

## Reflective SPDT Ultra-Wideband PIN Diode Switch Operating from 1 MHz to 75 GHz Up to 15 dBm, 400 nsec and 1.85mm

The PE71S1110 is a single pole double throw (SPDT) PIN diode switch that operates across an ultra-wideband frequency from 1 MHz to 75 GHz. The 50 ohm reflective design supports TTL compatible driver circuitry for accurate logic control. Impressive typical performance includes 4.8 dB insertion loss, 35 dB isolation, and 400 nsec switching speed. The switch requires a +5Vdc bias voltage, and has maximum input power handling of up to +15 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	0.001		75	GHz
Impedance		50		Ohms
VSWR		2:1	2.5:1	
Insertion Loss		4.8	7.5	dB
IL Temp. Coefficient		0.003		dB/degC
Isolation	26	35		dB
Switching Time		400	500	ns
P0.1dB		15		dBm
Input IP3		45		dBm
Input Power (CW)			15	dBm
DC Power Dissipation		0.5		Watts
Positive Operating Voltage		5		Vdc
Current @ 5 Vdc			80	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%
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### 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]
Design	Reflective, SPDT
RF Input/Output Connector	Field Replaceable 1.85mm Female



### Features:

- Ultra-Wideband SPDT PIN Diode Switch
- 1 MHz to 75 GHz
- 50 Ohm Reflective Design
- Integrated TTL Driver
- Insertion Loss: 4.8 dB typ
- Isolation: 35 dB typ
- Switching Speed: 400 nsec typ
- Maximum RF input Power: +15 dBm
- Single Bias Voltage: +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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**Environmental Specifications**

**Temperature**

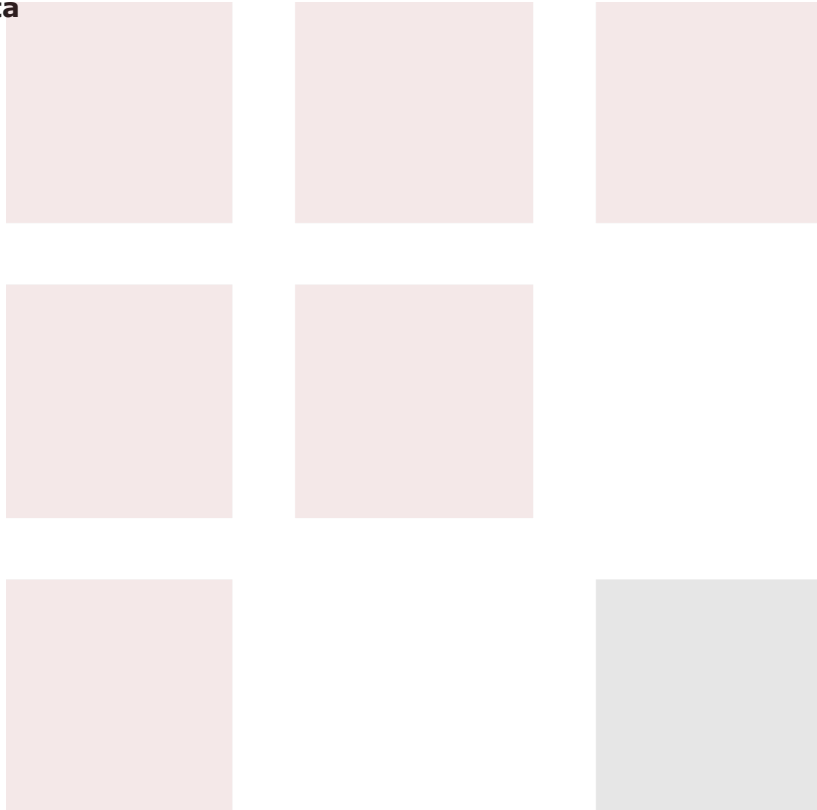
Operating Range -40 to +85 deg C  
Storage Range -50 to +105 deg C

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)

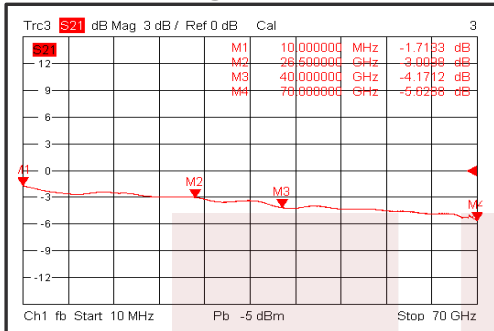
**Plotted and Other Data**

Notes:

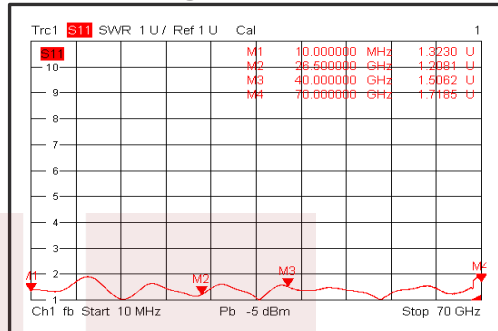


**Typical Performance Data**

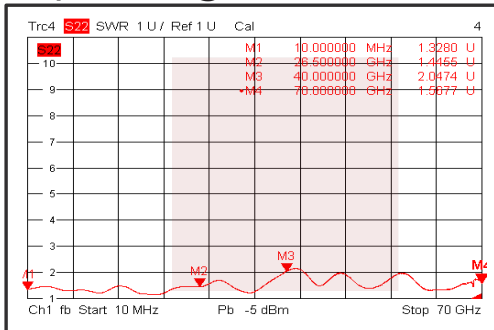
**Insertion Loss @+25°C**



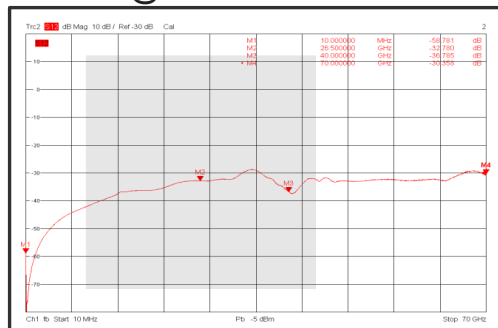
**Input VSWR @+25°C**



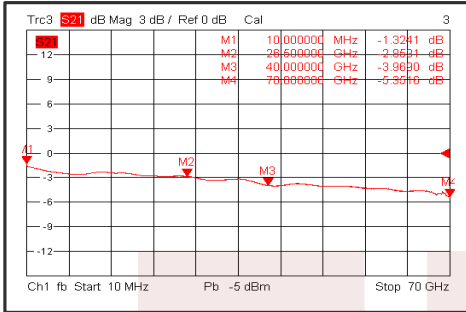
**Output VSWR @+25°C**



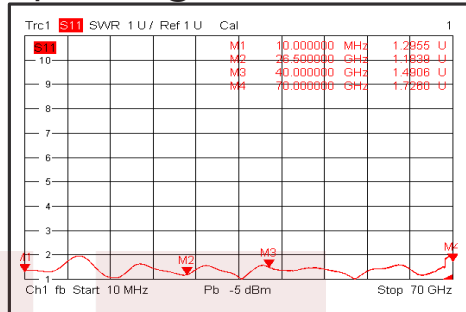
**Isolation @+25°C**



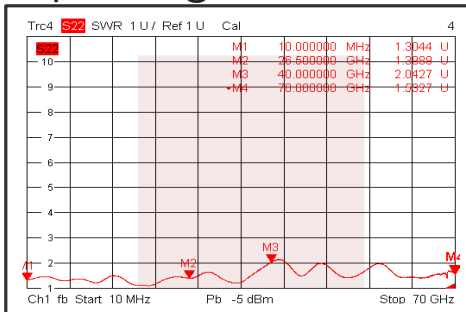
**Insertion Loss @-40°C**



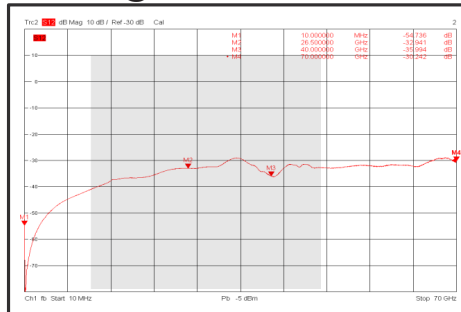
**Input VSWR @-40°C**



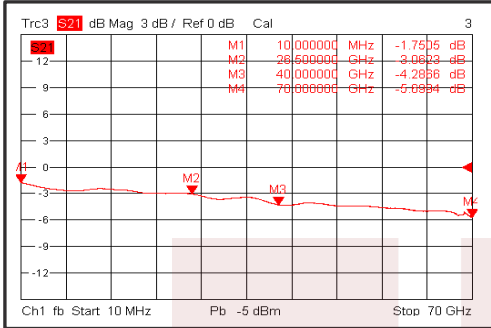
**Output VSWR @-40°C**



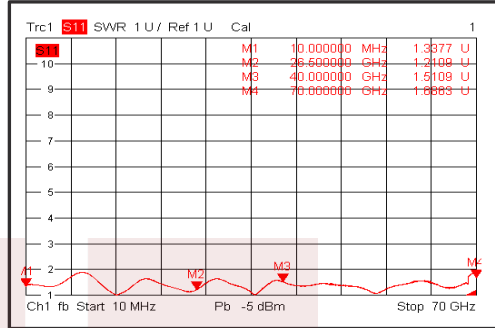
**Isolation @-40°C**



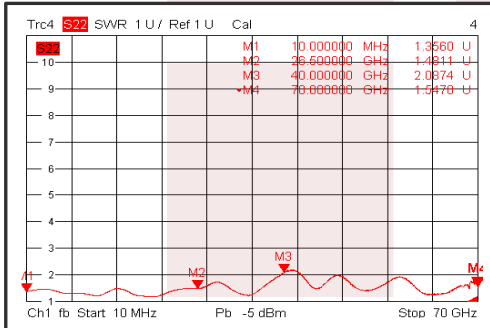
**Insertion Loss @+85°C**



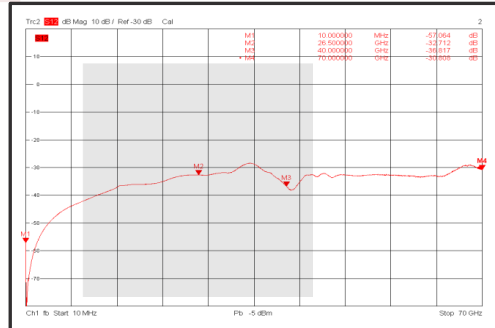
**Input VSWR @+85°C**



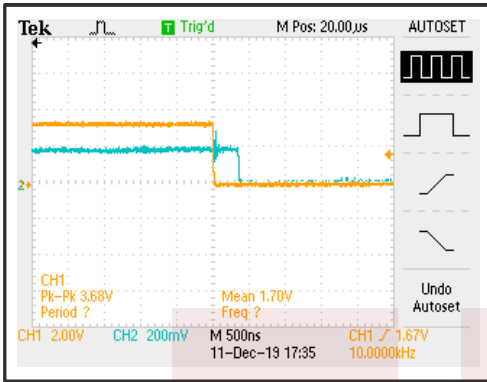
**Output VSWR @+85°C**



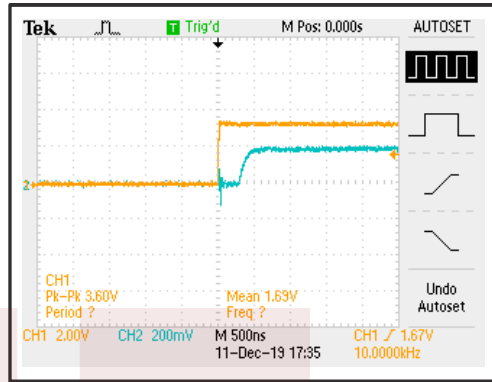
**Isolation @+85°C**



**Switching Speed**



**Switching Speed**

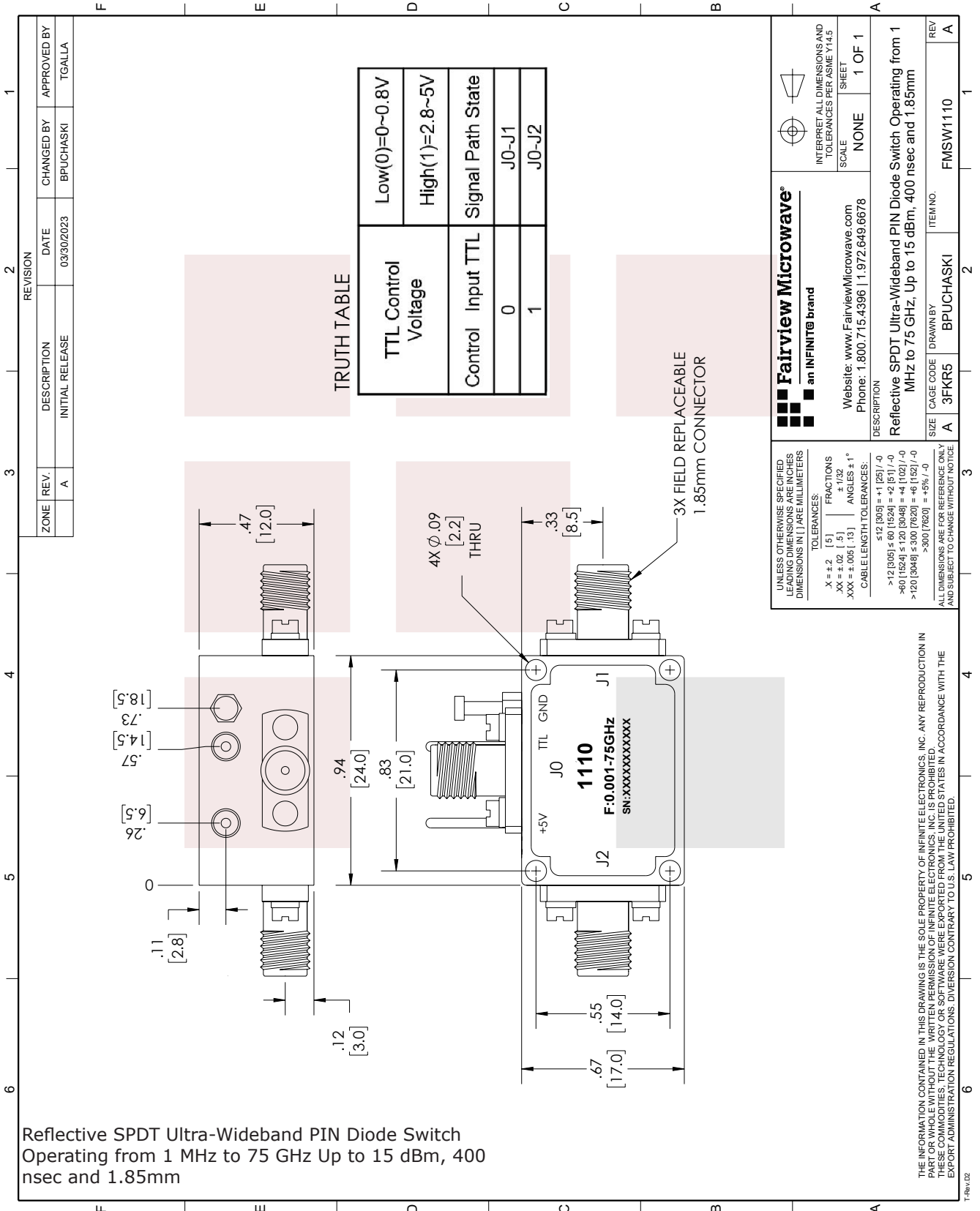


Reflective SPDT Ultra-Wideband PIN Diode Switch Operating from 1 MHz to 75 GHz Up to 15 dBm, 400 nsec and 1.85mm from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [Reflective SPDT Ultra-Wideband PIN Diode Switch Operating from 1 MHz to 75 GHz Up to 15 dBm, 400 nsec and 1.85mm FMSW1110](#)

URL:

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	A	03/30/2023	BPUCHASKI	TGALLA

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<p>Website: www.FairviewMicrowave.com Phone: 1.800.715.4396   1.972.649.6678</p>		<p>SCALE: NONE SHEET: 1 OF 1</p>
<p>DESCRIPTION: Reflective SPDT Ultra-Wideband PIN Diode Switch Operating from 1 MHz to 75 GHz. Up to 15 dBm, 400 nsec and 1.85mm</p>		
SIZE	CAGE CODE	ITEM NO.
A	3FKR5	FMSW1110
REV	DRAWN BY	
A	BPUCHASKI	