

Reflective SP4T Broadband PIN Diode Switch Operating from 1 GHz to 26 GHz, Up to 23 dBm, 100 nsec max and SMA

PIN Diode Switches Technical Data Sheet

PE71S1119

Features

- Broadband SP4T PIN Diode Switch
- 1 GHz to 26 GHz
- 50 Ohm Reflective Design
- Integrated TTL Driver
- Insertion Loss: 2.5 dB typ
- Isolation: 55 dB typ
- Switching Speed: < 100 nsec typ
- Maximum RF input Power: +23 dBm
- Dual Bias Voltage: +5Vdc / -5Vdc
- Field Replaceable SMA 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

Description

The PE71S1119 is a single pole four throw (SP4T) PIN diode switch that operates across a broadband frequency from 1 GHz to 26 GHz. The 50 ohm reflective design supports TTL compatible driver circuitry for accurate logic control. Impressive typical performance includes 2.5 dB insertion loss, 55 dB isolation, and < 100 nsec switching speed. The switch requires a dual bias voltage of +5Vdc / -5Vdc, and has maximum input power handling of up to +23 dBm. The rugged and compact package supports field replaceable SMA 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.

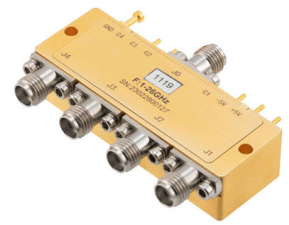
Electrical Specifications (@ +25°C)

TTL Control

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

| Description | Minimum | Typical | Maximum | Units |
|----------------------------|---------|---------|---------|---------|
| Frequency Range | 1 | | 26 | GHz |
| Impedance | | 50 | | Ohms |
| VSWR | | 1.7:1 | 2.3:1 | |
| Insertion Loss | | 2.5 | 3.5 | dB |
| IL Temperature Coefficient | | 0.003 | | dB/degC |
| Isolation | 46 | 55 | | dB |
| Switching Time | | | 100 | ns |
| 0.1dB Compression Point | | +23 | | dBm |
| Input IP3 | | 43 | | dBm |
| RF Input Power (CW) | | | 23 | dBm |
| DC Power Dissipation | | 0.9 | | Watt |
| Positive Operating Voltage | | 5 | | Vdc |
| Negative Operating Voltage | | -5 | | Vdc |

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Reflective SP4T Broadband PIN Diode Switch Operating from 1 GHz to 26 GHz, Up to 23 dBm, 100 nsec max and SMA PE71S1119](#)



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| | | |
|-----------------------|-----|-----------|
| Current @ 5 Vdc | 160 | mA |
| Current @ -5Vdc | 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 \pm 10%/-5V \pm 10%

Mechanical Specifications

Size

| | |
|---------------------------|------------------------------|
| Length | 2.05 in [52.07 mm] |
| Width | 0.49 in [12.45 mm] |
| Height | 0.71 in [18.03 mm] |
| Weight | 0.09 lbs [40.82 g] |
| Design | Reflective, SP4T |
| RF Input/Output Connector | Field Replaceable SMA Female |

Environmental Specifications

Temperature

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

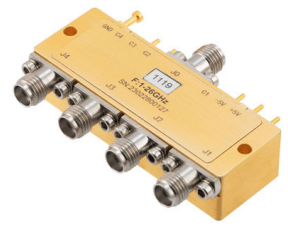
| | |
|-----------|--|
| Humidity | 100% RH at 35°C, 95% RH at 40°C |
| Shock | 20G for 11msec half sinewave, 3 axis both directions |
| Vibration | 25g RMA (15 degrees 2KHz) endurance, 1 hour per axis |
| Altitude | 30,000 ft |

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

Plotted and Other Data

Notes:

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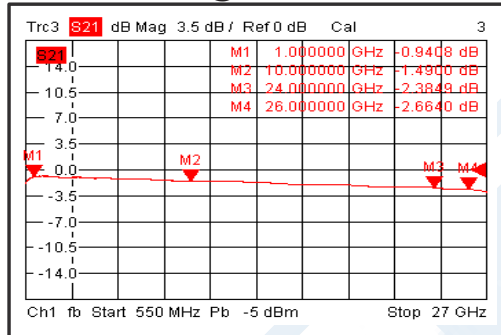
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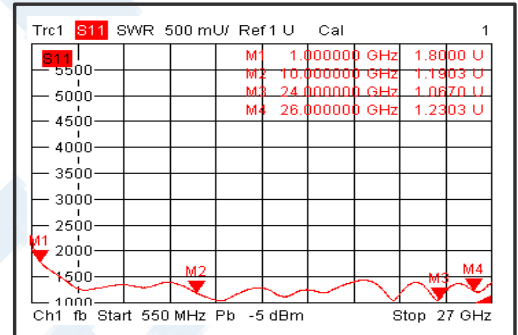
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Typical Performance Data

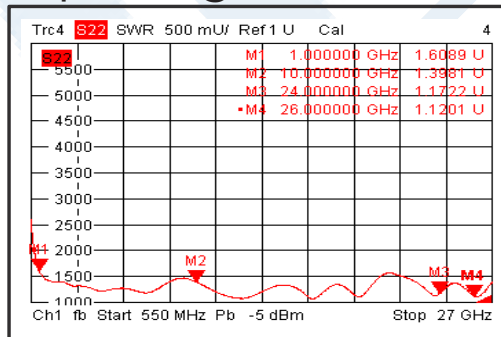
Insertion Loss @+25°C



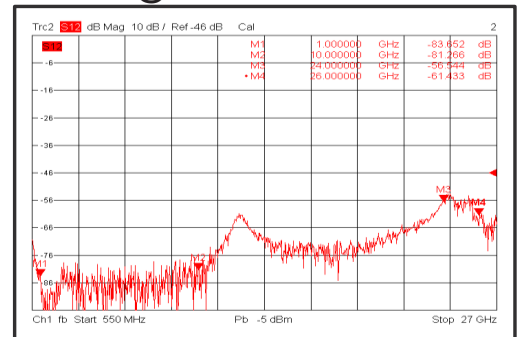
Input VSWR @+25°C



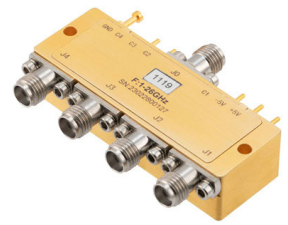
Output VSWR @+25°C



Isolation @+25°C



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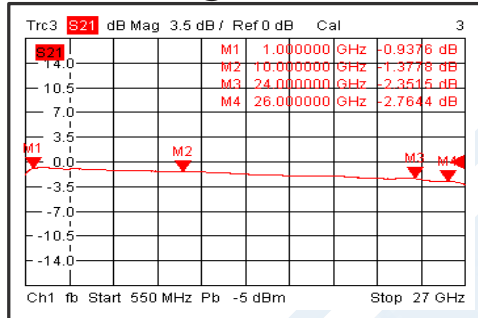


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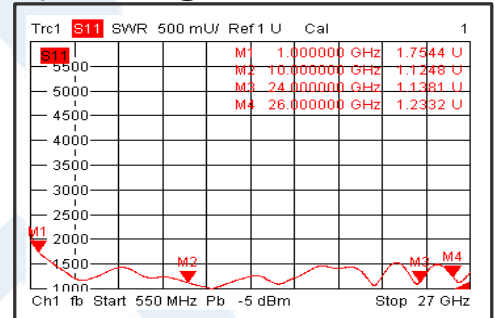
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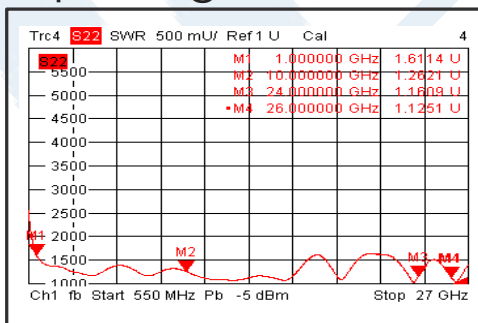
Insertion Loss @-40°C



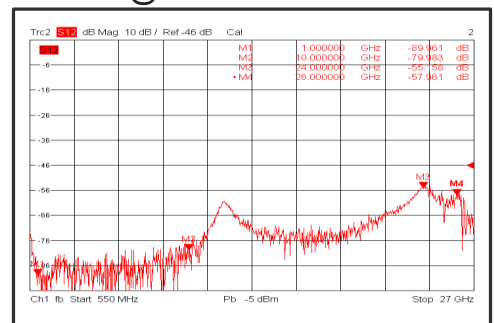
Input VSWR @-40°C



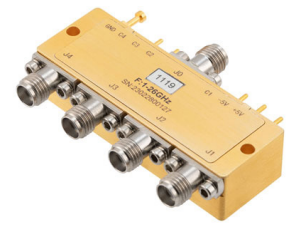
Output VSWR @-40°C



Isolation @-40°C



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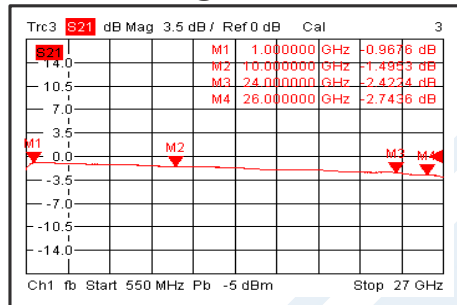


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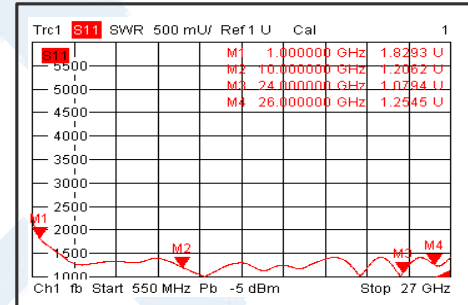
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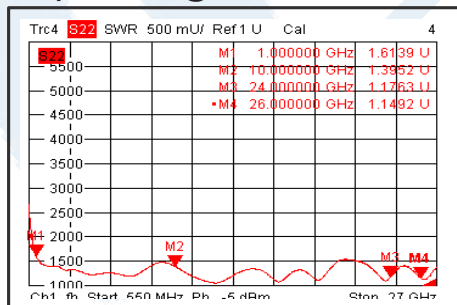
Insertion Loss @+85°C



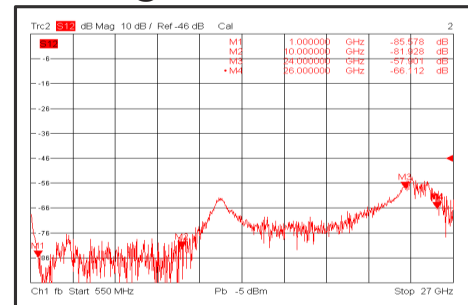
Input VSWR @+85°C



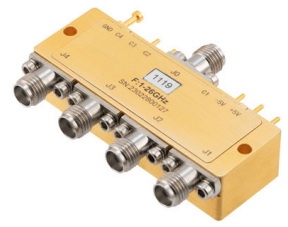
Output VSWR @+85°C



Isolation @+85°C



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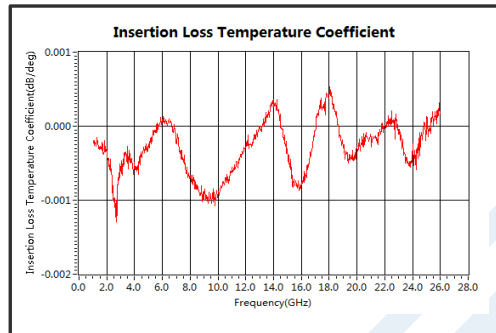


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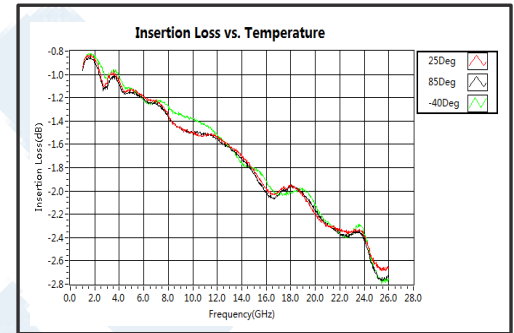
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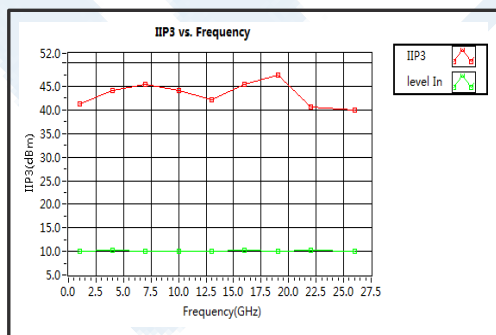
Insertion Loss Temperature Coefficient



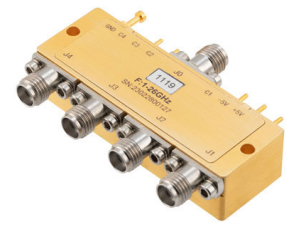
Insertion Loss vs. Temperature



IIP3



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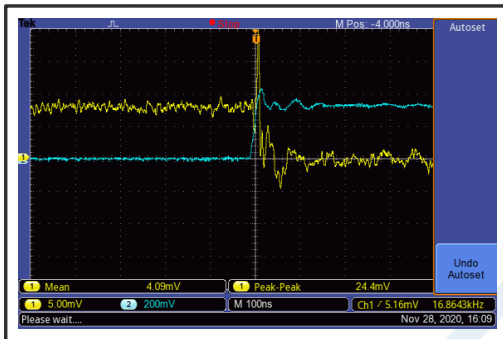


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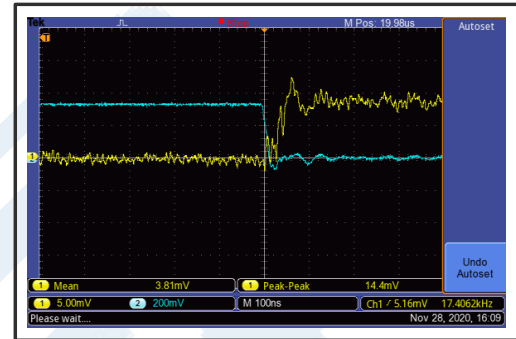
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Switching Speed



Switching Speed



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PE71S1119 CAD Drawing

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