



SP6T, Electromechanical Relay Latching Switch, DC to 52GHz, 28VDC, Indicators, Reset, D-Sub, 2.4mm

Electromechanical Relay Switches Technical Data Sheet

PE71S8019

Features

- Single Pole Six Throw (SP6T) Electromechanical Relay Switch
- DC to 52 GHz Frequency Range
- Latching Actuator
- Indicators
- 1M Lifecycle Rating
- Insertion Loss 1.0 dB typ
- Isolation > 80 dB typ
- VSWR as low as 1.3:1 max
- D-Sub Connector for DC Command 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
- Reset/Set Capability

Applications

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

Description

The PE71S8019 is a Single Pole Six Throw (SP6T) electromechanical relay switch that operates across an ultra wide frequency range from DC to 52 GHz and can handle up to 3 Watts of Average Power in a break before make condition. The 50 Ohm design has a Latching Actuator that magnetically latches in place after the control voltage is removed. For power sensitive applications, this is the best actuator option. Additional features include indicators to monitor the switch position and reset/set functionality. Impressive typical performance includes 1.0 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 D-Sub Connector for 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
 Actuator Type
 Actuator Options

SP6T
 Latching
 Indicators, Reset

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		52	GHz
Operating Voltage	26	28	30	Volts
Actuating Set Current			110	mA
Actuating Reset Current		660		mA
VSWR		1.5:1	2.8:1	
Insertion Loss		1	2.3	dB
Isolation	50	80		dB
Input Power			3	Watts

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T, Electromechanical Relay Latching Switch, DC to 52GHz, 28VDC, Indicators, Reset, D-Sub, 2.4mm PE71S8019](#)



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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	1.3:1	1.4:1	1.5:1	1.7:1	1.9:1	
Insertion Loss, Max	0.2	0.4	0.5	0.7	0.9	dB
Isolation, Min	70	60	60	55	50	dB

Performance by Frequency

Description	F6	F7	F8	F9	F10	Units
Frequency Range	40 to 50	50 to 52				GHz
VSWR, Max	2.2:1	2.8:1				
Insertion Loss, Max	1.3	2.3				dB
Isolation, Min	50	50				dB

Mechanical Specifications

Size

Length	1.75 in [44.45 mm]
Width/Diameter	1.75 in [44.45 mm]
Height	1.75 in [44.45 mm]
Weight	0.28 lbs [127.01 g]
Finish	Electroless Nickel

Connectors

RF Connector Type	2.4mm Female
Control Connector	D-Subminiature

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

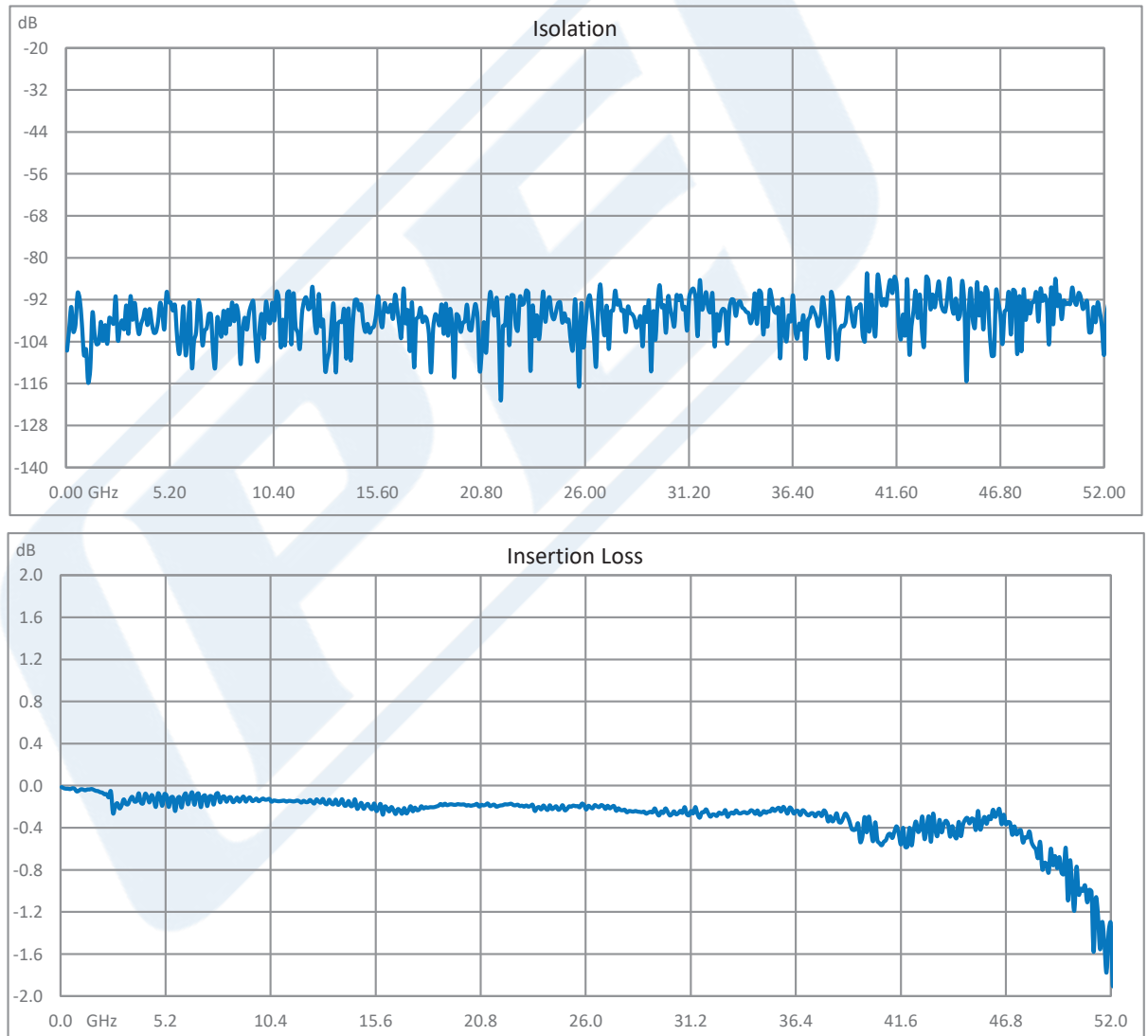
PE71S8019

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

Plotted and Other Data

Notes:

Typical Performance Data



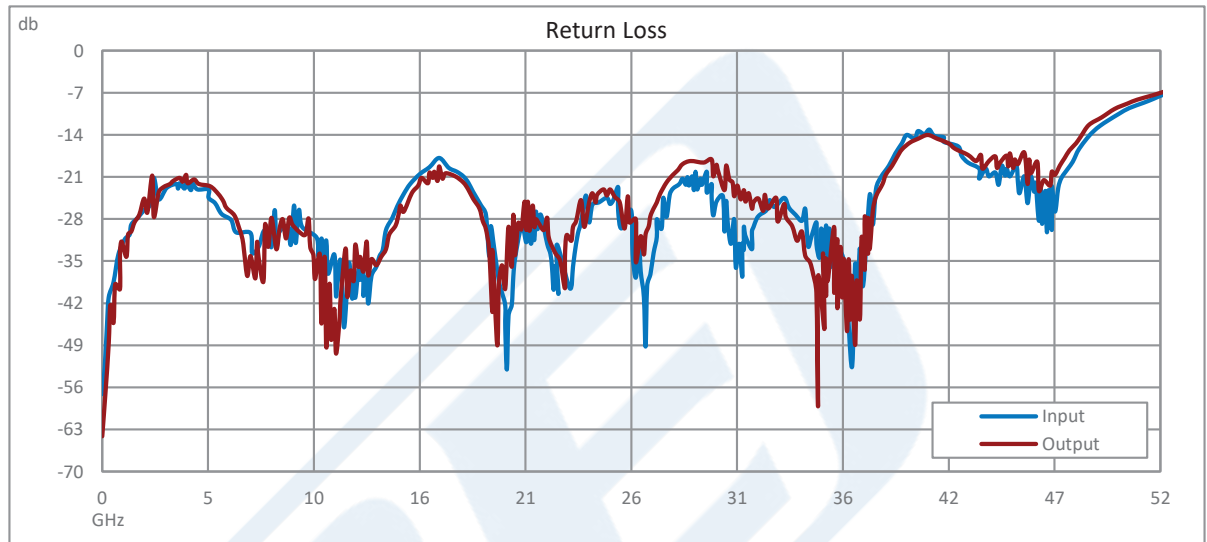
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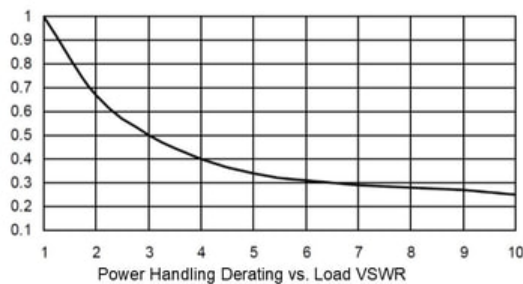


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Power Handling vs. Frequency



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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SP6T, Electromechanical Relay Latching Switch, DC to 52GHz, 28VDC, Indicators, Reset, D-Sub, 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.

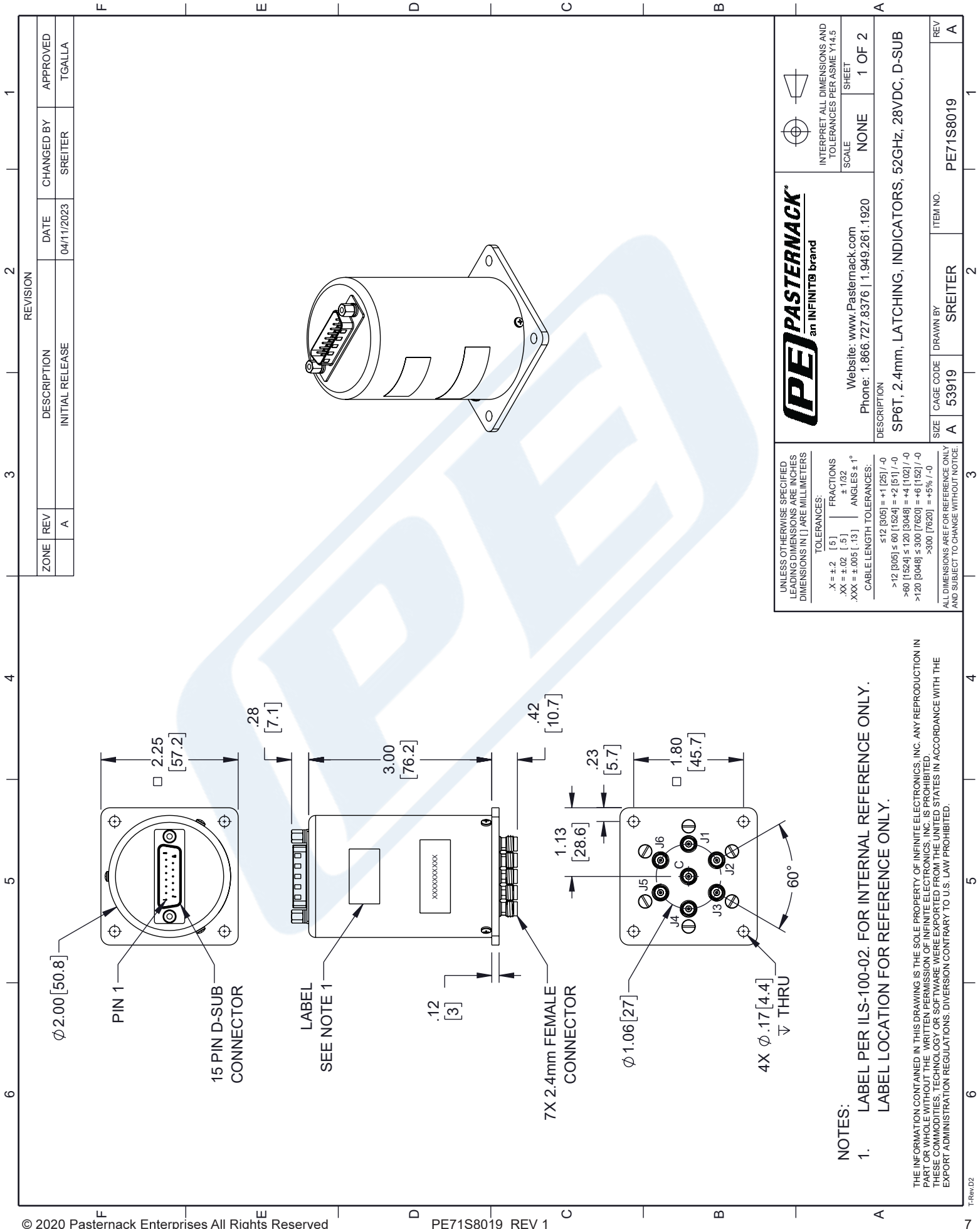
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URL: <https://www.pasternack.com/sp6t-electromechanical-relay-latching-switch-52-ghz-28v-indicators-reset-2.4mm-pe71s8019-p.aspx>

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.

PE71S8019 CAD Drawing

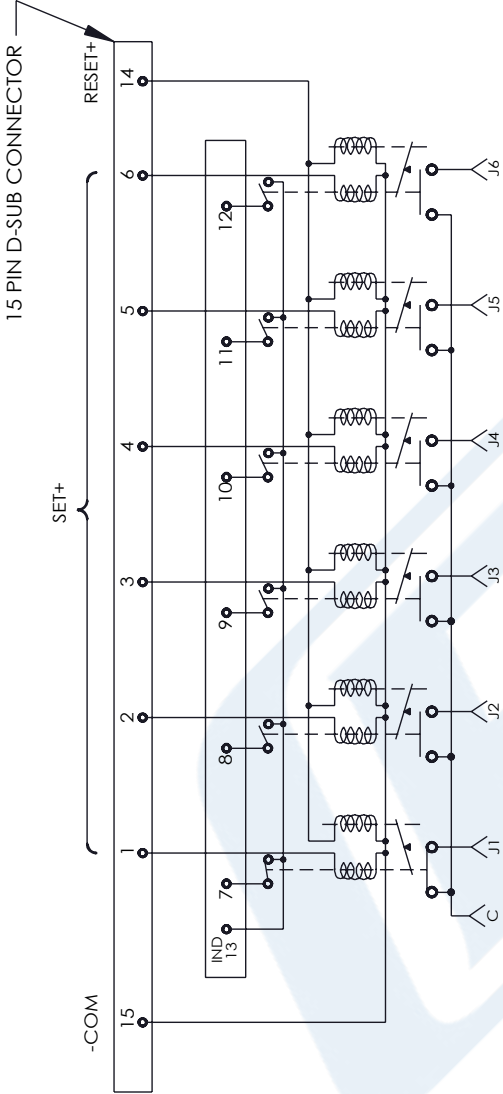
SP6T, Electromechanical Relay Latching Switch, DC to 52GHz, 28VDC, Indicators, Reset, D-Sub, 2.4mm



ZONE	REV	DESCRIPTION	DATE	CHANGED BY	APPROVED
	A	INITIAL RELEASE	04/11/2023	SREITER	TGALLA

REVISION

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.		 INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5 SCALE: NONE SHEET: 1 OF 2	
PE PASTERNAK an INFINITO brand Website: www.Pasternack.com Phone: 1.866.727.8376 1.949.261.1920 DESCRIPTION SP6T, 2.4mm, LATCHING, INDICATORS, 52GHz, 28VDC, D-SUB		REV: A ITEM NO.: PE71S8019	
SIZE: A	CAGE CODE: 53919	DRAWN BY: SREITER	ITEM NO.:



SCHEMATIC

(J1 SHOWN LAST ENERGIZED)

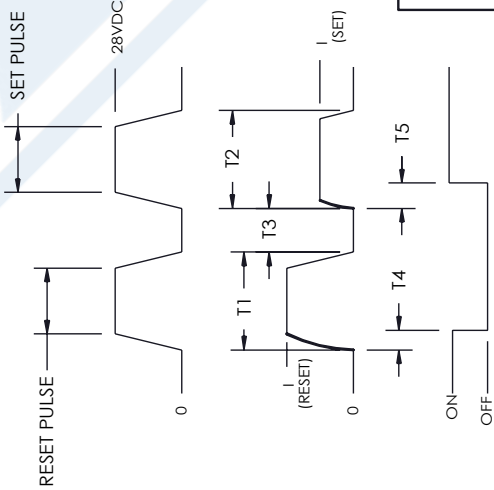
PIN ASSIGNMENT :

TERMINALS	RF PATH						INDICATOR					
	J1	J2	J3	J4	J5	J6	J1	J2	J3	J4	J5	J6
D-SUB PIN ASSIGNMENT												
1 (SET+)	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
2 (SET+)	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
3 (SET+)	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
4 (SET+)	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
5 (SET+)	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF
6 (SET+)	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON
14 (RESET+)	ALL OFF											

PIN 15. -COM
PIN 13. IND COM

ACTUATION CHARACTERISTICS:

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



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LEADING DIMENSIONS ARE INCHES
DIMENSIONS IN [] ARE MILLIMETERS

TOLERANCES:

X = ±.2 [.5] FRACTIONS
.XX = ±.02 [.5] ±.132
XXX = ±.005 [.13] ANGLES ± 1°

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

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DESCRIPTION

SP6T, 2.4mm, LATCHING, INDICATORS, 52GHz, 28VDC, D-SUB



SCALE NONE
SHEET 2 OF 2

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