

**SP6T NO DC to 18 GHz Electro-Mechanical Relay Switch, up to 90W, 28V, SMA**

The FMSW6409 is a Single Pole Six Throw (SP6T) electromechanical relay switch that operates across a wide frequency range of DC to 18 GHz and can handle up to 60 Watts of CW input power in a break before make condition. The design features a Normally Open actuator and is rated for 2M life cycles for high reliability operation. Insertion loss is specified from 0.4 dB maximum and Isolation from 80 dB minimum. The Normally Open actuator has a +28 Vdc bias voltage, and operates over a temperature range of -25°C to +70°C. The rugged and compact package assembly supports SMA Female connectors and Solder Pins for command control capability. 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	SP6T
Actuator Type	Normally Open
Switching Sequence	Break before Make

Description	Min	Typ	Max	Units
Frequency Range	DC		18	GHz
Impedance		50		Ohms
Operating Voltage	26	28	30	Volts
Actuating Current @ 28 Volts		90		mA
VSWR		1.2:1	1.4:1	
Insertion Loss		0.15	0.4	dB
Insertion Loss Repeatability				
Isolation	80	80		dB
Input Power (CW)			60	Watts
Switching Time			20	ms

**Performance by Frequency**

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 6	6 - 12	12 - 18			GHz
VSWR, Max	1.2:1	1.3:1	1.4:1			
Insertion Loss, Max	0.15	0.25	0.4			dB
Isolation, Min	80	80	80			dB
Power In, Typ (CW)	90	75	60			Watts

**Mechanical Specifications**

<b>Size</b>	
Weight	0.2395 lbs [108.64 g]
Package Type	Connectorized
Operating Life	2,000,000 Cycles

**Connectors**

RF Connector Type	SMA Female
Control Connector	Solder Pin

**Features:**

- Single Pole Six Throw
- DC to 18 GHz Frequency Range
- 2M Cycle Min Operating Life
- +28 Volt DC
- 60 Watt Avg Power
- Normally Open Actuator
- -25 to +70°C Operating Temperature
- Insertion Loss as low as 0.15 dB Max
- VSWR 1.4:1 Max
- SMA Female RF connectors
- Solder Pin DC control

**Applications:**

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

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**Environmental Specifications**

**Temperature**

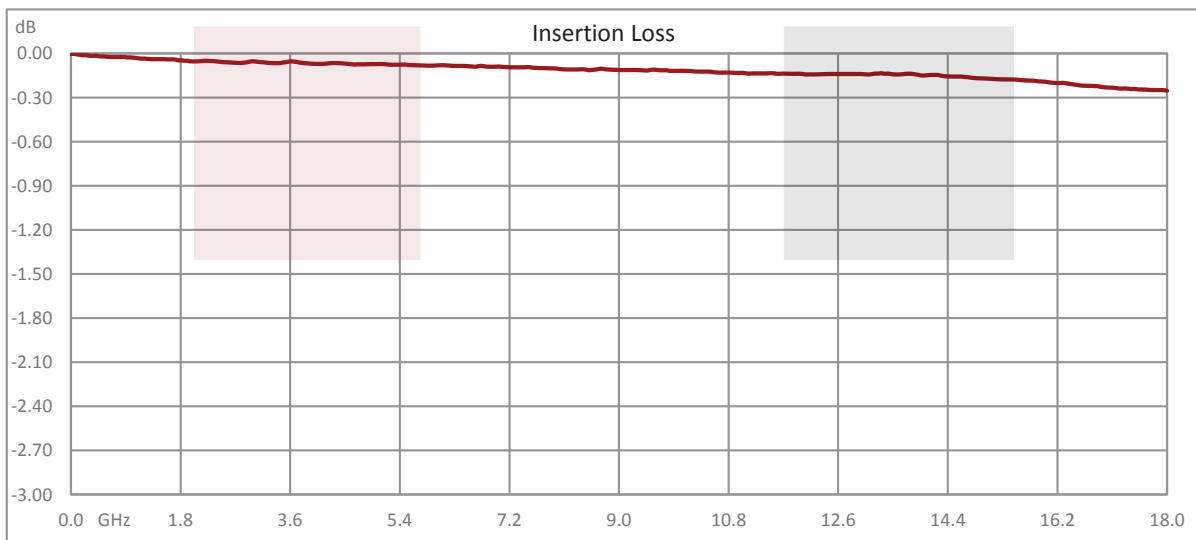
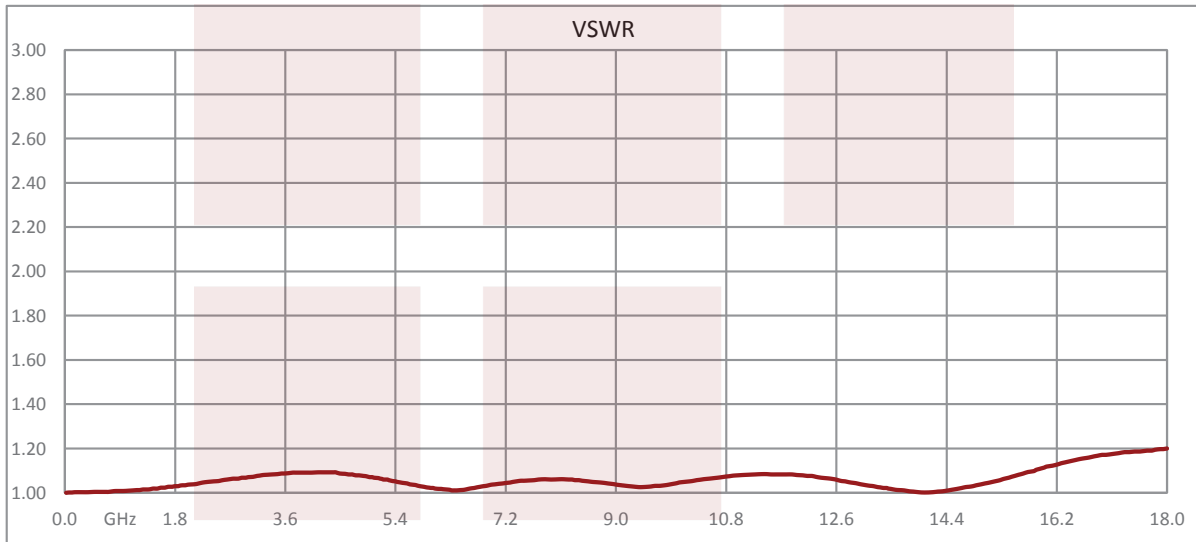
Operating Range -25 to +70 deg C  
 Storage Range -55 to +100 deg C

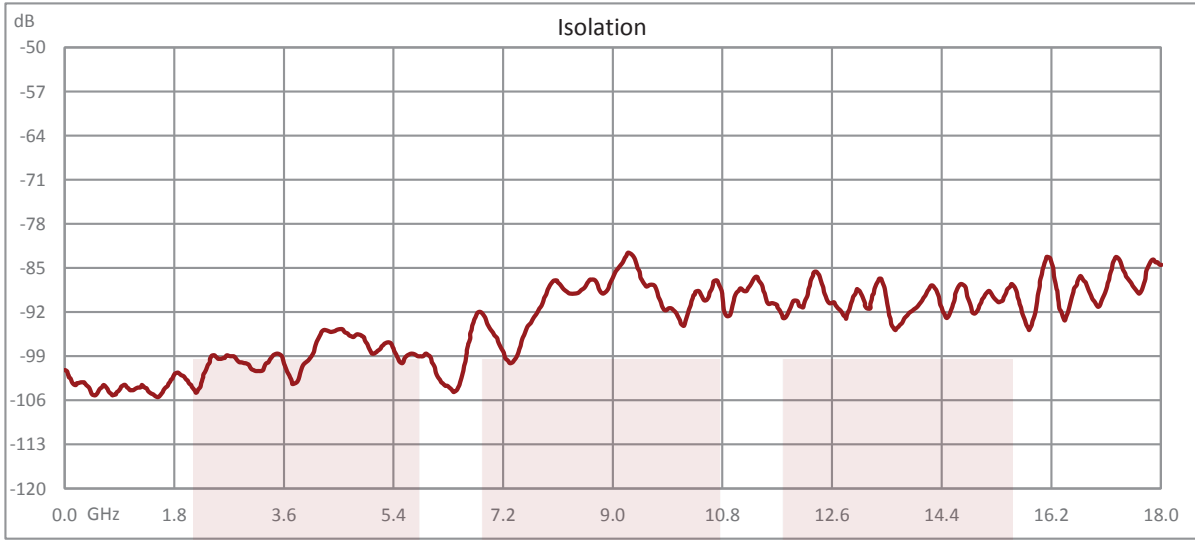
**Compliance Certifications** (see [product page](#) for current document)

**Plotted and Other Data**

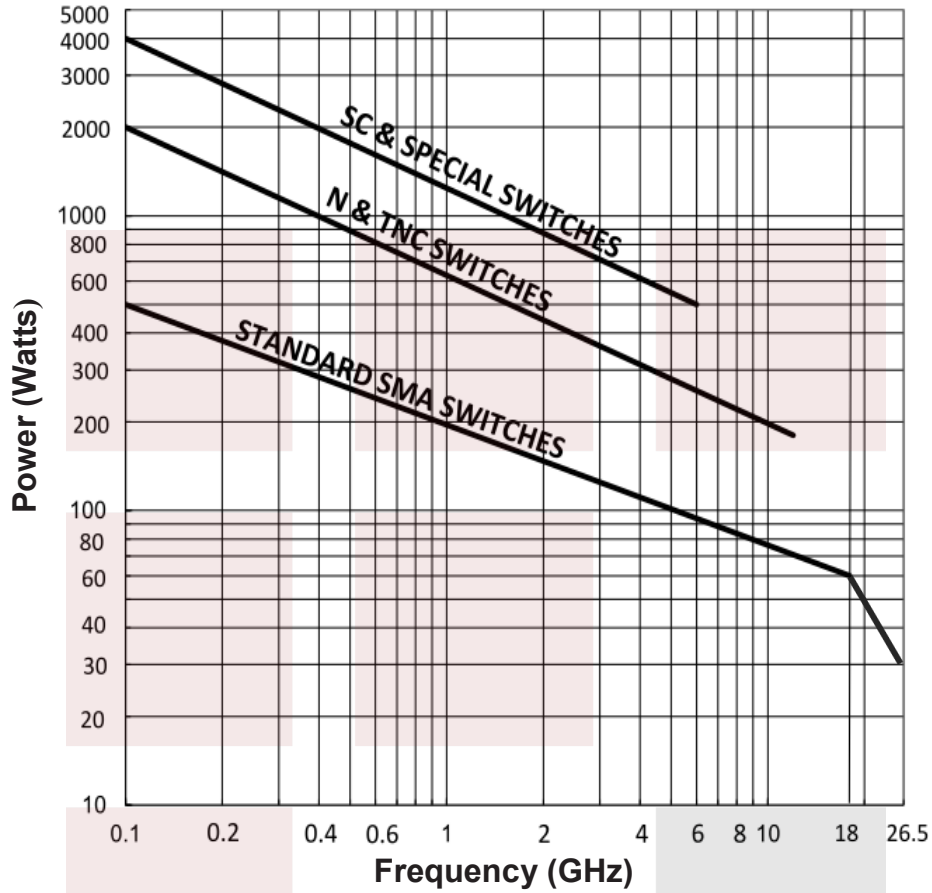
Notes:

**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

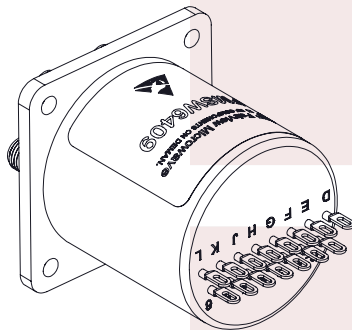
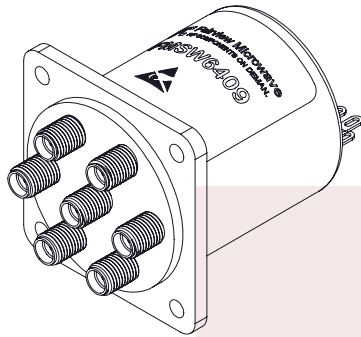
SP6T NO DC to 18 GHz Electro-Mechanical Relay Switch, up to 90W, 28V, SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SP6T NO DC to 18 GHz Electro-Mechanical Relay Switch, up to 90W, 28V, SMA FMSW6409](#)

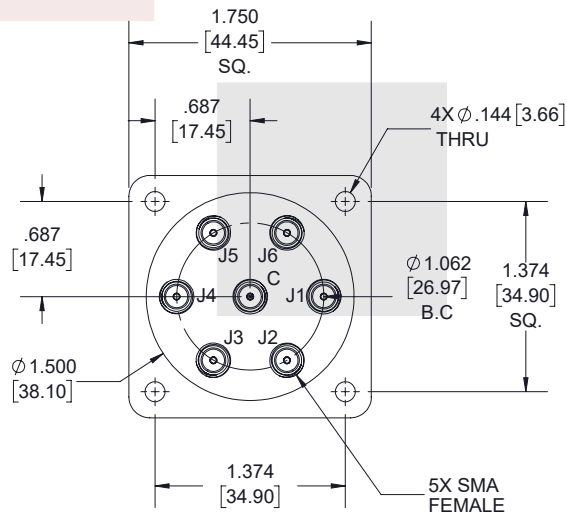
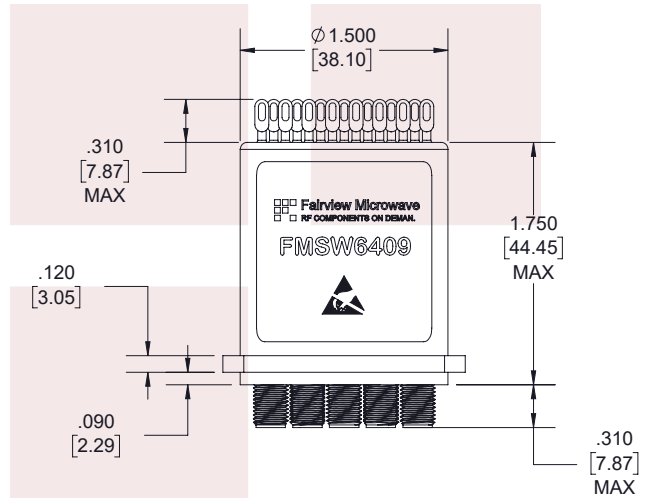
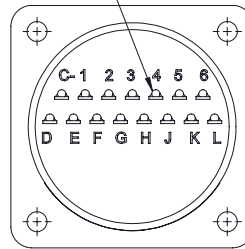
URL: <https://www.fairviewmicrowave.com/sp6t-normally-open-18-ghz-electro-mechanical-relay-switch-60w-28v-sma-fmsw6409-p.aspx>

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.





15X SOLDER  
TERMINALS



NOTE:



PINS D, E, F, G, H, J, K, L  
ARE NO CONNECTION (N/C).

**STANDARD TOLERANCES**

.X ±0.2  
.XX ±0.01  
.XXX ±0.005

\*STANDARD TOLERANCES APPLY  
ONLY TO DIMENSIONS IN INCHES

**FAIRVIEW MICROWAVE INC.**

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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].

TITLE

SP6T NO DC to 18 GHz Electro-Mechanical Relay  
Switch, up to 90W, 28V, SMA

DWG NO

FMSW6409

CAGE CODE

3FKR5

CAD FILE

101317

SHEET

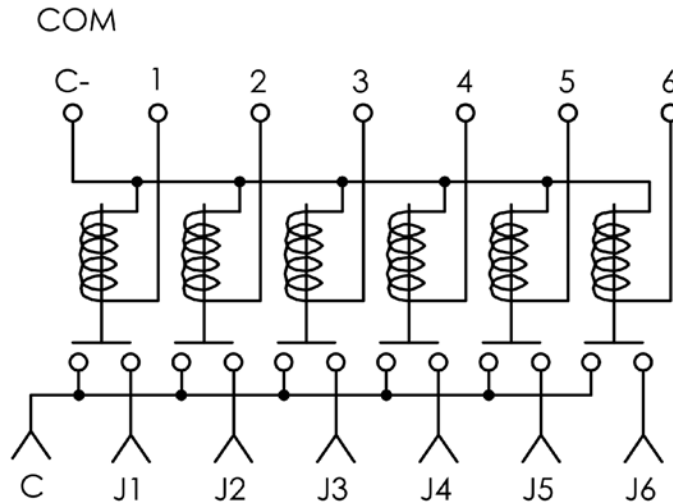
1 OF 2

SCALE

N/A

SIZE

A 7361



**SCHEMATIC SHOWN IN NORMALLY OPEN POSITION**

TERMINALS D-SUB PIN ASSIGNMENT	RF PATH					
	J1	J2	J3	J4	J5	J6
1	ON	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF
3	OFF	OFF	ON	OFF	OFF	OFF
4	OFF	OFF	OFF	ON	OFF	OFF
5	OFF	OFF	OFF	OFF	ON	OFF
6	OFF	OFF	OFF	OFF	OFF	ON

NOTE: PINS D, E, F, G, H, J, K, L  
 ARE NO CONNECTION (N/C)

**STANDARD TOLERANCES**

.X ±0.2  
 .XX ±0.01  
 .XXX ±0.005

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		SIZE	A		7361