



SP6T Electromechanical Relay Normally Open Switch, Terminated, DC to 26.5 GHz, 2M lifecycles, 20W, 28V, SMA, Solder Pins

Electromechanical Relay Switches Technical Data Sheet

PE71S6516

Features

- Single Pole Six Throw (SP6T) 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
- +28 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 PE71S6516 is a Single Pole Six Throw (SP6T) electromechanical relay switch that operates across a wide frequency range from DC to 26.5 GHz and can handle up to 20W 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. The output ports are terminated in 50 ohms when switched in the isolation (off) state. 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. 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 SP6T
Actuator Type Normally Open

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

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T Electromechanical Relay Normally Open Switch, Terminated, DC to 26.5 GHz, 2M lifecycles, 20W, 28V, SMA, Solder Pins PE71S6516](#)



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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 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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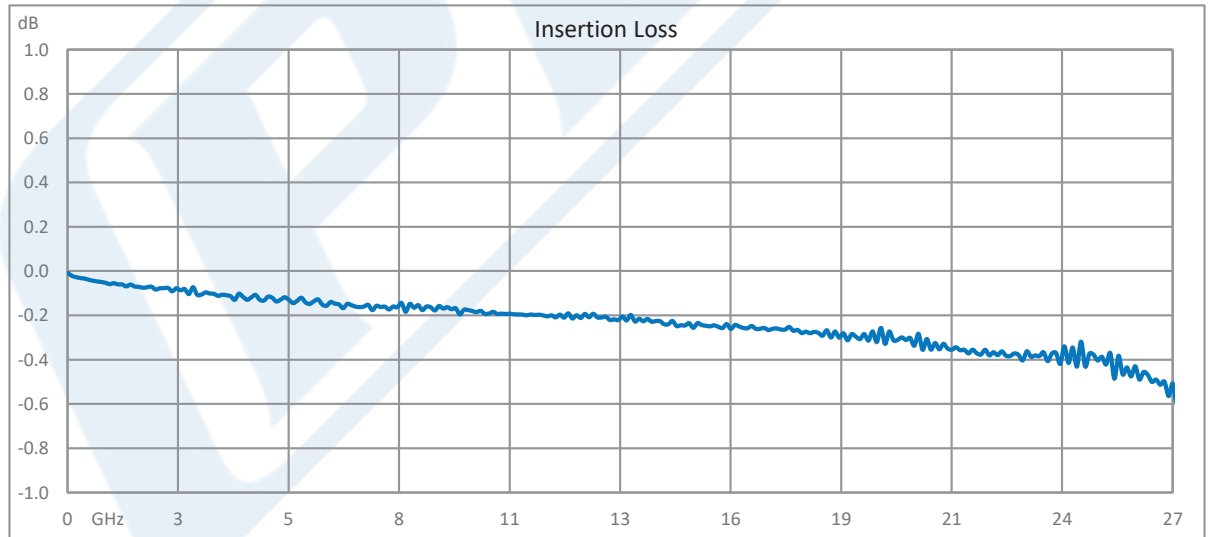
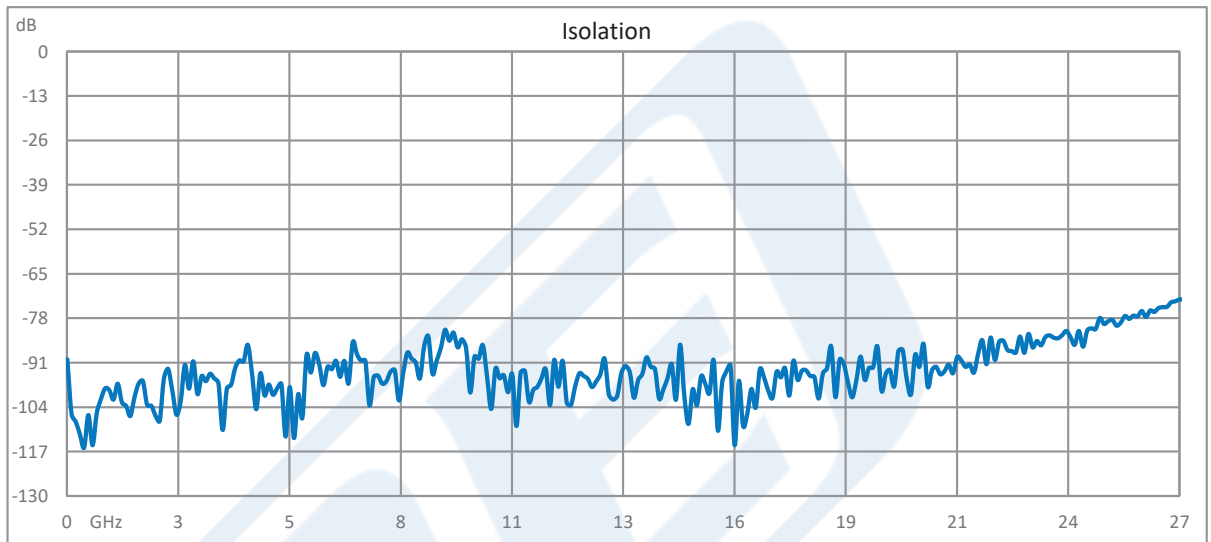


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Typical Performance Data



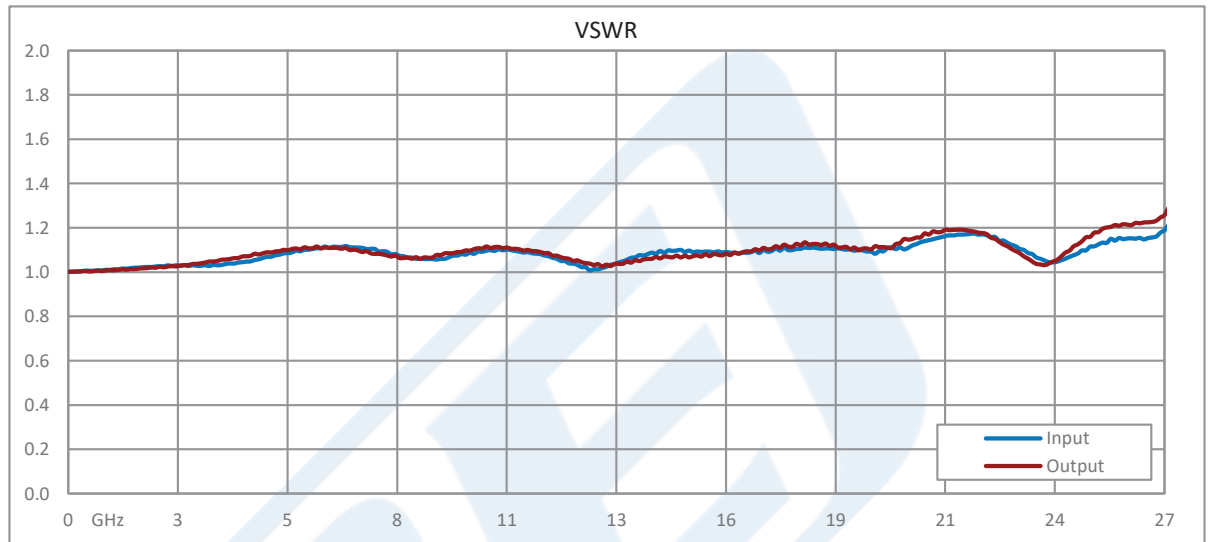
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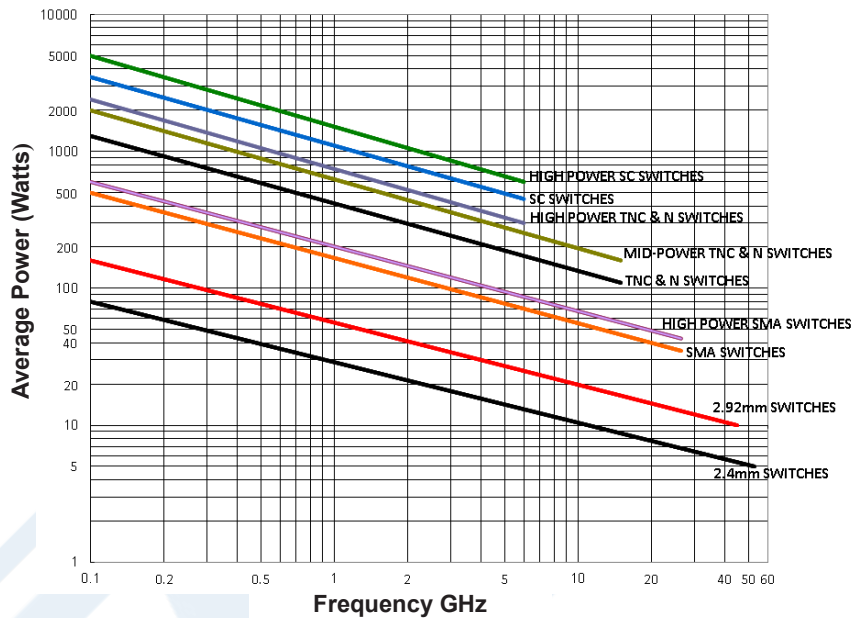


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Power Handling vs. Frequency



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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SP6T Electromechanical Relay Normally Open Switch, Terminated, DC to 26.5 GHz, 2M lifecycles, 20W, 28V, SMA, Solder Pins 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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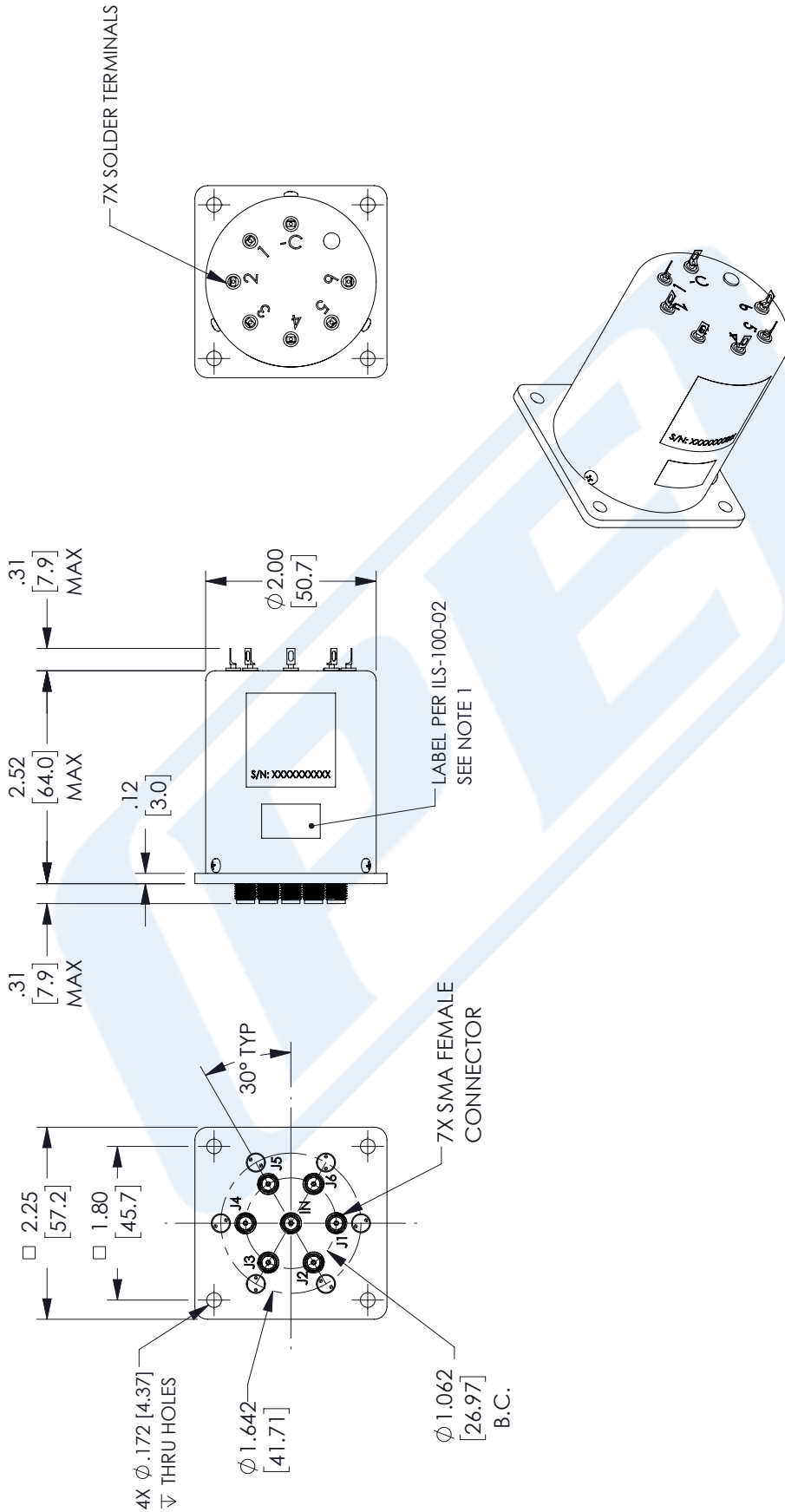
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PE71S6516 CAD Drawing

SP6T Electromechanical Relay Normally Open Switch, Terminated,
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| REVISIONS | | | |
|-----------|-----------------|------------|----------|
| REV. | DESCRIPTION | DATE | APPROVED |
| A | INITIAL RELEASE | 05/19/2022 | T. GALLA |



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TOLERANCES:

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

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.

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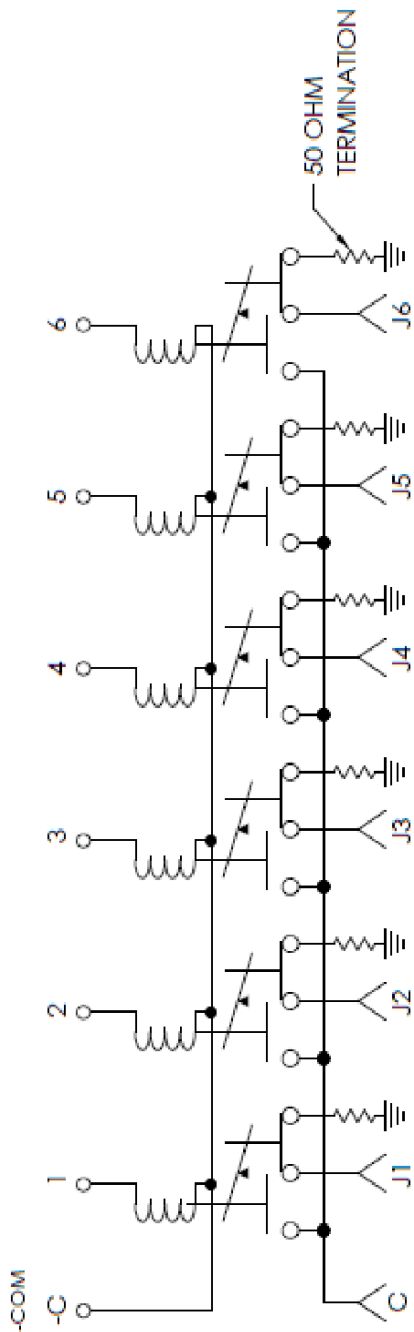
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SCHEMATIC

(SHOWN IN NORMALLY OPEN AND INTERNALLY TERMINATE POSITIONS)

TRUTH TABLE/PIN ASSIGNMENT:
PIN ASSIGNMENT

| TERMINALS PIN ASSIGNMENT | RF PATH | | | | | |
|-----------------------------|---------|-----|-----|-----|-----|-----|
| | J1 | J2 | J3 | J4 | J5 | J6 |
| 1 | ON | OFF | OFF | OFF | OFF | OFF |
| 2 | OFF | ON | OFF | OFF | OFF | OFF |
| 3 | OFF | OFF | ON | OFF | OFF | OFF |
| 4 | OFF | OFF | OFF | ON | OFF | OFF |
| 5 | OFF | OFF | OFF | OFF | ON | OFF |
| 6 | OFF | OFF | OFF | OFF | OFF | ON |

PIN - C. -COM

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LEADING DIMENSIONS ARE INCHES
DIMENSIONS IN [] ARE MILLIMETERS

TOLERANCES:

.X = ±.2 [5.08] FRACTIONS
.XX = ±.02 [.51] ±.1/32

.XXX = ±.005 [.13] ANGLES ± 1°

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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

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