

## SPDT Failsafe Electro-Mechanical Relay Switch DC to 12 GHz , 600W, 28V, 2M Lifecycles, N

The FMSW6438 is a Single Pole Double Throw (SPDT) electromechanical relay switch that operates across a wide frequency range of DC to 12 GHz and can handle up to 600 Watts of CW input power in a break before make condition. The 50 Ohm design features a Failsafe Actuator and is rated for 2 million lifecycles. Impressive typical performance includes 0.4 dB insertion loss and isolation 80 dB. This switch requires +28Vdc bias voltage and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports N Type female connectors and solder terminal pins for DC control. And for highly reliable operation, the model is guaranteed to meet MIL-STD-202 environmental test conditions for shock and random vibration.

### Electrical Specifications

Switch Type SPDT  
 Actuator Type Failsafe  
 Switching Sequence Break before Make

Description	Min	Typ	Max	Units
Frequency Range	DC		12	GHz
Impedance		50		Ohms
Operating Voltage	26	28	30	Volts
Actuating Current @ 28 Volts At +20°C			220	mA
VSWR		1.3:1	1.4:1	
Insertion Loss		0.4	0.5	dB
Isolation	70	80		dB
Input Power (CW)			600	Watts
Switching Time			20	ms

### Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 1	1 - 4	4 - 8	8 - 12		GHz
VSWR, Max	1.25:1	1.3:1	1.4:1	1.4:1		
Insertion Loss, Max	0.3	0.4	0.4	0.5		dB
Isolation, Min	90	80	80	70		dB

### Mechanical Specifications

#### Size

Body Material and Plating Aluminum  
 Package Type Connectorized  
 Operating Life 2,000,000 Cycles

#### Connectors

RF Connector Type N Female  
 Control Connector Solder Terminals



### Features:

- Single Pole Double Throw Electromechanical Relay Switch
- DC to 12 GHz Frequency Range
- Failsafe Actuator
- 2M Lifecycle Rating
- Insertion Loss 0.4 dB typ
- Isolation > 80 dB typ
- VSWR 1.40:1 typ
- +28 Volt DC Bias
- Terminal Pins for DC Control
- N Type Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 600 Watt Average Power Handling
- 50 Ohm Design
- Hot Switching Capability - Consult Factory
- S-Parameter Data available upon request
- Rugged Design meets Mil-STD-202 Test Conditions

### Applications:

- Aerospace & Defense
- Test & Measurement
- Microwave Radio Systems
- Military & Commercial Communication Systems
- Research & Development
- SATCOM
- Wireless Communications
- Enterprise
- IoT

Fairview Microwave  
 301 Leora Ln., Suite 100  
 Lewisville, TX 75056  
 Tel: 1-800-715-4396 / (972) 649-6678  
 Fax: (972) 649-6689  
[www.fairviewmicrowave.com](http://www.fairviewmicrowave.com)  
[sales@fairviewmicrowave.com](mailto:sales@fairviewmicrowave.com)

**Environmental Specifications**

**Temperature**

Operating Range -25 to +65 deg C  
Storage Range -55 to +100 deg C

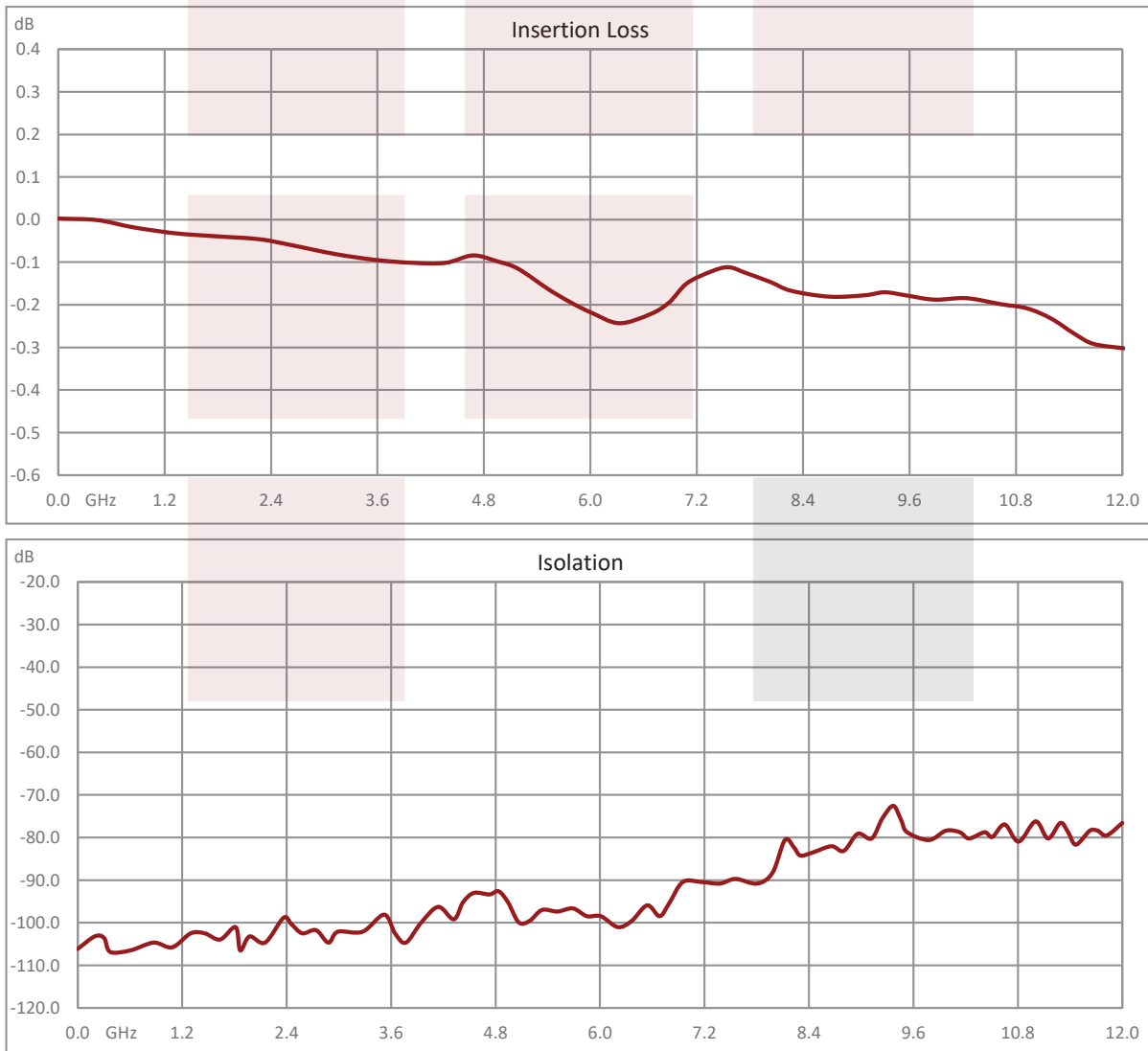
Humidity Moisture Resistance  
Shock MIL-STD-202 Method 213, Cond. D 500G Non Operating  
Vibration MIL-STD-202 Method 204, Cond. D 10G RMS Non Operating

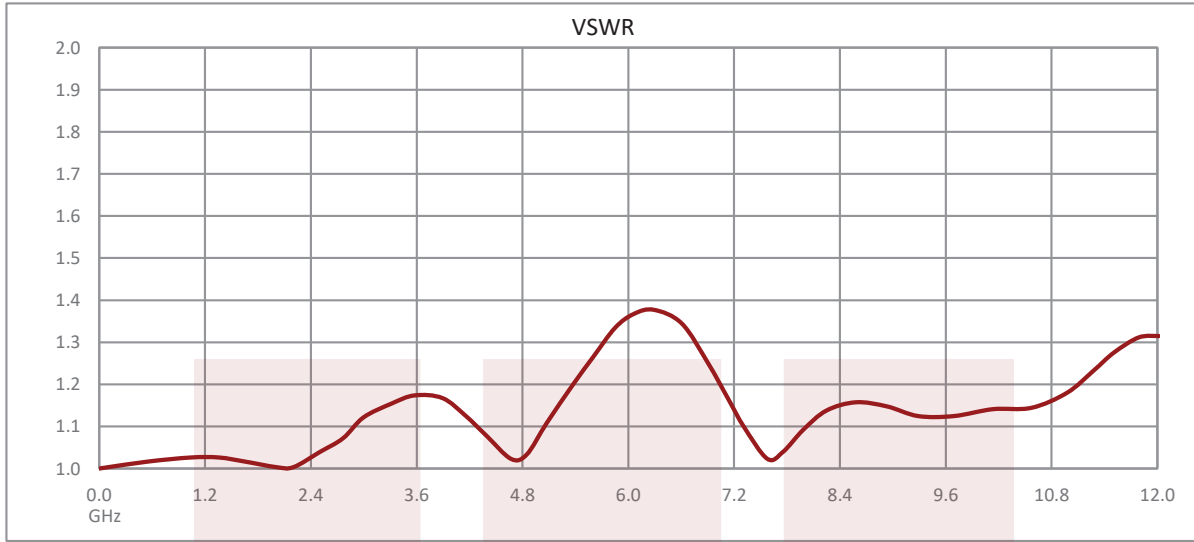
**Compliance Certifications** (see [product page](#) for current document)

**Plotted and Other Data**

Notes:

**Typical Performance Data**





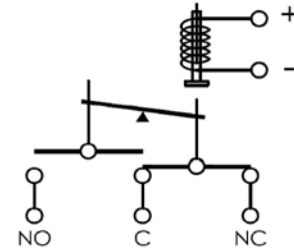
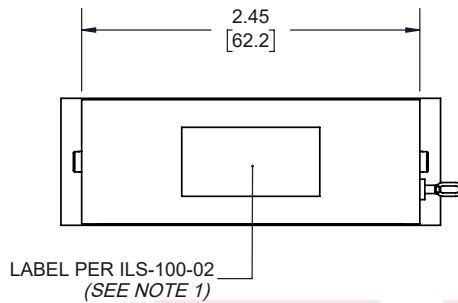
SPDT Failsafe Electro-Mechanical Relay Switch DC to 12 GHz , 600W, 28V, 2M Lifecycles, N from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SPDT Failsafe Electro-Mechanical Relay Switch DC to 12 GHz , 600W, 28V, 2M Lifecycles, N FMSW6438](https://www.fairviewmicrowave.com/spdt-failsafe-10-ghz-electro-mechanical-relay-switch-600w-28v-tnc-fm-sw6438-p.aspx)

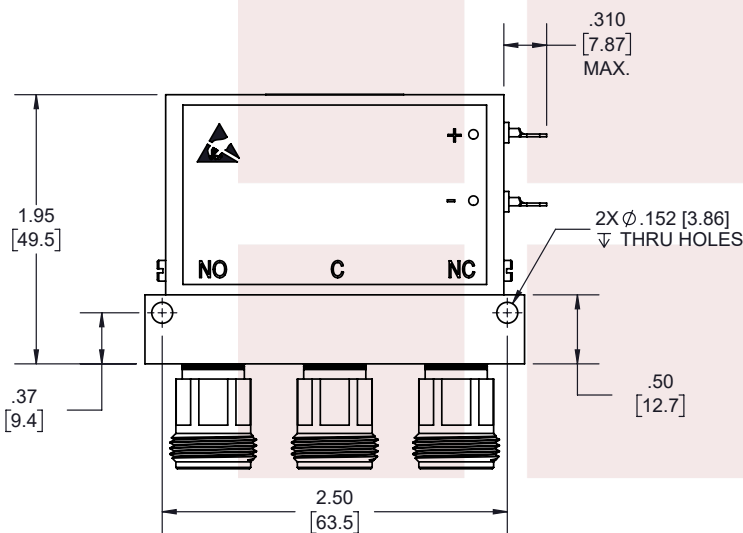
URL: <https://www.fairviewmicrowave.com/spdt-failsafe-10-ghz-electro-mechanical-relay-switch-600w-28v-tnc-fm-sw6438-p.aspx>

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.

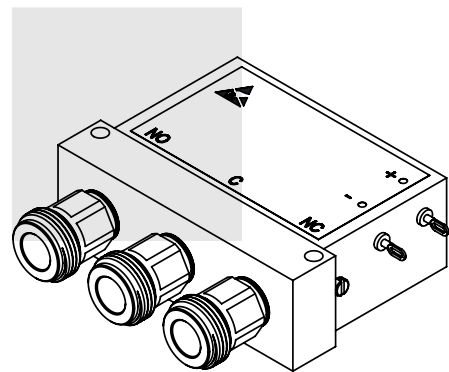
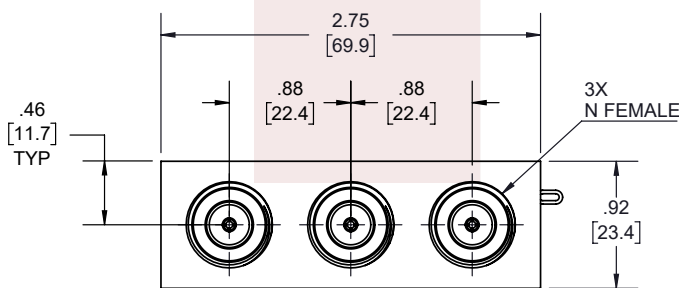
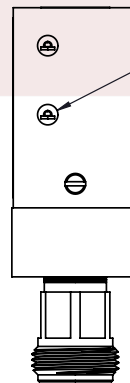
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	11/12/2020	T.GALLA



SCHEMATIC SHOWN IN FAILSAFE POSITION



2X SOLDER TERMINALS,  
SOLDER WIRE USING SN96  
MAXIMUM TEMP 210°C FOR  
NO MORE THAN 5 SEC.



**NOTES:**

- LABEL PER ILS-100-02. FOR INTERNAL REFERENCE ONLY. LABEL LOCATION FOR REFERENCE ONLY.

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TITLE  
SPDT Failsafe Electro-Mechanical Relay Switch DC to 12 GHz , 600W, 28V, 2M Lifecycles, N

UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES  
DIMENSIONS IN [ ] ARE MILLIMETERS

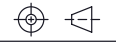
**TOLERANCES:**

.X = ±.2 [5.08] FRACTIONS  
.XX = ±.02 [.51] ± 1/32  
.XXX = ±.005 [.13] ANGLES ± 1°

**CABLE LENGTH (L) TOLERANCES:**

L ≤ 12 [305] = +1 [25] / -0  
12 [305] < L ≤ 60 [1524] = +2 [51] / -0  
60 [1524] < L ≤ 120 [3048] = +4 [102] / -0  
120 [3048] < L ≤ 300 [7620] = +6 [152] / -0  
300 [7620] < L = +5%L / -0

THIRD-ANGLE PROJECTION



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SHEET 1 OF 1

SCALE N/A

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

SIZE A	CAGE CODE 3FKR5	DRAWN BY K.DANG	ITEM NO. FMSW6438	REV A
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T-Rev.D