

**SPDT, IP64 Rated Electromechanical Relay  
 Failsafe Switch, DC to 26.5 GHz, 90W,  
 TTL, Indicators, Diodes, 28VDC, SMA**

The FMSW6540 is a Ruggedized Single Pole Double Throw (SP2T) electromechanical relay switch that operates across a frequency range from DC to 26.5 GHz and can handle up to 90 Watts 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 has a Failsafe actuator and is rated for 2 million lifecycles. Additional features include TTL control logic, indicators to monitor the switch position, and suppression diodes which limit voltage spikes or reverse current. Impressive typical performance includes 0.3 dB insertion loss and isolation greater than 70 dB. The switch requires + 28 Vdc bias voltage and operates over a wide temperature range of -54°C to +85°C. The rugged and compact package assembly supports female SMA connectors and Solder Pins for DC and 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:**

- Single Pole Double Throw (SP2T) Ruggedized Electromechanical Relay Switch
- IP64 Level 1 Rated
- DC to 18 GHz Frequency Range
- Failsafe
- 2M Lifecycle Rating
- TTL Logic Control
- Indicators
- Suppression Diodes
- Insertion Loss 0.3 dB typ
- Isolation >70 dB typ
- VSWR as low as 1.2:1 max
- Solder Terminal Pins for DC and Command Control
- +28 Volt DC Bias
- SMA 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

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

Switch Type	SPDT
Actuator Type	Failsafe
Actuator Options	Indicators, TTL Logic, Diodes
TTL Control	on: 2.4 to 5.5 Volts off: 0 to 0.8 Volts

Description	Min	Typ	Max	Units
Frequency Range	DC		26.5	GHz
Impedance		50		Ohms
Operating Voltage	26	28	30	Volts
Actuating Current @ 28 Volts			90	mA
VSWR		1.3:1	1.7:1	
Insertion Loss		0.3	0.6	dB
Isolation	50	80		dB
Switching Time		20		ms

**Performance by Frequency**

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 6	6 - 12	12 - 18	18 - 26.5		GHz
VSWR, Max	1.2:1	1.3:1	1.4:1	1.7:1		
Insertion Loss, Max	0.2	0.4	0.5	0.6		dB
Isolation, Min	70	60	60	50		dB

**Applications:**

- Aerospace & Defense
- Test & Measurement
- Microwave Radio Systems
- Military & Commercial Communication Systems
- Research & Development
- SATCOM
- Wireless Communications
- Enterprise
- IoT

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[sales@fairviewmicrowave.com](mailto:sales@fairviewmicrowave.com)

**Mechanical Specifications**

<b>Size</b>	
Length	2.05 in [52.07 mm]
Width/Diameter	1.5 in [38.1 mm]
Height	0.52 in [13.21 mm]
Weight	0.054 lbs [24.49 g]

**Connectors**

RF Connector Type	SMA Female
Control Connector	Solder Terminals

**Environmental Specifications**

**Temperature**

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

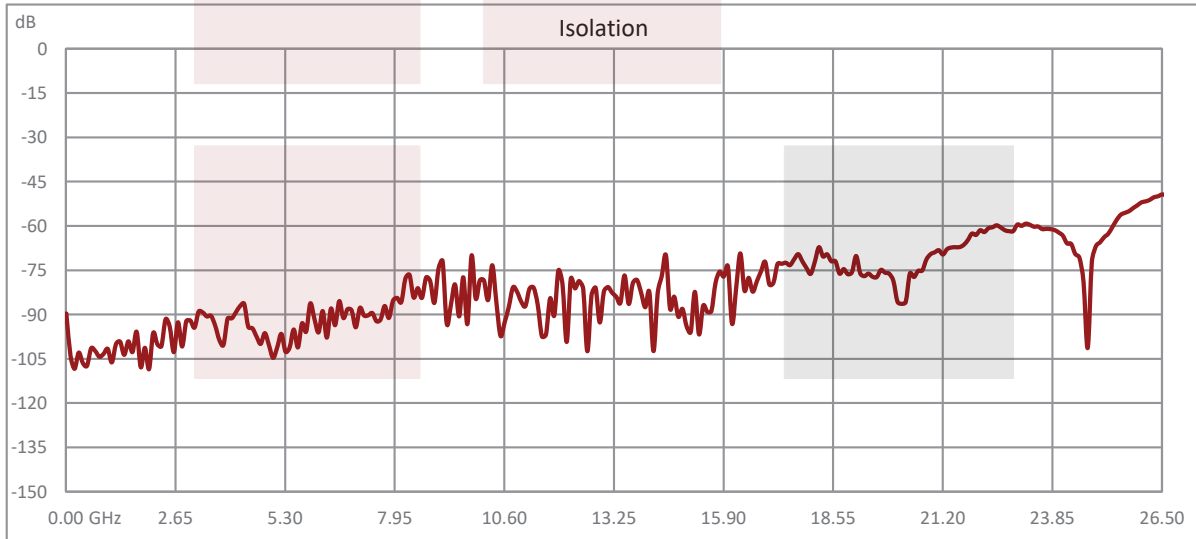
Ingress Protection (IP) Rating	IP64
Shock	MIL-STD-202 Method 213, Condition D, 500 G (non oper)
Vibration	MIL-STD-202 Method 204, Condition D, 10G RMS (non oper)

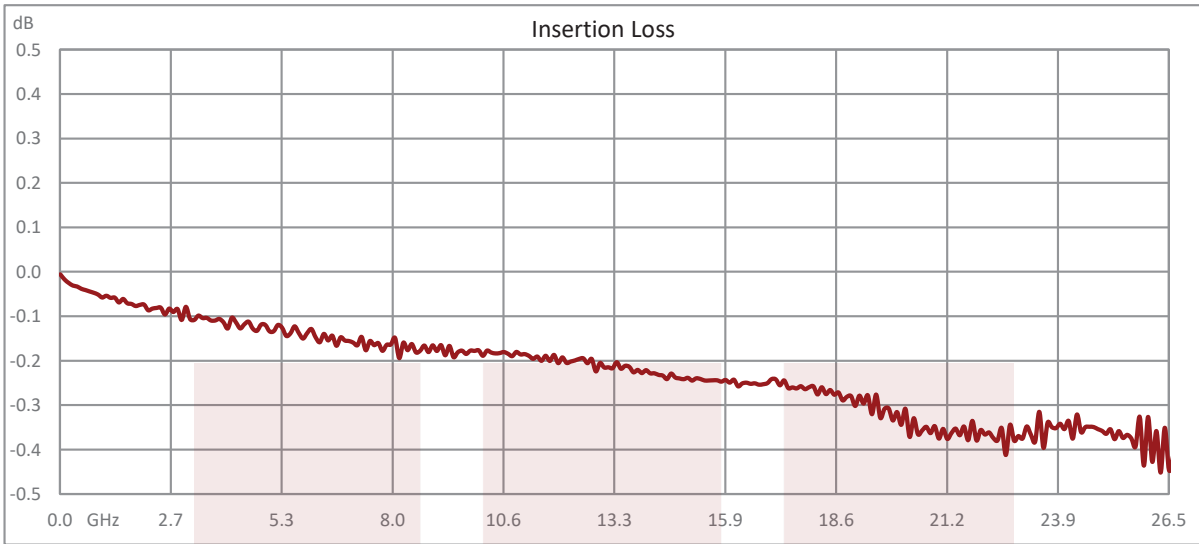
**Compliance Certifications** (see [product page](#) for current document)

**Plotted and Other Data**

Notes:

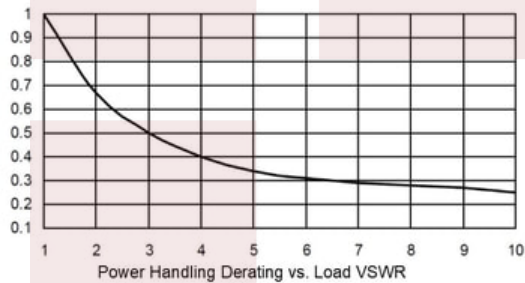
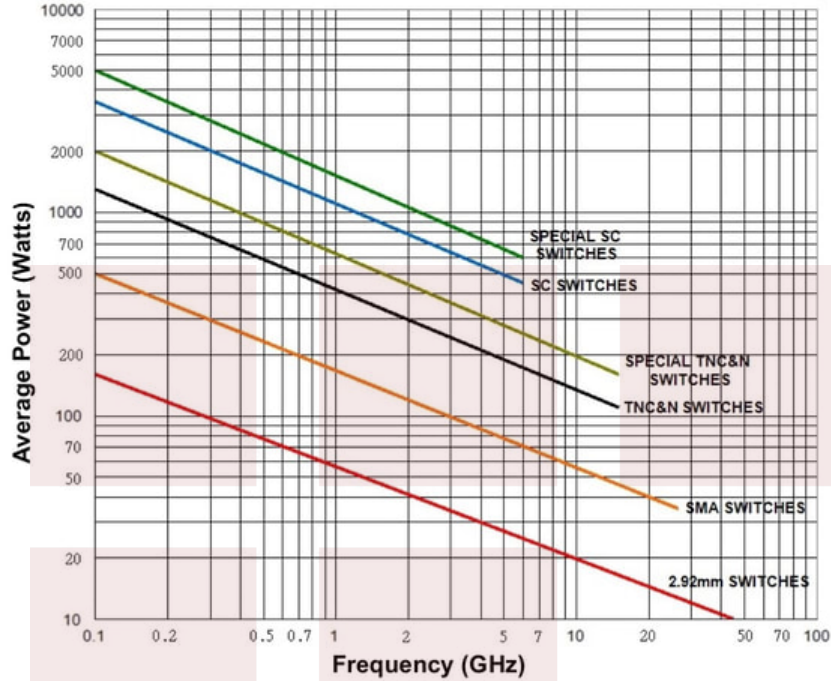
**Typical Performance Data**





**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

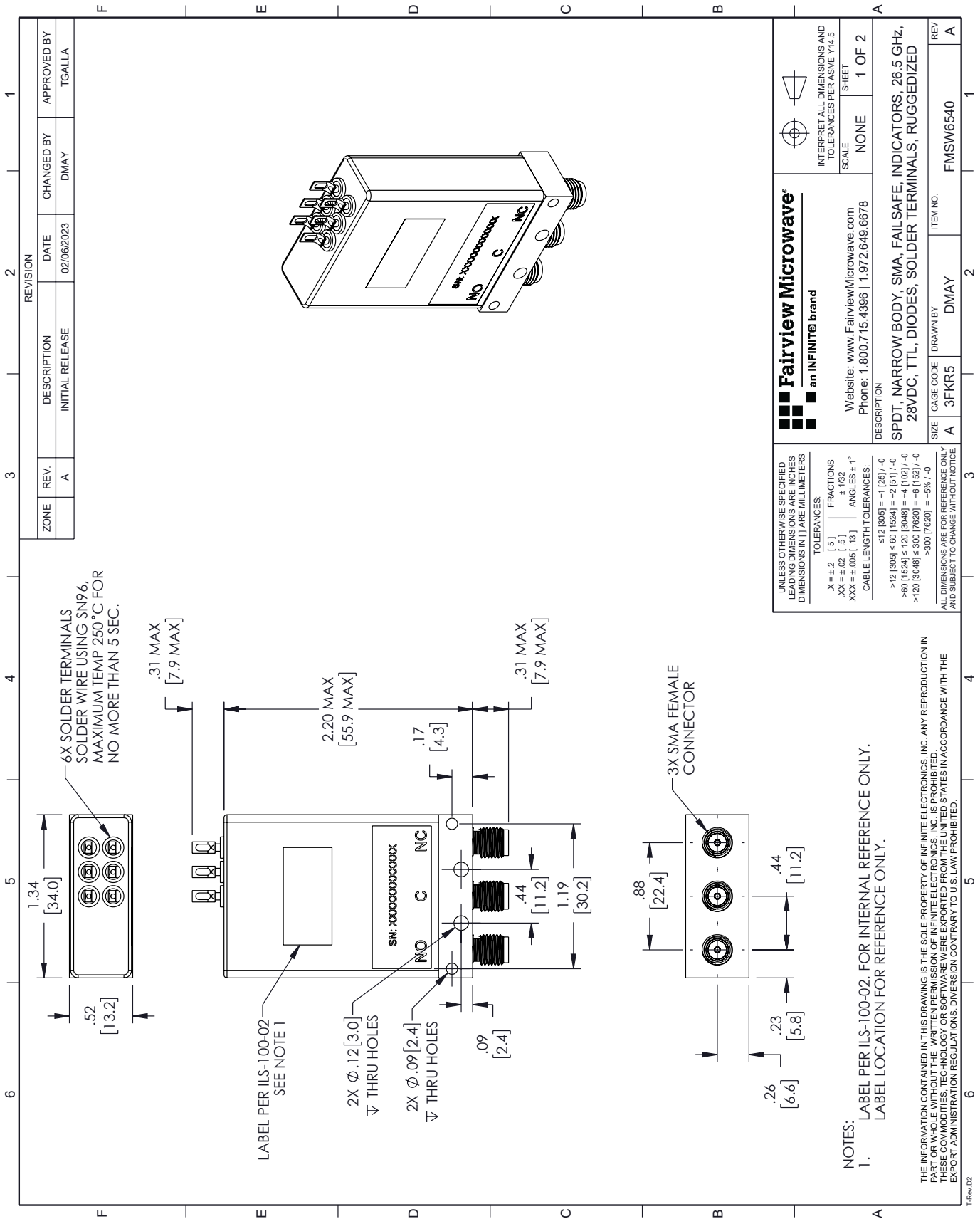
SPDT, IP64 Rated Electromechanical Relay Failsafe Switch, DC to 26.5 GHz, 90W, TTL, Indicators, Diodes, 28VDC, SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SPDT, IP64 Rated Electromechanical Relay Failsafe Switch, DC to 26.5 GHz, 90W, TTL, Indicators, Diodes, 28VDC, SMA FMSW6540](#)

URL: <https://www.fairviewmicrowave.com/spdt-failsafe-26.5-ghz-electro-mechanical-relay-switch-indicators-ttl-diodes-sma-fmsw6540-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.





ZONE	REV.	DESCRIPTION	DATE	CHANGED BY	APPROVED BY
A	A	INITIAL RELEASE	02/06/2023	DMAY	TGALLA

REVISION	DATE	CHANGED BY	APPROVED BY
2	02/06/2023	DMAY	TGALLA

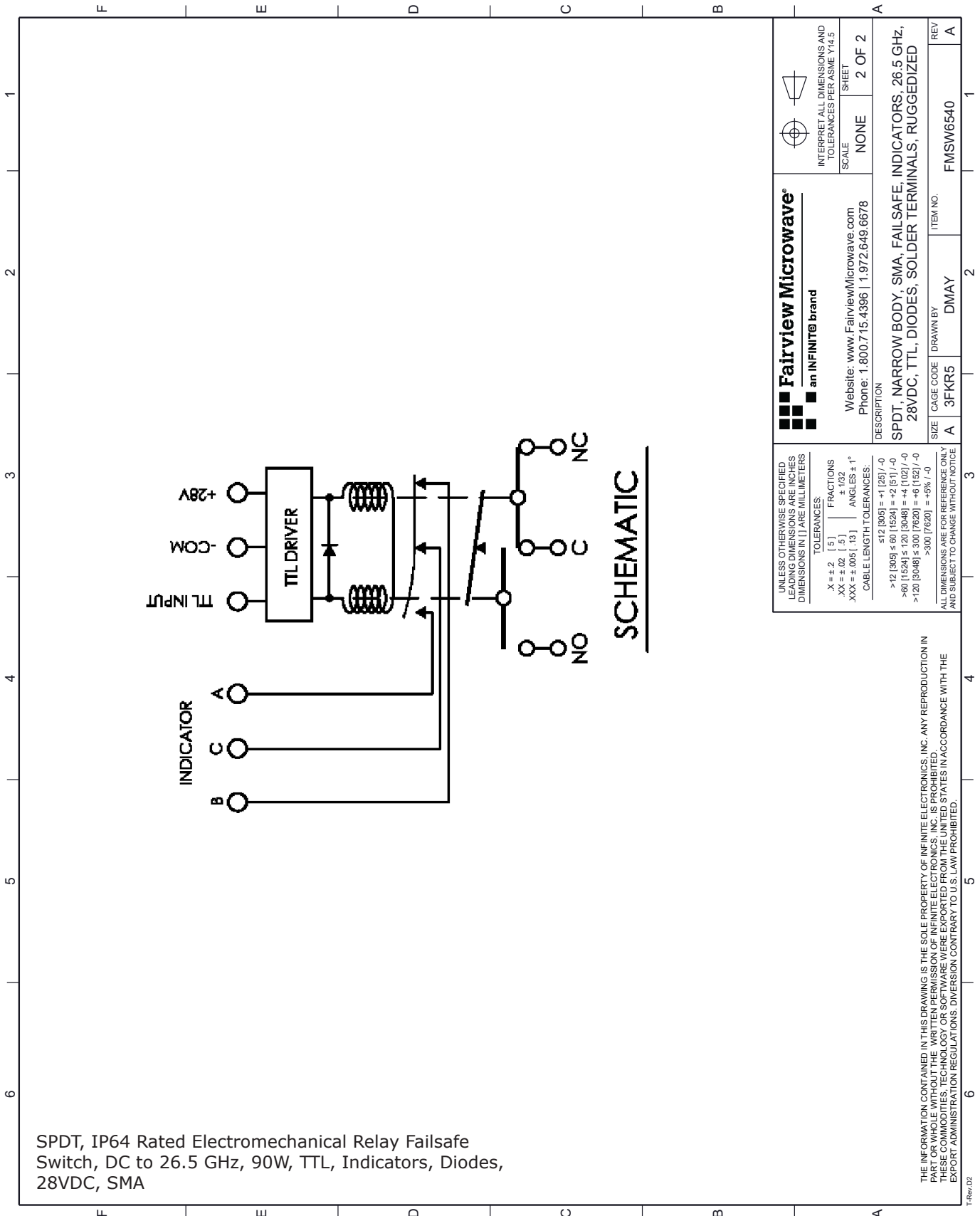
FAIRVIEW MICROWAVE	an INFINIT <sup>®</sup> brand
Website: <a href="http://www.FairviewMicrowave.com">www.FairviewMicrowave.com</a>	Phone: 1.800.715.4396   1.972.649.6678
DESCRIPTION	
SPDT, NARROW BODY, SMA, FAIL-SAFE, INDICATORS, 26.5 GHz, 28VDC, TTL, DIODES, SOLDER TERMINALS, RUGGEDIZED	
SIZE	ITEM NO.
A	FMSW6540

UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [ ] ARE MILLIMETERS
TOLERANCES:
.X ± .2 [5]
.XX ± .02 [.5]
.XXX ± .005 [.13]
FRACTIONS ± 1/32
ANGLES ± 1°
CABLE LENGTH TOLERANCES:
>12 [305] ≤ 60 [1524] = +1 [25] / -0
>60 [1524] ≤ 120 [3048] = +4 [102] / -0
>120 [3048] ≤ 300 [7620] = +6 [152] / -0
>300 [7620] = +5% / -0

INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5 SHEET	
SCALE	NONE
SHEET	1 OF 2

ALL DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO CHANGE WITHOUT NOTICE
NOTE:
1. LABEL PER ILS-100-02. FOR INTERNAL REFERENCE ONLY. LABEL LOCATION FOR REFERENCE ONLY.

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	<p>SCALE: NONE</p> <p>SHEET: 2 OF 2</p>
<p>DESCRIPTION: SPDT, NARROW BODY, SMA, FAILSAFE, INDICATORS, 26.5 GHz, 28VDC, TTL, DIODES, SOLDER TERMINALS, RUGGEDIZED</p>	
<p>SIZE: A</p> <p>CAGE CODE: 3FKR5</p>	<p>ITEM NO.: DMAY</p> <p>REV: A</p>
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