

SPDT, Terminated, Electromechanical Relay Failsafe Switch, DC to 53GHz, 28VDC, Indicators, Solder Terminal, 2.4mm

The FMSW8013 is a Single Pole Double Throw (SPDT) electromechanical relay switch that operates across an ultra wide frequency range from DC to 53 GHz and can handle up to 3 Watts of Average Power in a break before make condition. The 50 Ohm design is rated for 1 million lifecycles and features a Failsafe Actuator. The output ports are terminated in 50 ohms when switched in the isolation (off) state. An additional feature includes indicators to monitor the switch position. 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 solder terminal 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 = 28 Vdc)

Switch Type	SPDT
Actuator Type	Failsafe
Actuator Options	Indicators

Description	Min	Typ	Max	Units
Frequency Range	DC		53	GHz
Impedance		50		Ohms
Operating Voltage	26	28	30	Volts
Actuating Current @ 28 Volts			200	mA
VSWR		1.9:1	2.8:1	
Insertion Loss		0.8	1.8	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 - 18	18 - 26.5	26.5 - 40	40 - 50	GHz
VSWR, Max	1.2:1	1.3:1	1.6:1	1.6:1	1.8:1	
Insertion Loss, Max	0.2	0.3	0.6	0.6	1.1	dB
Isolation, Min	80	70	70	70	50	dB

Performance by Frequency

Description	F6	F7	F8	F9	F10	Units
Frequency Range	50 - 52	52 - 53				GHz
VSWR, Max	2.2:1	2.8:1				
Insertion Loss, Max	1.3	1.8				dB
Isolation, Min	50	50				dB


Features:

- Single Pole Double Throw (SPDT) Electromechanical Relay Switch
- DC to 53 GHz Frequency Range
- Failsafe Actuator
- Terminated
- Indicators
- 1M Lifecycle Rating
- Insertion Loss 0.8 dB typ
- Isolation > 80 dB typ
- VSWR as low as 1.2:1 max
- Solder Terminal Pins for DC 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

Fairview Microwave
 301 Leora Ln., Suite 100
 Lewisville, TX 75056
 Tel: 1-800-715-4396 / (972) 649-6678
 Fax: (972) 649-6689
www.fairviewmicrowave.com
sales@fairviewmicrowave.com

Mechanical Specifications

Size

Length	1.95 in [49.53 mm]
Width/Diameter	2.75 in [69.85 mm]
Height	0.92 in [23.37 mm]
Weight	0.16 lbs [72.57 g]
Finish	Electroless Nickel

Connectors

RF Connector Type	2.4mm Female
Control Connector	Solder Terminals

Environmental Specifications

Temperature

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

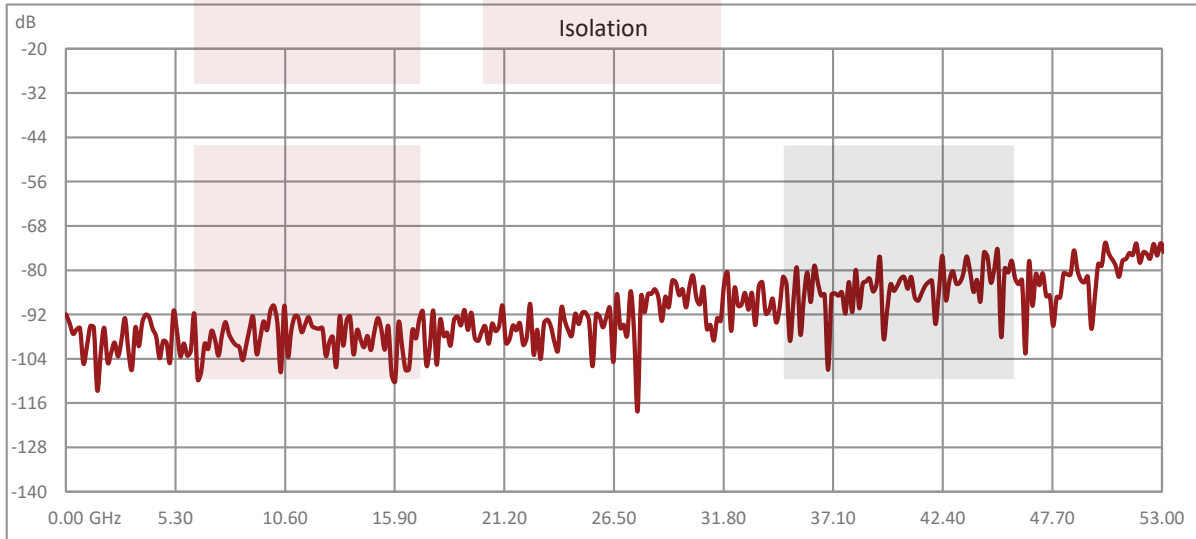
Shock	MIL-STD-202 Method 213, Condition D, 500G (non operational)
Vibration	MIL-STD-202 Method 204, Condition D, 10G RMS (non operational)

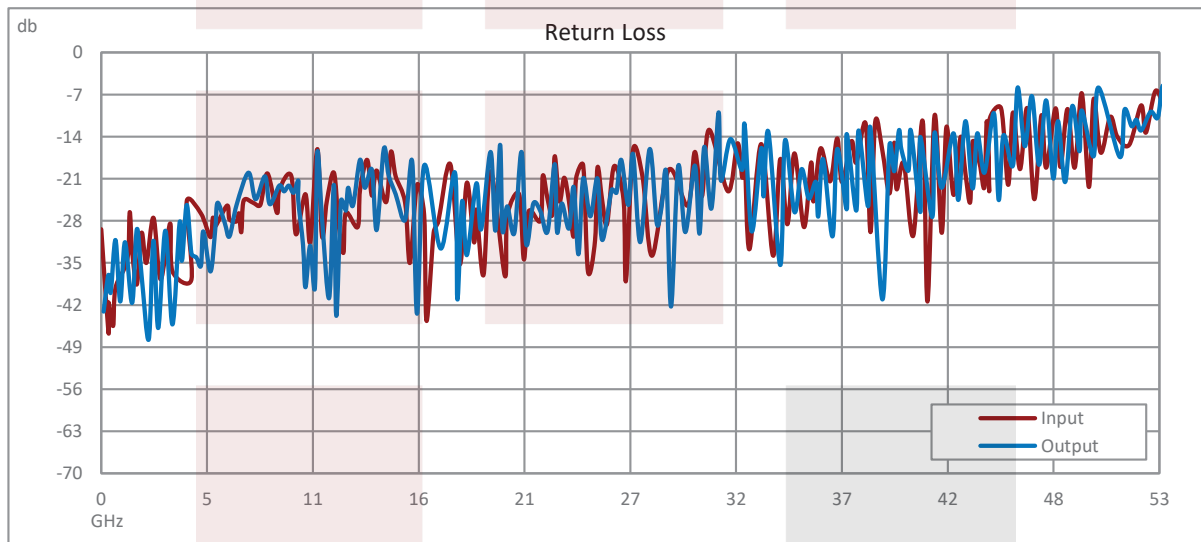
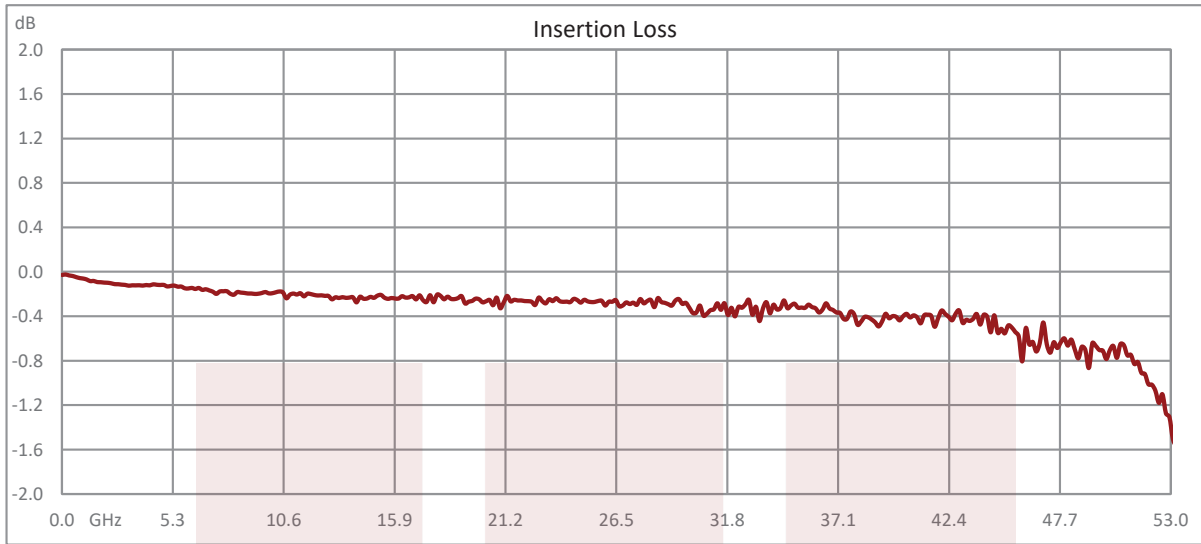
Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

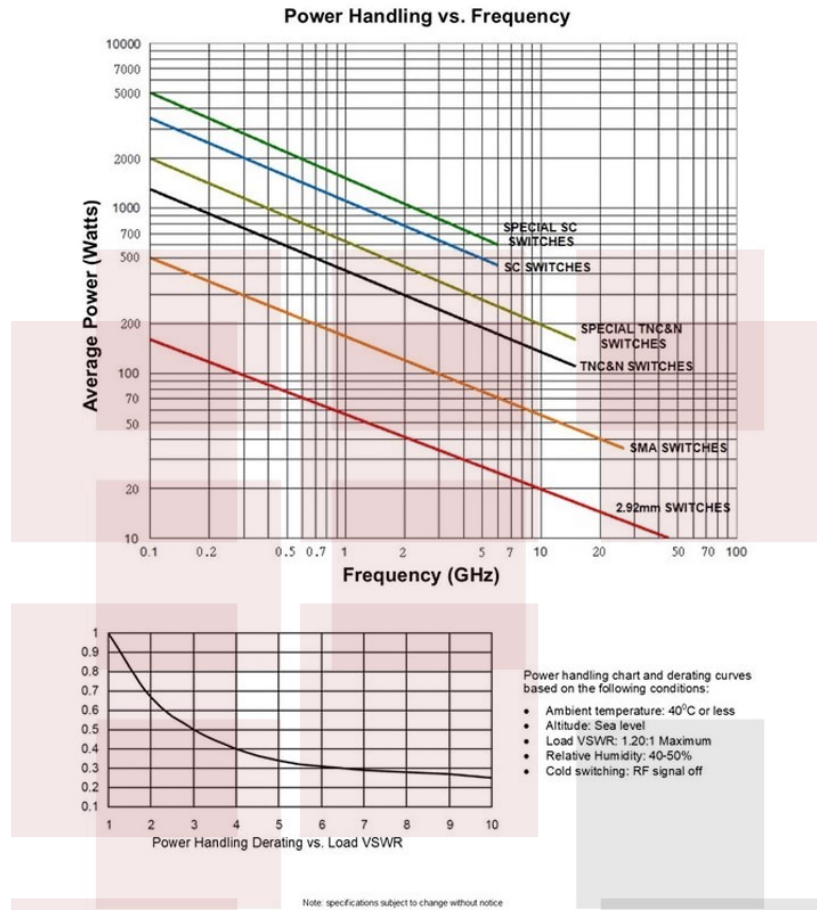
Notes:

Typical Performance Data





Power Handling vs. Frequency

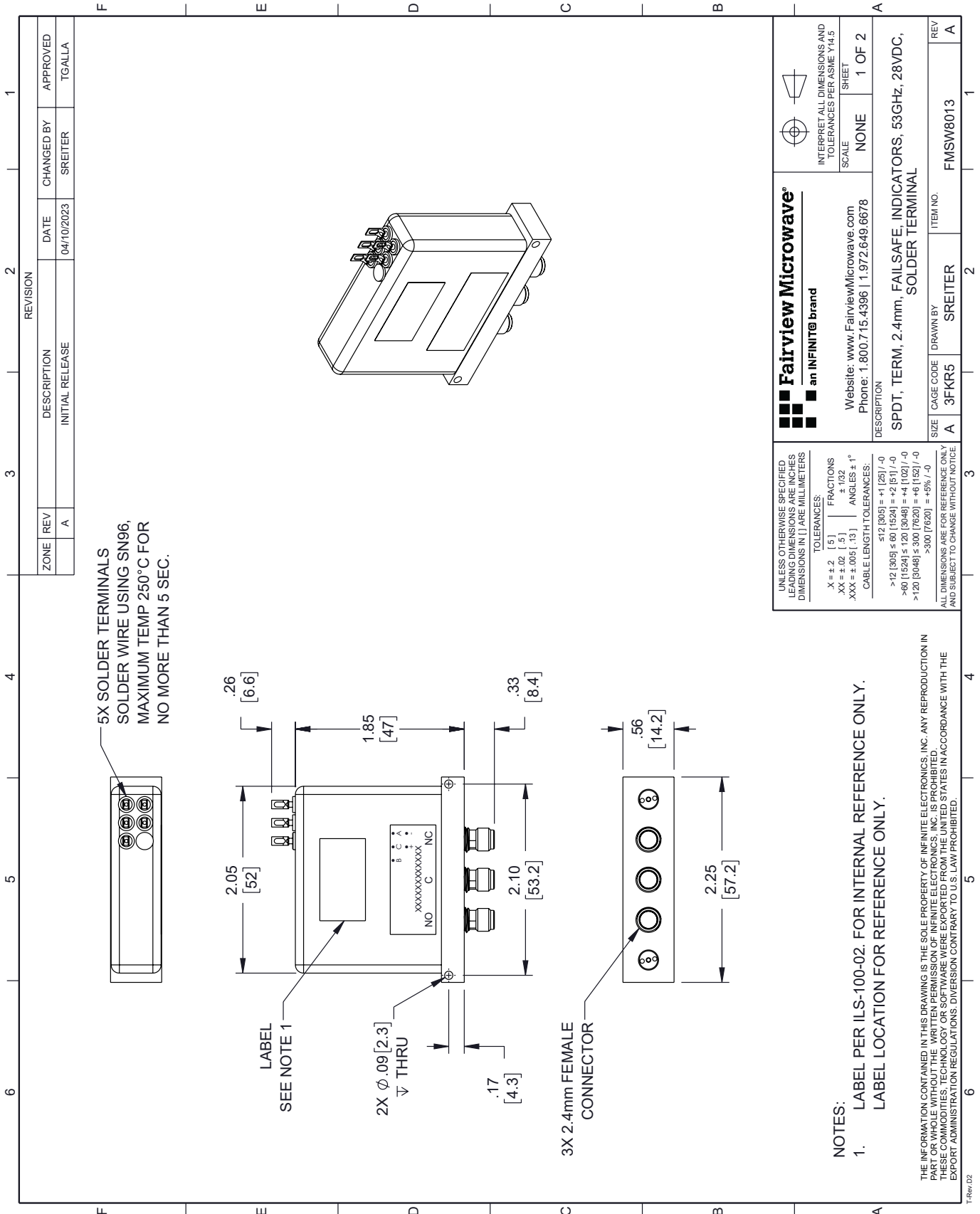


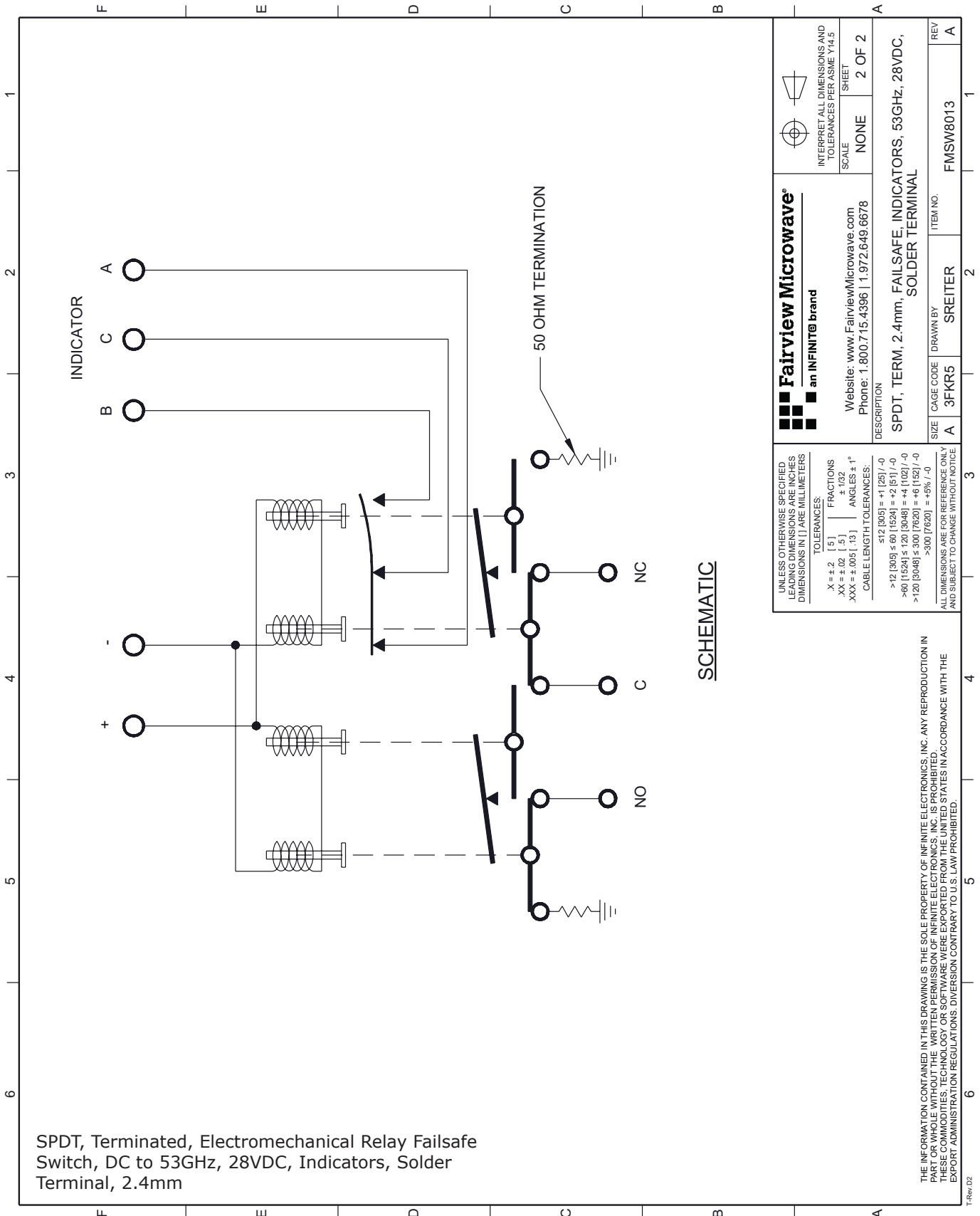
SPDT, Terminated, Electromechanical Relay Failsafe Switch, DC to 53GHz, 28VDC, Indicators, Solder Terminal, 2.4mm from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SPDT, Terminated, Electromechanical Relay Failsafe Switch, DC to 53GHz, 28VDC, Indicators, Solder Terminal, 2.4mm FMSW8013](https://www.fairviewmicrowave.com/spdt-failsafe-53-ghz-electro-mechanical-relay-switch-indicators-28v-2.4mm-fmsw8013)

URL: <https://www.fairviewmicrowave.com/spdt-failsafe-53-ghz-electro-mechanical-relay-switch-indicators-28v-2.4mm-fmsw8013-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.





SPDT, Terminated, Electromechanical Relay Failsafe Switch, DC to 53GHz, 28VDC, Indicators, Solder Terminal, 2.4mm

<p>Fairview Microwave® an INFINITE® brand</p> <p>Website: www.FairviewMicrowave.com Phone: 1.800.715.4396 1.972.649.6678</p>	<p>INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5</p>
	<p>SCALE: NONE</p> <p>SHEET: 2 OF 2</p>
<p>DESCRIPTION:</p> <p>SPDT, TERM, 2.4mm, FAILSAFE, INDICATORS, 53GHz, 28VDC, SOLDER TERMINAL</p>	
<p>UNLESS OTHERWISE SPECIFIED, LEADING DIMENSIONS ARE INCHES, DIMENSIONS IN [] ARE MILLIMETERS</p> <p>TOLERANCES:</p> <p>.X = ±.2 [.5] FRACTIONS .XX = ±.02 [.5] ±.132 ANGLES ± 1° .XXX = ±.005 [.13]</p> <p>CABLE LENGTH TOLERANCES:</p> <p>512 [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</p> <p>ALL DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO CHANGE WITHOUT NOTICE</p>	<p>ITEM NO. FMSW8013</p> <p>REV A</p>
<p>SIZE A</p> <p>CAGE CODE 3FKR5</p> <p>DRAWN BY SREITER</p>	<p>DESCRIPTION</p>

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF INFINITE ELECTRONICS, INC. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF INFINITE ELECTRONICS, INC. IS PROHIBITED. THESE COMMODITIES, TECHNOLOGY OR SOFTWARE WERE EXPORTED FROM THE UNITED STATES IN ACCORDANCE WITH THE EXPORT ADMINISTRATION REGULATIONS. DIVERSION CONTRARY TO U.S. LAW PROHIBITED.