

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

The FMSW6350 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 Failsafe actuator with TTL logic control and is rated for 2M life cycles for high reliability operation. Impressive performance includes insertion loss less than 0.15 dB typical and isolation greater than 85 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 and TTL control functions. 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
Actuator Options	TTL Logic
TTL Control	on: 2.4 to 5 Volts off: 0 to 0.8 Volts

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	85		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	85	75	65			dB
Power In, Typ (CW)	90	75	60			Watts

Mechanical Specifications

Size	
Weight	0.122 lbs [55.34 g]
Package Type	Connectorized
Operating Life	2,000,000 Cycles



Features:

- Single Pole Double Throw
- DC to 18 GHz Frequency Range
- Isolation greater than 85 dB typical
- 2M Cycle Min Operating Life
- +12 Volt DC
- 90 Watt average Power
- Failsafe Actuator
- TTL Control
- -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
- Hot Switching Capability - Consult Factory
- S-Parameter test data available upon request

Applications:

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

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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

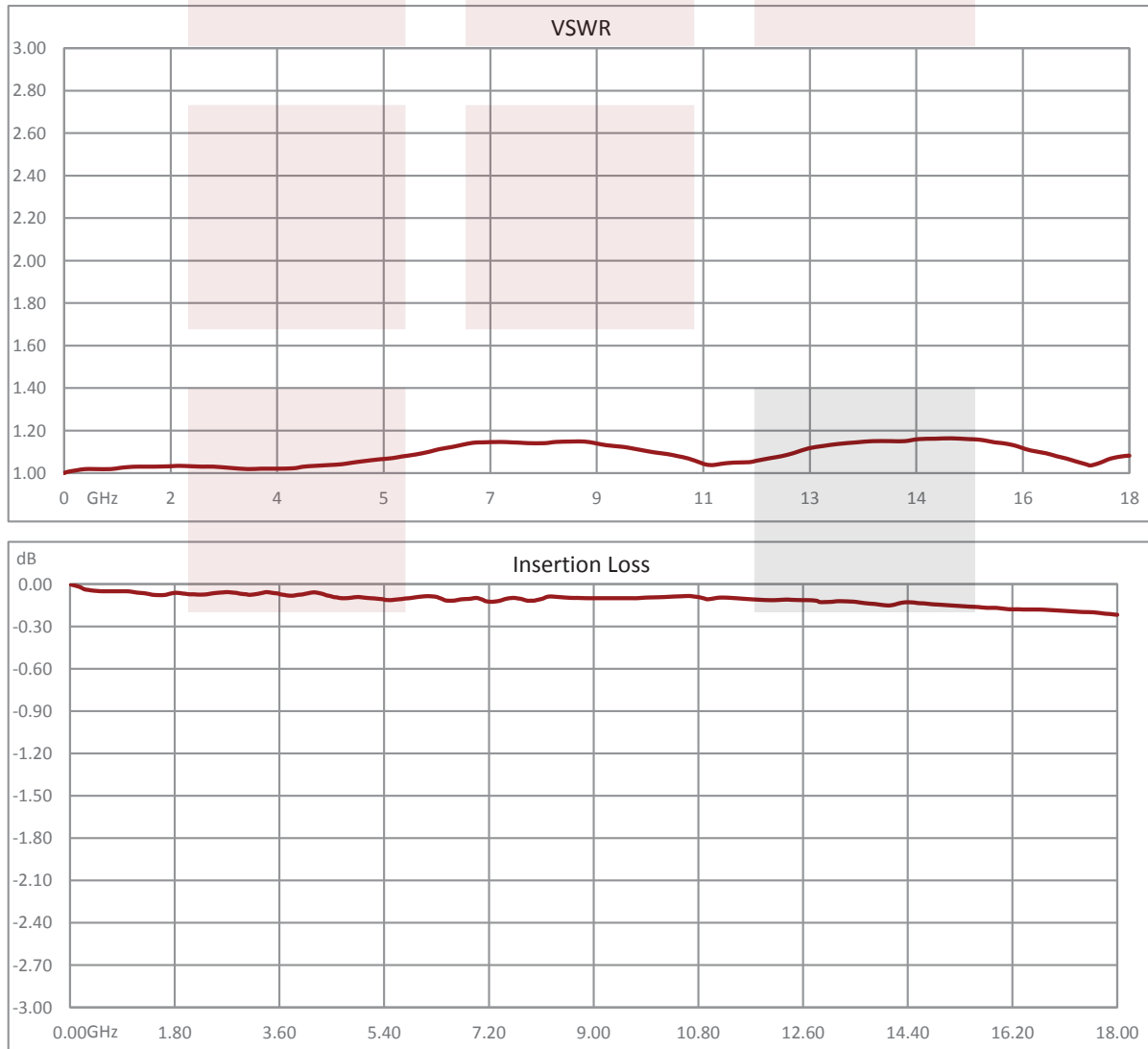
MIL-STD-202 Method 213, Cond. D 500G Non Operating
MIL-STD-202 Method 214, Cond. D 10G RMS Non Operating

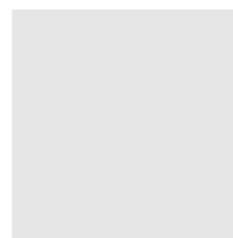
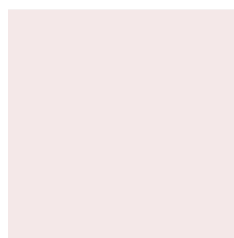
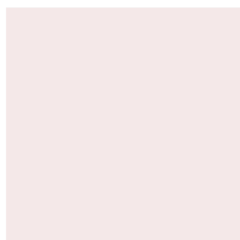
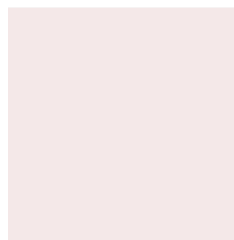
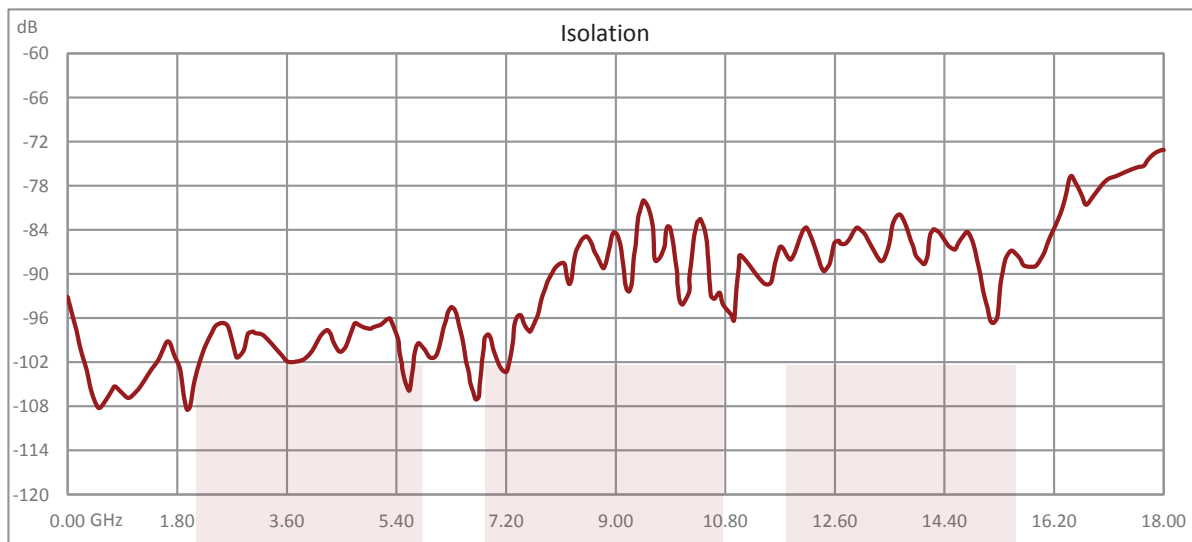
Compliance Certifications (see [product page](#) for current document)

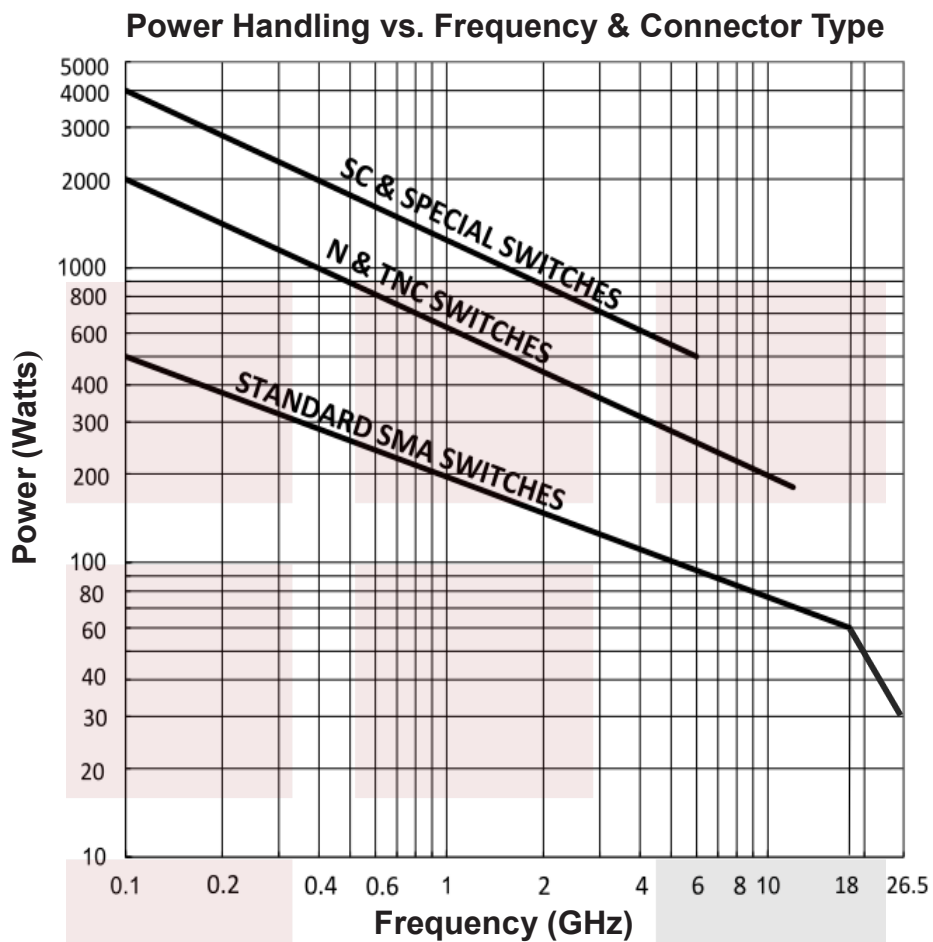
Plotted and Other Data

Notes:

Typical Performance Data







Environmental and Test Conditions:

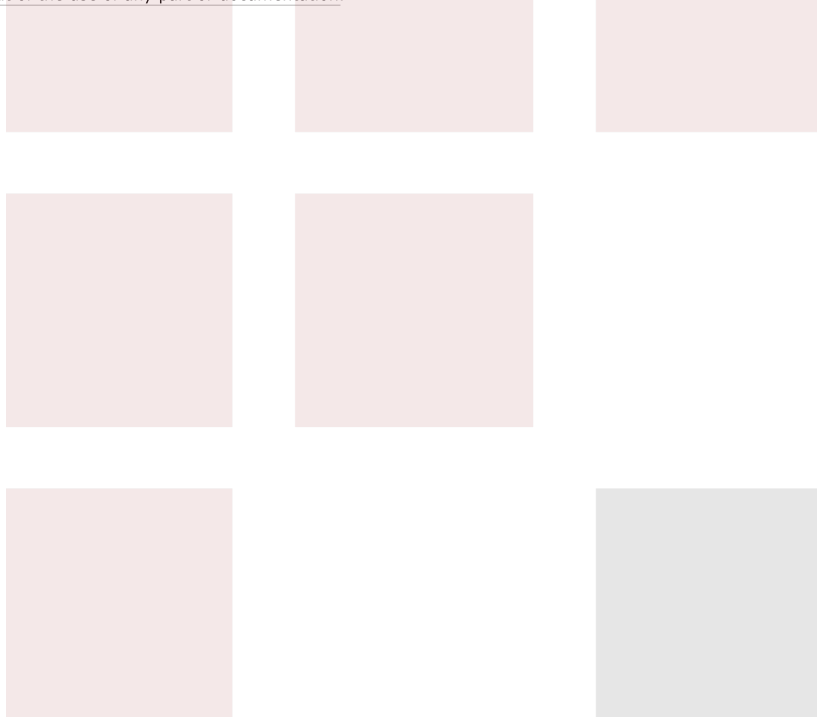
- Ambient temperature of 25°C or less
- Altitude: Sea Level
- Load VSWR: 1.20:1 max.
- Cold Switching

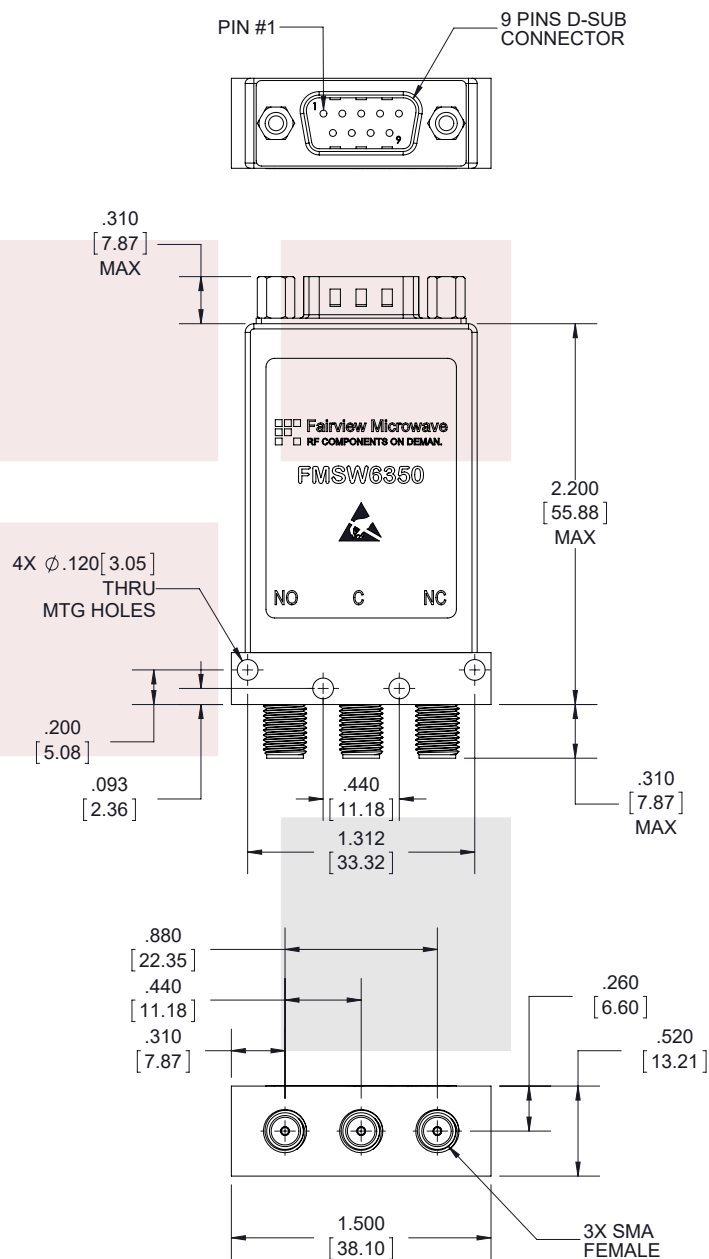
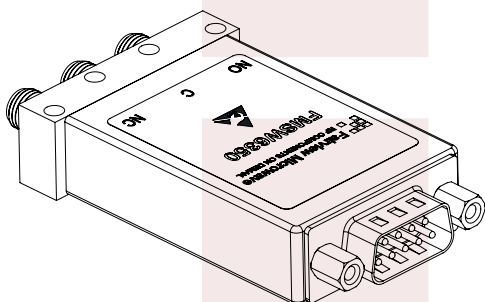
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For additional information on this product, please click the following link: [SPDT Failsafe DC to 18 GHz Electro-Mechanical Relay Switch, TTL, up to 90W, 12V, SMA FMSW6350](#)

URL: <https://www.fairviewmicrowave.com/spdt-failsafe-18-ghz-electro-mechanical-relay-switch-ttl-60w-12v-sma-fm-sw6350-p.aspx>

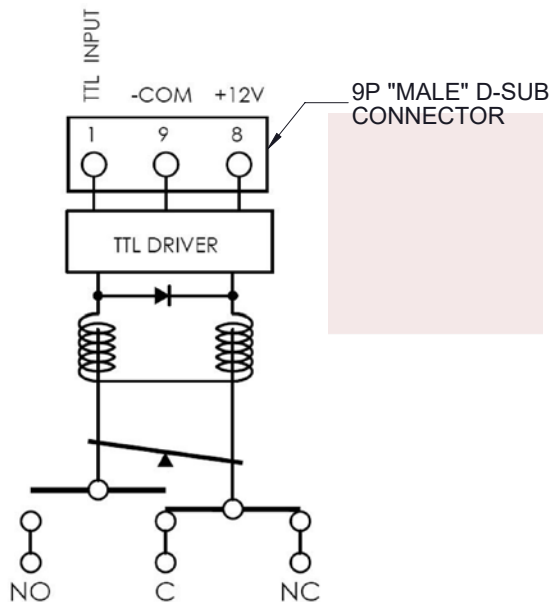
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.X	±0.2
.XX	±0.01
.XXX	±0.005

7361



SCHEMATIC SHOWN IN FAILSAFE POSITION

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		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 SPDT Fail-safe DC to 18 GHz Electro-Mechanical Relay Switch, TTL, up to 90W, 12V, SMA	DWG NO FMSW6350		CAGE CODE 3FKR5		
	CAD FILE 090617	SHEET 2 OF 2	SCALE N/A	SIZE A	7361