



SP4T Electromechanical Relay Normally Open Switch,
DC to 26.5 GHz, up to 90W, 2M Lifecycles, 28V, SMA

Electromechanical Relay Switches Technical Data Sheet

PE71S6453

Features

- Single Pole Four Throw Electromechanical Relay Switch
- DC to 26.5 GHz Frequency Range
- Normally Open Actuator
- 2M Lifecycle Rating
- Insertion Loss 0.35 dB typ
- Isolation > 80 dB typ
- VSWR as low as 1.2:1 max
- +28 Volt DC Bias
- Terminal Solder Pins for DC Control
- SMA Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 90 Watt Average Power Handling
- 50 Ohm Design
- Hot Switching Capability - Consult Factory
- S-Parameter Data available upon request
- Rugged Design meets Mil-STD-202 Test Conditions

Applications

- Aerospace & Defense
- Test & Measurement
- Microwave Radio Systems
- Military & Commercial Communication Systems
- Research & Development
- SATCOM
- Wireless Communications
- Enterprise
- IoT

Description

The PE71S6453 is a Single Pole Four Throw (SP4T) electromechanical relay switch that operates across a wide frequency range of DC to 26.5 GHz and can handle up to 90 Watts of Average power in a break before make condition. The 50 Ohm design is rated for 2 million lifecycles and features a Normally Open Actuator where the selected position remains active with constant voltage, all positions are open when voltage is removed. Impressive typical performance includes 0.35 dB insertion loss and isolation greater than 80 dB. This switch requires +28 Vdc bias voltage and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports SMA female connectors and solder terminal pins for DC control. And for highly reliable operation, the model is guaranteed to meet MIL-STD-202 environmental test conditions for shock and random vibration.

Electrical Specifications

Switch Type	SP4T
Actuator Type	Normally Open
Switching Sequence	Break Before Make
Actuator Options	Solder Pins

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		26.5	GHz
Impedance		50		Ohms
Operating Voltage	26	28	30	Volts
Actuating Set Current @ 28 Volts			140	mA
VSWR		1.3:1	1.7:1	
Insertion Loss		0.35	0.7	dB
Isolation	70	80		dB

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP4T Electromechanical Relay Normally Open Switch, DC to 26.5 GHz, up to 90W, 2M Lifecycles, 28V, SMA PE71S6453](#)



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Switching Time 20 ms Max

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 6	6 to 12	12 to 18	18 to 26.5		GHz
VSWR, Max	1.2:1	1.3:1	1.4:1	1.7:1		
Insertion Loss, Max	0.15	0.25	0.4	0.7		dB
Isolation, Min	80	80	80	70		dB

Mechanical Specifications

Size

Length 1.75 in [44.45 mm]
Width/Diameter 1.75 in [44.45 mm]
Height 1.75 in [44.45 mm]

Finish

NICKEL

Package Type

Connectorized

Operating Life

2,000,000 Cycles

Connectors

RF Connector Type

SMA Female

Control Connector

D-Subminiature

Environmental Specifications

Temperature

Operating Range

Storage Range

-25 to +65 deg C

-55 to +100 deg C

Humidity

Shock

Moisture resistant or immersion sealing available
MIL-STD-202 Method 213, Condition D, 500G (non oper)

Vibration

MIL-STD-202 Method 214, Condition D, 10G RMS (non oper)

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

Plotted and Other Data

Notes:

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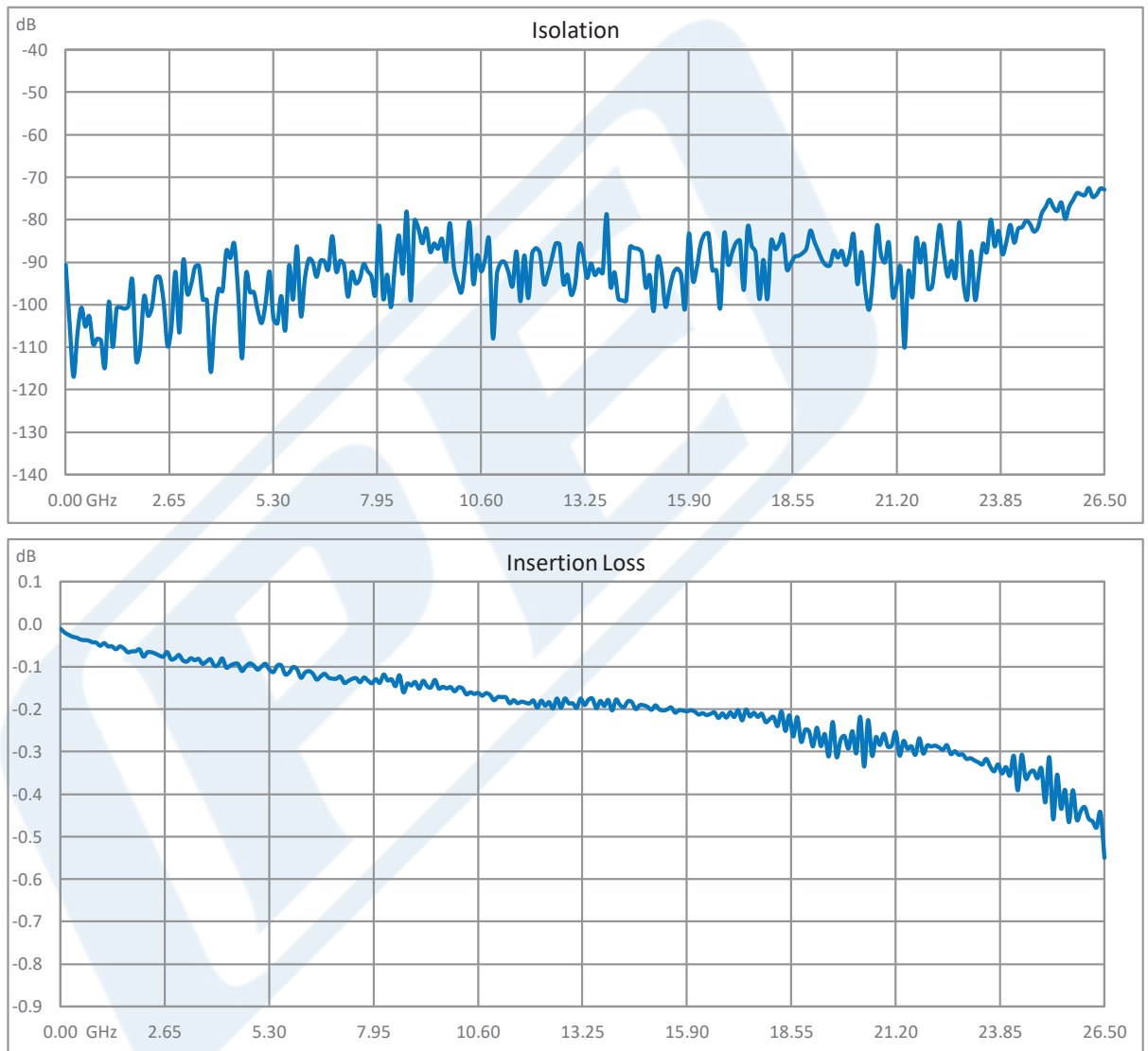


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Typical Performance Data



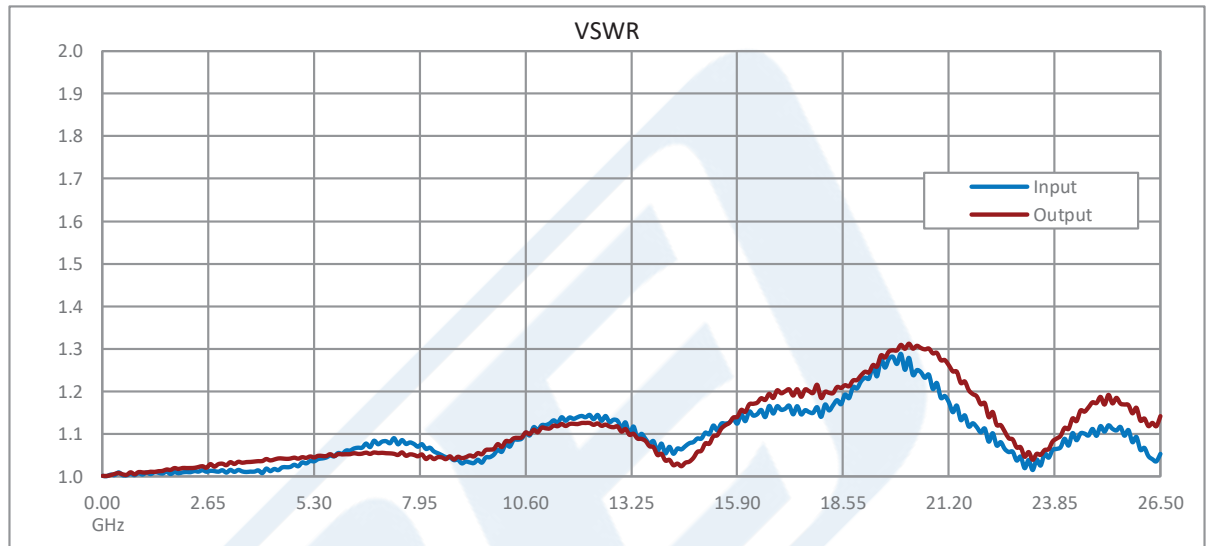
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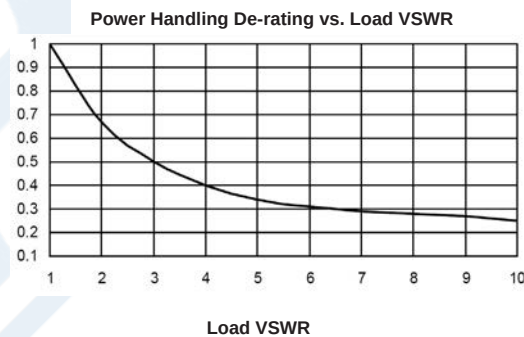
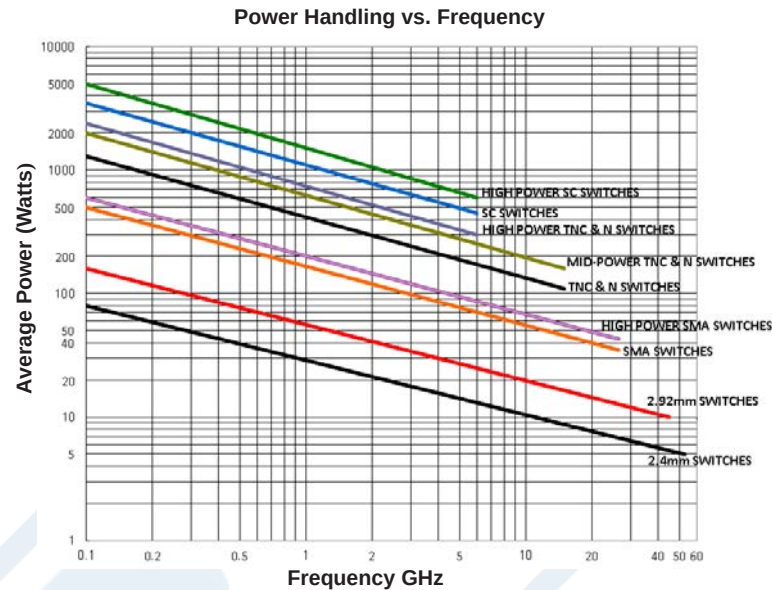
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Power Handling Chart and Derating Curves based on the following Test and Environmental Conditions:

- Ambient temperature: 20 - 25°C
- Altitude: Sea Level to 1,000 feet
- Relative Humidity: 50 - 55%
- Load VSWR: $\leq 1.20:1$
- Operation: Cold Switching

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SP4T Electromechanical Relay Normally Open Switch, DC to 26.5 GHz, up to 90W, 2M Lifecycles, 28V, SMA 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.

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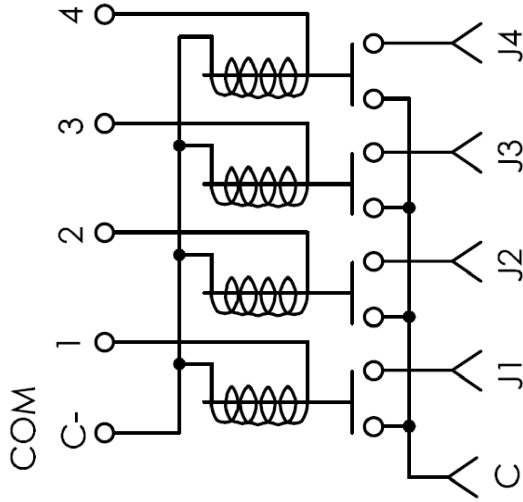
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PE71S6453 CAD Drawing

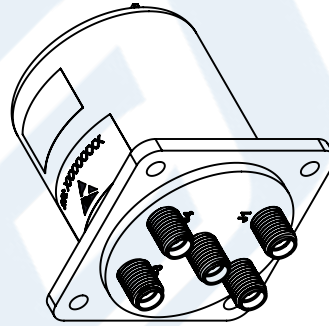
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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	1/27/2021	T.GALLA



RF POSITION

SCHEMATIC



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

TOLERANCES:
FRACTIONS
X = ±.2 [5.08]
XX = ±.02 [.51]
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% / -0
ALL DIMENSIONS SHOWN
ARE FOR REFERENCE ONLY.

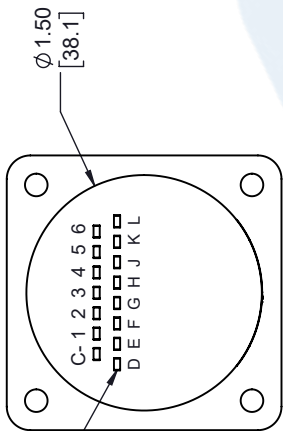
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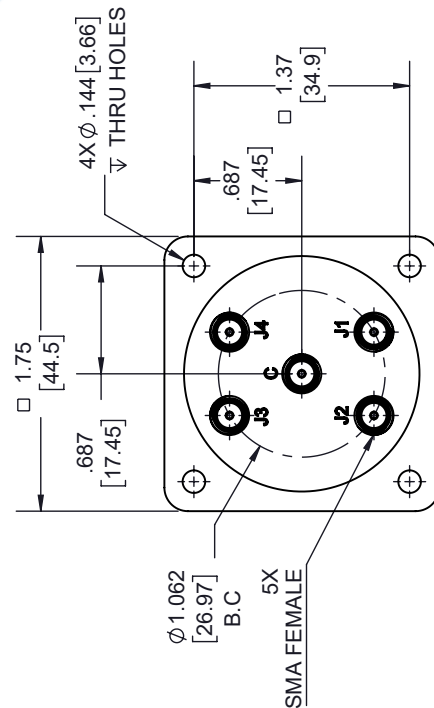
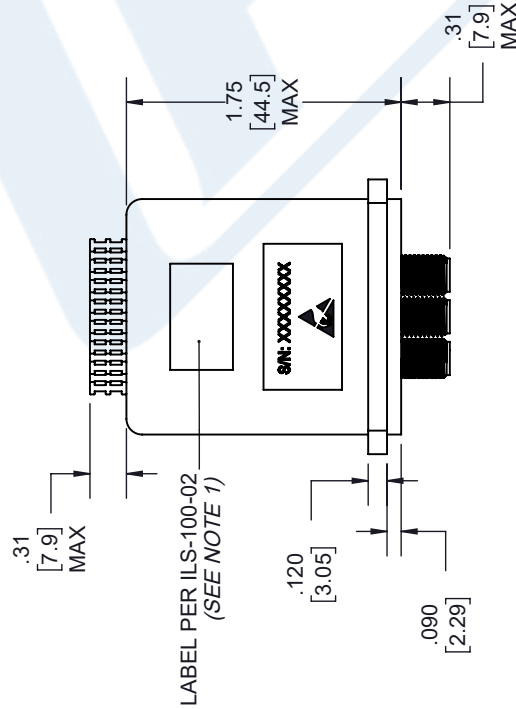
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SIZE A
CAGE CODE 53919
DRAWN BY K.DANG
ITEM NO. PE71S6453



15X SOLDER TERMINALS



NOTES:

1. LABEL PER ILS-100-02. FOR INTERNAL REFERENCE ONLY.
2. LABEL LOCATION FOR REFERENCE ONLY.

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