

Reflective SP4T PIN Diode Switch Operating From 100 MHz to 520 MHz Up to 100 Watt (+50 dBm) and Field Replaceable SMA with Heatsink



PE71S5008

Features

- Reflective SP4T High Power PIN Diode Switch
- Reflective Design
- Frequency Range: 100 MHz to 520 MHz
- Insertion Loss: 0.8 dB max
- Isolation: 65 dB typ
- VSWR: 1.5:1 typ
- Maximum RF Input Power: 100 Watt
- Input IP3: +50 dBm typ
- Switching Speed: 1.2 usec
- TTL Compatible Driver Circuitry
- 50 Ohm Design
- SMA Female Connectors
- Compact Package Design withstands up to 95% Relative Humidity
- -40°C to +60°C Operating Temperature

Applications

- Aerospace & Defense
- Microwave Radio
- Military & Commercial Communication
- VSAT
- SATCOM
- Test & Measurement
- Wireless Infrastructure
- Fiber Optics

Description

The PE71S5008 is a single pole four throw (SP4T) PIN diode switch that operates across a wide frequency band from 100 MHz to 520 MHz. The 50 ohm reflective design supports TTL compatible driver circuitry for accurate logic control. Impressive typical performance includes 0.8 dB insertion loss max, 50 dB isolation min, and 1.2 usec switching speed. The switch requires a dual bias voltage of +5Vdc/-28V, and has maximum input power handling of up to 100 W. 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 +60°C, and meets a series of environmental test conditions including Altitude, Vibration, Humidity, and Shock.

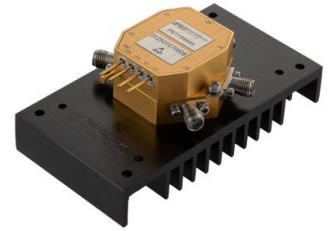
Electrical Specifications

TTL Control Logic

Off/Isolation: "0" 0 to 0.8 V
On/Low Loss: "1" 2.8 to 5 V

Description	Min	Typ	Max	Units
Frequency Range	100		520	MHz
Impedance		50		Ohms
VSWR		1.3:1	1.5:1	
Insertion Loss		0.35	0.8	dB
IL Temperature Coefficient		0.003		
Isolation	50	65		dB
Switching Time		500	1.2	ps
0.1dB Compression Point		49		
Input IP3		50		dBm
Power In, Hot Switching (CW)			100	Watts
DC Power Dissipation		1.3		Watt
Positive Operating Voltage		5		Vdc
Negative Operating Voltage		-28		Vdc
Current @ 5 Vdc		250		mA

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Electrical Specifications

TTL Control Logic

Off/Isolation: "0" 0 to 0.8 V
On/Low Loss: "1" 2.8 to 5 V

Description	Min	Typ	Max	Units
Current @ -28Vdc		120		mA
Operating Temperature	-40		60	deg C

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	100 to 520					MHz

Electrical Specification Notes:

1. TTL pins cannot be connected to the negative voltage otherwise the internal driver will be damaged.
2. If the device operates in high power state, case temperature must be lower than 60 degrees C.
3. Cold Switching: Before changing any TTL signal(s), the RF input power must be blanked or the switch could be damaged.

Absolute Maximum Rating

Parameter	Rating
Biasing	+5V±10%/-28V±10%
TTL Control Voltage	0~0.8V/2.8~5V



ESD Sensitive Material,
Transport material in
Approved ESD bags.
Handle only in approved
ESD Workstation.

Mechanical Specifications

Size

Length	1.56 in [39.62 mm]
Width	1.36 in [34.54 mm]
Height	0.77 in [19.56 mm]
Weight	0.05 lbs [22.68 g]
Body Material and Plating	Aluminum, Gold

Configuration

Design	Reflective, SP4T
RF Input/Output Connector	SMA Female
Band Type	Wide Band

Environmental Specifications

Temperature

Operating Range	-40 to 60 deg C
Storage Range	-50 to 105 deg C

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Humidity	100% RH at 35°C, 95%RH at 40°C
Shock	20G for 11msec half sine wave, 3 axis both directions
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)?
	60,000 ft. 1.0psi min
Hermetic Seal	Optional

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

Plotted and Other Data

Notes:

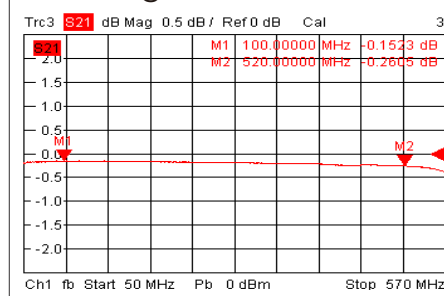
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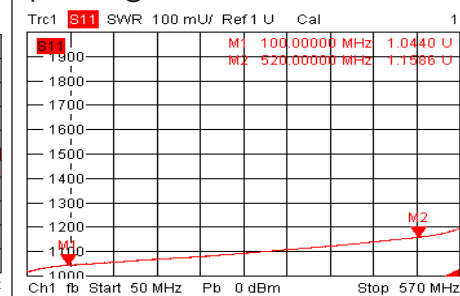
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Typical Performance Data

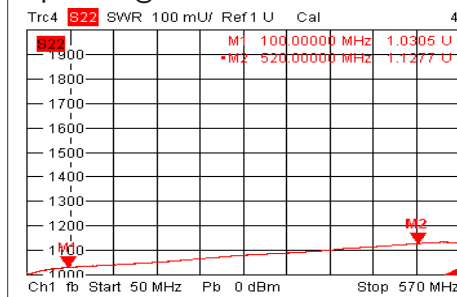
Insertion Loss @+25°C



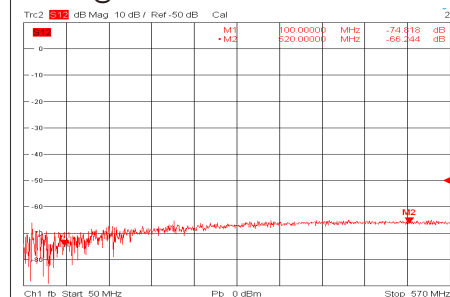
Input VSWR @+25°C



Output VSWR @+25°C



Isolation @+25°C

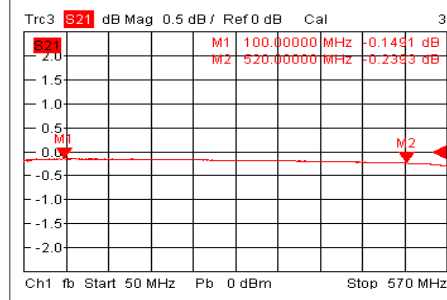


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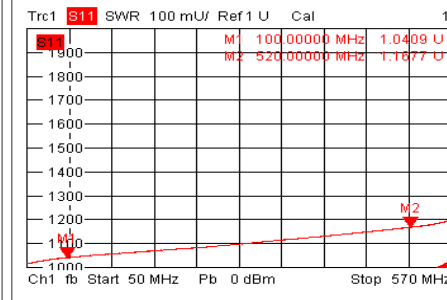


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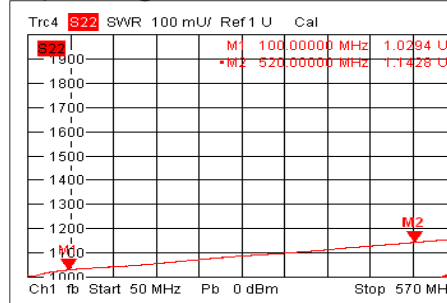
Insertion Loss @-40°C



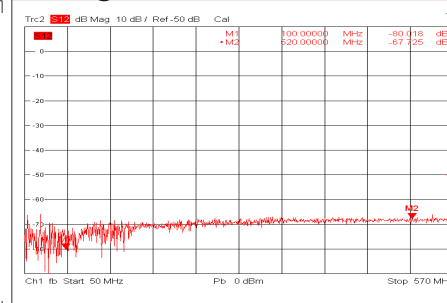
Input VSWR @-40°C



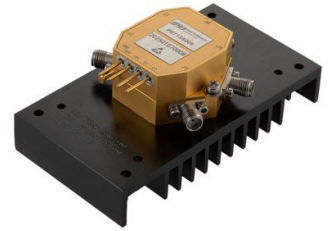
Output VSWR @-40°C



Isolation @-40°C

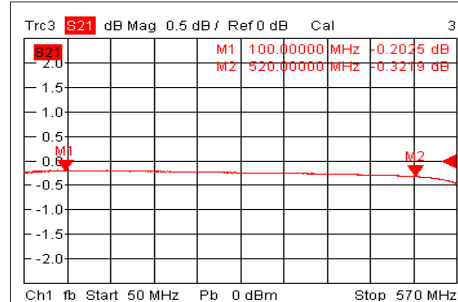


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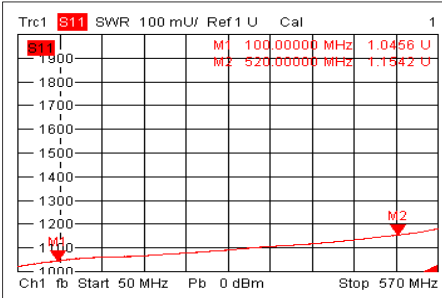


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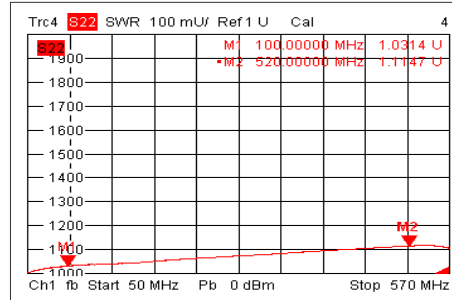
Insertion Loss @+60°C



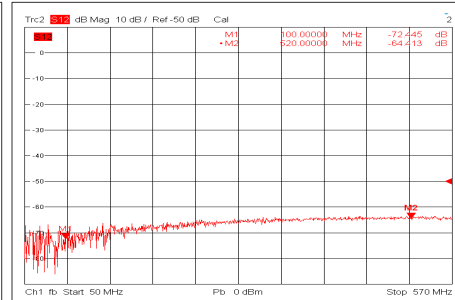
Input VSWR @+60°C



Output VSWR @+60°C



Isolation @+60°C

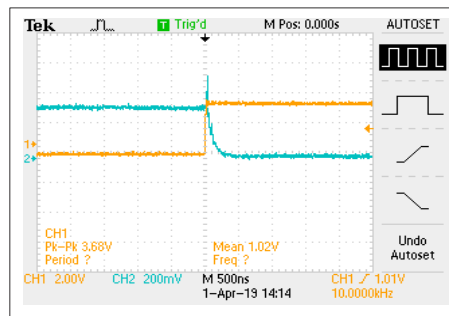


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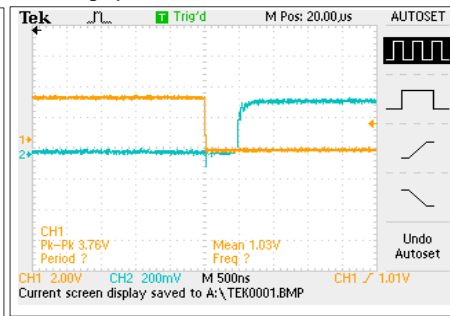


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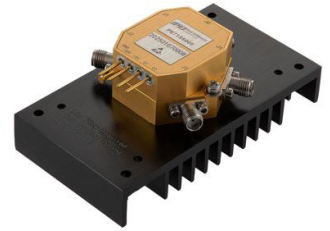
Switching Speed



Switching Speed



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Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Reflective SP4T PIN Diode Switch Operating From 100 MHz to 520 MHz Up to 100 Watt \(+50 dBm\) and Field Replaceable SMA with Heatsink PE71S5008](https://www.pasternack.com/absorptive-sp12t-pin-diode-switch-20-ghz-27-dbm-sma-pe71s2034-p.aspx)

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