



Absorptive SP4T PIN Diode Switch Operating From 500 MHz to 40 GHz Up to 0.1 Watts (+20 dBm) and Field Replaceable 2.92mm

## PIN Diode Switches Technical Data Sheet

PE71S6217

### Features

- SP4T Absorptive Switch
- 0.5 GHz to 40.0 GHz
- High Speed Switching
- Insertion Loss 8.0 dB max
- Isolation 60 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 PE71S6217 is a Single Pole Four Throw (SP4T) Absorptive PIN Diode Switch that operates from 0.5 GHz to 40 GHz. The output port is terminated in 50 ohms when switched in the isolation (off) state. Outstanding performance includes 8.0 dB max insertion loss, 60 dB min isolation and 50 ns 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 -5 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 2.92mm connectors.

### Electrical Specifications

Description	Minimum	Typical	Maximum	Units
Frequency Range	0.5		40	GHz
Impedance		50		Ohms
VSWR			2.5:1	
Insertion Loss			8	dB
Isolation	60			dB
Rise Time			15	ns
Fall Time			15	ns
Switching Time			50	ns
Input Power (CW)			0.1	Watts
Survival Power			1	Watts
Positive Operating Voltage		5		Vdc
Negative Operating Voltage		-5		Vdc
Current @ 5 Vdc		250		mA
Current @ -5 Vdc		100		mA
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 500 MHz to 40 GHz Up to 0.1 Watts \(+20 dBm\) and Field Replaceable 2.92mm PE71S6217](#)



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**Mechanical Specifications**

**Size**

Length	2.75 in [69.85 mm]
Width	1.5 in [38.1 mm]
Height	0.4 in [10.16 mm]
Weight	0.1 lbs [45.36 g]
Finish	Blue Paint

**Configuration**

Design	Absorptive, SP4T
RF Connector	2.92mm 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

Shock

Vibration

Altitude

Temperature Cycling

ESD Sensitivity

MIL-STD-202F, METHOD 103B COND. B  
MIL-STD-202F, METHOD 213B COND. B  
MIL-STD-202F, METHOD 204D COND. B  
MIL-STD-202F, METHOD 105C COND. B  
MIL-STD-202F, METHOD 107D COND. A  
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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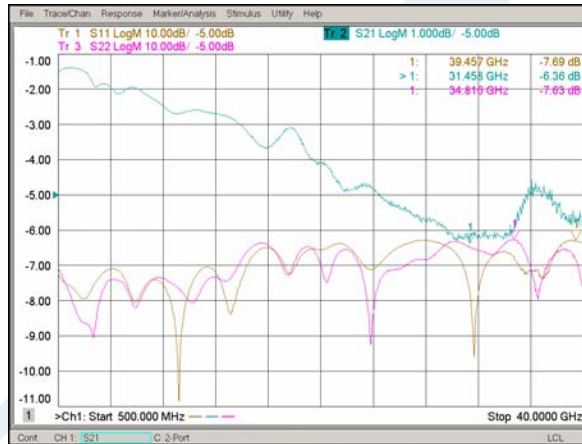
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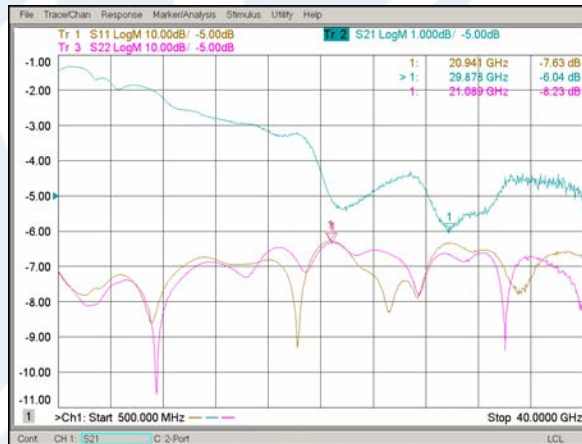
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Typical Performance Data

(J1 – J2) Insertion Loss and Return Loss



(J1 – J3) Insertion Loss and Return Loss



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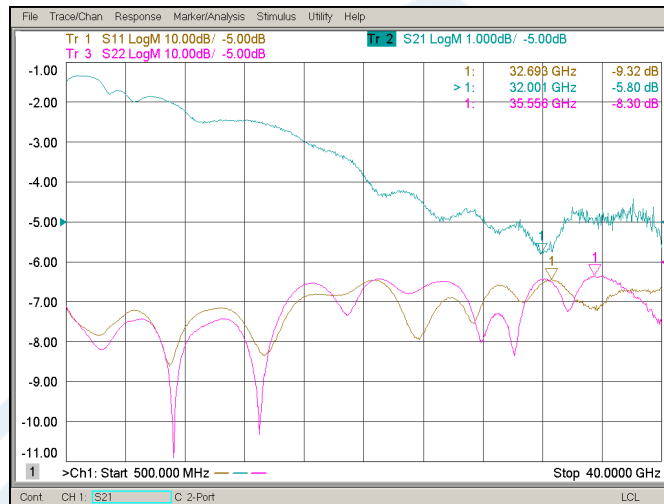


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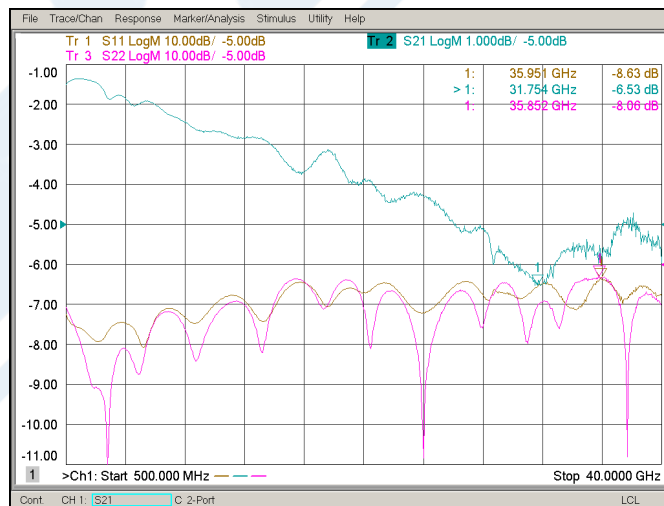
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**(J1 – J4) Insertion Loss and Return Loss**



**(J1 – J5) Insertion Loss and Return Loss**



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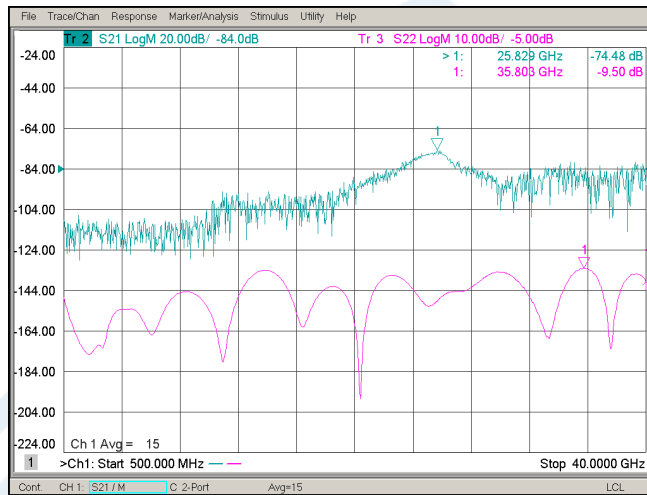


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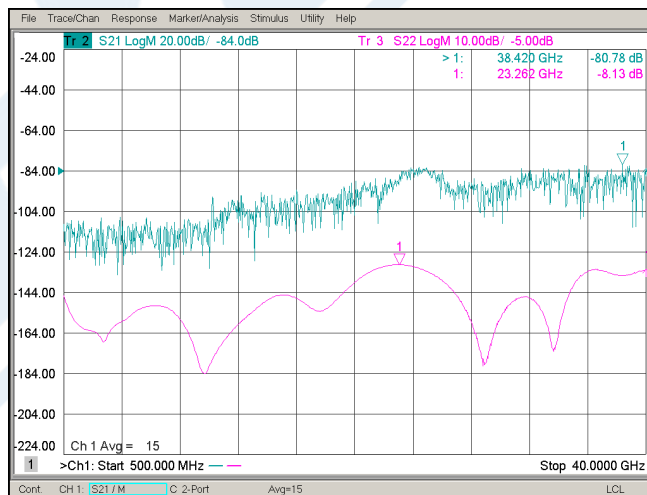
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**(J1 – J2) Isolation and Termination Return Loss**



**(J1 – J3) Isolation and Termination Return Loss**



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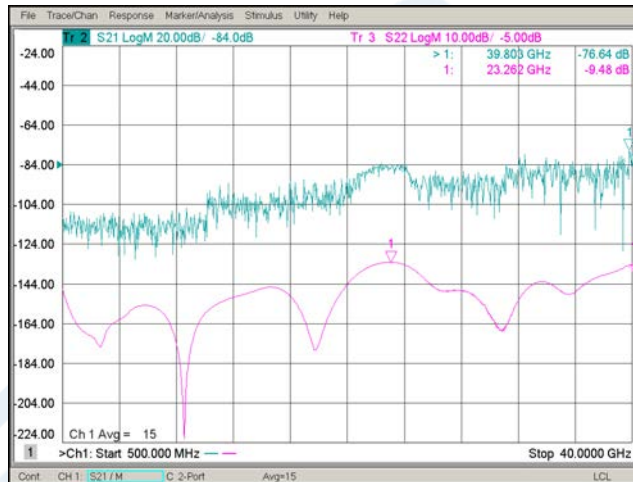


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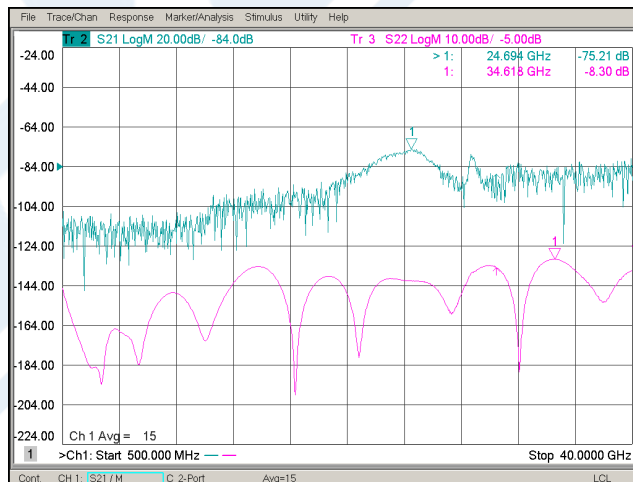
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**(J1 – J4) Isolation and Termination Return Loss**



**(J1 – J5) Isolation and Termination Return Loss**



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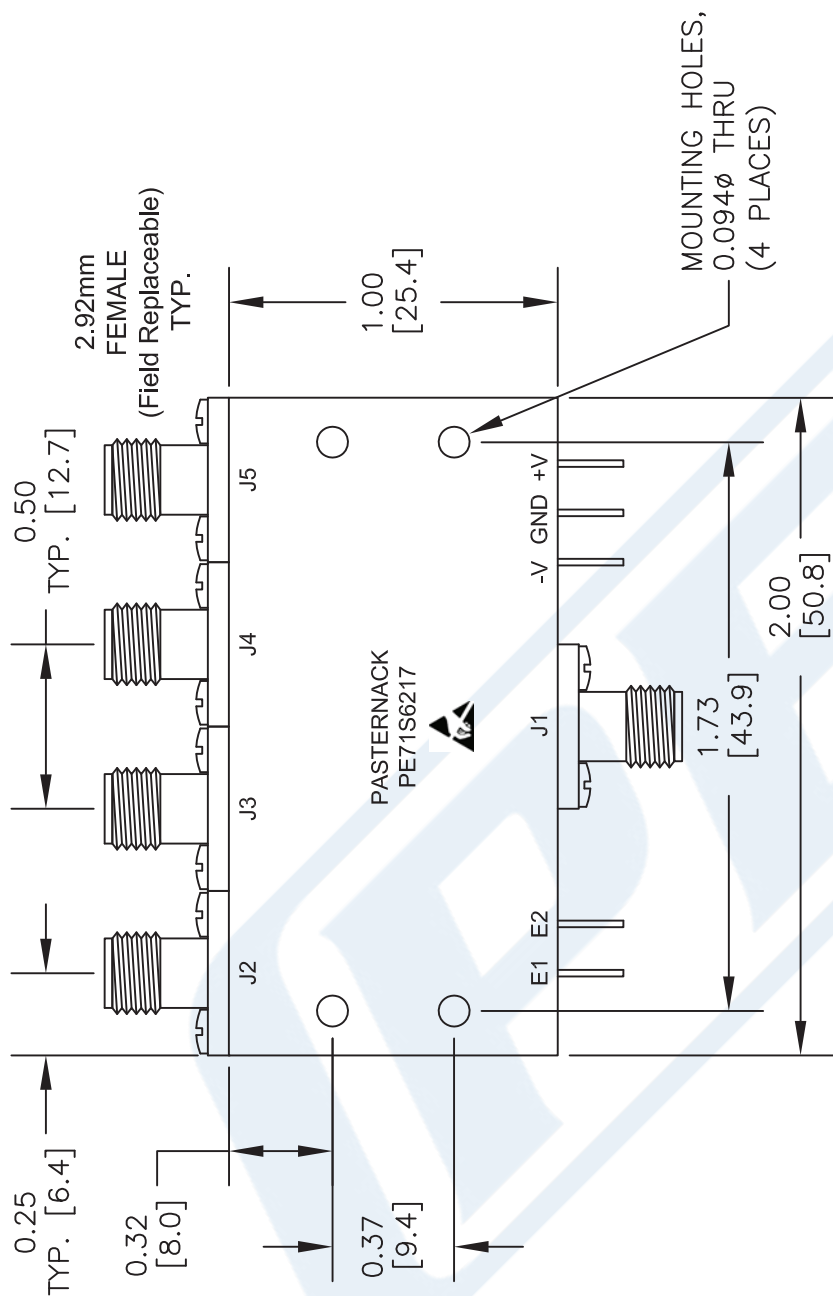
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The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements.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

# PE71S6217 CAD Drawing

Absorptive SP4T PIN Diode Switch Operating From 500 MHz to 40 GHz  
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Top View

2 BIT DECODER LOGIC TABLE

E1	E2	FUNCTION
0	0	J1-J2 LOW LOSS
0	1	J1-J3 LOW LOSS
1	0	J1-J4 LOW LOSS
1	1	J1-J5 LOW LOSS

ALL DIMENSIONS ARE IN INCHES.  
TOLERANCES:  
X.XX ±0.020  
X.XXX ±0.010

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



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DWG TITLE

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NOTES:  
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2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.  
3. DIMENSIONS ARE IN INCHES [mm].

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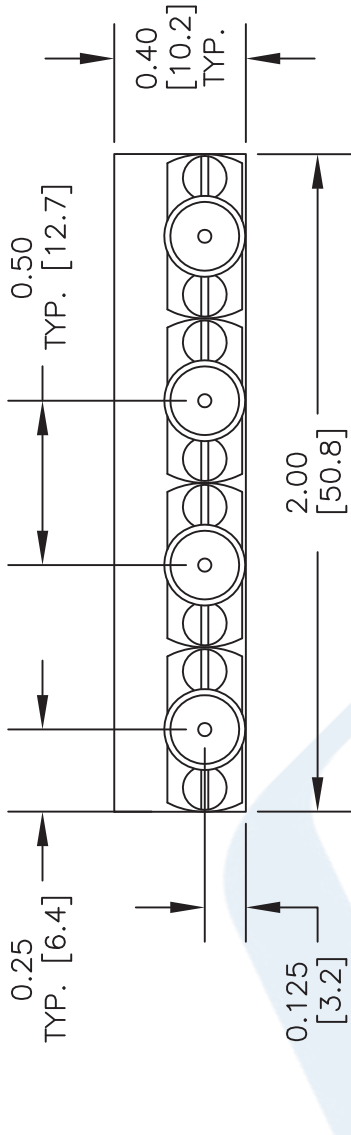
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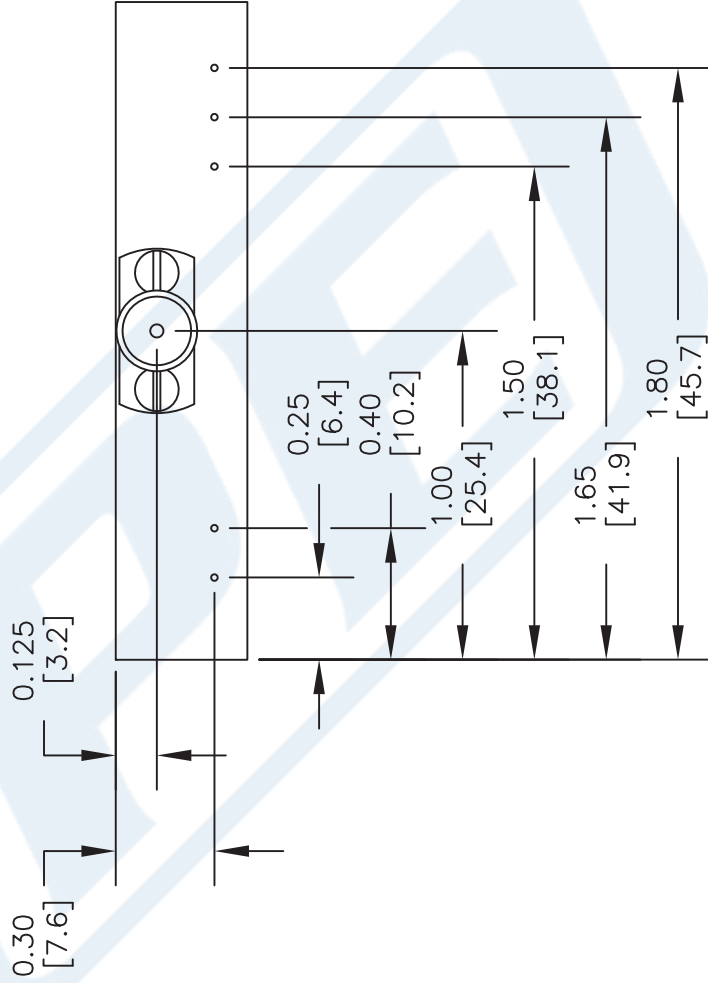


# PE71S6217 CAD Drawing

Absorptive SP4T PIN Diode Switch Operating From 500 MHz to 40 GHz  
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**Back View**



**Front View**

2 BIT DECODER LOGIC TABLE		FUNCTION
E1	E2	
0	0	J1-J2 LOW LOSS
0	1	J1-J3 LOW LOSS
1	0	J1-J4 LOW LOSS
1	1	J1-J5 LOW LOSS

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**THE ENGINEER'S RF SOURCE**  
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