



SP4T Electromechanical Relay Normally Open  
Switch, Terminated, DC to 26.5 GHz, 2M  
Lifecycles, 20W, 28V, TTL, Diodes, SMA

## Electromechanical Relay Switches Technical Data Sheet

**PE71S6514**

### Features

- Single Pole Four Throw (SP4T) Electromechanical Relay Switch
- DC to 26.5 GHz Frequency Range
- Normally Open Actuator
- 2M Lifecycle Rating
- Insertion Loss 0.4 dB typ
- Isolation > 70 dB typ
- VSWR as low as 1.25:1 max
- +12 Volt DC Bias
- Terminal Solder Pins for DC Control
- SMA Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 20 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 PE71S6513 is a Single Pole Four Throw (SP4T) electromechanical relay switch that operates across a wide frequency range from DC to 26.5 GHz and can handle up to 20W of CW input 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. The output ports are terminated in 50 ohms when switched in the isolation (off) state. Additional features include TTL control logic, 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 +28Vdc 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 Pins for DC control functions. 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	SP4T
Actuator Type	Normally Open
Actuator Options	TTL Logic
TTL Control	on: 2.4 to 5 Volts off: 0 to 0.8 Volts

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		26.5	GHz
Operating Voltage		+28		Volts
Actuating Set Current @ +28 Volts			200	mA
VSWR		1.2:1	1.8:1	
Insertion Loss		0.4	0.8	dB
Isolation	50	70		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, Terminated, DC to 26.5 GHz, 2M Lifecycles, 20W, 28V, TTL, Diodes, SMA PE71S6514](#)



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Input Power (CW) 20 Watts  
(at 26.5 GHz)

### 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	1.25:1	1.4:1	1.5:1	1.8:1		
Insertion Loss, Max	0.2	0.4	0.5	0.8		dB
Isolation, Min	70	60	60	50		dB

### Mechanical Specifications

#### Size

Length 2.52 in [64.01 mm]  
Width/Diameter 2.25 in [57.15 mm]  
Height 2.25 in [57.15 mm]  
Weight 0.35 lbs [158.76 g]

#### Connectors

RF Connector Type SMA Female

### 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 oper)

#### Vibration

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

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

### Plotted and Other Data

Notes:

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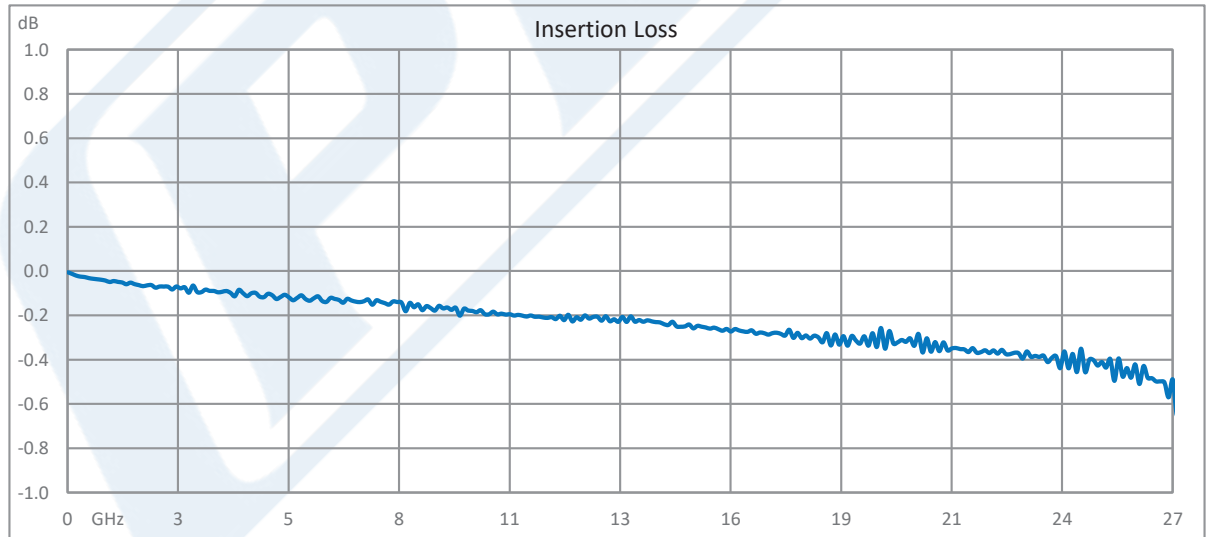
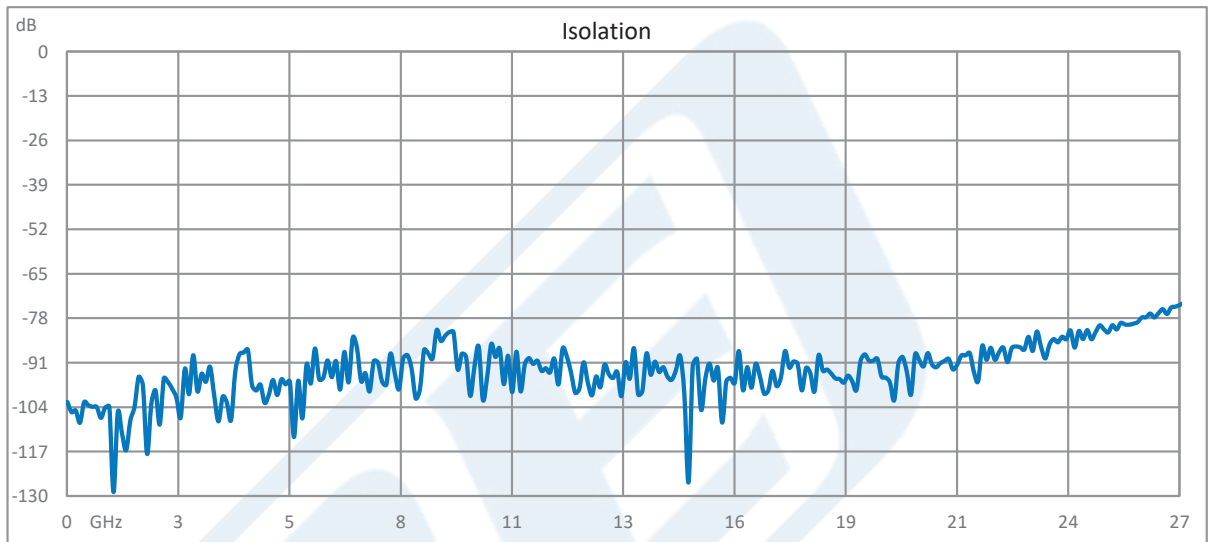


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## Electromechanical Relay Switches Technical Data

**PE71S6514**

### Typical Performance Data



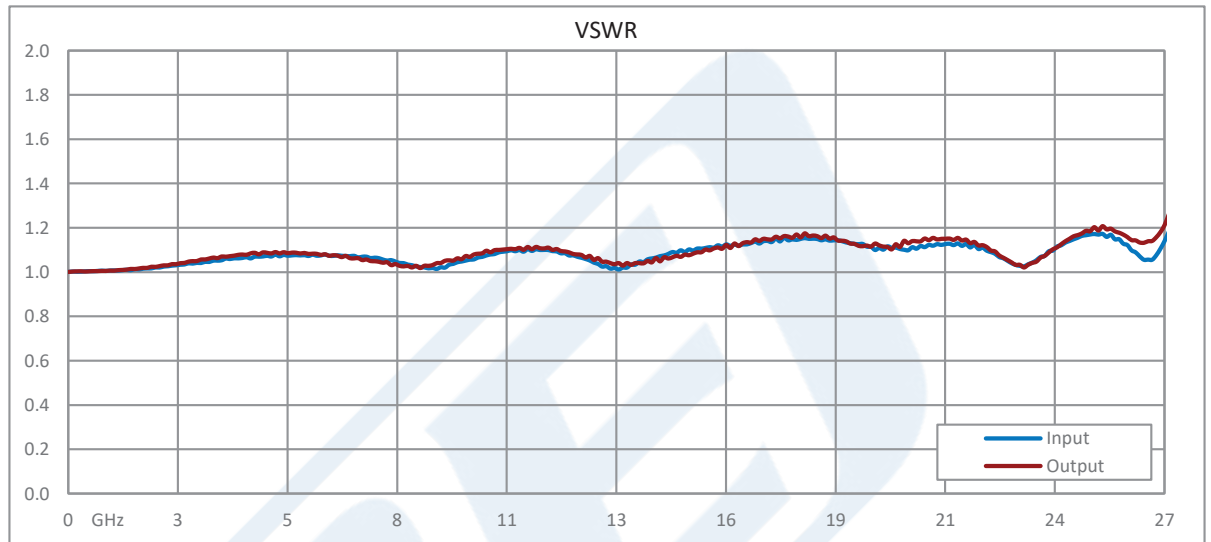
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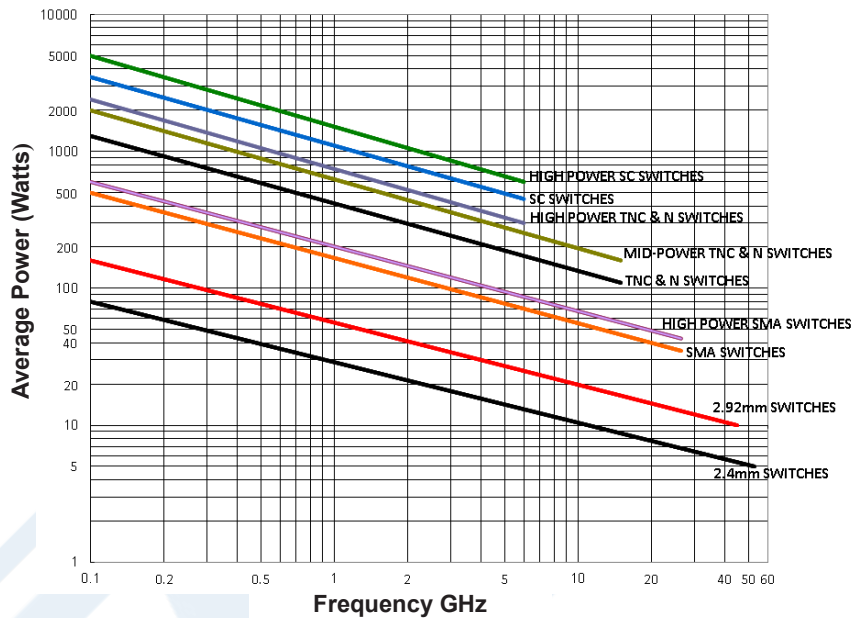


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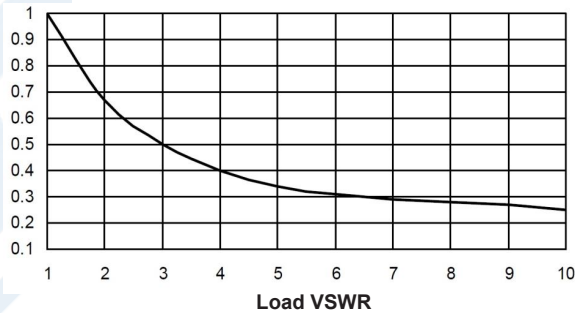
**Electromechanical Relay Switches Technical Data**

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**Power Handling vs. Frequency**



**Power Handling De-rating vs. Load VSWR**



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: ≤ 1.20:1  
 Operation: Cold Switching

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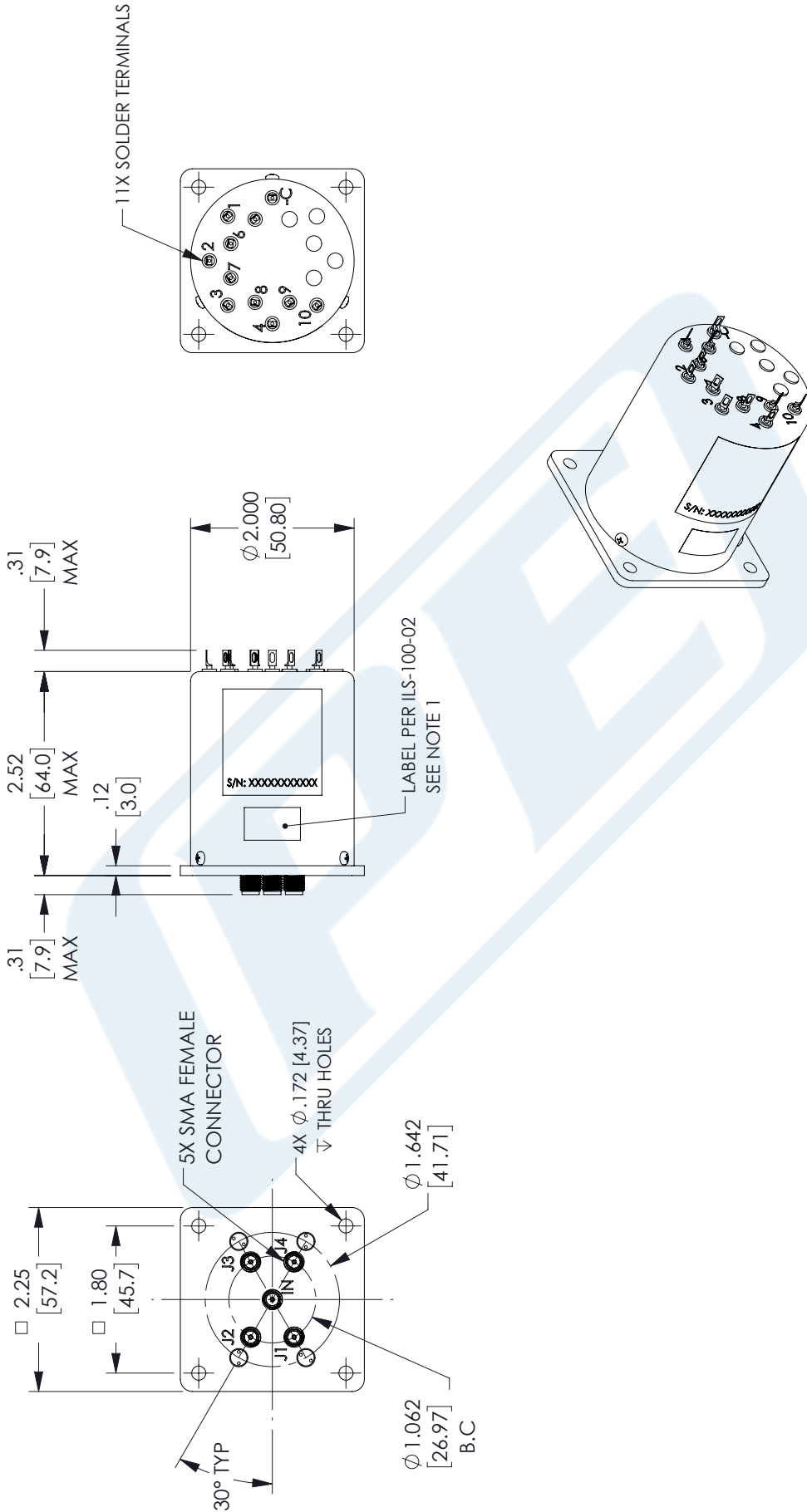
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# PE71S6514 CAD Drawing

SP4T Electromechanical Relay Normally Open Switch, Terminated,  
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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	05/17/2022	T. GALLA



**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.**

**THIRD-ANGLE PROJECTION**

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SIZE	CAGE CODE	DRAWN BY	ITEM NO.
A	53919	KGLEBOVA	PE71S6514
REV			A

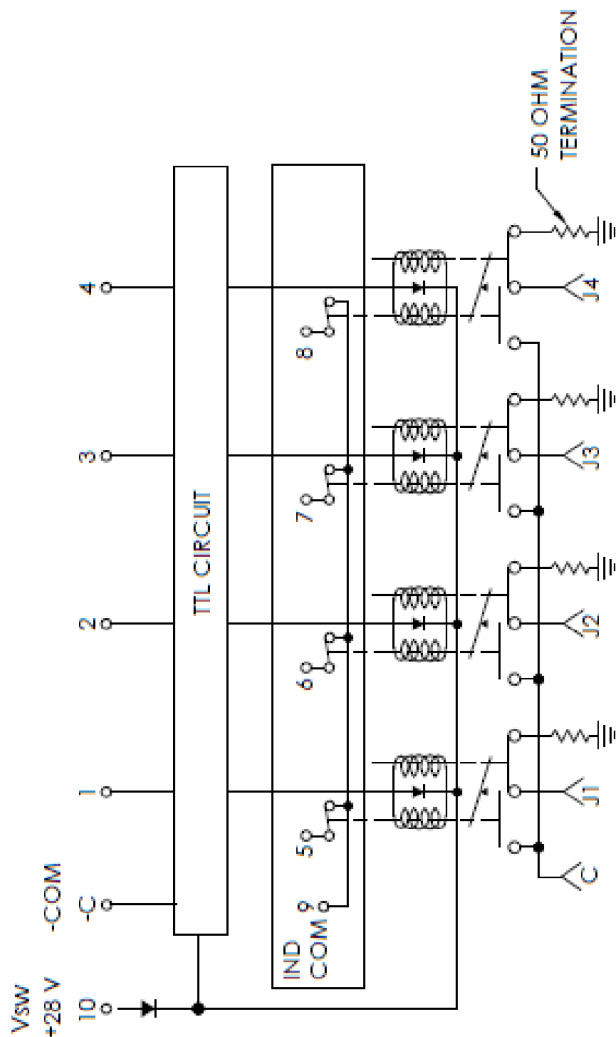
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TRUTH TABLE/PIN ASSIGNMENT :  
PIN ASSIGNMENT

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

PIN -C. -COM  
PIN 10. V<sub>SW</sub> +28V  
PIN 9. IND COM

## SCHEMATIC

[SHOWN IN NORMALLY OPEN AND INTERNALLY TERMINATE POSITIONS]

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LEADING DIMENSIONS ARE INCHES  
DIMENSIONS IN [ ] ARE MILLIMETERS

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