

## SPDT Latching DC to 43 GHz Electro-Mechanical Relay Switch, Self Cut Off, Diodes, 10W, 5M Lifecycles, 12V, 2.92mm

### FMSW6623



#### Features

- Single Pole Double Throw
- DC to 43 GHz Frequency Range
- Isolation greater than 40 dB minimum
- 5M Cycle Min Operating Life
- +12 Volt DC
- 10 Watt average Power
- Latching Self Cut Off Actuator
- Suppression Diodes
- -25 to +65°C Operating Temperature
- Insertion Loss as low as 1.2 dB Max
- VSWR as low as 1.9:1 max
- 2.92mm 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 FMSW6623 is a Single Pole Double Throw (SPDT) electromechanical relay switch that operates across a wide frequency range of DC to 43 GHz and can handle up to 10 Watts of CW input power in a break before make condition. The 50 Ohm design is rated for 5M 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 1.2 dB maximum and isolation greater than 40 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 2.92mm 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	Make Before Break
Actuator Options	Self Cut Off, Diodes

Description	Min	Typ	Max	Units
Frequency Range	DC		43	GHz
Impedance		50		Ohms
Operating Voltage		12		Volts
Actuating Current @ 12 Volts			140	mA
140mA max @ 12Vdc and 20°C				
VSWR			1.9:1	
Insertion Loss			1.2	
Isolation	40			dB

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Description	Min	Typ	Max	Units
Input Power (CW) (Average Power for Cold Switching (Reference RF Power Rating Table for Cold Switching))		10		Watts
Switching Time		20		ms

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 6	6 - 12.4	12.4 - 18	18 - 26.5	26.5 - 40	GHz
VSWR, Max	1.15:1	1.35:1	1.4:1	1.45:1	1.5:1	
Insertion Loss, Max	0.2	0.3	0.4	0.5	0.7	dB
Isolation, Min	85	80	80	75	60	dB

Performance by Frequency

Description	F6	F7	F8	F9	F10	Units
Frequency Range	40 - 43					GHz
VSWR, Max	1.9:1					
Insertion Loss, Max	1.2					dB
Isolation, Min	40					dB

Mechanical Specifications

<b>Size</b>	
Length	2.05 in [52.07 mm]
Width/Diameter	1.5 in [38.1 mm]
Height	0.52 in [13.21 mm]
Weight	0.1 lbs [45.36 g]
Finish	Electroless Nickel
Package Type	Connectorized
Operating Life	5,000,000 Cycles

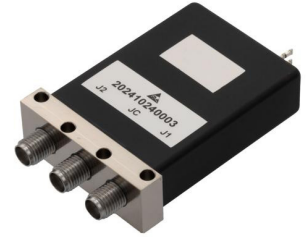
<b>Connectors</b>	
RF Connector Type	2.92mm Female
Control Connector	Solder Terminals

Environmental Specifications

<b>Temperature</b>	
Operating Range	-25 to +65 deg C
Shock	MIL-STD-202 Method 213, Condition D (500G Non Operating)
Vibration	MIL-STD-202 Method 214, Condition D (100G RMS Non Operating)

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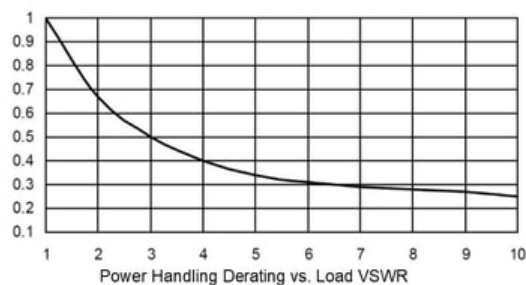
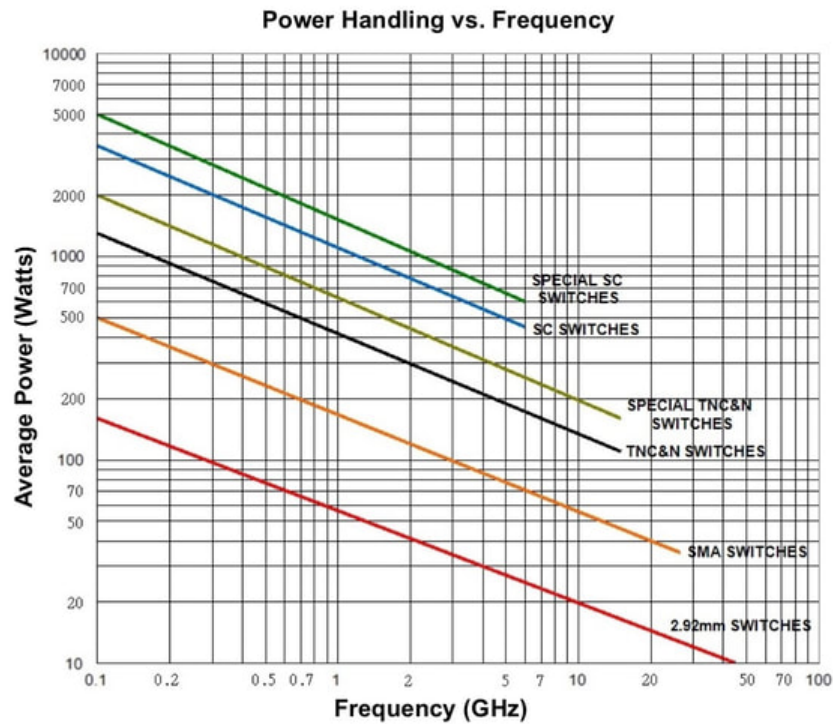


**Compliance Certifications** (see [product page](#) for current document)

### Plotted and Other Data

Notes:

### 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 43 GHz Electro-Mechanical Relay Switch, Self Cut Off, Diodes, 10W, 5M Lifecycles, 12V, 2.92mm 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 43 GHz Electro-Mechanical Relay Switch, Self Cut Off, Diodes, 10W, 5M Lifecycles, 12V, 2.92mm FMSW6623](https://www.fairviewmicrowave.com/spdt-latching-43-ghz-electro-mechanical-relay-switch-diodes-12v-2.92mm-fmsw6623-p.aspx)

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FMSW6623 CAD Drawing

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