

SPDT, 1P64 Rated Electromechanical Relay Latching Self Cut Off Switch, DC to 12 GHz, 90W, 12VDC, N

The FMSW6521 is a Ruggedized Single Pole Double Throw (SP2T) electromechanical relay switch that operates across a broadband frequency range of DC to 12 GHz and can handle up to 90W of average power in a break before make condition. The 50 Ohm design is IP64 compliant with a Level 1 moisture seal and specially designed to operate reliably in harsh usage environments and conditions, such as over extreme temperatures and wet or dusty environments. Intrusion protection offers full protection against dust and other particulants. Moisture protection enables resistance to splashes in all directions. The switch features a Latching Self Cut-Off 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 0.2 dB insertion loss and isolation greater than 90 dB. This switch requires +12Vdc bias voltage, operates over a wide temperature range of -54°C to +85°C, and is rated for 1 million lifecycles. The rugged and compact package assembly supports female N-Type connectors and terminal solder 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 = 12 Vdc)

Switch Type SPDT
 Actuator Type Latching

Description	Min	Typ	Max	Units
Frequency Range	DC		18	GHz
Impedance		50		Ohms
Operating Voltage	11	12	13	Volts
Actuating Current @ 12 Volts			200	mA
VSWR		1.1:1	1.4:1	
Insertion Loss		0.2	0.5	dB
Isolation	60	90		dB
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	0.4	0.4	0.5		dB
Isolation, Min	90	80	70	60		dB

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	0.182 lbs [82.55 g]



Features:

- Single Pole Double Throw (SP2T) Ruggedized Electromechanical Relay Switch
- IP64 Level 1 Rated
- DC to 12 GHz Frequency Range
- Latching Self Cut-Off Actuator
- 1M Lifecycle Rating
- Insertion Loss 0.2 dB typ
- Isolation > 90 dB typ
- VSWR as low as 1.25:1 max
- Solder Terminal Pins for DC Control
- +12 Volt DC Bias
- N-Type Female Connectors
- -54°C to +85°C Operating Temperature
- Up to 90 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

Connectors

RF Connector Type
Control Connector

N Female
Solder Terminals

Environmental Specifications

Temperature

Operating Range
Storage Range

-54 to +85 deg C
-55 to +100 deg C

Ingress Protection (IP) Rating

IP64

Shock

MIL-STD-202 Method 213, Condition D, 500 G (non oper)

Vibration

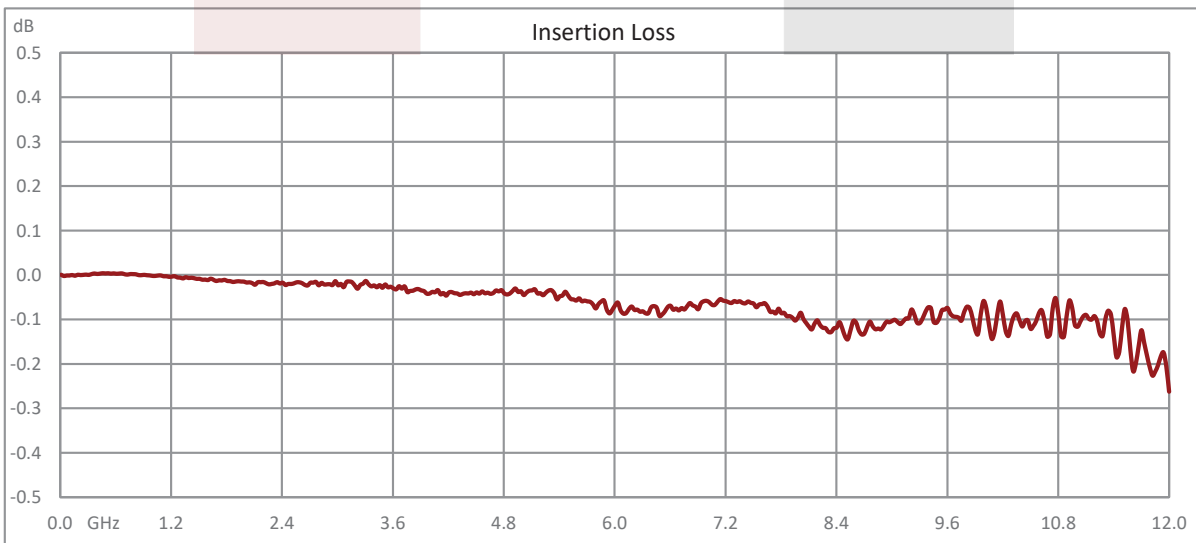
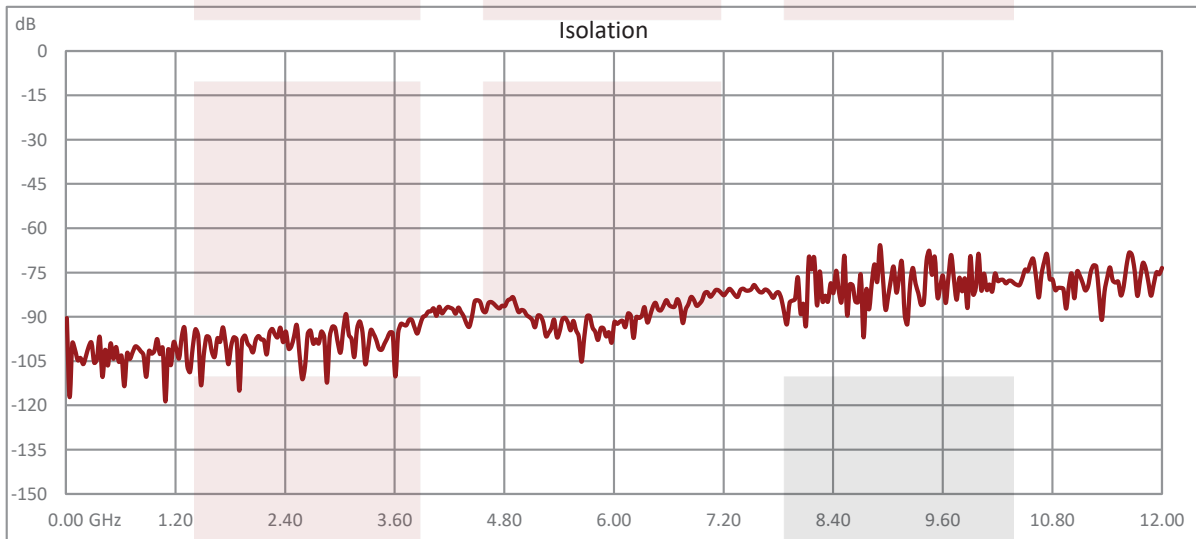
MIL-STD-202 Method 204, Condition D, 10G RMS (non oper)

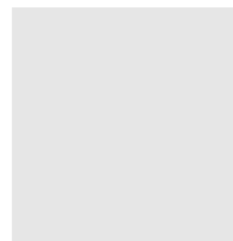
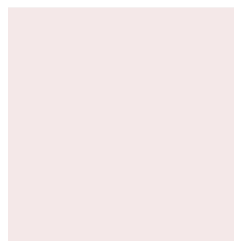
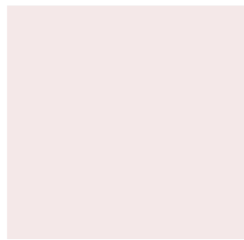
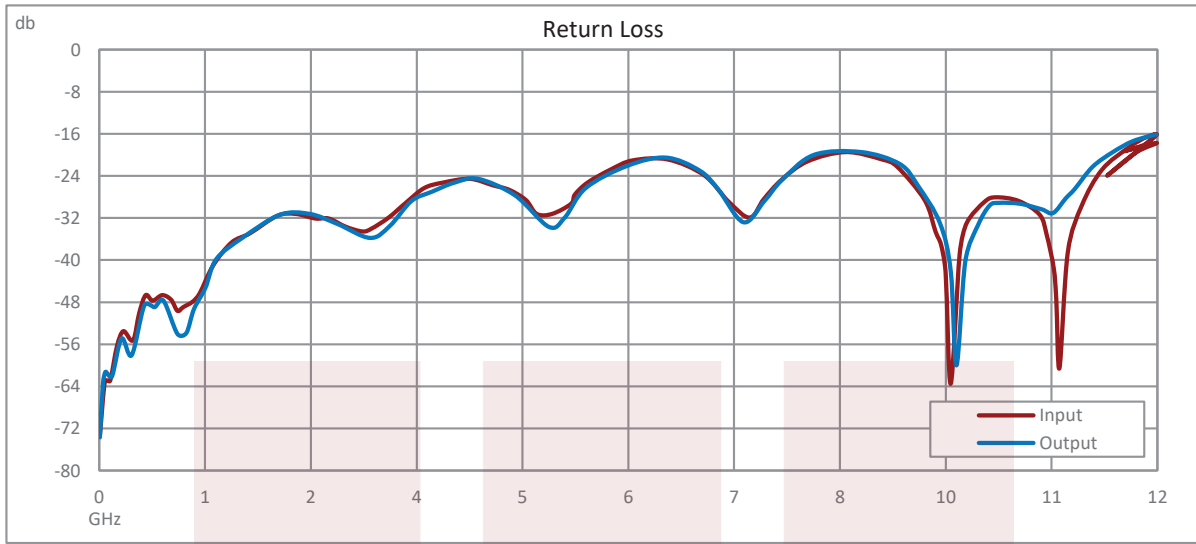
Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

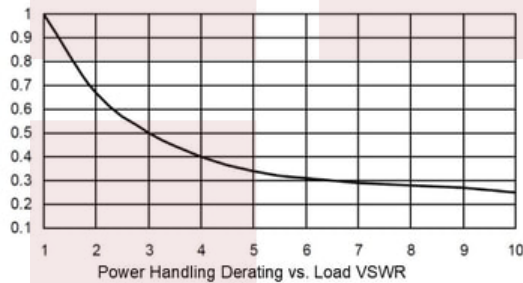
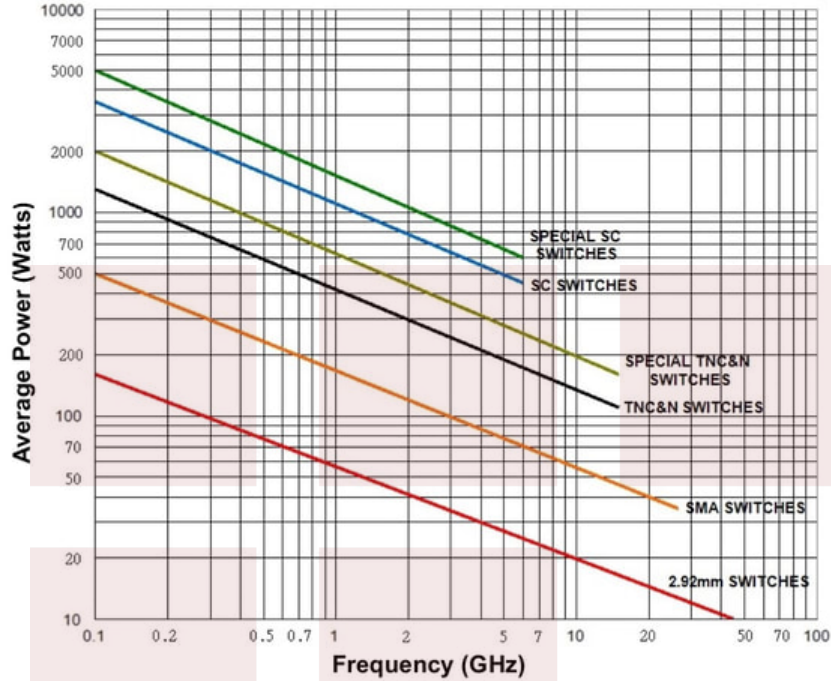
Typical Performance Data





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

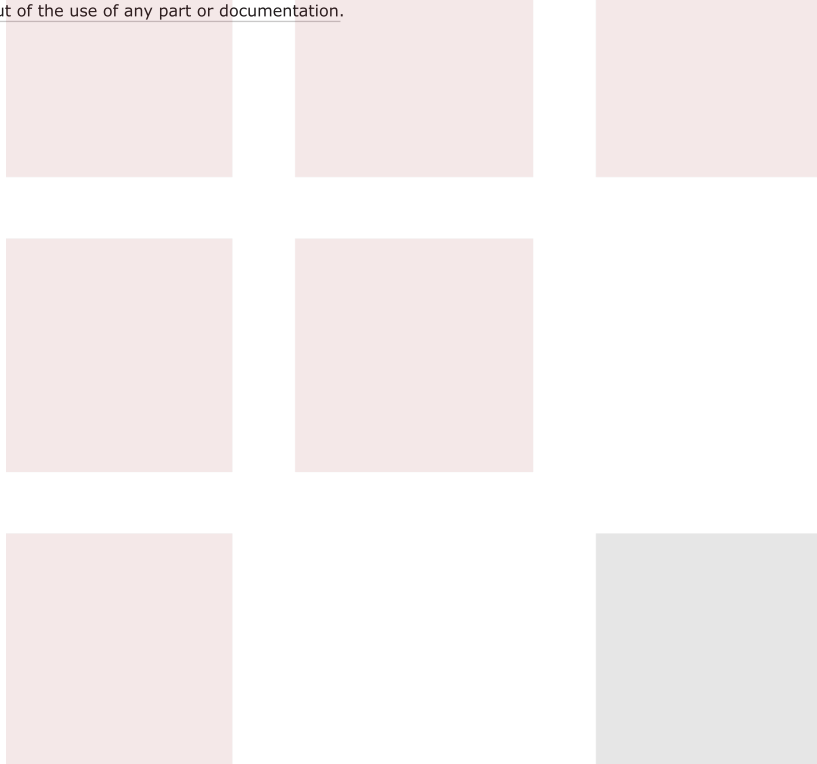
Note: specifications subject to change without notice

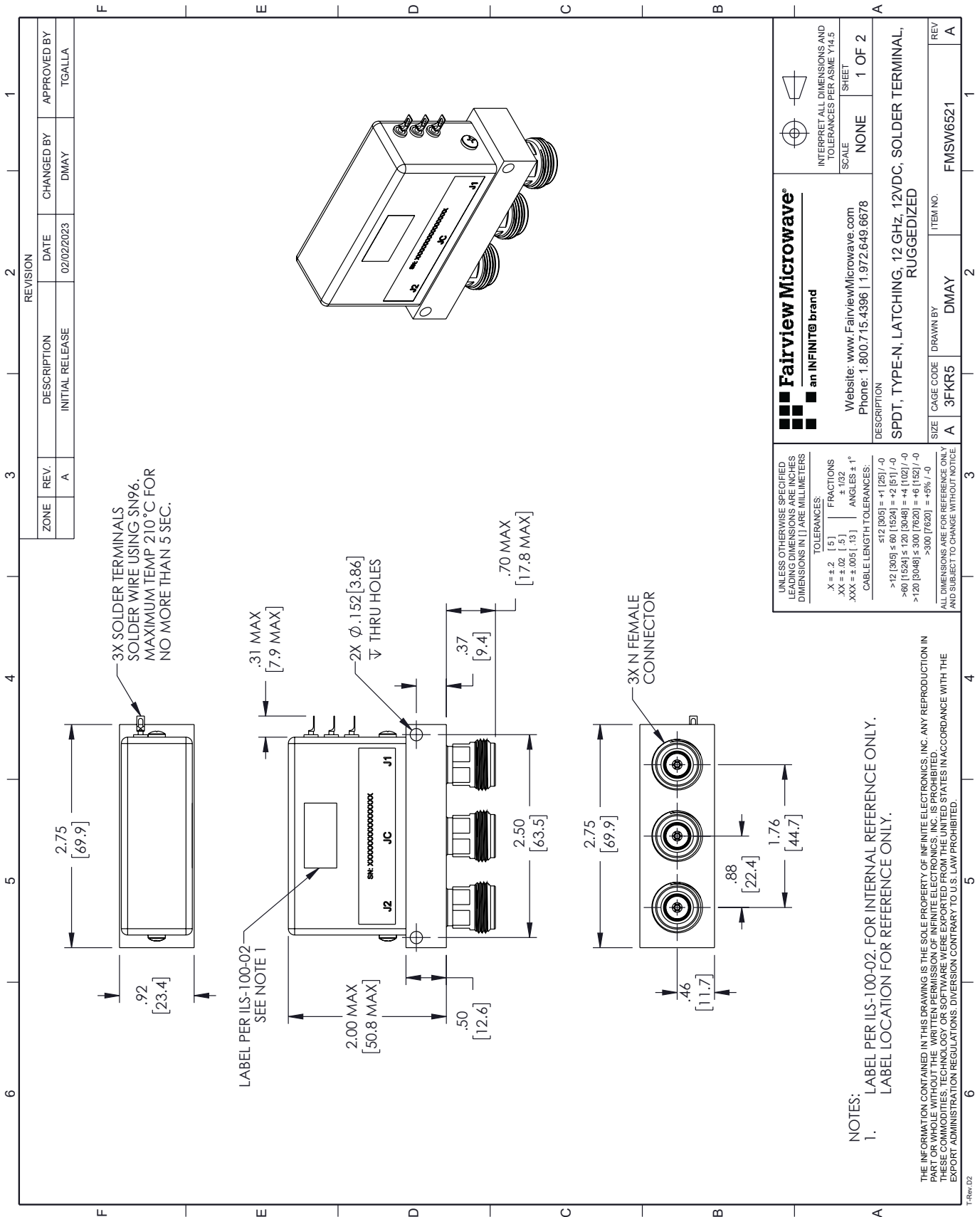
SPDT, 1P64 Rated Electromechanical Relay Latching Self Cut Off Switch, DC to 12 GHz, 90W, 12VDC, N from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

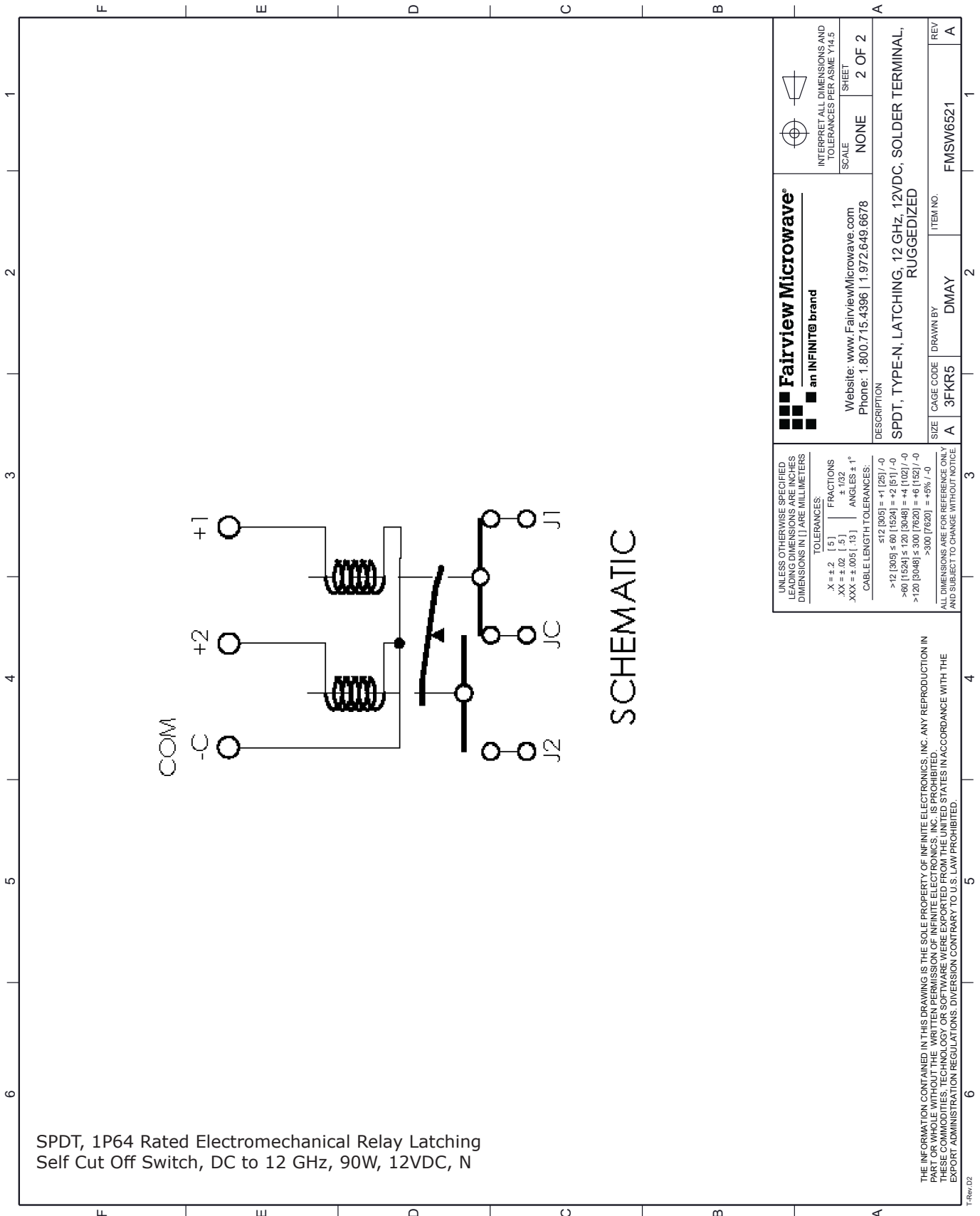
For additional information on this product, please click the following link: [SPDT, 1P64 Rated Electromechanical Relay Latching Self Cut Off Switch, DC to 18 GHz, 90W, 12VDC, N FMSW6521](#)

URL: <https://www.fairviewmicrowave.com/spdt-latching-12-ghz-electro-mechanical-relay-switch-n-fmsw6521-p.aspx>

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Self Cut Off Switch, DC to 12 GHz, 90W, 12VDC, N

<p>Fairview Microwave an INFINIT[®] 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>UNLESS OTHERWISE SPECIFIED, LEADING DIMENSIONS ARE INCHES AND DIMENSIONS IN [] ARE MILLIMETERS</p> <p>TOLERANCES:</p> <p>.X = ±.2 [.5] FRACTIONS ± 1/32</p> <p>.XX = ±.02 [.5] ANGLES ± 1°</p> <p>.XXX = ±.005 [.13]</p> <p>CABLE LENGTH TOLERANCES:</p> <p>≤ 12 [305] = ± 1 [25] / -0</p> <p>> 12 [305] ≤ 60 [1524] = +2 [51] / -0</p> <p>> 60 [1524] ≤ 120 [3048] = +4 [102] / -0</p> <p>> 120 [3048] ≤ 300 [7620] = +6 [152] / -0</p> <p>> 300 [7620] = +5% / -0</p>		<p>DESCRIPTION</p> <p>SPDT, TYPE-N, LATCHING, 12 GHz, 12VDC, SOLDER TERMINAL, RUGGEDIZED</p>	
SIZE	CAGE CODE	DRAWN BY	ITEM NO.
A	3FKR5	DMAY	FMSW6521
REV			A

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