

Absorptive SP4T Ultra-Wideband PIN Diode Switch Operating 100 MHz to 50 GHz, Up to 23 dBm, 100 nsec max and 2.4mm

The PE71S1114 is a single pole four throw (SP4T) PIN diode switch that operates across an ultra-wideband frequency from 100 MHz to 50 GHz. The 50 ohm absorptive design is terminated in 50 ohms when switched in the isolation (off) state, and supports TTL compatible driver circuitry for accurate logic control. Impressive typical performance includes 5 dB insertion loss, 55 dB isolation, and < 100 nsec switching speed. The switch requires a dual bias voltage of +5Vdc / -15 Vdc, and has maximum input power handling of up to +23 dBm. The rugged and compact package supports field replaceable 2.4mm female RF connectors and solder terminal pins for DC bias voltage and TTL control. The switch is designed for high reliability with a wide operational temperature range of -40°C to +85°C, and meets a series of environmental test conditions including Altitude, Vibration, Humidity, and Shock.

Electrical Specifications (@+25°C)

TTL Control Logic

Off/Isolation: 0 to 0.8 V
On/Low Loss: 2.8 to 5 V

Description	Min	Typ	Max	Units
Frequency Range	0.1		50	GHz
Impedance		50		Ohms
VSWR			3:1	
Insertion Loss		5	6.5	dB
IL Temp. Coefficient		0.003		dB/degC
Isolation	40	55		dB
Switching Time			100	ns
P0.1dB		23		dBm
Input Power (CW)			23	dBm
DC Power Dissipation		0.15		Watts
Positive Operating Voltage		5		Vdc
Negative Operating Voltage		-15		Vdc
Current @ 5 Vdc			120	mA
Current @ -15Vdc			50	mA
Operating Temperature	-40		+85	deg C

Electrical Specification Notes: TTL pins cannot be connected to the negative voltage otherwise the internal driver will be damaged.

Absolute Maximum Ratings

Biasing	+5V ± 10% / -15V ± 10%
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Mechanical Specifications

Length	1.23 in [31.24 mm]
Width	0.47 in [11.94 mm]
Height	1.06 in [26.92 mm]
Weight	0.04 lbs [18.14 g]



Features:

- Ultra-Wideband SP4T PIN Diode Switch
- 100 MHz to 50 GHz
- 50 Ohm Absorptive Design
- Integrated TTL Driver
- Insertion Loss: 5 dB typ
- Isolation: 55 dB typ
- Switching Speed: < 100 nsec typ
- Maximum RF input Power: +23 dBm
- Dual Bias Voltage: +5Vdc / -15Vdc
- Field Replaceable 2.4mm Female RF Connectors
- Operational Temperature Range -40°C to +85°C
- Rugged and Compact Aluminum Gold Plated Package Design
- Guaranteed Environmental Test Conditions Altitude, Vibration, Humidity, Shock

Applications:

- Test & Measurement
- 5G Communication
- Military Electronic Systems
- Wireless Infrastructure
- Fiber Optics
- Research & Development

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Design
 RF Input/Output Connector

Absorptive, SP4T
 Field Replaceable 2.4mm Female

Environmental Specifications

Temperature

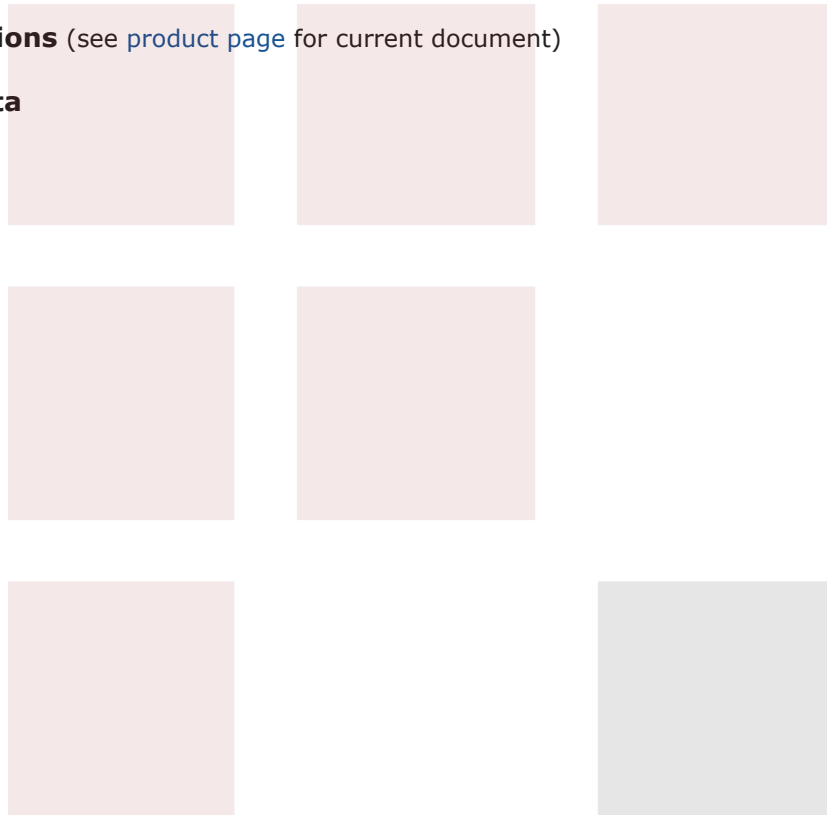
Operating Range -40 to +85 deg C
 Storage Range -50 to +105 deg C

Humidity 100% RH at 35°C, 95% RH at 40°C
 Shock 20G for 11msec half sinewave, 3 axis both directions
 Vibration 25g RMA (15 degrees 2KHz) endurance, 1 hour per axis
 Altitude 30,000 ft

Compliance Certifications (see [product page](#) for current document)

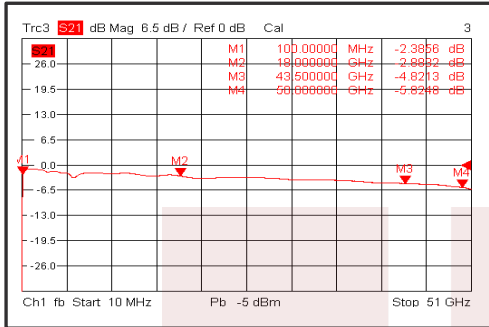
Plotted and Other Data

Notes:

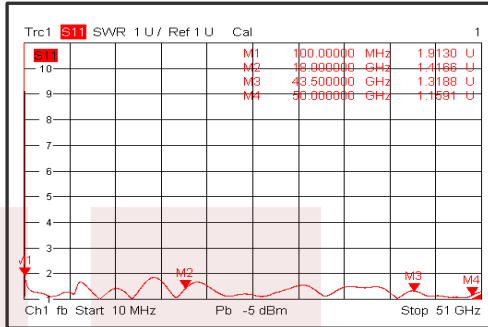


Typical Performance Data

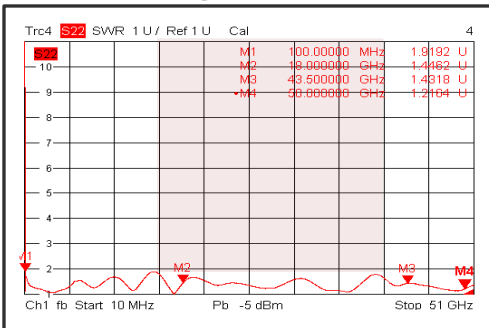
Insertion Loss @+25°C



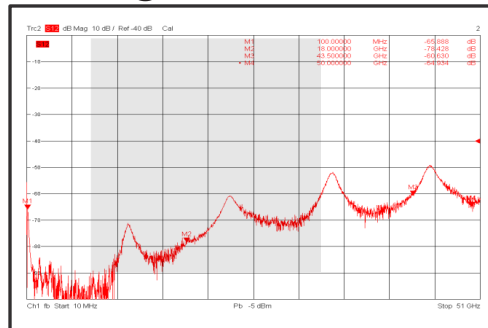
Input VSWR @+25°C



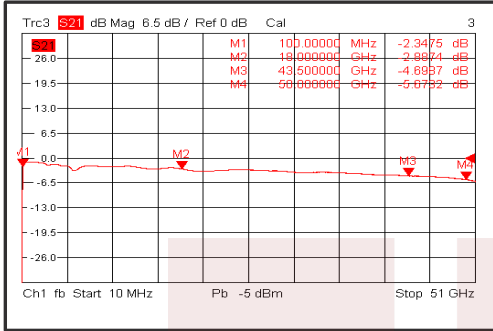
Output VSWR @+25°C



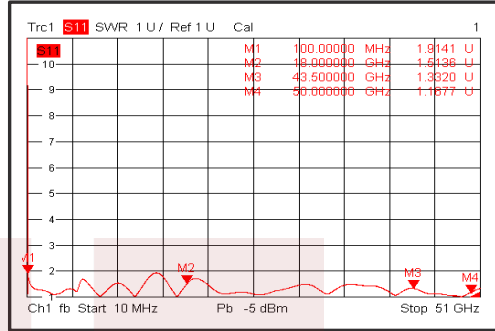
Isolation @+25°C



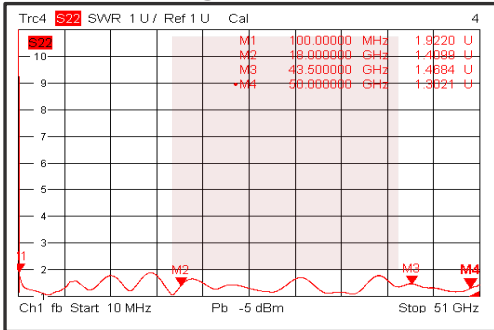
Insertion Loss @-40°C



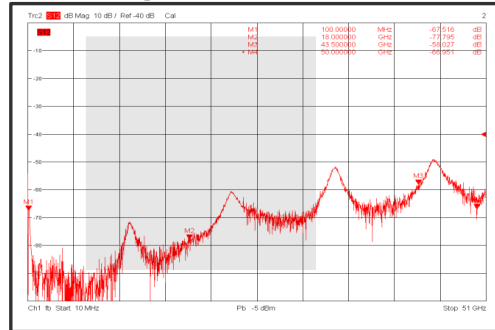
Input VSWR @-40°C



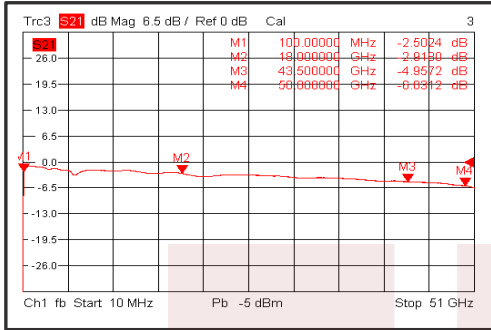
Output VSWR @-40°C



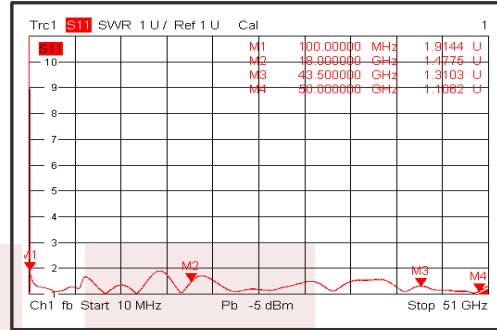
Isolation @-40°C



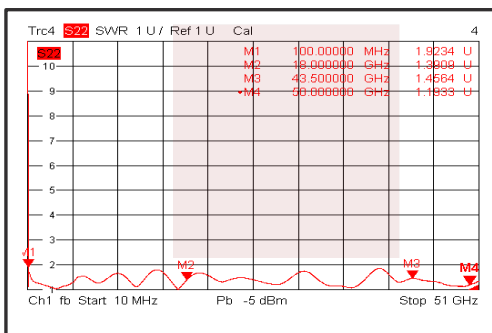
Insertion Loss @+85°C



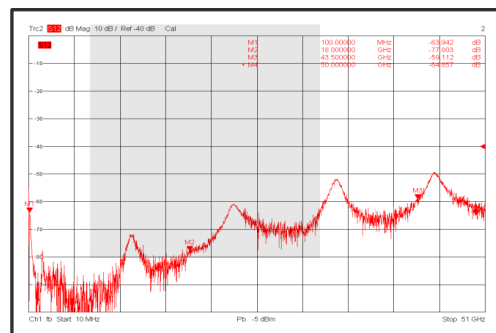
Input VSWR @+85°C



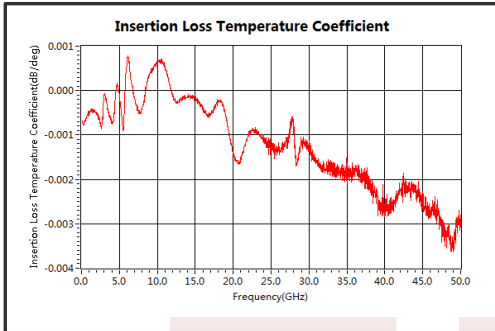
Output VSWR @+85°C



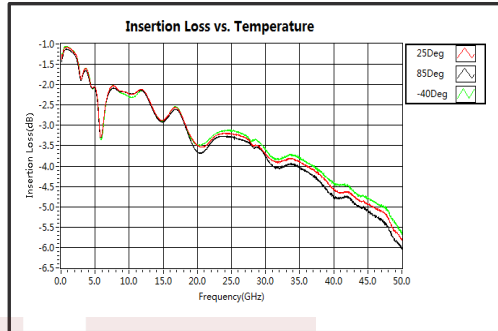
Isolation @+85°C



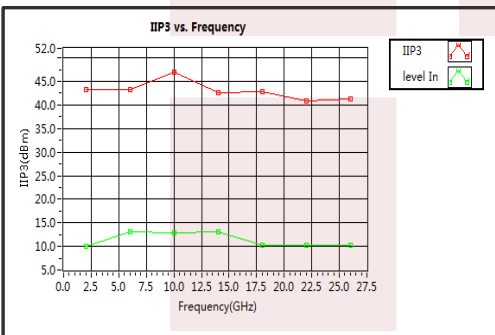
Insertion Loss Temperature Coefficient



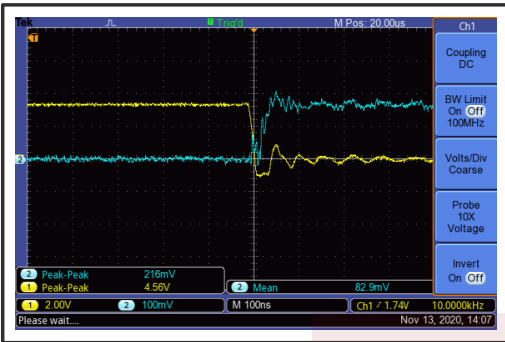
Insertion Loss vs. Temperature



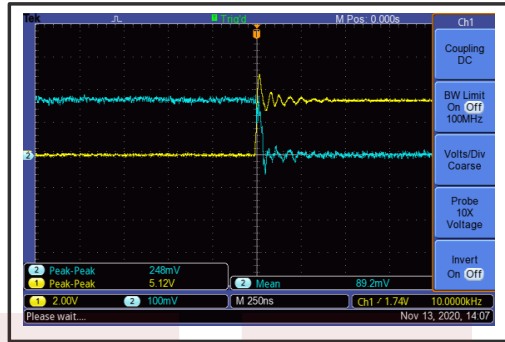
IIP3



Switching Speed



Switching Speed



Absorptive SP4T Ultra-Wideband PIN Diode Switch Operating 100 MHz to 50 GHz, Up to 23 dBm, 100 nsec max and 2.4mm from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [Absorptive SP4T Ultra-Wideband PIN Diode Switch Operating 100 MHz to 50 GHz, Up to 23 dBm, 100 nsec max and 2.4mm FMSW1114](#)

URL:

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