

## SPDT Failsafe DC to 12 GHz Electro-Mechanical Relay Switch, up to 600W, 12V, N

The FMSW6398 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 200 Watts of CW input power in a break before make condition. The design features a Failsafe actuator and is rated for 2M life cycles for high reliability operation. Insertion loss is specified as low as 0.3 dB and Isolation up to 90 dB minimum. The Failsafe actuator has a +12 Vdc bias voltage, and operates over a temperature range of -25°C to +70°C. The rugged and compact package assembly supports N Female connectors and Solder Pins for DC control. The model is guaranteed to meet MIL-STD-202 environmental test conditions for shock and 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	11	12	13	Volts
Actuating Set Current @ 12 Volts		200		mA
VSWR		1.25:1	1.4:1	
Insertion Loss		0.3	0.5	dB
Isolation	70	90		dB
Input Power (CW)			200	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
Power In, Typ (CW)	600	300	230	200		Watts

### Mechanical Specifications

Size  
 Weight 0.3835 lbs [173.95 g]  
 Body Material and Plating Aluminum  
 Package Type Connectorized  
 Operating Life 2,000,000 Cycles

### Features:

- Single Pole Double Throw
- DC to 12 GHz Frequency Range
- 2M Cycle Min Operating Life
- +12 Volt DC
- 200 Watt Avg Power
- Failsafe Actuator
- -25 to +70°C Operating Temperature
- Insertion Loss as low as 0.3 dB
- VSWR 1.4:1 Max
- N Female RF connectors
- Solder Pins DC Control
- Hot Switching Capability - Consult Factory
- S-Parameter Data available upon request

### Applications:

- High Performance Relay Switch
- Military Communications
- Communications Systems
- Test & Measurement

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**Connectors**

RF Connector Type	N Female
RF Connector Contact Material & Plating	Beryllium Copper, Gold
RF Connector Body Material & Plating	Aluminum, Nickel
Control Connector	Solder Pin

**Environmental Specifications**

**Temperature**

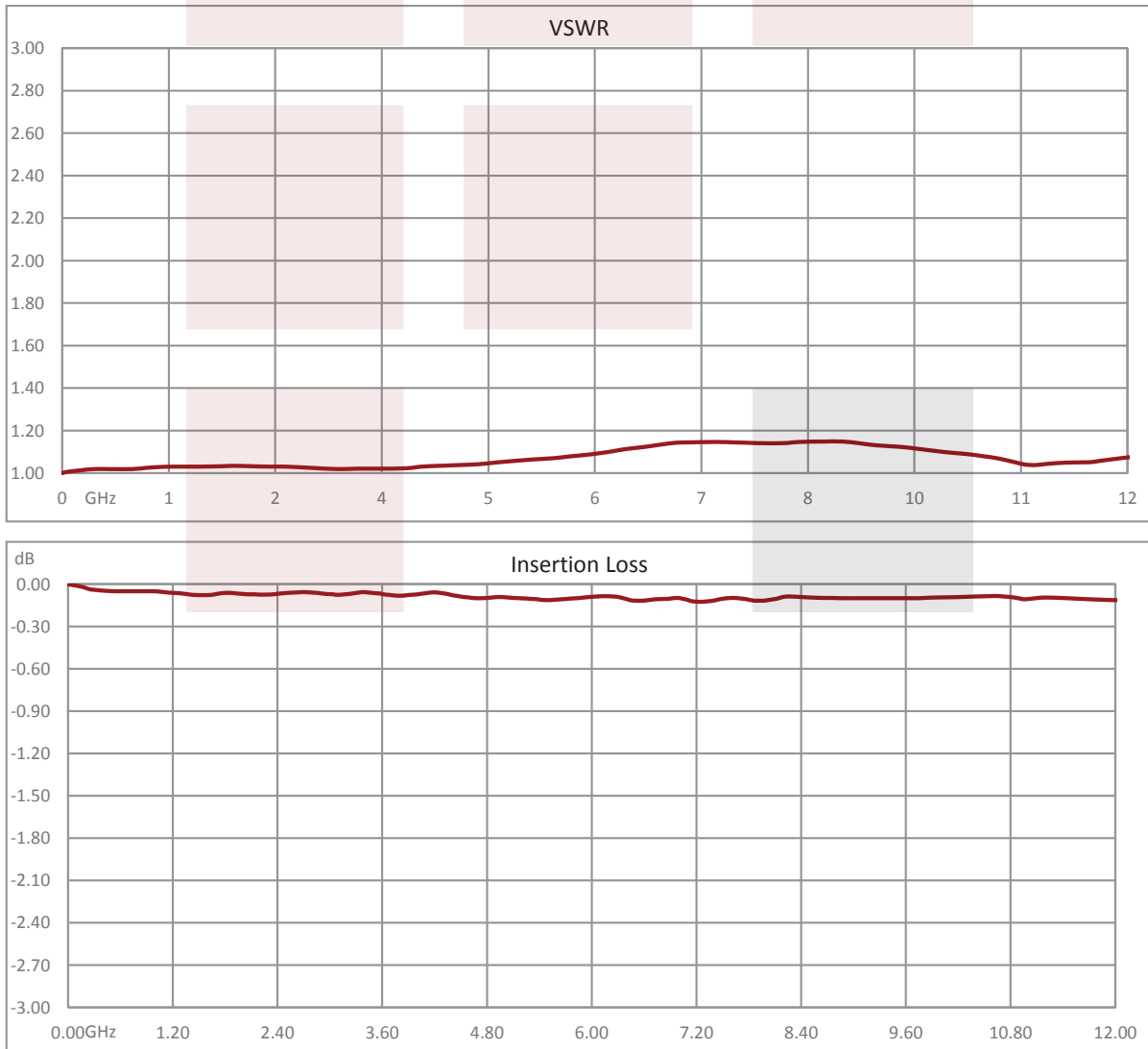
Operating Range	-25 to +70 deg C
Storage Range	-55 to +100 deg C

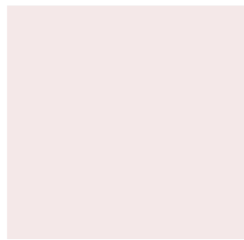
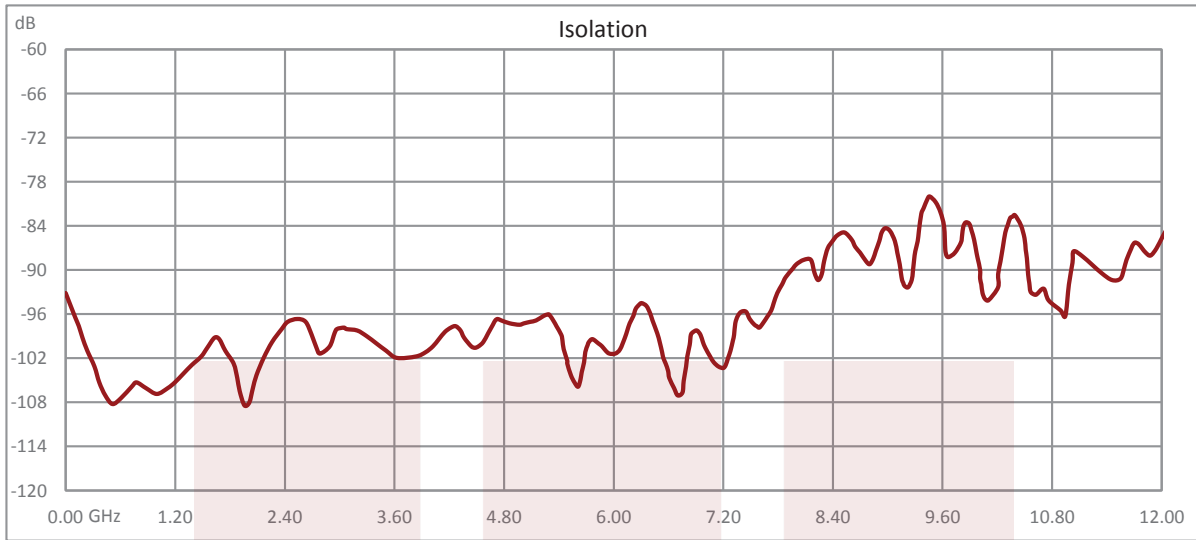
**Compliance Certifications** (see [product page](#) for current document)

**Plotted and Other Data**

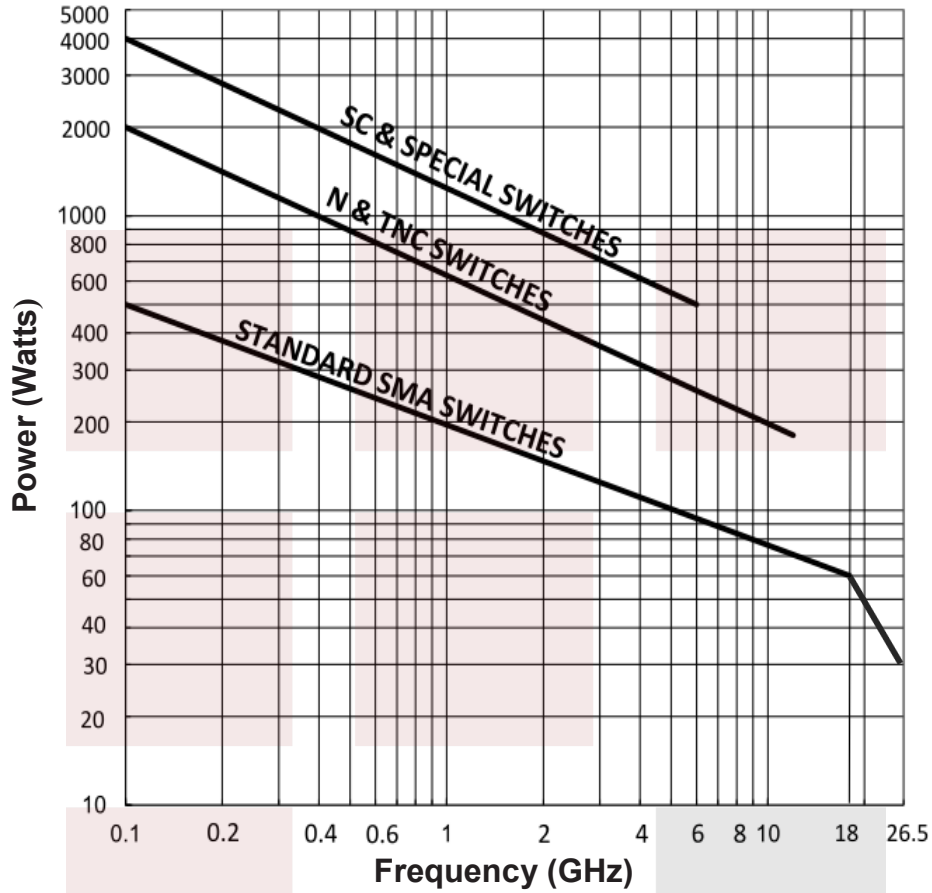
Notes:

**Typical Performance Data**





**Power Handling vs. Frequency & Connector Type**



**Environmental and Test Conditions:**

- Ambient temperature of 25°C or less
- Altitude: Sea Level
- Load VSWR: 1.20:1 max.
- Cold Switching

SPDT Failsafe DC to 12 GHz Electro-Mechanical Relay Switch, up to 600W, 12V, 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.

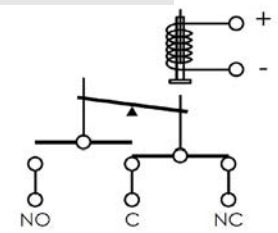
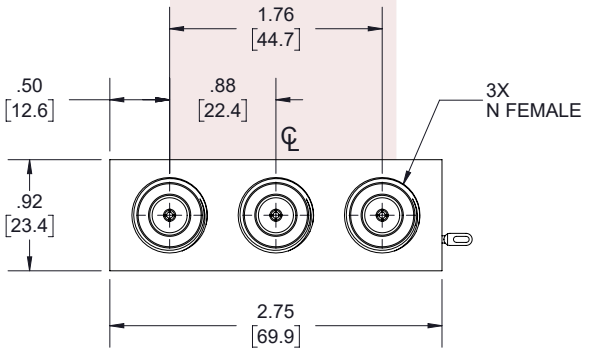
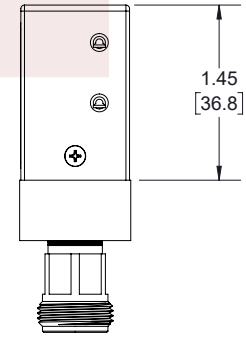
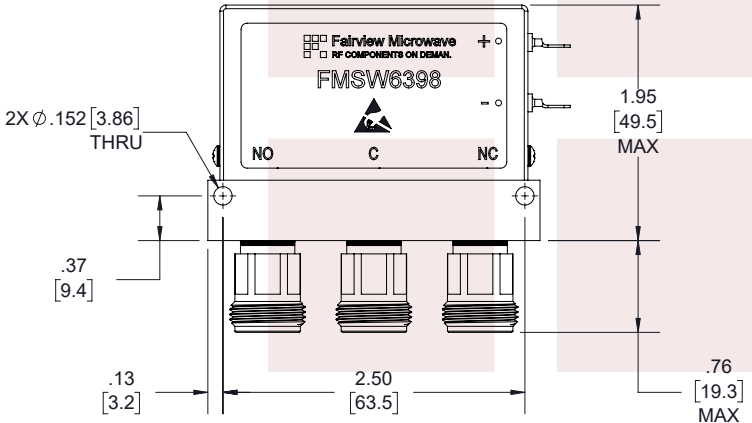
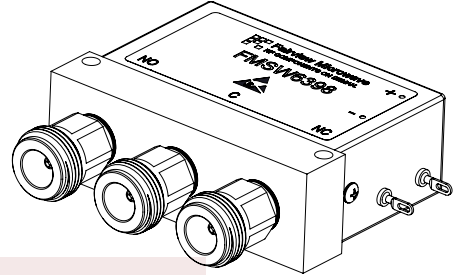
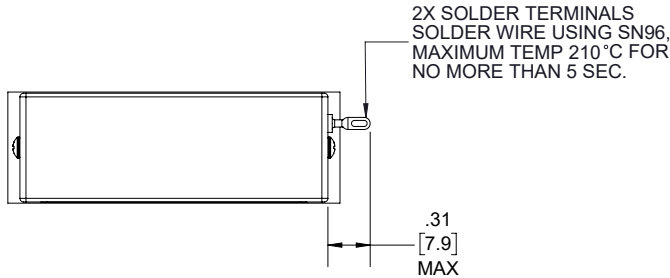
For additional information on this product, please click the following link: [SPDT Failsafe DC to 12 GHz Electro-Mechanical Relay Switch, up to 600W, 12V, N FMSW6398](#)

URL: <https://www.fairviewmicrowave.com/spdt-failsafe-12-ghz-electro-mechanical-relay-switch-200w-12v-n-fmsw6398-p.aspx>

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PCR FMSW6397	1/6/2020	T.GALLA



SCHEMATIC SHOWN IN FAILSAFE POSITION

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TITLE  
SPDT Failsafe DC to 12 GHz Electro-Mechanical Relay Switch, up to 600W, 12V, N

UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [ ] ARE MILLIMETERS		THIRD-ANGLE PROJECTION	
TOLERANCES:		CABLE LENGTH (L) TOLERANCES:	
.X = ±.2 [5.08]	FRACTIONS ± 1/32	L ≤ 12 [305] = +1 [25] / -0	THE INFORMATION AND DESIGN IN THIS DOCUMENT IS THE PROPERTY OF FAIRVIEW MICROWAVE CORPORATION. ALL RIGHTS RESERVED.
.XX = ±.02 [.51]	ANGLES ± 1°	12 [305] < L ≤ 60 [1524] = +2 [51] / -0	
.XXX = ±.005 [.13]		60 [1524] < L ≤ 120 [3048] = +4 [102] / -0	
ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.		300 [7620] < L = +5%L / -0	
SIZE A	CAGE CODE 3FKR5	DRAWN BY K.DANG	ITEM NO. FMSW6398
SHEET 1 OF 1			SCALE N/A
REV A			

T-Rev.D