



SP4T, Electromechanical Relay Normally Open
Switch, DC to 43 GHz, 28VDC, 10W, Indicators,
TTL, Diodes, Solder Terminals, 2.92mm

Electromechanical Relay Switches Technical Data Sheet

PE71S7291

Features

- Single Pole Four Throw (SP4T) Electromechanical Relay Switch
- DC to 43 GHz Frequency Range
- Normally Open Actuator
- TTL Logic Control
- Indicators
- Suppression Diodes
- 2M Lifecycle Rating
- Insertion Loss 0.4 dB typ
- Isolation > 70 dB typ
- VSWR as low as 1.25:1 max
- Solder Terminal Pines for DC Control
- +28 Volt DC Bias
- 2.92mm Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 10 Watts 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 PE71S7291 is a Single Pole Four Throw (SP4T) electromechanical relay switch that operates across an ultra wide frequency range from DC to 43 GHz and can handle up to 10 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. Additional features include TTL logic control, Indicators to monitor the switch position, and Suppression Diodes which limit voltage spikes or reverse current. Impressive typical performance includes 0.4 dB insertion loss and isolation greater than 70 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 2.92mm 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 (TA = 25°C, DC Voltage = 28 Vdc)

Switch Type
Actuator Type
Actuator Options

SP4T
Normally Open
Indicators, TTL Logic, Diodes

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		43	GHz
Operating Voltage	26	28	30	Volts
Actuating Set Current			140	mA
VSWR		1.4:1	2.1:1	
Insertion Loss		0.4	1.6	dB
Isolation	40	85		dB
Input Power			10	Watts

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 43 GHz, 28VDC, 10W, Indicators, TTL, Diodes, Solder Terminals, 2.92mm PE71S7291](#)



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Switching Time	20	ms
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Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 6	6 to 12	12 to 18	18 to 28	28 to 34	GHz
VSWR, Max	1.25:1	1.4:1	1.5:1	1.8:1	1.8:1	
Insertion Loss, Max	0.2	0.4	0.5	0.9	1	dB
Isolation, Min	70	60	60	60	60	dB

Performance by Frequency

Description	F6	F7	F8	F9	F10	Units
Frequency Range	34 to 40	40 to 43				GHz
VSWR, Max	1.8:1	2.1:1				
Insertion Loss, Max	1.3	1.6				dB
Isolation, Min	50	40				dB

Mechanical Specifications

Size

Length	1.75 in [44.45 mm]
Width/Diameter	1.75 in [44.45 mm]
Height	2.5 in [63.5 mm]
Weight	0.22 lbs [99.79 g]
Finish	Electroless Nickel

Connectors

RF Connector Type	2.92mm Female
Control Connector	Solder Terminals

Environmental Specifications

Temperature

Operating Range	-25 to +65 deg C
Storage Range	-55 to +100 deg C

Shock

MIL-STD-202 Method 213, Condition D, 500G (non operational)

Vibration

MIL-STD-202 Method 204, Condition D, 10G RMS (non operational)

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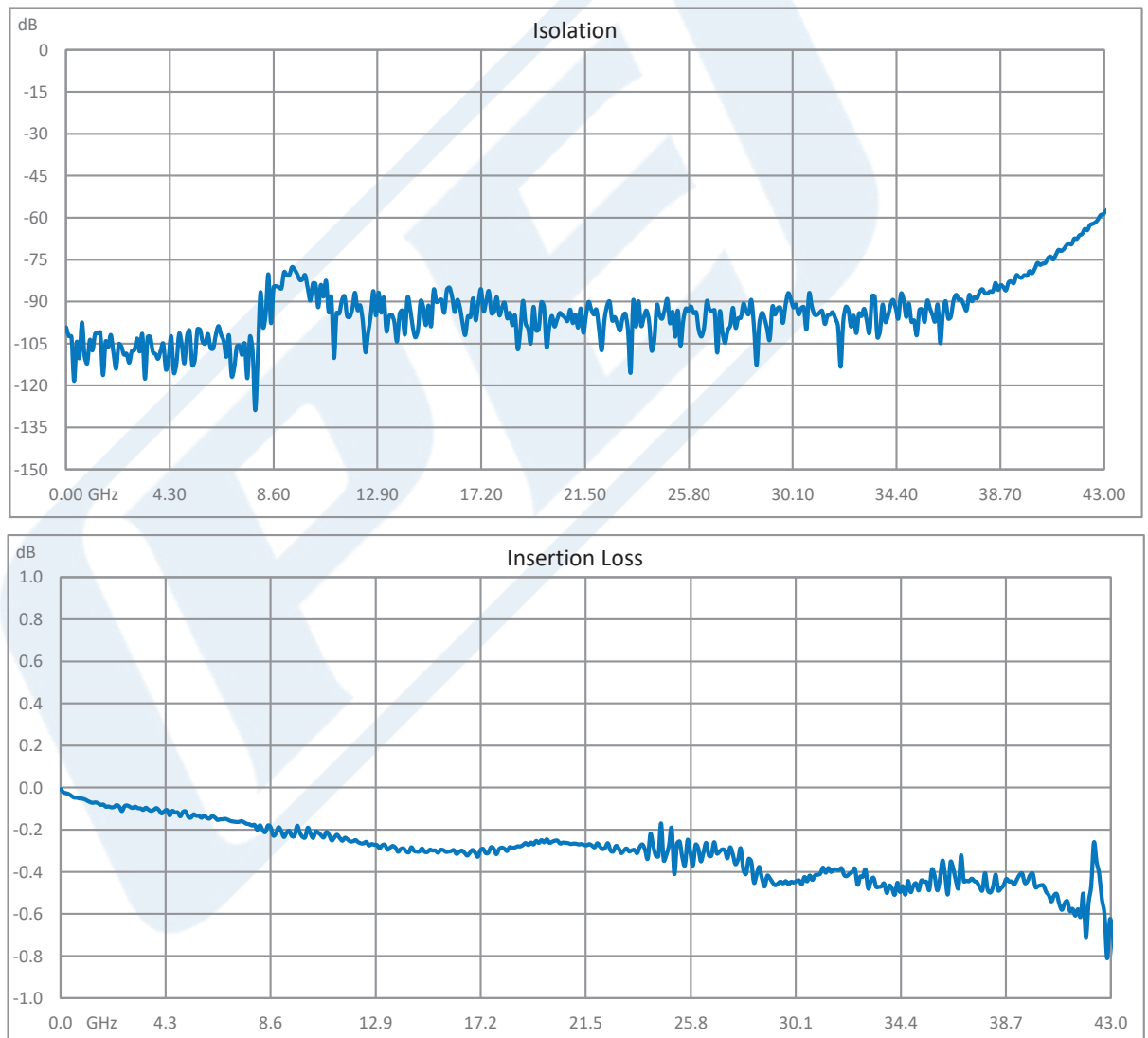
PE71S7291

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

Plotted and Other Data

Notes:

Typical Performance Data



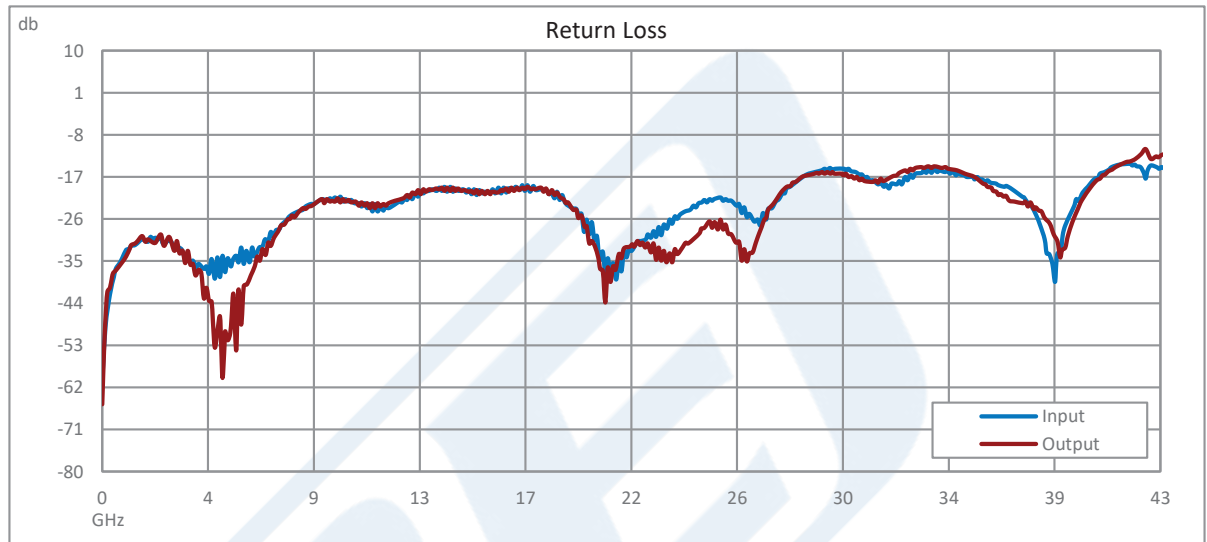
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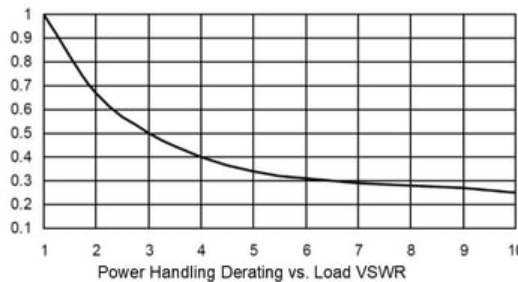
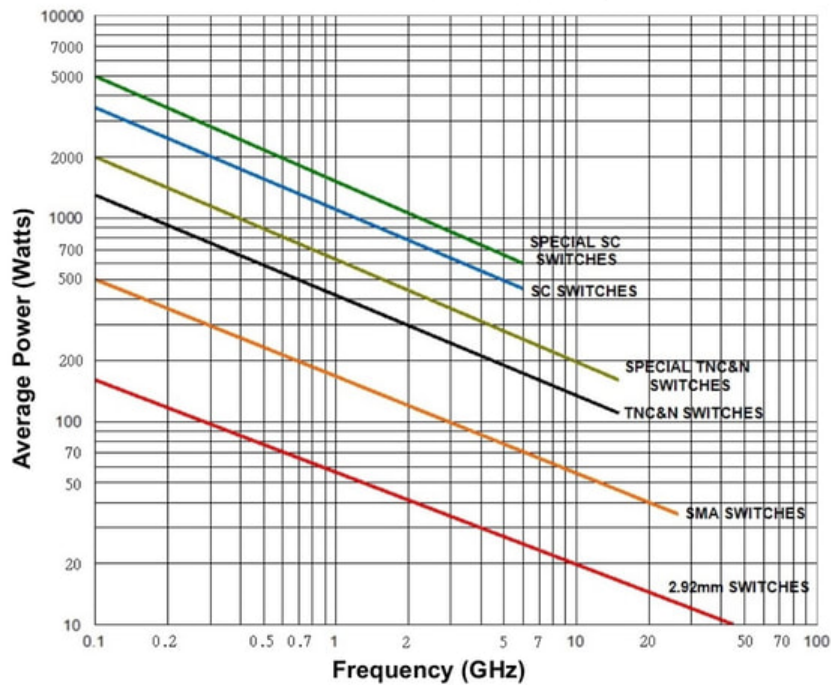


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Power Handling vs. Frequency



Power handling chart and derating curves based on the following conditions:

- Ambient temperature: 40°C or less
- Altitude: Sea level
- Load VSWR: 1.20:1 Maximum
- Relative Humidity: 40-50%
- Cold switching: RF signal off

Note: specifications subject to change without notice

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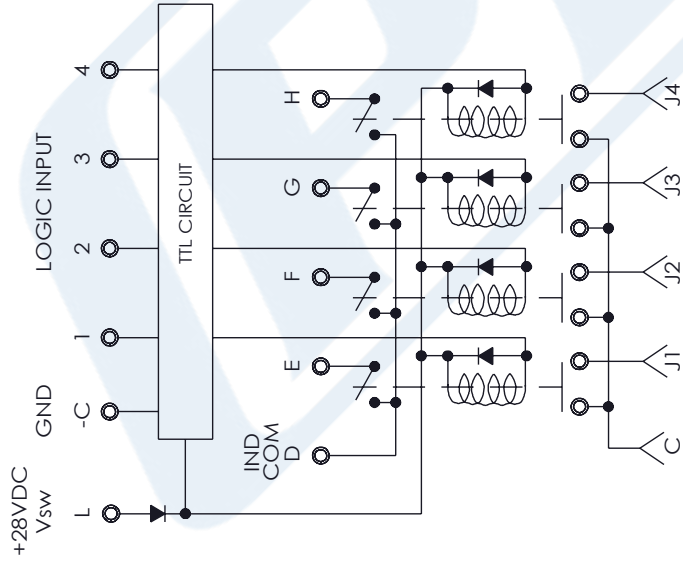
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PE71S7291 CAD Drawing

SP4T, Electromechanical Relay Normally Open Switch, DC to 43 GHz, 28VDC,
10W, Indicators, TTL, Diodes, Solder Terminals, 2.92mm



TRUTH TABLE/PIN ASSIGNMENT :
PIN ASSIGNMENT

TERMINALS	RF PATH				INDICATOR			
	J1	J2	J3	J4	E	F	G	H
LOGIC INPUT PINS								
1 ("1")	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
2 ("1")	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
3 ("1")	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
4 ("1")	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON

PIN -C: GND
PIN D: IND COM
PIN L: Vsw +28VDC

RF POSITION
SCHEMATIC

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

TOLERANCES:

X = ±.2 [.5] FRACTIONS
XX = ±.02 [.5] ± 1/32
XXX = ±.005 [.13] ANGLES ± 1°
CABLE LENGTH TOLERANCES:

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

ALL DIMENSIONS ARE FOR REFERENCE ONLY
AND SUBJECT TO CHANGE WITHOUT NOTICE



Website: www.Pasternack.com
Phone: 1.866.727.8376 | 1.949.261.1920

DESCRIPTION

SP4T, NO, 43GHz, 28VDC, indicators, TTL, diodes, 2.92mm, solder terminal

SIZE A CAGE CODE 53919 DRAWN BY BPUCHASKI ITEM NO. PE71S7291 REV A



INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5
SCALE NONE SHEET 2 OF 2

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