



SPDT, Electromechanical Relay Failsafe Switch, DC to 43 GHz,
12VDC, 10W, Indicators, TTL, Diodes, Solder Terminals, 2.92mm

Electromechanical Relay Switches Technical Data Sheet

PE71S7281

Features

- Single Pole Double Throw (SPDT) Electromechanical Relay Switch
- DC to 43 GHz Frequency Range
- Failsafe Actuator
- Indicators
- TTL Logic Control
- Suppression Diodes
- 2M Lifecycle Rating
- Insertion Loss 0.4 dB typ
- Isolation > 85 dB typ
- VSWR as low as 1.15:1 max
- Solder Terminal Pins for DC Control
- +12 Volt DC Bias
- 2.92mm Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 10 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 PE71S7281 is a Single Pole Double Throw (SPDT) electromechanical relay switch that operates across an ultra wide frequency range from DC to 43 GHz and can handle up to 10 Watts of Average Power in a break before make condition. The 50 Ohm design is rated for 2 million lifecycles and features a Failsafe Actuator. Additional features include TTL control logic, indicators to monitor the switch position, and suppression diodes which limit voltage spikes or reverse current. Impressive typical performance includes 0.4 dB insertion loss and isolation greater than 85 dB. This switch requires +12 Vdc bias voltage and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports 2.92mm 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 = 12 Vdc)

Switch Type	SPDT
Actuator Type	Failsafe
Actuator Options	Indicators, TTL Logic, Diodes
TTL Control	on: 2.4 to 5 Volts off: 0 to 0.8 Volts

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		43	GHz
Operating Voltage	11	12	13	Volts
Actuating Set Current			200	mA
VSWR		1.4:1	1.9:1	
Insertion Loss		0.4	1.2	dB
Isolation	40	85		dB

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 43 GHz, 12VDC, 10W, Indicators, TTL, Diodes, Solder Terminals, 2.92mm PE71S7281](#)



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Input Power	10	Watts
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Switching Time	20	ms
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Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 6	6 to 12.4	12.4 to 18	18 to 26.5	26.5 to 40	GHz
VSWR, Max	1.15:1	1.35:1	1.4:1	1.45:1	1.5:1	
Insertion Loss, Max	0.2	0.3	0.4	0.5	0.7	dB
Isolation, Min	85	80	80	75	60	dB

Performance by Frequency

Description	F6	F7	F8	F9	F10	Units
Frequency Range	40 to 43					GHz
VSWR, Max	1.9:1					
Insertion Loss, Max	1.2					dB
Isolation, Min	40					dB

Mechanical Specifications

Size

Length	2.05 in [52.07 mm]
Width/Diameter	1.5 in [38.1 mm]
Height	0.52 in [13.21 mm]
Weight	0.1 lbs [45.36 g]
Finish	Electroless Nickel

Connectors

RF Connector Type	2.92mm 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)

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Vibration

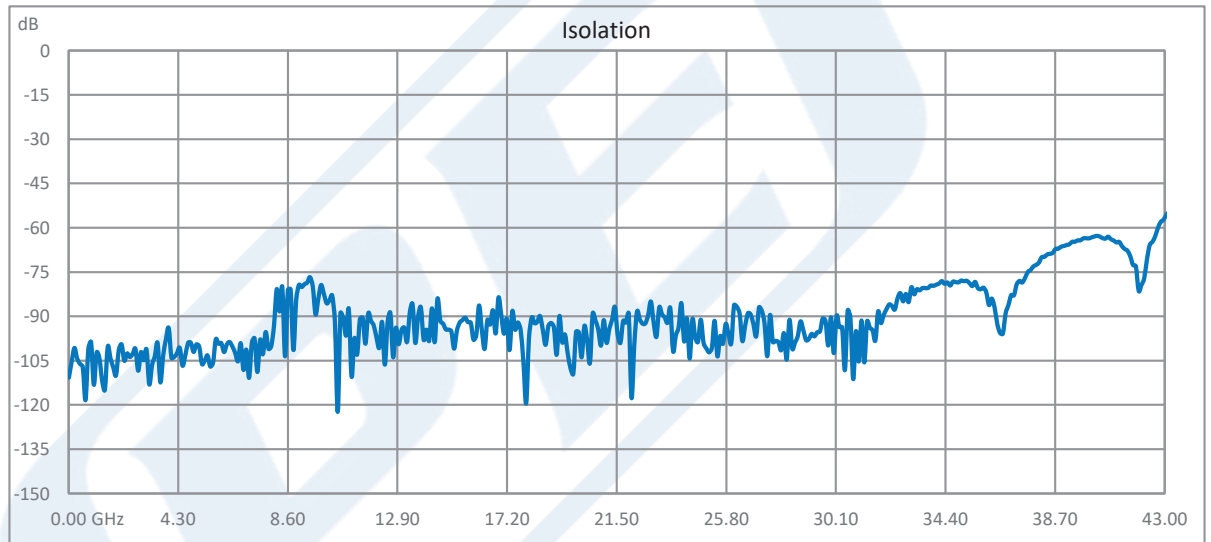
MIL-STD-202 Method 204, Condition D, 10G RMS (non operational)

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

Plotted and Other Data

Notes:

Typical Performance Data



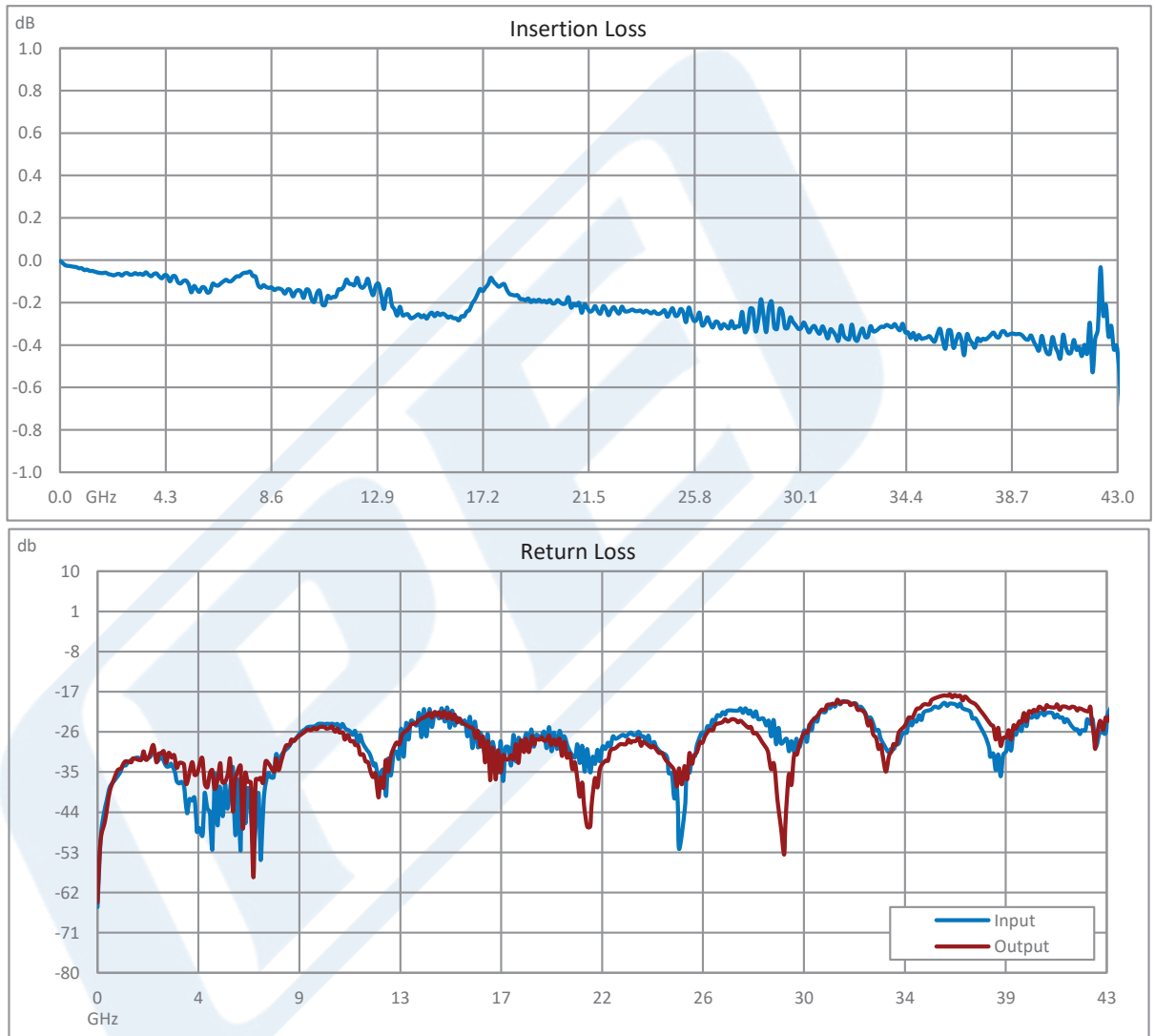
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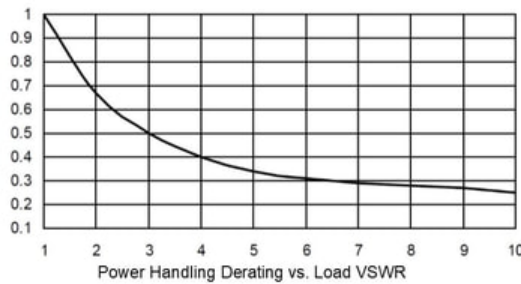
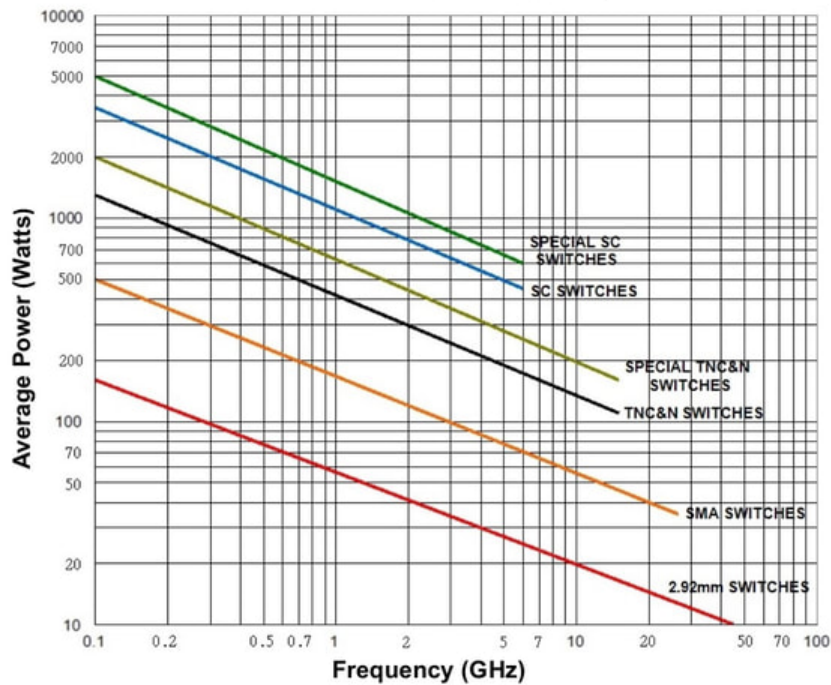


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Power Handling vs. Frequency



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, Electromechanical Relay Failsafe Switch, DC to 43 GHz, 12VDC, 10W, Indicators, TTL, Diodes, Solder Terminals, 2.92mm 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.

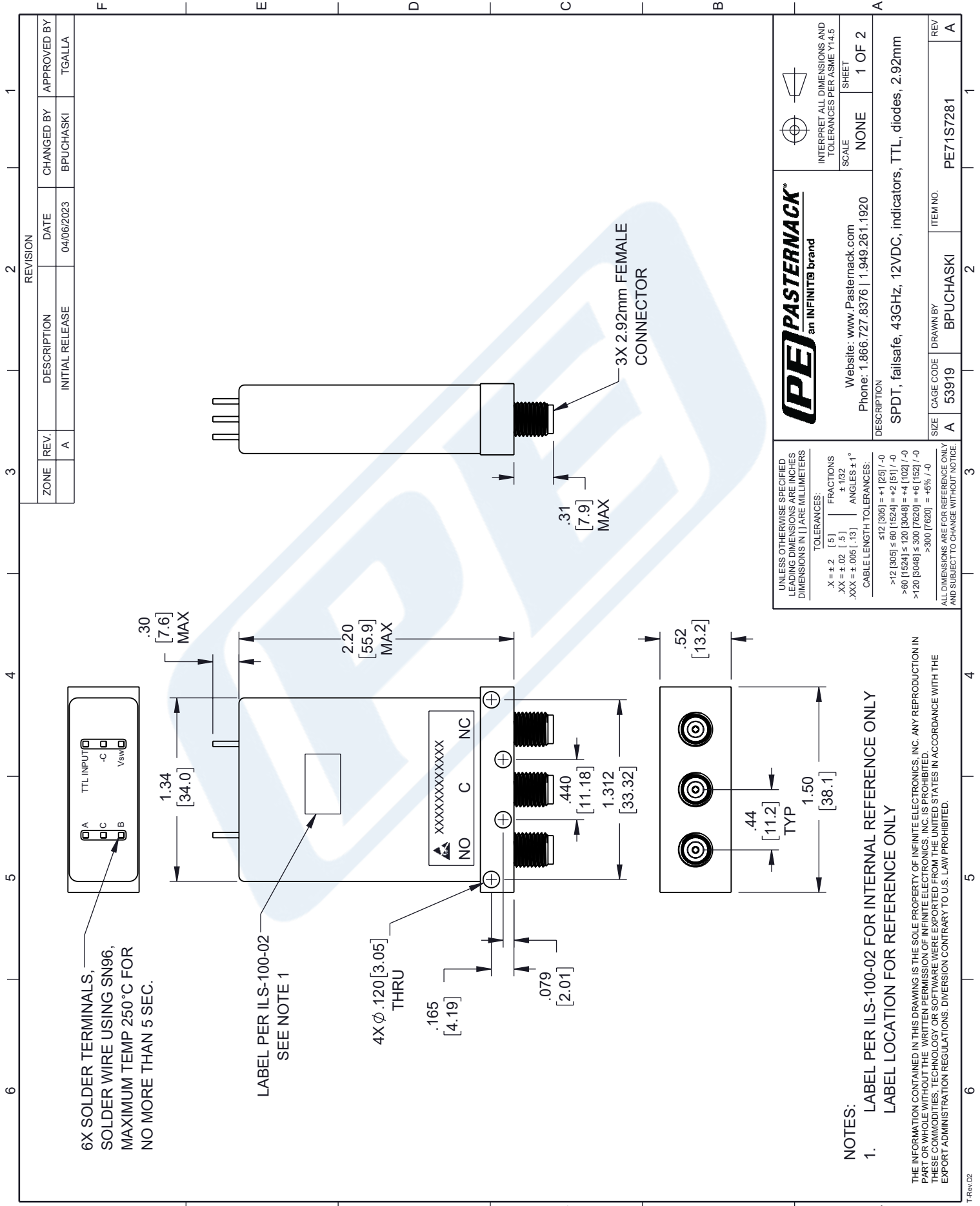
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PE71S7281 CAD Drawing

SPDT, Electromechanical Relay Failsafe Switch, DC to 43 GHz, 12VDC, 10W, Indicators, TTL, Diodes, Solder Terminals, 2.92mm



ZONE	REV.	DESCRIPTION	DATE	CHANGED BY	APPROVED BY
	A	INITIAL RELEASE	04/06/2023	BPUCHASKI	TGALLA

REVISION	

<p>PASTERNAK an INFINIT® brand</p>	Website: www.Pasternack.com Phone: 1.866.727.8376 1.949.261.1920	INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5 SCALE: NONE SHEET: 1 OF 2
	DESCRIPTION: SPDT, failsafe, 43GHz, 12VDC, indicators, TTL, diodes, 2.92mm	SIZE: A CAGE CODE: 53919 DRAWN BY: BPUCHASKI ITEM NO.: PE71S7281

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:
 ≤17 [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

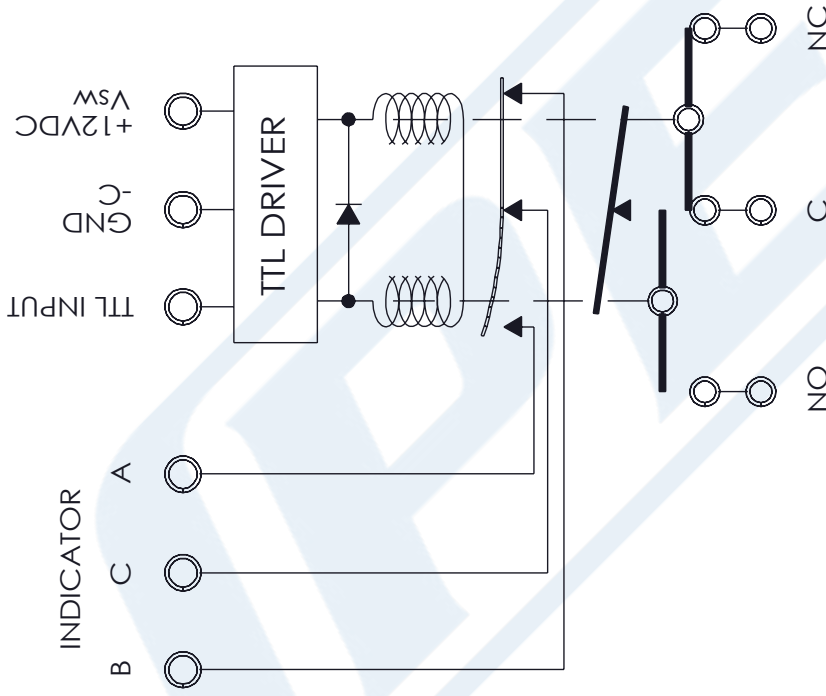
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NOTES:
 1. LABEL PER ILS-100-02 FOR INTERNAL REFERENCE ONLY
 LABEL LOCATION FOR REFERENCE ONLY

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SCHEMATIC

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LEADING DIMENSIONS ARE INCHES
DIMENSIONS IN [] ARE MILLIMETERS

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DESCRIPTION
SPDT, failsafe, 43GHz, 12VDC, indicators, TTL, diodes, 2.92mm

SIZE A CAGE CODE A 53919 DRAWN BY BPUCHASKI ITEM NO. PE71S7281 REV A

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

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