

## SP4T Electromechanical Relay Latching Switch, +COM, DC to 52 GHz, 5W, 12VDC, 2.4mm

The FMSW6565 is a Single Pole Four Throw (SP4T) electromechanical relay switch that operates across an ultra wideband frequency range from DC to 52 GHz and can handle 5W of average power in a break before make condition. The 50 Ohm design supports a positive common (+COM) biasing configuration and features a Latching Actuator with a 1 million lifecycle rating. The Latching Actuator magnetically latches in place after the control voltage is removed. For power sensitive applications, this is the best actuator option. Impressive typical performance includes 1.5 dB insertion loss and isolation greater than 70 dB. This switch requires 12 Vdc bias voltage and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports 2.4mm female connectors and a 15 Pin D-SUB Connector 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	SP4T
Actuator Type	Latching

Description	Min	Typ	Max	Units
Frequency Range	DC		52	GHz
Operating Voltage	11	12	13	Volts
Actuating Current @ 12 Volts		280		mA
Actuating Reset Current		1.12		A
VSWR		2:1	2.8:1	
Insertion Loss		1.5	2.3	dB
Isolation	50	80		dB
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	2.2:12.8:1					
Insertion Loss, Max	1.3	2.3				dB
Isolation, Min	50	50				dB



### Features:

- Single Pole Four Throw (SP4T) Electromechanical Relay Switch
- DC to 52 GHz Frequency Range
- Latching Actuator
- Positive Common (+COM) Configuration
- 2M Lifecycle Rating
- Insertion Loss 1.5 dB typ
- Isolation > 70 dB typ
- VSWR as low as 1.3:1 max
- 15 PIN D-SUB Connector for DC Control
- 12 Volt DC Bias
- 2.4mm Female Connectors
- -25°C to +65°C Operating Temperature
- 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
- Actuating Set / Reset Feature

### 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 2.05 in [52.07 mm]  
 Width/Diameter 1.5 in [38.1 mm]  
 Height 0.52 in [13.21 mm]  
 Weight 0.172 lbs [78.02 g]

**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

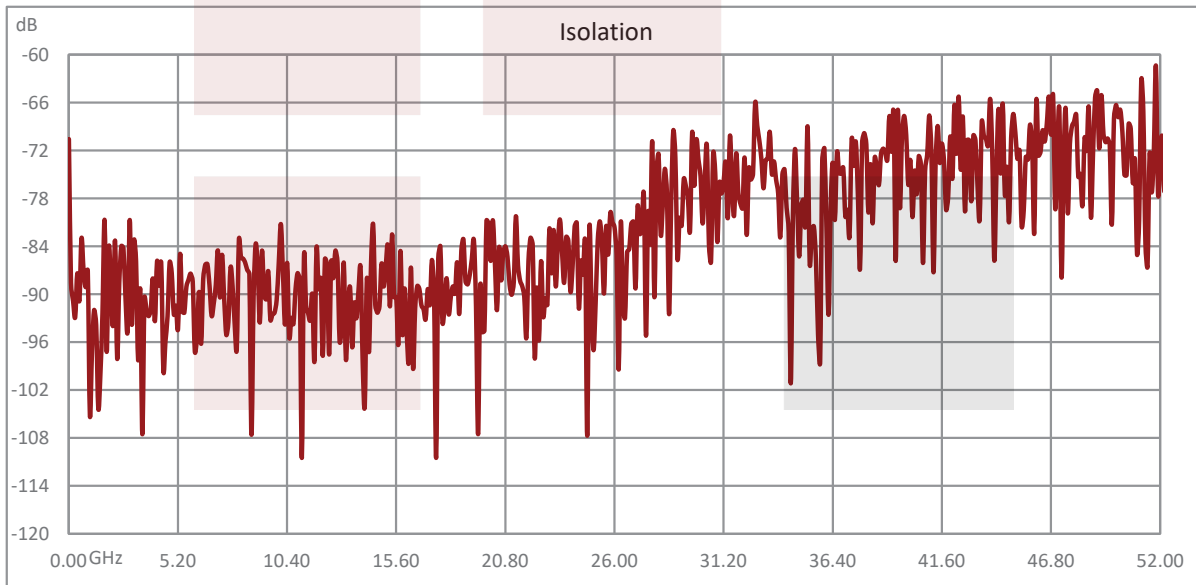
Shock MIL-STD-202 Method 213, Condition D, 500G (non oper)  
 Vibration MIL-STD-202 Method 204, Condition D, 10G RMS (non oper)

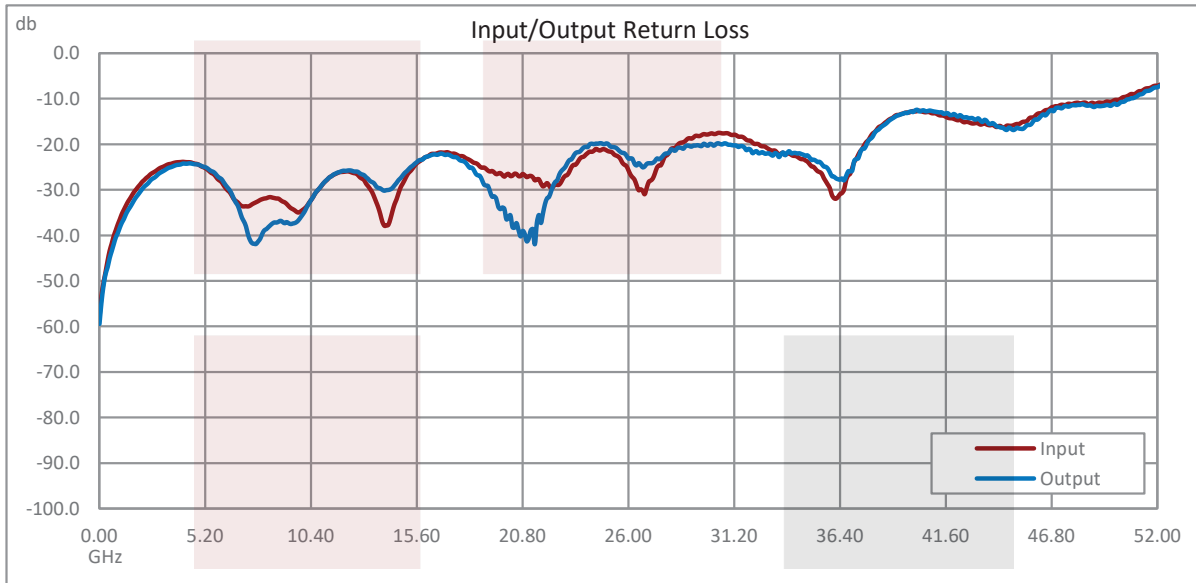
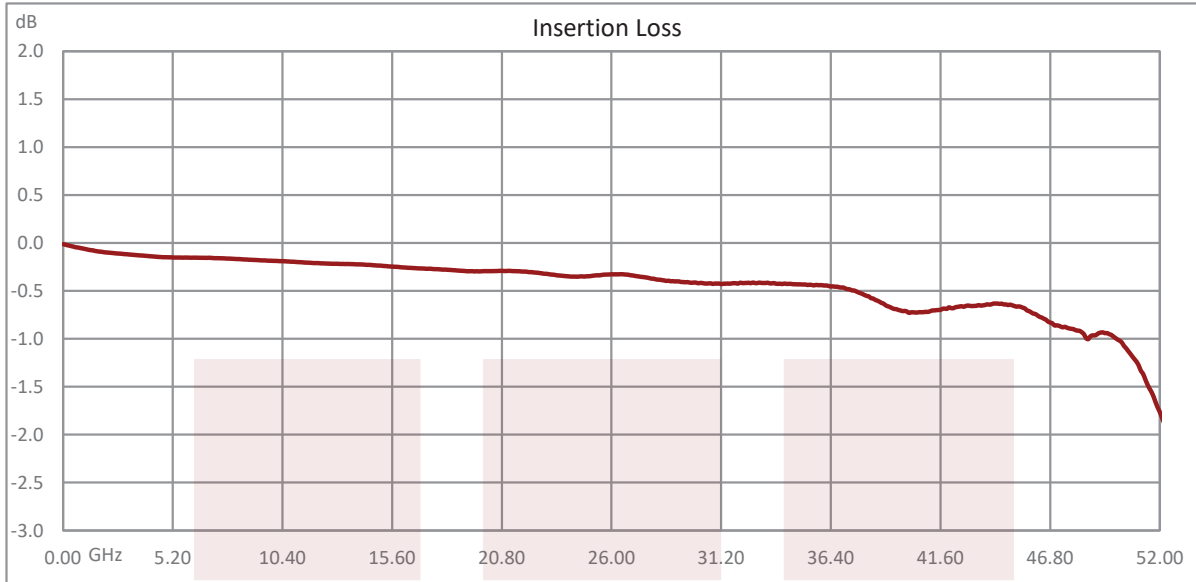
**Compliance Certifications** (see [product page](#) for current document)

**Plotted and Other Data**

Notes:

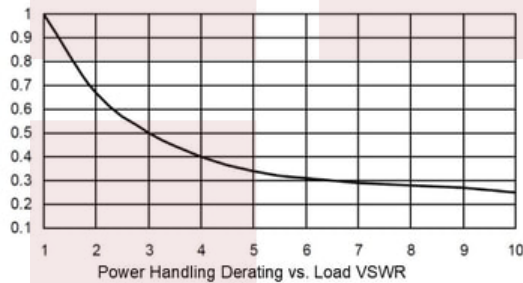
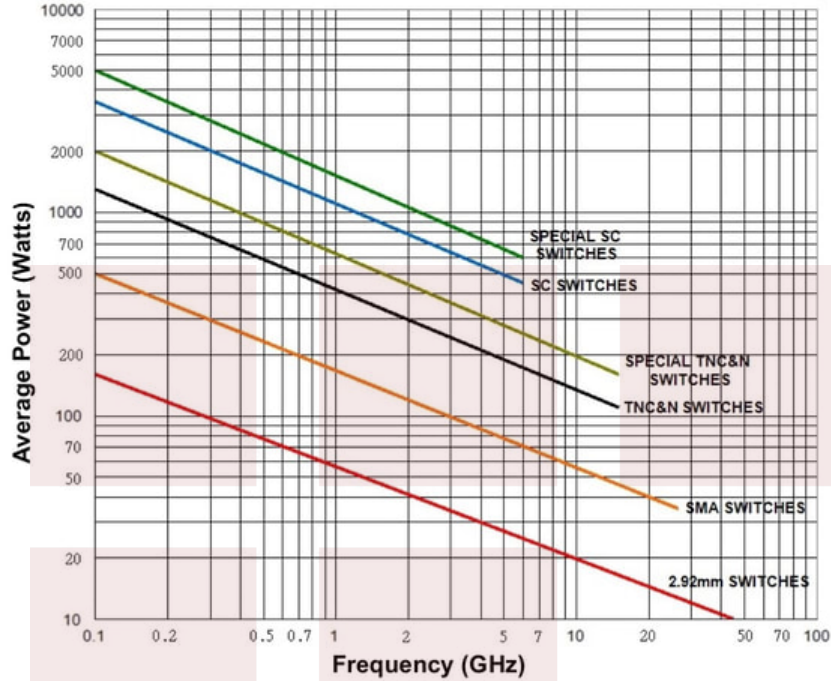
**Typical Performance Data**





**Power Handling vs. Frequency**

**Power Handling vs. Frequency**



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

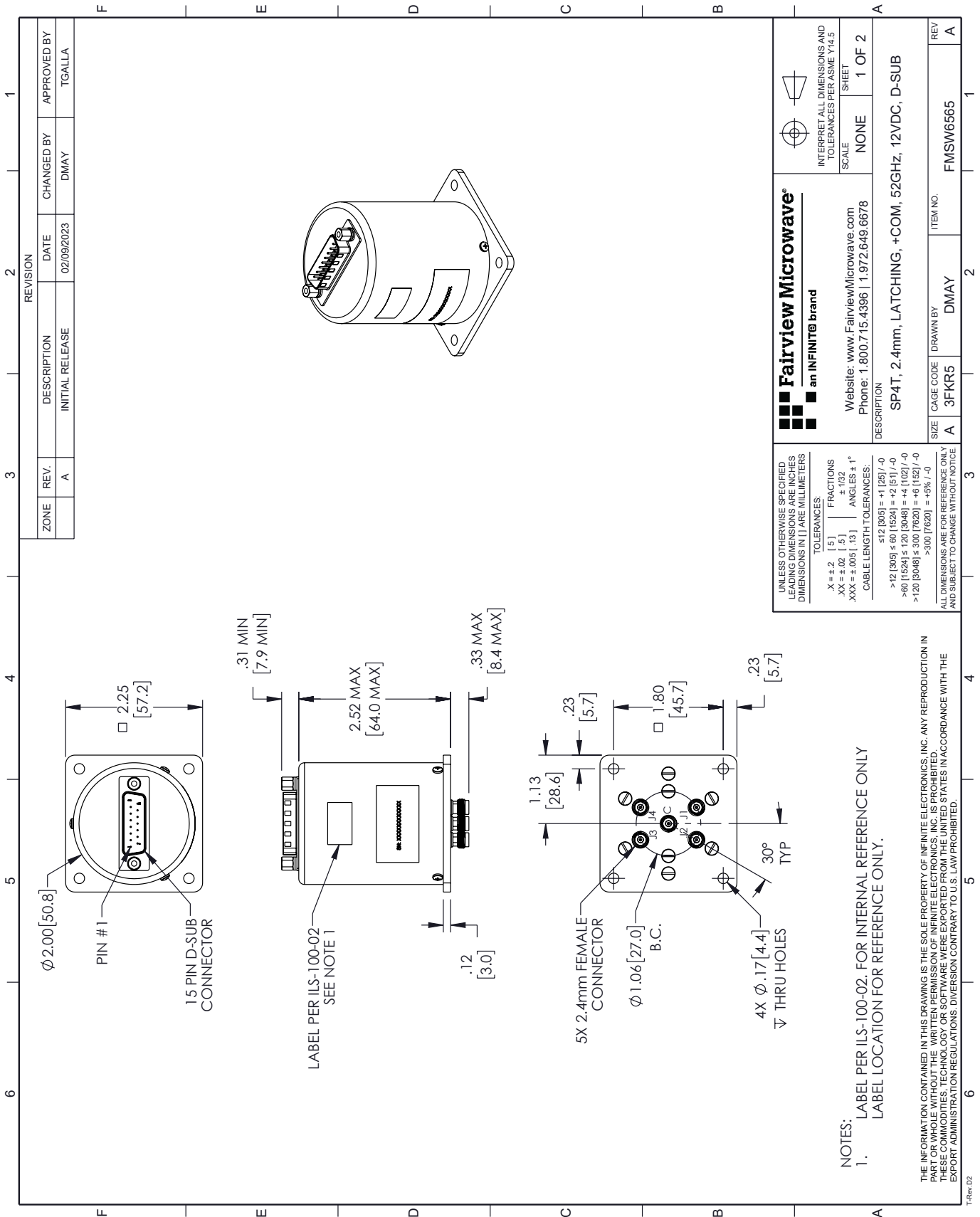
SP4T Electromechanical Relay Latching Switch, +COM, DC to 52 GHz, 5W, 12VDC, 2.4mm from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

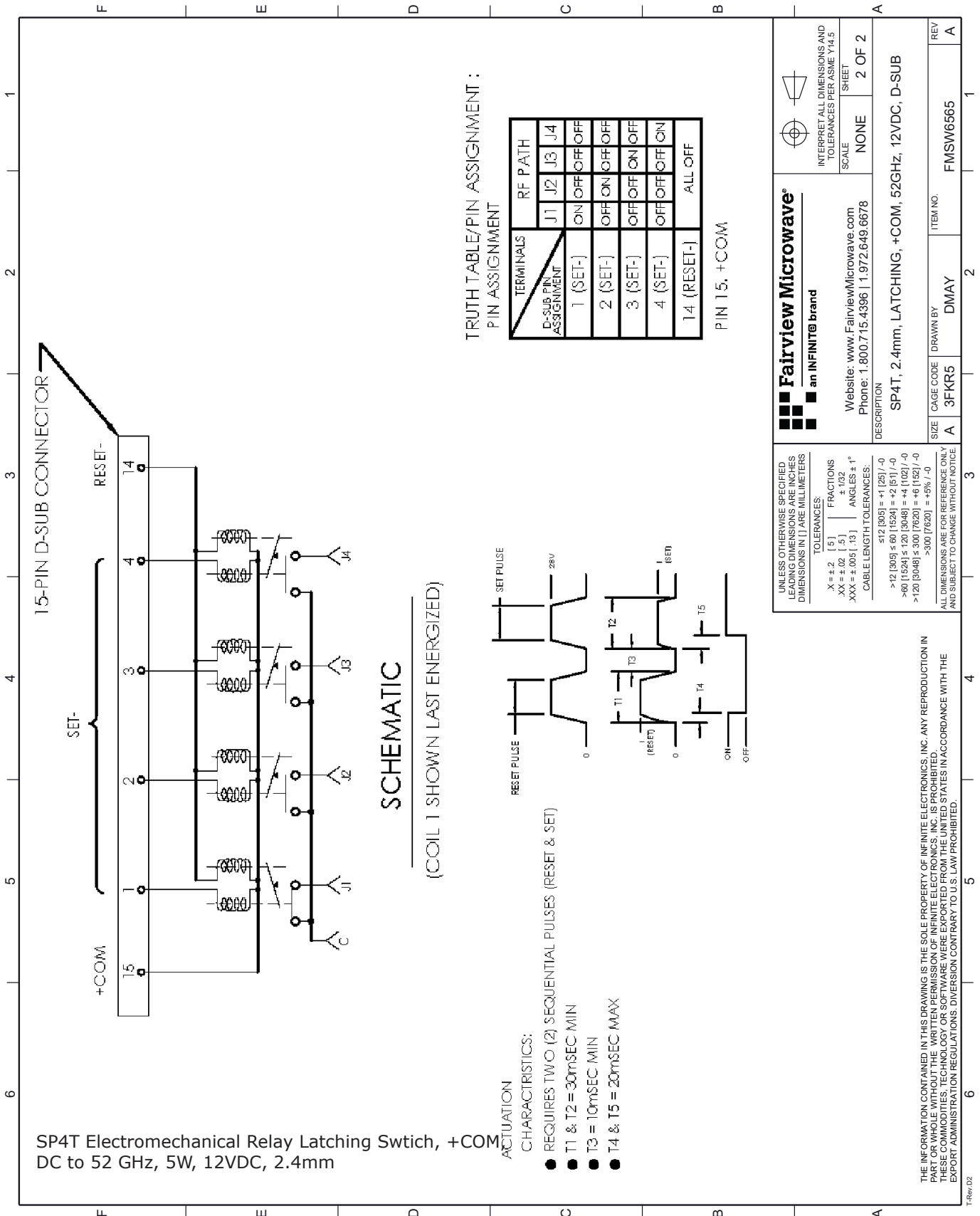
For additional information on this product, please click the following link: [SP4T Electromechanical Relay Latching Switch, +COM, DC to 52 GHz, 5W, 12VDC, 2.4mm FMSW6565](#)

URL: <https://www.fairviewmicrowave.com/sp4t-latching-52-ghz-electro-mechanical-relay-switch-12v-2.4mm-fmsw6565-p.aspx>

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INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5 SHEET

SCALE: NONE  
SHEET: 2 OF 2

DESCRIPTION: SP4T, 2.4mm, LATCHING, +COM, 52GHz, 12VDC, D-SUB

SIZE: A  
CAGE CODE: 3FKR5  
DRAWN BY: DMAY  
ITEM NO.: FMSW6565  
REV: A