

Reflective SPDT PIN Diode Switch Operating From 1 GHz to 2 GHz Up to 70 Watt (+48.45 dBm) and Field Replaceable N-Type with Heatsink



PE71S5020

Features

- Reflective SPDT High Power PIN Diode Switch
- Reflective Design
- Frequency Range: 1 GHz to 2 GHz
- Insertion Loss: 1 dB max
- Isolation: 35 dB typ
- VSWR: 1.8:1 max
- Maximum RF Input Power: 100 Watt
- Input IP3: +45 dBm typ
- Switching Speed: 38 usec
- TTL Compatible Driver Circuitry
- 50 Ohm Design
- N-Type Female Connectors
- Compact Package Design withstands up to 95% Relative Humidity
- -40°C to +85°C Operating Temperature

Applications

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

Description

The PE71S5020 is a single pole double throw (SPDT) PIN diode switch that operates across a wide frequency band from 1 GHz to 2 GHz. The 50 ohm reflective design supports TTL compatible driver circuitry for accurate logic control. Impressive typical performance includes 1 dB insertion loss max, 35 dB isolation typ, and 38 usec switching speed max. The switch requires a bias voltage of +5Vdc, and has maximum input power handling of up to 100 W. The rugged and compact package supports field replaceable N-Type 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

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	1		2	GHz
Impedance		50		Ohms
VSWR		1.5:1	1.8:1	
Insertion Loss		0.5	1	dB
IL Temperature Coefficient		0.003		
Isolation		35		dB
Switching Time		38		us
0.1dB Compression Point		50		
Input IP3		45		dBm
Input Power (Peak) 12% duty cycle, 30us pulses			600	Watts
DC Power Dissipation		0.25		Watt
Positive Operating Voltage		5		Vdc
Current @ 5 Vdc		50		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
Operating Temperature	-40		85	deg C

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	1 to 2					GHz

Electrical Specification Notes:

1. TTL pins cannot be connected to the negative voltage otherwise the internal driver will be damaged.
2. 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%
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	2.8 in [71.12 mm]
Width	2.36 in [59.94 mm]
Height	0.75 in [19.05 mm]
Weight	0.05 lbs [22.68 g]
Body Material and Plating	Copper, Nickel

Configuration

Design	Reflective, SPDT
RF Input/Output Connector	N Female
Band Type	Wideband

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 sine wave, 3 axis both directions
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis

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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:

Reflective SPDT PIN Diode Switch Operating From 1 GHz to 2 GHz Up to 70 Watt (+48.45 dBm) and Field Replaceable N-Type with Heatsink from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Reflective SPDT PIN Diode Switch Operating From 1 GHz to 2 GHz Up to 70 Watt \(+48.45 dBm\) and Field Replaceable N-Type with Heatsink PE71S5020](#)

URL: <https://www.pasternack.com/absorptive-sp12t-pin-diode-switch-20-ghz-27-dbm-sma-pe71s2034-p.aspx>

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