



SP4T, Electromechanical Relay Latching Switch,  
DC to 43 GHz, 28VDC, 5W, Reset, Indicators,  
TTL, Diodes, Self Cut-Off, D-Sub, 2.92mm

## Electromechanical Relay Switches Technical Data Sheet

**PE71S7287**

### Features

- SP4T Electromechanical Relay Switch
- DC to 43 GHz Frequency Range
- Latching Actuator with Self Cut-Off
- TTL Logic Control
- Indicators
- Suppression Diodes
- 2M Lifecycle Rating
- Insertion Loss 0.8 dB typ
- Isolation > 80 dB typ
- VSWR as low as 1.15:1 max
- 2.92mm Female Connectors
- +28 Volt DC Bias
- 15 Pin D-Sub Connector for all DC Command Control Functions
- -25°C to +65°C Operating Temperature
- Up to 5 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
- Reset/Set Feature

### Applications

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

### Description

The PE71S7287 is a Single Pole Four Throw (SP4T) electromechanical relay switch that operates across an ultra wide frequency range from DC to 43 GHz and can handle up to 5W of Average Power in a break before make condition. The 50 Ohm design has a Latching Actuator with Self Cut-Off that magnetically latches in place after the control voltage is removed. For power sensitive applications, this is the best actuator option. Additional features include TTL logic control, Indicators to monitor the switch position, Suppression Diodes which limit voltage spikes or reverse current, and a Reset/Set function by input of a pulse voltage. Impressive typical performance includes 0.8 dB insertion loss and isolation greater than 80 dB. This switch requires +28Vdc bias voltage, operates over a temperature range of -25°C to +65°C, and is rated for 2 million lifecycles. The rugged and compact package assembly supports 2.92mm female connectors and a 15 Pin D-Sub connector for all DC command control functions. 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	SP4T
Actuator Type	Latching
Actuator Options	Self Cut Off, Reset, 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			110	mA

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP4T, Electromechanical Relay Latching Switch, DC to 43 GHz, 28VDC, 5W, Reset, Indicators, TTL, Diodes, Self Cut-Off, D-Sub, 2.92mm PE71S7287](#)



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Actuating Reset Current		440	mA
VSWR	1.4:1	2.1:1	
Insertion Loss	0.6	1.6	dB
Isolation	40	85	dB
Input Power		5	Watts
Switching Time		20	ms

### Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 6	6 to 12	12 to 18	18 to 26.5	26.5 to 32	GHz
VSWR, Max	1.15:1	1.25:1	1.35:1	1.5:1	1.7:1	
Insertion Loss, Max	0.2	0.3	0.6	0.8	0.8	dB
Isolation, Min	80	75	70	70	60	dB

### Performance by Frequency

Description	F6	F7	F8	F9	F10	Units
Frequency Range	32 to 40	40 to 43				GHz
VSWR, Max	1.8:1	2.1:1				
Insertion Loss, Max	1.1	1.6				dB
Isolation, Min	60	40				dB

### Mechanical Specifications

#### Size

Length	1.75 in [44.45 mm]
Width/Diameter	1.75 in [44.45 mm]
Height	2.5 in [63.5 mm]
Weight	0.22 lbs [99.79 g]
Finish	Electroless Nickel

#### Connectors

RF Connector Type	2.92mm Female
Control Connector	D-Subminiature

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### 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

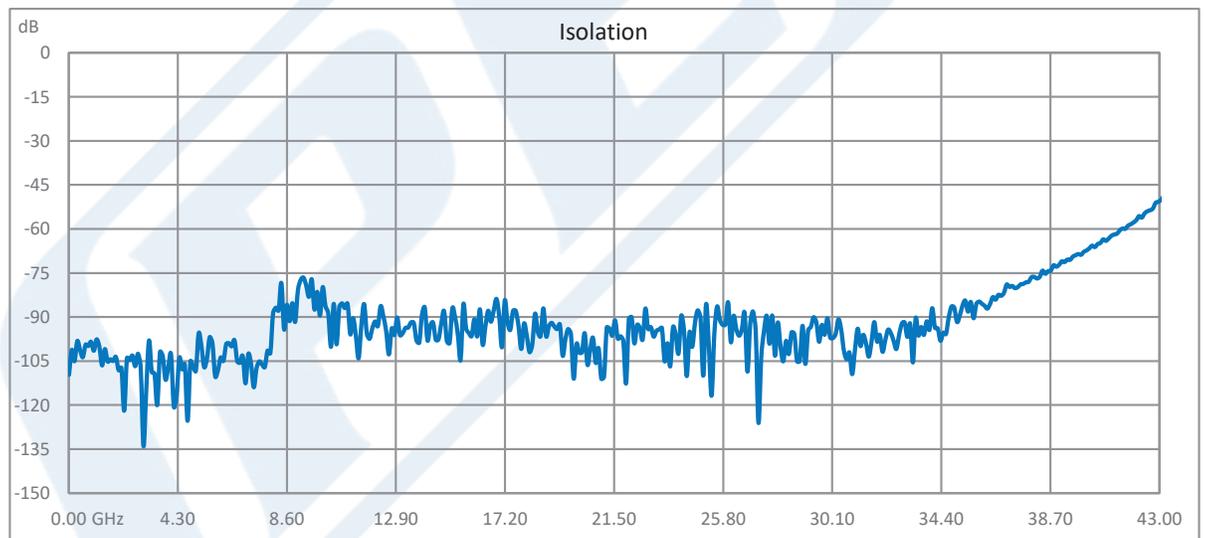
MIL-STD-202 Method 204, Condition D, 10G RMS (non operational)

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

### Plotted and Other Data

Notes:

#### Typical Performance Data



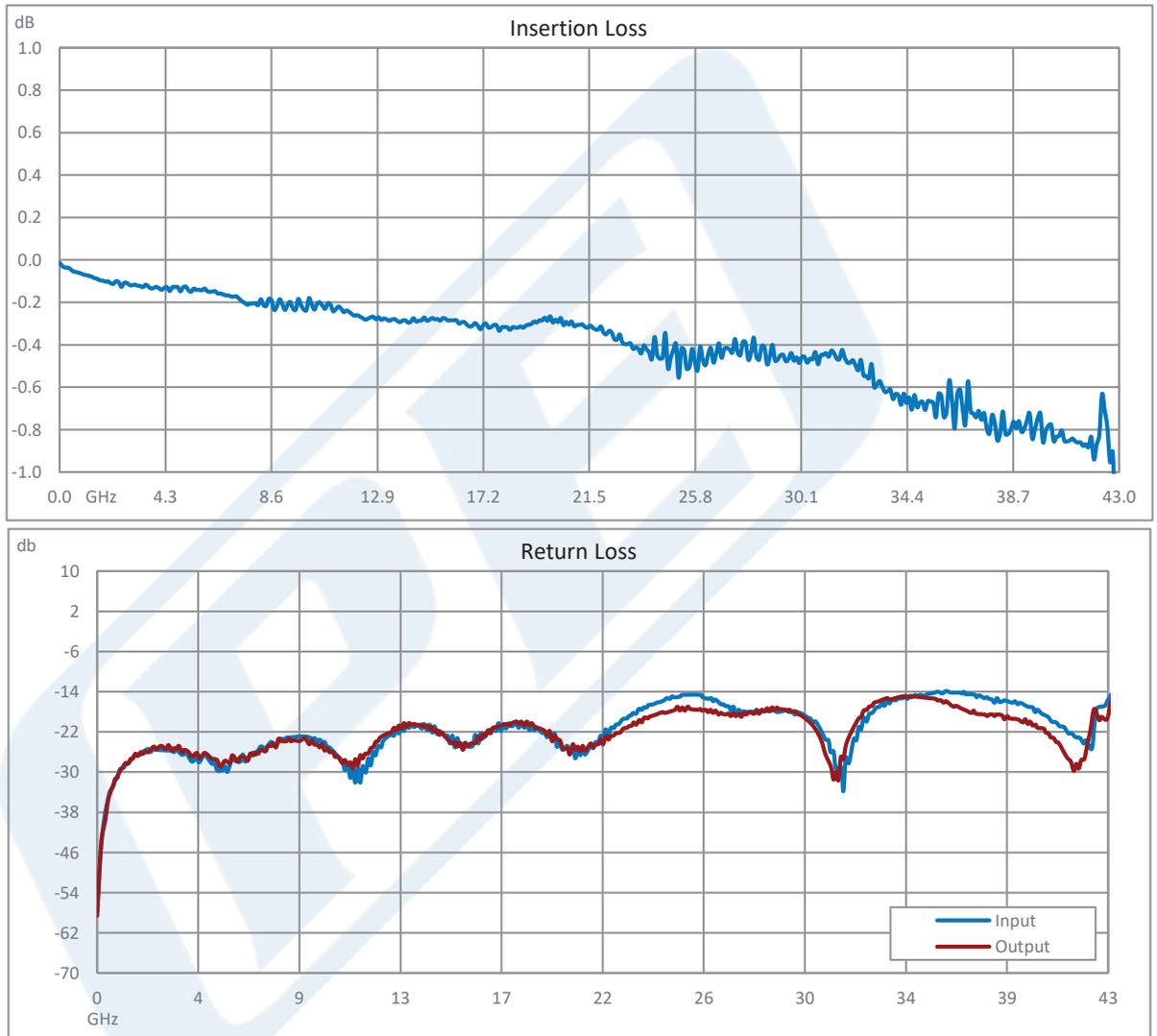
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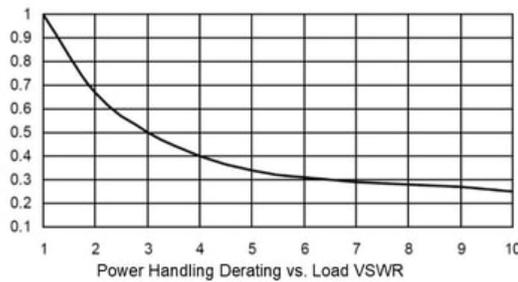
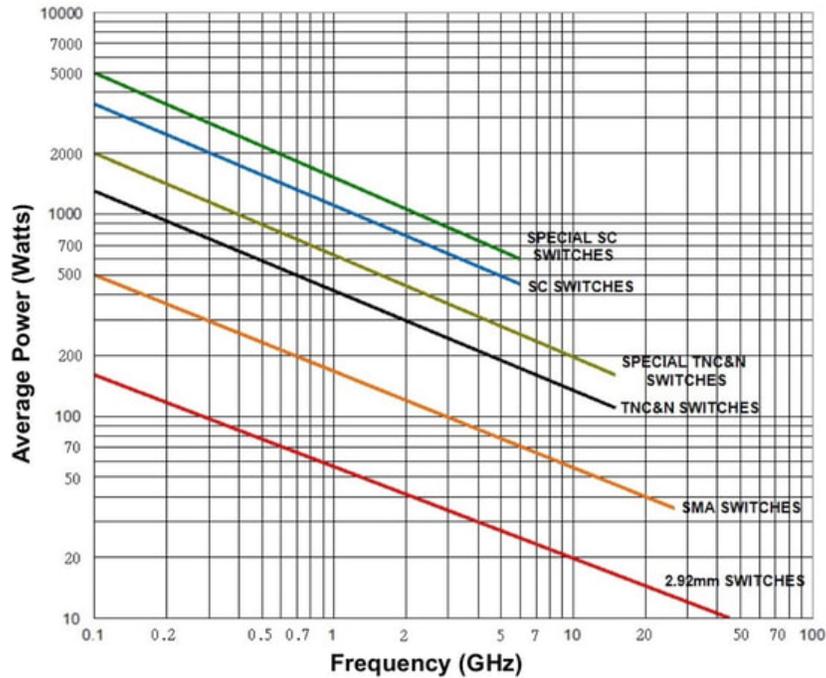


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**Power Handling vs. Frequency**



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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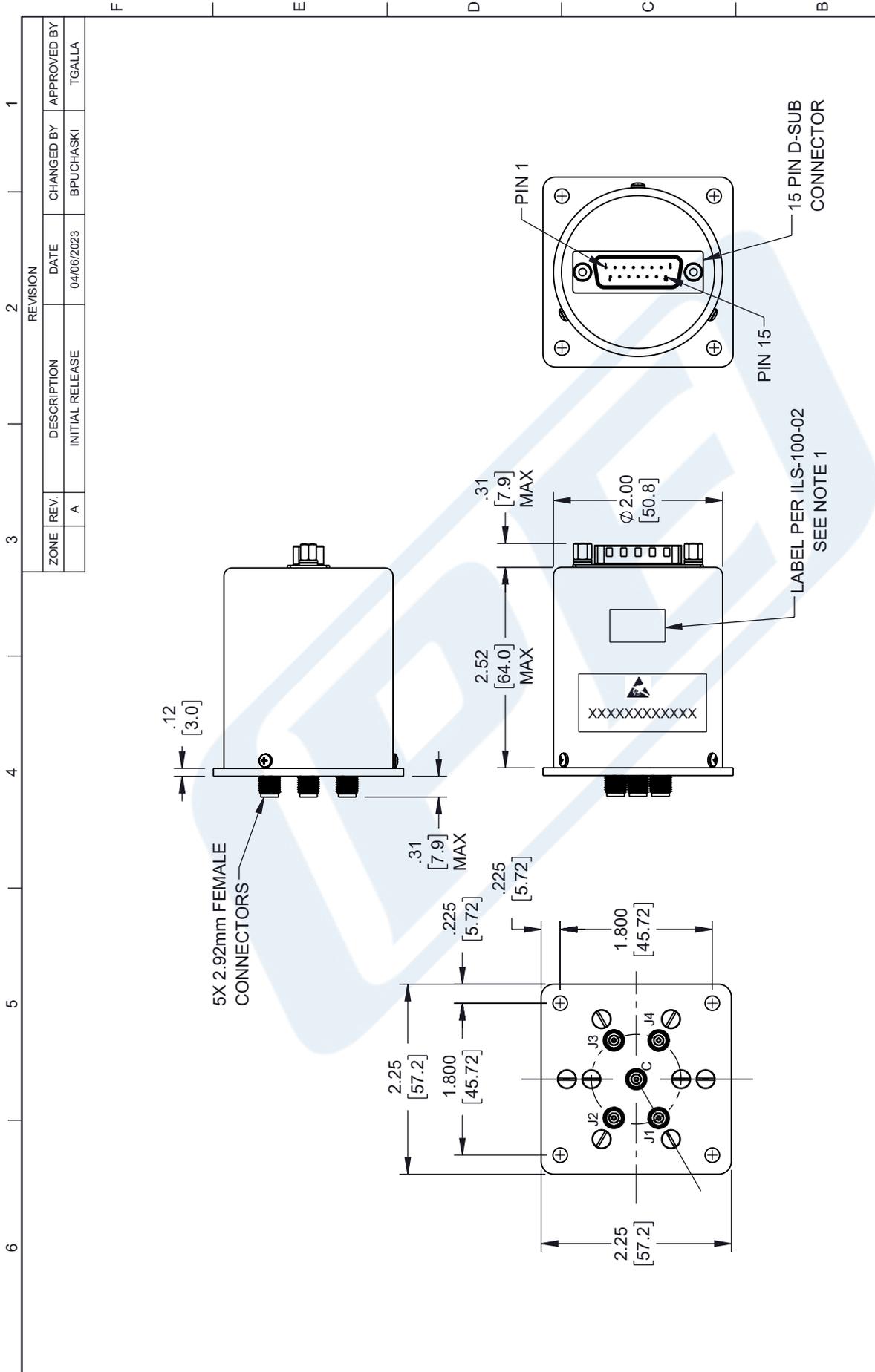
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The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. 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.

# PE71S7287 CAD Drawing

SP4T, Electromechanical Relay Latching Switch, DC to 43 GHz, 28VDC, 5W, Reset, Indicators, TTL, Diodes, Self Cut-Off, D-Sub, 2.92mm



 <b>PASTERNAK</b> an INFINITO brand	INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5
	SCALE: NONE SHEET: 1 OF 2
Website: <a href="http://www.Pasternack.com">www.Pasternack.com</a> Phone: 1.866.727.8376   1.949.261.1920	DESCRIPTION: SP4T, latching, 43GHz, up to 18W, 28VDC, indicators, TTL, diodes, SCO, 2.92mm
SIZE: A CAGE CODE: 53919 DRAWN BY: BPUCHASKI ITEM NO.: PE71S7287	REV: A

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

TOLERANCES:  
 X = ±.2 [5] FRACTIONS  
 XX = ±.02 [.51] ANGLES ± 1°  
 .XXX = ±.005 [.13] CABLE LENGTH TOLERANCES:  
 ≤12 [305] ≤ 60 [1524] = +1 [25] / -0  
 >60 [1524] ≤ 120 [3048] = +4 [102] / -0  
 >120 [3048] ≤ 300 [7620] = +6 [152] / -0  
 >300 [7620] = +5% / -0

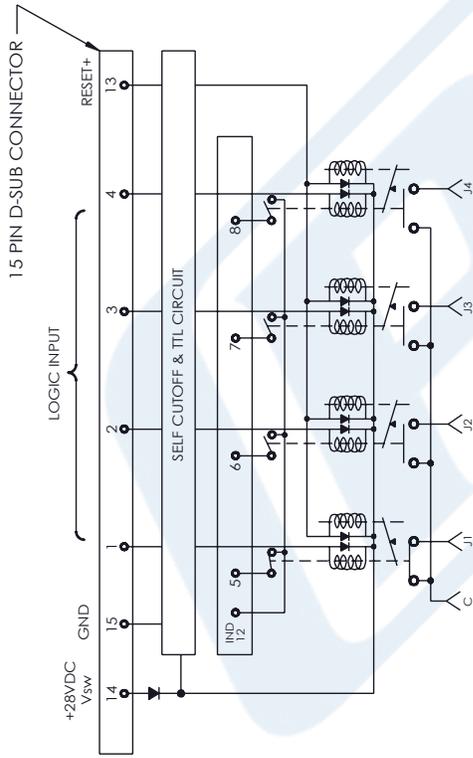
ALL DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO CHANGE WITHOUT NOTICE

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

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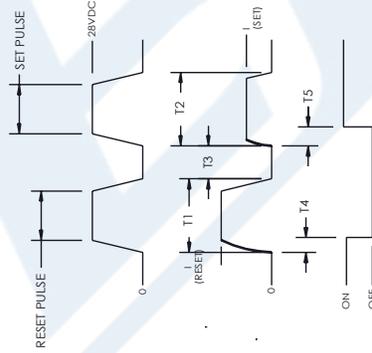


## SCHEMATIC

(J1 SHOWN LAST ENERGIZED)

### ACTUATION CHARACTERISTICS:

- REQUIRES TWO (2) SEQUENTIAL PULSES (RESET & SET)
- T1 & T2 = 30mSEC MIN
- T3 = 10mSEC MIN
- T4 & T5 = 20mSEC MAX



### TRUTH TABLE/PIN ASSIGNMENT :

TERMINALS LOGIC INPUT PINS	RF PATH				INDICATOR			
	J1	J2	J3	J4	5	6	7	8
1 ("1")	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
2 ("1")	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
3 ("1")	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
4 ("1")	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
13 ("1")	ALL OFF							

PIN 12. IND COM  
PIN 14. Vsw +28VDC  
PIN 15. GND



Website: [www.Pasternack.com](http://www.Pasternack.com)  
Phone: 1.866.727.8376 | 1.949.261.1920

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SCO, 2.92mm

SIZE A CAGE CODE 53919 DRAWN BY BPUCHASKI ITEM NO. PE71S7287 REV A

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