

Absorptive SP8T Broadband PIN Diode Switch Operating from 2 GHz to 18 GHz, Up to 30 dBm, 100 nsec max and SMA

The PE71S1118 is a single pole eight throw (SP8T) PIN diode switch that operates across a broadband frequency from 2 GHz to 18 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 2.5 dB insertion loss, 85 dB isolation, and < 100 nsec switching speed. The switch requires a dual bias voltage of +5Vdc / -5 Vdc, and has maximum input power handling of up to +30 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 Logic

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

Description	Min	Typ	Max	Units
Frequency Range	2		18	GHz
Impedance		50		Ohms
VSWR		1.5:1	2:1	
Insertion Loss		2.5	4	dB
IL Temp. Coefficient		0.003		dB/degC
Isolation	60	85		dB
Switching Time			100	ns
P0.1dB		30		dBm
Input IP3		40		dBm
Input Power (CW)			30	dBm
DC Power Dissipation		1.5		Watts
Positive Operating Voltage		5		Vdc
Negative Operating Voltage		-5		Vdc
Current @ 5 Vdc			350	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 ± 10% / -5V ± 10%
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Mechanical Specifications

Length	1.91 in [48.51 mm]
Width	0.37 in [9.4 mm]
Height	1.58 in [40.13 mm]



Features:

- Broadband SP8T PIN Diode Switch
- 2 GHz to 18 GHz
- 50 Ohm Absorptive Design
- Integrated TTL Driver
- Insertion Loss: 2.5 dB typ
- Isolation: 85 dB typ
- Switching Speed: < 100 nsec typ
- Maximum RF input Power: +30 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

Fairview Microwave
 301 Leora Ln., Suite 100
 Lewisville, TX 75056
 Tel: 1-800-715-4396 / (972) 649-6678
 Fax: (972) 649-6689
www.fairviewmicrowave.com
sales@fairviewmicrowave.com

Weight	0.04 lbs [18.14 g]
Design	Absorptive, SP8T
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)

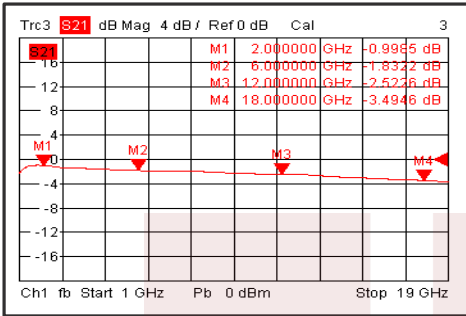
Plotted and Other Data

Notes:

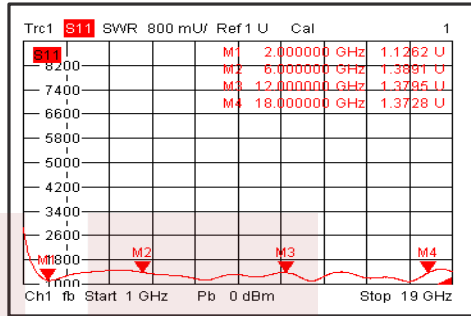


Typical Performance Data

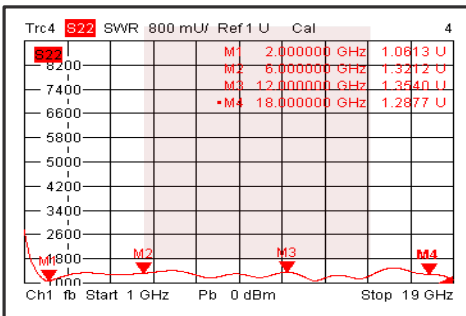
Insertion Loss @+25°C



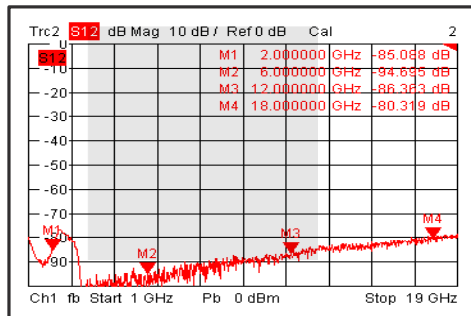
Input VSWR @+25°C



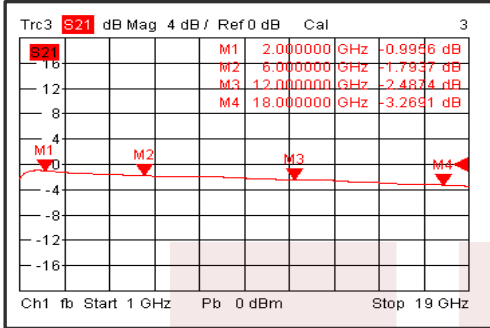
Output VSWR @+25°C



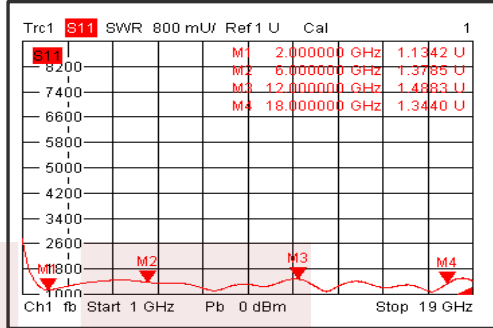
Isolation @+25°C



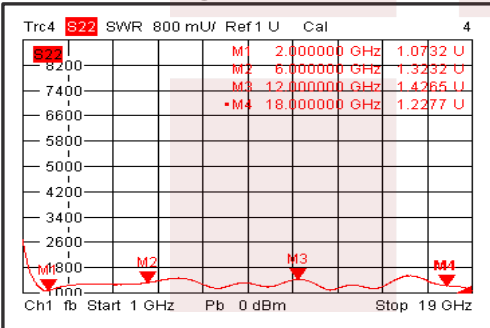
Insertion Loss @-40°C



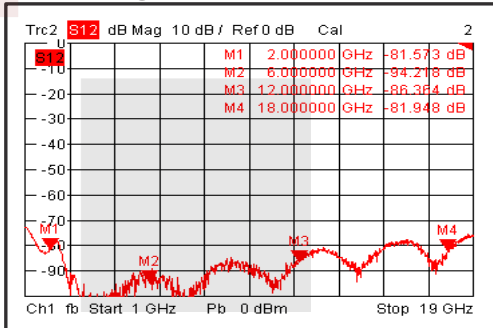
Input VSWR @-40°C



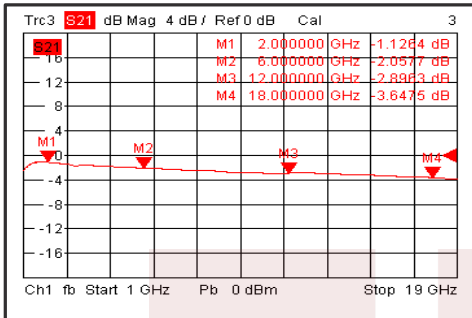
Output VSWR @-40°C



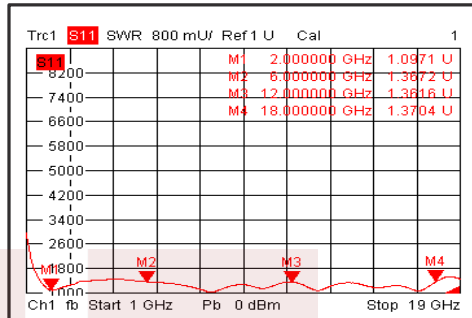
Isolation @-4°C



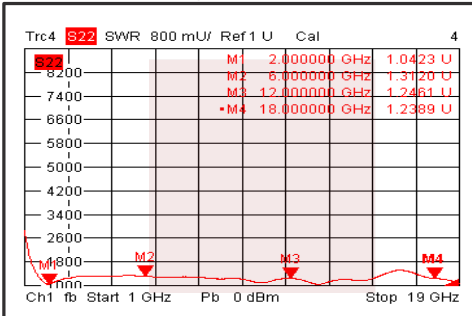
Insertion Loss @+85°C



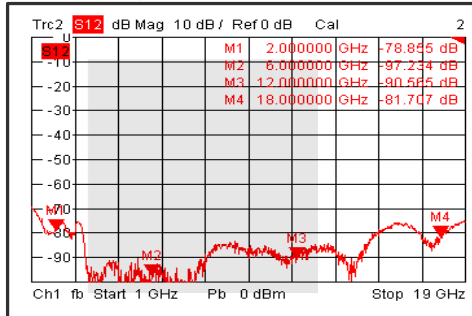
Input VSWR @+85°C



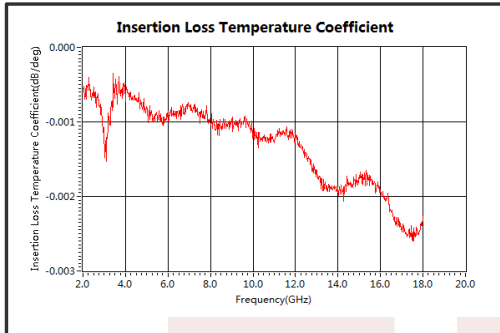
Output VSWR @+85°C



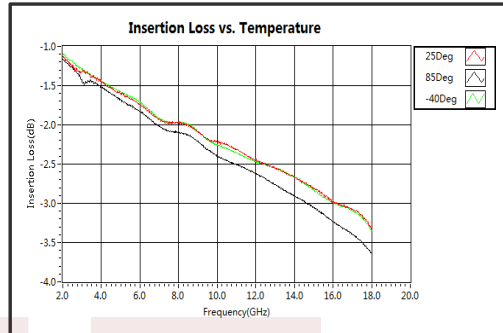
Isolation @+85°C



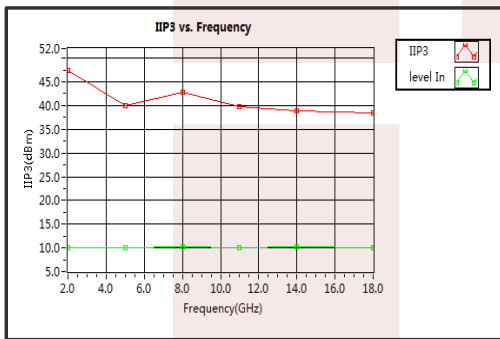
Insertion Loss Temperature Coefficient



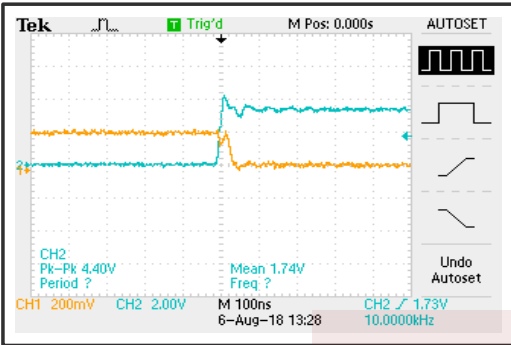
Insertion Loss vs. Temperature



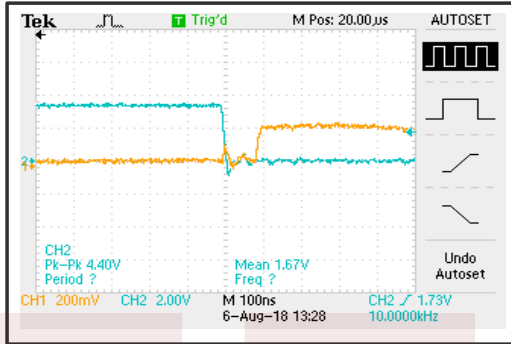
IIP3



Switching Speed



Switching Speed



Absorptive SP8T Broadband PIN Diode Switch Operating from 2 GHz to 18 GHz, Up to 30 dBm, 100 nsec max and SMA 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 SP8T Broadband PIN Diode Switch Operating from 2 GHz to 18 GHz, Up to 30 dBm, 100 nsec max and SMA FMSW1118](#)

URL:

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