

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

The FMSW6354 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 internal 50 ohm terminations 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 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 | SPDT, Terminated |
| Actuator Type | Failsafe |
| 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 | | 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 |
| 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 | 0.35 | | | dB |
| Isolation, Min | 85 | 75 | 65 | | | dB |
| Power In, Typ (CW) | 90 | 75 | 60 | | | Watts |

Mechanical Specifications

| | |
|----------------|---------------------|
| Size | |
| Weight | 0.167 lbs [75.75 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
- 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
- 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

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Connectors

RF Connector Type SMA Female
 Control Connector 9 Pin D-Sub

Environmental Specifications

Temperature

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

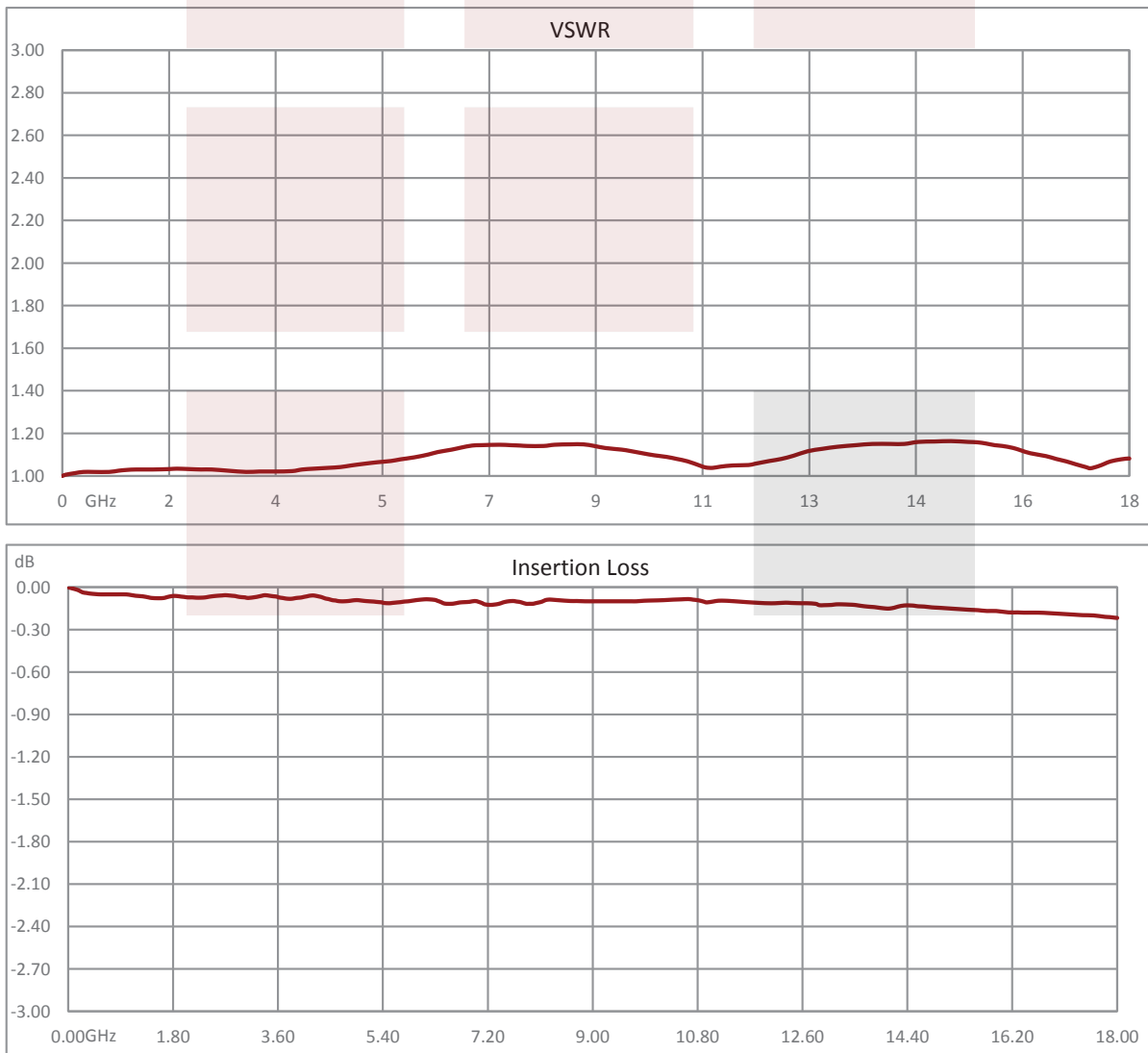
Shock MIL-STD-202 Method 213, Cond. D 500G Non Operating
 Vibration MIL-STD-202 Method 214, Cond. D 10G RMS Non Operating

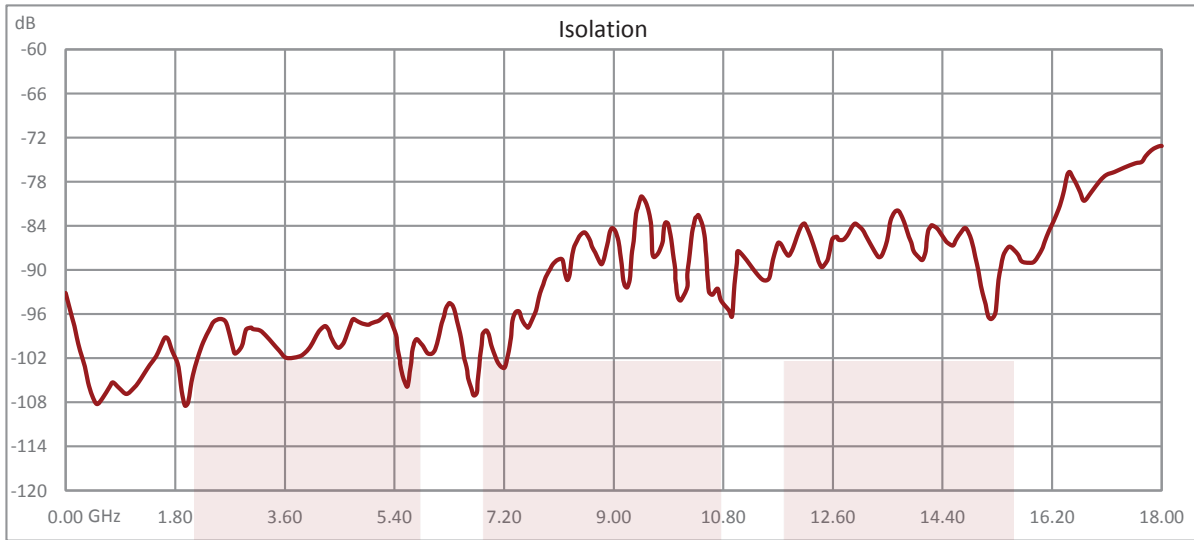
Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

Typical Performance Data



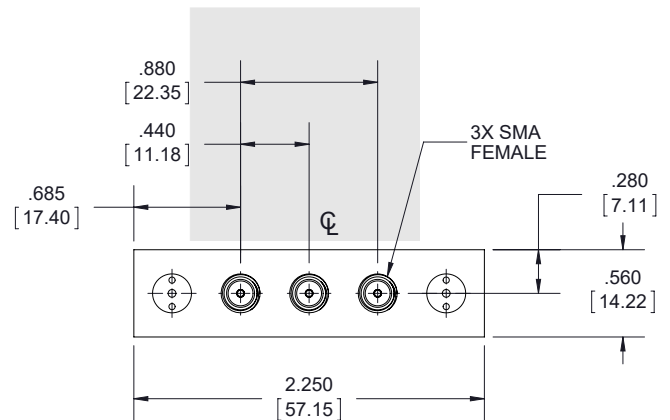
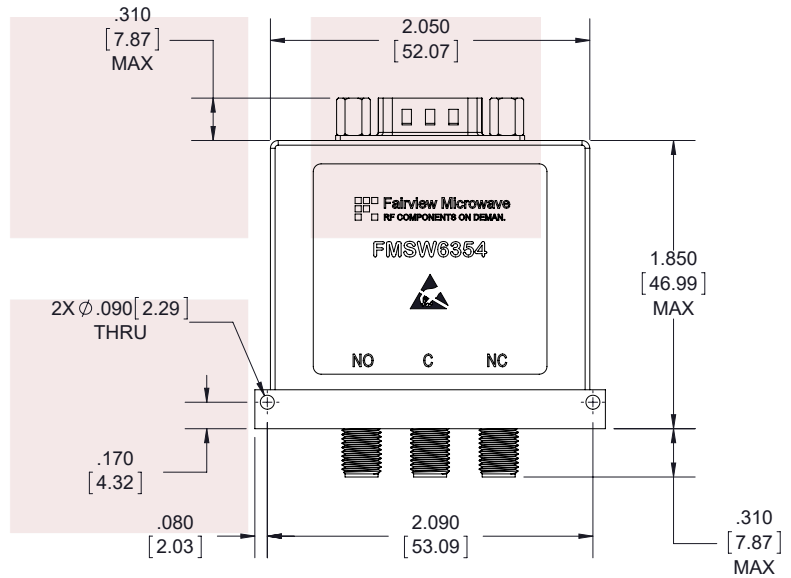
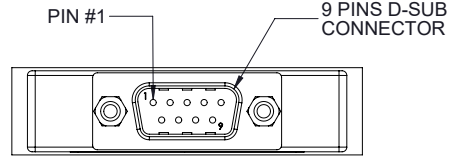
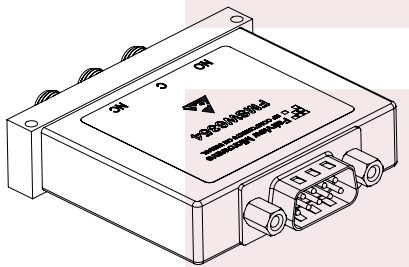
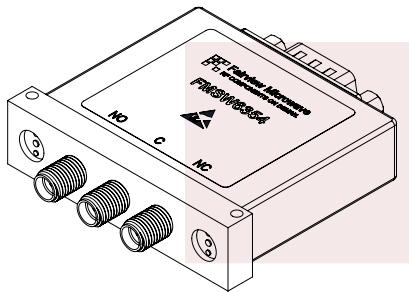


SPDT Failsafe DC to 18 GHz Terminated Electro-Mechanical Relay Switch, up to 90W, 12V, SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is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

For additional information on this product, please click the following link: [SPDT Failsafe DC to 18 GHz Terminated Electro-Mechanical Relay Switch, up to 90W, 12V, SMA FMSW6354](https://www.fairviewmicrowave.com/spdt-failsafe-dc-to-18-ghz-terminated-electro-mechanical-relay-switch-60w-12v-sma-fmsw6354)

URL: <https://www.fairviewmicrowave.com/spdt-failsafe-18-ghz-terminated-electro-mechanical-relay-switch-60w-12v-sma-fmsw6354-p.aspx>

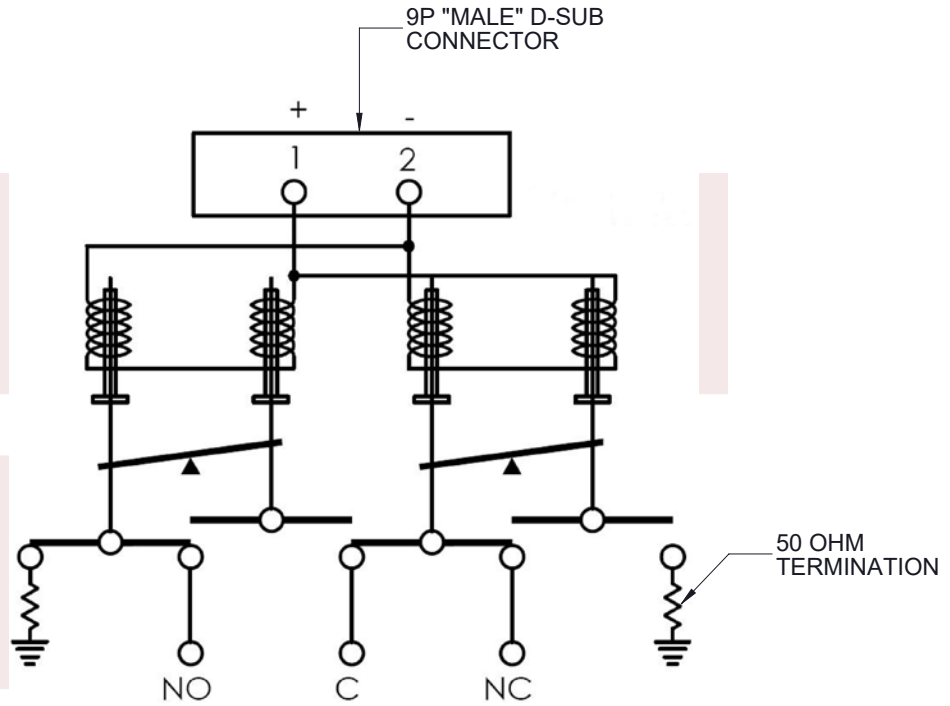
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STANDARD TOLERANCES
.X ±0.2
.XX ±0.01
.XXX ±0.005

*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 Failsafe DC to 18 GHz Terminated Electro-Mechanical Relay Switch, up to 90W, 12V, SMA | | DWG NO FMSW6354 | | CAGE CODE 3FKR5 | | | | |
| CAD FILE | 090617 | SHEET | 1 OF 2 | SCALE | N/A | SIZE | A | 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

| | | | | | | |
|--|--|---|--------------|------------------------|--------|------|
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| | | DWG NO FMSW6354 | | CAGE CODE 3FKR5 | | |
| TITLE SPDT Fail-safe DC to 18 GHz Terminated Electro-Mechanical Relay Switch, up to 90W, 12V, SMA | | CAD FILE 090617 | SHEET 2 OF 2 | SCALE N/A | SIZE A | 7361 |