

SPDT Electromechanical Relay Failsafe Switch,
DC to 12 GHz, up to 600W, 2M Lifecycles, 12V,
Indicators, TTL, Suppression Diodes, N



FMSW6460

Features

- Single Pole Double Throw Electromechanical Relay Switch
- DC to 12 GHz Frequency Range
- Failsafe Actuator
- TTL Logic Control
- Suppression Diodes
- Indicators
- 2M Lifecycle Rating
- Insertion Loss < 0.2 dB typ
- Isolation > 80 dB typ
- VSWR as low as 1.25:1 max
- +12 Volt DC Bias
- Solder Terminal Pins for DC Control
- N Type Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 600 Watt Average Power Handling
- 50 Ohm Design
- Hot Switching Capability - Consult Factory
- S-Parameter Data available upon request
- Rugged Design meets Mil-STD-202 Test Conditions

Applications

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

Description

The FMSW6460 is a Single Pole Double Throw (SP2T) electromechanical relay switch that operates across a wide frequency range of DC to 12 GHz and can handle up to 600W of Average power in a break before make condition. The 50 Ohm design is rated for 2 million lifecycles and features a Failsafe Actuator. Additional features include TTL control logic, suppression diodes which limit voltage spikes or reverse current, and indicators. Impressive typical performance includes 0.2 dB insertion loss and isolation greater than 80 dB. This switch requires +12Vdc 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 solder terminal pins for all command control functions. 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	Failsafe
Switching Sequence	Break Before Make
Actuator Options	Indicators, TTL Logic
TTL Control	on: 2.4 to 5.5 Volts off: 0 to 0.8 Volts
TTL Control Current	450mA at 5.5 Volts 450mA at 0.8 Volts

Description	Min	Typ	Max	Units
Frequency Range	DC		12	GHz
Impedance		50		Ohms
Operating Voltage	11	12	13	Volts
Actuating Current @ 12 Volts			450	mA
VSWR		1.3:1	1.4:1	
Insertion Loss		0.2	0.5	dB

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Description	Min	Typ	Max	Units
Isolation	70	80		dB
Input Power (CW)			1	kWatts
Switching Time			20	ms

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 1	1 - 4	4 - 8	8 - 12		GHz
VSWR, Max	1.25:1	1.3:1	1.4:1	1.4:1		
Insertion Loss, Max	0.3	0.3	0.4	0.5		dB
Isolation, Min	90	80	80	70		dB

Mechanical Specifications

Size

Length	2.36 in [59.94 mm]
Width/Diameter	2.75 in [69.85 mm]
Height	0.92 in [23.37 mm]
Weight	0.5 lbs [226.8 g]
Finish	NICKEL
Package Type	Connectorized
Operating Life	2,000,000 Cycles

Connectors

RF Connector Type	N Female
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Environmental Specifications

Temperature

Operating Range	-25 to +65 deg C
Storage Range	-55 to +100 deg C
Humidity	Moisture resistant or immersion sealing available
Shock	MIL-STD-202 Method 213, Condition D, 500G (non oper)
Vibration	MIL-STD-202 Method 214, Condition D, 10G RMS (non oper)

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

Plotted and Other Data

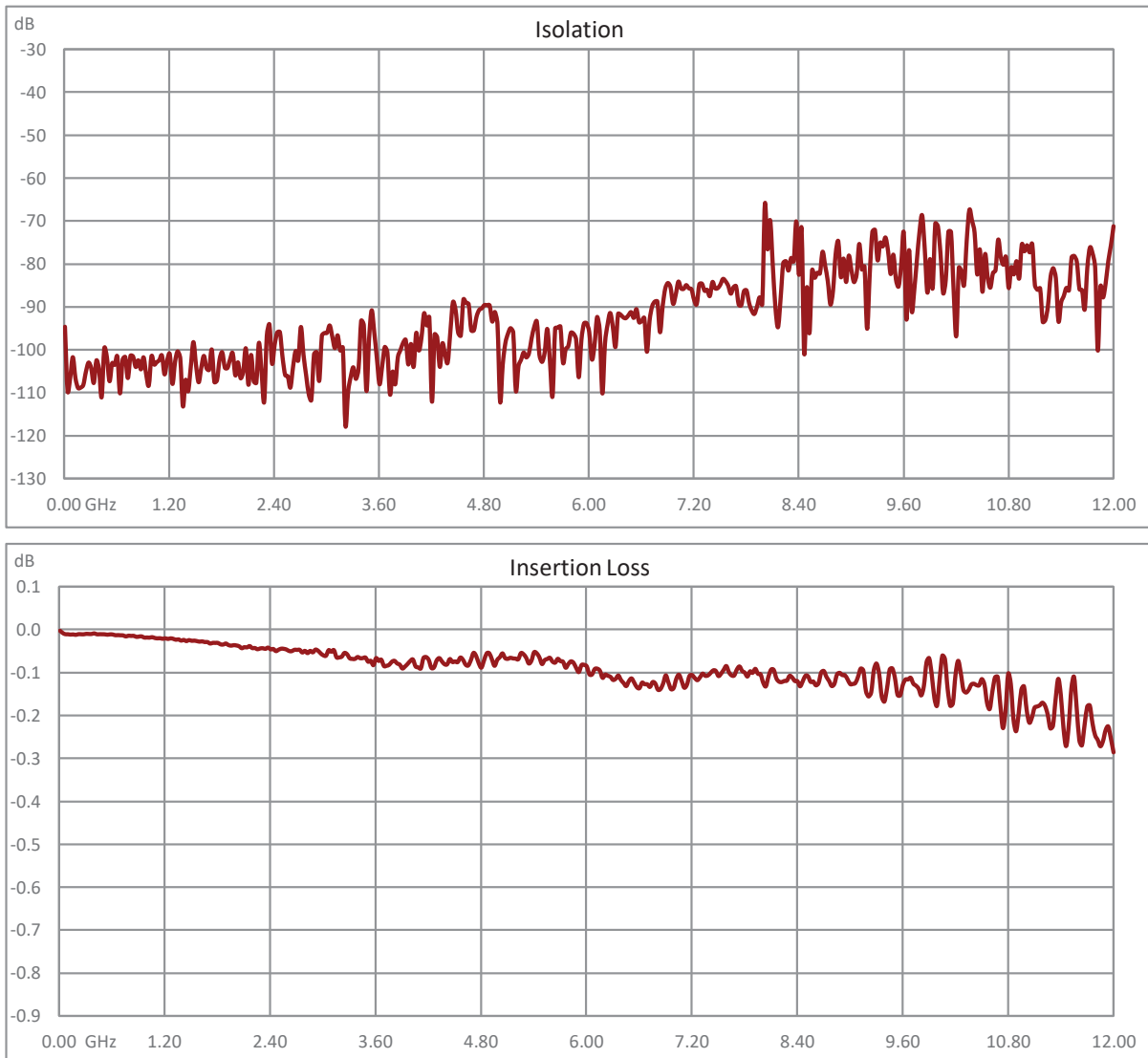
Notes:

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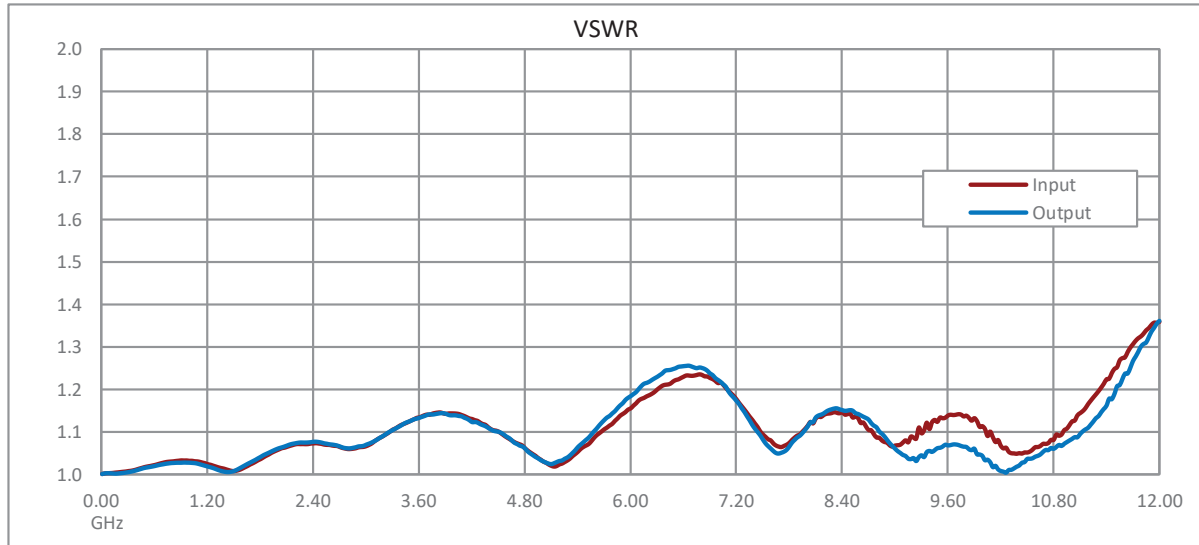
Typical Performance Data



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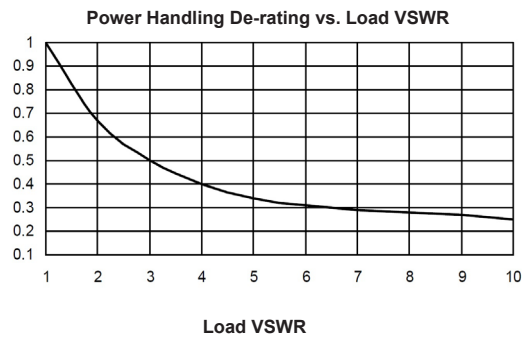
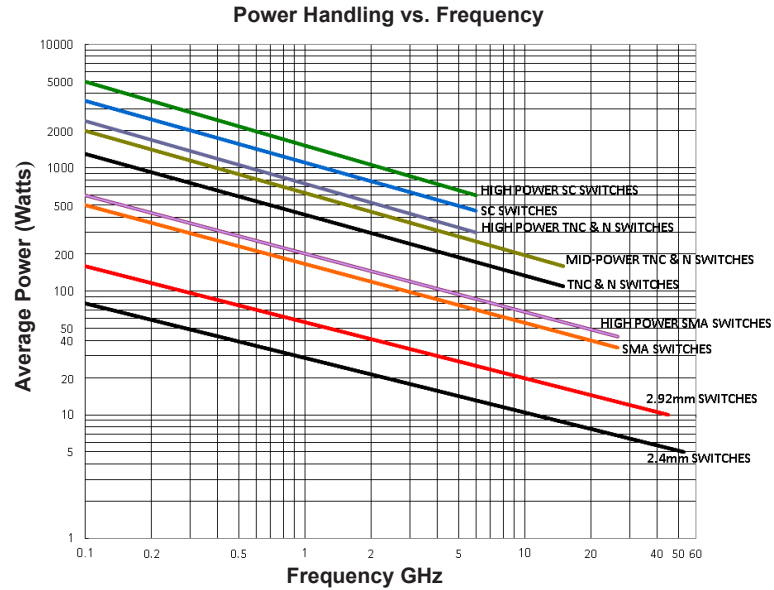
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Power Handling Chart and Derating Curves based
on the following Test and Environmental Conditions:
Ambient temperature: 20 - 25°C
Altitude: Sea Level to 1,000 feet
Relative Humidity: 50 - 55%
Load VSWR: $\leq 1.20:1$
Operation: Cold Switching

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SPDT Electromechanical Relay Failsafe Switch, DC to 12 GHz, up to 600W, 2M Lifecycles, 12V, Indicators, TTL, Suppression Diodes, 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 Electromechanical Relay Failsafe Switch, DC to 12 GHz, up to 600W, 2M Lifecycles, 12V, Indicators, TTL, Suppression Diodes, N FMSW6460](https://www.fairviewmicrowave.com/spdt-failsafe-12-ghz-electro-mechanical-relay-switch-indicators-1000w-12v-n-fmsw6460-p.aspx)

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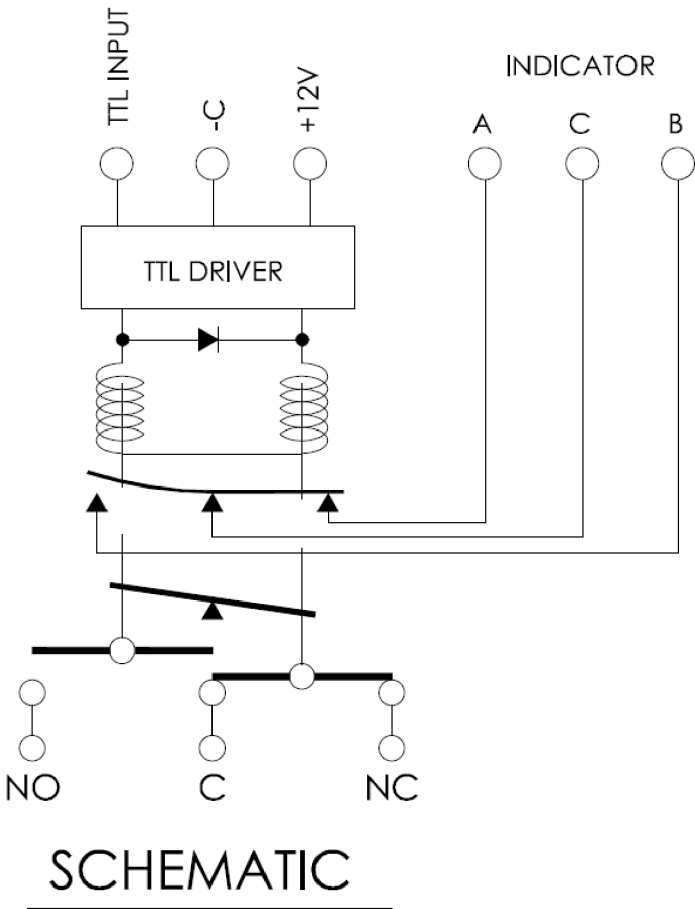
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FMSW6460 CAD Drawing

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TITLE

UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES
DIMENSIONS IN [] ARE MILLIMETERS

TOLERANCES:

.X = ±.2 [5.08] FRACTIONS
.XX = ±.02 [.51] ± 1/32
.XXX = ±.005 [.13] ANGLES ± 1°

CABLE LENGTH (L) TOLERANCES:

L ≤ 12 [305] = +1 [25] / -0
12 [305] < L ≤ 60 [1524] = +2 [51] / -0
60 [1524] < L ≤ 120 [3048] = +4 [102] / -0
120 [3048] < L ≤ 300 [7620] = +6 [152] / -0
300 [7620] < L = +5%L / -0

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

THIRD-ANGLE PROJECTION



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SHEET 2 OF 2

SCALE N/A

SIZE
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CAGE CODE
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ITEM NO.
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