

**SPDT, Electromechanical Relay Latching Switch,
DC to 43 GHz, 28VDC, 5W, Indicators, TTL,
Diodes, Self Cut-Off, Solder Terminals, 2.92mm**

The FMSW7285 is a Single Pole Double Throw (SPDT) electromechanical relay switch that operates across an ultra wide frequency range from DC to 43 GHz and can handle up to 5W of Average Power in a break before make condition. The 50 Ohm design has a Latching Actuator with Self Cut-Off that magnetically latches in place after the control voltage is removed. For power sensitive applications, this is the best actuator option. Additional features include TTL logic control, Indicators to monitor the switch position, and Suppression Diodes which limit voltage spikes or reverse current. Impressive typical performance includes 0.6 dB insertion loss and isolation greater than 85 dB. This switch requires +28Vdc bias voltage, operates over a temperature range of -25°C to +65°C, and is rated for 2 million lifecycles. The rugged and compact package assembly supports 2.92mm female connectors and solder terminal pins for DC 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 = 28 Vdc)

Switch Type	SPDT
Actuator Type	Latching
Actuator Options	Indicators, TTL Logic, Diodes, Self Cut Off
TTL Control	on: 2.4 to 5 Volts off: 0 to 0.8 Volts

Description	Min	Typ	Max	Units
Frequency Range	DC		43	GHz
Operating Voltage	26	28	30	Volts
Actuating Current @ 28 Volts			65	mA
VSWR		1.4:1	1.9:1	
Insertion Loss		0.6	1.2	dB
Isolation	40	85		dB
Input Power			5	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					



Features:

- SPDT Electromechanical Relay Switch
- DC to 43 GHz Frequency Range
- Latching Actuator with Self Cut-Off
- TTL Logic Control
- Indicators
- Suppression Diodes
- 2M Lifecycle Rating
- Insertion Loss 0.6 dB typ
- Isolation > 85 dB typ
- VSWR as low as 1.15:1 max
- 2.92mm Female Connectors
- +28 Volt DC Bias
- Solder Terminal Pins for DC Command Control Functions
- -25°C to +65°C Operating Temperature
- Up to 5 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

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Insertion Loss, Max	1.2	dB
Isolation, Min	40	dB

Mechanical Specifications

Size

Length	2.2 in [55.88 mm]
Width/Diameter	1.5 in [38.1 mm]
Height	0.52 in [13.21 mm]
Weight	0.1 lbs [45.36 g]
Body Material and Plating	Electroless Nickel

Connectors

RF Connector Type	2.92mm Female
Control Connector	Solder Terminals

Environmental Specifications

Temperature

Operating Range	-25 to +65 deg C
Storage Range	-55 to +100 deg C

Shock
Vibration

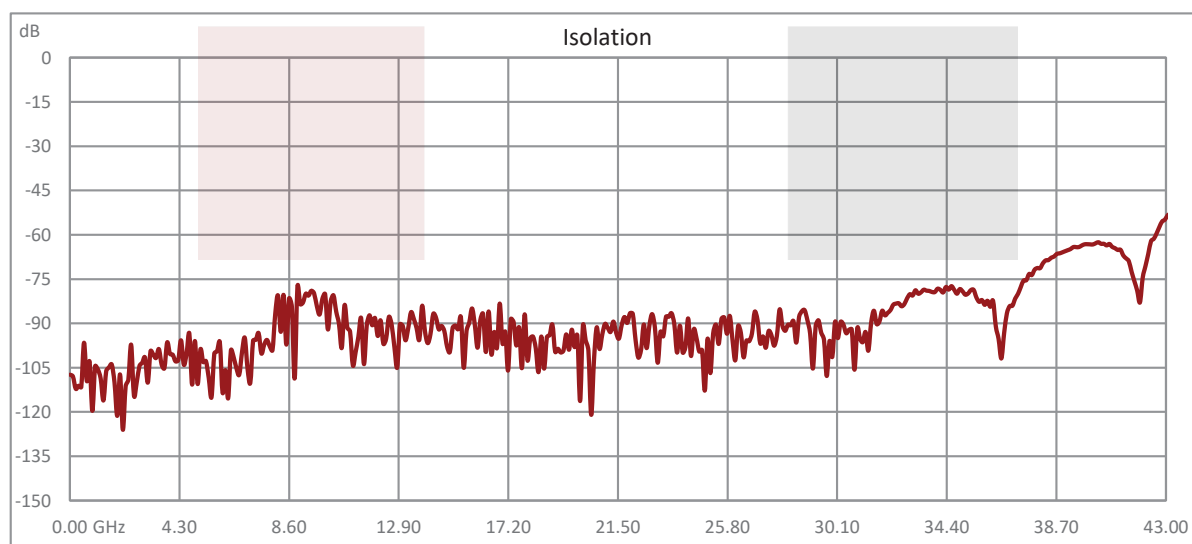
MIL-STD-202 Method 213, Condition D, 500G (non operational)
MIL-STD-202 Method 204, Condition D, 10G RMS (non operational)

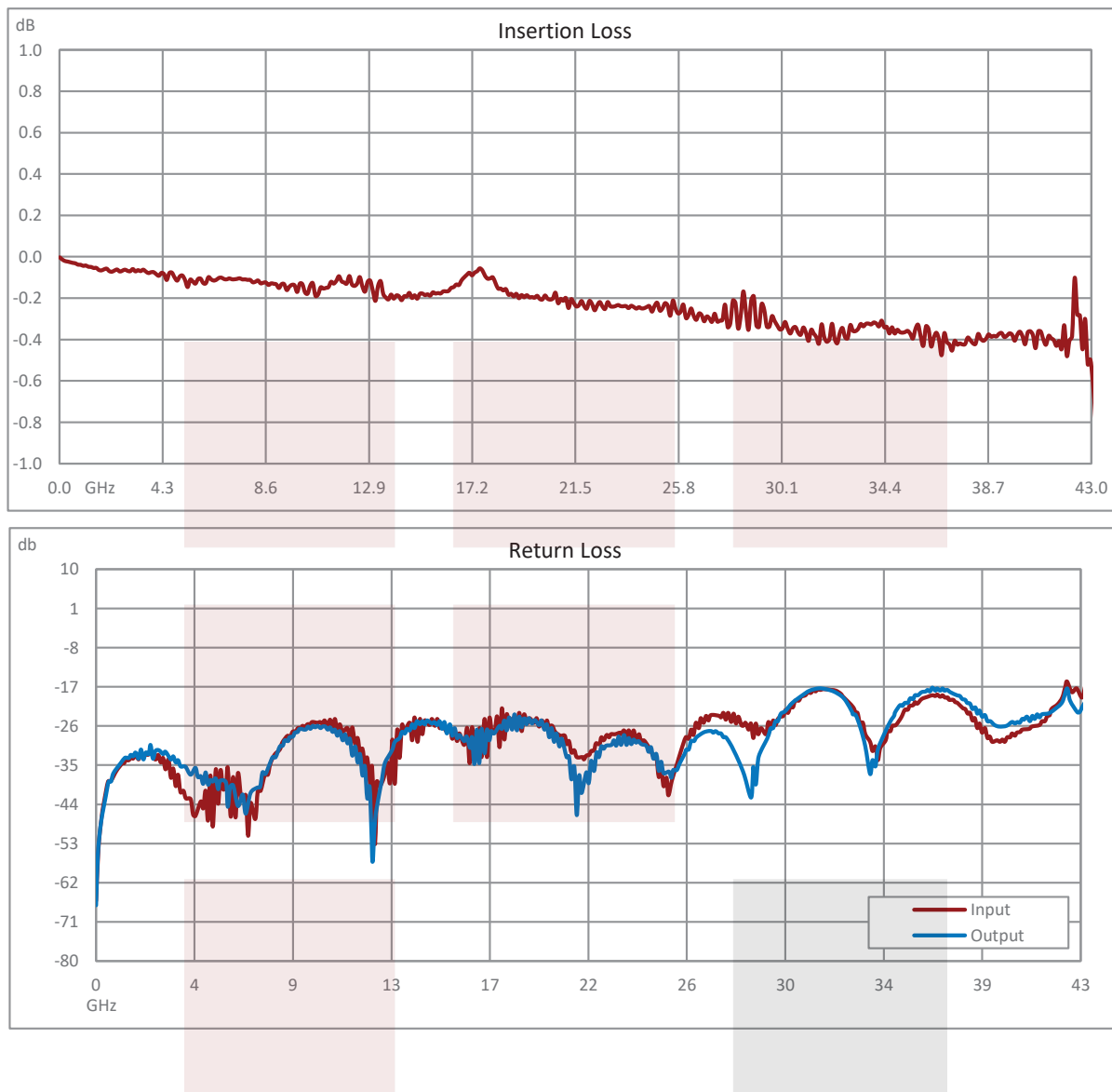
Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

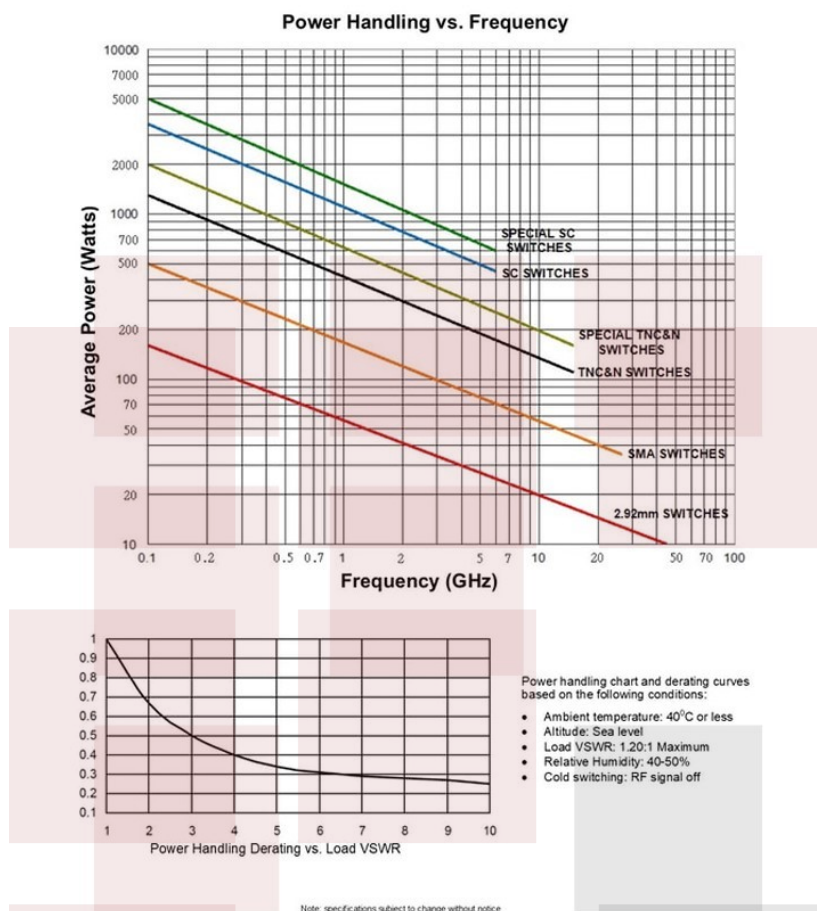
Notes:

Typical Performance Data





Power Handling vs. Frequency

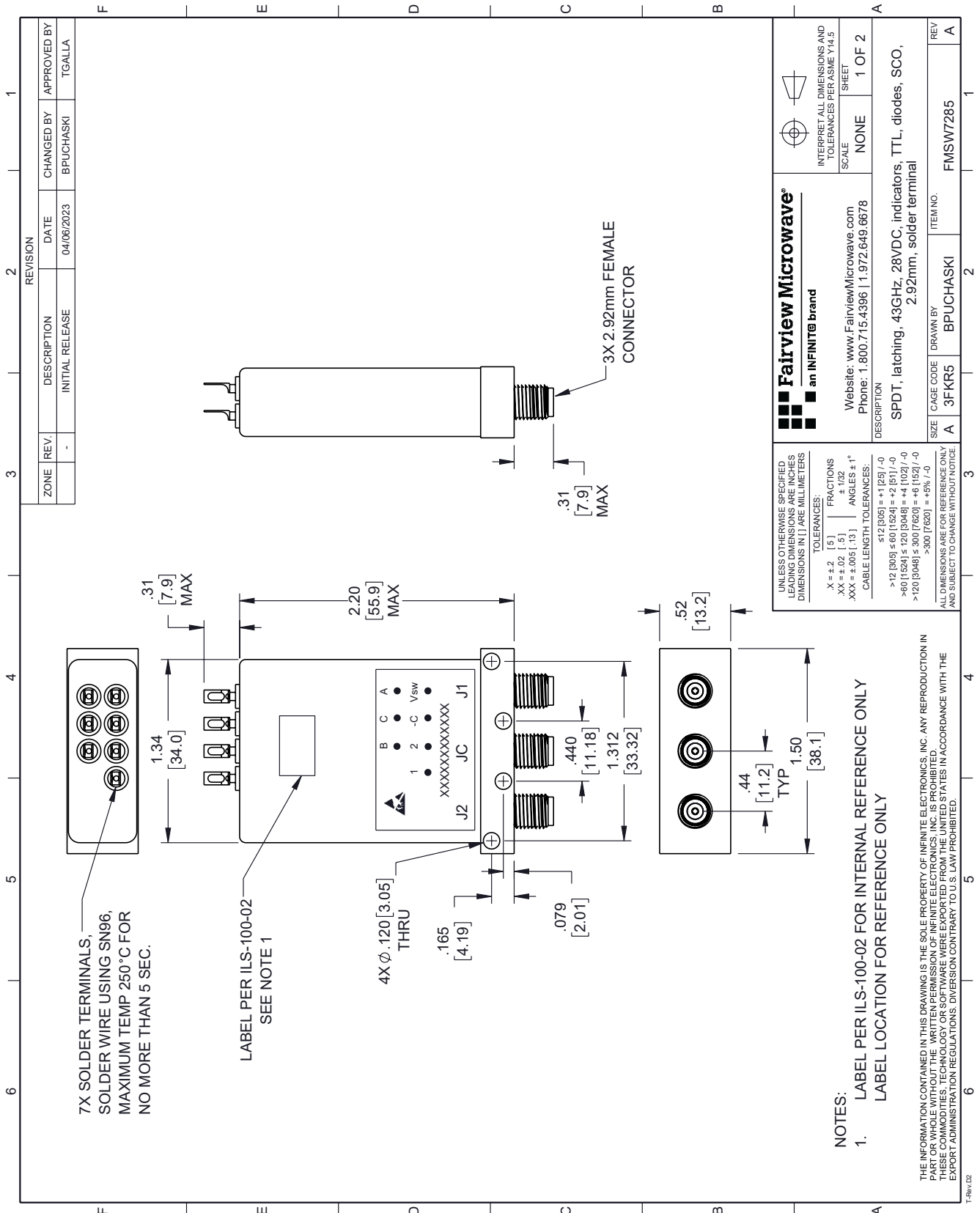


SPDT, Electromechanical Relay Latching Switch, DC to 43 GHz, 28VDC, 5W, Indicators, TTL, Diodes, Self Cut-Off, Solder Terminals, 2.92mm from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SPDT, Electromechanical Relay Latching Switch, DC to 43 GHz, 28VDC, 5W, Indicators, TTL, Diodes, Self Cut-Off, Solder Terminals, 2.92mm FMSW7285](https://www.fairviewmicrowave.com/spdt-latching-43-ghz-electro-mechanical-relay-switch-indicators-ttl-diodes-self-cut-off-28v-2.92mm-fmsw7285-p.aspx)

URL: <https://www.fairviewmicrowave.com/spdt-latching-43-ghz-electro-mechanical-relay-switch-indicators-ttl-diodes-self-cut-off-28v-2.92mm-fmsw7285-p.aspx>

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TTL INPUT

INDICATOR

+28VDC

GND

VSW

-C

TTL & SELF CUTOFF CIRCUIT

J2

J1

JC

SCHEMATIC

OPERATIONAL

LOGIC TABLE

TERMINALS	RF PORTS	INDICATOR			
1	2	J1	J2	A-C	B-C
0	0	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE
0	1	OFF	ON	OFF	ON
1	0	ON	OFF	ON	OFF
1	1	FORBIDDEN	FORBIDDEN	FORBIDDEN	FORBIDDEN

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS (INCHES IN PARENTHESES)

TOLERANCES:

X = ±.2 [5]

XX = ±.02 [.5]

XXX = ±.005 [.13]

FRACTIONS

±.132

ANGLES ± 1°

CABLE LENGTH TOLERANCES:

≤12 [305] = ±.125 [-0]

>12 [305] ≤ 60 [1524] = ±.25 [-0]

>60 [1524] ≤ 120 [3048] = ±.4 [102] [-0]

>120 [3048] ≤ 300 [7620] = ±.6 [152] [-0]

>300 [7620] = ±.5% [-0]

DESCRIPTION

SPDT, latching, 43GHz, 28VDC, indicators, TTL, diodes, SCO, 2.92mm, solder terminal

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INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5

SCALE

NONE

SHEET

2 OF 2

SIZE

CAGE CODE

3FKR5

ITEM NO.

BPUCHASKI

REV

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