

### SP4T Latching DC to 18 GHz Terminated Electro-Mechanical Relay Switch, up to 90W, 12V, SMA

The FMSW6364 is a Single Pole Four Throw (SP4T) electromechanical relay switch that operates across a wide frequency range of DC to 18 GHz and can handle up to 90 Watts of CW input power in a break before make condition. The design features a Latching actuator and is rated for 5M life cycles for high reliability operation. Impressive performance includes insertion loss less than 0.15 dB typical and isolation greater than 80 dB typical. The Latching actuator has 50 Ohm Terminations and a +12 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 a DB-15 Connector 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	SP4T, Terminated
Actuator Type	Latching
Switching Sequence	Break before Make

Description	Min	Typ	Max	Units
Frequency Range	DC		18	GHz
Impedance		50		Ohms
Termination Impedance		50		Ohms
Operating Voltage	11	12	13	Volts
Actuating Current @ 12 Volts			280	mA
Requires reset before switching positions.				
Actuating Reset Current			1.12	A
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
Termination Input Power (CW)			5	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



#### Features:

- Single Pole Four Throw
- DC to 18 GHz Frequency Range
- Isolation greater than 80 dB typical
- 5M Cycle Min Operating Life
- +12 Volt DC
- 90 Watt average Power
- Latching Actuator
- Internally Terminated
- -25 to +70°C Operating Temperature
- Insertion Loss as low as 0.15 dB Max
- VSWR as low as 1.2:1 max
- SMA Female RF connectors
- DB-15 Connector for 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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**Mechanical Specifications**

**Size**

Weight 0.374 lbs [169.64 g]  
 Body Material and Plating Aluminum  
 Package Type Connectorized  
 Operating Life 5,000,000 Cycles

**Connectors**

RF Connector Type SMA Female  
 RF Connector Contact Material & Plating Beryllium Copper, Gold  
 RF Connector Body Material & Plating Aluminum, Nickel  
 Control Connector 15-Pin D-Subminiatur

**Environmental Specifications**

**Temperature**

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

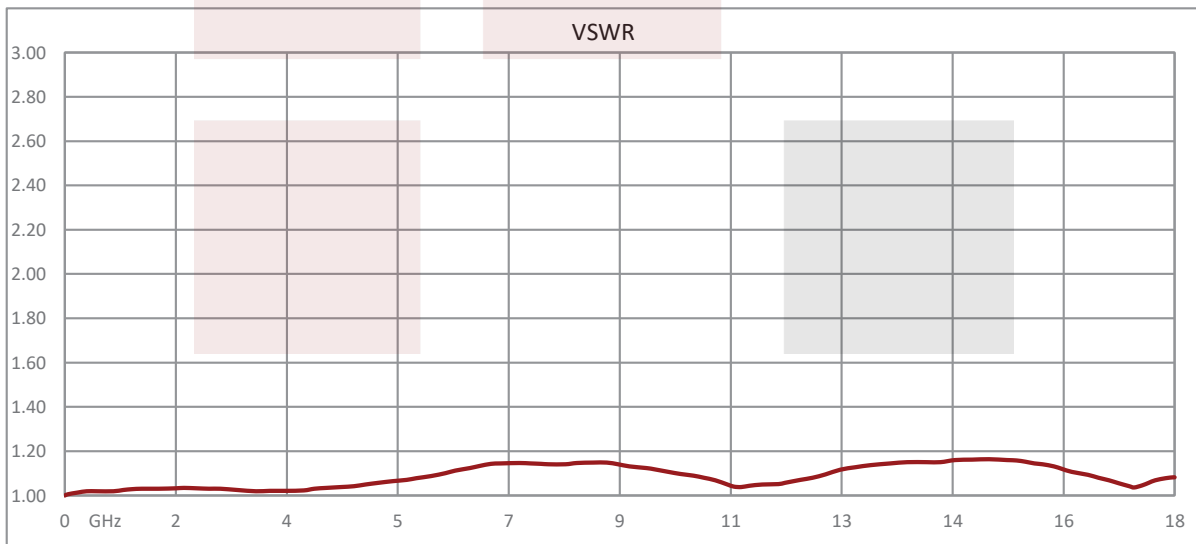
Shock MIL-STD-202 Method 213, Cond. D 500G Non Operating  
 Vibration MIL-STD-202 Method 214, Cond. D 10G RMS Non Operating

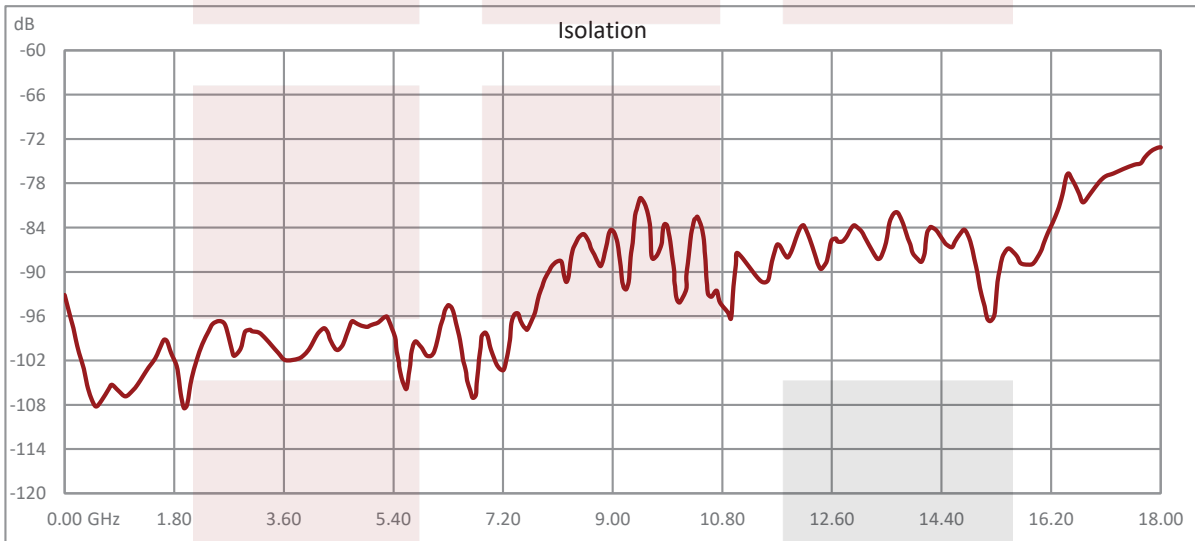
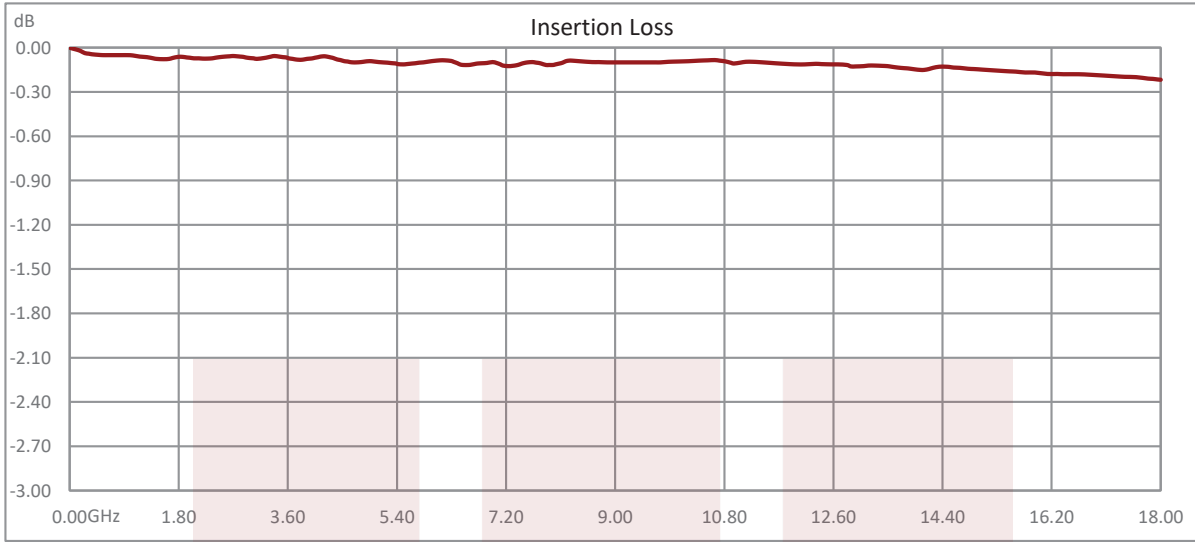
**Compliance Certifications** (see [product page](#) for current document)

**Plotted and Other Data**

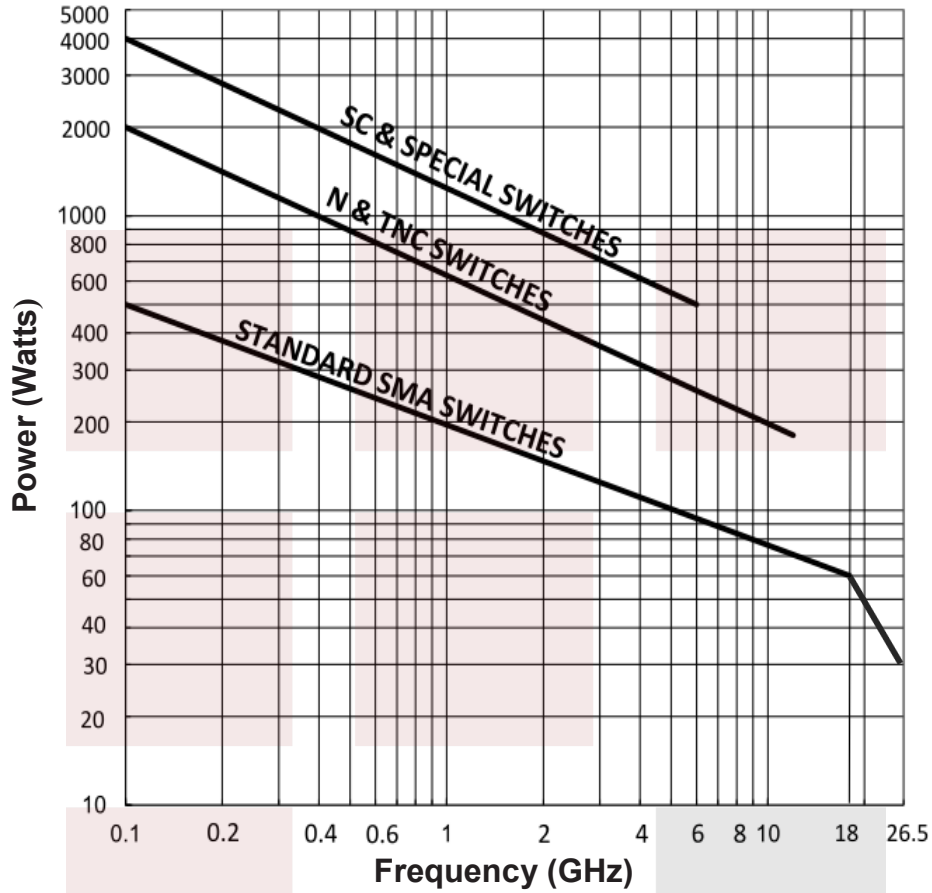
Notes:

**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

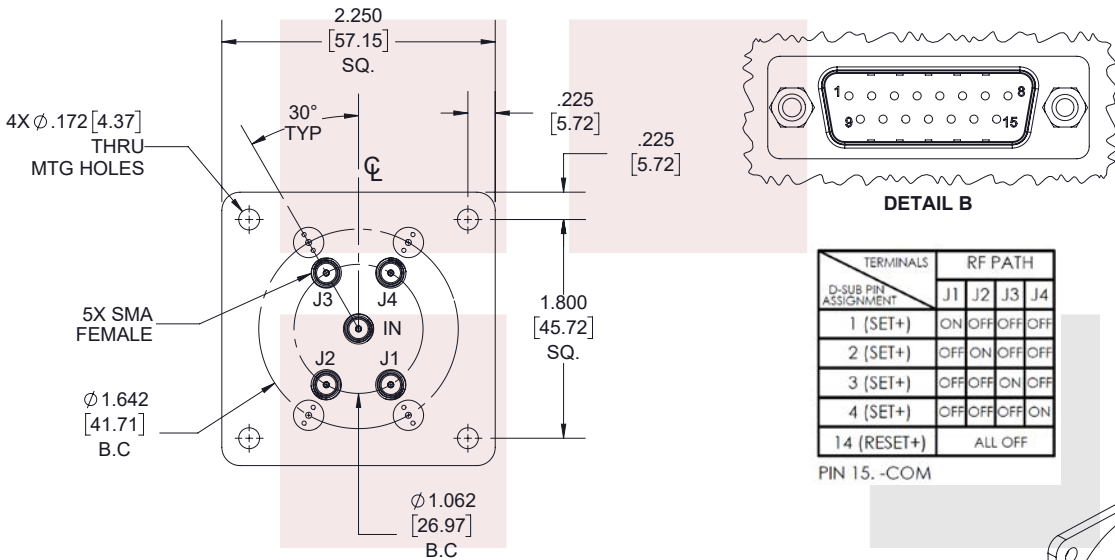
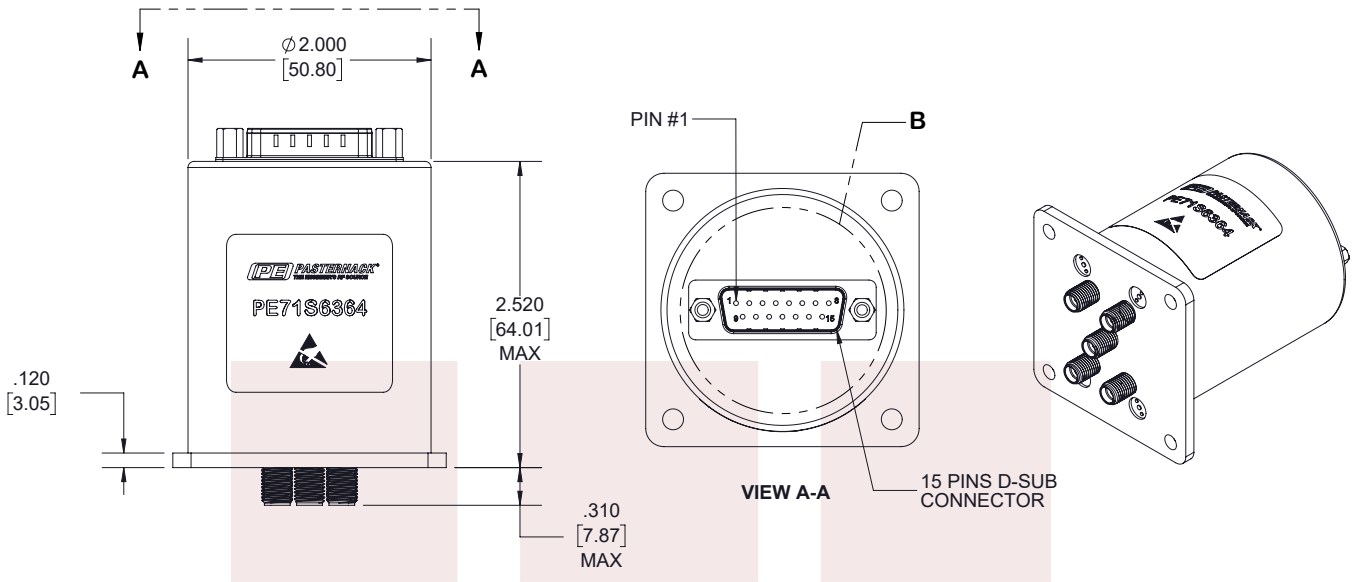
SP4T Latching DC to 18 GHz Terminated Electro-Mechanical Relay Switch, up to 90W, 12V, SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SP4T Latching DC to 18 GHz Terminated Electro-Mechanical Relay Switch, up to 90W, 12V, SMA FMSW6364](#)

URL: <https://www.fairviewmicrowave.com/sp4t-latching-18-ghz-terminated-electro-mechanical-relay-switch-60w-12v-sma-fmsw6364-p.aspx>

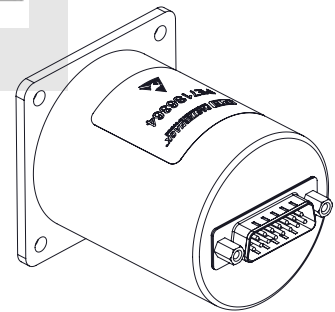
The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to 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.





TERMINALS D-SUB PIN ASSIGNMENT	RF PATH			
	J1	J2	J3	J4
1 (SET+)	ON	OFF	OFF	OFF
2 (SET+)	OFF	ON	OFF	OFF
3 (SET+)	OFF	OFF	ON	OFF
4 (SET+)	OFF	OFF	OFF	ON
14 (RESET+)	ALL OFF			

PIN 15. -COM



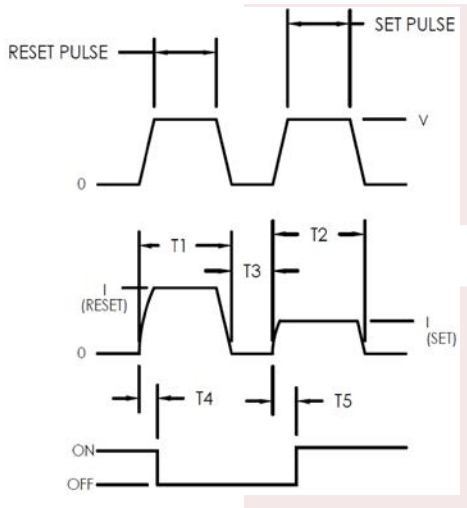
**STANDARD TOLERANCES**

.X	±0.2
.XX	±0.01
.XXX	±0.005

NOTE: THIS SWITCH REQUIRES A RESET EVERY TIME BEFORE SELECTING A DIFFERENT RF PATH.

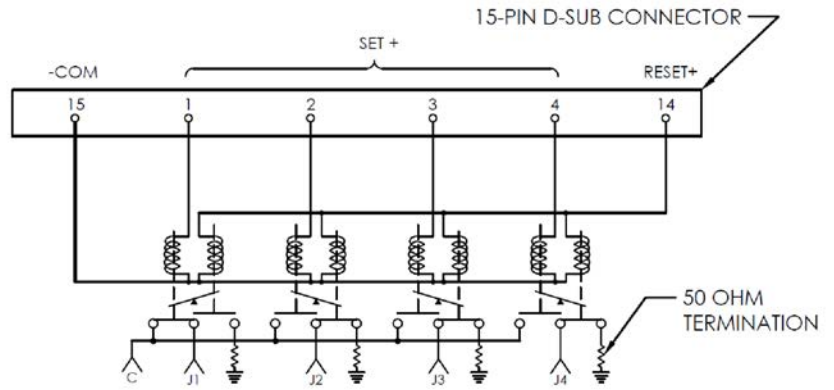
\*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES

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	TITLE SP4T Latching DC to 18 GHz Terminated Electro-Mechanical Relay Switch, up to 90W, 12V, SMA	DWG NO FMSW6364	CAGE CODE 3FKR5
CAD FILE 07/18/19	SHEET 1 OF 2	SCALE N/A	SIZE A 7361



**ACTUATION CHARACTERISTICS**

- REQUIRES TWO (2) SEQUENTIAL PULSES (RESET & SET)
- T1 & T2 = 30mSEC MIN
- T3 = 10mSEC MIN
- T4 & T5 = 20mSEC MAX



**SCHEMATIC**  
(COIL 1 SHOWN LAST ENERGIZED)

**STANDARD TOLERANCES**

- .X ±0.2
- .XX ±0.01
- .XXX ±0.005

\*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES

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