



# Absorptive SP4T PIN Diode Switch Operating From 1 GHz to 18 GHz Up to 0.1 Watts (+20 dBm) and Field Replaceable SMA

## PIN Diode Switches Technical Data Sheet

PE71S6255

### Features

- SP4T Absorptive Switch
- 1.0 GHz to 18.0 GHz
- Insertion Loss 3.75 dB max
- Isolation 70 dB min
- Power Input 20 dBm CW max
- Field Replaceable Connectors

### Applications

- Test & Measurement
- Military Communication
- Commercial Communication
- Wireless Communications
- SATCOM
- Military Electronic Systems
- RF Test Stations

### Description

The PE71S6255 is a Single Pole Single Four (SP4T) Absorptive PIN Diode Switch that operates from 1 GHz to 18 GHz. The output port is terminated in 50 ohms when switched in the isolation (off) state. Outstanding typical performance includes 3.75 dB max insertion loss, 70 dB min isolation, and 100 nsec max switching speed. The design incorporates TTL compatible driver circuitry for accurate logic control. Operational temperature range is -40°C to +85°C and dual voltage controls of +5 VDC and -15 VDC are required. The rugged package is designed to meet a series of MIL-STD-202F environmental conditions including humidity, shock, vibration, and temperature cycle. Package interfaces include solder terminals and female SMA connectors.

### Electrical Specifications

| Description                | Minimum | Typical | Maximum | Units |
|----------------------------|---------|---------|---------|-------|
| Frequency Range            | 1       |         | 18      | GHz   |
| Impedance                  |         | 50      |         | Ohms  |
| VSWR                       |         |         | 2:1     |       |
| Insertion Loss             |         |         | 3.75    | dB    |
| Isolation                  | 70      |         |         | dB    |
| Switching Time             |         |         | 100     | ns    |
| Input Power (CW)           |         |         | 0.1     | Watts |
| Survival Power             |         |         | 1       | Watts |
| Positive Operating Voltage |         | 5       |         | Vdc   |
| Negative Operating Voltage |         | -15     |         | Vdc   |
| Operating Temperature      | -40     |         | +85     | deg C |

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Absorptive SP4T PIN Diode Switch Operating From 1 GHz to 18 GHz Up to 0.1 Watts \(+20 dBm\) and Field Replaceable SMA PE71S6255](#)



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**Mechanical Specifications**

**Size**

|        |                    |
|--------|--------------------|
| Length | 1.25 in [31.75 mm] |
| Width  | 1.25 in [31.75 mm] |
| Height | 0.4 in [10.16 mm]  |
| Weight | 0.07 lbs [31.75 g] |
| Finish | Blue Paint         |

**Configuration**

|                       |                   |
|-----------------------|-------------------|
| Design                | Absorptive, SP4T  |
| RF Connector          | SMA Female        |
| RF Connector Option   | Field Replaceable |
| TTL Control Connector | Solder Pin        |

**Environmental Specifications**

**Temperature**

|                 |                   |
|-----------------|-------------------|
| Operating Range | -40 to +85 deg C  |
| Storage Range   | -55 to +125 deg C |

|                     |                                                                                                  |
|---------------------|--------------------------------------------------------------------------------------------------|
| Humidity            | MIL-STD-202F, Method 103B, Condition B                                                           |
| Shock               | MIL-STD-202F, Method 213B, Condition B                                                           |
| Vibration           | MIL-STD-202F, Method 204D, Condition B                                                           |
| Altitude            | MIL-STD-202F, Method 105C, Condition B                                                           |
| Temperature Cycling | MIL-STD-202F, Method 107D, Condition A                                                           |
| ESD Sensitivity     | ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation. |



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

|                    |            |
|--------------------|------------|
| Not RoHS Compliant |            |
| REACH Compliant    | 12/17/2015 |

**Plotted and Other Data**

Notes:

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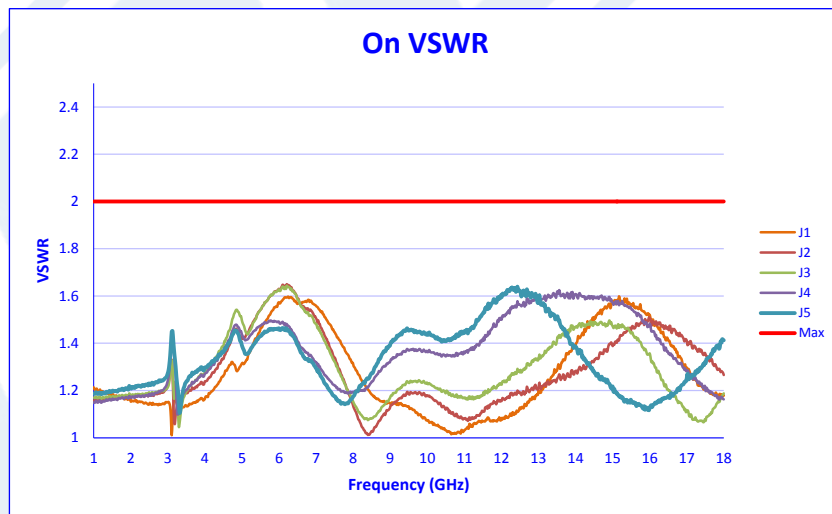
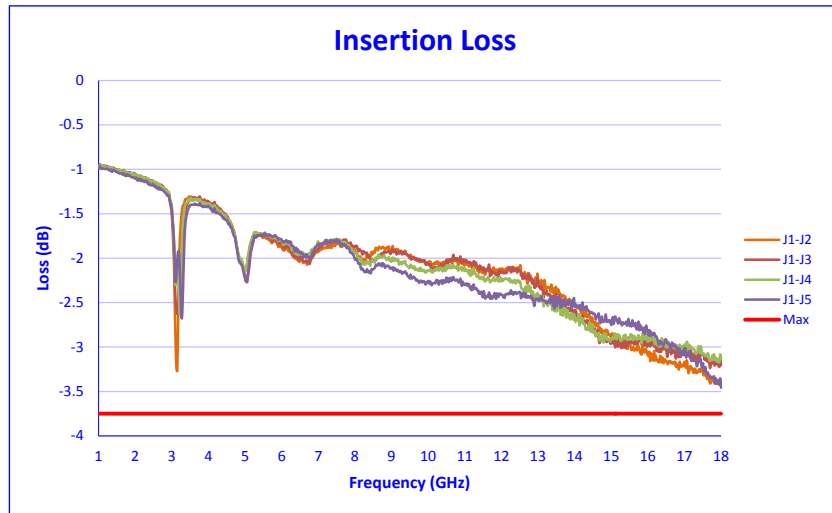


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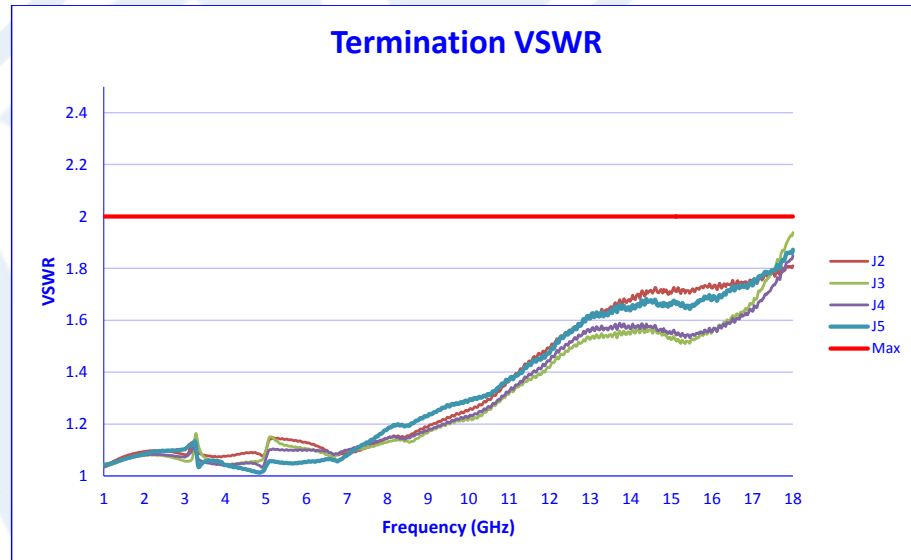
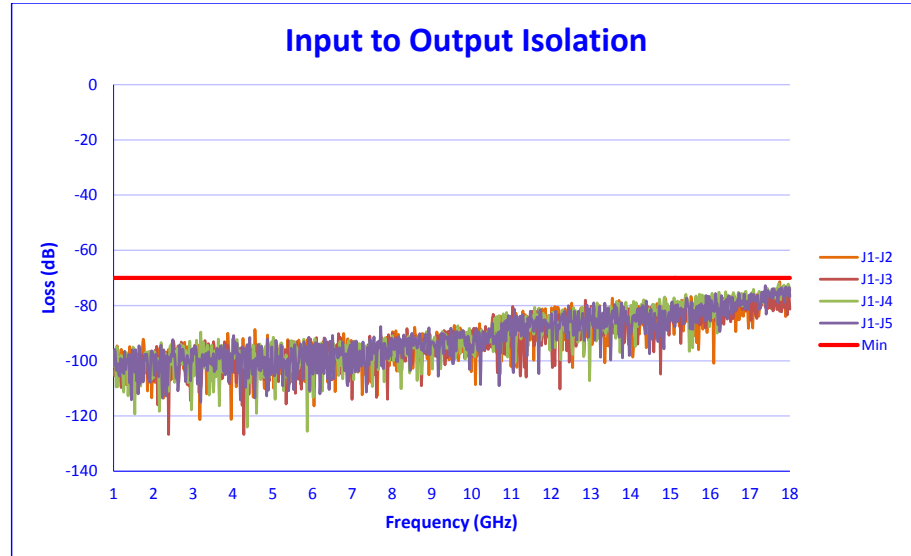
Typical Performance Data



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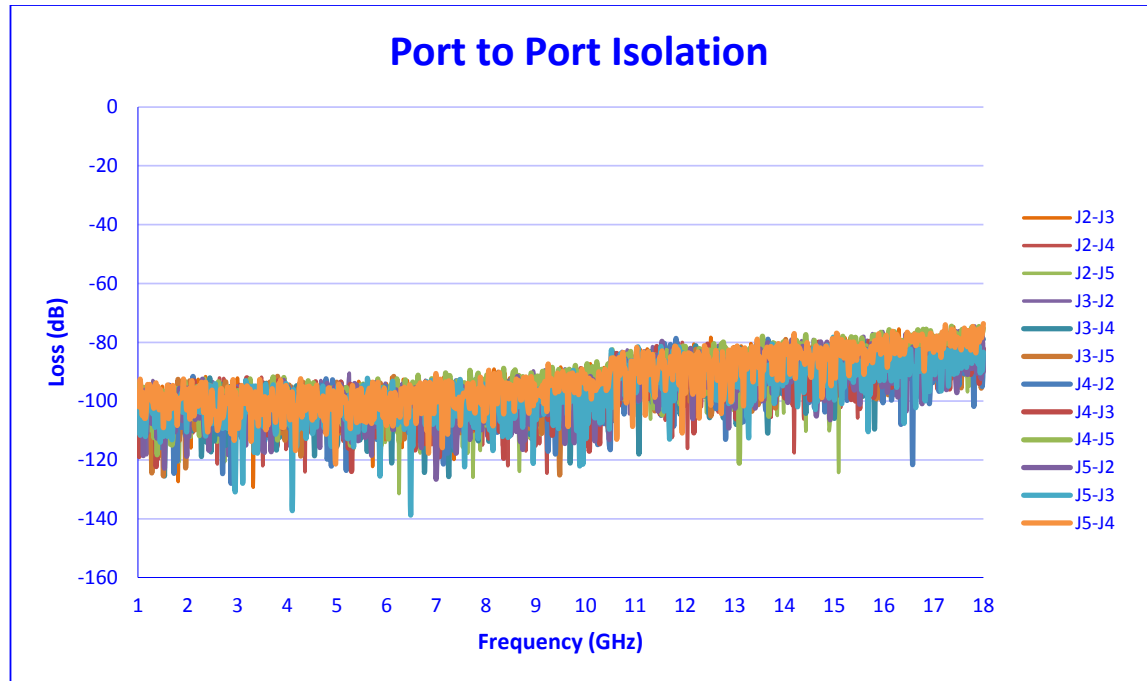
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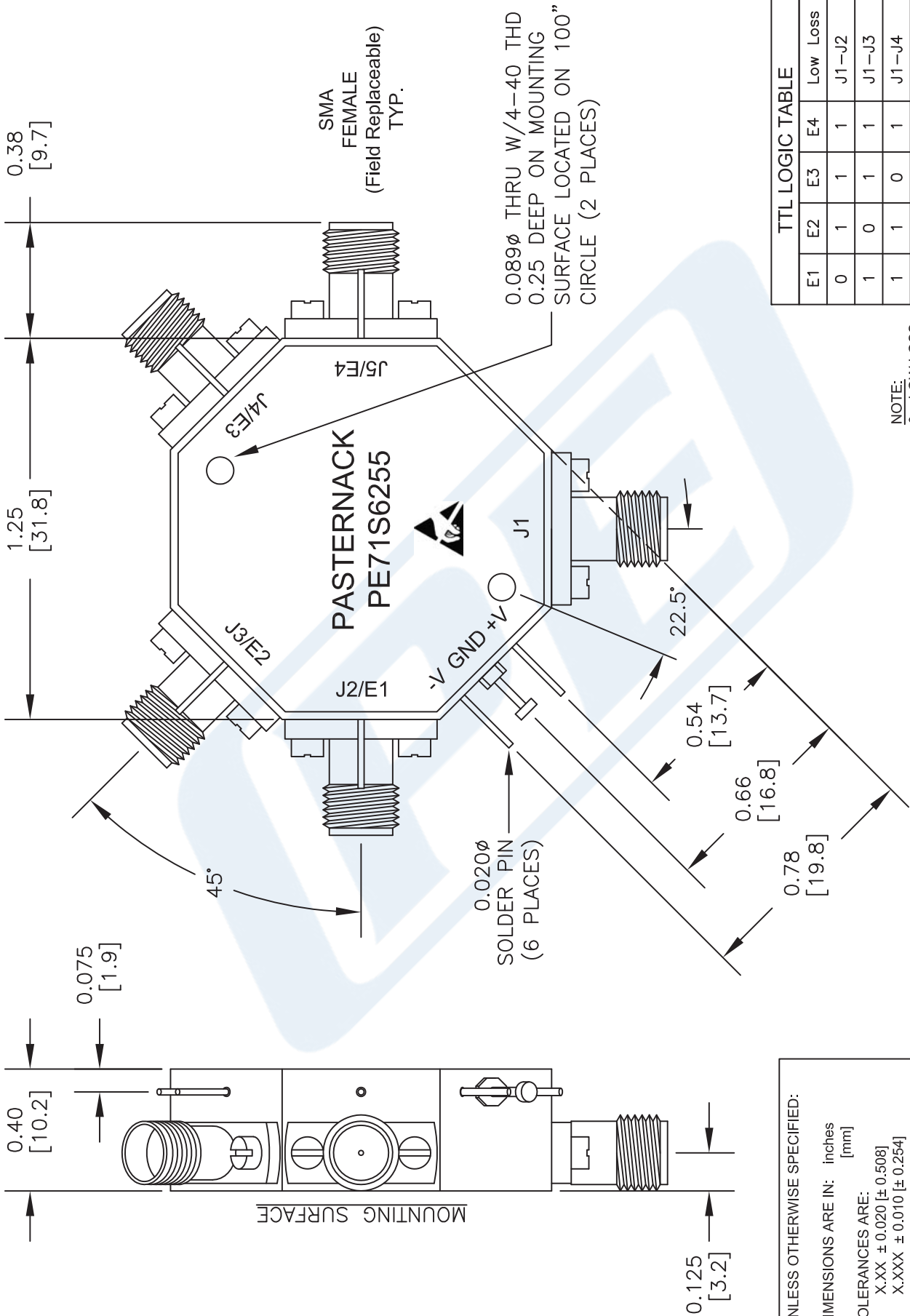
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The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements.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

# PE71S6255 CAD Drawing

Absorptive SP4T PIN Diode Switch Operating From 1 GHz to 18 GHz  
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UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN: inches [mm]  
TOLERANCES ARE:  
X.XX ± 0.020 [± 0.508]  
X.XXX ± 0.010 [± 0.254]

TTL LOGIC TABLE

| E1 | E2 | E3 | E4 | Low Loss |
|----|----|----|----|----------|
| 0  | 1  | 1  | 1  | J1-J2    |
| 1  | 0  | 1  | 1  | J1-J3    |
| 1  | 1  | 0  | 1  | J1-J4    |
| 1  | 1  | 1  | 0  | J1-J5    |

NOTE:  
0 = LOW LOSS  
1 = ISOLATION

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].

DWG TITLE  
**PE71S6255**

FSCM NO. 53919

CAD FILE 041516

SCALE N/A

SIZE A

2233

**PE PASTERNAK**  
THE ENGINEER'S RF SOURCE

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