

SP6T, Electromechanical Relay Latching Switch, DC to 52GHz, 28VDC, D-Sub, 2.4mm

The FMSW8018 is a Single Pole Six Throw (SP6T) electromechanical relay switch that operates across an ultra wide frequency range from DC to 52 GHz and can handle up to 3 Watts of Average Power in a break before make condition. The 50 Ohm design has a Latching Actuator that magnetically latches in place after the control voltage is removed. For power sensitive applications, this is the best actuator option. Impressive typical performance includes 0.8 dB insertion loss and isolation greater than 80 dB. This switch requires +28 Vdc bias voltage and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports 2.4mm female connectors and D-Sub Connector 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	SP6T
Actuator Type	Latching

Description	Min	Typ	Max	Units
Frequency Range	DC		52	GHz
Operating Voltage	26	28	30	Volts
Actuating Current @ 28 Volts			110	mA
Actuating Reset Current		660		mA
VSWR		1.5:1	2.8:1	
Insertion Loss		0.8	2.3	dB
Isolation	50	80		dB
Input Power			3	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	1.3:1	1.4:1	1.5:1	1.7:1	1.9:1	
Insertion Loss, Max	0.2	0.4	0.5	0.7	0.9	dB
Isolation, Min	70	60	60	55	50	dB

Performance by Frequency

Description	F6	F7	F8	F9	F10	Units
Frequency Range	40 - 50	50 - 52				GHz
VSWR, Max	2.2:1	2.8:1				
Insertion Loss, Max	1.3	2.3				dB
Isolation, Min	50	50				dB



Features:

- Single Pole Six Throw (SP6T) Electromechanical Relay Switch
- DC to 52 GHz Frequency Range
- Latching Actuator
- 1M Lifecycle Rating
- Insertion Loss 0.8 dB typ
- Isolation > 80 dB typ
- VSWR as low as 1.3:1 max
- D-Sub Connector for DC Command Control
- +28 Volt DC Bias
- 2.4mm Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 3 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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Mechanical Specifications

Size

Length	1.75 in [44.45 mm]
Width/Diameter	1.75 in [44.45 mm]
Height	1.75 in [44.45 mm]
Weight	0.395 lbs [179.17 g]
Finish	Electroless Nickel

Connectors

RF Connector Type	2.4mm Female
Control Connector	D-Subminiature

Environmental Specifications

Temperature

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

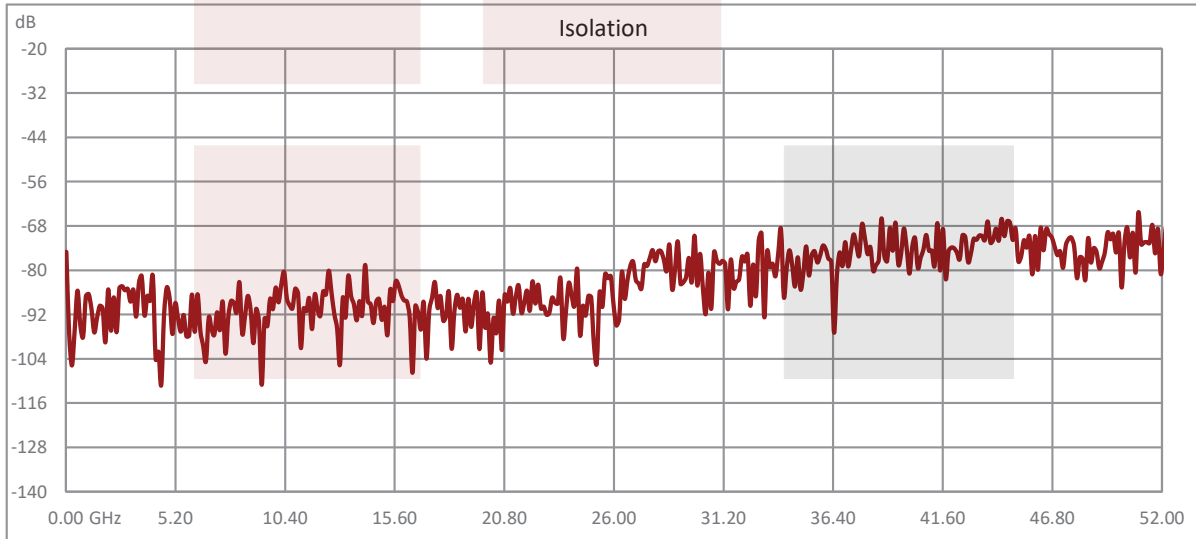
Shock	MIL-STD-202 Method 213, Condition D, 500G (non operational)
Vibration	MIL-STD-202 Method 204, Condition D, 10G RMS (non operational)

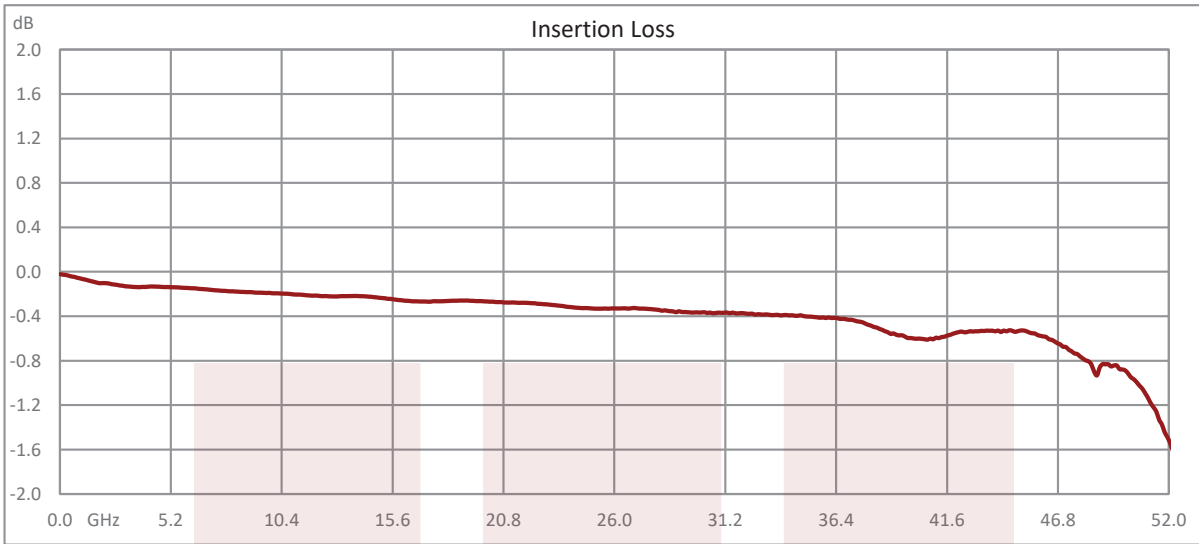
Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

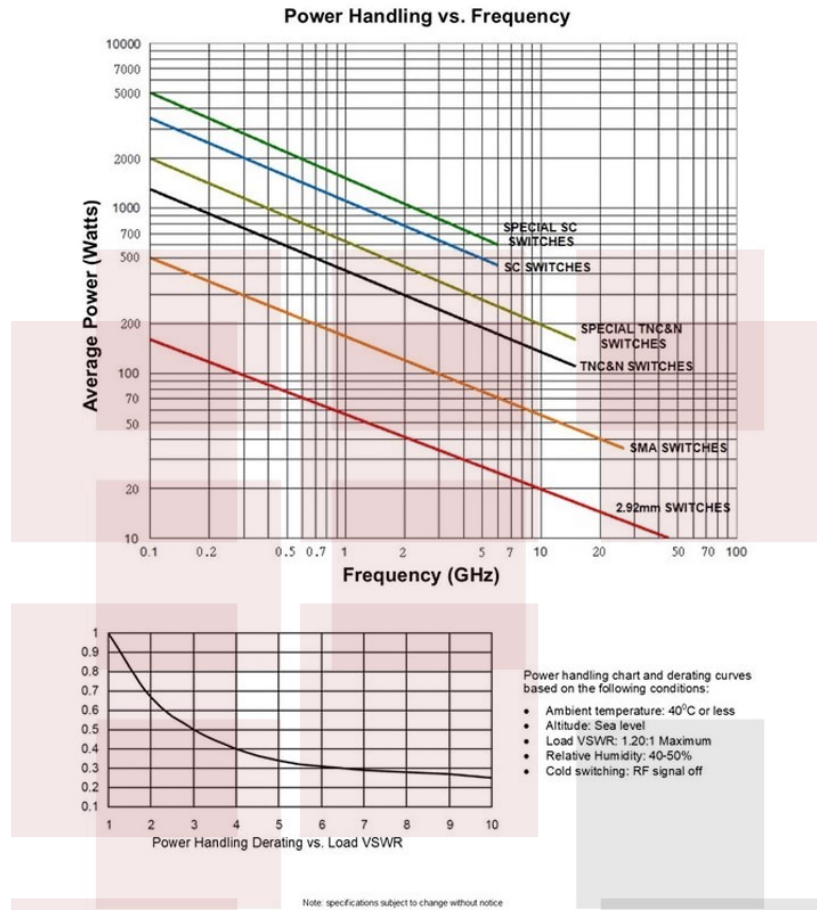
Notes:

Typical Performance Data





Power Handling vs. Frequency

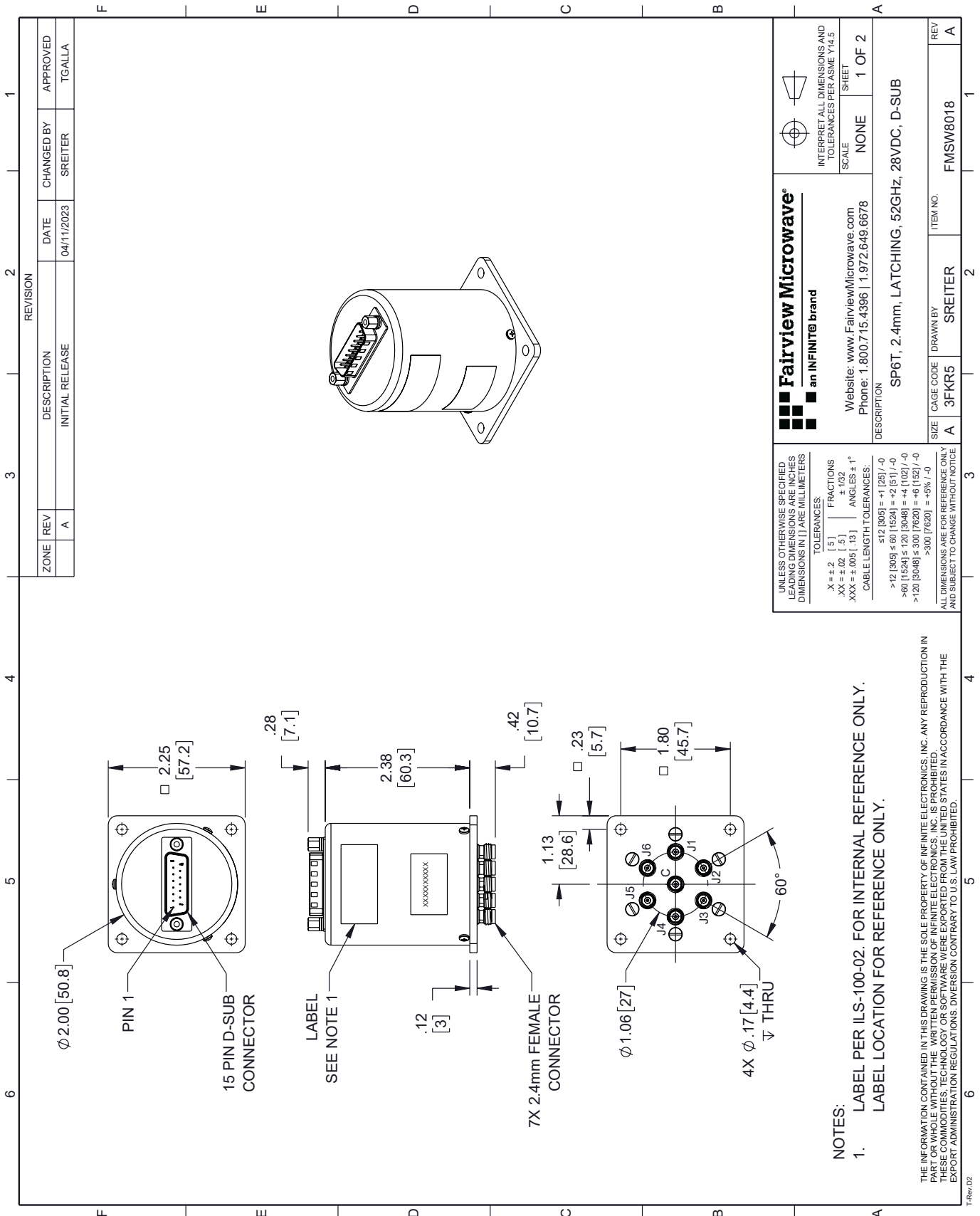


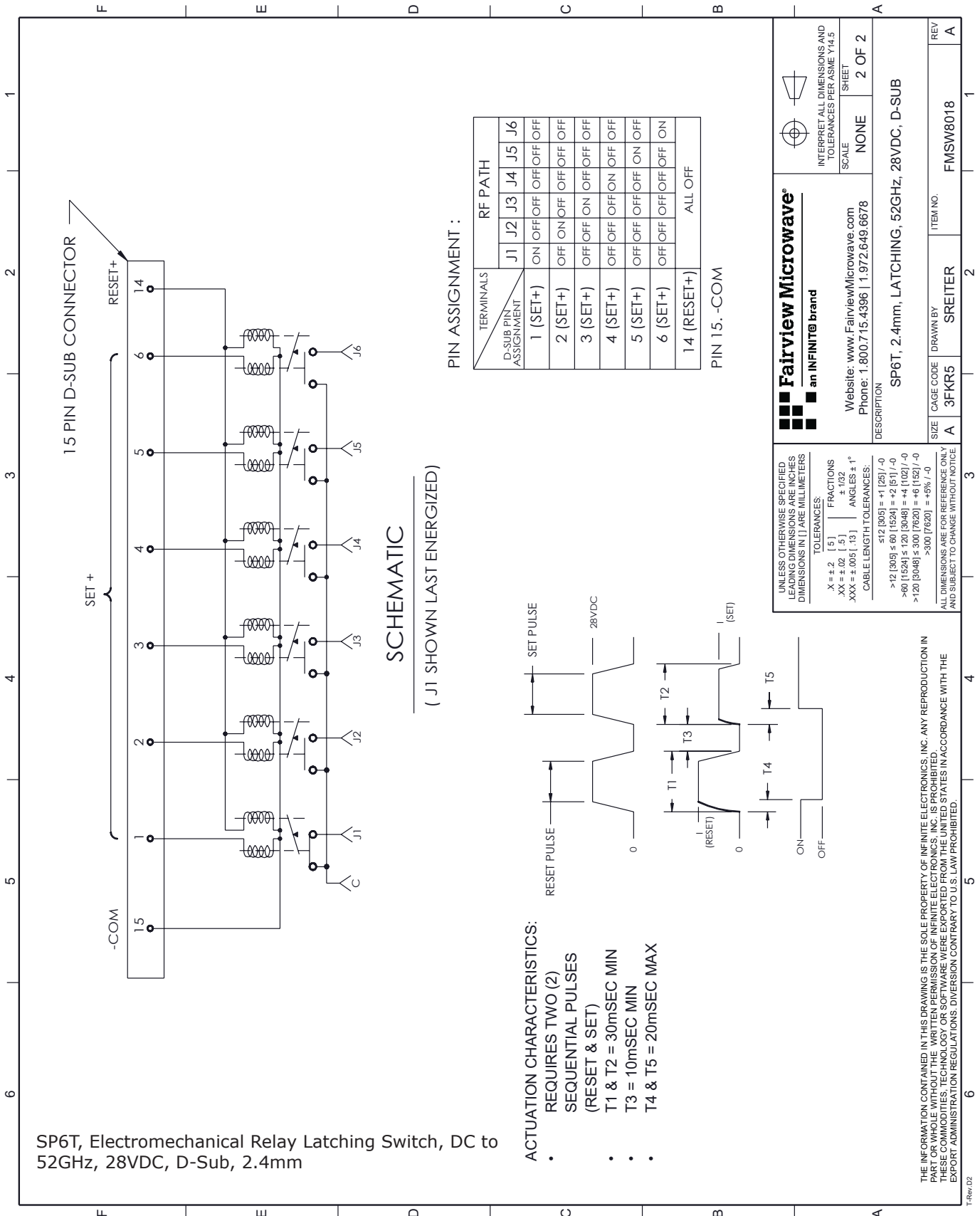
SP6T, Electromechanical Relay Latching Switch, DC to 52GHz, 28VDC, D-Sub, 2.4mm from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SP6T, Electromechanical Relay Latching Switch, DC to 52GHz, 28VDC, D-Sub, 2.4mm FMSW8018](https://www.fairviewmicrowave.com/sp6t-latching-52-ghz-electro-mechanical-relay-switch-28v-2.4mm-fmsw8018)

URL: <https://www.fairviewmicrowave.com/sp6t-latching-52-ghz-electro-mechanical-relay-switch-28v-2.4mm-fmsw8018-p.aspx>

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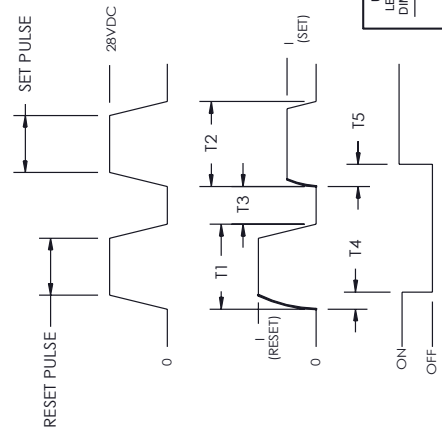
SCHEMATIC

(J1 SHOWN LAST ENERGIZED)

PIN ASSIGNMENT :

TERMINALS	RF PATH					
	J1	J2	J3	J4	J5	J6
1 (SET+)	ON	OFF	OFF	OFF	OFF	OFF
2 (SET+)	OFF	ON	OFF	OFF	OFF	OFF
3 (SET+)	OFF	OFF	ON	OFF	OFF	OFF
4 (SET+)	OFF	OFF	OFF	ON	OFF	OFF
5 (SET+)	OFF	OFF	OFF	OFF	ON	OFF
6 (SET+)	OFF	OFF	OFF	OFF	OFF	ON
14 (RESET+)	ALL OFF					

PIN 15. -COM



- ACTUATION CHARACTERISTICS:**
- REQUIRES TWO (2) SEQUENTIAL PULSES (RESET & SET)
 - T1 & T2 = 30mSEC MIN
 - T3 = 10mSEC MIN
 - T4 & T5 = 20mSEC MAX

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INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5 SHEET SCALE NONE 2 OF 2

DESCRIPTION: SP6T, 2.4mm, LATCHING, 52GHz, 28VDC, D-SUB

SIZE A CAGE CODE 3FKR5 DRAWN BY SREITER ITEM NO. FMSW8018 REV A

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

TOLERANCES:
 .X ± .2 [.5] FRACTIONS
 .XX ± .02 [.5] ANGLES ± 1°
 .XXX ± .005 [.13]
 CABLE LENGTH TOLERANCES:
 ≤12 [305] = +1 [25] / -0
 >12 [305] ≤ 60 [1524] = +2 [51] / -0
 >60 [1524] ≤ 120 [3048] = +4 [102] / -0
 >120 [3048] ≤ 300 [7620] = +6 [152] / -0
 >300 [7620] = +5% / -0

ALL DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO CHANGE WITHOUT NOTICE

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