



SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 50 Watts, 12V, Solder Pins

Electromechanical Relay Switches Technical Data Sheet

PE71S6501

Features

- Single Pole Six Throw Electromechanical Relay Switch
- DC to 12 GHz Frequency Range
- Normally Open Actuator
- 2M Lifecycle Rating
- Insertion Loss 0.2 dB typ
- Isolation >70 dB typ
- VSWR as low as 1.25:1 max
- +12 Volt DC Bias
- Terminal Solder Pins for DC Control
- N Type Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 50 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 PE71S6501 is a Single Pole Six Throw (SP6T) electromechanical relay switch that operates across a wide frequency range from DC to 12 GHz and can handle up to 50 Watts of average power in a break before make condition. The 50 Ohm design is rated for 2 million lifecycles and features a Normally Open Actuator where the selected position remains active with constant voltage, all positions are open when voltage is removed. Impressive typical performance includes 0.2 dB insertion loss and isolation greater than 70 dB. This switch requires +12Vdc bias voltage and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports N Type female connectors and Solder 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 SP6T
Actuator Type Normally Open

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		12.4	GHz
Operating Voltage		+12		Volts
Actuating Set Current @ +12 Volts			600	mA
VSWR		1.4:1	1.7:1	
Insertion Loss		0.2	0.7	dB
Isolation	60	70		dB
Input Power (CW) (at 12.4 GHz)			50	Watts

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 Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 50 Watts, 12V, Solder Pins PE71S6501](#)



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Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 1	1 to 4	4 to 8	8 to 12		GHz
VSWR, Max	1.25:1	1.4:1	1.45:1	1.7:1		
Insertion Loss, Max	0.3	0.4	0.4	0.7		dB
Isolation, Min	70	60	60	60		dB

Mechanical Specifications

Size

Length	2.15 in [54.61 mm]
Width/Diameter	2.5 in [63.5 mm]
Height	2.5 in [63.5 mm]
Weight	0.1 lbs [45.36 g]

Connectors

RF Connector Type	N Female
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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)
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Vibration	MIL-STD-202 Method 204, Condition D, 10G RMS (non oper)
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Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

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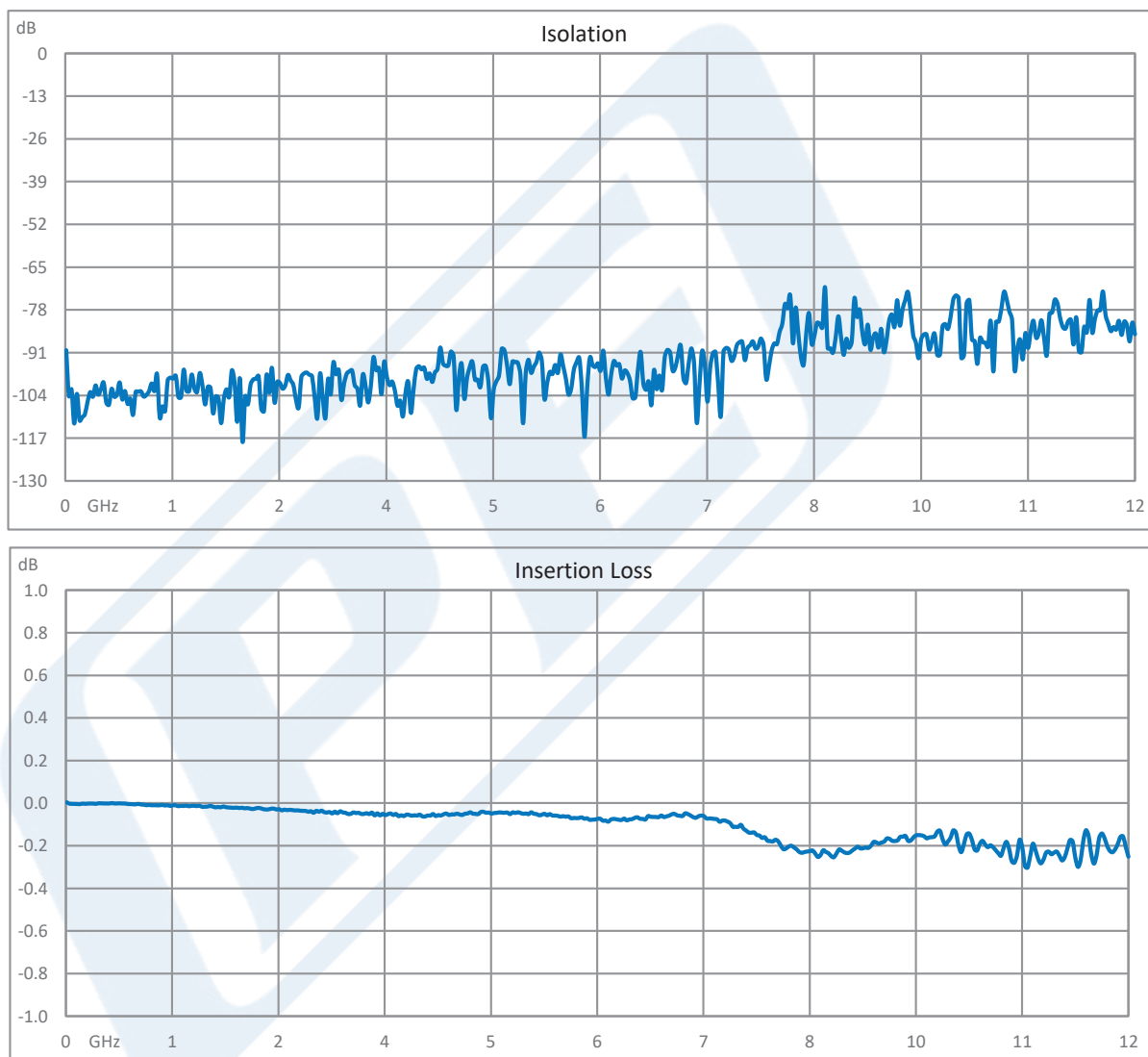


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Typical Performance Data



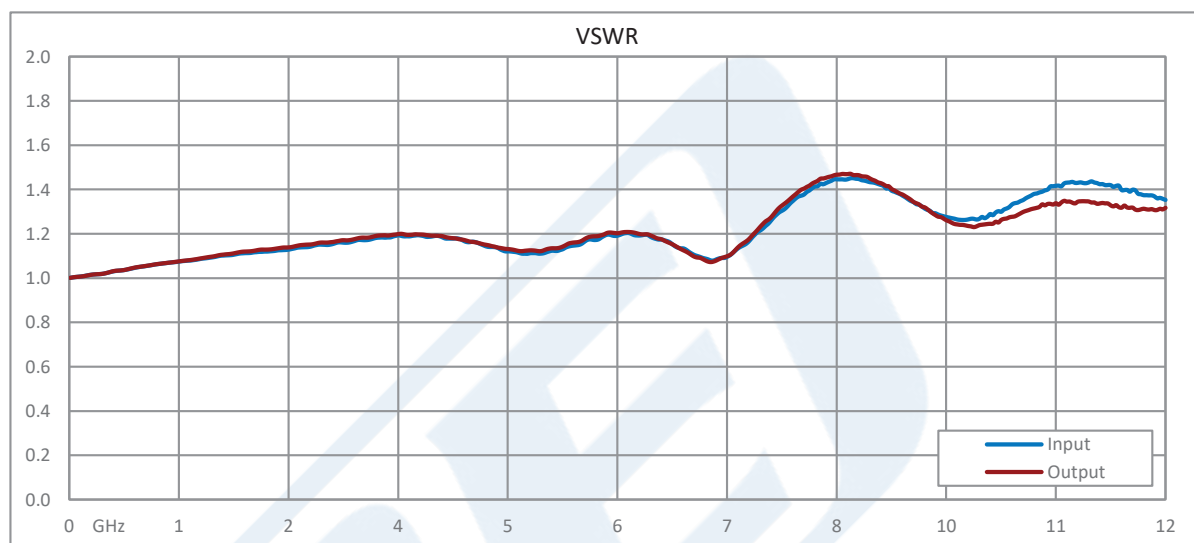
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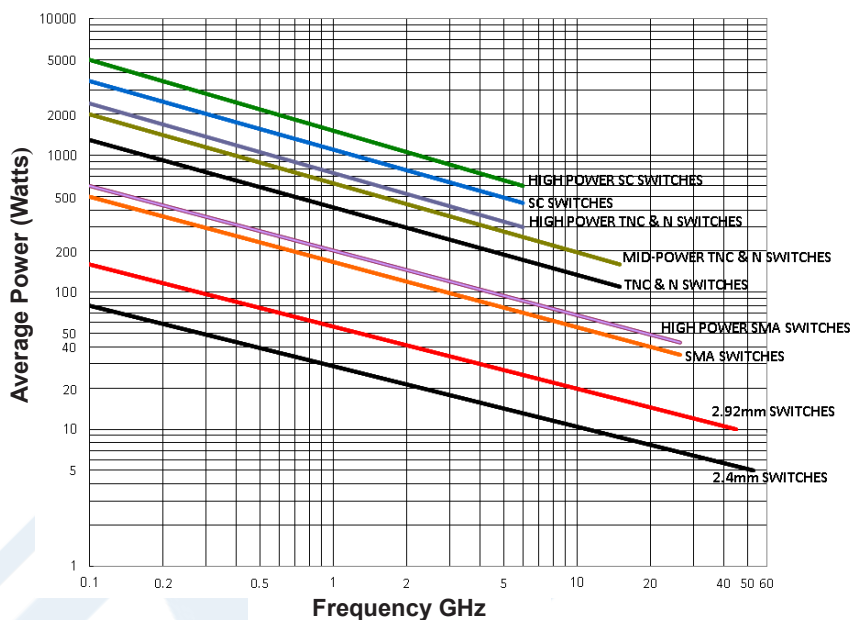


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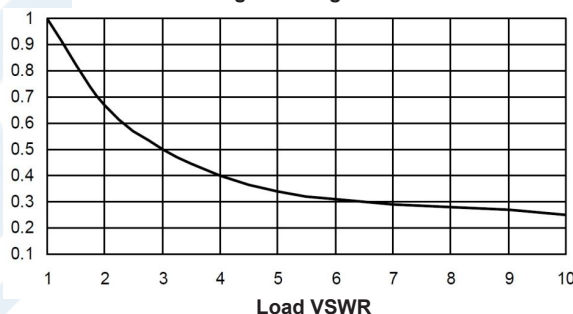
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Power Handling vs. Frequency



Power Handling De-rating vs. Load VSWR



Power Handling Chart and Derating Curves based on the following Test and Environmental Conditions:
 Ambient temperature: 20-25°C
 Altitude: Sea Level to 1,000 feet
 Relative Humidity: 50-55%
 Load VSWR: ≤ 1.20:1
 Operation: Cold Switching

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SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 50 Watts, 12V, Solder Pins 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: [SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 50 Watts, 12V, Solder Pins PE71S6501](https://www.pasternack.com/sp6t-electromechanical-relay-normally-open-switch-12.4-ghz-50w-12v-n-pe71s6501-p.aspx)

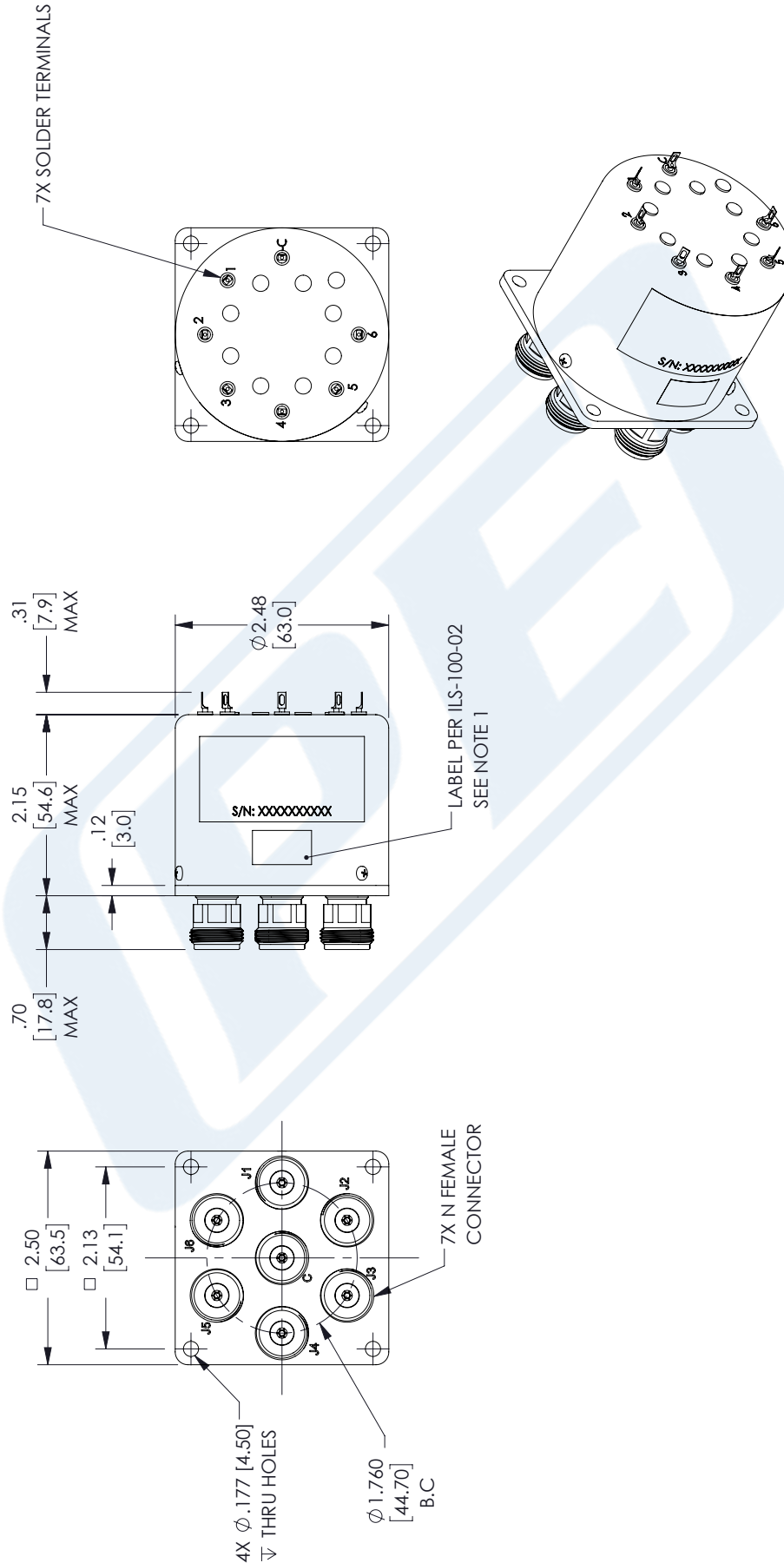
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The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. 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.

PE71S6501 CAD Drawing

SP6T Electromechanical Relay Normally Open Switch DC to
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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	05/17/2022	T. GALLA



NOTES:

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

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

TOLERANCES:	
.X = ± .2	[5.08]
.XX = ± .02	[.51]
.XXX = ± .005	[.13]
CABLE LENGTH (L) TOLERANCES:	
L ≤ 12 [305]	± .12 [3.05]
12 [305] < L ≤ 60 [1524]	± .25 [6.35]
60 [1524] < L ≤ 120 [3048]	± .51 [12.95]
120 [3048] < L ≤ 300 [7620]	± 1.02 [25.91]
300 [7620] < L	± 5% [127]

ALL DIMENSIONS SHOWN
ARE FOR REFERENCE ONLY.

THIRD-ANGLE PROJECTION



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SHEET 1 OF 2

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REV A



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E-mail: sales@pasternack.com

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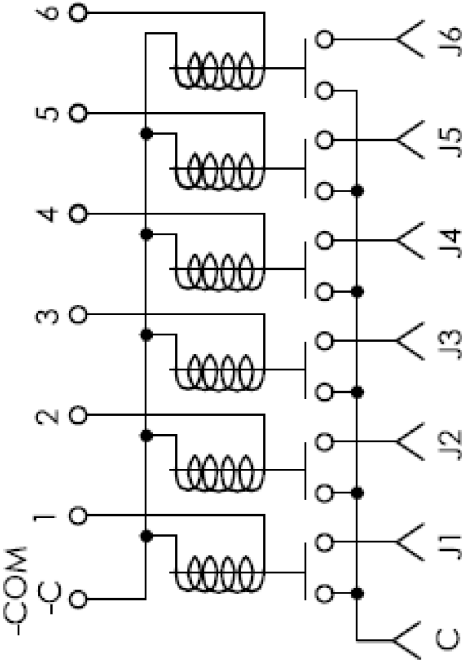
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SIZE A

PE71S6501 CAD Drawing

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RF POSITION
SCHEMATIC

TRUTH TABLE/PIN ASSIGNMENT :
PIN ASSIGNMENT

TERMINALS PIN ASSIGNMENT	RF PATH					
	J1	J2	J3	J4	J5	J6
1	ON	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF
3	OFF	OFF	ON	OFF	OFF	OFF
4	OFF	OFF	OFF	ON	OFF	OFF
5	OFF	OFF	OFF	OFF	ON	OFF
6	OFF	OFF	OFF	OFF	OFF	ON

PIN -C, -COM

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

TOLERANCES:
X = ± .2 [.08] FRACTIONS
.XX = ± .02 [.51] ± 1/32
.XXX = ± .005 [.13] ANGLES ± 1°

CABLE LENGTH (L) TOLERANCES:
L ≤ 12 [305] = +1 [25] / -0
12 [305] < L ≤ 60 [1524] = +2 [51] / -0
60 [1524] < L ≤ 120 [3048] = +4 [102] / -0
120 [3048] < L ≤ 300 [7620] = +6 [152] / -0
300 [7620] < L = +5%L / -0

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SIZE	CAGE CODE	DRAWN BY	ITEM NO.
A	53919	KGLEBOVA	PE71S6501

THIRD-ANGLE PROJECTION



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