

## SP6T Latching DC to 50 GHz Electromechanical Relay Switch, Indicators, 80W, 2M Lifecycles, 28 V, Solder Terminal, 2.4mm

### FMSW9023



#### Features

- Single Pole Six Throw
- DC to 50 GHz Frequency Range
- Isolation greater than 50 dB minimum
- 2M Cycle Min Operating Life
- +28 Volt DC
- 80 Watt average Power
- Latching Actuator
- Indicators
- -25 to +70°C Operating Temperature
- Insertion Loss as low as 1.2 dB Max
- VSWR as low as 2.2:1 max
- 2.4mm Female RF connectors
- Solder Terminals for DC Control

#### Applications

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

#### Description

The FMSW9023 is a Single Pole Six Throw (SP6T) electromechanical relay switch that operates across a wide frequency range of DC to 50 GHz and can handle up to 80 Watts of CW input power in a break before make condition. The 50 Ohm design is rated for 2M life cycles for high reliability operation and features a Latching actuator, which maintains its position without continuous power, reducing power consumption and ensuring stable operation even during power loss. Additional features include indicators which help provide clear operational status. Impressive performance includes insertion loss less than 2.2 dB maximum and isolation greater than 50 dB minimum. The Latching actuator requires +28 Vdc bias voltage, and operates over a temperature range of -25°C to +70°C. The rugged and compact package assembly supports 2.4mm Female connectors and terminal solder pins for DC Control.

#### Electrical Specifications (TA = +25°C, DC Voltage = 28 Vdc)

Switch Type	SP6T
Actuator Type	Latching
Switching Sequence	Make Before Break
Polarity	Negative Common
Indicator Rating	1 Watt / 30 Volts / 100 mA

Description	Min	Typ	Max	Units
Frequency Range	DC		50	GHz
Impedance		50		Ohms
Operating Voltage	24	28	30	Volts
Actuating Current @ 28 Volts		125		mA
VSWR			2.2:1	
Insertion Loss			1.2	dB
Isolation	50			dB
Input Power (CW)			40	Watts
Switching Time			15	ms

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Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 6	6 - 18	18 - 26.5	26.5 - 40	40 - 50	GHz
VSWR, Max	1.3:1	1.5:1	1.7:1	1.9:1	2.2:1	
Insertion Loss, Max	0.2	0.5	0.7	0.9	1.2	dB
Isolation, Min	70	60	55	50	50	dB
Power In, Max (CW)	40	25	15	5	3	Watts

Electrical Specification Notes:  
Average Power at 25°C per RF Path

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### Mechanical Specifications

#### Size

Length	1.83 in [46.48 mm]
Width/Diameter	1.75 in [44.45 mm]
Height	1.75 in [44.45 mm]
Weight	0.05 lbs [22.68 g]
Package Type	Connectorized
Operating Life	2,000,000 Cycles

#### Connectors

RF Connector Type	2.4mm Female
Control Connector	Solder Pin

Mechanical Specification Notes:

Solder Pins: 250°C max/30sec.

### Environmental Specifications

#### Temperature

Operating Range	-25 to +70 deg C
Storage Range	-40 to +85 deg C
Construction	Splashproof

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

### Plotted and Other Data

Notes:

Values shown are typical at 25°C.

SP6T Latching DC to 50 GHz Electromechanical Relay Switch, Indicators, 80W, 2M Lifecycles, 28 V, Solder Terminal, 2.4mm 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: [SP6T Latching DC to 50 GHz Electromechanical Relay Switch, Indicators, 80W, 2M Lifecycles, 28 V, Solder Terminal, 2.4mm FMSW9023](#)

URL: <https://www.fairviewmicrowave.com/sp6t-latching-50-ghz-electro-mechanical-relay-switch-40w-28v-2.4mm-fmsw9023-p.aspx>

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