



SP6T Electromechanical Relay Latching Switch DC to 40 GHz,  
2.92mm, 3 Watts, 12V Control, Self Cut Off, Reset, Diodes

## Electromechanical Relay Switches Technical Data Sheet

PE71S6146

### Features

- Single Pole Six Throw Relay Switch
- DC to 40 GHz Frequency Range
- 1M Cycle Min Operating Life
- Latching Actuator
- Self Cut Off, Reset, Suppression Diodes
- Insertion Loss 0.9 dB max
- Isolation 50 dB min
- 3 Watts Avg Power Max
- Switching Sequence Break Before Make

### Applications

- Test & Measurement
- Communications System
- Instrumentation

### Description

The PE71S6146 is a Single Pole Six Throw Electromechanical Relay Switch that operates from DC to 40 GHz and has a rating of 3 Watts input power (CW) in a Break Before Make condition. The design features a Latching Actuator with Self Cut Off, Reset circuitry, Suppression Diodes and is rated for 1M Life Cycles for high reliability operation. Insertion loss is specified from 0.2 dB max and Isolation from 70 dB min, with +12 Vdc operating voltage and performance is guaranteed over -35°C to +85°C. The package interface uses solder terminals and 2.92mm Female connectors.

### Electrical Specifications

|                    |                             |
|--------------------|-----------------------------|
| Switch Type        | SP6T, Reflective            |
| Actuator Type      | Latching                    |
| Switching Sequence | Break Before Make           |
| Actuator Options   | Self Cut Off, Reset, Diodes |
| Polarity           | Positive Common             |

| Description                  | Minimum | Typical | Maximum | Units |
|------------------------------|---------|---------|---------|-------|
| Frequency Range              | DC      |         | 40      | GHz   |
| Impedance                    |         | 50      |         | Ohms  |
| Operating Voltage            |         | 12      |         | Volts |
| Actuating Current @ 12 Volts |         |         | 480     | mA    |
| VSWR                         |         |         | 2:1     |       |
| Insertion Loss               |         |         | 0.9     | dB    |
| Isolation                    | 50      |         |         | dB    |
| Input Power (CW)<br>(40 GHz) |         |         | 3       | 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 Latching Switch DC to 40 GHz, 2.92mm, 3 Watts, 12V Control, Self Cut Off, Reset, Diodes PE71S6146](#)



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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 40 | GHz   |
| VSWR, Max           | 1.3:1   | 1.4:1   | 1.5:1    | 1.7:1      | 2:1        |       |
| Insertion Loss, Max | 0.2     | 0.4     | 0.5      | 0.8        | 0.9        | dB    |
| Isolation, Min      | 70      | 60      | 60       | 55         | 50         | dB    |

### Mechanical Specifications

#### Size

|                           |                      |
|---------------------------|----------------------|
| Length                    | 2.375 in [60.33 mm]  |
| Width/Diameter            | 2.25 in [57.15 mm]   |
| Height                    | 2.25 in [57.15 mm]   |
| Weight                    | 0.53 lbs [240.4 g]   |
| Body Material and Plating | Aluminum             |
| Package Type              | Connectorized Module |

|                |                  |
|----------------|------------------|
| Operating Life | 1,000,000 Cycles |
| Switching Time | 35 ms Max        |

#### Connectors

|                                           |                            |
|-------------------------------------------|----------------------------|
| RF Connector Type                         | 2.92mm Female              |
| RF Connector Contact Material and Plating | Beryllium Copper, Gold     |
| RF Connector Body Material and Plating    | Passivated Stainless Steel |
| Control Connector                         | Solder Pin                 |

### Environmental Specifications

#### Temperature

|                 |                                                                                                      |
|-----------------|------------------------------------------------------------------------------------------------------|
| Operating Range | -35 to +85 deg C                                                                                     |
| ESD Sensitivity | ESD Sensitive Material. Transport material in Approved ESD bags. Handle in approved ESD Workstation. |



Environmental Specification Notes:  
Designed to meet MIL-DTL-3928

### Compliance Certifications (visit [www.Pasternack.com](http://www.Pasternack.com) for current document)

Not RoHS Compliant

### Plotted and Other Data

Notes:

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 DC to 40 GHz, 2.92mm, 3 Watts, 12V Control, Self Cut Off, Reset, Diodes PE71S6146](#)

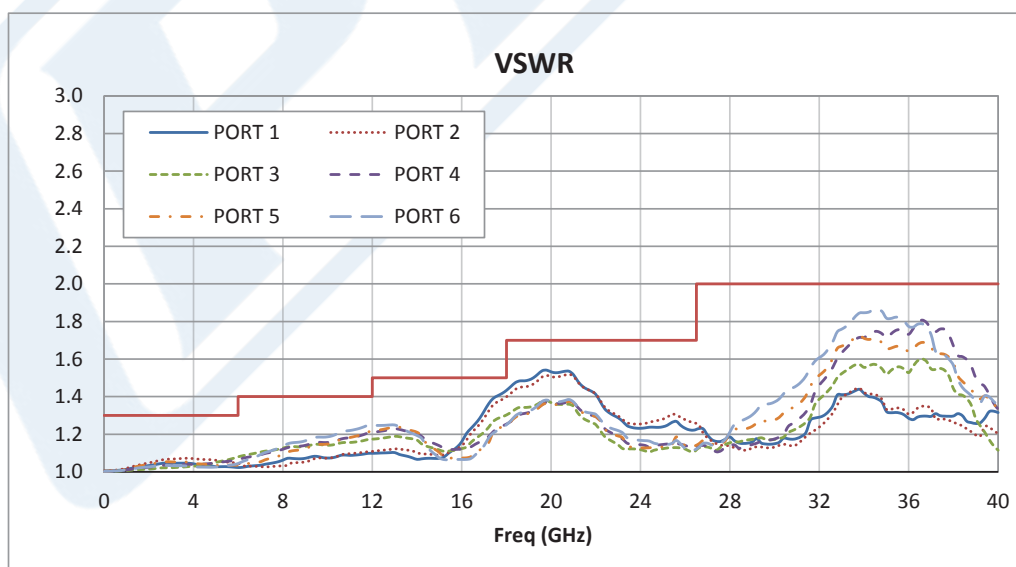
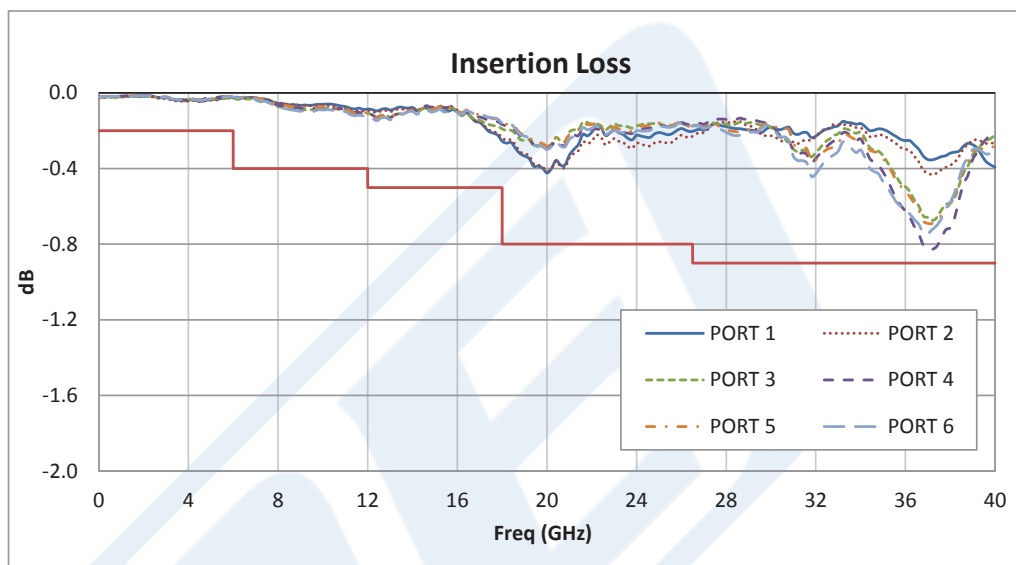


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### Typical Performance Data



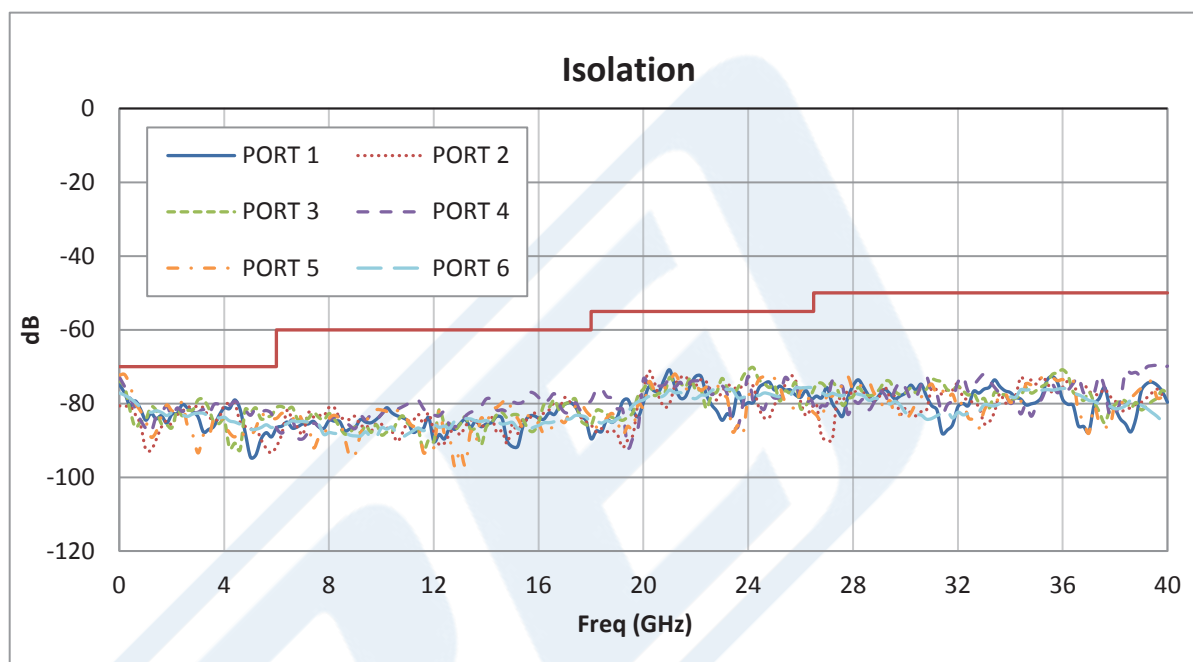
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SP6T Electromechanical Relay Latching Switch DC to 40 GHz, 2.92mm, 3 Watts, 12V Control, Self Cut Off, Reset, Diodes from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99% availability and are part of the broadest selection in the industry.

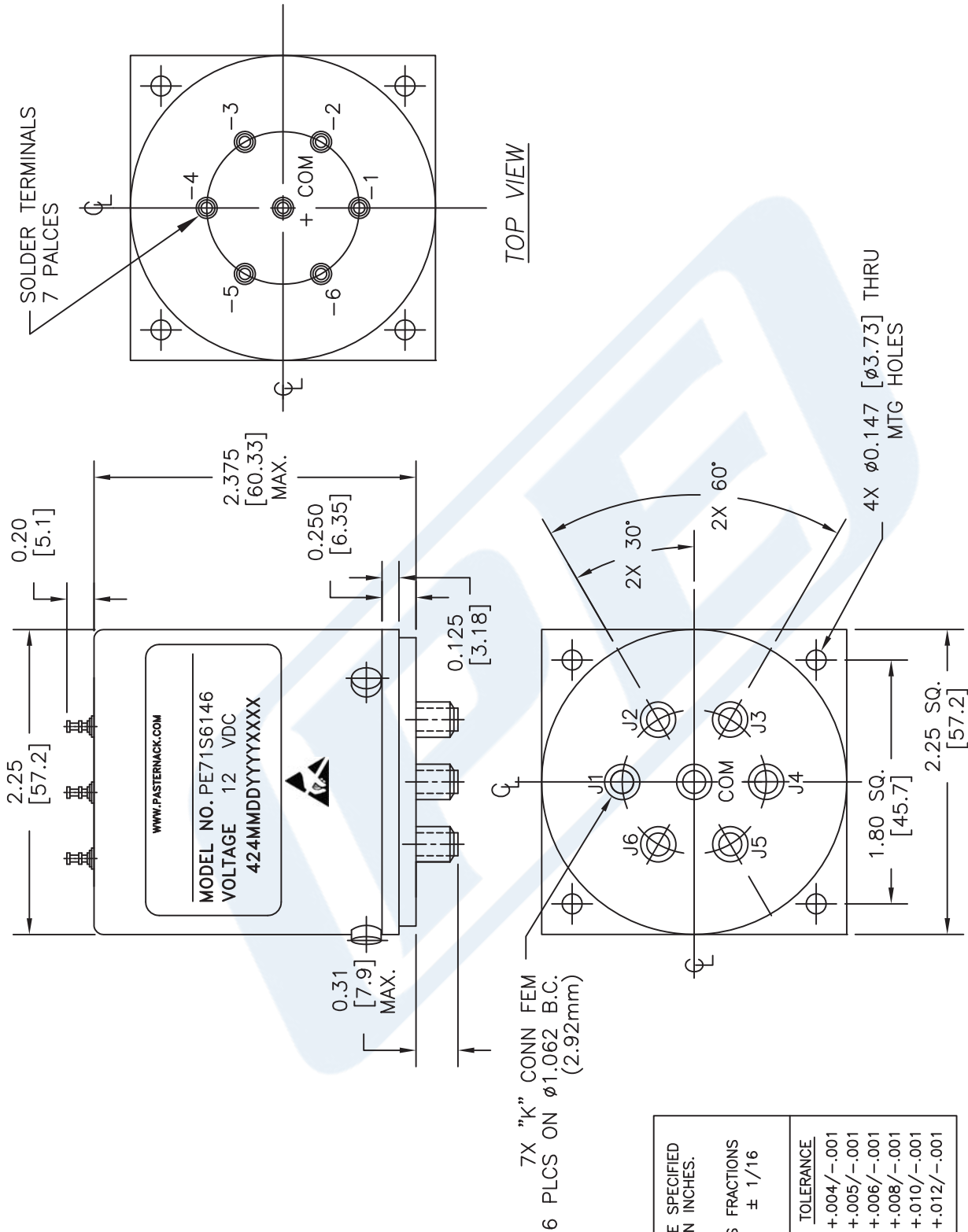
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The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements.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

# PE71S6146 CAD Drawing

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| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES.<br>TOLERANCES ARE: |              |           |
|----------------------------------------------------------------------------|--------------|-----------|
| DECIMALS                                                                   | ANGLES       | FRACTIONS |
| .XX ±.03                                                                   | ± 1°         | ± 1/16    |
| .XXX ±.010                                                                 |              |           |
| HOLE DIAMETER                                                              | TOLERANCE    |           |
| .0135 TO .125                                                              | +.004/- .001 |           |
| .126 TO .250                                                               | +.005/- .001 |           |
| .251 TO .500                                                               | +.006/- .001 |           |
| .501 TO .750                                                               | +.008/- .001 |           |
| .751 TO 1.000                                                              | +.010/- .001 |           |
| 1.001 TO 2.000                                                             | +.012/- .001 |           |

\* THESE DIMENSIONS AND TOLERANCES  
SUPERSEDE NOTE #1 ON TITLE BLOCK.

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DWG TITLE

**PE71S6146**

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].

FSCM NO. 53919

CAD FILE 031615

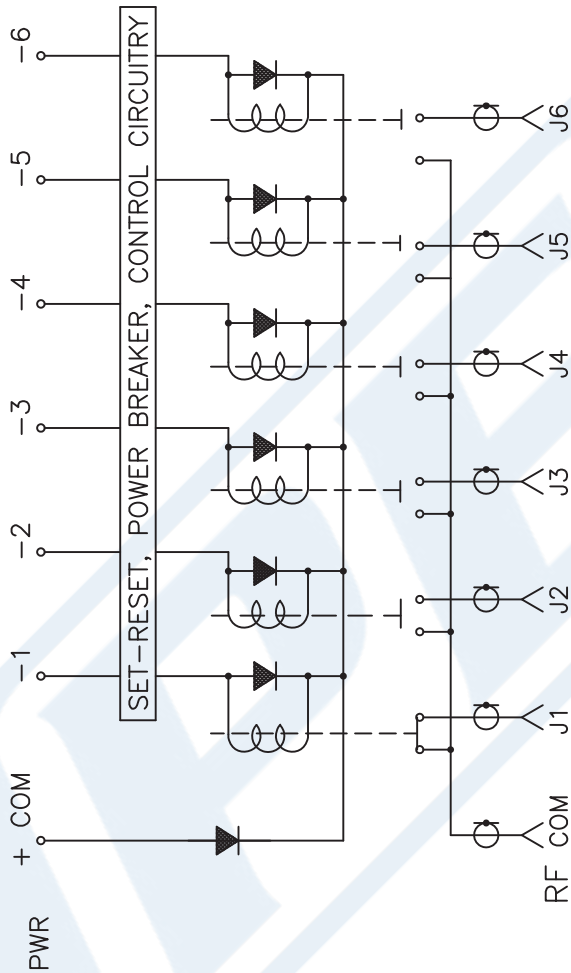
SCALE N/A

SIZE A

200

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SCHEMATIC LATCHING WITH "K" CONN.  
SHOWN IN POSITION 1 (COM – J1)

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DWG TITLE

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FSCM NO. 53919

CAD FILE

030515

SCALE N/A

SIZE A

2233

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