



SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz
Up to 0.1 Watts (+20 dBm) and Field Replaceable SMA

PIN Diode Switches Technical Data Sheet

PE71S6221

Features

- SP3T Reflective Switch
- 0.5 GHz to 18.0 GHz
- Insertion Loss 3.2 dB typ
- Isolation 55 dB min
- Power Input 20 dBm CW max
- Switching Speed 100 nsec max

Applications

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

Description

The PE71S6221 is a Single Pole Three Throw (SP3T) Reflective PIN Diode Switch that operates from 0.5 to 18 GHz. Performance includes 3.2 dB typ insertion loss, 55 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 design is compact, features field replaceable female SMA connectors, and is designed to meet MIL-STD 202F environmental test conditions which include humidity, shock, vibration, altitude, and temperature cycle.

Electrical Specifications

Description	Minimum	Typical	Maximum	Units
Frequency Range	0.5		18	GHz
Impedance		50		Ohms
VSWR			2:1	
Insertion Loss		3.2		dB
Isolation	55			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
Current @ 5 Vdc		120		mA
Current @ -15 Vdc		50		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: [SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz Up to 0.1 Watts \(+20 dBm\) and Field Replaceable SMA PE71S6221](#)



SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz
Up to 0.1 Watts (+20 dBm) and Field Replaceable SMA

PIN Diode Switches Technical Data Sheet

PE71S6221

Mechanical Specifications

Size

Length	1.2 in [30.48 mm]
Width	1.2 in [30.48 mm]
Height	0.5 in [12.7 mm]
Weight	0.056 lbs [25.4 g]
Finish	Blue Paint

Configuration

Design	Reflective, SP3T
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

Shock

Vibration

Altitude

Temperature Cycling

ESD Sensitivity

MIL-STD-202F, Method 103B, Condition B
MIL-STD-202F, Method 213B, Condition B
MIL-STD-202F, Method 204D, Condition B
MIL-STD-202F, Method 105C, Condition B
MIL-STD-202F, Method 107D, Condition A
ESD Sensitive Material, Transport material in Approved
ESD bags. Handle only in ESD Workstation.



Compliance Certifications (visit www.Pasternack.com for current document)

Not RoHS Compliant

REACH Compliant

12/17/2015

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: [SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz Up to 0.1 Watts \(+20 dBm\) and Field Replaceable SMA PE71S6221](#)



SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz
Up to 0.1 Watts (+20 dBm) and Field Replaceable SMA

PIN Diode Switches Technical Data Sheet

PE71S6221

Typical Performance Data

(J1-J2) Insertion Loss and Return Loss



(J1-J3) Insertion Loss and Return Loss



Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz Up to 0.1 Watts \(+20 dBm\) and Field Replaceable SMA PE71S6221](#)

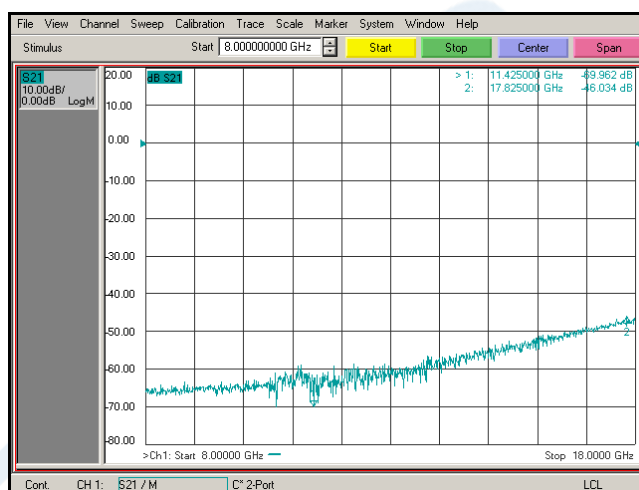


SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz
Up to 0.1 Watts (+20 dBm) and Field Replaceable SMA

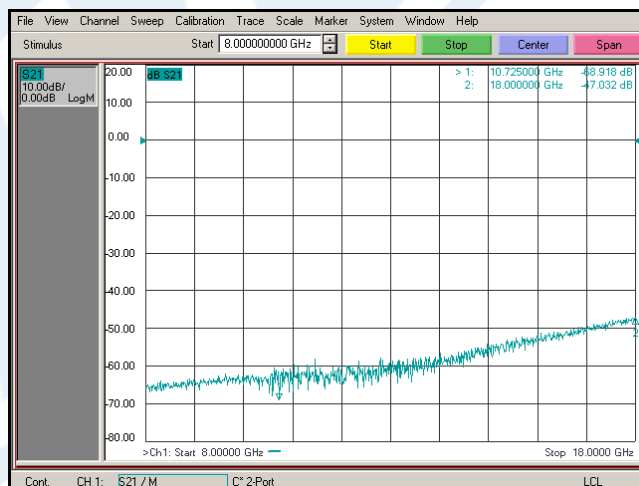
PIN Diode Switches Technical Data Sheet

PE71S6221

(J1 – J2) Isolation and Return Loss



(J1 – J3) Isolation and Return Loss



Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz Up to 0.1 Watts \(+20 dBm\) and Field Replaceable SMA PE71S6221](#)



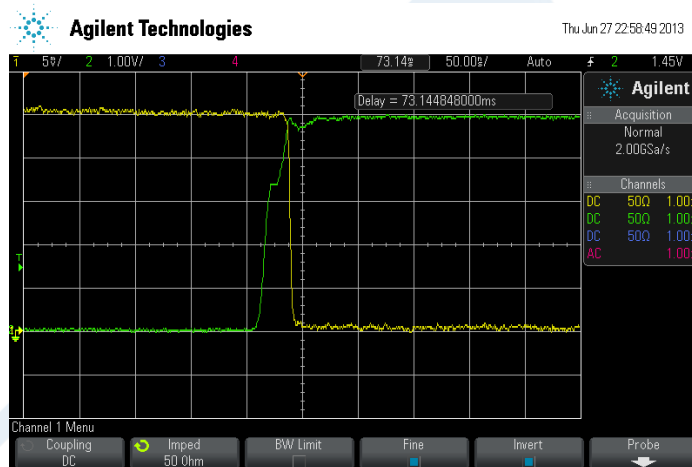
SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz
Up to 0.1 Watts (+20 dBm) and Field Replaceable SMA

PIN Diode Switches Technical Data Sheet

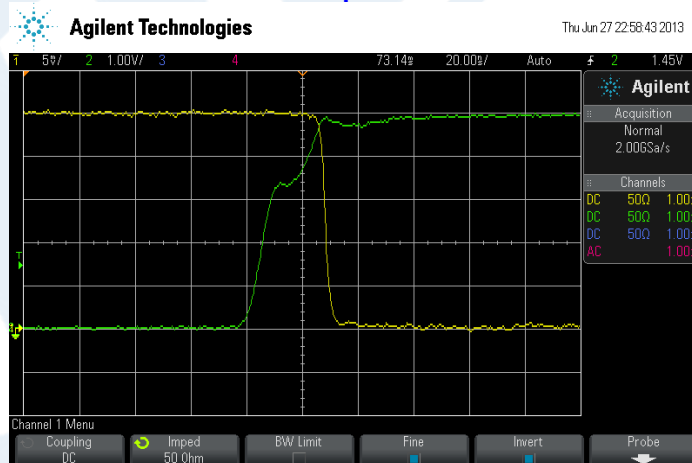
PE71S6221

Switching Speed OFF Delay & Fall Time

50ns per Div.



20ns per Div.



Green Trace: TTL Signal
Yellow Trace: RF Signal

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz Up to 0.1 Watts \(+20 dBm\) and Field Replaceable SMA PE71S6221](#)



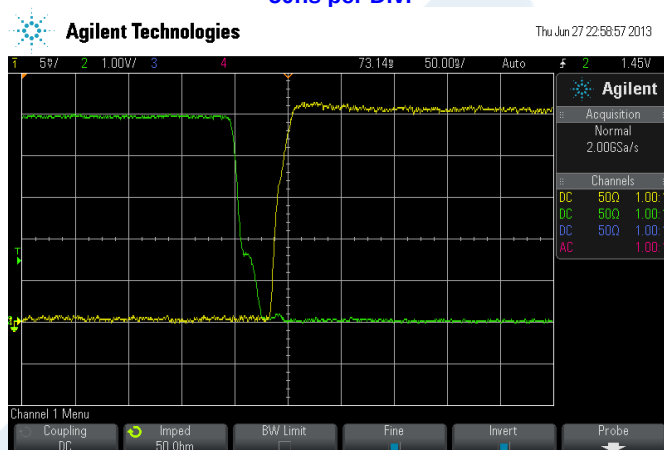
SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz
Up to 0.1 Watts (+20 dBm) and Field Replaceable SMA

PIN Diode Switches Technical Data Sheet

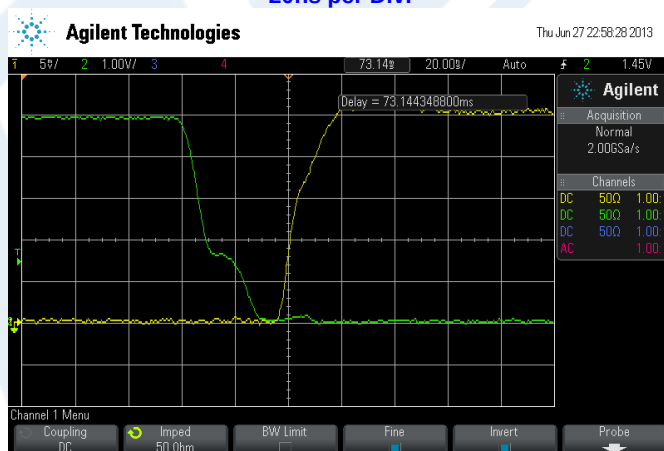
PE71S6221

ON Delay & Rise Time

50ns per Div.



20ns per Div.



Green Trace: TTL Signal
Yellow Trace: RF Signal

SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz Up to 0.1 Watts (+20 dBm) and Field Replaceable SMA 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.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz Up to 0.1 Watts \(+20 dBm\) and Field Replaceable SMA PE71S6221](#)



SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz
Up to 0.1 Watts (+20 dBm) and Field Replaceable SMA

PIN Diode Switches Technical Data Sheet

PE71S6221

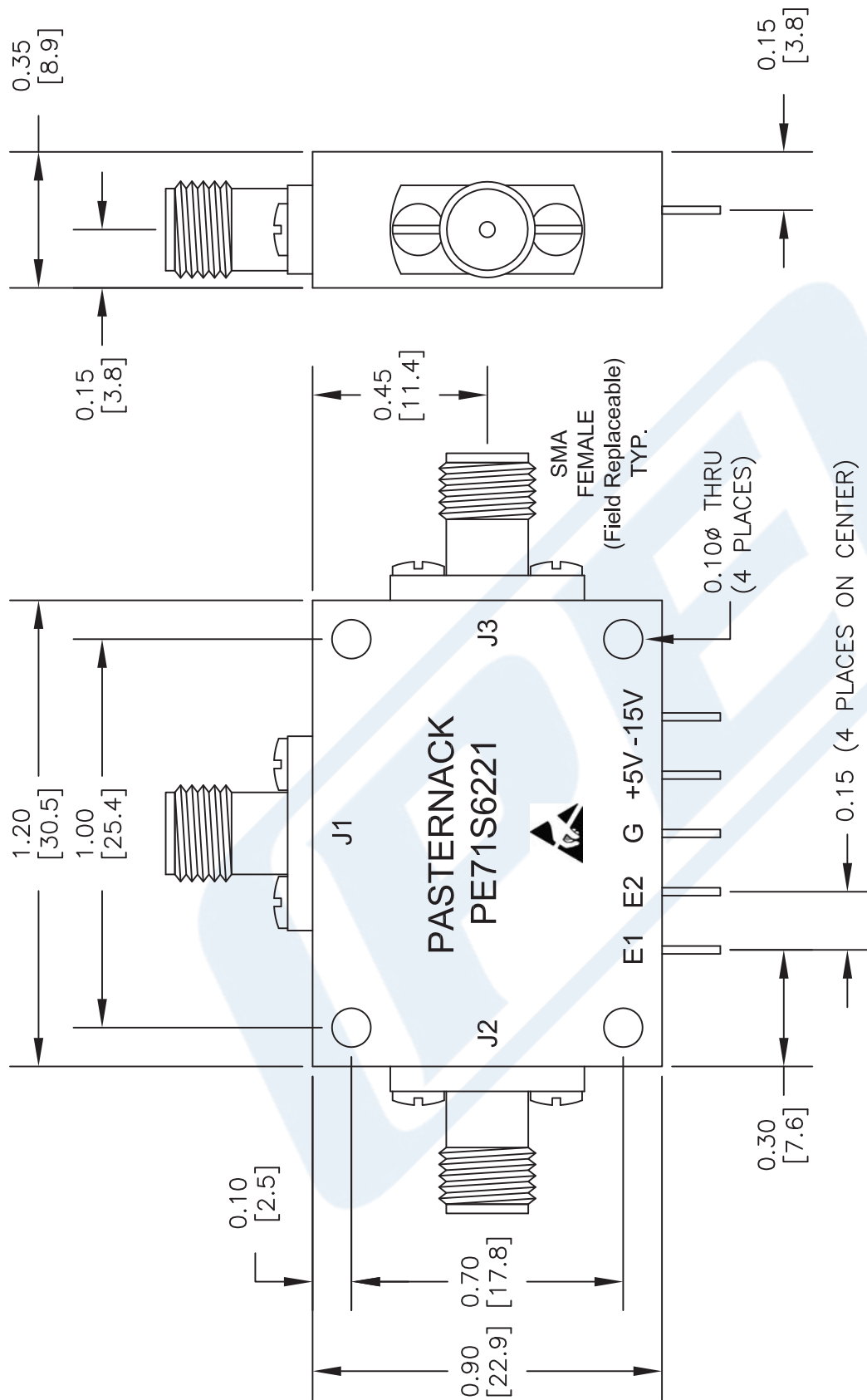
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz Up to 0.1 Watts \(+20 dBm\) and Field Replaceable SMA PE71S6221](https://www.pasternack.com/sp3t-pin-diode-switch-18-ghz-20-dbm-sma-pe71s6221-p.aspx)

URL: <https://www.pasternack.com/sp3t-pin-diode-switch-18-ghz-20-dbm-sma-pe71s6221-p.aspx>

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.

PE71S6221 CAD Drawing

SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz Up
to 0.1 Watts (+20 dBm) and Field Replaceable SMA



ALL DIMENSIONS ARE IN INCHES.
TOLERANCES:
X.XX ±0.010
X.XXX ±0.005

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

2 BIT TTL LOGIC TABLE		
E1	E2	FUNCTION
0	1	J1-J2 LOW LOSS
1	0	J1-J3 LOW LOSS

DWG TITLE

PE71S6221

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].

PE PASTERNAK®
THE ENGINEER'S RF SOURCE
Pasternack Enterprises, Inc.
P.O. Box 16759 | Irvine | CA | 92623

Phone: (949) 261-1920 | Fax: (949) 261-7451
Website: www.pasternack.com | E-Mail: sales@pasternack.com

FSCM NO. 53919

CAD FILE 041916

SCALE N/A

SIZE A

2233