



Transfer Electromechanical Relay Failsafe Switch,  
DC to 12 GHz, up to 600W, 2M Lifecycles, 12V,  
Indicators, TTL, Suppression Diodes, N

## Electromechanical Relay Switches Technical Data Sheet

PE71S6463

### Features

- Transfer Electromechanical Relay Switch
- DC to 12 GHz Frequency Range
- Failsafe Actuator
- TTL Logic Control
- Suppression Diodes
- Indicators
- 2M Lifecycle Rating
- Insertion Loss 0.2 dB typ
- Isolation > 80 dB typ
- VSWR as low as 1.2:1 max
- +12 Volt DC Bias
- Solder Terminal Pins for DC Command Control
- N Type Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 600 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 PE71S6463 is a Transfer electromechanical relay switch that operates across a wide frequency range of DC to 12 GHz and can handle up to 600 Watts of Average power in a break before make condition. The 50 Ohm design features a Failsafe Actuator and is rated for 2 million lifecycles. Additional features include TTL control logic, suppression diodes which limit voltage spikes or reverse current, and indicators. Impressive typical performance includes 0.2 dB insertion loss and isolation greater than 80 dB. This switch requires +12Vdc bias voltage and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports N type female connectors and solder terminal pins for DC command 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

|                    |   |
|--------------------|---|
| Switch Type        | DPDT  |
| Actuator Type      | Failsafe                                    |
| Switching Sequence | Break Before Make                           |
| Actuator Options   | Indicators, TTL Logic                       |
| TTL Control        | on: 2.4 to 5.5 Volts<br>off: 0 to 0.8 Volts |

| Description                      | Minimum | Typical | Maximum | Units |
|----------------------------------|---------|---------|---------|-------|
| Frequency Range                  | DC      |         | 12      | GHz   |
| Impedance                        |         | 50      |         | Ohms  |
| Operating Voltage                | 11      | 12      | 13      | Volts |
| Actuating Set Current @ 12 Volts |         |         | 800     | mA    |
| VSWR                             |         | 1.4:1   | 1.7:1   |       |

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Transfer Electromechanical Relay Failsafe Switch, DC to 12 GHz, up to 600W, 2M Lifecycles, 12V, Indicators, TTL, Suppression Diodes, N PE71S6463](#)



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|                  |    |     |     |        |
|------------------|----|-----|-----|--------|
| Insertion Loss   |    | 0.2 | 0.7 | dB     |
| Isolation        | 60 | 80  |     | dB     |
| Input Power (CW) |    |     | 1   | kWatts |
| Switching Time   |    |     | 20  | ms Max |

### Performance by Frequency

| Description         | F1      | F2     | F3     | F4      | F5 | Units |
|---------------------|---------|--------|--------|---------|----|-------|
| Frequency Range     | DC to 2 | 2 to 4 | 4 to 8 | 8 to 12 |    | GHz   |
| VSWR, Max           | 1.2:1   | 1.4:1  | 1.5:1  | 1.7:1   |    |       |
| Insertion Loss, Max | 0.2     | 0.4    | 0.5    | 0.7     |    | dB    |
| Isolation, Min      | 80      | 80     | 70     | 60      |    | dB    |

### Mechanical Specifications

#### Size

|                |                    |
|----------------|--------------------|
| Length         | 2.52 in [64.01 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 | N Female |
|-------------------|----------|

### Environmental Specifications

#### Temperature

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

|           |   |
|-----------|---|
| Humidity  | Moisture resistant or immersion sealing available       |
| Shock     | 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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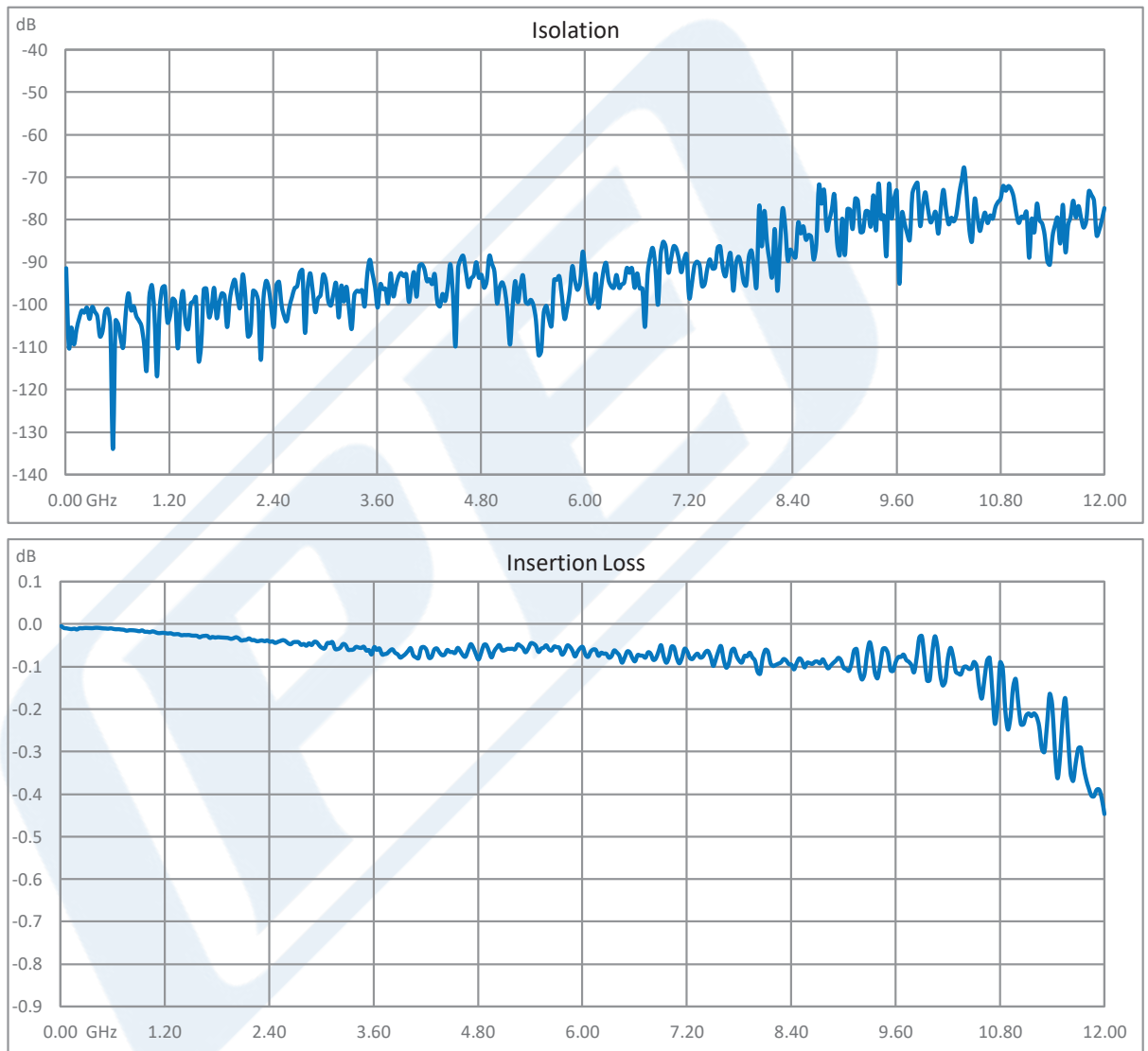


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### Typical Performance Data



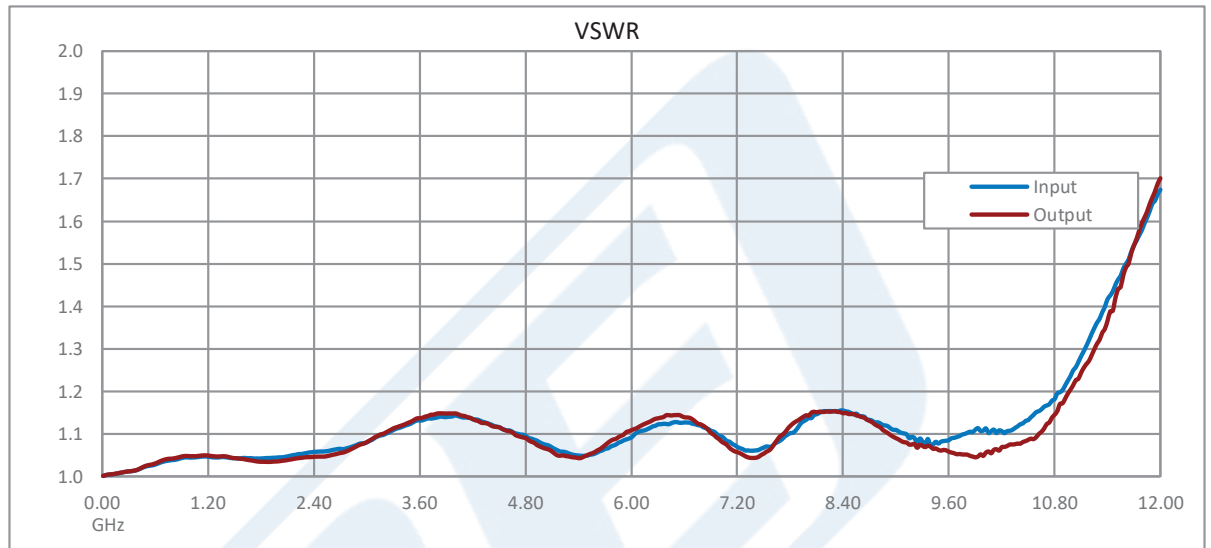
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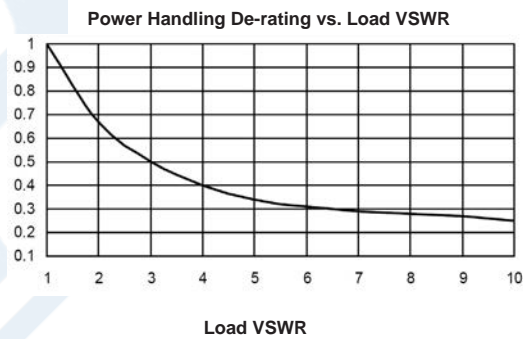
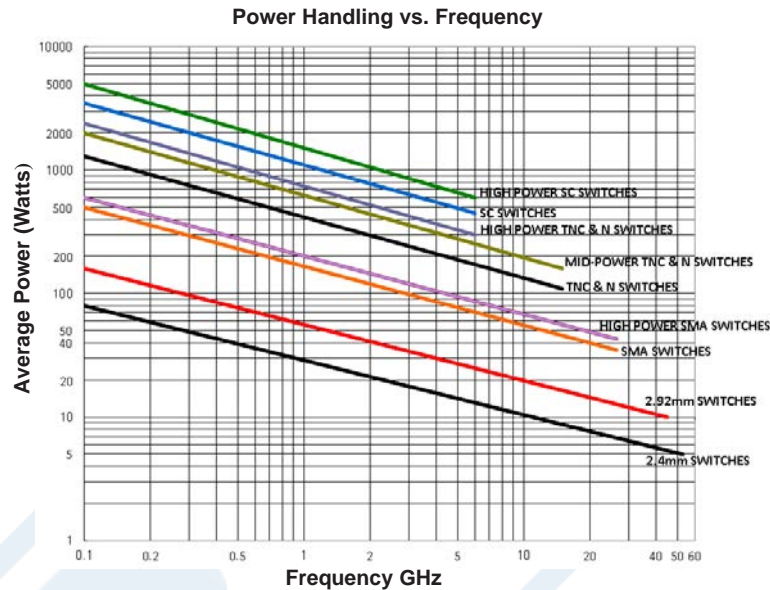
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Power Handling Chart and Derating Curves based on the following Test and Environmental Conditions:  
 Ambient temperature: 20 - 25°C  
 Altitude: Sea Level to 1,000 feet  
 Relative Humidity: 50 - 55%  
 Load VSWR: ≤ 1.20:1  
 Operation: Cold Switching

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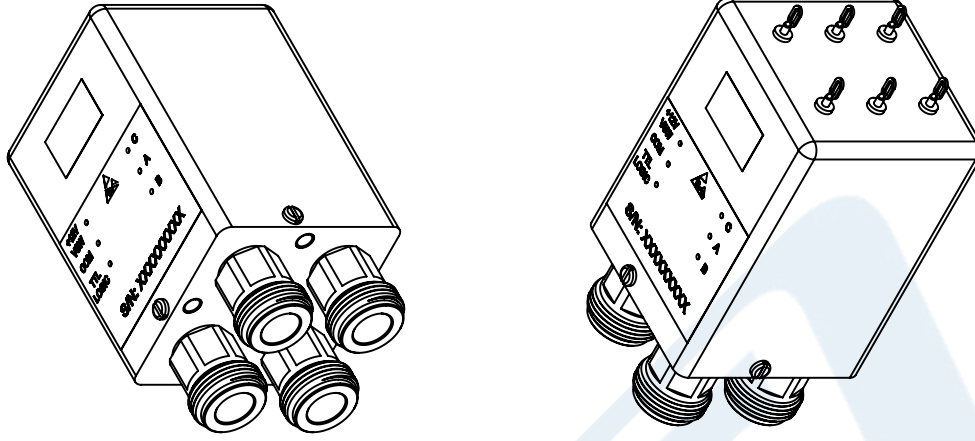
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# PE71S6463 CAD Drawing

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| REVISIONS |                 |           |
|-----------|-----------------|-----------|
| REV.      | DESCRIPTION     | DATE      |
| A         | INITIAL RELEASE | 1/25/2021 |
|           |                 | APPROVED  |
|           |                 | T.GALLA   |



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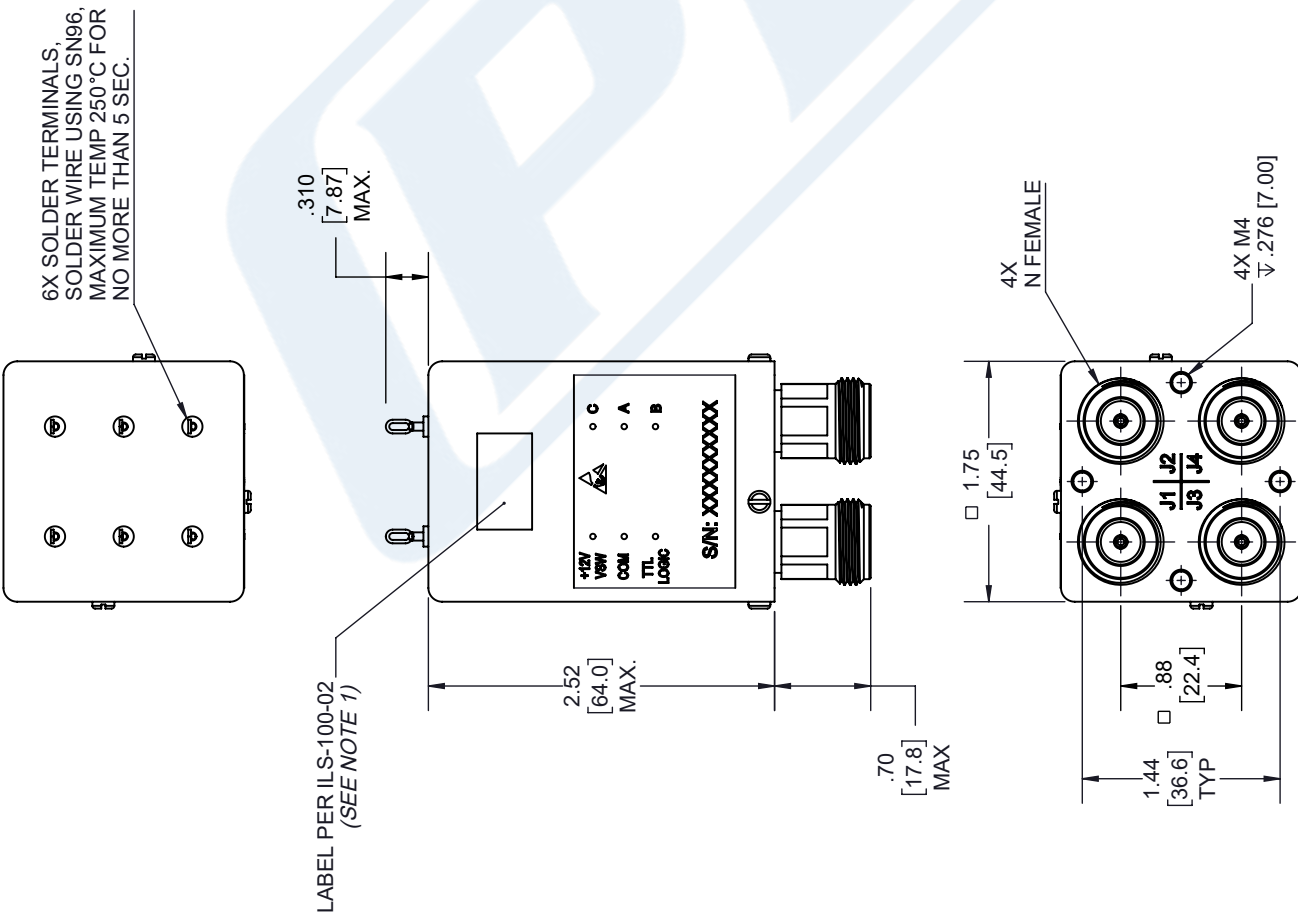
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TOLERANCES:

.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% / -0

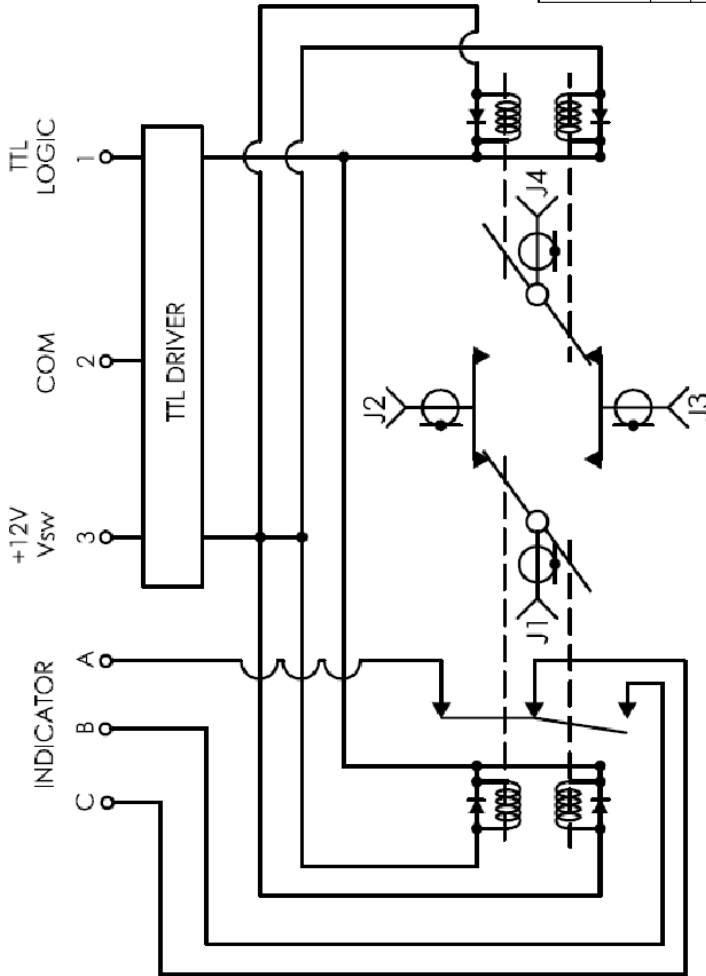
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| VOLTAGE      | LOGIC INPUT | RF PATH      | INDICATOR PATH |
|--------------|-------------|--------------|----------------|
| DE-ENERGIZED | OFF         | J1-J2, J3-J4 | A-C            |
| ENERGIZED    | ON          | J1-J3, J2-J4 | B-C            |

## SCHEMATIC

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