



SPDT Electromechanical Relay Latching Switch,
 +COM, DC to 53 GHz, 5W, 12VDC, 2.4mm

Electromechanical Relay Switches Technical Data Sheet

PE71S6559

Features

- Single Pole Double Throw (SPDT) Electromechanical Relay Switch
- DC to 53 GHz Frequency Range
- Latching Actuator
- Positive Common (+COM) Configuration
- 1M Lifecycle Rating
- Insertion Loss 0.6 dB typ
- Isolation > 80 dB typ
- VSWR as low as 1.2:1 max
- Solder Terminal Pins for DC Control
- 12 Volt DC Bias
- 2.4mm Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 5 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

Description

The PE71S6559 is a Single Pole Double Throw (SPDT) electromechanical relay switch that operates across an ultra wideband frequency range from DC to 53 GHz and can handle up to 5W 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 1 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 0.6 dB insertion loss and isolation greater than 80 dB. This switch requires 12 Vdc bias voltage and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports 2.4mm 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 = 12 Vdc)

Switch Type
 Actuator Type

SPDT
 Latching

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		53	GHz
Operating Voltage	11	12	13	Volts
Actuating Set Current @		140		mA
VSWR		1.7:1	2.2:1	
Insertion Loss		0.6	1.2	dB
Isolation	50	80		dB
Switching Time		<20		ms Typ

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SPDT Electromechanical Relay Latching Switch, +COM, DC to 53 GHz, 5W, 12VDC, 2.4mm PE71S6559](#)



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Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 6	6 to 18	18 to 26.5	26.5 to 40	40 to 50	GHz
VSWR, Max	1.2:1	1.3:1	1.6:1	1.6:1	1.8:1	
Insertion Loss, Max	0.2	0.3	0.6	0.6	0.8	dB
Isolation, Min	80	70	70	70	50	dB

Performance by Frequency

Description	F6	F7	F8	F9	F10	Units
Frequency Range	50 to 53					GHz
VSWR, Max	2.2:1					
Insertion Loss, Max	1.2					dB
Isolation, Min	50					dB

Mechanical Specifications

Size

Length	1.95 in [49.53 mm]
Width/Diameter	2.75 in [69.85 mm]
Height	0.92 in [23.37 mm]
Weight	0.042 lbs [19.05 g]

Connectors

RF Connector Type	2.4mm 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:

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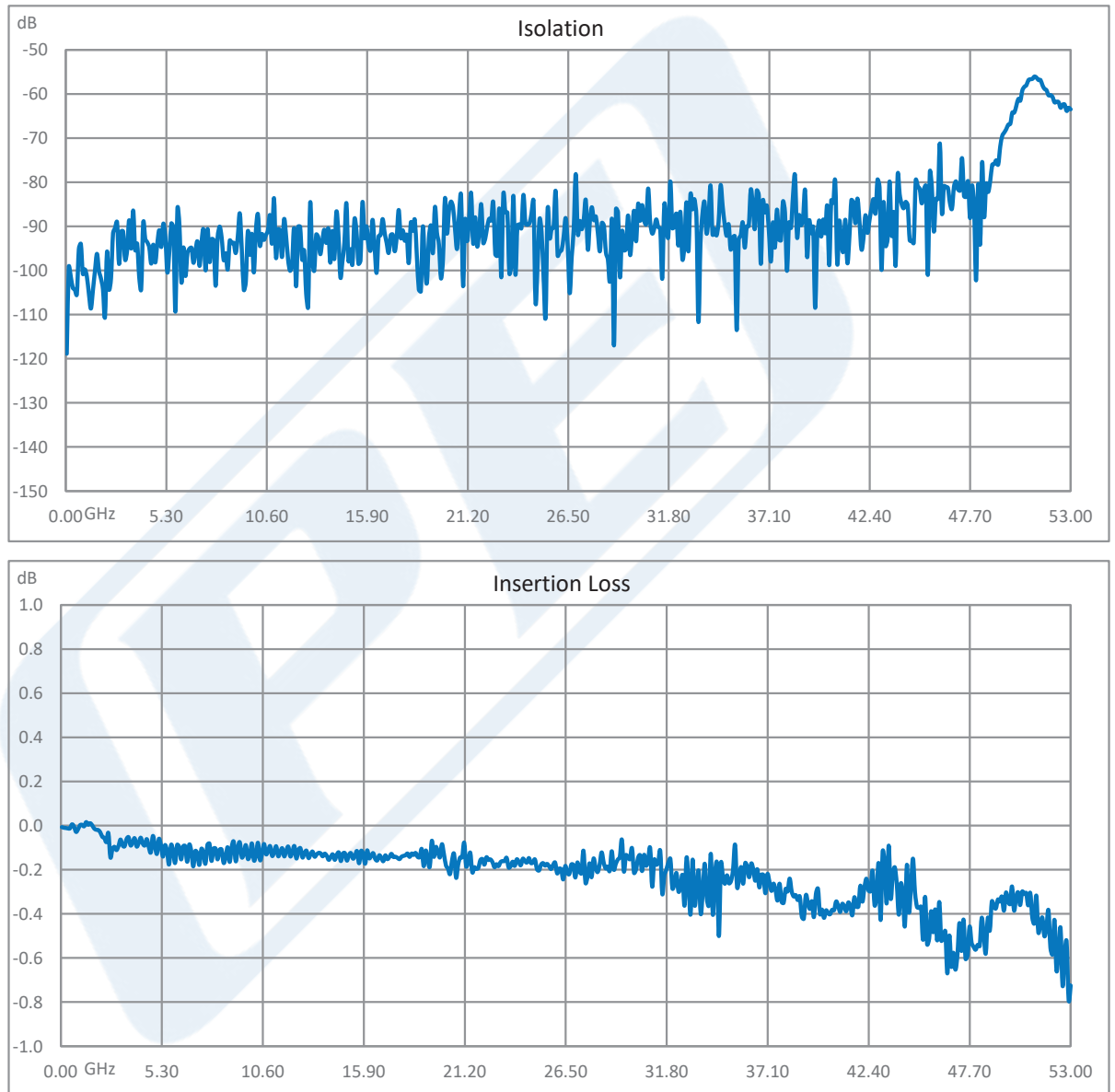


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Typical Performance Data



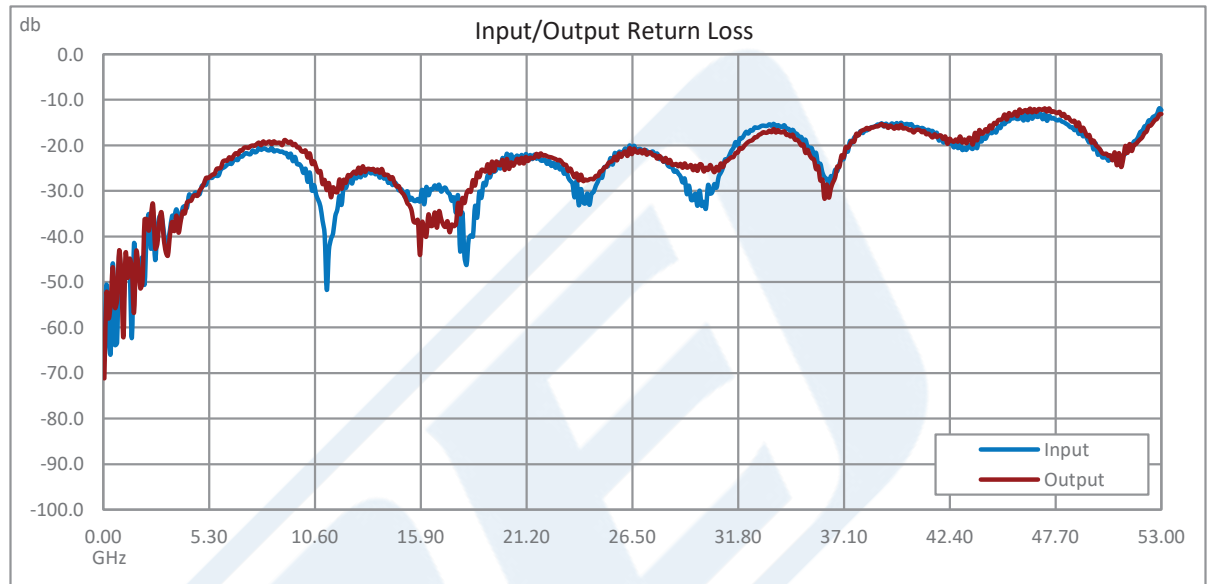
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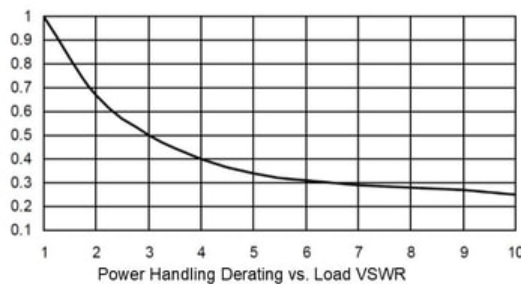


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Power Handling vs. Frequency



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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SPDT Electromechanical Relay Latching Switch, +COM, DC to 53 GHz, 5W, 12VDC, 2.4mm from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SPDT Electromechanical Relay Latching Switch, +COM, DC to 53 GHz, 5W, 12VDC, 2.4mm PE71S6559](https://www.pasternack.com/spdt-electromechanical-relay-latching-switch-53-ghz-12v-2.4mm-pe71s6559-p.aspx)

URL: <https://www.pasternack.com/spdt-electromechanical-relay-latching-switch-53-ghz-12v-2.4mm-pe71s6559-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. Pasternack reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack does not assume any liability arising out of the use of any part or documentation.

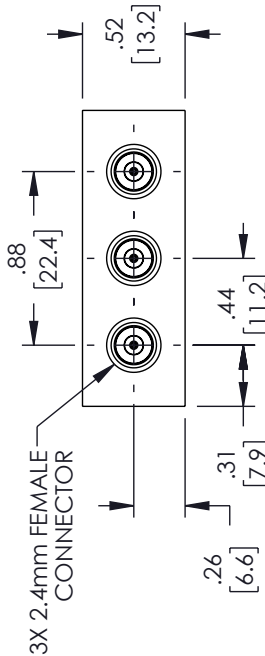
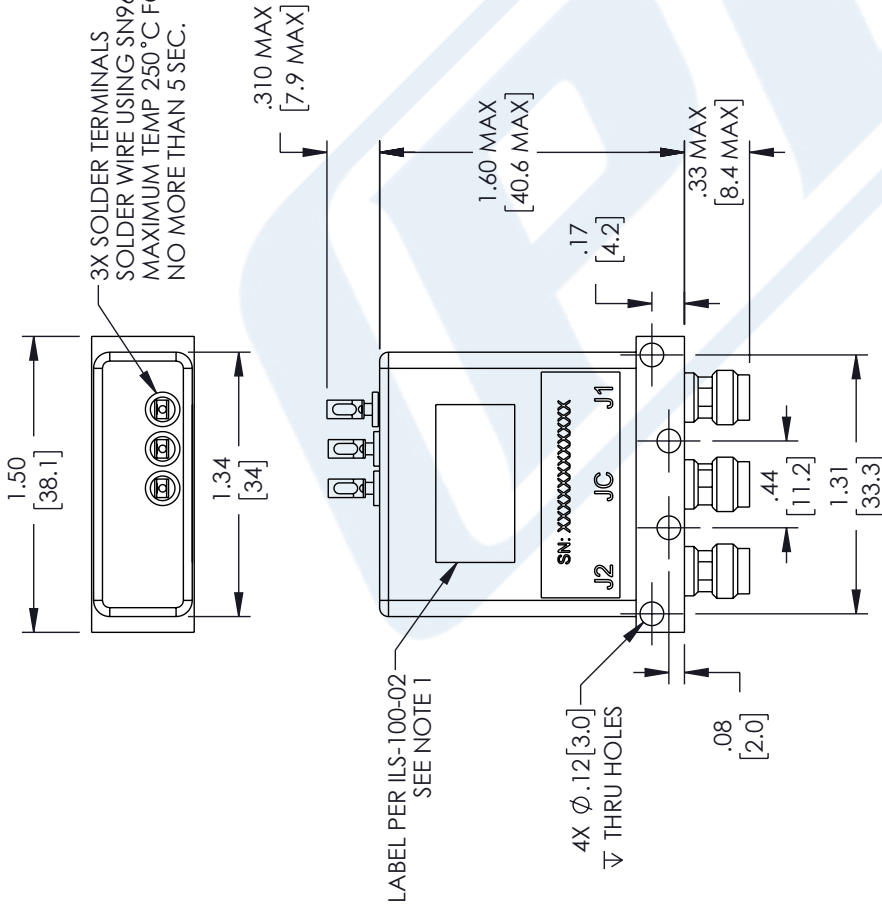
PE71S6559 CAD Drawing

SPDT Electromechanical Relay Latching Switch, +COM, DC to 53 GHz, 5W, 12VDC, 2.4mm

ZONE	REV.	DESCRIPTION	DATE	CHANGED BY	APPROVED BY
A	1	INITIAL RELEASE	02/09/2023	DMAY	TGALLA

REVISION	1	2	3	4	5	6
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3X SOLDER TERMINALS
SOLDER WIRE USING SN96,
MAXIMUM TEMP 250 °C FOR
NO MORE THAN 5 SEC.



NOTES:

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

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

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

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PE PASTERNAK
an INFINIT® brand

Website: www.Pasternack.com
Phone: 1.866.727.8376 | 1.949.261.1920

DESCRIPTION

SPDT, 2.4mm, LATCHING, +COM, 53GHz, 12VDC, SOLDER
TERMINAL

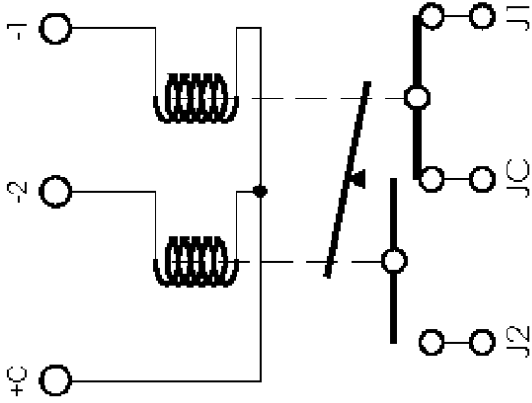


INTERPRET ALL DIMENSIONS AND
TOLERANCES PER ASME Y14.5
SCALE NONE
SHEET 1 OF 2

SIZE	CAGE CODE	DRAWN BY	ITEM NO.	REV
A	53919	DMAY	PE71S6559	A

PE71S6559 CAD Drawing

SPDT Electromechanical Relay Latching Switch, +COM, DC to 53 GHz, 5W, 12VDC, 2.4mm



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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

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DESCRIPTION
SPDT, 2.4mm, LATCHING, +COM, 53GHz, 12VDC, SOLDER
TERMINAL

SIZE A CAGE CODE 53919 DRAWN BY DMAY ITEM NO. PE71S6559 REV A

INTERPRET ALL DIMENSIONS AND
TOLERANCES PER ASME Y14.5

SCALE NONE SHEET 2 OF 2