



## SPDT Electromechanical Relay Failsafe Switch DC to 12.4 GHz, 2M Lifecycles, TNC, 50 Watts, 28V, Solder Pins

### Electromechanical Relay Switches Technical Data Sheet

**PE71S6508**

#### Features

- Single Pole Double Throw (SPDT) Electromechanical Relay Switch
- DC to 12 GHz Frequency Range
- Failsafe Actuator with Self Cut-Off
- 2M Lifecycle Rating
- Insertion Loss 0.3 dB typ
- Isolation > 80 dB typ
- VSWR as low as 1.25:1 max
- +28 Volt DC Bias
- Solder Terminal Pins for DC Control
- TNC Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 50 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 PE71S6508 is a Single Pole Double Throw (SPDT) electromechanical relay switch that operates across a wide frequency range of DC to 12 GHz and can handle up to 50 Watts of average power in a break before make condition. The design is rated for 2 million lifecycles and features a Failsafe Actuator. Impressive typical performance includes 0.3 dB insertion loss and isolation greater than 80 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 TNC 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 SPDT  
Actuator Type Failsafe

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		12.4	GHz
Operating Voltage		+28		Volts
Actuating Set Current @ +28 Volts			220	mA
VSWR		1.4:1	1.8:1	
Insertion Loss		0.3	0.5	dB
Isolation	70	80		dB
Input Power (CW) (at 12.4 GHz)			50	Watts

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 12.4 GHz, 2M Lifecycles, TNC, 50 Watts, 28V, Solder Pins PE71S6508](#)



SPDT Electromechanical Relay Failsafe Switch DC to 12.4 GHz, 2M Lifecycles, TNC, 50 Watts, 28V, Solder Pins

## Electromechanical Relay Switches Technical Data

**PE71S6508**

### 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	1.25:1	1.3:1	1.6:1	1.8:1		
Insertion Loss, Max	0.2	0.4	0.5	0.5		dB
Isolation, Min	80	80	70	70		dB

### Mechanical Specifications

#### Size

Length	1.95 in [49.53 mm]
Width/Diameter	2.75 in [69.85 mm]
Height	0.92 in [23.37 mm]
Weight	0.1 lbs [45.36 g]

#### Connectors

RF Connector Type	TNC 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:

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 12.4 GHz, 2M Lifecycles, TNC, 50 Watts, 28V, Solder Pins PE71S6508](#)

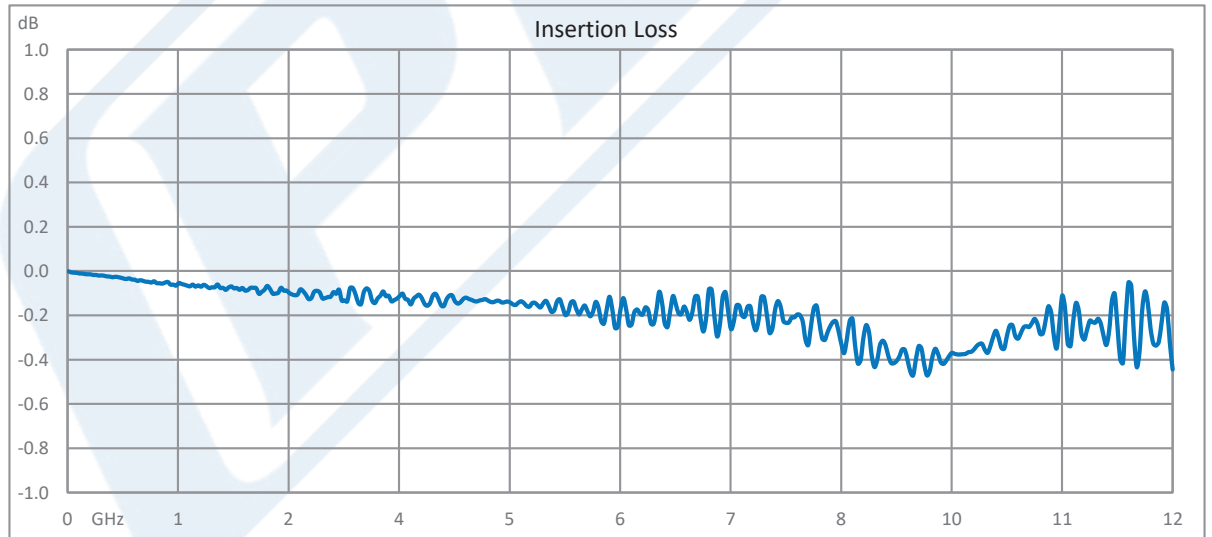
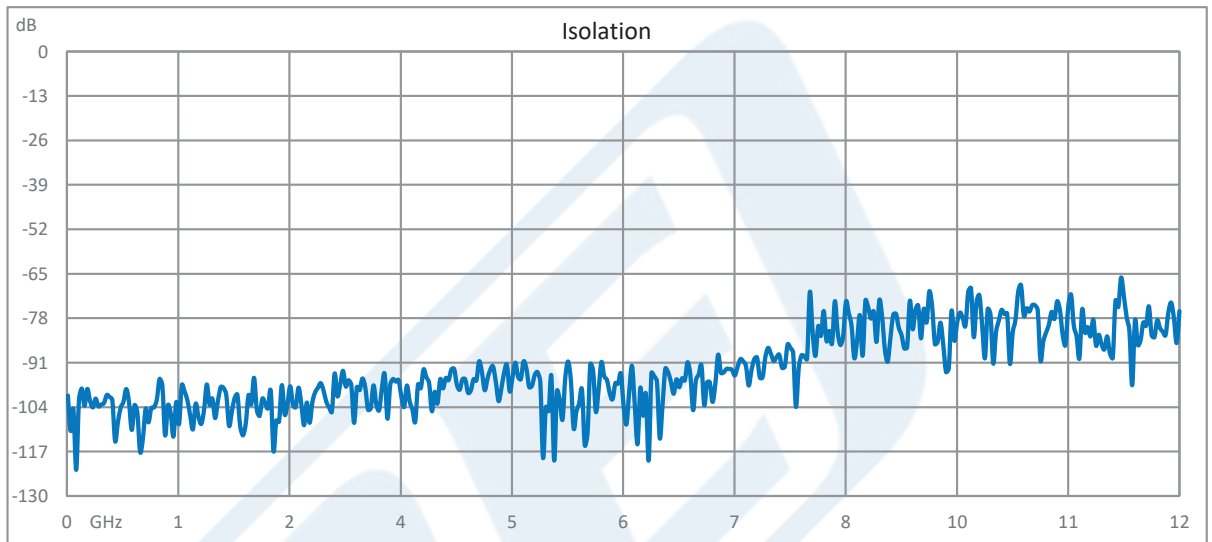


SPDT Electromechanical Relay Failsafe Switch DC to 12.4 GHz, 2M Lifecycles, TNC, 50 Watts, 28V, Solder Pins

**Electromechanical Relay Switches Technical Data**

**PE71S6508**

**Typical Performance Data**



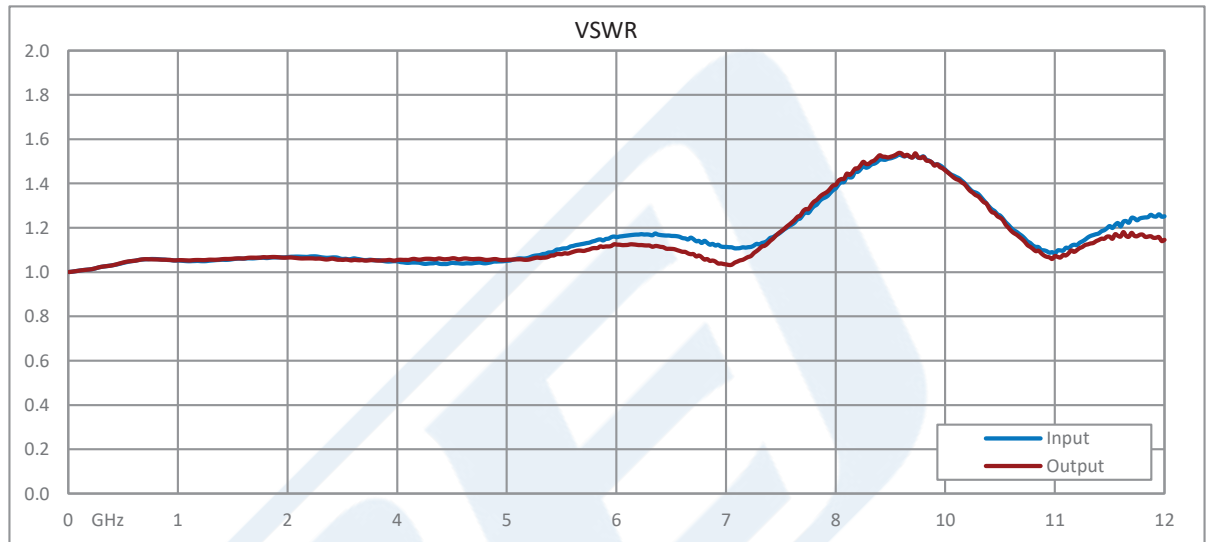
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SPDT Electromechanical Relay Failsafe Switch DC to 12.4 GHz, 2M Lifecycles, TNC, 50 Watts, 28V, Solder Pins PE71S6508](#)



SPDT Electromechanical Relay Failsafe Switch DC to 12.4 GHz, 2M Lifecycles, TNC, 50 Watts, 28V, Solder Pins

## Electromechanical Relay Switches Technical Data

**PE71S6508**



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 12.4 GHz, 2M Lifecycles, TNC, 50 Watts, 28V, Solder Pins PE71S6508](#)

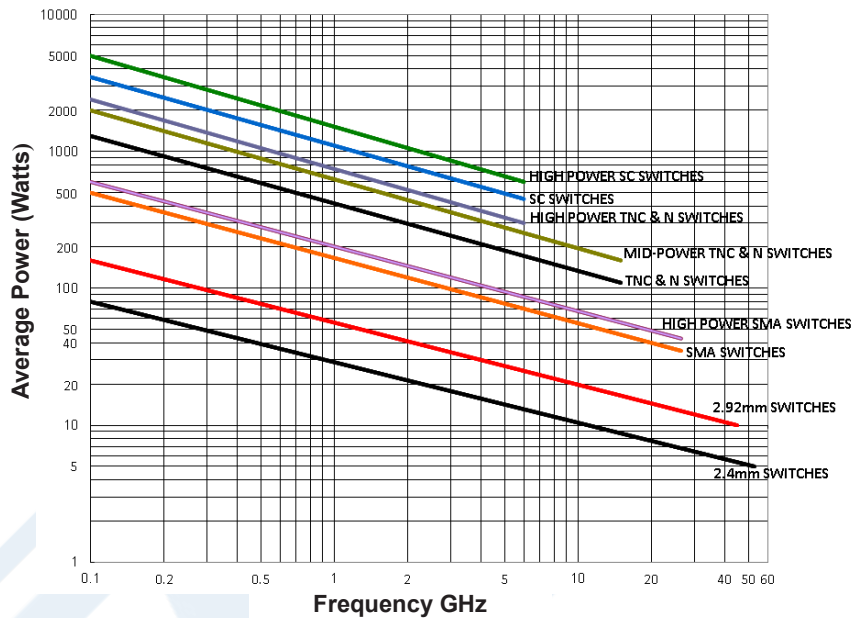


SPDT Electromechanical Relay Failsafe Switch DC to 12.4 GHz, 2M Lifecycles, TNC, 50 Watts, 28V, Solder Pins

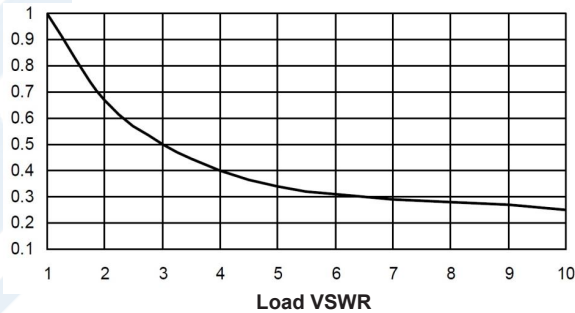
**Electromechanical Relay Switches Technical Data**

**PE71S6508**

**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

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 12.4 GHz, 2M Lifecycles, TNC, 50 Watts, 28V, Solder Pins PE71S6508](#)



SPDT Electromechanical Relay Failsafe Switch DC to 12.4 GHz, 2M Lifecycles, TNC, 50 Watts, 28V, Solder Pins

## Electromechanical Relay Switches Technical Data

**PE71S6508**

SPDT Electromechanical Relay Failsafe Switch DC to 12.4 GHz, 2M Lifecycles, TNC, 50 Watts, 28V, 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.

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 12.4 GHz, 2M Lifecycles, TNC, 50 Watts, 28V, Solder Pins PE71S6508](https://www.pasternack.com/spdt-electromechanical-relay-failsafe-switch-12.4-ghz-50w-28v-tnc-pe71s6508-p.aspx)

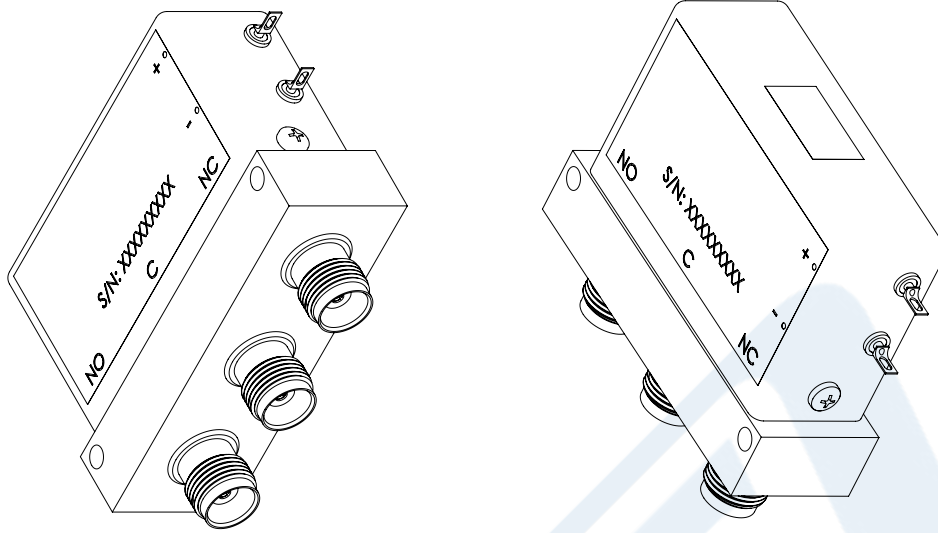
URL: <https://www.pasternack.com/spdt-electromechanical-relay-failsafe-switch-12.4-ghz-50w-28v-tnc-pe71s6508-p.aspx>

The information contained in 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 reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack does not assume any liability arising out of the use of any part or documentation.

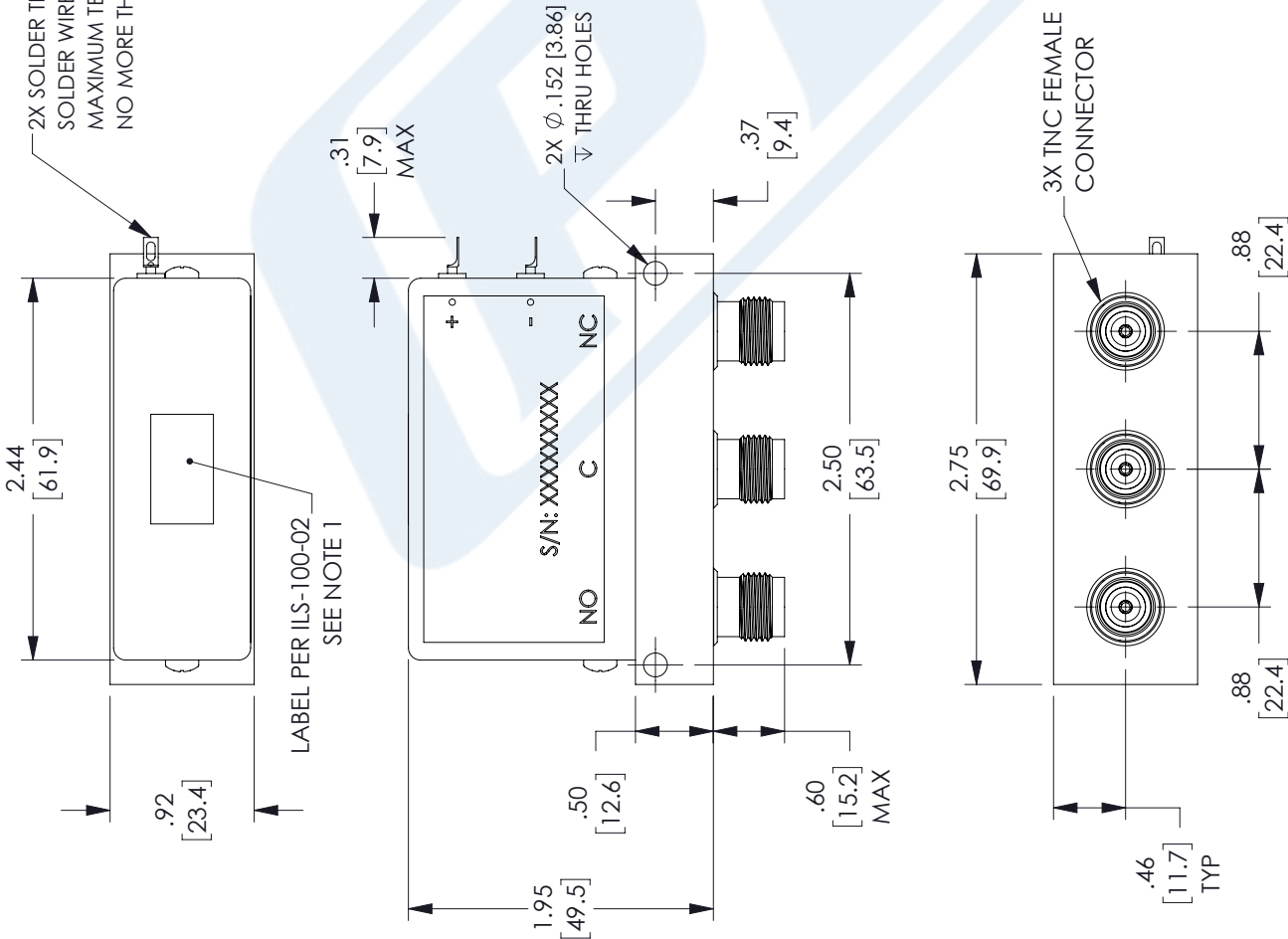
# PE71S6508 CAD Drawing

SPDT Electromechanical Relay Failsafe Switch DC to 12.4 GHz,  
2M Lifecycles, TNC, 50 Watts, 28V, Solder Pins

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	05/17/2022	T. GALLA



2X SOLDER TERMINALS  
SOLDER WIRE USING SN96  
MAXIMUM TEMP 210°C FOR  
NO MORE THAN 5 SEC.



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

THE INFORMATION AND  
DESIGN IN THIS DOCUMENT  
IS THE PROPERTY OF  
PASTERNAK CORPORATION  
ALL RIGHTS RESERVED.

SHEET 1 OF 2  
SCALE N/A

**PE PASTERNAK**  
an INFINITI® brand

Pasternack Enterprises, Inc.  
P. O. Box 16759, Irvine, CA 92623.  
Phone: 1.949.261.1920 | 1.866.727.8376  
Fax: 1.949.261.7451  
Website: www.pasternack.com  
E-mail: sales@pasternack.com

SIZE A    CAGE CODE 53919    DRAWN BY KGLEBOVA    ITEM NO. PE71S6508    REV A

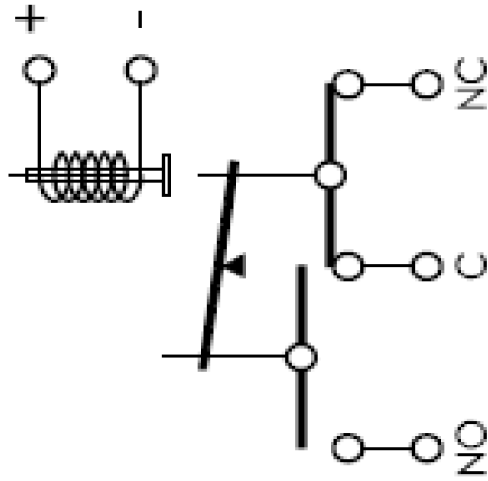
NOTES:  
1. LABEL PER ILS-100-02. FOR INTERNAL REFERENCE ONLY.  
LABEL LOCATION FOR REFERENCE ONLY.

THESE COMMODITIES, TECHNOLOGY OR SOFTWARE WERE EXPORTED FROM THE UNITED STATES IN ACCORDANCE WITH THE EXPORT ADMINISTRATION REGULATIONS. DIVERSION CONTRARY TO U.S. LAW PROHIBITED.



# PE71S6508 CAD Drawing

SPDT Electromechanical Relay Failsafe Switch DC to 12.4 GHz,  
2M Lifecycles, TNC, 50 Watts, 28V, Solder Pins



SCHEMATIC SHOWN IN FAILSAFE POSITION

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

**TOLERANCES:**

.X = ±.2	[.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.

**PE PASTERNAK**  
an INFINITI® brand

Pasternack Enterprises, Inc.  
P. O. Box 16759, Irvine, CA 92623.  
Phone: 1.949.261.1920 | 1.866.727.8376  
Fax: 1.949.261.7451  
Website: www.pasternack.com  
E-mail: sales@pasternack.com

SIZE: A CAGE CODE: 53919 DRAWN BY: KGLEBOVA ITEM NO.: E71S6508

THIRD-ANGLE PROJECTION

THE INFORMATION AND  
DESIGN IN THIS DOCUMENT  
IS THE PROPERTY OF  
PASTERNAK CORPORATION  
ALL RIGHTS RESERVED.

SHEET 2 OF 2  
SCALE N/A  
REV A