



SP6T Electromechanical Relay Latching Switch,
+COM, DC to 52 GHz, 5W, 28VDC, 2.4mm

Electromechanical Relay Switches Technical Data Sheet

PE71S6574

Features

- Single Pole Six Throw (SP6T) Electromechanical Relay Switch
- DC to 52 GHz Frequency Range
- Latching Actuator
- Positive Common (+COM) Configuration
- 1M Lifecycle Rating
- Insertion Loss 1.3 dB typ
- Isolation > 70 dB typ
- VSWR as low as 1.3:1 max
- 15 PIN D-SUB Connector for DC Control
- 28 Volt DC Bias
- SMA Female Connectors
- -25°C to +65°C Operating Temperature
- 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
- 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 PE71S6574 is a Single Pole Six Throw (SP6T) electromechanical relay switch that operates across an ultra wideband frequency range from DC to 52 GHz and can handle 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 1.3 dB insertion loss and isolation greater than 70 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 2.4mm 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 = 28 Vdc)

Switch Type
Actuator Type

SP6T
Latching

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		52	GHz
Operating Voltage	26	28	30	Volts
Actuating Set Current @		110		mA
Actuating Reset Current		660		mA
VSWR		1.9:1	2.8:1	
Insertion Loss		1.3	2.3	dB
Isolation	50	80		dB

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T Electromechanical Relay Latching Switch, +COM, DC to 52 GHz, 5W, 28VDC, 2.4mm PE71S6574](#)



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Switching Time <20 ms Typ

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 6	6 to 12.4	12.4 to 18	18 to 26.5	26.5 to 40	GHz
VSWR, Max	1.3:1	1.4:1	1.5:1	1.7:1	1.9:1	
Insertion Loss, Max	0.2	0.4	0.5	0.7	0.9	dB
Isolation, Min	70	60	60	55	50	dB

Performance by Frequency

Description	F6	F7	F8	F9	F10	Units
Frequency Range	40 to 50	50 to 52				GHz
VSWR, Max	2.2:1	2.8:1				
Insertion Loss, Max	1.3	2.3				dB
Isolation, Min	50	50				dB

Mechanical Specifications

Size

Length	1.75 in [44.45 mm]
Width/Diameter	1.75 in [44.45 mm]
Height	1.75 in [44.45 mm]
Weight	0.178 lbs [80.74 g]

Connectors

RF Connector Type	2.4mm 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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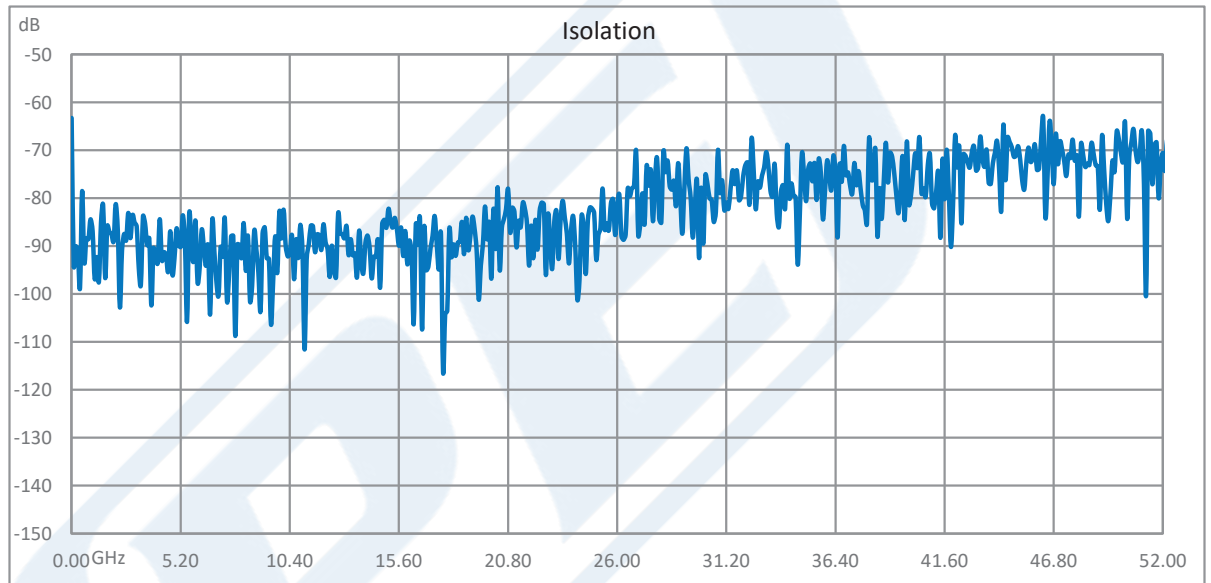
PE71S6574

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

Plotted and Other Data

Notes:

Typical Performance Data



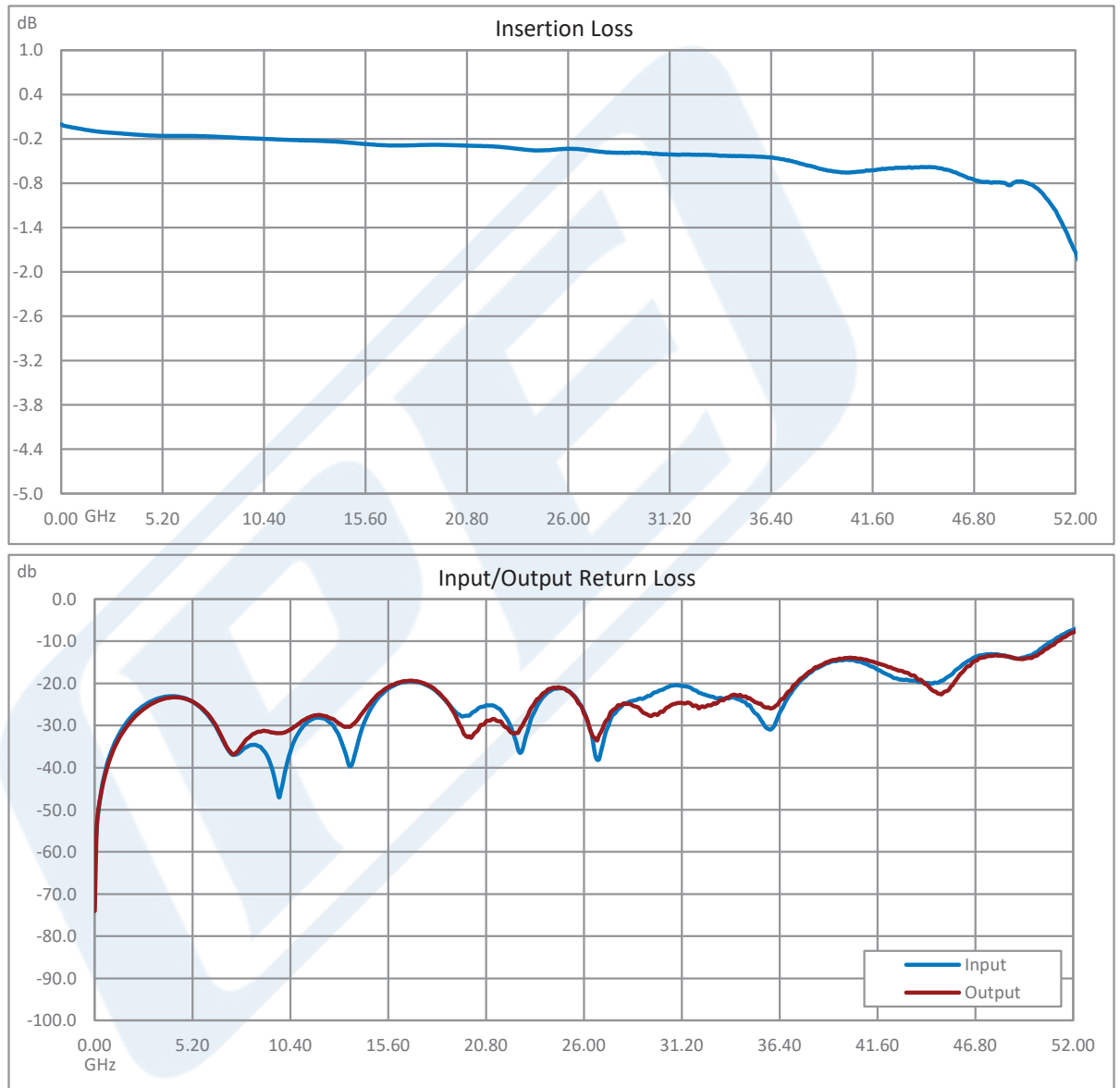
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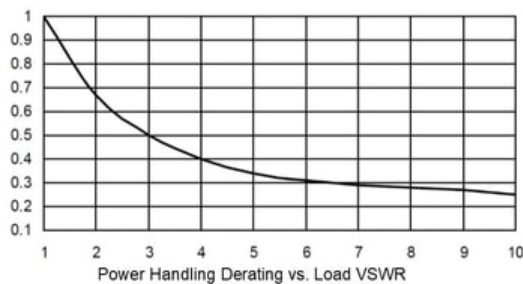
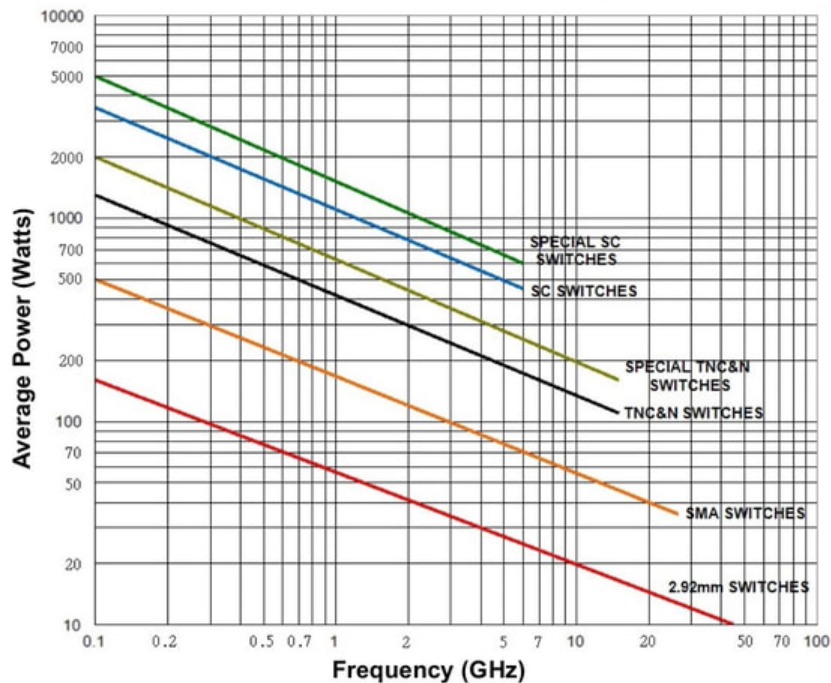


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Power Handling vs. Frequency



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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Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T Electromechanical Relay Latching Switch, +COM, DC to 52 GHz, 5W, 28VDC, 2.4mm PE71S6574](https://www.pasternack.com/sp6t-electromechanical-relay-latching-switch-52-ghz-28v-2.4mm-pe71s6574-p.aspx)

URL: <https://www.pasternack.com/sp6t-electromechanical-relay-latching-switch-52-ghz-28v-2.4mm-pe71s6574-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.

PE71S6574 CAD Drawing

SP6T Electromechanical Relay Latching Switch, +COM, DC to 52 GHz, 5W, 28VDC, 2.4mm

F E D C B A

F E D C B A

1

2

3

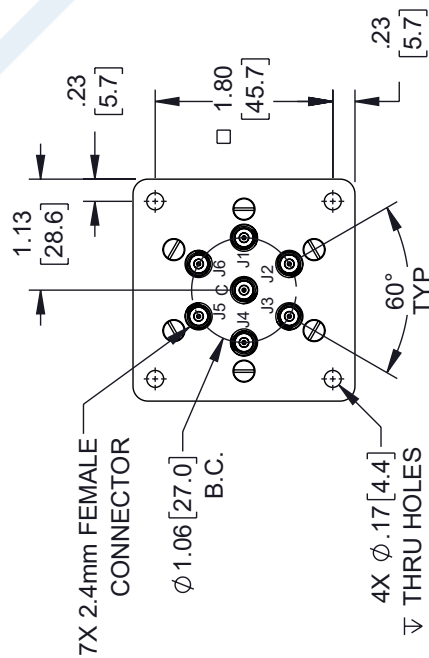
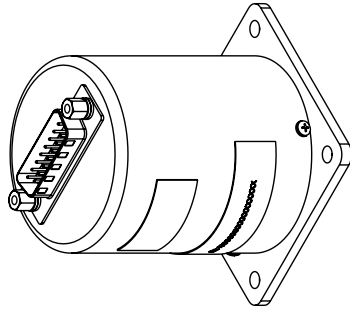
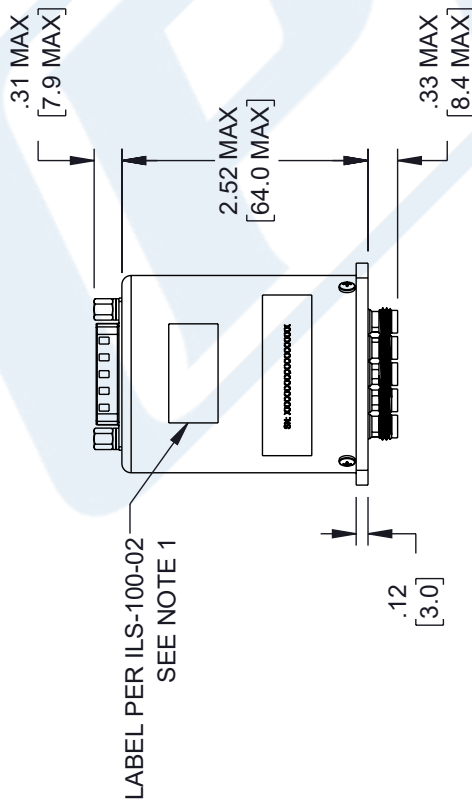
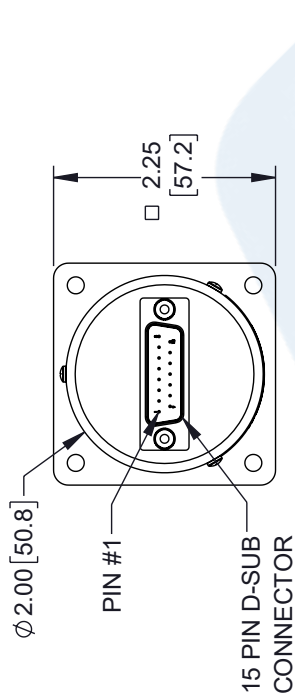
4

5

6

ZONE	REV	DESCRIPTION	DATE	CHANGED BY	APPROVED
	A	INITIAL RELEASE	02/16/2023	DMAY	TGALLA

REVISION	1	2	3	4	5	6
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NOTES:

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

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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:

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

DESCRIPTION

SP6T, 2.4mm, LATCHING, +COM, 52GHz, 28VDC, D-SUB



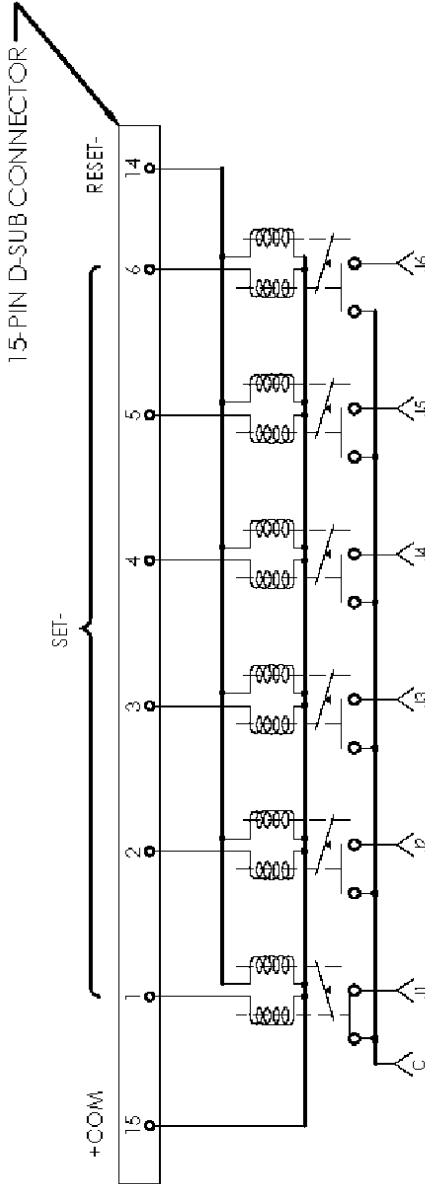
INTERPRET ALL DIMENSIONS AND
TOLERANCES PER ASME Y14.5

SCALE NONE

SHEET 1 OF 2

SIZE	CAGE CODE	DRAWN BY	ITEM NO.	REV
A	53919	DMAY	PE71S6574	A

T-Rev.D2



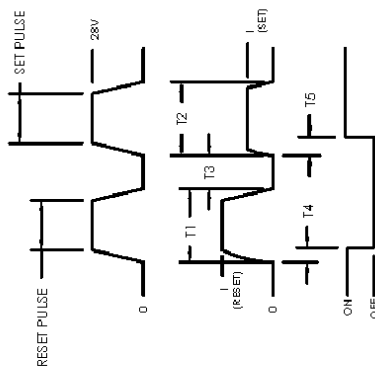
SCHEMATIC

(COIL 1 SHOWN LAST ENERGIZED)

TRUTH TABLE/PIN ASSIGNMENT :
PIN ASSIGNMENT

TERMINALS	RF PATH					
	J1	J2	J3	J4	J5	J6
D-SUB PIN ASSIGNMENT						
1 (SET-)	ON	OFF	OFF	OFF	OFF	OFF
2 (SET-)	OFF	ON	OFF	OFF	OFF	OFF
3 (SET-)	OFF	OFF	ON	OFF	OFF	OFF
4 (SET-)	OFF	OFF	OFF	ON	OFF	OFF
5 (SET-)	OFF	OFF	OFF	OFF	ON	OFF
6 (SET-)	OFF	OFF	OFF	OFF	OFF	ON
14 (RESET-)	ALL OFF					

PIN 15. +COM



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

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