

SPDT Failsafe DC to 18 GHz Electro-Mechanical Relay Switch, 28V, N

FMSW6589



Features

- Single Pole Double Throw
- DC to 18 GHz Frequency Range
- Isolation greater than 60 dB minimum
- 1M Cycle Min Operating Life
- +28 Volt DC
- 100 Watt average Power
- Failsafe Actuator
- -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 FMSW6589 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 Failsafe actuator, which returns the actuator to its default position when power is removed, ensuring the system remains in a known and safe state. Impressive performance includes insertion loss less than 0.8 dB maximum and isolation greater than 60 dB minimum. The Failsafe actuator requires +28 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 = 28 Vdc)

Switch Type	SPDT
Actuator Type	Failsafe
Switching Sequence	Break Before Make

Description	Min	Typ	Max	Units
Frequency Range	DC		18	GHz
Impedance		50		Ohms
Operating Voltage		28		Volts
Actuating Current @ 28 Volts			220	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 +65 deg C
Construction	Splashproof
Shock	MIL-STD-202 Method 213, Condition D (500G Non Operating)
Vibration	MIL-STD-202 Method 214, Condition D (10G RMS Non Operating)

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

Plotted and Other Data

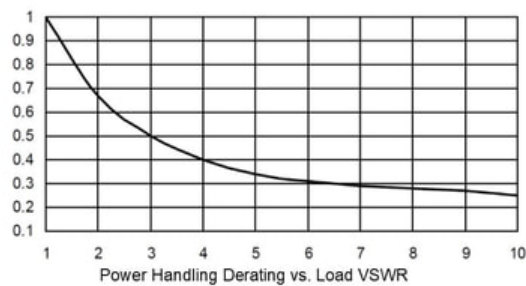
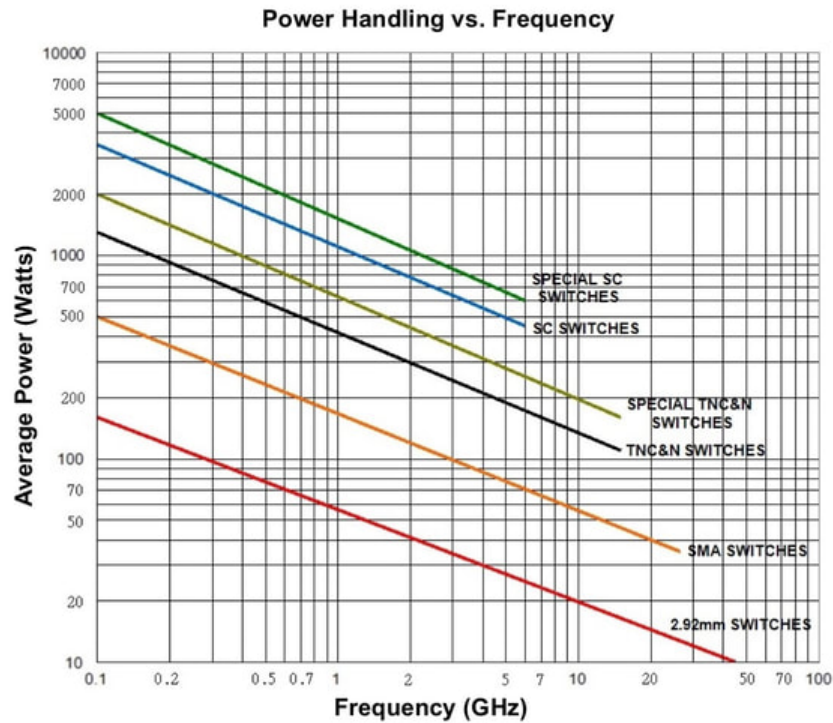
Notes:
Values shown are typical at 25°C.

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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 Failsafe DC to 18 GHz Electro-Mechanical Relay Switch, 28V, 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 Failsafe DC to 18 GHz Electro-Mechanical Relay Switch, 28V, N FMSW6589](https://www.fairviewmicrowave.com/spdt-failsafe-18-ghz-electro-mechanical-relay-switch-28v-n-fmsw6589-p.aspx)

URL: <https://www.fairviewmicrowave.com/spdt-failsafe-18-ghz-electro-mechanical-relay-switch-28v-n-fmsw6589-p.aspx>

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