

Reflective SPDT Wideband PIN Diode Switch Operating from 52 GHz to 72 GHz Up to 20 dBm, 100 nsec max and 1.85mm

The PE71S1111 is a single pole double throw (SPDT) PIN diode switch that operates across a wide mm-Wave frequency band from 52 GHz to 72 GHz. The 50 ohm reflective design supports TTL compatible driver circuitry for accurate logic control. Impressive typical performance includes 4.5 dB insertion loss, 37 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 +20 dBm. The rugged and compact package supports field replaceable 1.85mm 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	52		72	GHz
Impedance		50		Ohms
VSWR		2.2:1	3:1	
Insertion Loss		4.5	6	dB
IL Temp. Coefficient		0.003		dB/degC
Isolation	30	37		dB
Switching Time			100	ns
P0.1dB		20	dBm	
Input IP3		50		dBm
Input Power (CW)			20	dBm
DC Power Dissipation		0.3		Watts
Positive Operating Voltage		5		Vdc
Negative Operating Voltage		-5		Vdc
Current @ 5 Vdc		50		mA
Current @ -5Vdc		20		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 Voltage

+5V ± 10% / -5V ± 10%

Mechanical Specifications

Length	0.94 in [23.88 mm]
Width	0.47 in [11.94 mm]
Height	0.67 in [17.02 mm]
Weight	0.04 lbs [18.14 g]



Features:

- Wideband mm-Wave SPDT PIN Diode Switch
- 52 GHz to 72 GHz
- 50 Ohm Reflective Design
- Integrated TTL Driver
- Insertion Loss: 4.5 dB typ
- Isolation: 37 dB typ
- Switching Speed: < 100 nsec typ
- Maximum RF input Power: +20 dBm
- Dual Bias Voltage: +5Vdc / -5Vdc
- Field Replaceable 1.85mm 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

Reflective, SPDT
Field Replaceable 1.85mm 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

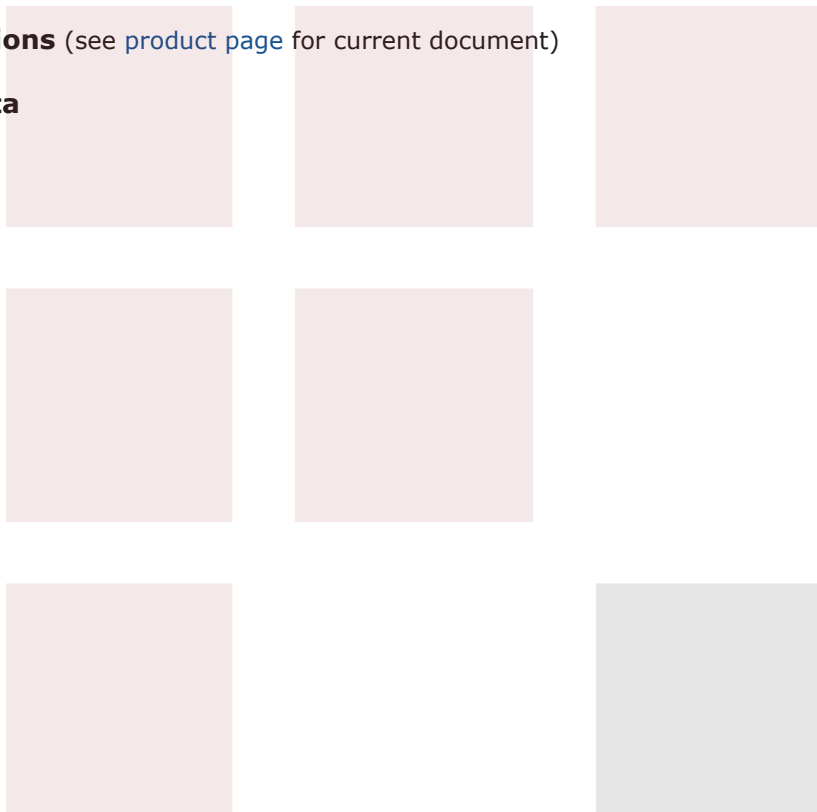
Altitude

30,000 ft

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

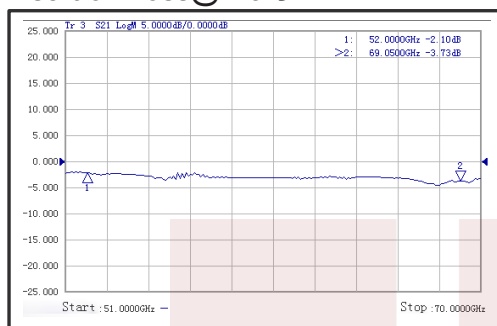
Plotted and Other Data

Notes:

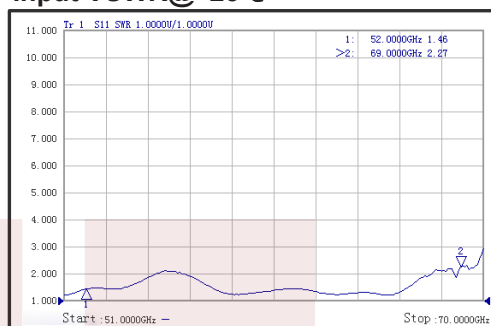


Typical Performance Data

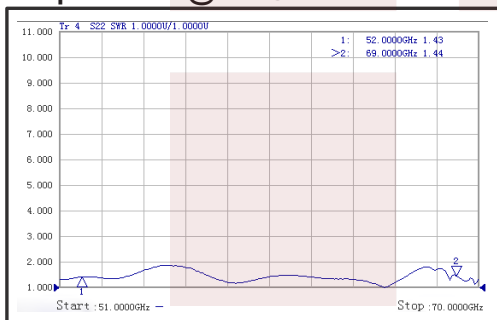
Insertion Loss@+25°C



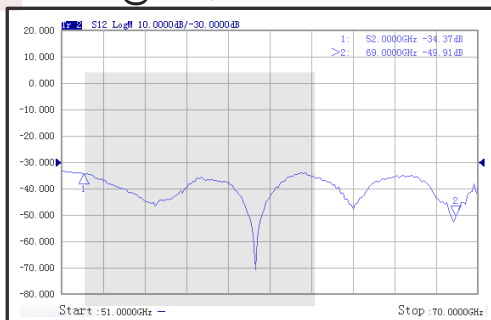
Input VSWR@+25°C



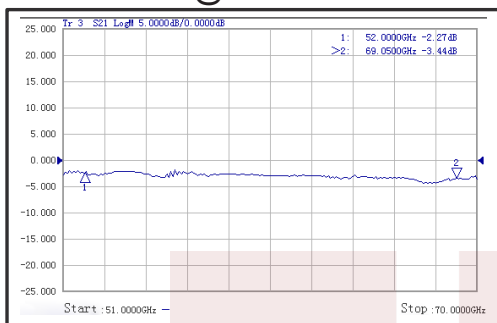
Output VSWR@+25°C



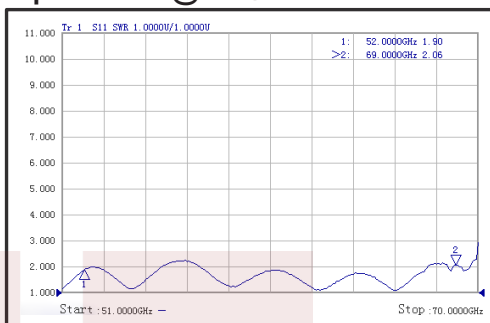
Isolation@+25°C



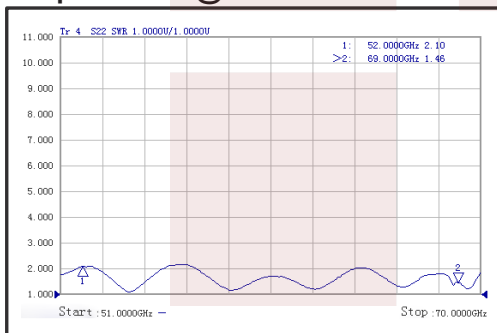
Insertion Loss@-40°C



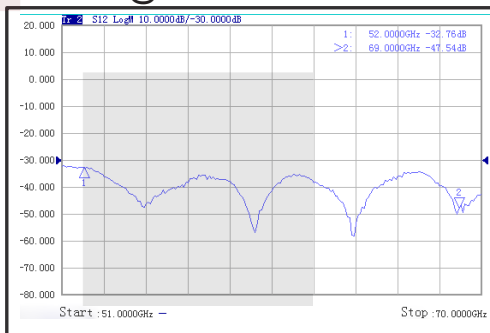
Input VSWR @-40°C



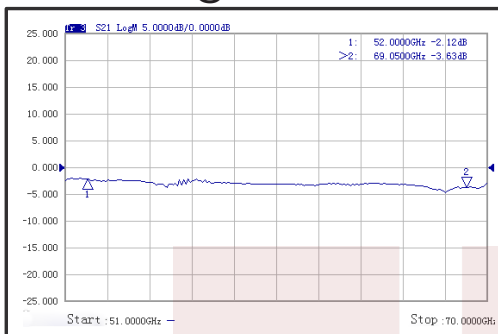
Output VSWR @-40°C



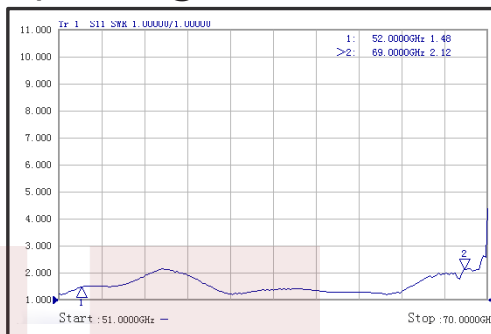
Isolation @-40°C



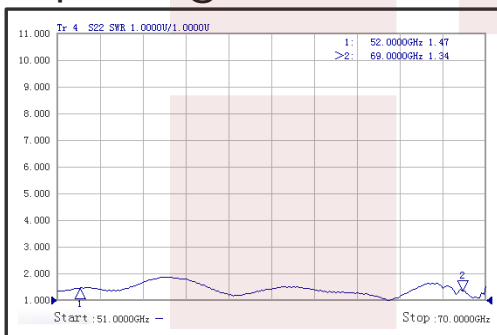
Insertion Loss@+85°C



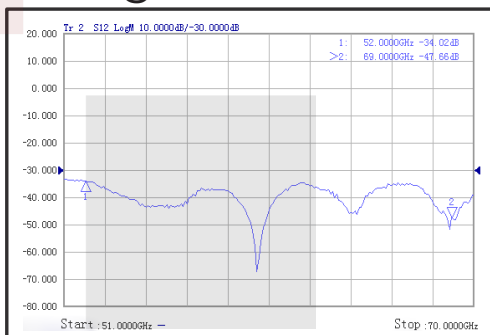
Input VSWR@+85°C



Output VSWR@+85°C



Isolation@+85°C



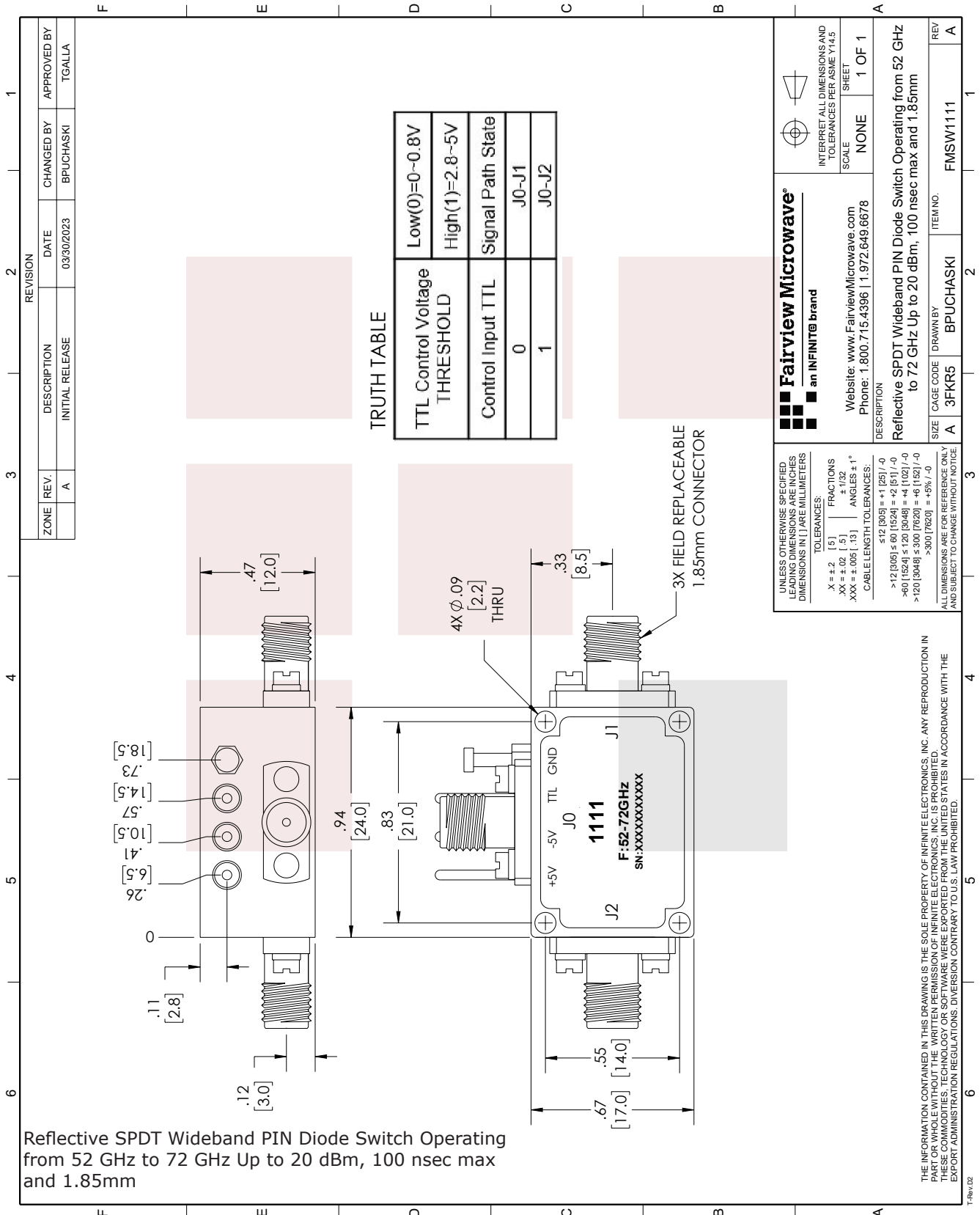
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For additional information on this product, please click the following link: [Reflective SPDT Wideband PIN Diode Switch Operating from 52 GHz to 72 GHz Up to 20 dBm, 100 nsec max and 1.85mm FMSW1111](#)

URL:

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