

## SPDT Electromechanical Relay Failsafe Switch, DC to 18 GHz, 12V, Self Cut Off, Indicators, N

### PE71S6587



#### Features

- Single Pole Double Throw
- DC to 18 GHz Frequency Range
- Isolation greater than 60 dB minimum
- 1M Cycle Min Operating Life
- +12 Volt DC
- 100 Watt average Power
- Failsafe Actuator
- -25 to +65°C Operating Temperature
- Insertion Loss as low as 0.8 dB Max
- VSWR as low as 1.8:1 max
- N-Type Female RF connectors
- Solder Terminals for DC Control
- Hot Switching Capability - Consult Factory
- S-Parameter Data available upon request

#### Applications

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

#### Description

The PE71S6587 is a Single Pole Double Throw (SPDT) electromechanical relay switch that operates across a wide frequency range of DC to 18 GHz and can handle up to 100 Watts of CW input power in a break before make condition. The 50 Ohm design is rated for 1M life cycles for high reliability operation and features a Failsafe actuator, which returns the actuator to its default position when power is removed, ensuring the system remains in a known and safe state. Impressive performance includes insertion loss less than 0.8 dB maximum and isolation greater than 60 dB minimum. The Failsafe actuator requires +12 Vdc 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 terminal 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 = 12 Vdc)

|                    |                          |
|--------------------|--------------------------|
| Switch Type        | SPDT                     |
| Actuator Type      | Failsafe                 |
| Switching Sequence | Break Before Make        |
| Actuator Options   | Self Cut Off, Indicators |

| Description                  | Min | Typ | Max   | Units |
|------------------------------|-----|-----|-------|-------|
| Frequency Range              | DC  |     | 18    | GHz   |
| Impedance                    |     | 50  |       | Ohms  |
| Operating Voltage            |     | 12  |       | Volts |
| Actuating Current @ 12 Volts |     |     | 450   | mA    |
| VSWR                         |     |     | 1.8:1 |       |
| Insertion Loss               |     |     | 0.8   | dB    |
| Isolation                    | 60  |     |       | dB    |
| Input Power (CW)             |     | 100 |       | Watts |
| Switching Time               |     |     | 20    | ms    |

SPDT Electromechanical Relay Failsafe Switch,  
DC to 18 GHz, 12V, Self Cut Off, Indicators, N

PE71S6587



Performance by Frequency

| Description         | F1      | F2     | F3      | F4       | F5 | Units |
|---------------------|---------|--------|---------|----------|----|-------|
| Frequency Range     | DC to 3 | 3 to 8 | 8 to 12 | 12 to 18 |    | GHz   |
| VSWR, Max           | 1.25:1  | 1.4:1  | 1.6:1   | 1.8:1    |    |       |
| Insertion Loss, Max | 0.3     | 0.4    | 0.5     | 0.8      |    | dB    |
| Isolation, Min      | 80      | 70     | 65      | 60       |    | dB    |

Electrical Specification Notes:  
Average Power for Cold Switching (Reference RF Power Rating Table for Cold Switching)

SPDT Electromechanical Relay Failsafe Switch,  
DC to 18 GHz, 12V, Self Cut Off, Indicators, N

## PE71S6587



### Mechanical Specifications

#### Size

|                |                    |
|----------------|--------------------|
| Length         | 2.75 in [69.85 mm] |
| Width/Diameter | 2.36 in [59.94 mm] |
| Height         | 0.92 in [23.37 mm] |
| Weight         | 0.05 lbs [22.68 g] |
| Package Type   | Connectorized      |
| Operating Life | 1,000,000 Cycles   |

#### Connectors

|                   |            |
|-------------------|------------|
| RF Connector Type | N Female   |
| Control Connector | Solder Pin |

Mechanical Specification Notes:  
Solder Pins: 250°C max/5sec.

### Environmental Specifications

#### Temperature

|                 |  |
|-----------------|--|
| Operating Range | -25 to +65 deg C   |
| Construction    | Splashproof  |
| Shock           | MIL-STD-202 Method 213, Condition D<br>(500G Non Operating)    |
| Vibration       | MIL-STD-202 Method 214, Condition D<br>(10G RMS Non Operating) |

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

### Plotted and Other Data

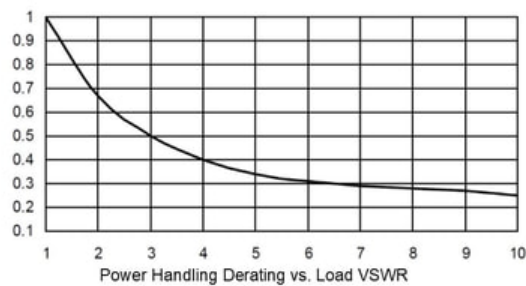
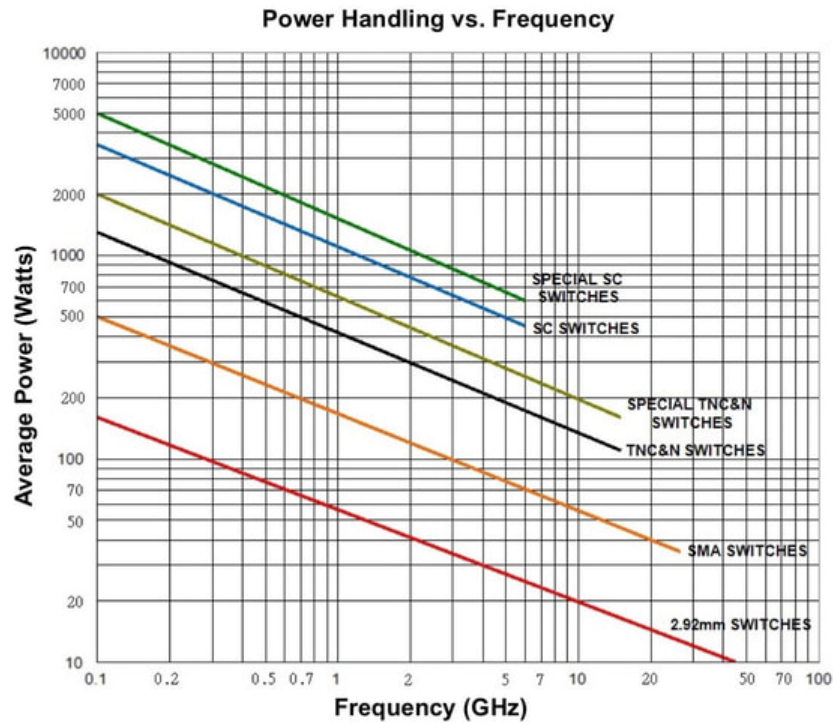
Notes:  
Values shown are typical at 25°C.

SPDT Electromechanical Relay Failsafe Switch,  
DC to 18 GHz, 12V, Self Cut Off, Indicators, N

**PE71S6587**



#### Typical Performance Data



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

## SPDT Electromechanical Relay Failsafe Switch, DC to 18 GHz, 12V, Self Cut Off, Indicators, N

### PE71S6587



SPDT Electromechanical Relay Failsafe Switch, DC to 18 GHz, 12V, Self Cut Off, Indicators, N 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.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SPDT Electromechanical Relay Failsafe Switch, DC to 18 GHz, 12V, Self Cut Off, Indicators, N PE71S6587](https://www.pasternack.com/spdt-electromechanical-relay-failsafe-switch-terminated-18-ghz-12v-indicators-n-pe71s6587-p.aspx)

URL: <https://www.pasternack.com/spdt-electromechanical-relay-failsafe-switch-terminated-18-ghz-12v-indicators-n-pe71s6587-p.aspx>

The information contained within this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part in order to implement improvements. Pasternack Enterprises reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack Enterprises does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack Enterprises does not assume liability arising out of the use of any part or document.

PE71S6587 CAD Drawing

SPDT Electromechanical Relay Failsafe Switch, DC to 18 GHz, 12V, Self Cut Off, Indicators, N

