

**SP4T Normally Open Electro-Mechanical Relay Switch From DC to 22 GHz, 20 Watts with Indicators, TTL, Diodes, SMA**

The FMSW6129 is an SP4T Electromechanical Relay Switch that operates over a wide frequency band from DC to 22 GHz and has a rating of 20 Watts input power (CW). Rated for 1M life cycles for high reliability operation, this design uses a Normally Open Actuator with a break before make configuration, TTL logic driver, position indicators and suppression diodes. The switch exhibits exceptional electrical performance specified from 0.3 dB max for insertion loss and 75 dB min for isolation, and guaranteed over -55°C to +85°C. The assembly requires an operating voltage of +28Vdc and is certified as RoHS compliant. External connectors include solder terminals and SMA female connectors.

**Electrical Specifications**

Switch Type	SP4T, Reflective
Actuator Type	Normally Open
Switching Sequence	Break Before Make
Actuator Options	Indicators, TTL Logic, Diodes
TTL Control	on: 2.4 to 5 Volts off: 0 to 0.8 Volts

Description	Min	Typ	Max	Units
Frequency Range	DC		22	GHz
Impedance		50		Ohms
Operating Voltage		28		Volts
Actuating Current @ 28 Volts		135		mA
VSWR			1.6:1	
Insertion Loss			0.6	dB
Isolation	60			dB
Input Power (CW) (at 22 GHz)			20	Watts

**Performance by Frequency**

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 4	4 - 8	8 - 12	12 - 18	18 - 22	GHz
VSWR, Max	1.2:1	1.3:1	1.4:1	1.5:1	1.6:1	
Insertion Loss, Max	0.3	0.35	0.4	0.5	0.6	dB
Isolation, Min	75	70	65	60	60	dB

**Mechanical Specifications**

<b>Size</b>	
Length	2.75 in [69.85 mm]
Width/Diameter	1.75 in [44.45 mm]
Height	1.75 in [44.45 mm]
Weight	0.367 lbs [166.47 g]
Body Material and Plating	Aluminum
Package Type	Connectorized
Operating Life	1,000,000 Cycles
Switching Time	15 ms Max



**Features:**

- Single Pole Four Throw Relay Switch
- DC to 22 GHz Frequency Range
- 1M Cycle Operating Life Min
- Normally Open Actuator
- TTL Logic Driver, Position Indicators, Suppression Diodes
- Insertion Loss 0.6 dB max
- Isolation 60 dB min
- 20 Watts Avg Power Max
- Switching Sequence Break Before Make

**Applications:**

- Test & Measurement
- Communications System
- Instrumentation

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**Connectors**

RF Connector Type	SMA Female
RF Connector Contact Material & Plating	Beryllium Copper, Gold
RF Connector Body Material & Plating	Passivated Stainless Steel
Control Connector	Solder Pin

**Environmental Specifications**

**Temperature**

Operating Range	-55 to +85 deg C
ESD Sensitivity	ESD Sensitive Material. Transport material in Approved ESD bags. Handle in approved ESD Workstation.



Environmental Specification Notes:  
 Designed to meet MIL-DTL-3928

**Compliance Certifications** (visit [www.FairviewMicrowave.com](http://www.FairviewMicrowave.com) for current document)

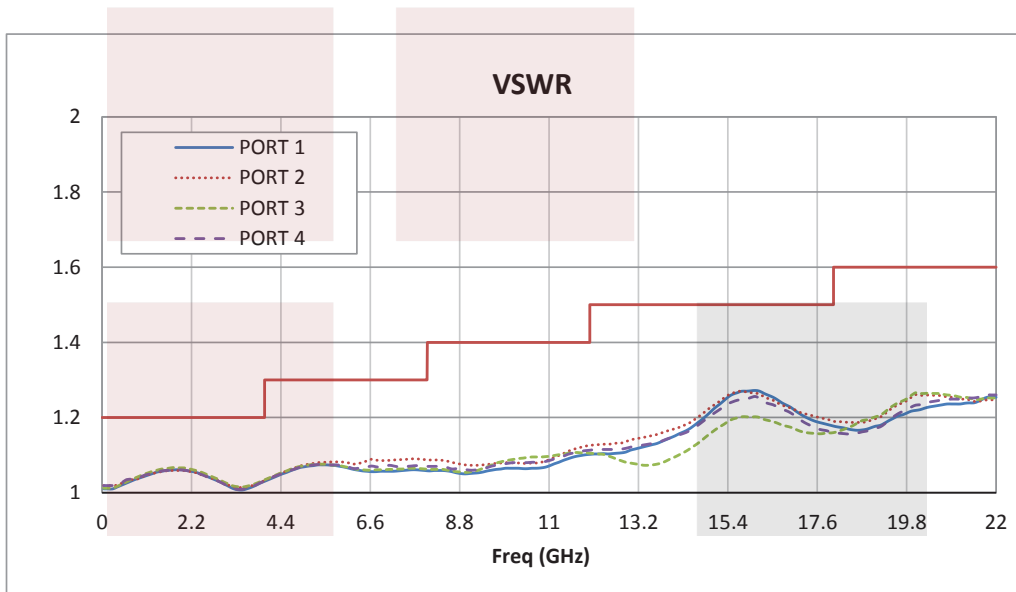
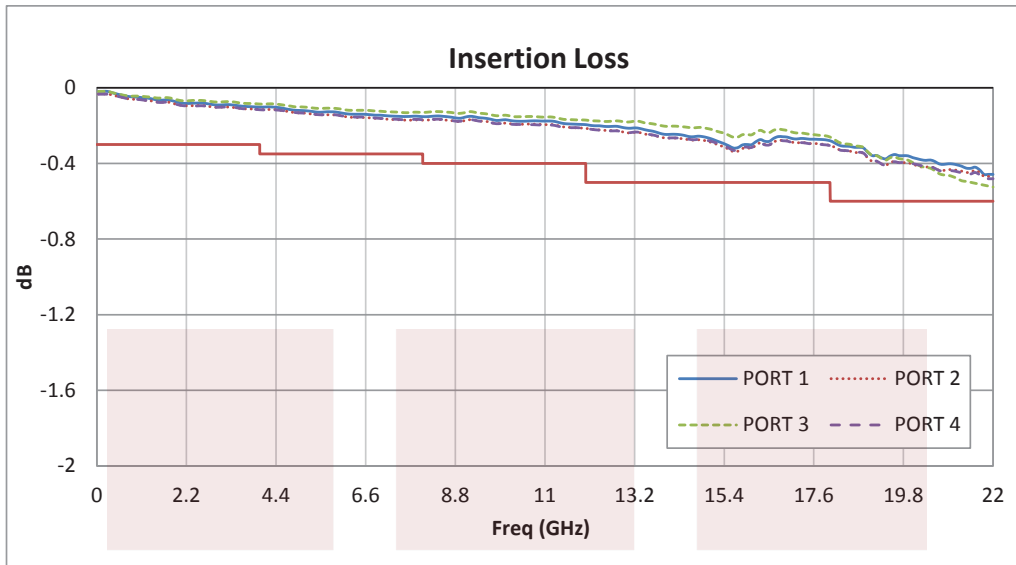
RoHS Compliant

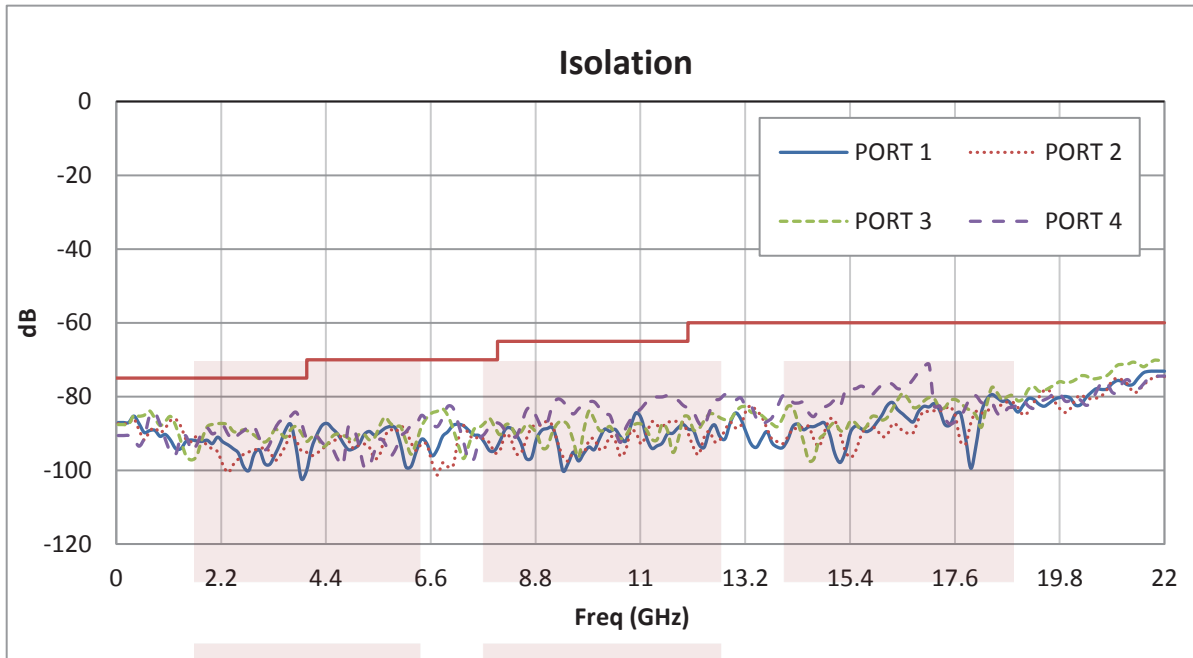
**Plotted and Other Data**

Notes:



**Typical Performance Data**



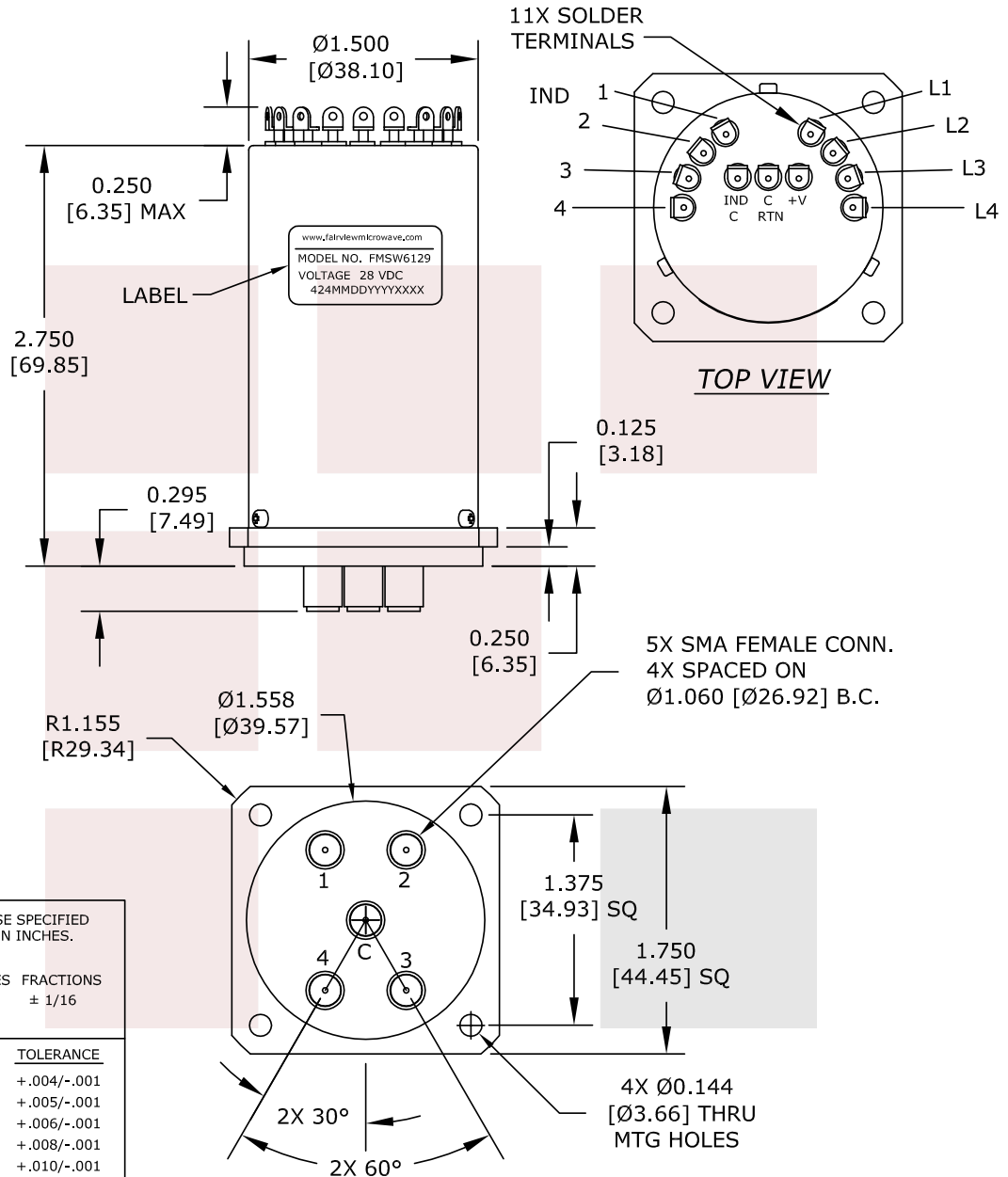


SP4T Normally Open Electro-Mechanical Relay Switch From DC to 22 GHz, 20 Watts with Indicators, TTL, Diodes, SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SP4T Normally Open Electro-Mechanical Relay Switch From DC to 22 GHz, 20 Watts with Indicators, TTL, Diodes, SMA FMSW6129](#)

URL: <http://www.fairviewmicrowave.com/sp4t-normally-open-electro-mechanical-relay-switch-indicators-ttl-fmsw6129-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.



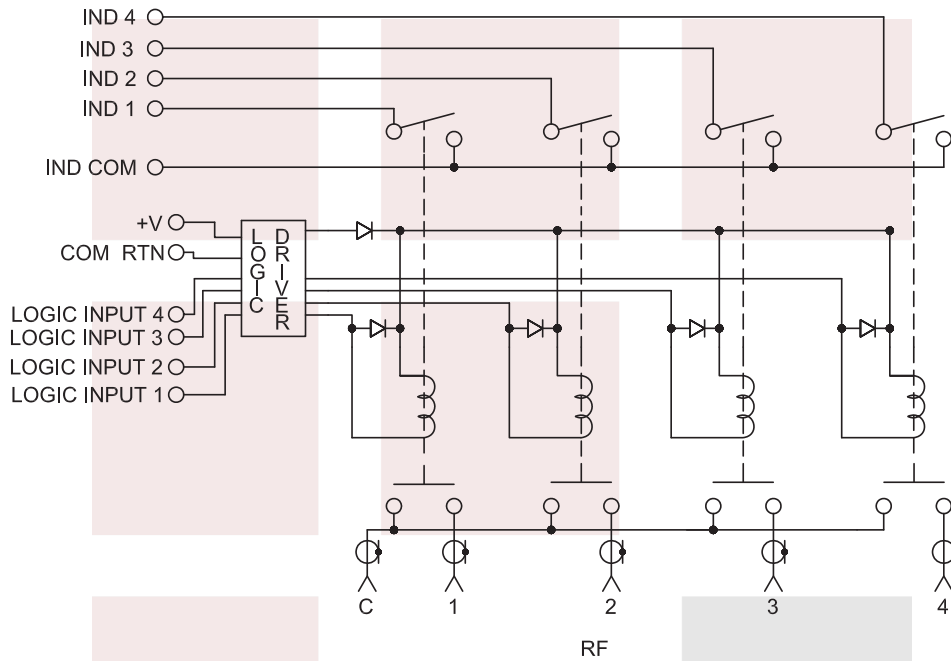
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:

DECIMALS	ANGLES	FRACTIONS
.XX ± .03	± 1°	± 1/16
.XXX ± .010		

HOLE DIAMETER	TOLERANCE
.0135 TO .125	+.004/- .001
.126 TO .250	+.005/- .001
.251 TO .500	+.006/- .001
.501 TO .750	+.008/- .001
.751 TO 1.000	+.010/- .001
1.001 TO 2.000	+.012/- .001

\* THESE DIMENSIONS AND TOLERANCES SUPERSEDE NOTE #1 ON TITLE BLOCK.

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ALLEN, TX 75013 WWW.FAIRVIEWMICROWAVE.COM		DWG NO		CAGE CODE	
TITLE SP4T Normally Open Electro-Mechanical Relay Switch From DC to 22 GHz, 20 Watts with Indicators, TTL, Diodes, SMA		FMSW6129		3FKR5	
CAD FILE	031115	SHEET	SCALE	N/A	SIZE A 200



SCHEMATIC NORMALLY OPEN SHOWN IN DE-ENERGIZED POSITION

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