



SP4T Electromechanical Relay Latching Switch,
+COM, DC to 43 GHz, 10W, 12VDC, 2.92mm

Electromechanical Relay Switches Technical Data Sheet

PE71S6563

Features

- Single Pole Four Throw (SP4T) Electromechanical Relay Switch
- DC to 43 GHz Frequency Range
- Latching Actuator
- Positive Common (+COM) Configuration
- 2M Lifecycle Rating
- Insertion Loss 0.7 dB typ
- Isolation > 80 dB typ
- VSWR as low as 1.15:1 max
- 15 PIN D-SUB Connector for DC Control
- 12 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
- Actuating Set / Reset Feature

Applications

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

Description

The PE71S6563 is a Single Pole Four Throw (SP4T) electromechanical relay switch that operates across a wideband frequency range from DC to 43 GHz and can handle 10W 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 0.7 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 2.92mm female connectors and a 15 Pin D-SUB Connector 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

SP4T
Latching

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		43	GHz
Operating Voltage	11	12	13	Volts
Actuating Set Current @		280		mA
Actuating Reset Current		1.12		A
VSWR		1.6:1	2.1:1	
Insertion Loss		0.7	1.6	dB
Isolation	40	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: [SP4T Electromechanical Relay Latching Switch, +COM, DC to 43 GHz, 10W, 12VDC, 2.92mm PE71S6563](#)



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Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 6	6 to 12	12 to 18	18 to 26.5	26.5 to 32	GHz
VSWR, Max	1.15:1	1.25:1	1.35:1	1.5:1	1.7:1	
Insertion Loss, Max	0.2	0.3	0.6	0.8	0.8	dB
Isolation, Min	80	75	70	70	60	dB

Performance by Frequency

Description	F6	F7	F8	F9	F10	Units
Frequency Range	32 to 40	40 to 43				GHz
VSWR, Max	1.8:1	2.1:1				
Insertion Loss, Max	1.1	1.6				dB
Isolation, Min	60	40				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	0.164 lbs [74.39 g]

Connectors

RF Connector Type	2.92mm Female
Control Connector	D-Subminiature

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)

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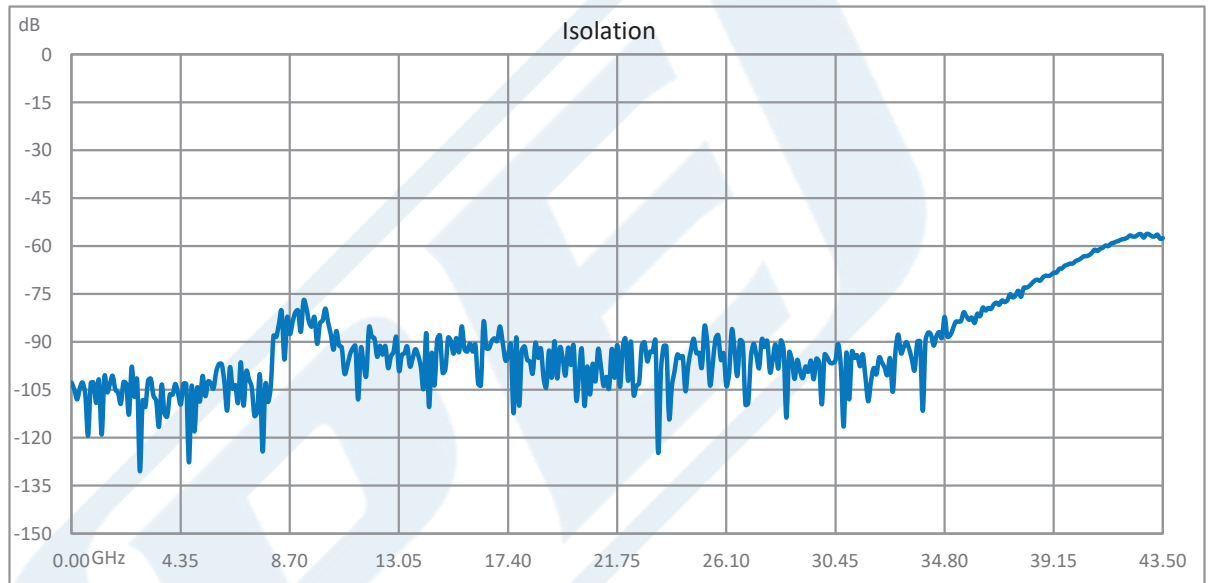
PE71S6563

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

Plotted and Other Data

Notes:

Typical Performance Data



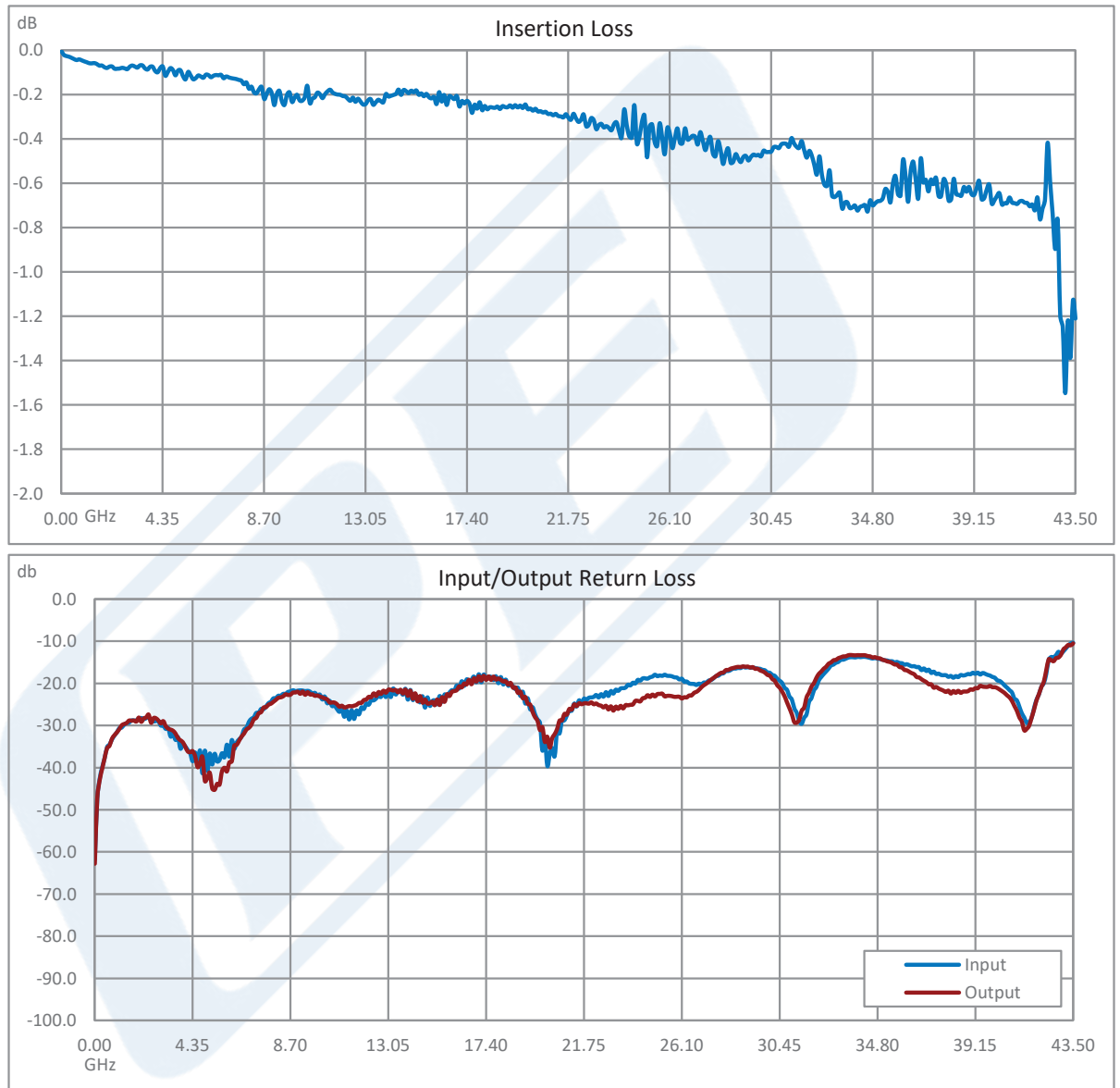
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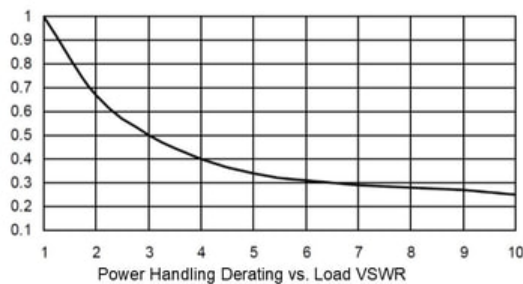


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Power Handling vs. Frequency



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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SP4T Electromechanical Relay Latching Switch, +COM, DC to 43 GHz, 10W, 12VDC, 2.92mm 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.

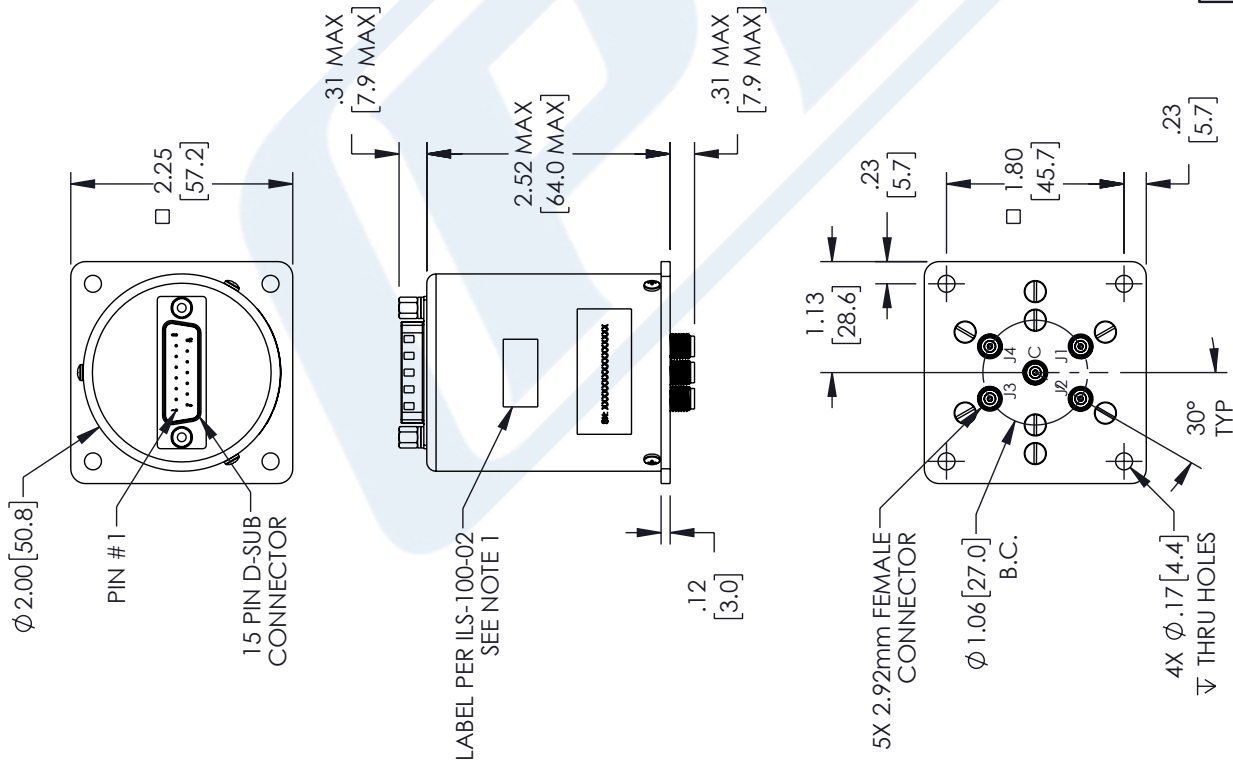
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP4T Electromechanical Relay Latching Switch, +COM, DC to 43 GHz, 10W, 12VDC, 2.92mm PE71S6563](https://www.pasternack.com/sp4t-electromechanical-relay-latching-switch-43-ghz-12v-2.92mm-pe71s6563-p.aspx)

URL: <https://www.pasternack.com/sp4t-electromechanical-relay-latching-switch-43-ghz-12v-2.92mm-pe71s6563-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.

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



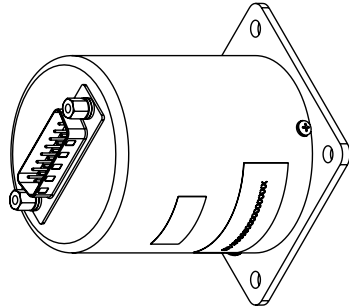
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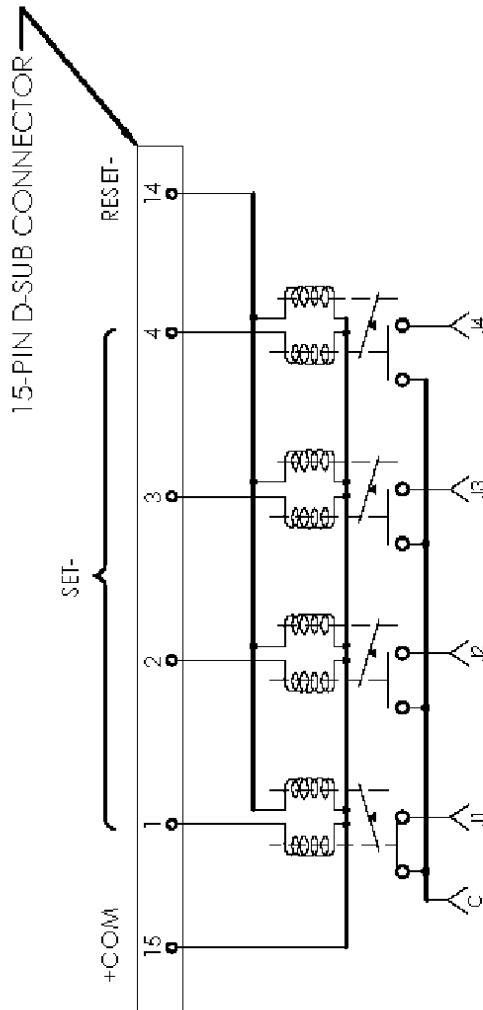
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PE PASTERNAK an INFINITO brand		SCALE NONE		SHEET 1 OF 2	
DESCRIPTION					
Website: www.Pasternack.com					
Phone: 1.866.727.8376 1.949.261.1920					
SP4T, 2.92mm, LATCHING, +COM, 43GHz, 12VDC, D-SUB					
SIZE	CAGE CODE	DRAWN BY	ITEM NO.	REV	
A	53919	DMAY	PE71S6563	A	
ALL DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO CHANGE WITHOUT NOTICE					





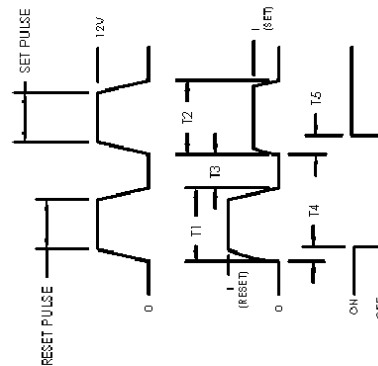
SCHEMATIC

(COIL 1 SHOWN LAST ENERGIZED)

ACTUATION

CHARACTERISTICS:

- REQUIRES TWO (2) SEQUENTIAL PULSES (RESET & SET)
- T1 & T2 = 30mSEC MIN
- T3 = 10mSEC MIN
- T4 & T5 = 20mSEC MAX

TRUTH TABLE/PIN ASSIGNMENT :
PIN ASSIGNMENT

TERMINALS D-SUB PIN ASSIGNMENT	RF PATH			
	J1	J2	J3	J4
1 (SET-)	ON	OFF	OFF	OFF
2 (SET-)	OFF	ON	OFF	OFF
3 (SET-)	OFF	OFF	ON	OFF
4 (SET-)	OFF	OFF	OFF	ON
14 (RESET-)	ALL OFF			

PIN 15. +COM

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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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DESCRIPTION

SP4T, 2.92mm, LATCHING, +COM, 43GHz, 12VDC, D-SUB



INTERPRET ALL DIMENSIONS AND
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SCALE NONE
SHEET 2 OF 2

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