

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

The FMSW6545 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 particulates. 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. Additional features include indicators to monitor the switch position. 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.



Features:

- SPDT Electromechanical Relay Switch
- DC to 18 GHz Frequency Range
- Latching Actuator
- Indicators
- 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

Electrical Specifications (TA = +25°C, DC Voltage = 28 Vdc)

Switch Type	SPDT
Actuator Type	Latching
Actuator Options	Indicators

Description	Min	Typ	Max	Units
Frequency Range	DC		18	GHz
Impedance		50		Ohms
Operating Voltage	26	28	30	Volts
Actuating Current @ 28 Volts			65	mA
VSWR		1.1:1	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	1.2:1	1.3:1	1.4:1			
Insertion Loss, Max	0.15	0.25	0.4			dB
Isolation, Min	85	70	65			dB

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	0.062 lbs [28.12 g]

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

SMA 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

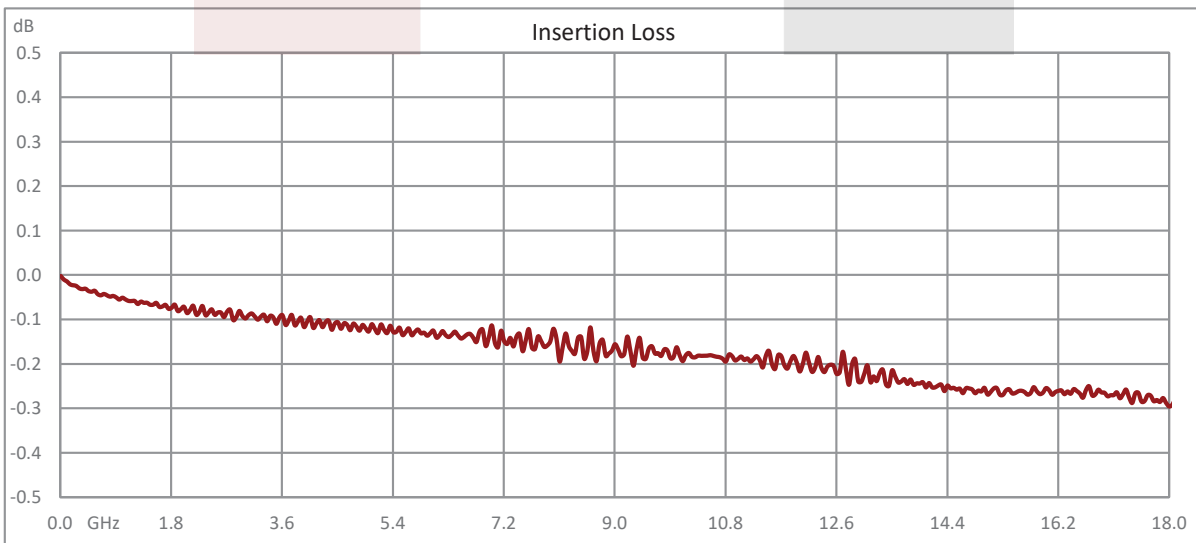
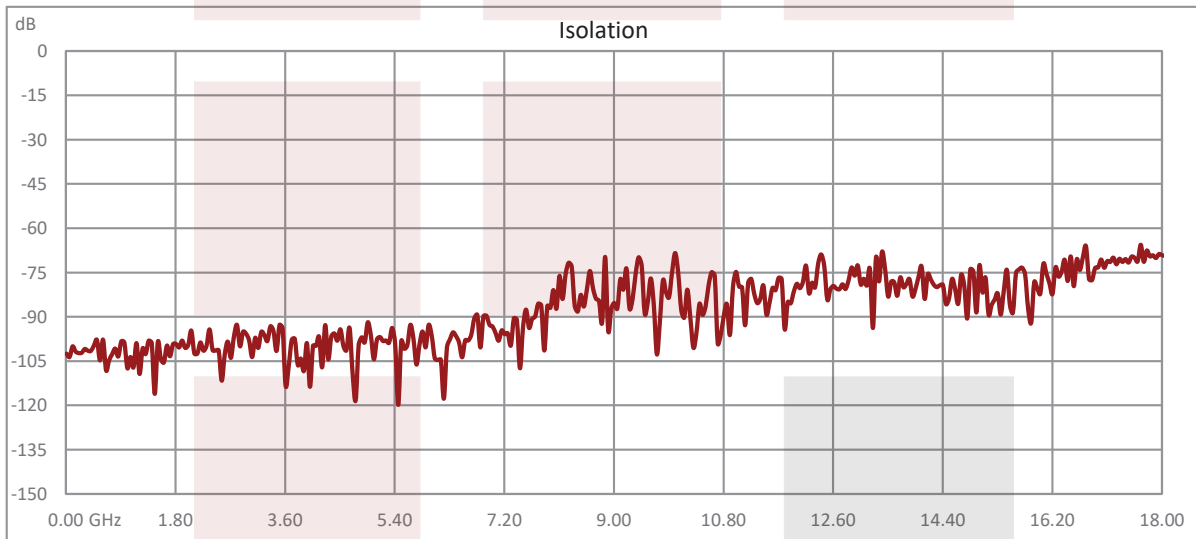
MIL-STD-202 Method 204, Condition D, 10G RMS (non oper)

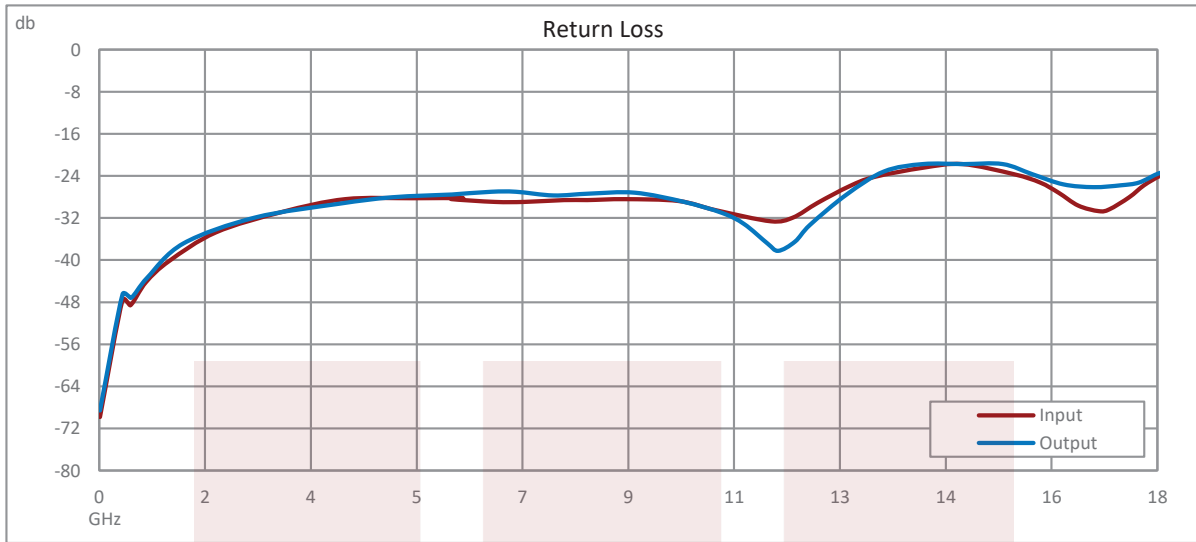
Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

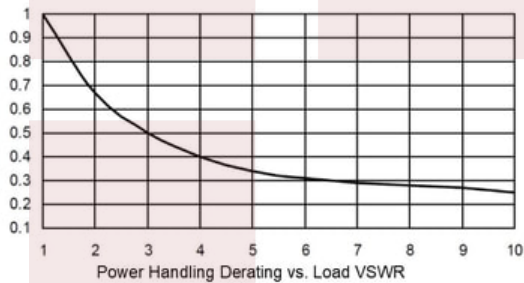
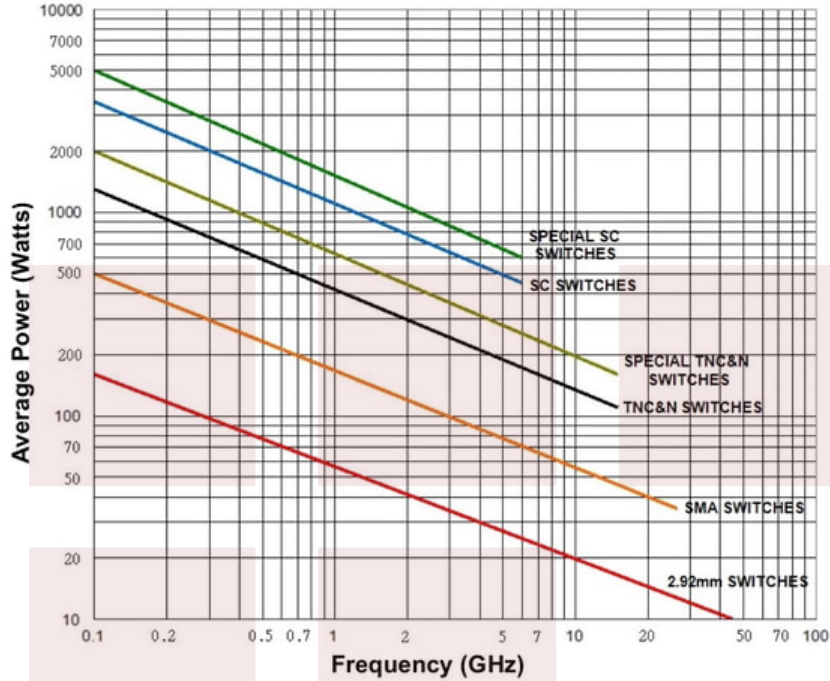
Typical Performance Data





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

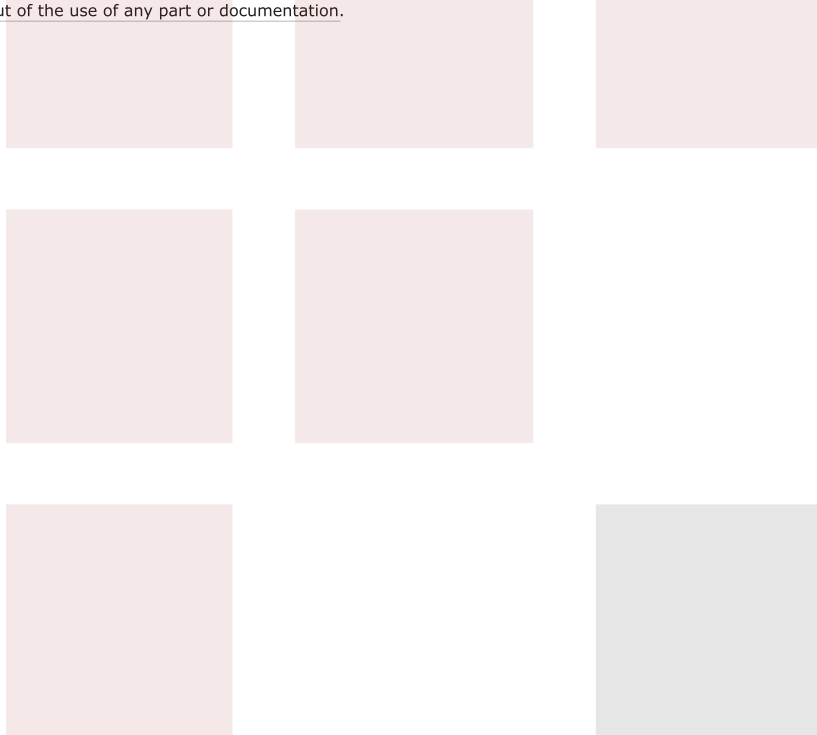
Note: specifications subject to change without notice

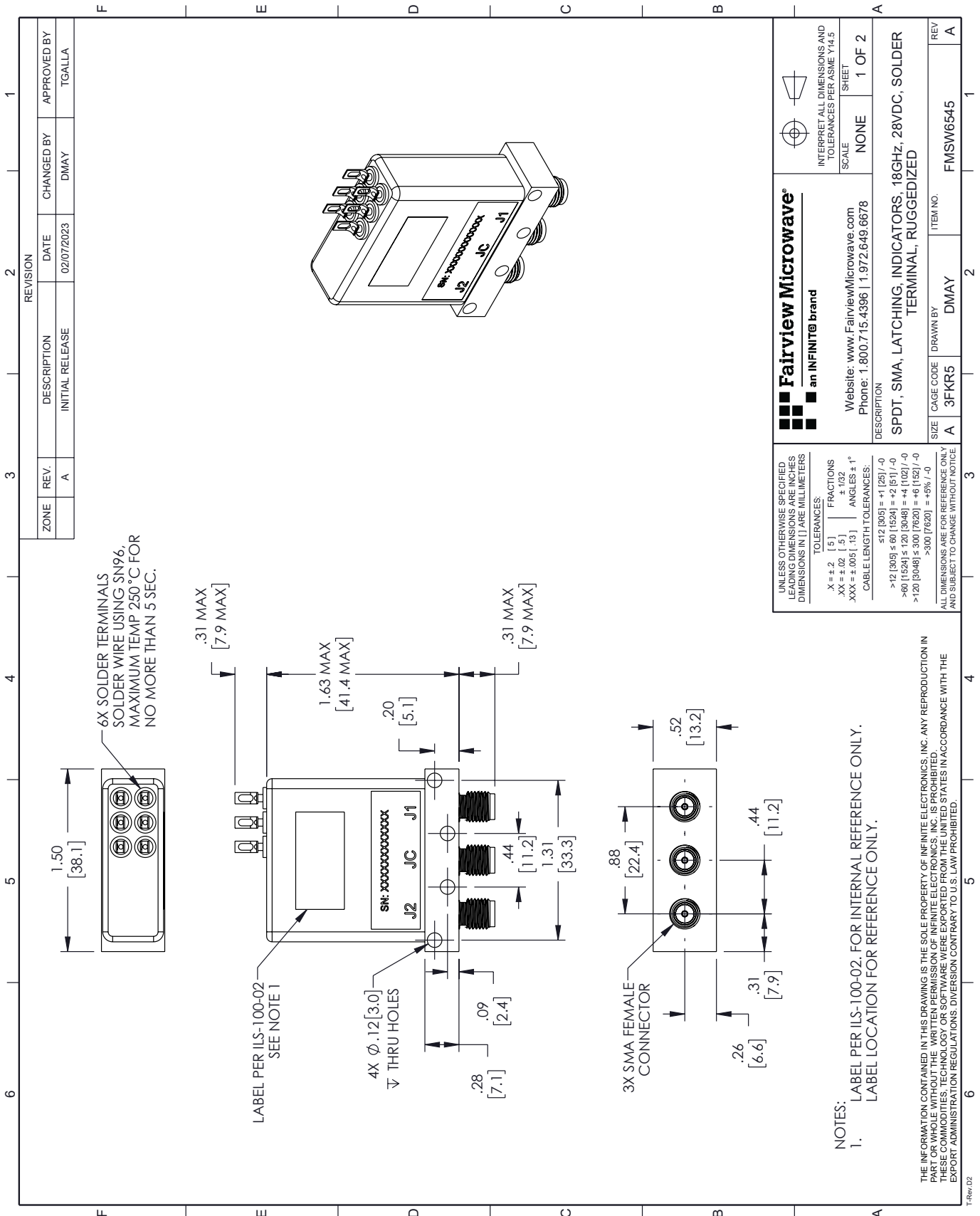
SPDT, IP64 Rated Electromechanical Relay Latching Switch, DC to 18 GHz, 90W, Indicators, 28VDC, SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

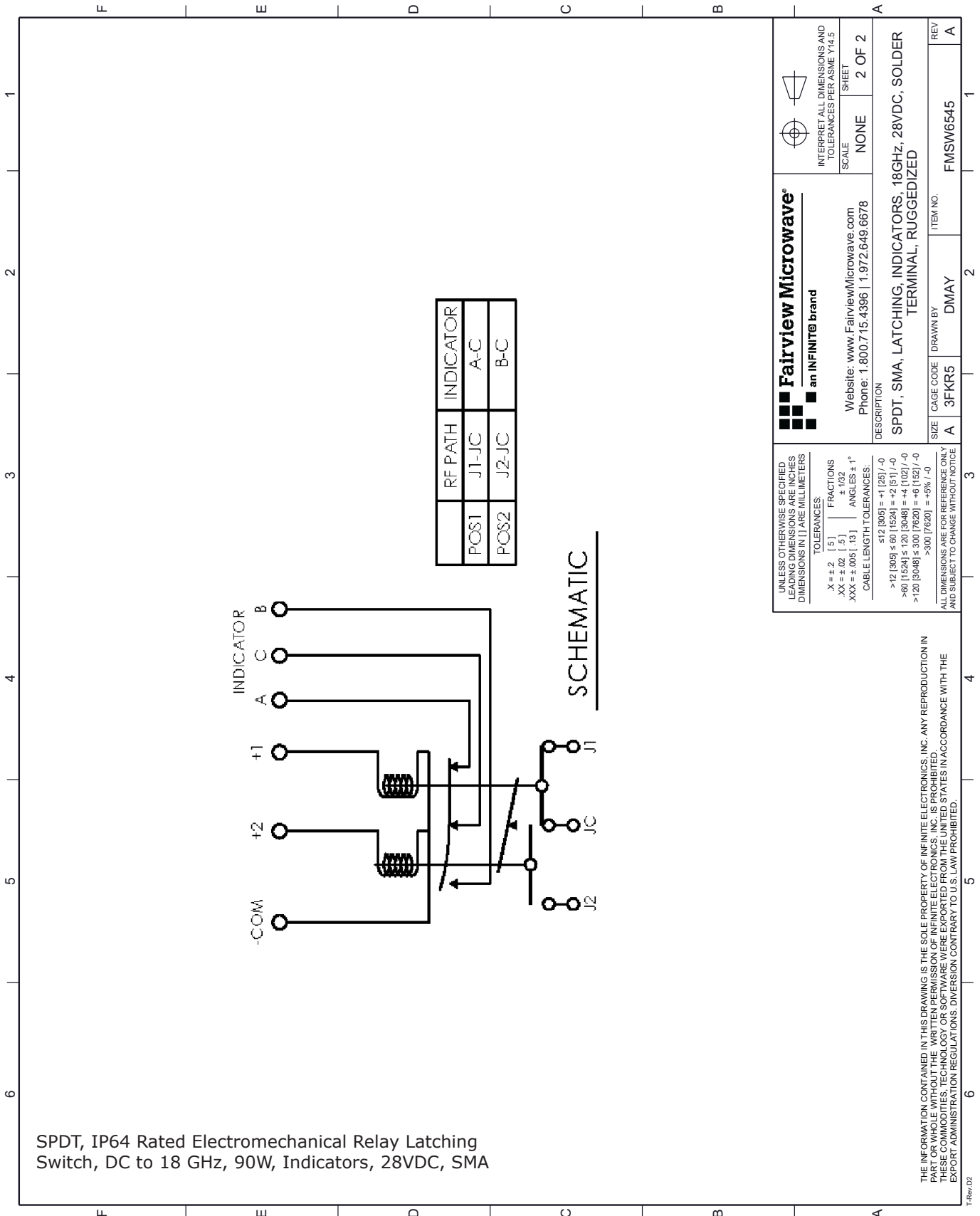
For additional information on this product, please click the following link: [SPDT, IP64 Rated Electromechanical Relay Latching Switch, DC to 18 GHz, 90W, Indicators, 28VDC, SMA FMSW6545](#)

URL: <https://www.fairviewmicrowave.com/spdt-latching-18-ghz-electro-mechanical-relay-switch-indicators-sma-fm-sw6545-p.aspx>

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	<p>SCALE: NONE</p> <p>SHEET: 2 OF 2</p>
<p>DESCRIPTION</p> <p>SPDT, SMA, LATCHING, INDICATORS, 18GHz, 28VDC, SOLDER TERMINAL, RUGGEDIZED</p>	
<p>SIZE: A</p> <p>CAGE CODE: 3FKR5</p> <p>DRAWN BY: DMAY</p>	<p>ITEM NO.: FMSW6545</p> <p>REV: A</p>

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

TOLERANCES:

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

CABLE LENGTH TOLERANCES:

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

ALL DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO CHANGE WITHOUT NOTICE.

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