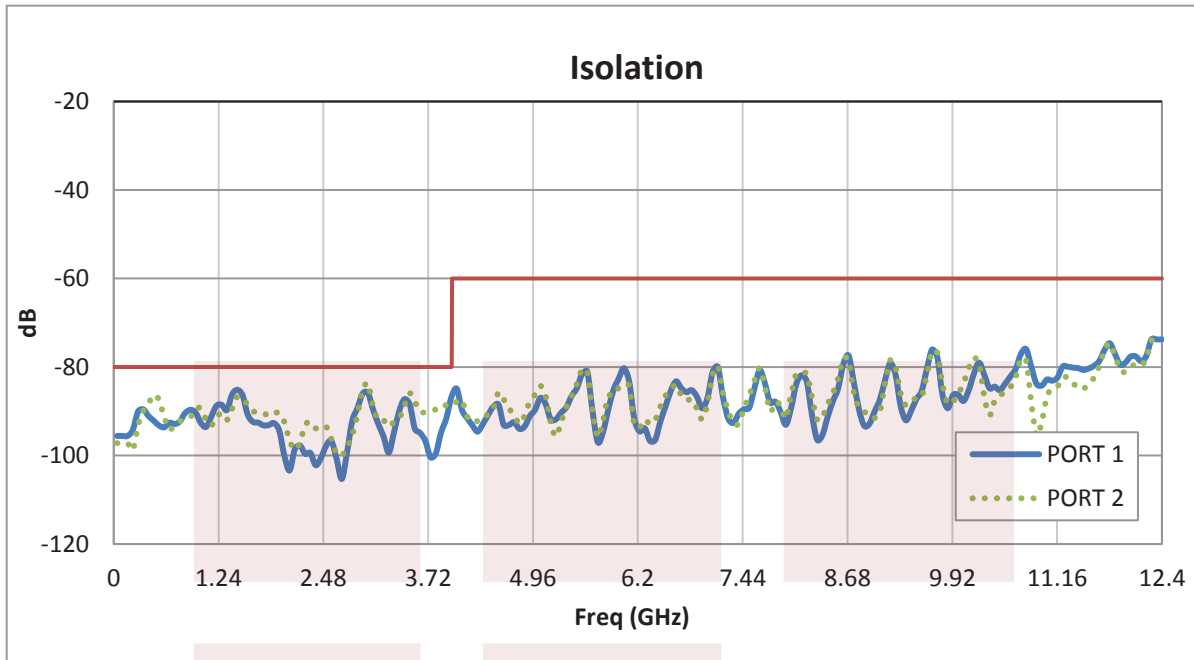
**Plotted and Other Data**

Notes:



**Typical Performance Data**



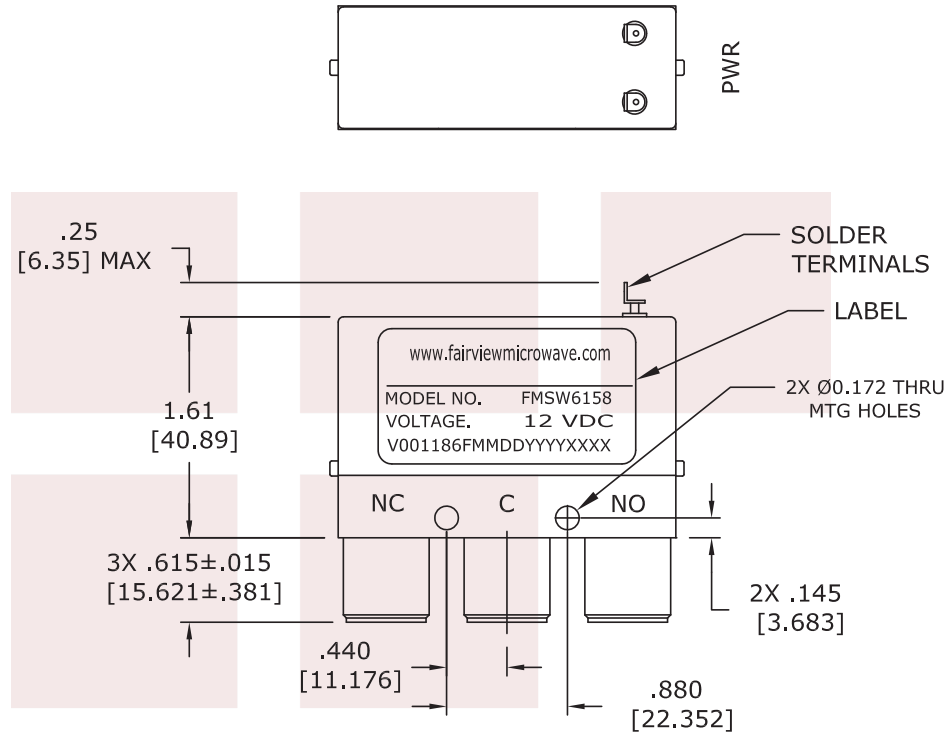


SPDT Failsafe Electro-Mechanical Relay Switch From DC to 12.4 GHz, 160 Watts, N from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SPDT Failsafe Electro-Mechanical Relay Switch From DC to 12.4 GHz, 160 Watts, N FMSW6158](#)

URL: <http://www.fairviewmicrowave.com/spdt-failsafe-electro-mechanical-relay-switch-fmsw6158-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.

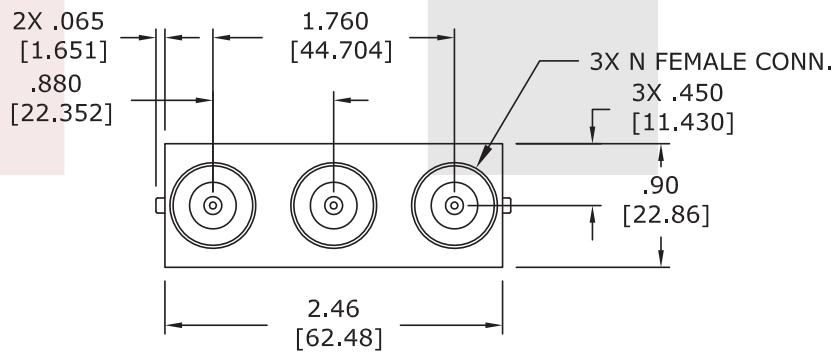


UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:

DECIMALS	ANGLES
.XX ± .03 (0.76)	±1°
.XXX ± .010 (0.254)	FRACTIONS ±1/16

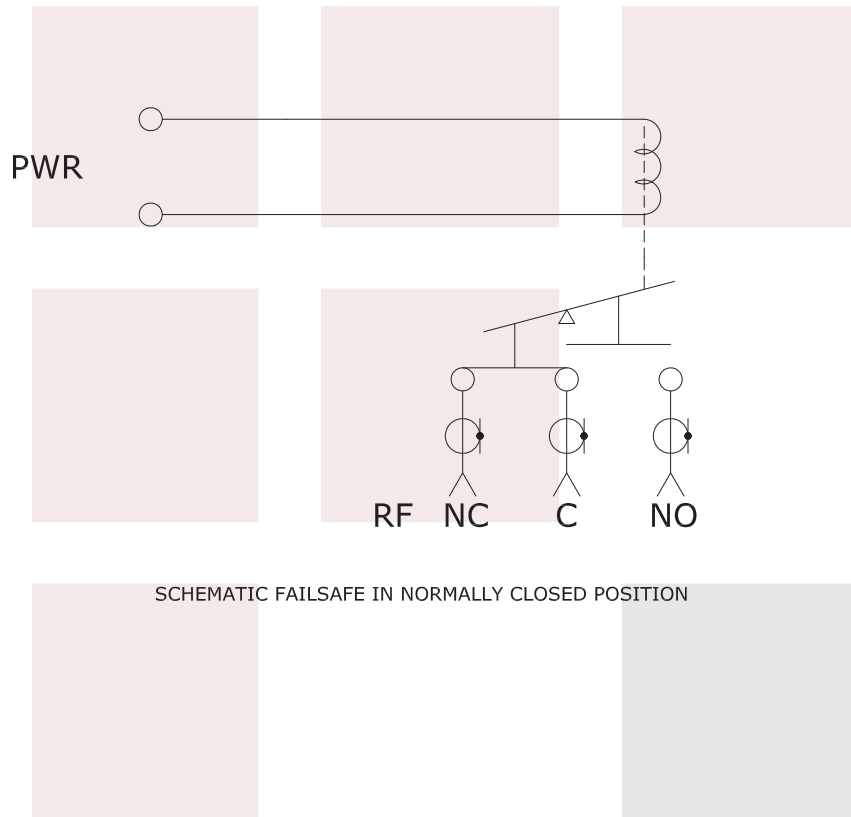
  

HOLE DIAMETER	TOLERANCE
.0135 TO .125 (0.343 TO 3.175)	+.004 TO -.001 (+0.102 TO -0.025)
.126 TO .250 (3.200 TO 6.350)	+.005 TO -.001 (+0.127 TO -0.025)
.251 TO .500 (6.375 TO 12.700)	+.006 TO -.001 (+0.152 TO -0.025)
.501 TO .750 (12.725 TO 19.050)	+.008 TO -.001 (+0.203 TO -0.025)
.751 TO 1.000 (19.075 TO 25.400)	+.010 TO -.001 (+0.254 TO -0.025)
1.001 TO 2.000 (25.425 TO 50.800)	+.012 TO -.001 (+0.305 TO -0.025)



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

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TITLE SPDT Failsafe Electro-Mechanical Relay Switch From DC to 12.4 GHz, 160 Watts, N		DWG NO FMSW6158		CAGE CODE 3FKR5	
CAD FILE	051515	SHEET	SCALE	N/A	SIZE A 2233



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