



SPDT, Electromechanical Relay Failsafe Switch, DC to 43 GHz,  
28VDC, 10W, Indicators, TTL, Diodes, Solder Terminals, 2.92mm

## Electromechanical Relay Switches Technical Data Sheet

**PE71S7282**

### Features

- Single Pole Double Throw (SPDT) Electromechanical Relay Switch
- DC to 43 GHz Frequency Range
- Failsafe Actuator
- TTL Logic Control
- Indicators
- 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 Command Control Functions
- +28 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 PE71S7282 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 logic control, 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 +28 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 = 28 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	26	28	30	Volts
Actuating Set Current			90	mA
VSWR		1.4:1	1.9:1	
Insertion Loss		0.4	1.2	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, 28VDC, 10W, Indicators, TTL, Diodes, Solder Terminals, 2.92mm PE71S7282](#)



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Isolation	40	85		dB
Input Power			10	Watts
Switching Time			20	ms

### 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

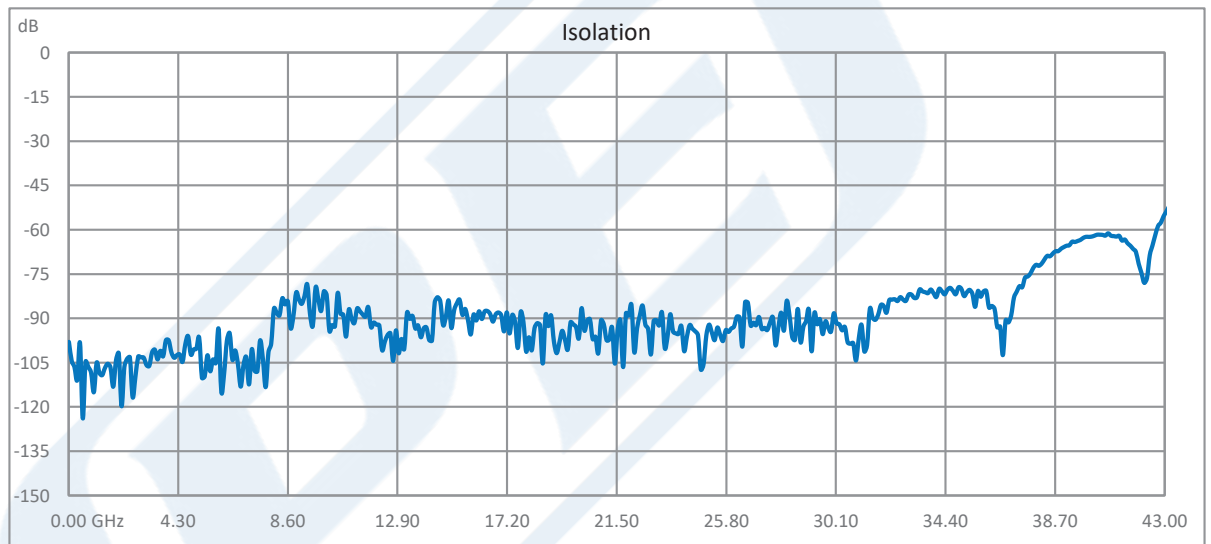
MIL-STD-202 Method 204, Condition D, 10G RMS (non operational)

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

### Plotted and Other Data

Notes:

### Typical Performance Data



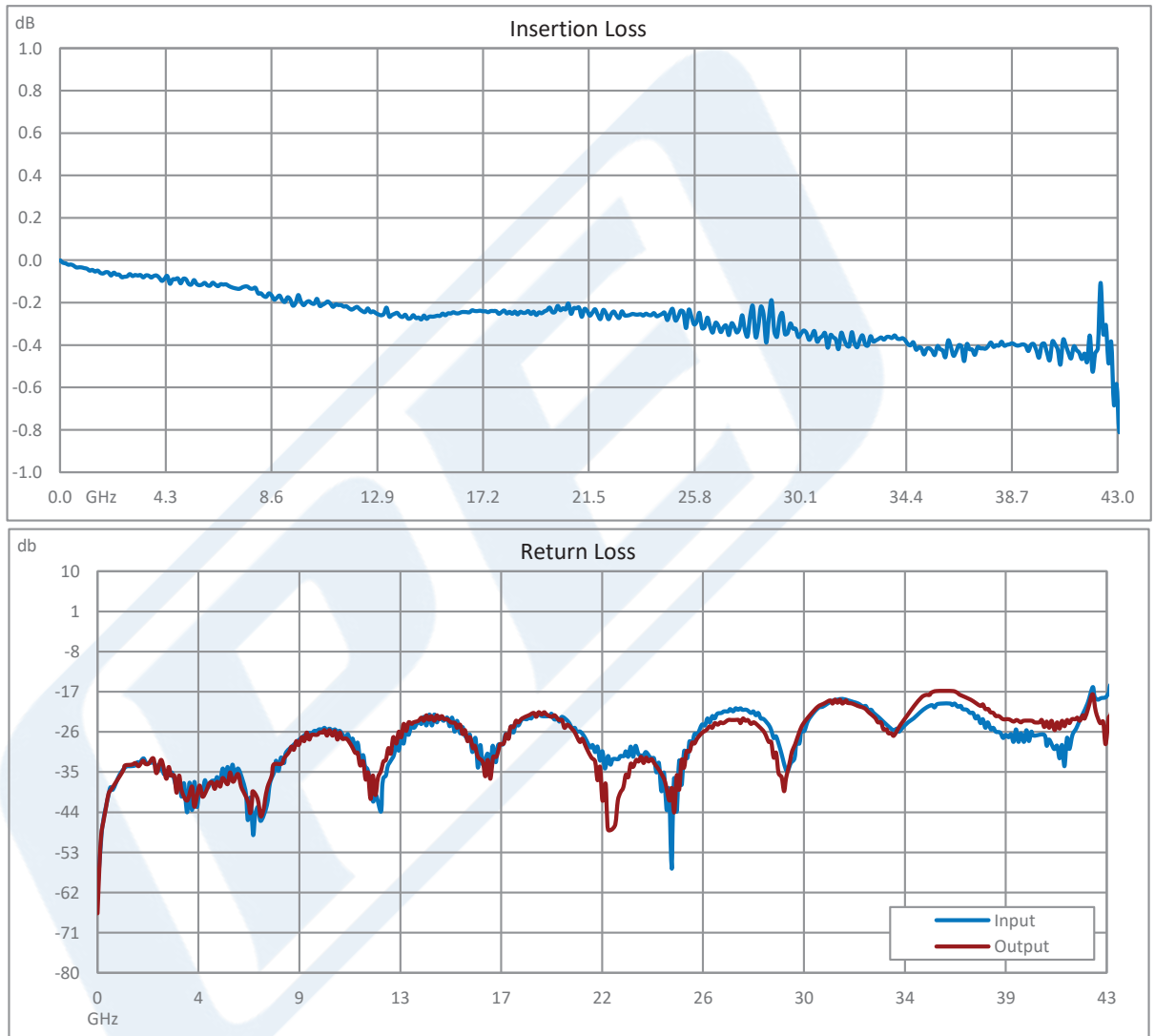
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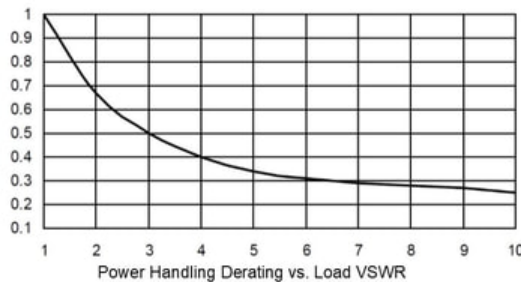
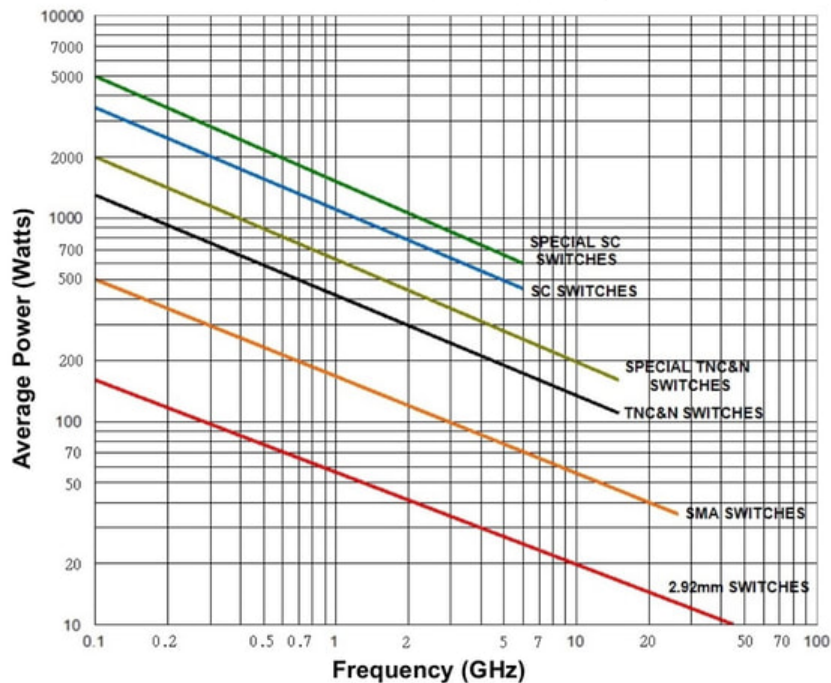


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**Power Handling vs. Frequency**



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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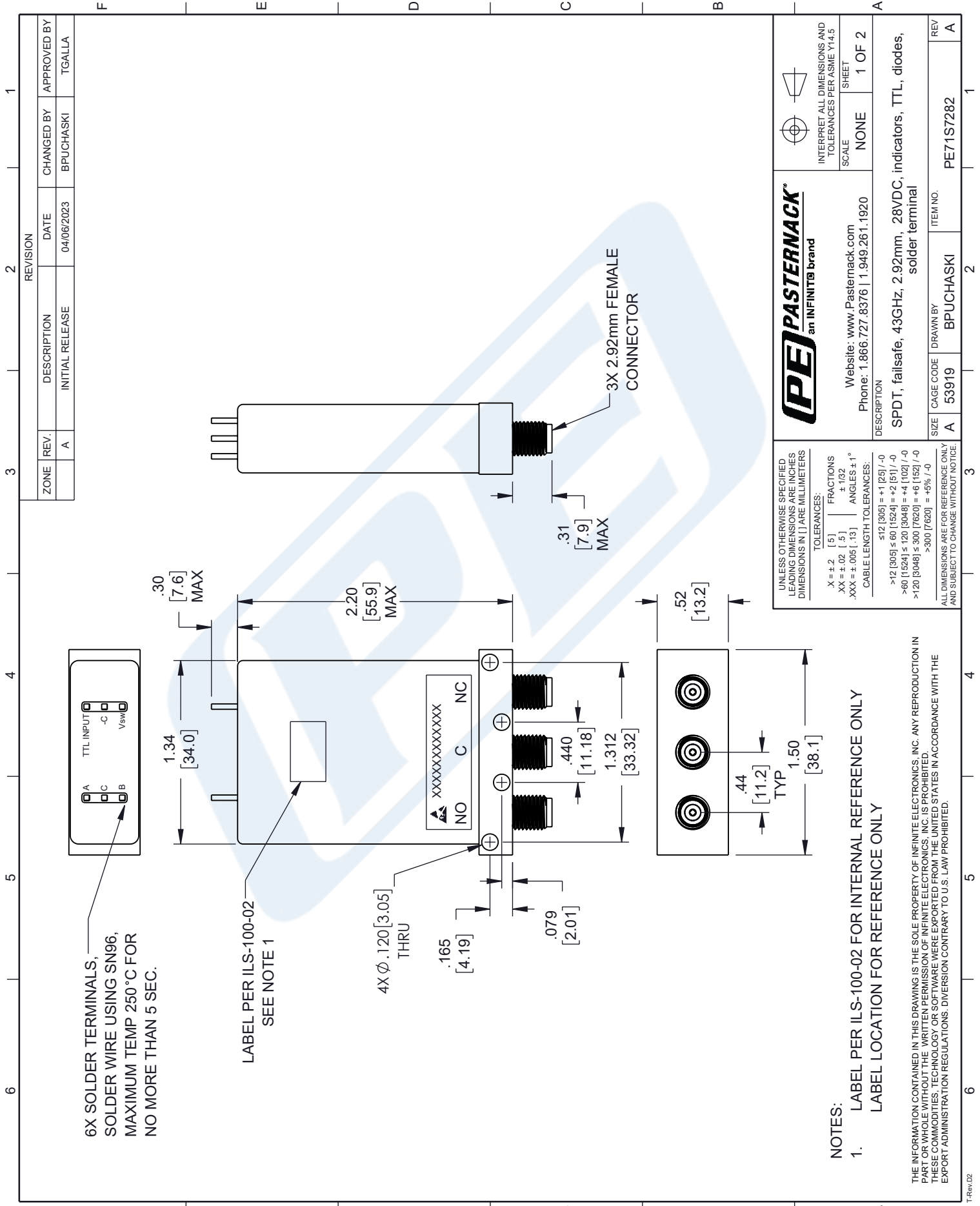
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# PE71S7282 CAD Drawing

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ZONE		REVISION		DATE		APPROVED BY	
1	A	INITIAL RELEASE	04/06/2023	BPUCHASKI	TGALLA		

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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:  
 ≤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

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

INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5

SCALE NONE SHEET 1 OF 2

DESCRIPTION  
 SPDT, failsafe, 43GHz, 2.92mm, 28VDC, indicators, TTL, diodes, solder terminal

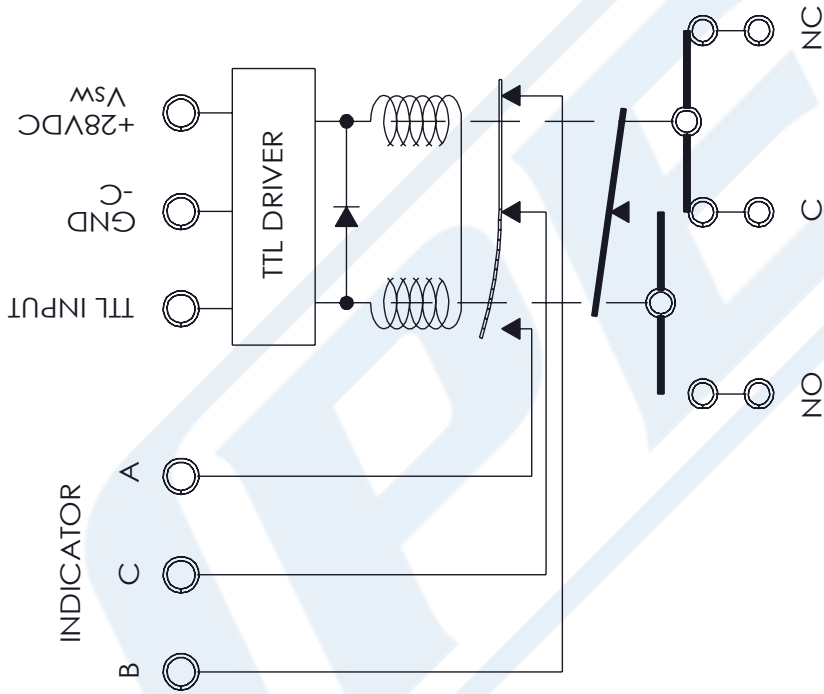
SIZE A CAGE CODE 53919 DRAWN BY BPUCHASKI ITEM NO. PE71S7282

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

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SCHEMATIC

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DESCRIPTION  
SPDT, failsafe, 43GHz, 2.92mm, 28VDC, indicators, TTL, diodes,  
solder terminal

SIZE	CAGE CODE	DRAWN BY	ITEM NO.
A	53919	BPUCHASKI	PE71S7282

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SCALE NONE SHEET 2 OF 2

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