

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

The FMSW6353 is a Single Pole Double Throw (SPDT) 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 with 1W Indicators, 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. This switch requires 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 9 Pin D-Sub connector for DC control and indicator monitoring. The model is guaranteed to meet MIL-STD-202 environmental test conditions for shock and random vibration.

### Electrical Specifications

Switch Type	SPDT
Actuator Type	Latching
Switching Sequence	Break before Make
Actuator Options	Indicators
Indicator Rating	1 Watts / 32 Volts / 125 mA

Description	Min	Typ	Max	Units
Frequency Range	DC		18	GHz
Impedance		50		Ohms
Operating Voltage	11	12	13	Volts
Actuating Current @ 12 Volts		200		mA
VSWR		1.2:1	1.4:1	
Insertion Loss		0.15	0.35	dB
Insertion Loss Repeatability				
Isolation	65	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	0.35			dB
Isolation, Min	80	75	65			dB
Power In, Typ (CW)	90	75	60			Watts

### Mechanical Specifications

Size	
Weight	0.115 lbs [52.16 g]
Package Type	Connectorized
Operating Life	5,000,000 Cycles



### Features:

- Single Pole Double 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
- 1 Watt Indicators
- -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
- 9 Pin D-Sub 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

Fairview Microwave  
1130 Junction Dr. #100  
Allen, TX 75013  
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)

### Connectors

RF Connector Type  
Control Connector

SMA Female  
9 Pin D-Sub

### Environmental Specifications

#### Temperature

Operating Range  
Storage Range

-25 to +70 deg C  
-55 to +100 deg C

Shock  
Vibration

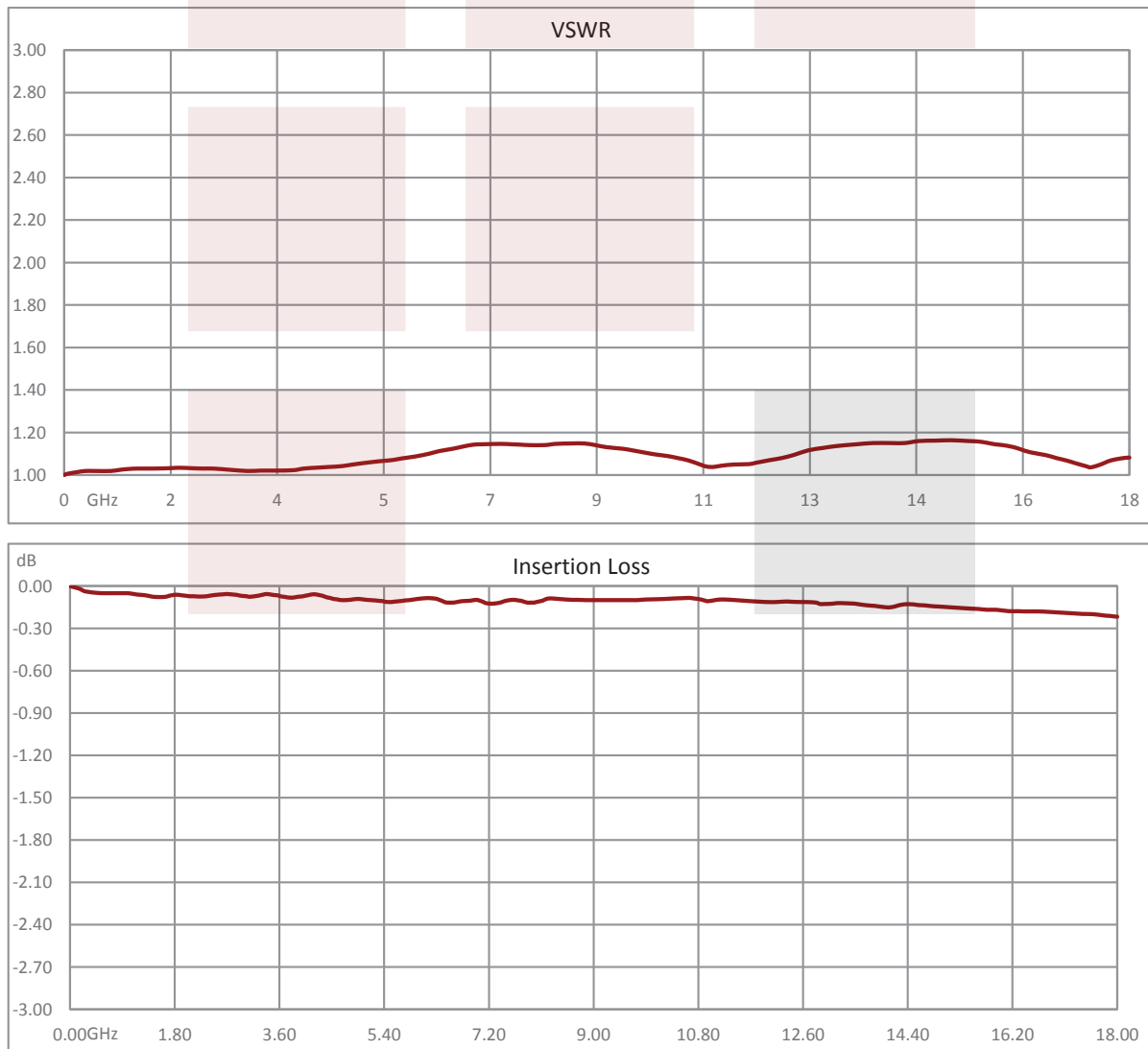
MIL-STD-202 Method 213, Cond. D 500G Non Operating  
MIL-STD-202 Method 214, Cond. D 10G RMS Non Operating

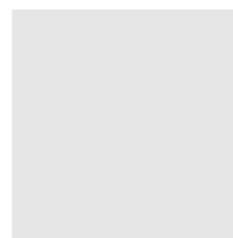
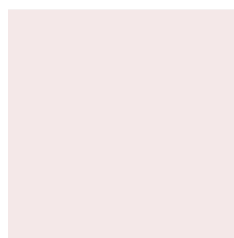
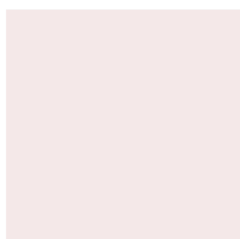
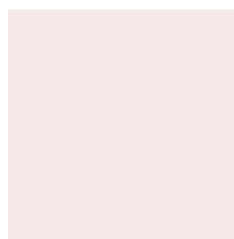
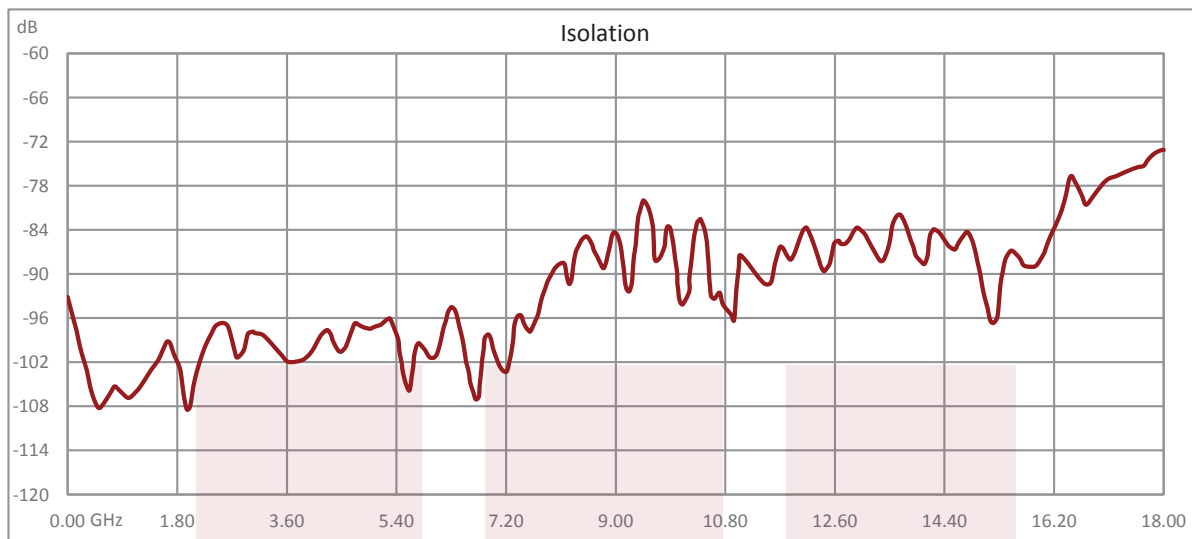
### Compliance Certifications (see [product page](#) for current document)

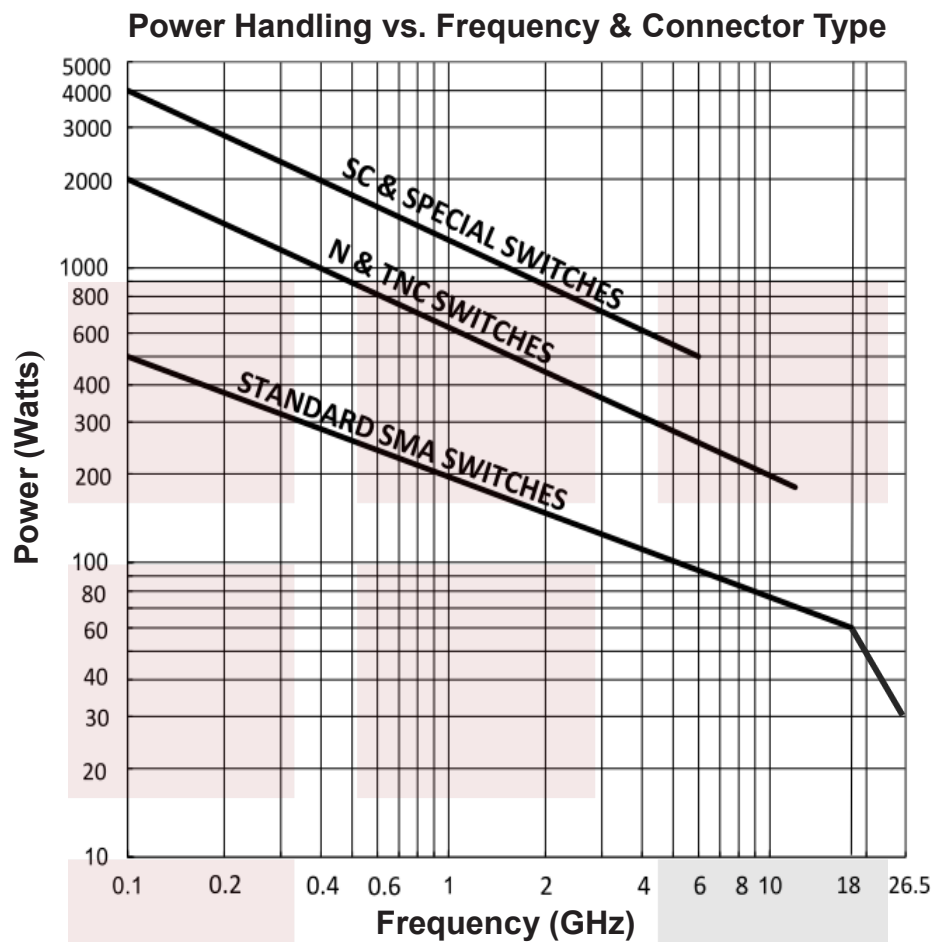
### Plotted and Other Data

Notes:

#### Typical Performance Data







**Environmental and Test Conditions:**

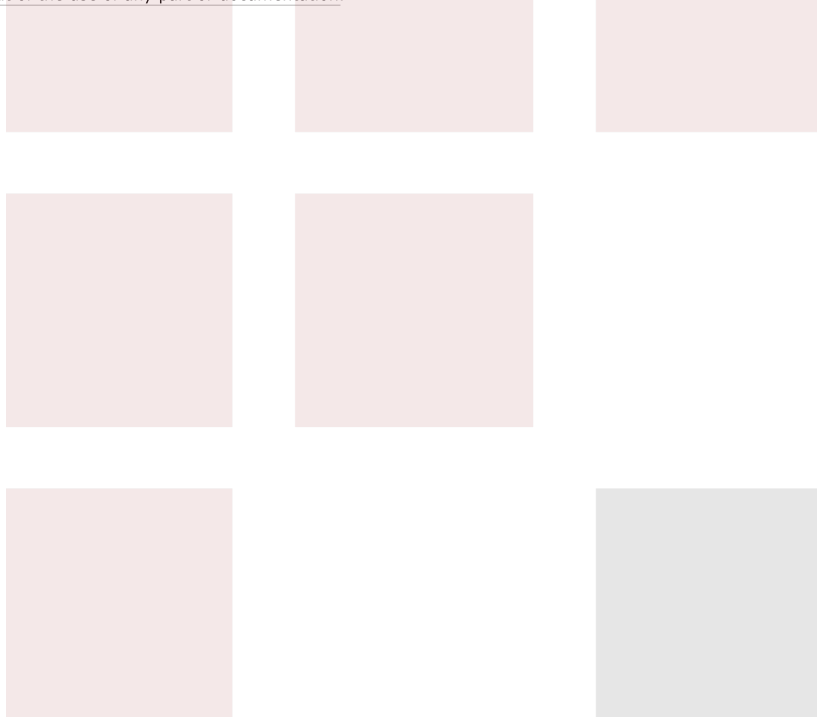
- Ambient temperature of 25°C or less
- Altitude: Sea Level
- Load VSWR: 1.20:1 max.
- Cold Switching

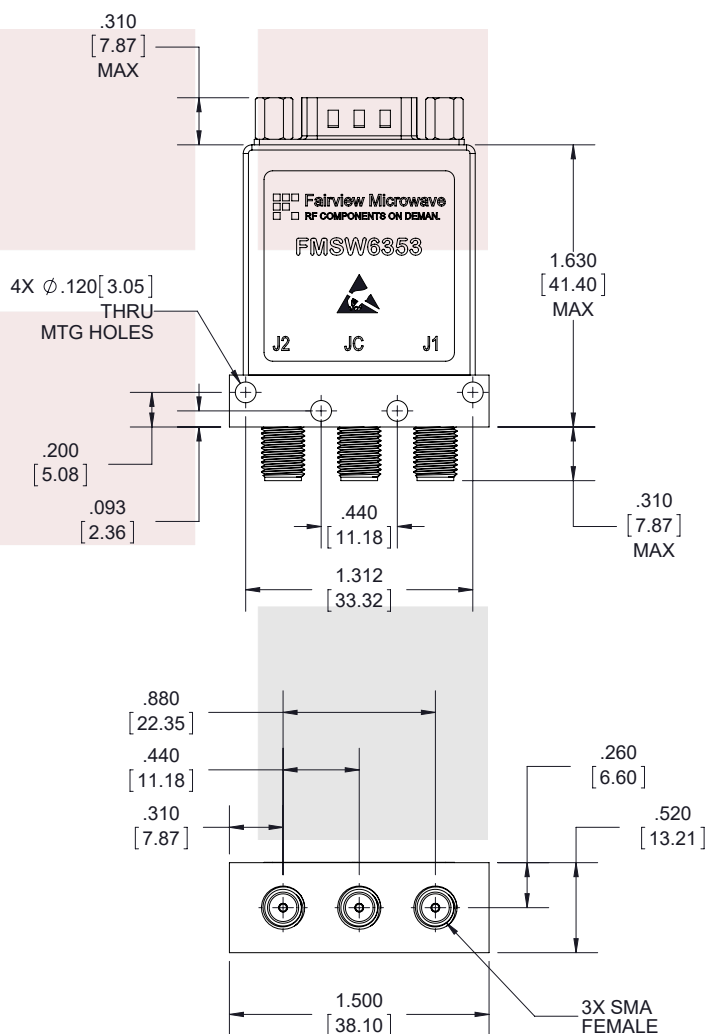
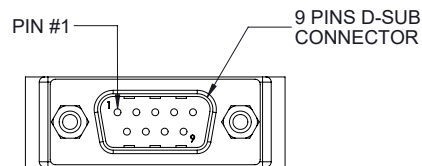
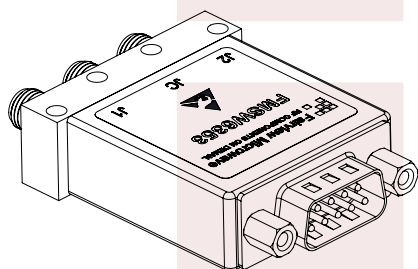
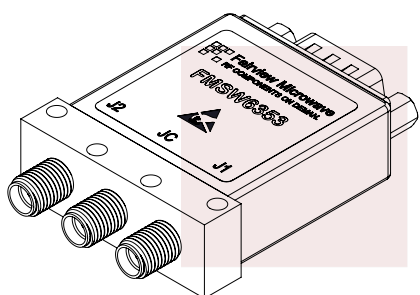
SPDT Latching DC to 18 GHz Electro-Mechanical Relay Switch, Indicators, up to 90W, 12V, SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave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

For additional information on this product, please click the following link: [SPDT Latching DC to 18 GHz Electro-Mechanical Relay Switch, Indicators, up to 90W, 12V, SMA FMSW6353](#)

URL: <https://www.fairviewmicrowave.com/spdt-latching-18-ghz-electro-mechanical-relay-switch-indicators-60w-12v-sma-fmsw6353-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.





**STANDARD TOLERANCES**

.X ±0.2  
.XX ±0.01  
.XXX ±0.005

\*STANDARD TOLERANCES APPLY  
ONLY TO DIMENSIONS IN INCHES

**FAIRVIEW MICROWAVE INC.**

ALLEN, TX 75013 WWW.FAIRVIEWMICROWAVE.COM

**TITLE**

SPDT Latching DC to 18 GHz Electro-Mechanical Relay  
Switch, Indicators, up to 90W, 12V, SMA

**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].

**DWG NO**

FMSW6353

**CAGE CODE**

3FKR5

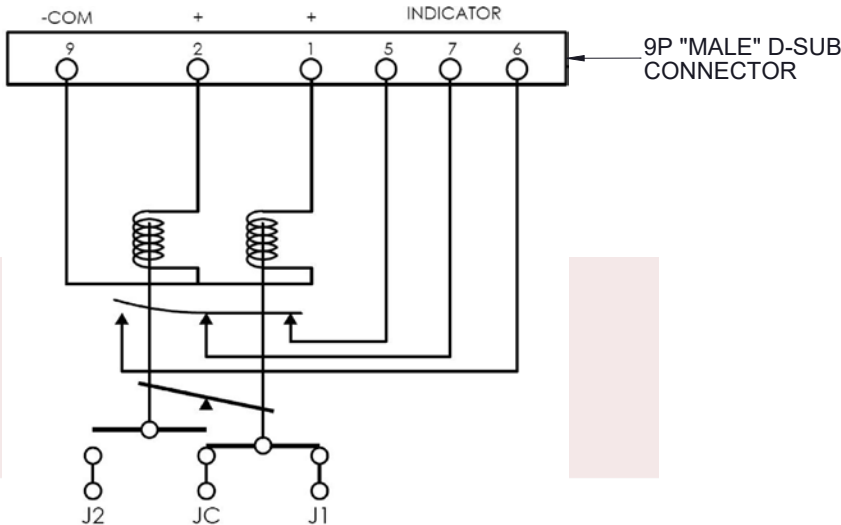
CAD FILE 090617

SHEET 1 OF 2

SCALE N/A

SIZE A

7361



SCHEMATIC SHOWN IN LATCHING POSITION

TERMINALS		RF PATH		INDICATOR	
1	2	J1	J2	5-7	6-7
0	0	NO CHANGE		NO CHANGE	
0	1	OFF	ON	OFF	ON
1	0	ON	OFF	ON	OFF
1	1	FORBIDDEN		FORBIDDEN	

PIN 7 : IND COM

STANDARD TOLERANCES

.X ±0.2  
.XX ±0.01  
.XXX ±0.005

\*STANDARD TOLERANCES APPLY  
ONLY TO DIMENSIONS IN INCHES

FAIRVIEW MICROWAVE INC.

ALLEN, TX 75013 WWW.FAIRVIEWMICROWAVE.COM

TITLE

SPDT Latching DC to 18 GHz Electro-Mechanical Relay  
Switch, Indicators, up to 90W, 12V, SMA

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].

DWG NO

FMSW6353

CAGE CODE

3FKR5

CAD FILE 090617

SHEET 2 OF 2

SCALE N/A

SIZE A

7361