



SPDT, 1P64 Rated Electromechanical Relay Latching  
Self Cut Off Switch, DC to 12 GHz, 90W, 12VDC, N

## Electromechanical Relay Switches Technical Data Sheet

**PE71S6521**

### Features

- Single Pole Double Throw (SP2T) Ruggedized Electro-mechanical Relay Switch
- IP64 Level 1 Rated
- DC to 12 GHz Frequency Range
- Latching Self Cut-Off Actuator
- 1M Lifecycle Rating
- Insertion Loss 0.2 dB typ
- Isolation > 90 dB typ
- VSWR as low as 1.25:1 max
- Solder Terminal Pins for DC Control
- +12 Volt DC Bias
- N-Type Female Connectors
- -54°C to +85°C Operating Temperature
- Up to 90 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 PE71S6521 is a Ruggedized Single Pole Double Throw (SP2T) electromechanical relay switch that operates across a broadband frequency range of DC to 12 GHz and can handle up to 90W of average power in a break before make condition. The 50 Ohm design is IP64 compliant with a Level 1 moisture seal and specifically designed to operate reliably in harsh usage environments and conditions, such as over extreme temperatures and wet or dusty environments. Intrusion protection offers full protection against dust and other particulates. Moisture protection enables resistance to splashes in all directions. The switch features a Latching Self Cut-Off Actuator that magnetically latches in place after the control voltage is removed. For power sensitive applications, this is the best actuator option. Impressive typical performance includes 0.2 dB insertion loss and isolation greater than 90 dB. This switch requires +12Vdc bias voltage, operates over a wide temperature range of -54°C to +85°C, and is rated for 1 million lifecycles. The rugged and compact package assembly supports female N-Type connectors and terminal 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 SPDT  
Actuator Type Latching

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		18	GHz
Impedance		50		Ohms
Operating Voltage	11	12	13	Volts
Actuating Set Current			200	mA
VSWR		1.1:1	1.4:1	
Insertion Loss		0.2	0.5	dB
Isolation	60	90		dB

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SPDT, 1P64 Rated Electromechanical Relay Latching Self Cut Off Switch, DC to 12 GHz, 90W, 12VDC, N PE71S6521](#)



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Switching Time <20 ms Typ

### 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	1.3:1	1.4:1	1.4:1		
Insertion Loss, Max	0.3	0.4	0.4	0.5		dB
Isolation, Min	90	80	70	60		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 0.176 lbs [79.83 g]

#### Connectors

RF Connector Type N Female  
 Control Connector Solder Terminals

### Environmental Specifications

#### Temperature

Operating Range -54 to +85 deg C  
 Storage Range -55 to +100 deg C

Ingress Protection (IP) Rating IP64

Shock MIL-STD-202 Method 213, Condition D, 500 G (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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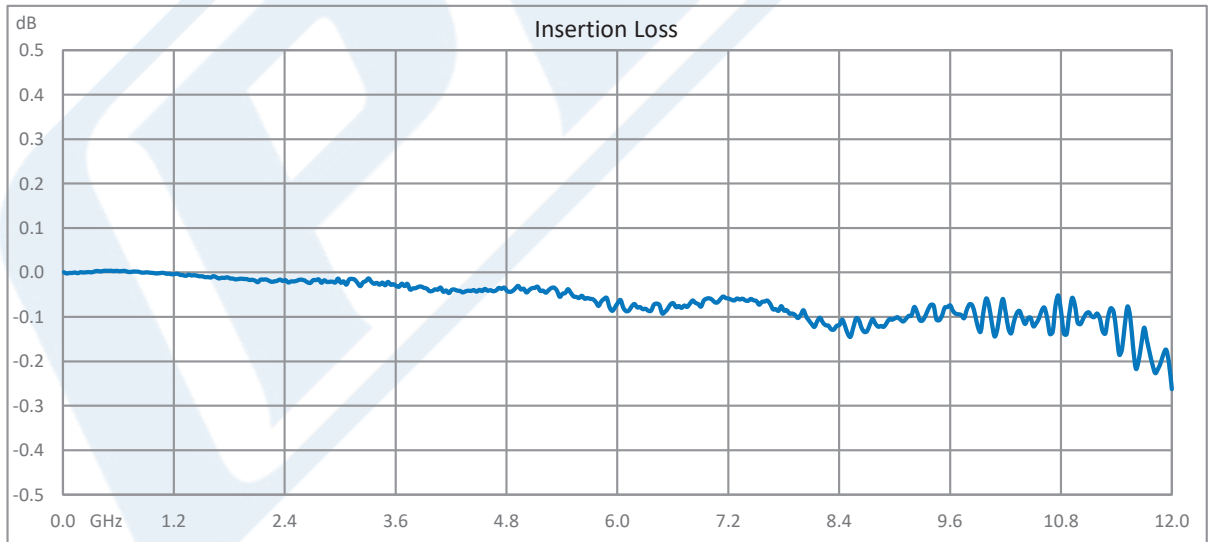
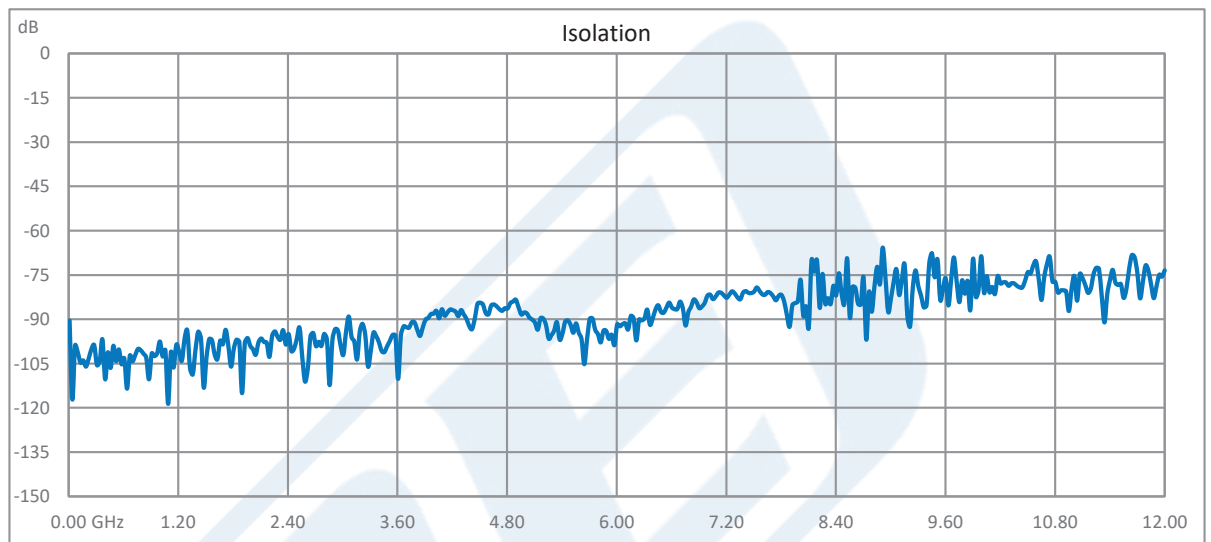


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## Electromechanical Relay Switches Technical Data

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### Typical Performance Data



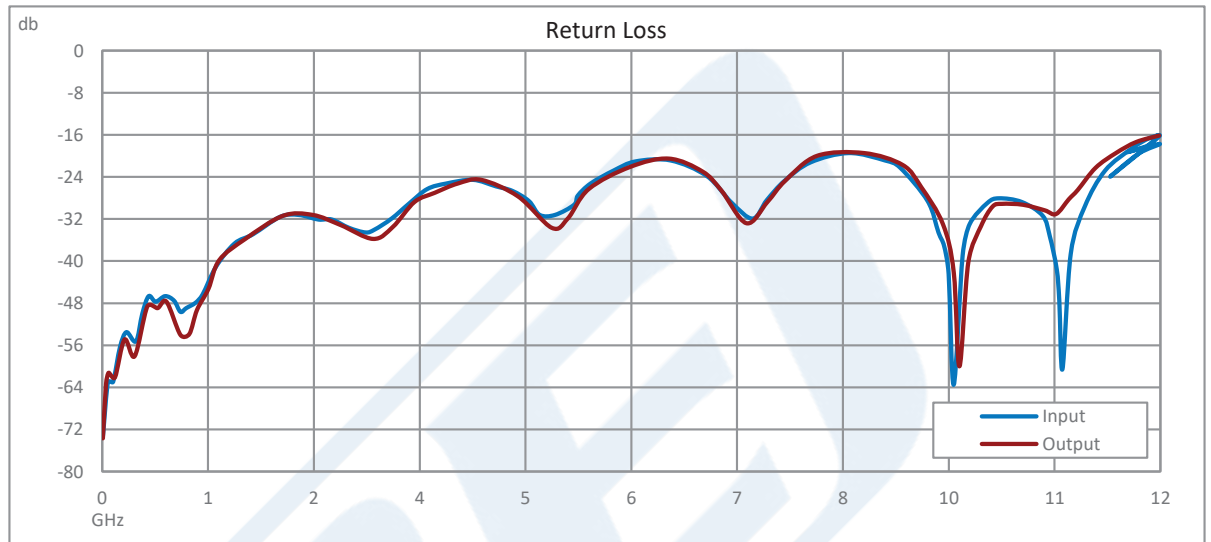
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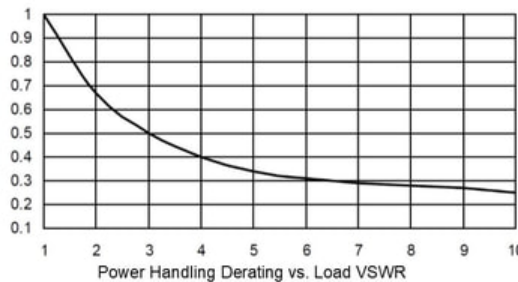
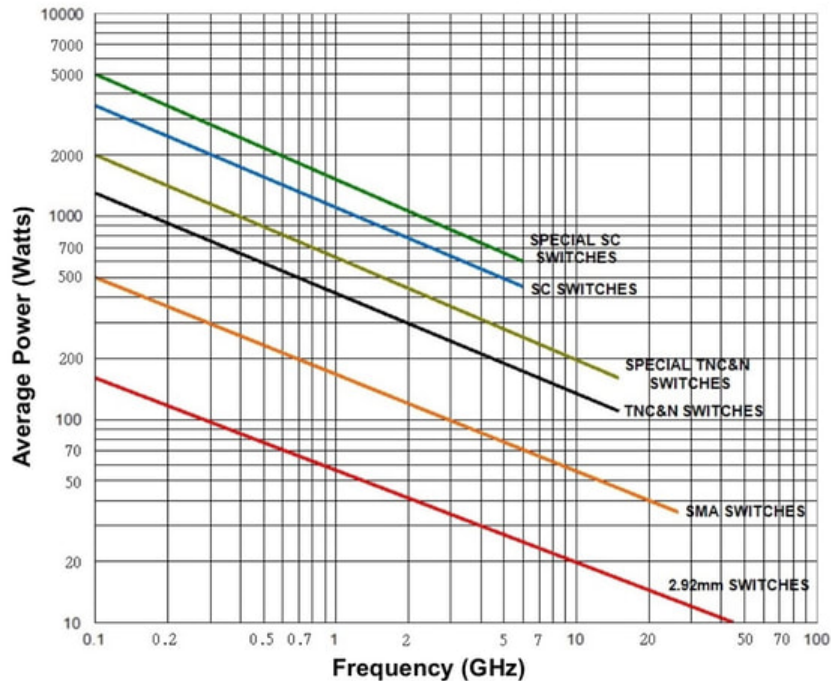


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**Power Handling vs. Frequency**



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, 1P64 Rated Electromechanical Relay Latching Self Cut Off Switch, DC to 12 GHz, 90W, 12VDC, N 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.

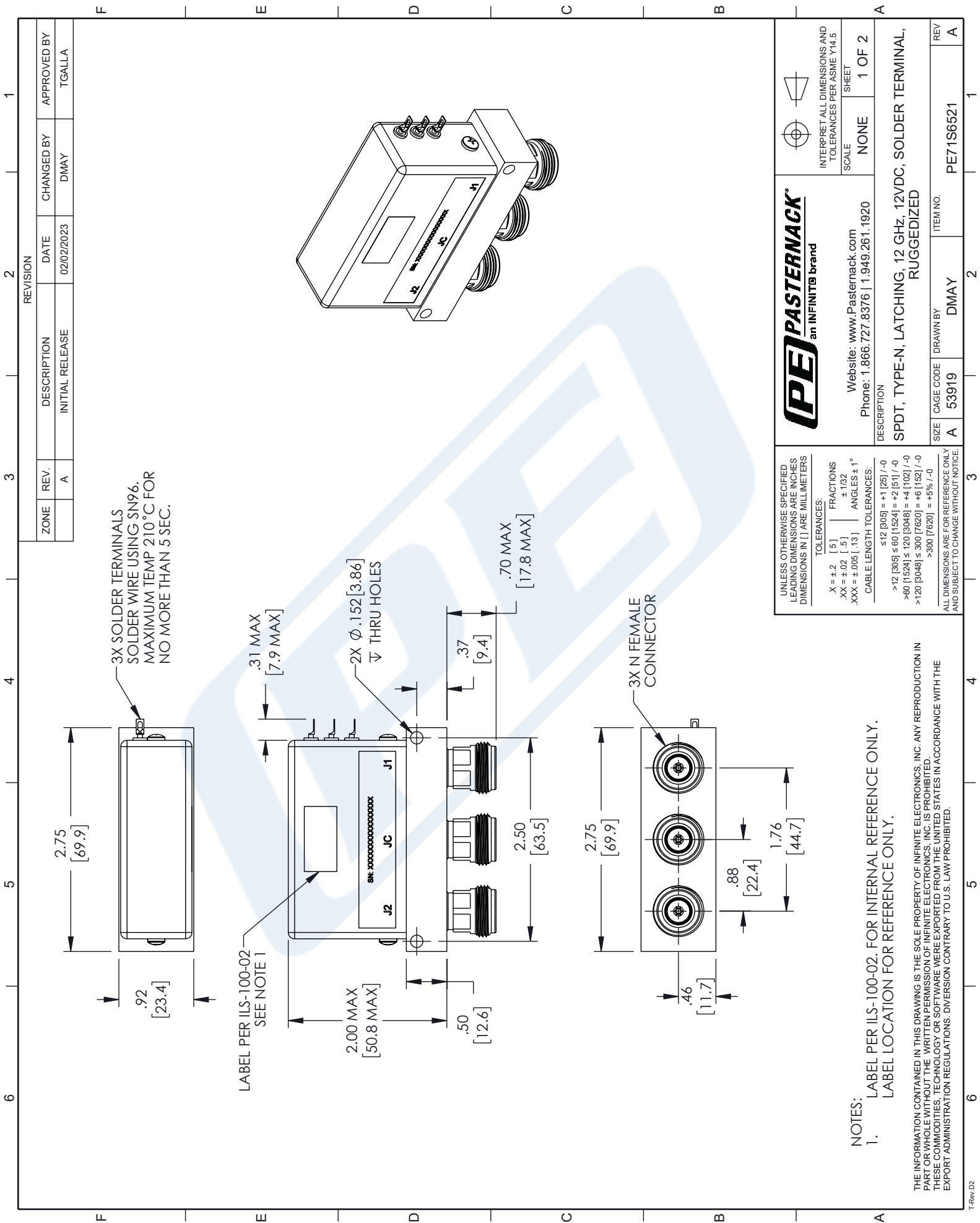
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The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements.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

# PE71S6521 CAD Drawing

SPDT, 1P64 Rated Electromechanical Relay Latching Self Cut Off Switch, DC to 12 GHz, 90W, 12VDC, N



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

REVISION	1	2	3	4	5	6
DESCRIPTION						
DATE	02/02/2023					
CHANGED BY	DMAY					
APPROVED BY	TGALLA					

**PE PASTERNAK**  
an INFINITIB brand

Website: [www.Pasternack.com](http://www.Pasternack.com)  
Phone: 1.866.727.8376 | 1.949.261.1920

DESCRIPTION  
 SPDT, TYPE-N, LATCHING, 12 GHz, 12VDC, SOLDER TERMINAL, RUGGEDIZED

SCALE NONE SHEET 1 OF 2

INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5

ITEM NO. PE71S6521 REV A

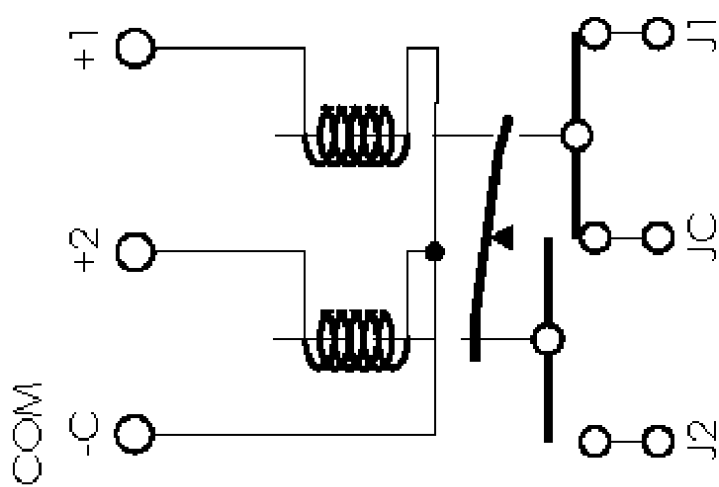
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## SCHEMATIC

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  
 >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

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Website: <a href="http://www.Pasternack.com">www.Pasternack.com</a> Phone: 1.866.727.8376   1.949.261.1920		INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5 SCALE: NONE SHEET: 2 OF 2
DESCRIPTION SPDT, TYPE-N, LATCHING, 12 GHz, 12VDC, SOLDER TERMINAL, RUGGEDIZED		
SIZE: A	CAGE CODE: 53919	DRAWN BY: DMAY
ITEM NO.: PE71S6521		REV: A

