

## SPDT Latching DC to 18 GHz Electro-Mechanical Relay Switch, Self Cut Off, Diodes, 12V, N



### FMSW6592

#### Features

- Single Pole Double Throw
- DC to 18 GHz Frequency Range
- Isolation greater than 60 dB minimum
- 1M Cycle Min Operating Life
- +12 Volt DC
- 100 Watt average Power
- Latching Self Cut Off Actuator
- Suppression Diodes
- -25 to +65°C Operating Temperature
- Insertion Loss as low as 0.8 dB Max
- VSWR as low as 1.8:1 max
- N-Type Female RF connectors
- Solder Terminals for DC Control
- Hot Switching Capability - Consult Factory
- S-Parameter Data available upon request

#### Applications

- Aerospace & Defense
- Test & Measurement
- Microwave Radio Systems
- Military Commercial Communication Systems
- Research & Development
- SATCOM
- Wireless Communications
- Enterprise
- IOT

#### Description

The FMSW6592 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 100 Watts of CW input power in a break before make condition. The 50 Ohm design is rated for 1M life cycles for high reliability operation and features a Latching Self Cut Off actuator, which maintains its position without continuous power, reducing power consumption and ensuring stable operation even during power loss. Additional features include suppression diodes which limit voltage spikes or reverse current. Impressive performance includes insertion loss less than 0.8 dB maximum and isolation greater than 60 dB minimum. The Latching actuator requires +12 Vdc bias voltage, and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports N-Type Female connectors and terminal solder pins 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 (TA = +25°C, DC Voltage = 12 Vdc)

|                    |                      |
|--------------------|----------------------|
| Switch Type        | SPDT                 |
| Actuator Type      | Latching             |
| Switching Sequence | Break Before Make    |
| Actuator Options   | Self Cut Off, Diodes |

| Description                  | Min | Typ | Max   | Units |
|------------------------------|-----|-----|-------|-------|
| Frequency Range              | DC  |     | 18    | GHz   |
| Impedance                    |     | 50  |       | Ohms  |
| Operating Voltage            |     | 12  |       | Volts |
| Actuating Current @ 12 Volts |     |     | 200   | mA    |
| VSWR                         |     |     | 1.8:1 |       |
| Insertion Loss               |     |     | 0.8   | dB    |
| Isolation                    | 60  |     |       | dB    |
| Input Power (CW)             |     | 100 |       | Watts |
| Switching Time               |     |     | 20    | ms    |

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Performance by Frequency

| Description         | F1     | F2    | F3     | F4      | F5 | Units |
|---------------------|--------|-------|--------|---------|----|-------|
| Frequency Range     | DC - 3 | 3 - 8 | 8 - 12 | 12 - 18 |    | GHz   |
| VSWR, Max           | 1.25:1 | 1.4:1 | 1.6:1  | 1.8:1   |    |       |
| Insertion Loss, Max | 0.3    | 0.4   | 0.5    | 0.8     |    | dB    |
| Isolation, Min      | 80     | 70    | 65     | 60      |    | dB    |

Electrical Specification Notes:  
Average Power for Cold Switching (Reference RF Power Rating Table for Cold Switching)

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#### Mechanical Specifications

##### Size

|                |                     |
|----------------|---------------------|
| Length         | 2.75 in [69.85 mm]  |
| Width/Diameter | 2.36 in [59.94 mm]  |
| Height         | 0.92 in [23.37 mm]  |
| Weight         | 0.38 lbs [172.37 g] |
| Package Type   | Connectorized       |
| Operating Life | 1,000,000 Cycles    |

##### Connectors

|                   |            |
|-------------------|------------|
| RF Connector Type | N Female   |
| Control Connector | Solder Pin |

Mechanical Specification Notes:  
Solder Pins: 250°C max/5sec.

#### Environmental Specifications

##### Temperature

|                 |                                                                |
|-----------------|----------------------------------------------------------------|
| Operating Range | -25 to +70 deg C                                               |
| Storage Range   | -40 to +85 deg C                                               |
| Construction    | Splashproof                                                    |
| Shock           | MIL-STD-202 Method 213, Condition D<br>(500G Non Operating)    |
| Vibration       | MIL-STD-202 Method 214, Condition D<br>(10G RMS Non Operating) |

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

#### Plotted and Other Data

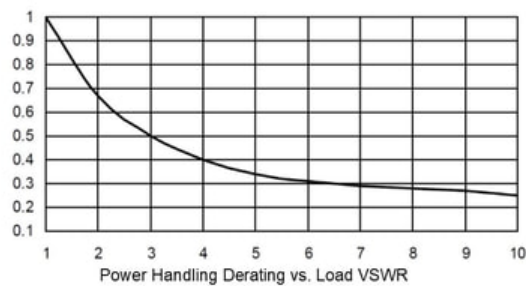
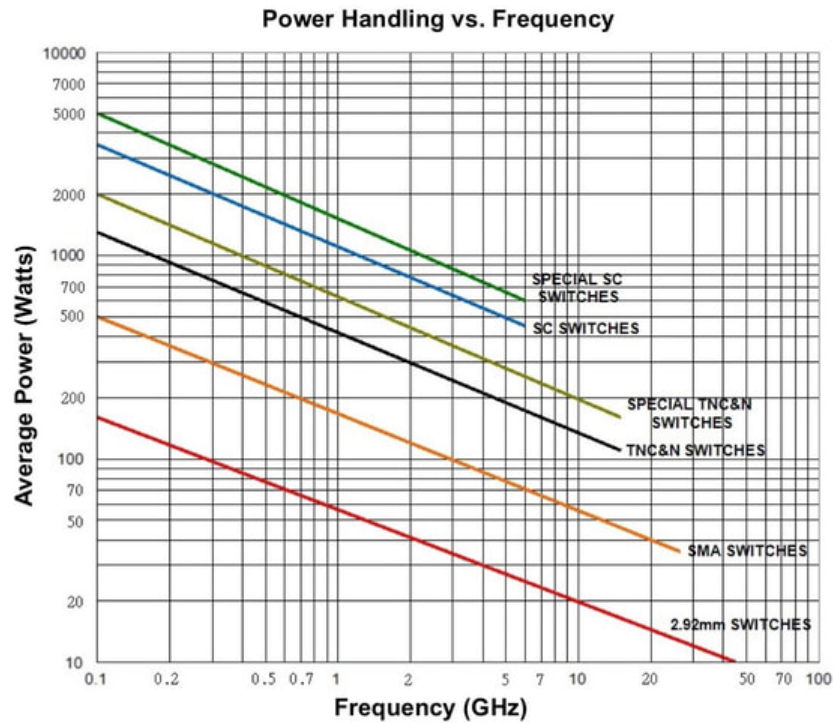
Notes:  
Values shown are typical at 25°C.

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Typical Performance Data



Power handling chart and derating curves based on the following conditions:

- Ambient temperature: 40°C or less
- Altitude: Sea level
- Load VSWR: 1.20:1 Maximum
- Relative Humidity: 40-50%
- Cold switching: RF signal off

Note: specifications subject to change without notice

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SPDT Latching DC to 18 GHz Electro-Mechanical Relay Switch, Self Cut Off, Diodes, 12V, N 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 Lewisville, 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, Self Cut Off, Diodes, 12V, N FMSW6592](https://www.fairviewmicrowave.com/spdt-latching-18-ghz-electro-mechanical-relay-switch-diodes-12v-n-fmsw6592-p.aspx)

URL: <https://www.fairviewmicrowave.com/spdt-latching-18-ghz-electro-mechanical-relay-switch-diodes-12v-n-fmsw6592-p.aspx>

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