

## SPDT, IP64 Rated Electromechanical Relay Latching Switch, Terminated, DC to 18 GHz, 90W, TTL, Indicators, diodes, 28VDC, SMA

The FMSW6529 is a Ruggedized SPDT electromechanical relay switch that operates across a broadband frequency range from DC to 18 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 specifically 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 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. The output ports are terminated in 50 ohms when switched in the isolation (off) state. 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 0.2 dB insertion loss and isolation greater than 85 dB. This switch requires +28Vdc bias voltage, operates over a temperature range of -54°C to +85°C, and is rated for 2 million lifecycles. The rugged and compact package assembly supports SMA 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, Diodes
TTL Control	on: 2.4 to 5.5 Volts off: 0 to 0.8 Volts

Description	Min	Typ	Max	Units
Frequency Range	DC		18	GHz
Impedance		50		Ohms
Operating Voltage	26	28	30	Volts
Actuating Current @ 28 Volts			200	mA
VSWR		1.15:1	1.4:1	
Insertion Loss		0.2	0.4	dB
Isolation	65	90		dB
Switching Time		20		ms

### Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 6	6 - 12	12 - 18			GHz
VSWR, Max	0.15:1	0.25:1	0.4:1			
Insertion Loss, Max	0.15	0.25	0.4			dB
Isolation, Min	85	70	65			dB



### Features:

- SPDT Electromechanical Relay Switch
- IP64 Level 1 Rated
- DC to 18 GHz Frequency Range
- Latching Actuator
- Internal 50 Ohm Terminations
- TTL Control Logic
- Indicators
- Suppression Diodes
- 2M Lifecycle Rating
- Insertion Loss 0.2 dB typ
- Isolation > 85 dB typ
- VSWR as low as 1.2:1 max
- SMA Female Connectors
- +28 Volt DC Bias
- Solder Terminal Pins for DC Command Control
- -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

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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	0.076 lbs [34.47 g]

**Connectors**

RF Connector Type	Terminal Female
Control Connector	Solder Terminals

**Environmental Specifications**

**Temperature**

Operating Range	-54 to +85 deg C
Storage Range	-55 to +100 deg C

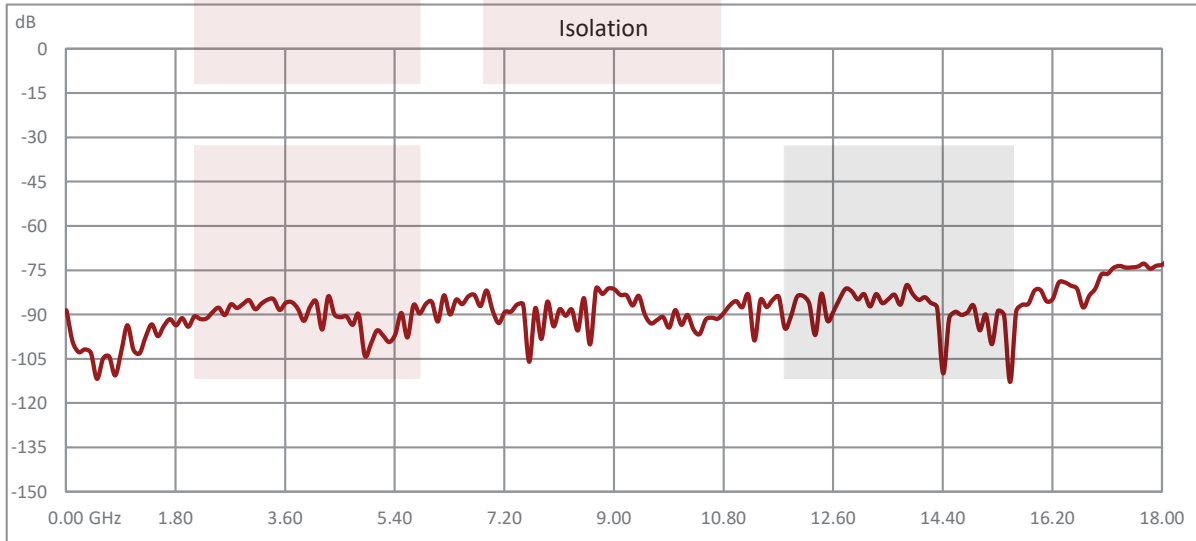
Ingress Protection (IP) Rating	IP64
Shock	MIL-STD-202 Method 213, Condition D, 500 G (non oper)
Vibration	MIL-STD-202 Method 204, Condition D, 10G RMS (non oper)

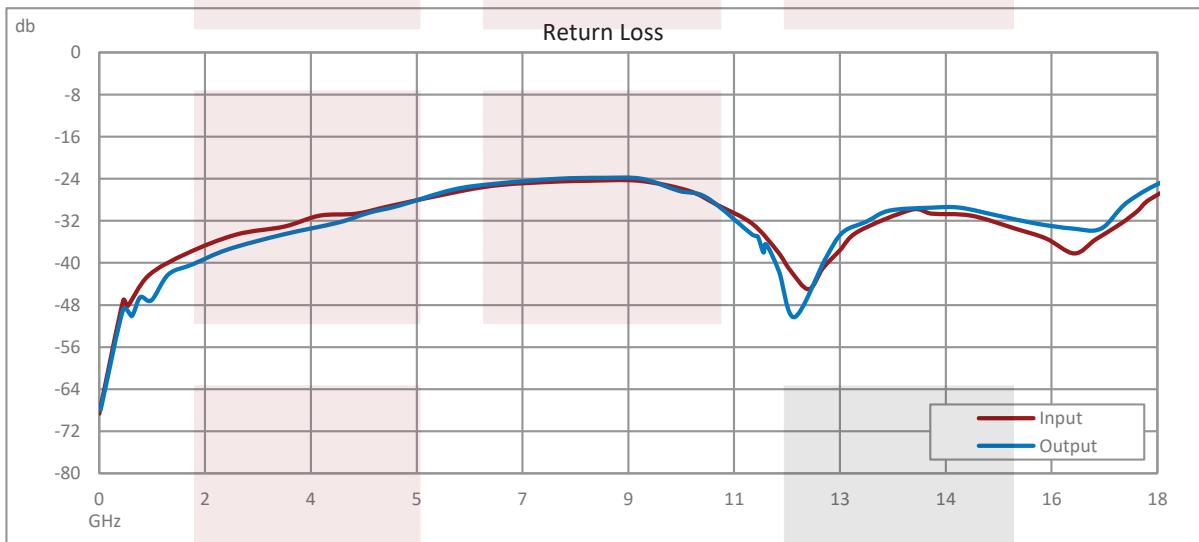
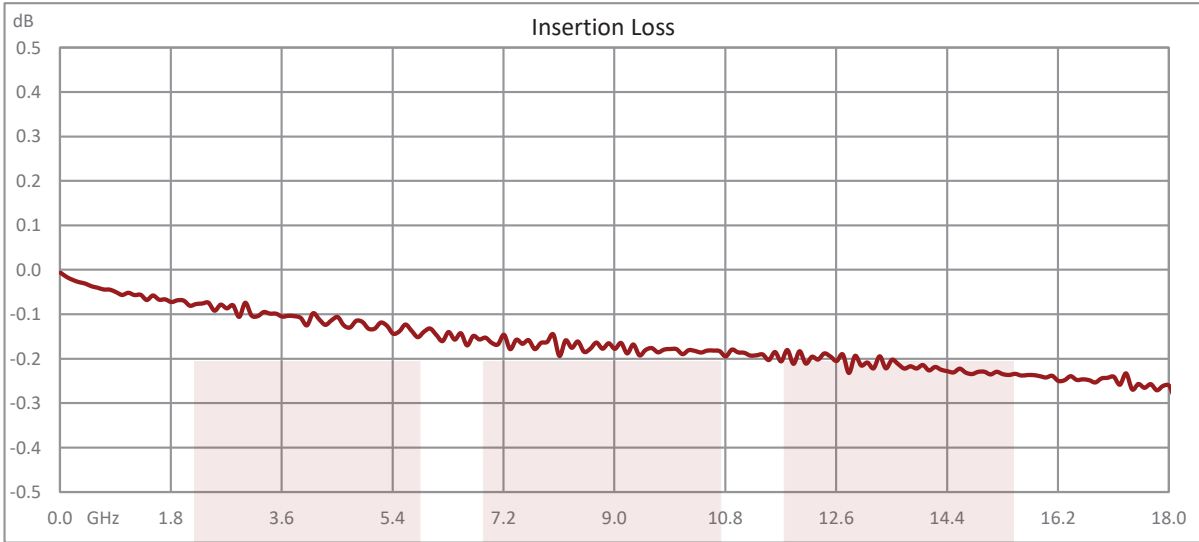
**Compliance Certifications** (see [product page](#) for current document)

**Plotted and Other Data**

Notes:

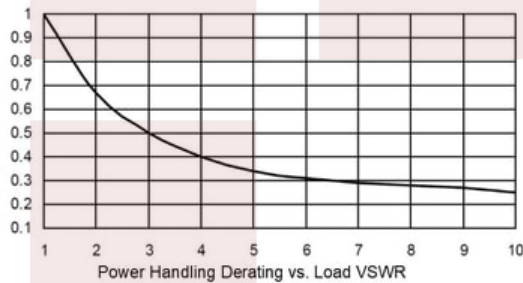
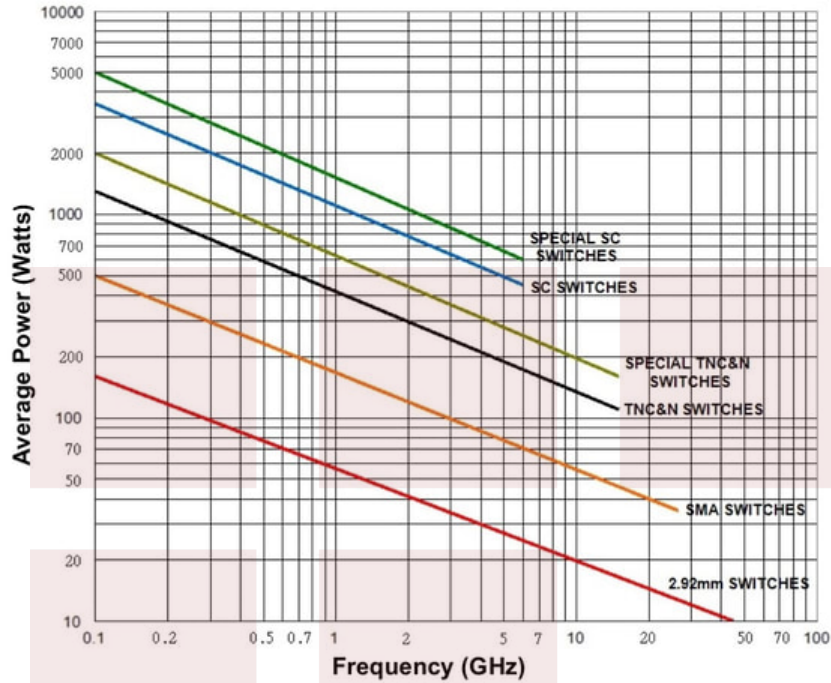
**Typical Performance Data**





**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

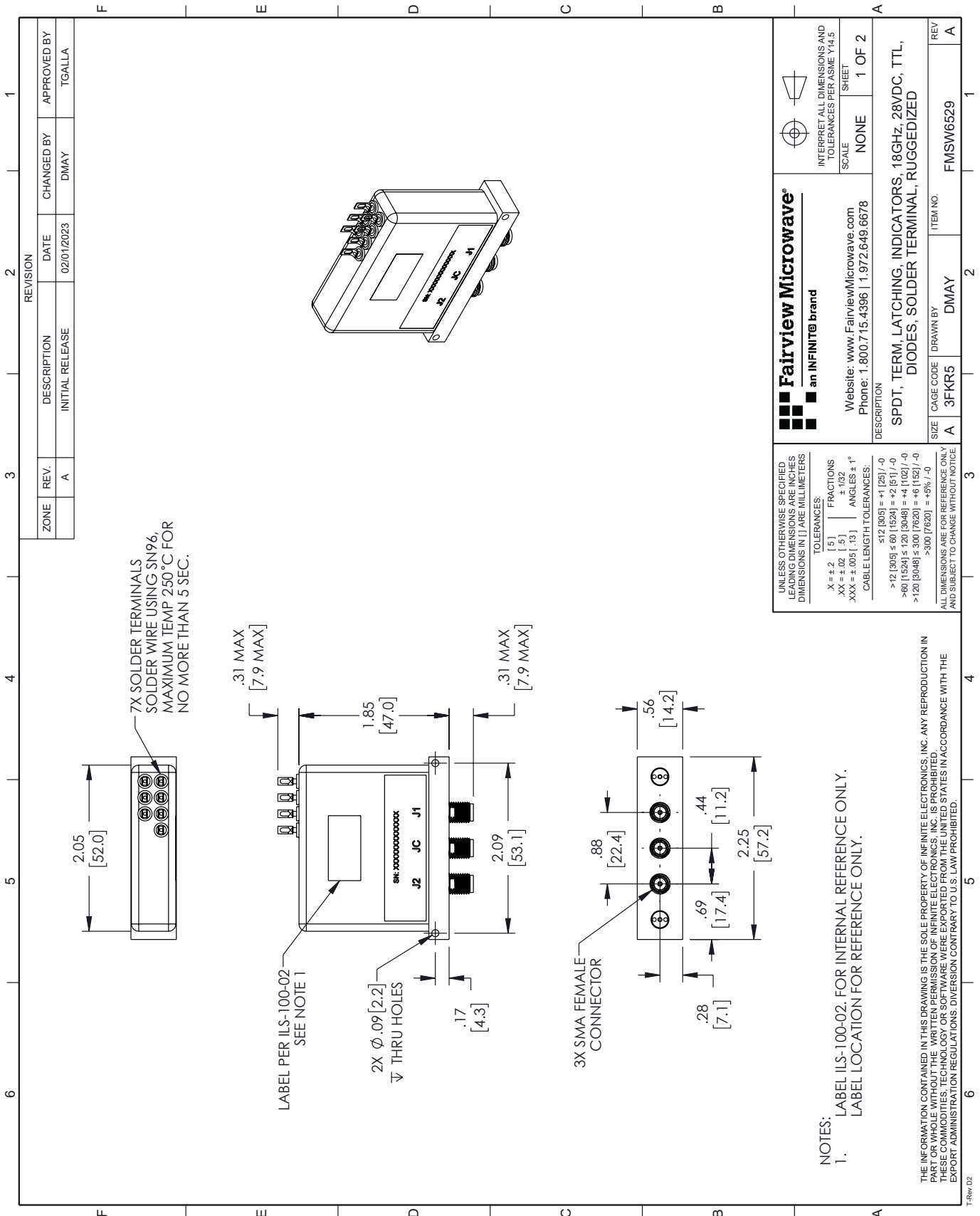
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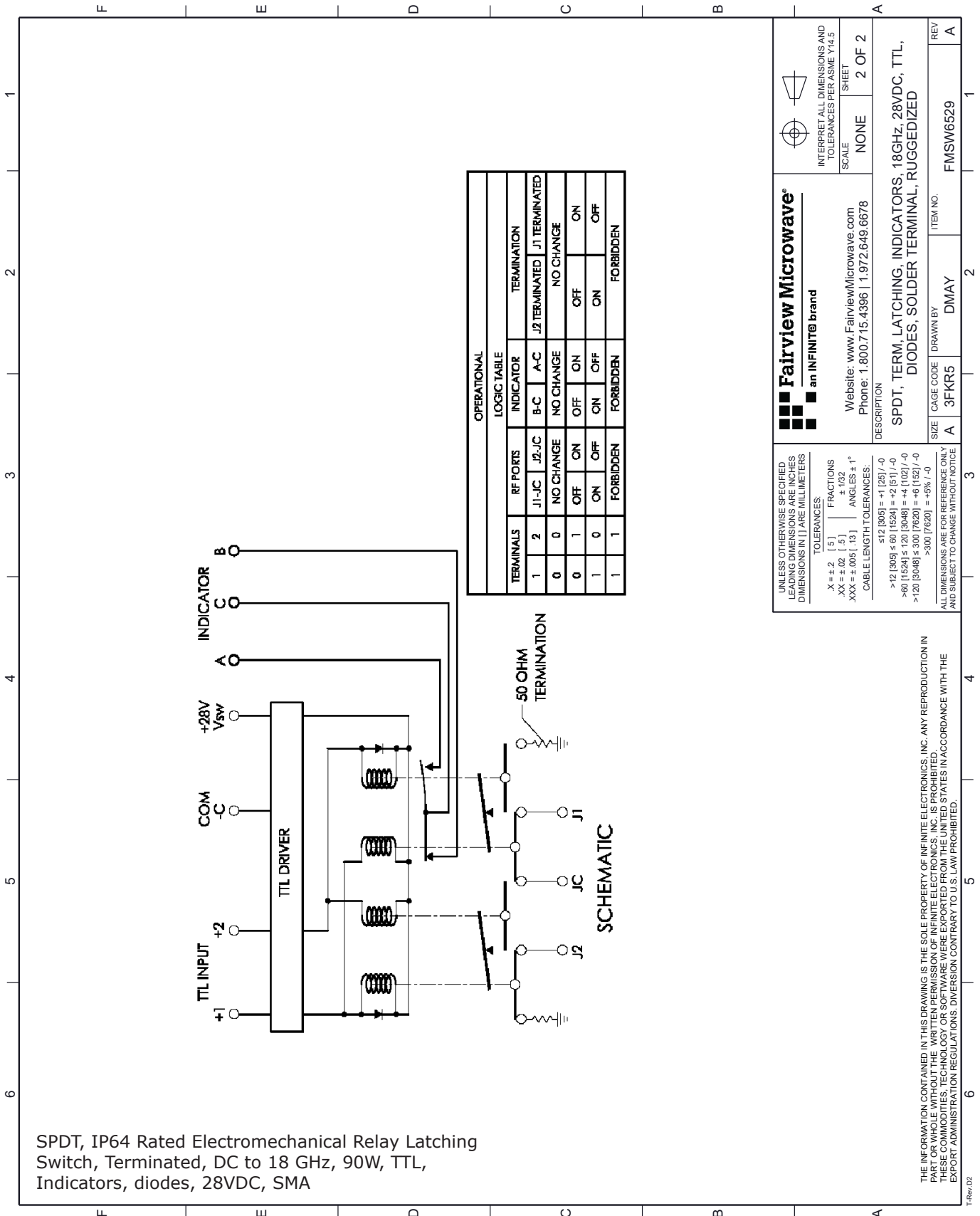
For additional information on this product, please click the following link: [SPDT, IP64 Rated Electromechanical Relay Latching Switch, Terminated, DC to 18 GHz, 90W, TTL, Indicators, diodes, 28VDC, SMA FMSW6529](#)

URL: <https://www.fairviewmicrowave.com/spdt-latching-18-ghz-electro-mechanical-relay-switch-indicators-diodes-fm-sw6529-p.aspx>

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OPERATIONAL LOGIC TABLE						
TERMINALS		RF PORTS		INDICATOR		TERMINATION
1	2	J1-JC	J2-JC	B-C	A-C	J2 TERMINATED   J1 TERMINATED
0	0	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE
0	1	OFF	ON	OFF	ON	OFF
1	0	ON	OFF	ON	OFF	ON
1	1	FORBIDDEN	FORBIDDEN	FORBIDDEN	FORBIDDEN	FORBIDDEN

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

TOLERANCES:  
 .X = ±.2 [ .5 ] FRACTIONS  
 .XX = ±.02 [ .5 ] ±.132 ANGLES ± 1°  
 .XXX = ±.005 [ .13 ]

CABLE LENGTH TOLERANCES:  
 >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

DESCRIPTION:  
 SPDT, TERM, LATCHING, INDICATORS, 18GHZ, 28VDC, TTL, DIODES, SOLDER TERMINAL, RUGGEDIZED

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

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