

SPDT Failsafe DC to 50 GHz Electromechanical Relay Switch, 80W, 2M Lifecycles, 12 V, Solder Terminal, 2.4mm



FMSW9024

Features

- Single Pole Double Throw
- DC to 50 GHz Frequency Range
- Isolation greater than 50 dB minimum
- 2M Cycle Min Operating Life
- +12 Volt DC
- 80 Watt average Power
- Failsafe Actuator
- -25 to +70°C Operating Temperature
- Insertion Loss as low as 1.1 dB Max
- VSWR as low as 1.9:1 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 FMSW9024 is a Single Pole Double Throw (SPDT) 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 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 1.1 dB maximum and isolation greater than 50 dB minimum. The Failsafe actuator requires +12 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 = 12 Vdc)

Switch Type	SPDT
Actuator Type	Failsafe
Switching Sequence	Make Before Break

Description	Min	Typ	Max	Units
Frequency Range	DC		50	GHz
Impedance		50		Ohms
Operating Voltage	10.2	12	13	Volts
Actuating Current @ 12 Volts		250		mA
VSWR			1.9:1	
Insertion Loss			1.1	dB
Isolation	50			dB
Switching Time			10	ms

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	1.9:1	

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Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Insertion Loss, Max	0.3	0.5	0.7	0.8	1.1	dB
Isolation, Min	70	60	55	50	50	dB
Power In, Max (CW)	80	50	20	10	5	Watts

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

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Mechanical Specifications

Size

Length	1.53 in [38.86 mm]
Width/Diameter	1.5 in [38.1 mm]
Height	0.51 in [12.95 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.

SPDT Failsafe DC to 50 GHz Electromechanical Relay Switch, 80W, 2M Lifecycles, 12 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: [SPDT Failsafe DC to 50 GHz Electromechanical Relay Switch, 80W, 2M Lifecycles, 12 V, Solder Terminal, 2.4mm FMSW9024](#)

URL: <https://www.fairviewmicrowave.com/spdt-failsafe-50-ghz-electro-mechanical-relay-switch-12v-2.4mm-fmsw9024-p.aspx>

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