



SPDT, Terminated, Electromechanical Relay Failsafe
 Switch, DC to 53GHz, 28VDC, Solder Terminal, 2.4mm

Electromechanical Relay Switches Technical Data Sheet

PE71S8012

Features

- Single Pole Double Throw (SPDT) Electromechanical Relay Switch
- DC to 53 GHz Frequency Range
- Failsafe Actuator
- Terminated
- 1M Lifecycle Rating
- Insertion Loss 0.8 dB typ
- Isolation > 80 dB typ
- VSWR as low as 1.2:1 max
- Solder Terminal Pins for DC Control
- +28 Volt DC Bias
- 2.4mm Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 3 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 PE71S8012 is a Single Pole Double Throw (SPDT) electromechanical relay switch that operates across an ultra wide frequency range from DC to 53 GHz and can handle up to 3 Watts of Average Power in a break before make condition. The 50 Ohm design is rated for 1 million lifecycles and features a Failsafe Actuator. The output ports are terminated in 50 ohms when switched in the isolation (off) state. Impressive typical performance includes 0.8 dB insertion loss and isolation greater than 80 dB. This switch requires +28 Vdc bias voltage and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports 2.4mm female connectors and solder terminal 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
 Actuator Type

SPDT
 Failsafe

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		53	GHz
Impedance		50		Ohms
Operating Voltage	26	28	30	Volts
Actuating Set Current			200	mA
VSWR		1.9:1	2.8:1	
Insertion Loss		0.8	1.8	dB
Isolation	50	80		dB
Input Power			3	Watts
Switching Time			20	ms

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SPDT, Terminated, Electromechanical Relay Failsafe Switch, DC to 53GHz, 28VDC, Solder Terminal, 2.4mm PE71S8012](#)



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Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 6	6 to 18	18 to 26.5	26.5 to 40	40 to 50	GHz
VSWR, Max	1.2:1	1.3:1	1.6:1	1.6:1	1.8:1	
Insertion Loss, Max	0.2	0.3	0.6	0.6	1.1	dB
Isolation, Min	80	70	70	70	50	dB

Performance by Frequency

Description	F6	F7	F8	F9	F10	Units
Frequency Range	50 to 52	52 to 53				GHz
VSWR, Max	2.2:1	2.8:1				
Insertion Loss, Max	1.3	1.8				dB
Isolation, Min	50	50				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]
Finish	Electroless Nickel

Connectors

RF Connector Type	2.4mm Female
Control Connector	Solder Terminals

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 operational)

Vibration

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

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Electromechanical Relay Switches Technical Data

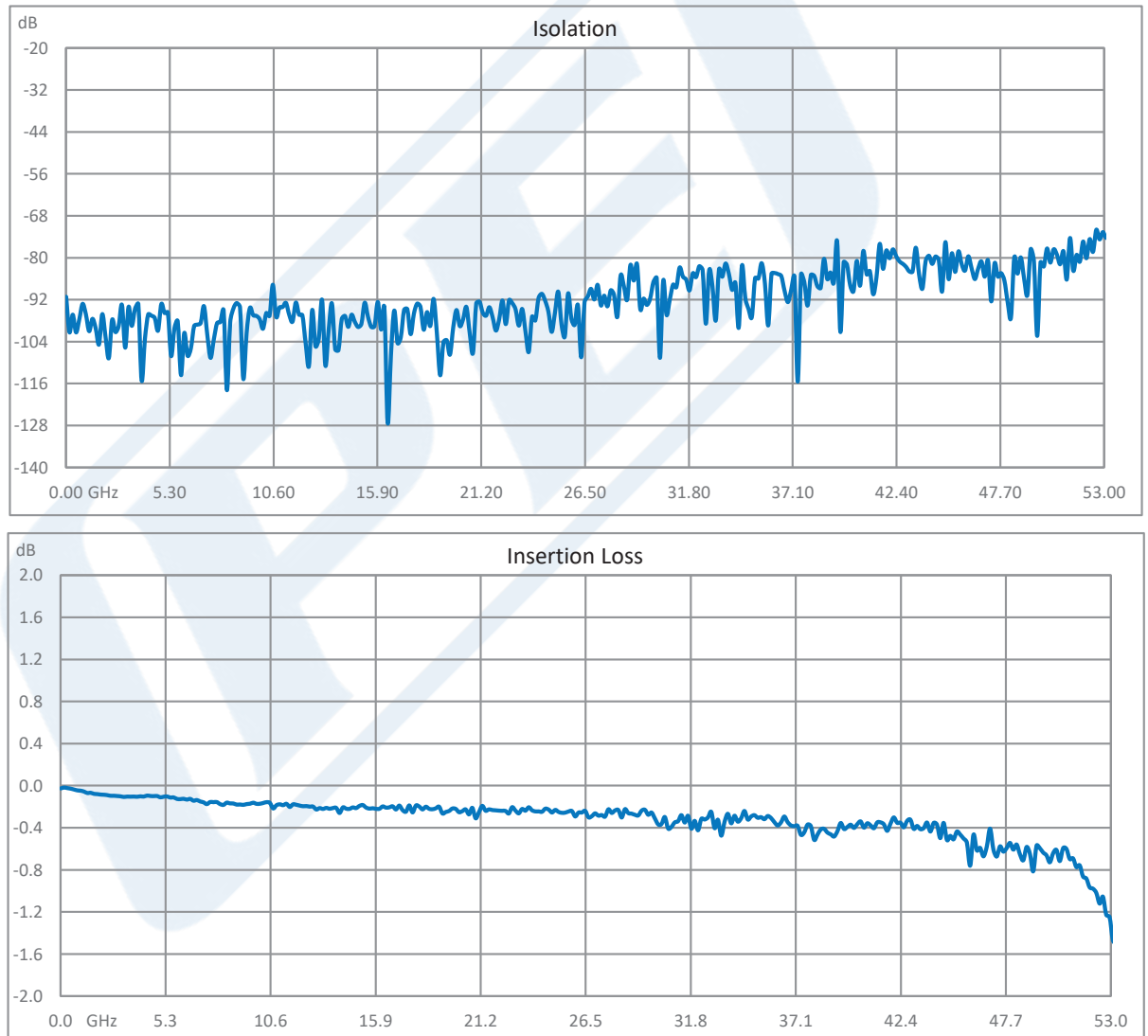
PE71S8012

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

Plotted and Other Data

Notes:

Typical Performance Data



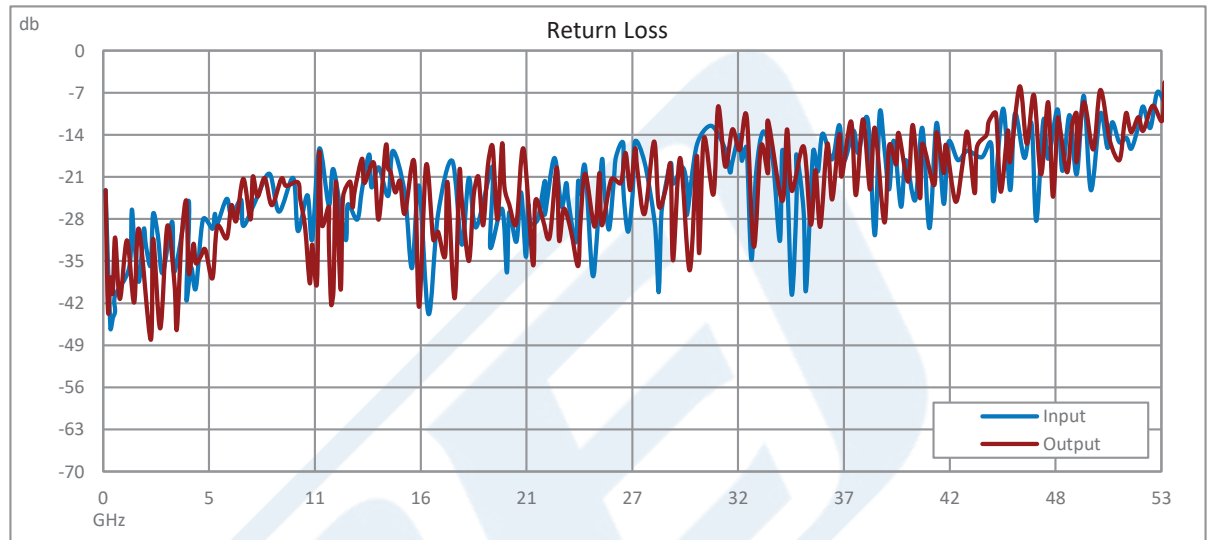
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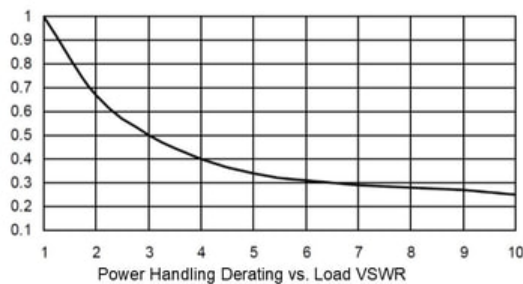


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Power Handling vs. Frequency



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

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SPDT, Terminated, Electromechanical Relay Failsafe Switch, DC to 53GHz, 28VDC, Solder Terminal, 2.4mm 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.

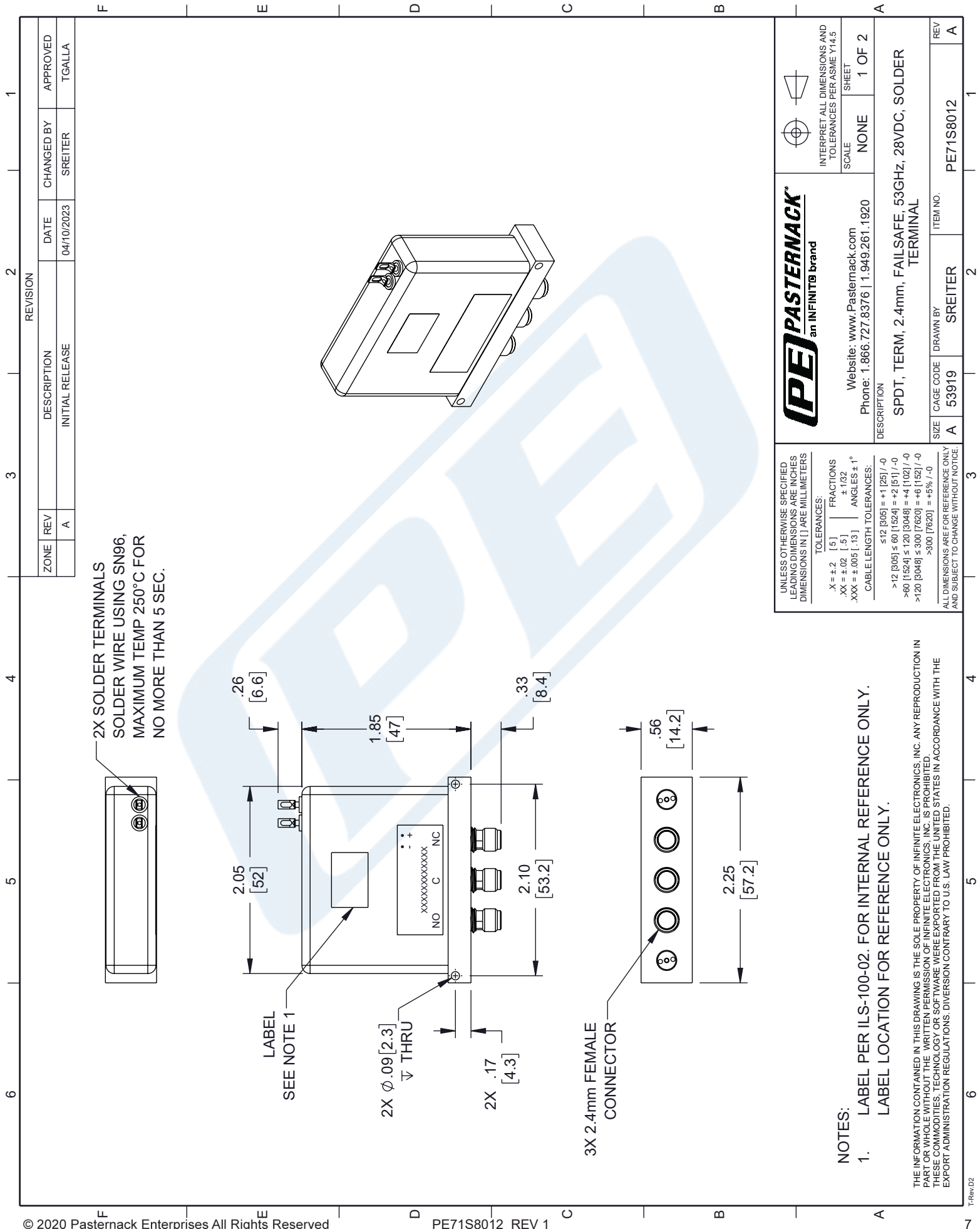
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SPDT, Terminated, Electromechanical Relay Failsafe Switch, DC to 53GHz, 28VDC, Solder Terminal, 2.4mm PE71S8012](https://www.pasternack.com/spdt-electromechanical-relay-failsafe-switch-53-ghz-28v-2.4mm-pe71s8012-p.aspx)

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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.

PE71S8012 CAD Drawing

SPDT, Terminated, Electromechanical Relay Failsafe Switch, DC to 53GHz, 28VDC, Solder Terminal, 2.4mm



NOTES:

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

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INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5

SCALE NONE SHEET 1 OF 2



Website: www.Pasternack.com
Phone: 1.866.727.8376 | 1.949.261.1920

DESCRIPTION

SPDT, TERM, 2.4mm, FAILSAFE 53GHz, 28VDC, SOLDER TERMINAL

SIZE A CAGE CODE 53919 DRAWN BY SREITER ITEM NO. PE71S8012 REV A

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

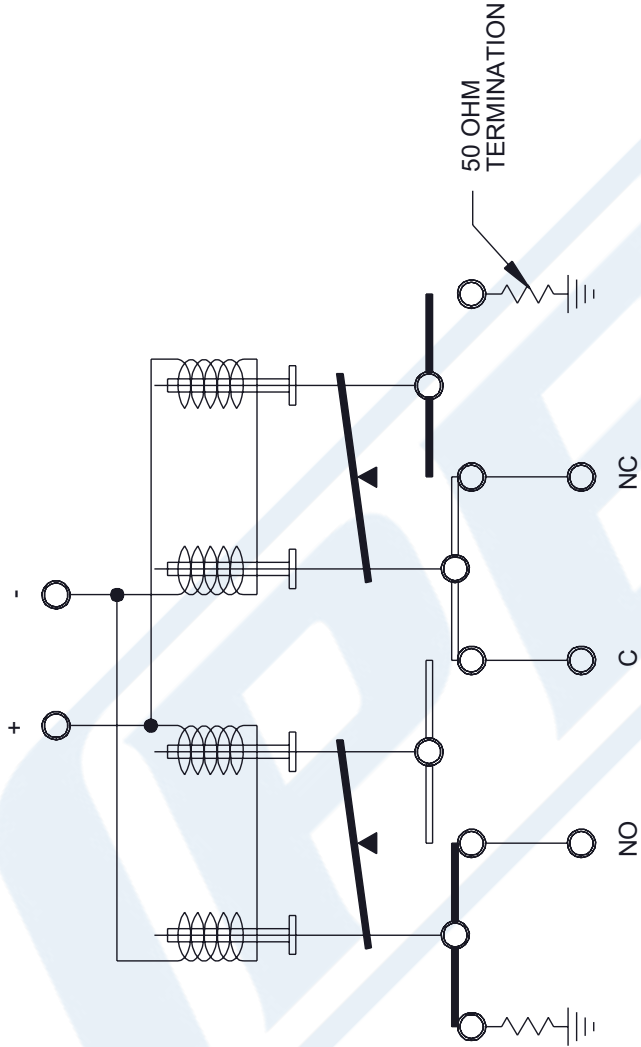
TOLERANCES:
X = ±.2 [5] FRACTIONS
.XX = ±.02 [.5] ANGLES ± 1°
.XXX = ±.005 [.13] CABLE LENGTH TOLERANCES:

≤12 [305] = ±.1 [25] / -0
>12 [305] ≤ 60 [1524] = ±.2 [51] / -0
>60 [1524] ≤ 120 [3048] = ±.4 [102] / -0
>120 [3048] ≤ 300 [7620] = ±.6 [152] / -0
>300 [7620] = ±.5% / -0

ALL DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO CHANGE WITHOUT NOTICE.

PE71S8012 CAD Drawing

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SCHEMATIC

UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [] ARE MILLIMETERS	
TOLERANCES:	
X = ±.2 [5]	FRACTIONS ± 1/32
.XX = ±.02 [.5]	ANGLES ± 1°
.XXX = ±.005 [.13]	
CABLE LENGTH TOLERANCES:	
≤12 [305]	±.125 [3.175]
>12 [305] ≤ 60 [1524]	±.25 [6.35]
>60 [1524] ≤ 120 [3048]	±.5 [12.7]
>120 [3048] ≤ 300 [7620]	±1.0 [25.4]
>300 [7620]	±2.0 [50.8]
ALL DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO CHANGE WITHOUT NOTICE	

PE PASTERNAK an INFINITI® brand	
Website: www.Pasternack.com Phone: 1.866.727.8376 1.949.261.1920	
DESCRIPTION SPDT, TERM, 2.4mm, FAILSAFE, 53GHz, 28VDC, SOLDER TERMINAL	
SIZE A	CAGE CODE 53919
DRAWN BY SREITER	ITEM NO. PE71S8012
REV A	

INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5	
SCALE NONE	SHEET 2 OF 2

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