



SPDT High Power PIN Diode Switch Operating from 100 MHz to 500 MHz up to 100 Watts Average Power (+47 dBm) Hot Switching and N Type

PIN Diode Switches Technical Data Sheet

PE71S8004

Features

- Single Pole Double Throw (SPDT) High Power PIN Diode Switch
- Frequency Range 100 MHz to 500 MHz
- Reflective Design
- TTL Control Logic
- Cold Switching up to 100 Watts Average Power and 500 Watts Peak Power
- Hot Switching up to 100 Watts Average Power
- Insertion Loss 0.3 dB typ
- Isolation 65 dB typ
- VSWR 1.2:1
- Switching Speed 40 microseconds max
- Operating Voltages +12 Vdc to +15 Vdc @ 250 mA and +5 Vdc @ 40 mA typ
- 50 Ohm Design
- -20°C to +70°C Operating Temperature
- N-Type Female Connectors
- Solder Pins for DC and TTL Control
- Rugged Mil Grade Aluminum Package Design

Applications

- Military & Commercial Communication Systems
- Microwave Radio Systems
- Radar Systems
- Test & Measurement
- Research & Development
- RF Wideband Front Ends

Description

The PE71S8004 is a Single Pole Double Throw (SPDT) High Power PIN Diode Switch that operates over the frequency range of 100 MHz to 500 MHz. The 50 ohm reflective design supports TTL control logic and is rated for cold switching up to 100 watts average power and 500 watts peak power (1 usec pulse width). The switch also supports up to 100 watts average power for hot switching (reference conditions in spec table). Impressive typical performance includes 0.3 dB insertion loss, 65 dB isolation, 40 microsecond switching speed, and 1.1:1 VSWR. Operating voltages are +12Vdc to +15Vdc @ 250 mA nominal and +5 Vdc @ 40 mA nominal. The rugged Mil Grade package design supports N type female connectors, and solder pins for DC and TTL control logic. The operational temperature range is -20°C to +70°C.

Electrical Specifications

TTL Control

Off/Isolation: 0 to 0.8 V $R_{F\text{OUT}}$
 On/Low Loss: 2 to 5 V J2-COM
 Off port is reflective

Description	Minimum	Typical	Maximum	Units
Frequency Range	100		500	MHz
Impedance		50		Ohms
VSWR		1.1:1	1.25:1	
Insertion Loss		0.3	0.5	dB
Isolation	55	65		dB
Switching Time*			40	us
Positive Operating Voltage		15		Vdc
Positive Operating Voltage 2		5		Vdc
Current @ 15 Vdc		250		mA
Current @ 5 Vdc		40		mA
Operating Temperature	-20		+70	deg C

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SPDT High Power PIN Diode Switch Operating from 100 MHz to 500 MHz up to 100 Watts Average Power \(+47 dBm\) Hot Switching and N Type PE71S8004](#)



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Electrical Specification Notes:

*Switching Speed: 50% TTL to 10% or 90% RF

**If switch rate exceeds 1000 cycles per second, external heat sinking will be required to maintain a maximum case temperature of +70°C

Descripton	Minimum	Typical	Maximum	Units
Average Power (Cold Switch)			100	Watts
Average Power (Hot Switch)**			100	Watts
Input Power (Peak) 1 usec pulse width			500	Watts

Mechanical Specifications

Size

Weight	0.65 lbs [294.84 g]
Design	SPDT
RF Connector	N Female
TTL Control Connector	Solder Pin

Environmental Specifications

Temperature

Operating Range	-20 to +70 deg C
Storage Range	-55 to +85 deg C

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

Plotted and Other Data

Notes:

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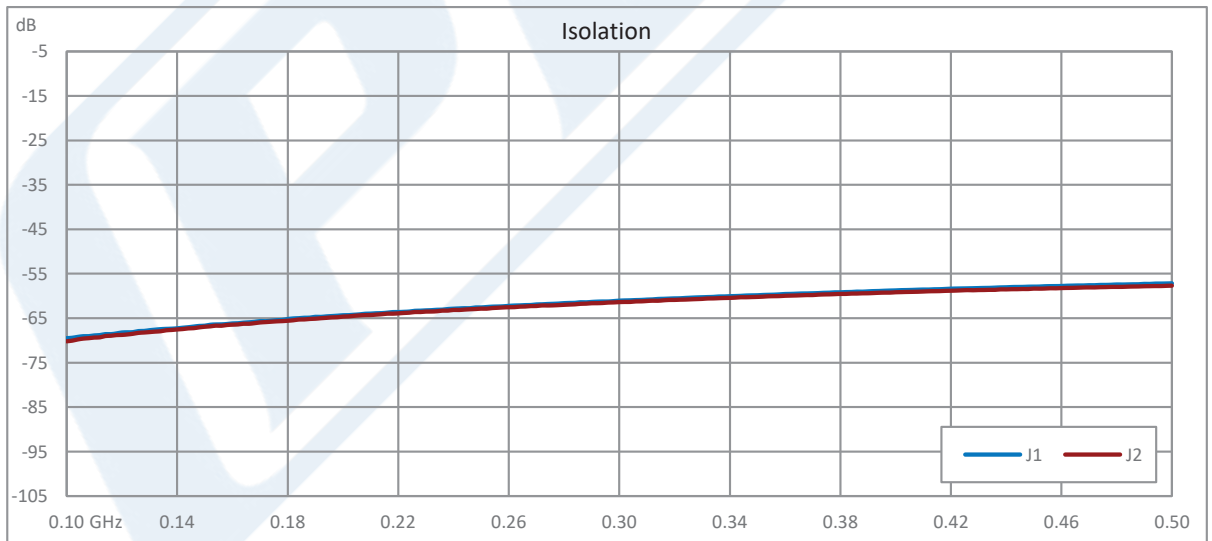
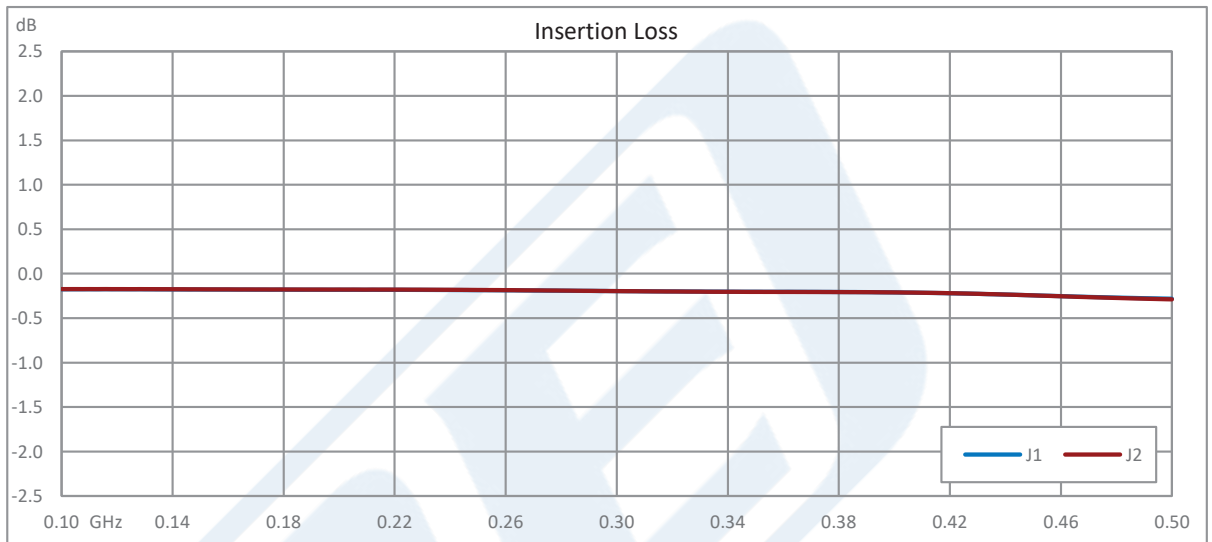


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Typical Performance Data



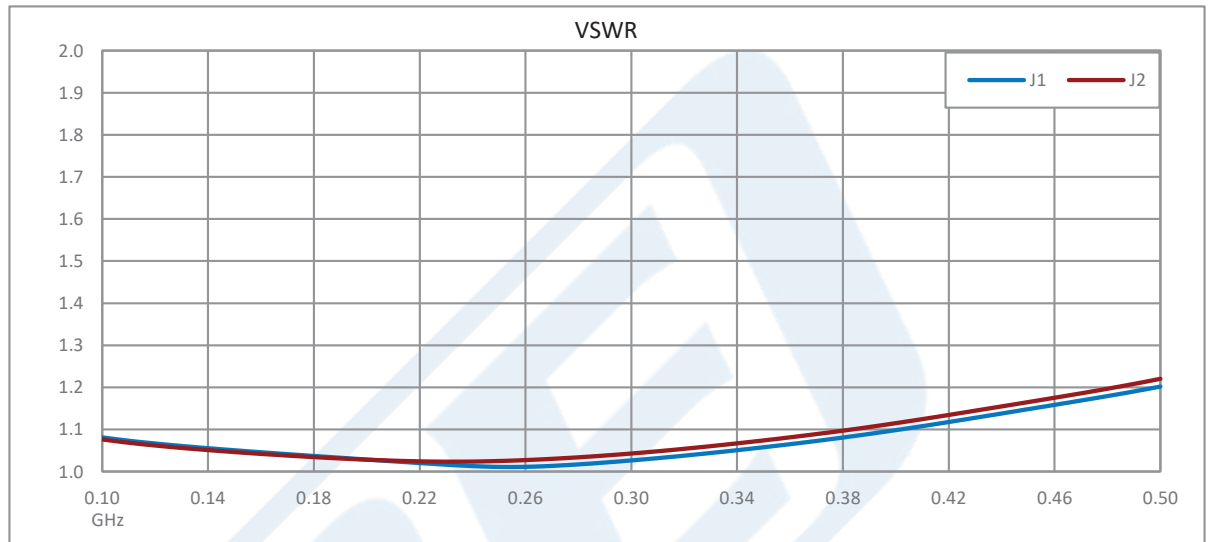
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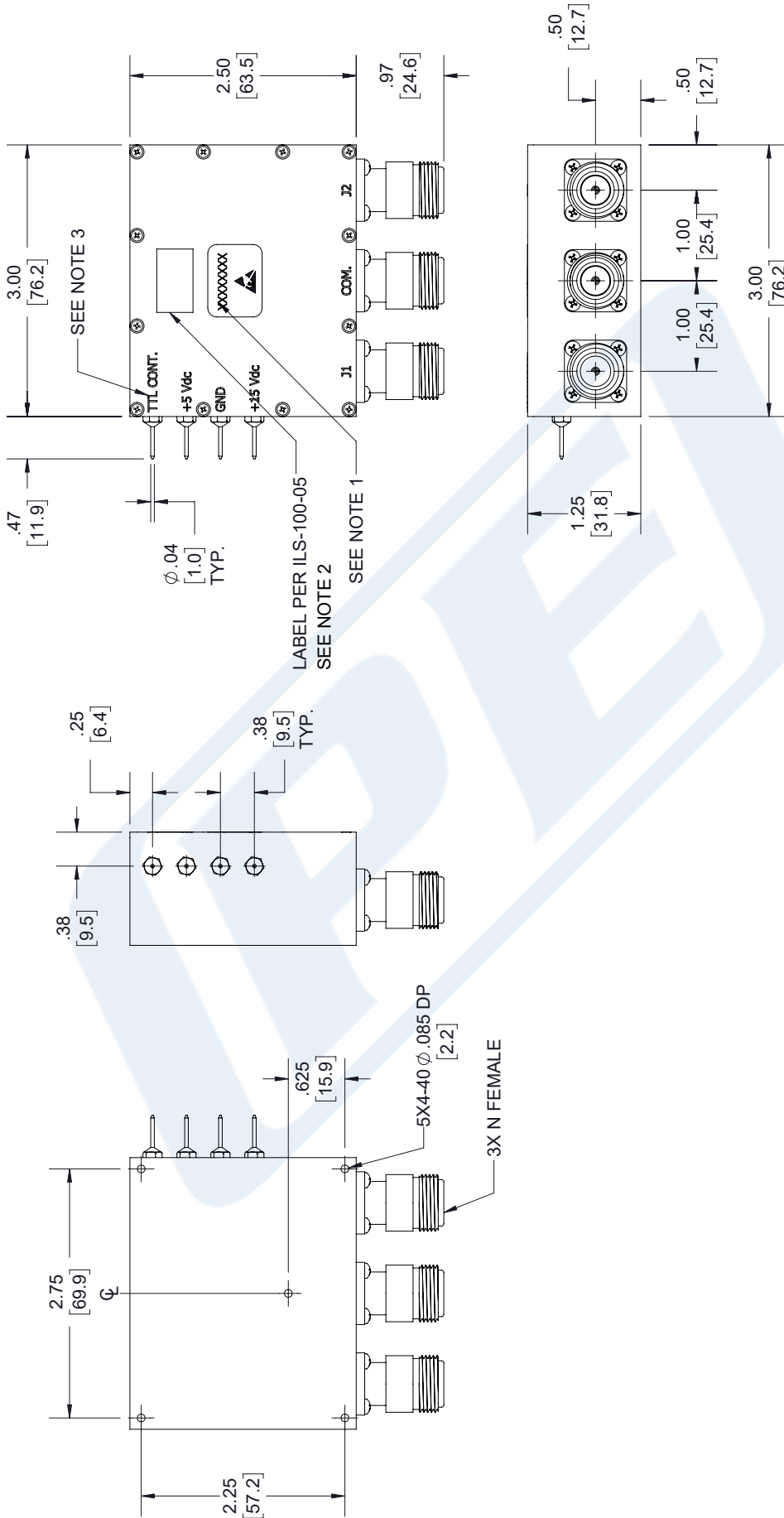
URL: <https://www.pasternack.com/spdt-electromechanical-relay-switch-accessory-pwb-500-mhz-500w-15v-sma-pe71s8004-p.aspx>

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PE71S8004 CAD Drawing

SPDT High Power PIN Diode Switch Operating from 100 MHz to 500 MHz
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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	14-08-2021	TGALLA



THIRD-ANGLE PROJECTION

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UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [] ARE MILLIMETERS

TOLERANCES:

.X = ±.2	[5.08]	FRACTIONS
.XX = ±.02	[.51]	±.1/32
.XXX = ±.005	[.13]	ANGLES ± 1°

CABLE LENGTH (L) TOLERANCES:

L ≤ 12	[305]	= +1 [25] / -0
12 [305] < L ≤ 60	[1524]	= +2 [51] / -0
60 [1524] < L ≤ 120	[3048]	= +4 [102] / -0
120 [3048] < L ≤ 300	[7620]	= +6 [152] / -0
300 [7620] < L		= +5%L / -0

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

SIZE [CAGE CODE] DRAWN BY ITEM NO.

A 53919 MVEERAPPAN PE71S8004

SCALE N/A

SHEET 1 OF 1

REV A

- NOTES:**
- SERIAL NUMBER AND DATE CODE ARE COMBINED. EX: 202008280001.
 - LABEL PER ILS-100-05. FOR INTERNAL REFERENCE ONLY. LABEL LOCATION SHOULD BE SAME AS SHOWN.
 - TTL LOW= COMMON TO J1, TTL HIGH= COMMON TO J2
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