

SPDT Electromechanical Relay Latching Switch, +COM, DC to 43 GHz, 10W, 28VDC, 2.92mm

The FMSW6558 is a Single Pole Double Throw (SPDT) electromechanical relay switch that operates across a wideband frequency range from DC to 43 GHz and can handle 10 Watts of average power in a break before make condition. The 50 Ohm design supports a positive common (+COM) biasing configuration and features a Latching Actuator with a 2 million lifecycle rating. The Latching Actuator magnetically latches in place after the control voltage is removed. For power sensitive applications, this is the best actuator option. Impressive typical performance includes 0.4 dB insertion loss and isolation greater than 85 dB. This switch requires 28 Vdc bias voltage and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports 2.92mm female connectors and solder terminal 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 = 28 Vdc)

Switch Type SPDT
 Actuator Type Latching

Description	Min	Typ	Max	Units
Frequency Range	DC		43	GHz
Operating Voltage	26	28	30	Volts
Actuating Current @ 28 Volts		65		mA
VSWR		1.2:1	1.9:1	
Insertion Loss		0.4	1.2	dB
Isolation	40	85		dB
Switching Time		20		ms

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 6	6 - 12.4	12.4 - 18	18 - 26.5	26.5 - 40	GHz
VSWR, Max	1.15:1	1.35:1	1.4:1	1.45:1	1.5:1	
Insertion Loss, Max	0.2	0.3	0.4	0.5	0.7	dB
Isolation, Min	85	80	80	75	60	dB

Performance by Frequency

Description	F6	F7	F8	F9	F10	Units
Frequency Range	40 - 43					GHz
VSWR, Max	1.9:1					
Insertion Loss, Max	1.2					dB
Isolation, Min	40					dB



Features:

- Single Pole Double Throw (SPDT) Electromechanical Relay Switch
- DC to 43 GHz Frequency Range
- Latching Actuator
- Positive Common (+COM) Configuration
- 2M Lifecycle Rating
- Insertion Loss 0.4 dB typ
- Isolation > 85 dB typ
- VSWR as low as 1.15:1 max
- Solder Terminal Pins for DC Control
- 28 Volt DC Bias
- 2.92mm Female Connectors
- -25°C to +65°C Operating Temperature
- 10 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	0.048 lbs [21.77 g]

Connectors

RF Connector Type	2.92mm Female
Control Connector	Solder Terminals

Environmental Specifications

Temperature

Operating Range	-25 to +65 deg C
Storage Range	-55 to +100 deg C

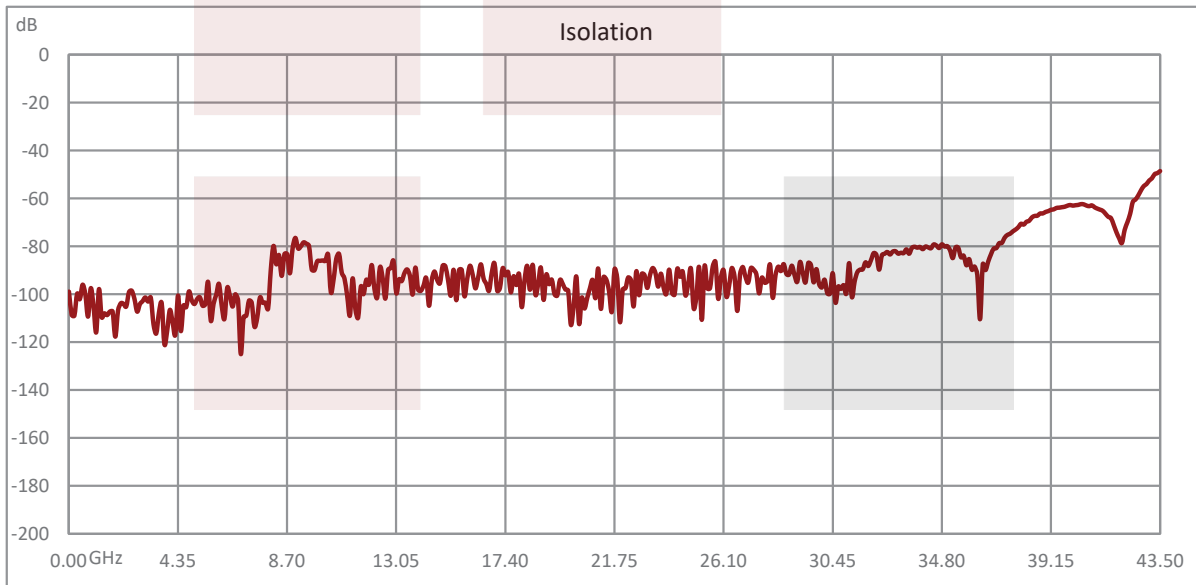
Shock	MIL-STD-202 Method 213, Condition D, 500G (non oper)
Vibration	MIL-STD-202 Method 204, Condition D, 10G RMS (non oper)

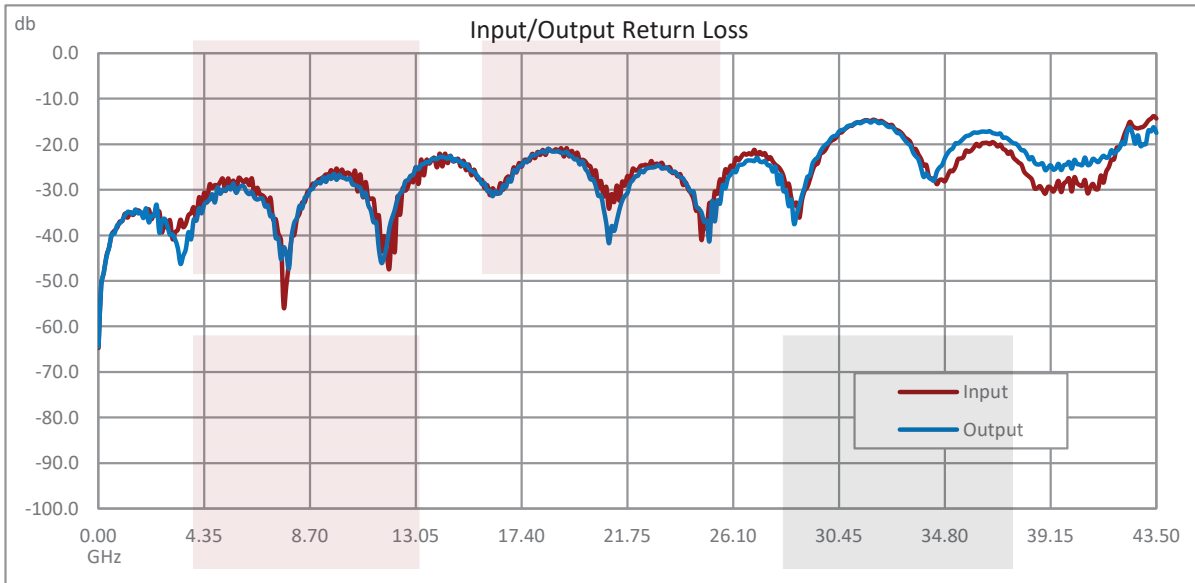
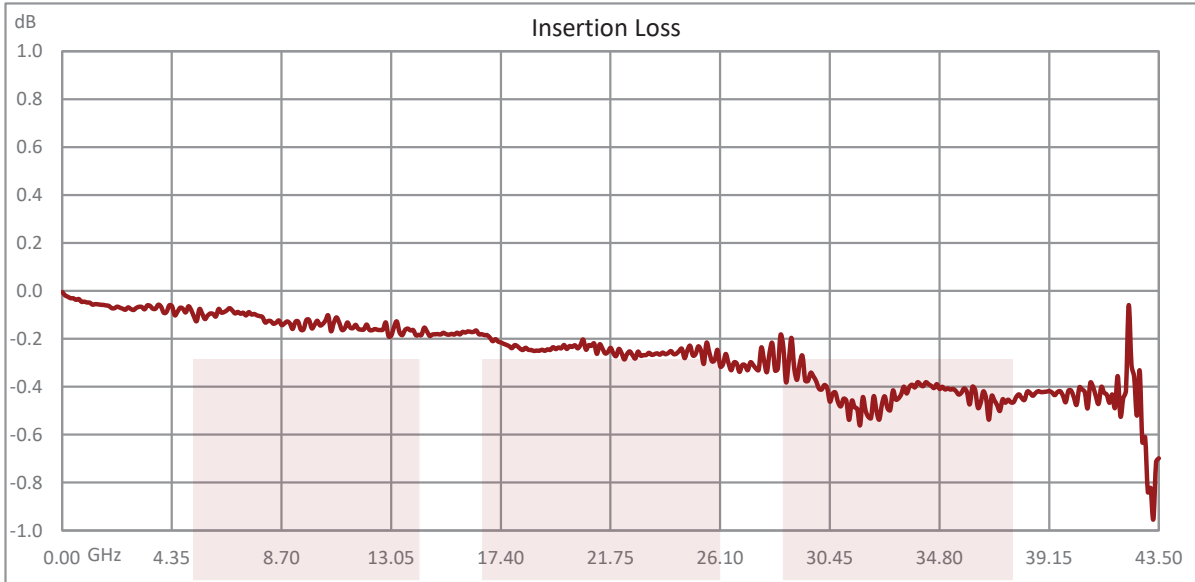
Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

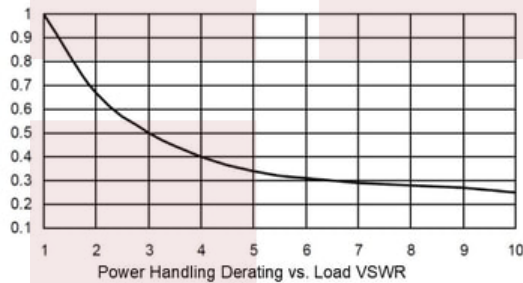
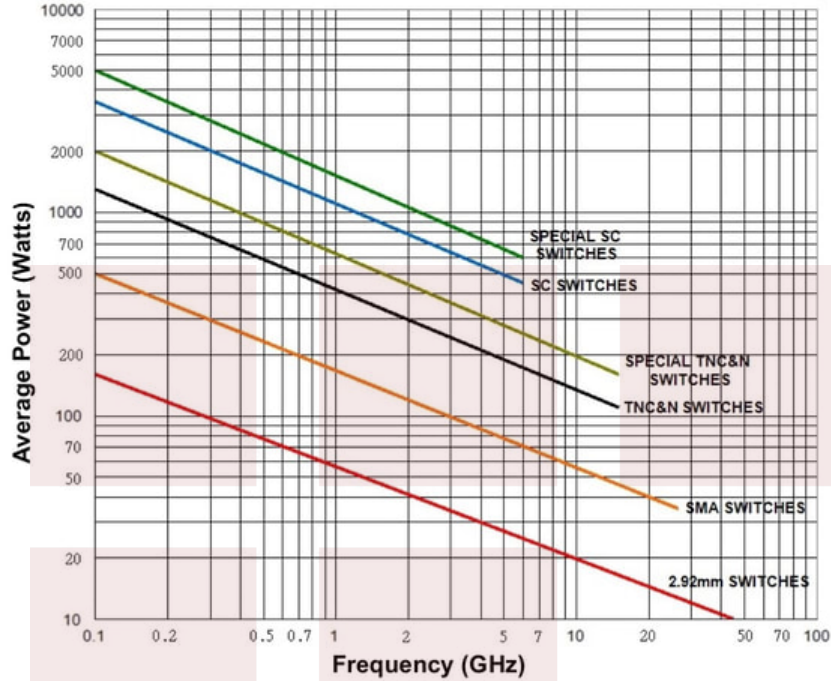
Typical Performance Data





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

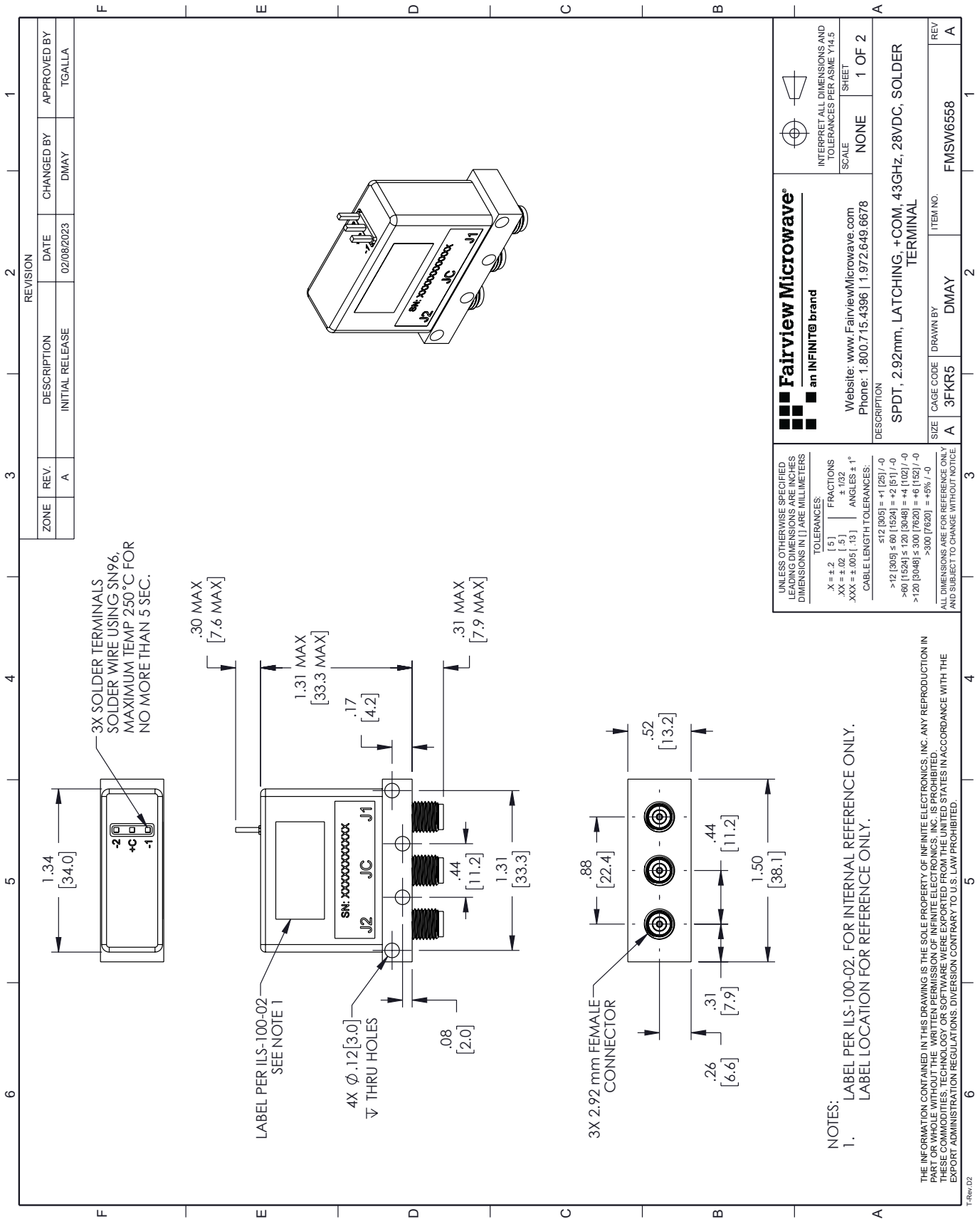
SPDT Electromechanical Relay Latching Switch, +COM, DC to 43 GHz, 10W, 28VDC, 2.92mm from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SPDT Electromechanical Relay Latching Switch, +COM, DC to 43 GHz, 10W, 28VDC, 2.92mm FMSW6558](#)

URL: <https://www.fairviewmicrowave.com/spdt-latching-43-ghz-electro-mechanical-relay-switch-28v-2.92mm-fm-sw6558-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	02/08/2023	DMAY	TGALLA

REVISION	DESCRIPTION	DATE	CHANGED BY	APPROVED BY
2	INITIAL RELEASE	02/08/2023	DMAY	TGALLA

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Website: www.FairviewMicrowave.com
Phone: 1.800.715.4396 | 1.972.649.6678

INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5 SHEET

SCALE: NONE

SHEET: 1 OF 2

DESCRIPTION: SPDT, 2.92mm, LATCHING, +COM, 43GHz, 28VDC, SOLDER TERMINAL

SIZE: A

CAGE CODE: 3FKR5

DRAWN BY: DMAY

ITEM NO.: FMSW6558

REV: A

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

TOLERANCES:

.X ± .2 [5] FRACTIONS ± .132 ANGLES ± 1°

.XX ± .02 [5] .XXX ± .005 [.13] CABLE LENGTH TOLERANCES:

≤12 [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

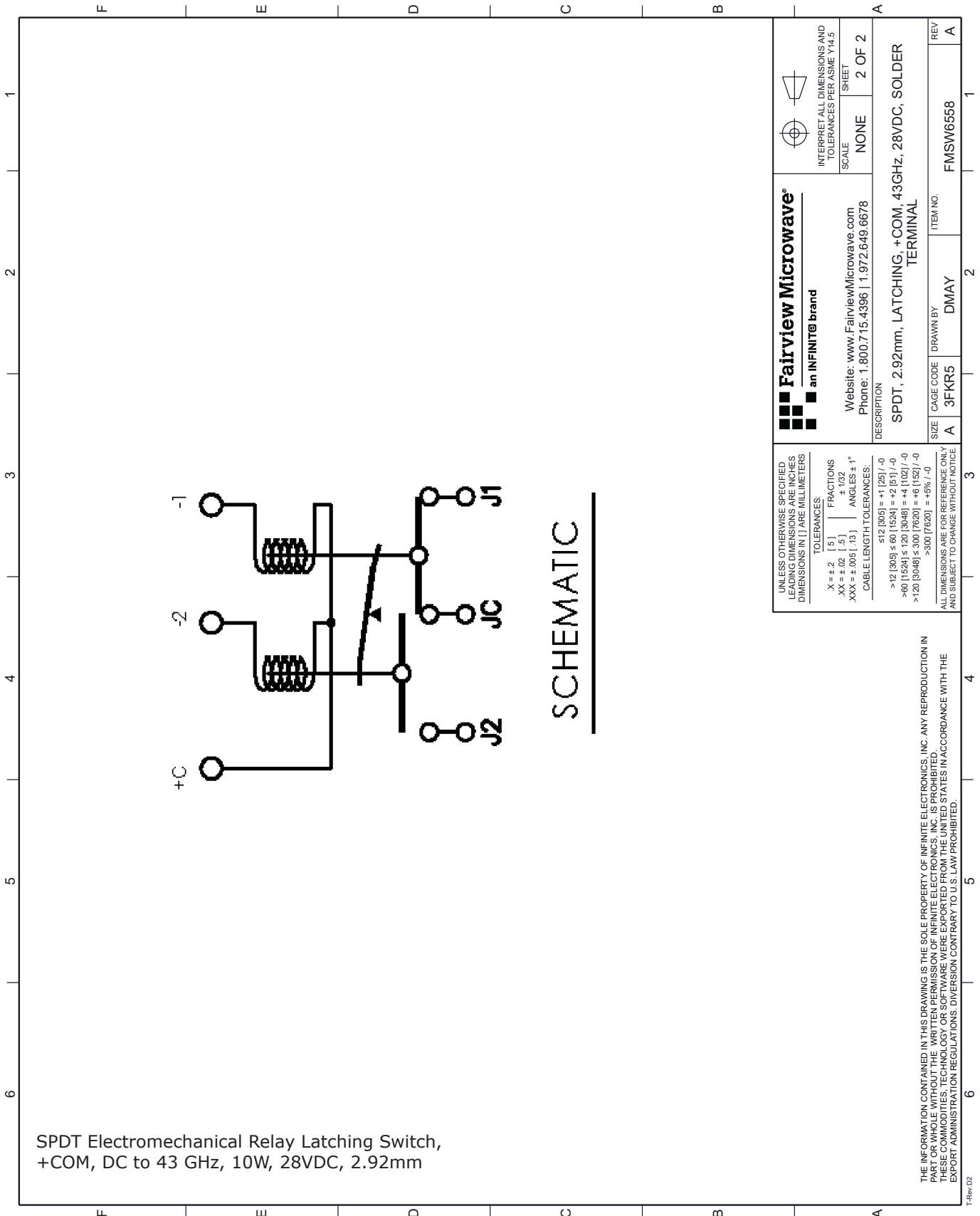
>300 [7620] = +5% / -0

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

NOTES:

1. LABEL PER ILS-100-02. FOR INTERNAL REFERENCE ONLY.
LABEL LOCATION FOR REFERENCE ONLY.

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<p>DESCRIPTION: SPDT, 2.92mm, LATCHING, +COM, 43GHz, 28VDC, SOLDER TERMINAL</p>			
SIZE: A	CAGE CODE: 3FKR5	DRAWN BY: DMAY	ITEM NO.: FMSW6558
REV: A			

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

TOLERANCES:

.X = ±.2	[.5]	FRACTIONS
.XX = ±.02	[.5]	± 1/32
.XXX = ±.005	[.13]	ANGLES ± 1°

CABLE LENGTH TOLERANCES:

>12 [305]	± 1 [25] / -0
>60 [1524]	± 2 [51] / -0
>120 [3048]	± 4 [102] / -0
>300 [7620]	± 6 [152] / -0
>600 [15240]	± 12 [305] / -0

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