PASTERNACK®
THE ENGINEER'S RF SOURCE



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

Pasternack Enterprises, Inc. • P.O. Box 16759, Irvine, CA 92623
Phone: (866) 727-8376 or (949) 261-1920 • **Fax:** (949) 261-7451
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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	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 for current document)

Not RoHS Compliant	
REACH Compliant	12/17/2015

Plotted and Other Data

Notes:

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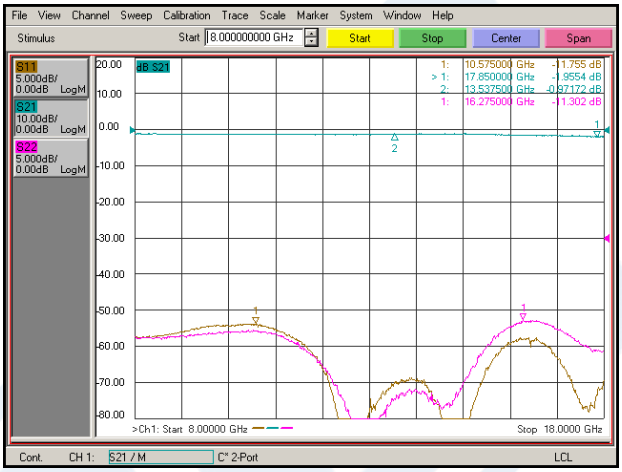
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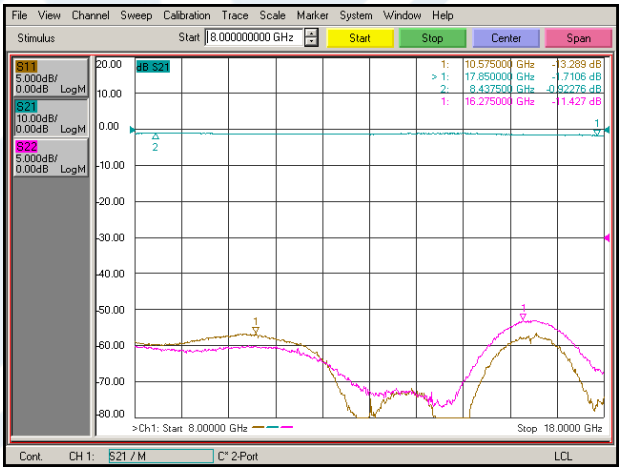
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Typical Performance Data

(J1-J2) Insertion Loss and Return Loss



(J1-J3) Insertion Loss and Return Loss



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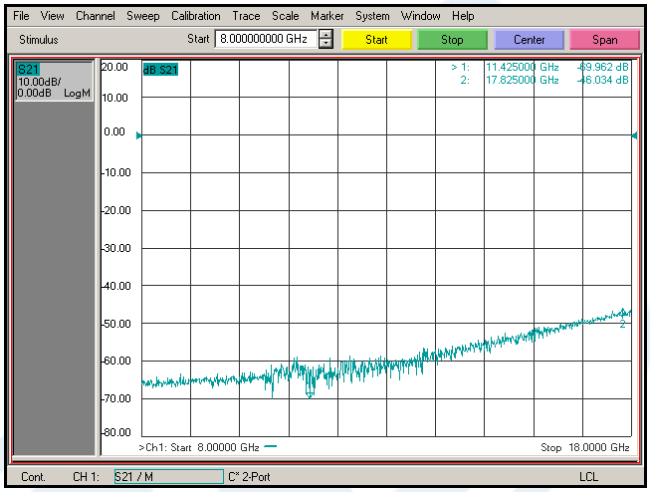
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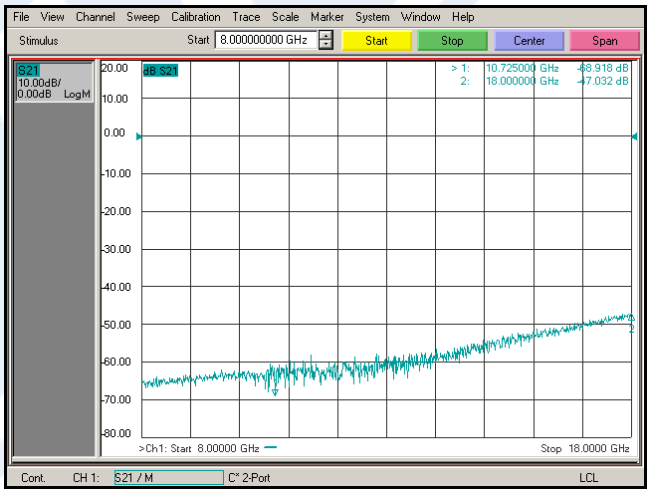


SP3T PIN Diode Switch Operating From 500 MHz to 18 GHz
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(J1 – J2) Isolation and Return Loss



(J1 – J3) Isolation and Return Loss



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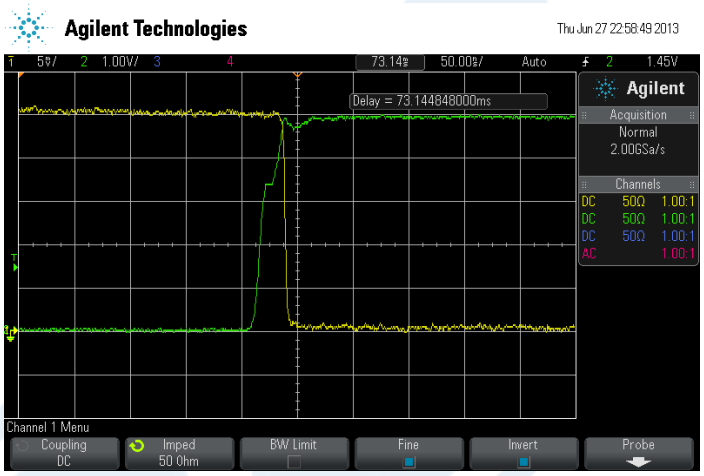
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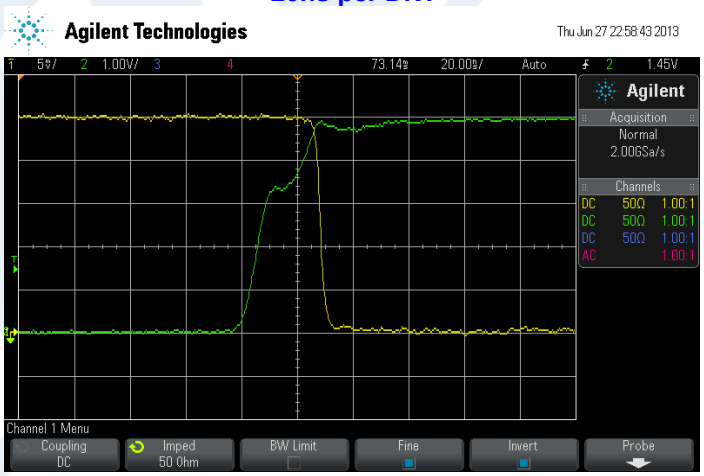
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Switching Speed OFF Delay & Fall Time

50ns per Div.



20ns per Div.



Green Trace: TTL Signal
Yellow Trace: RF Signal

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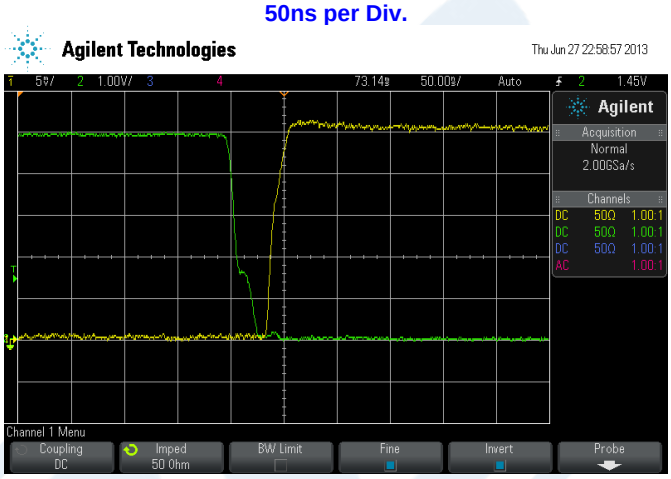
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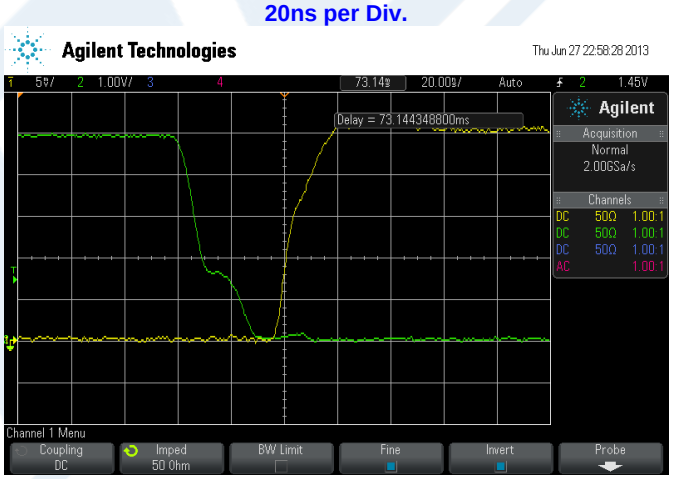
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ON Delay & Rise Time

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.

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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.

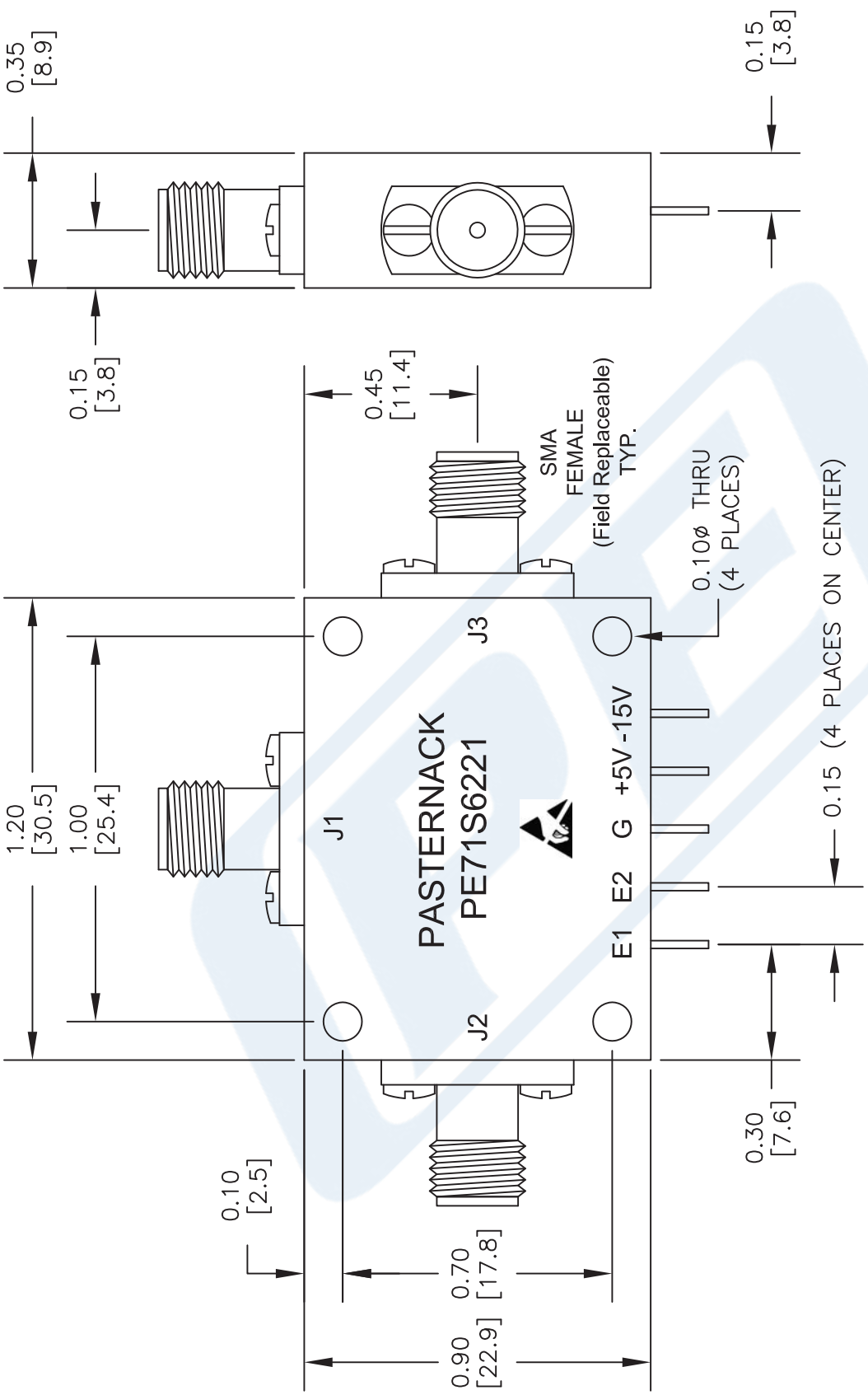
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PE71S6221 CAD Drawing

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

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].

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

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

DWG TITLE: PE71S6221

CAD FILE 041916 | SCALE N/A | SIZE A | 2233

FSCM NO. 53919

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