



## SP6T Electromechanical Relay Normally Open Switch, Terminated, DC to 18 GHz, up to 90W, 28V, SMA

### Electromechanical Relay Switches Technical Data Sheet

PE71S6381

#### Features

- Single Pole Six Throw
- DC to 18 GHz Frequency Range
- Isolation greater than 80 dB typical
- 2M Cycle Min Operating Life
- +28 Volt DC
- 90 Watt average Power
- Normally Open Actuator
- Internally Terminated
- -25 to +70°C Operating Temperature
- Insertion Loss as low as 0.15 dB Max
- VSWR as low as 1.2:1 max
- SMA Female RF connectors
- 15 Pin D-Sub Connector for DC Control
- Hot Switching Capability - Consult Factory
- S-Parameter Data available upon request

#### Applications

- High Performance Relay Switch
- Military Communications
- Communications Systems
- Test & Measurement

#### Description

The PE71S6381 is a Single Pole Six Throw (SP6T) electromechanical relay switch that operates across a wide frequency range of DC to 18 GHz and can handle up to 90 Watts of CW input power in a break before make condition. The design features a Normally Open actuator and is rated for 2M life cycles for high reliability operation. Impressive performance includes insertion loss less than 0.15 dB typical and isolation greater than 80 dB typical. The Normally Open actuator has 50 Ohm Terminations and a +28 Vdc bias voltage, and operates over a temperature range of -25°C to +70°C. The rugged and compact package assembly supports SMA 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

Switch Type	SP6T, Terminated
Actuator Type	Normally Open
Switching Sequence	Break before Make

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		18	GHz
Impedance		50		Ohms
Termination Impedance		50		Ohms
Operating Voltage	26	28	30	Volts
Actuating Current @ 28 Volts		90		mA
VSWR		1.2:1	1.4:1	
Insertion Loss		0.15	0.4	dB
Isolation	80	80		dB
Input Power (CW)			60	Watts
Termination Input Power (CW)			5	Watts
Switching Time			20	ms Max

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, Terminated, DC to 18 GHz, up to 90W, 28V, SMA PE71S6381](#)



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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			GHz
VSWR, Max	1.2:1	1.3:1	1.4:1			
Insertion Loss, Max	0.15	0.25	0.4			dB
Isolation, Min	80	80	80			dB
Input Power, Typ (CW)	90	75	60			Watts

### Mechanical Specifications

#### Size

Package Type	Connectorized
Operating Life	2,000,000 Cycles

#### Connectors

RF Connector Type	SMA Female
Control Connector	15 Pin D-Sub

### Environmental Specifications

#### Temperature

Operating Range	-25 to +70 deg C
Storage Range	-55 to +100 deg C

Shock	MIL-STD-202 Method 213, Cond. D 500G Non Operating
Vibration	MIL-STD-202 Method 214, Cond. D 10G RMS Non Operating

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

### Plotted and Other Data

Notes:

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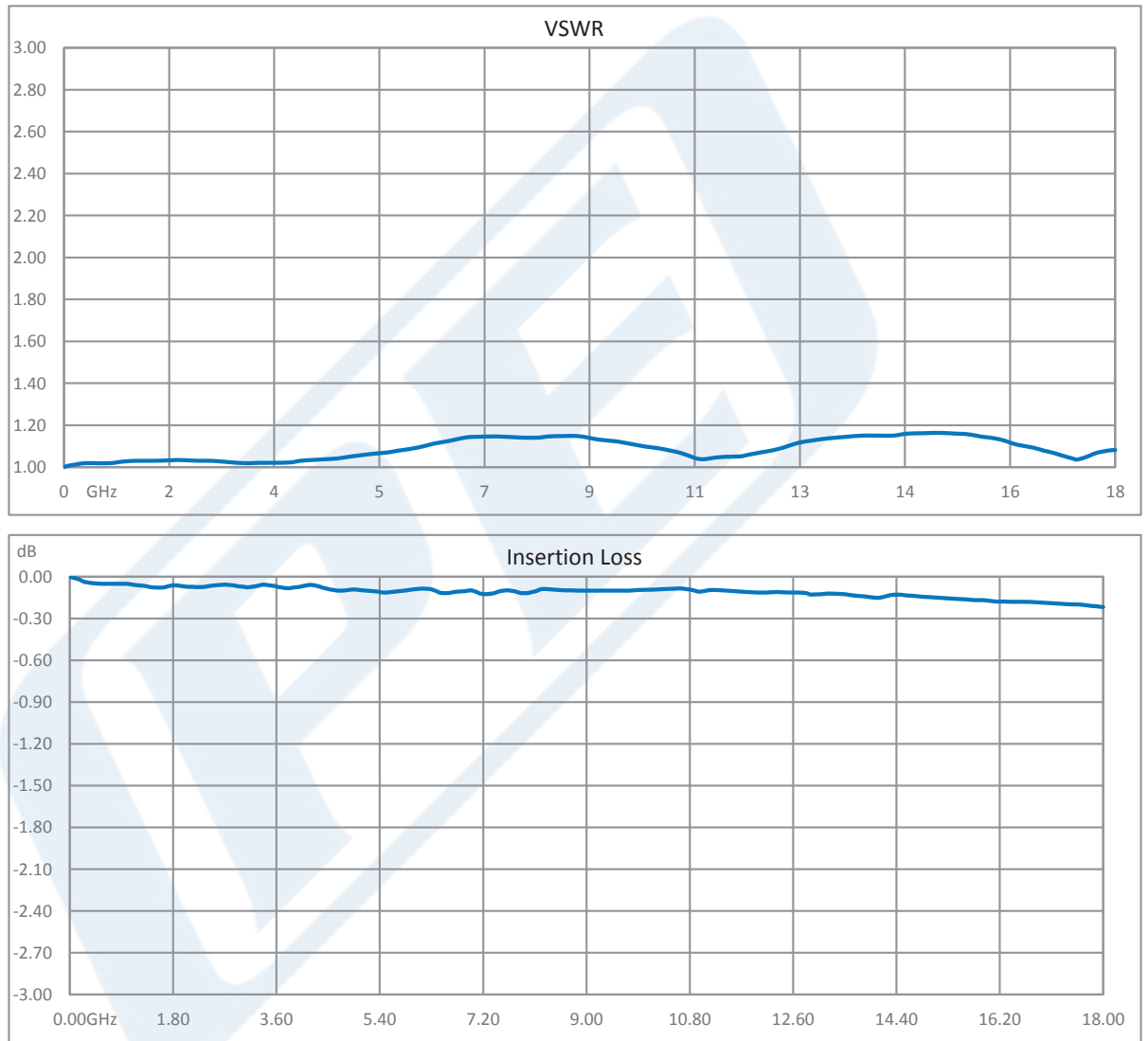


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Typical Performance Data



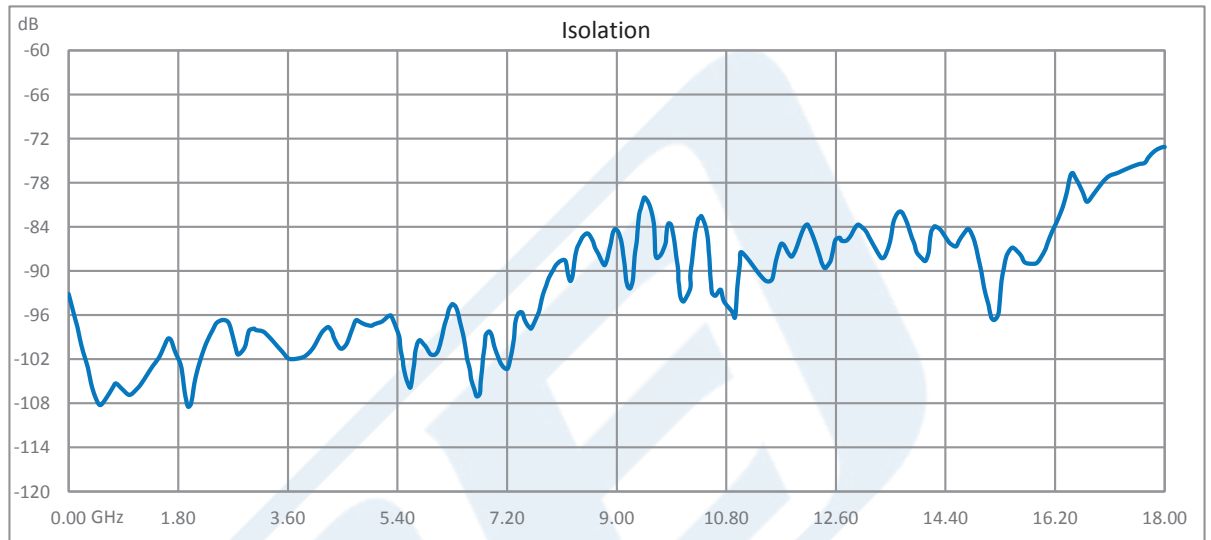
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**Power Handling vs. Frequency & Connector Type**



**Environmental and Test Conditions:**

- Ambient temperature of 25°C or less
- Altitude: Sea Level
- Load VSWR: 1.20:1 max.
- Cold Switching

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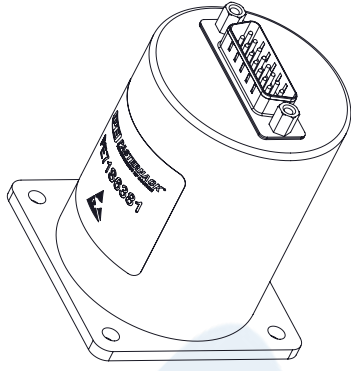
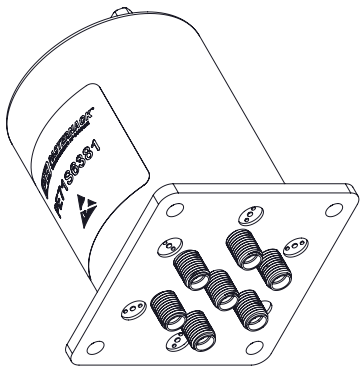
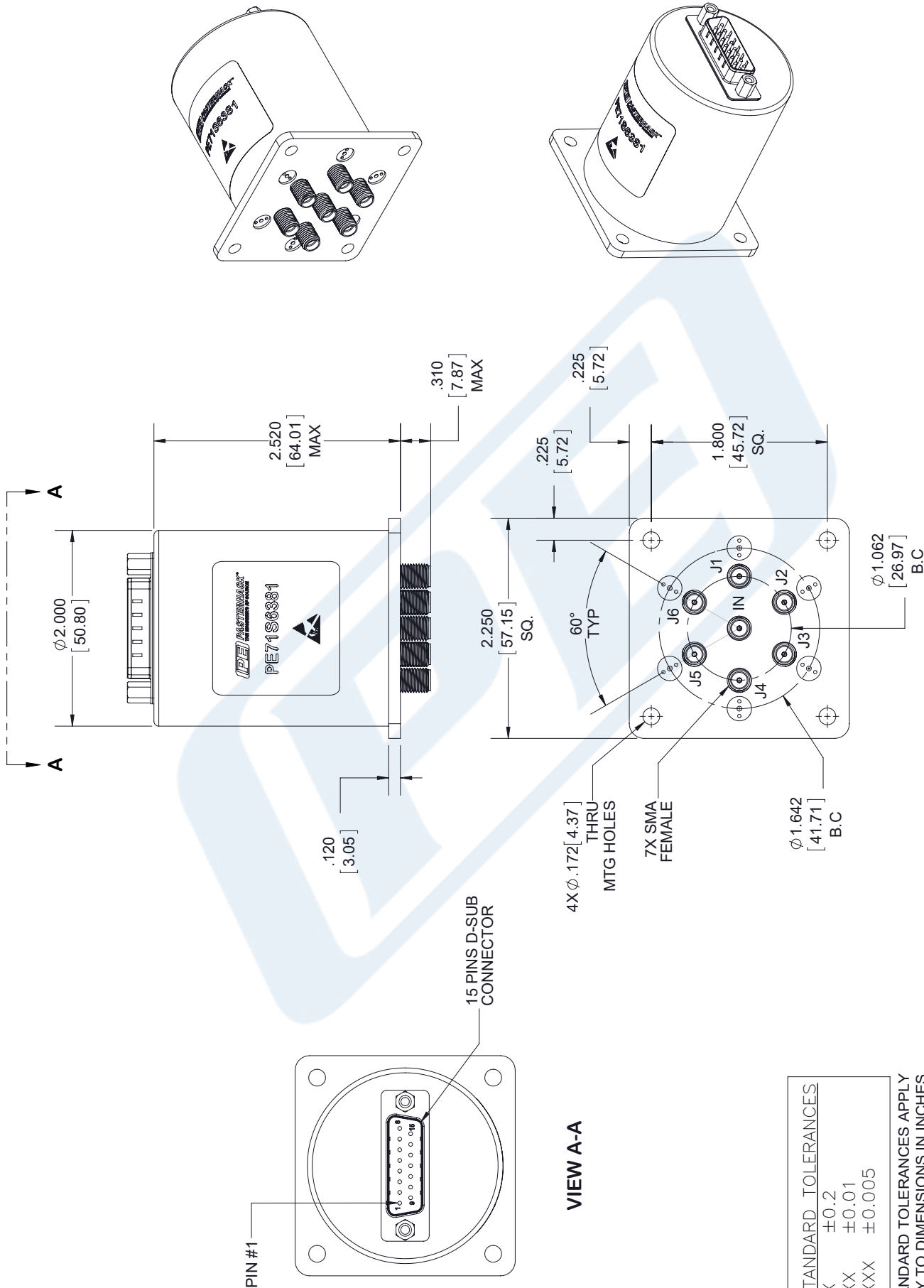
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# PE71S6381 CAD Drawing

SP6T Electromechanical Relay Normally Open Switch,  
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NOTES:  
 1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.  
 2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME  
 3. DIMENSIONS ARE IN INCHES [mm].

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DWG TITLE

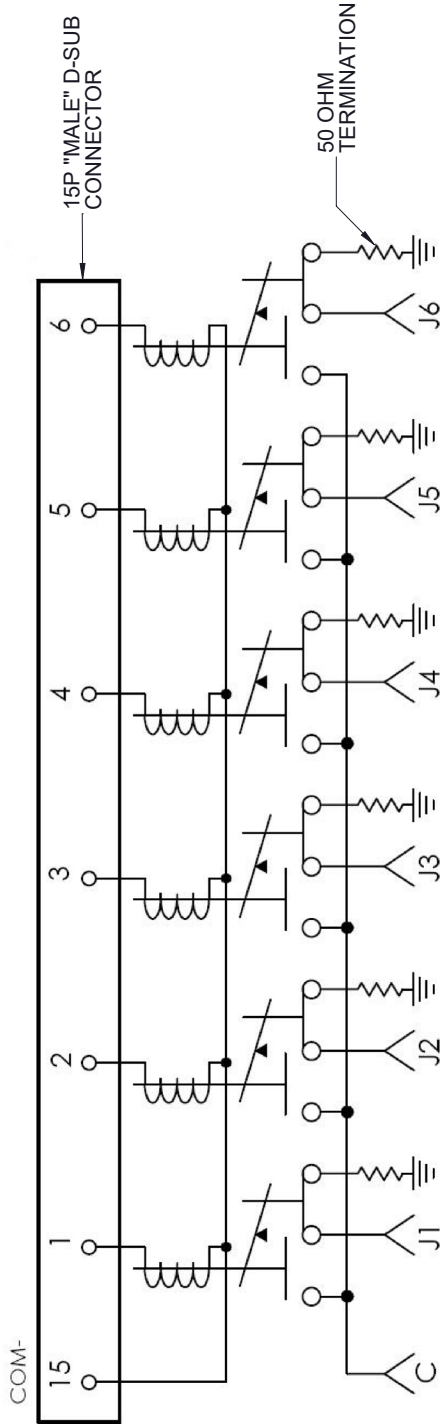
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# PE71S6381 CAD Drawing

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**SCHEMATIC SHOWN IN NORMALLY OPEN POSITION**

TERMINALS D-SUB PIN ASSIGNMENT	RF PATH					
	J1	J2	J3	J4	J5	J6
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

STANDARD TOLERANCES  
.X ±0.2  
.XX ±0.01  
.XXX ±0.005

\*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES



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