



SP6T E-M Relay Latching Switch with Self Cut-Off, DC to 40 GHz, 10W, 2M Lifecycles, 28V, Auto Reset, +COM Supression Diodes, 2.92mm

Electromechanical Relay Switches Technical Data Sheet

PE71S6459

Features

- Single Pole Six Throw Electromechanical Relay Switch
- DC to 40 GHz Frequency Range
- Latching Actuator with Self Cut-Off
- Reset Function
- Suppression Diodes
- Auto Reset
- +COM
- 2M Lifecycle Rating
- Insertion Loss 0.5 dB typ
- Isolation > 90 dB typ
- VSWR as low as 1.15:1 max
- +28 Volt DC Bias
- 15 Pin D-Sub for DC Command Control
- 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 PE71S6459 is a Single Pole Six Throw (SP6T) electromechanical relay switch that operates across a wide frequency range of DC to 40 GHz and can handle up to 10W of Average power in a break before make condition. The 50 Ohm design is rated for 2 million lifecycles and features a Latching Self Cut-Off 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 auto reset function, +COM, and suppression diodes which limit voltage spikes or reverse current. Impressive typical performance includes 0.5 dB insertion loss and isolation greater than 90 dB. This switch requires +28Vdc 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 15 pin 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

Switch Type	SP6T
Actuator Type	Normally Open
Switching Sequence	Break Before Make
Actuator Options	+ COM

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		40	GHz
Impedance		50		Ohms
Operating Voltage	26	28	30	Volts
Actuating Set Current @ 28 Volts			400	mA
VSWR		1.5:1	1.8:1	
Insertion Loss		0.5	1.1	dB

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T E-M Relay Latching Switch with Self Cut-Off, DC to 40 GHz, 10W, 2M Lifecycles, 28V, Auto Reset, +COM Supression Diodes, 2.92mm PE71S6459](#)



SP6T E-M Relay Latching Switch with Self Cut-Off, DC to 40 GHz, 10W, 2M Lifecycles, 28V, Auto Reset, +COM Supression Diodes, 2.92mm

Electromechanical Relay Switches Technical Data

PE71S6459

Isolation	60	90		dB
Switching Time			20	ms Max

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 40	GHz
VSWR, Max	1.15:1	1.25:1	1.35:1	1.5:1	1.8:1	
Insertion Loss, Max	0.2	0.3	0.4	0.5	1.1	dB
Isolation, Min	90	80	80	75	60	dB

Mechanical Specifications

Size

Length	2.52 in [64.01 mm]
Width/Diameter	2.25 in [57.15 mm]
Height	2.25 in [57.15 mm]

Finish	NICKEL
Package Type	Connectorized
Operating Life	2,000,000 Cycles

Connectors

RF Connector Type	2.92mm Female
-------------------	---------------

Environmental Specifications

Temperature

Operating Range	-25 to +65 deg C
Storage Range	-55 to +100 deg C

Humidity	Moisture resistant or immersion sealing available
Shock	MIL-STD-202 Method 213, Condition D, 500G (non oper)
Vibration	MIL-STD-202 Method 214, Condition D, 10G RMS (non oper)

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

Plotted and Other Data

Notes:

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T E-M Relay Latching Switch with Self Cut-Off, DC to 40 GHz, 10W, 2M Lifecycles, 28V, Auto Reset, +COM Supression Diodes, 2.92mm PE71S6459](#)

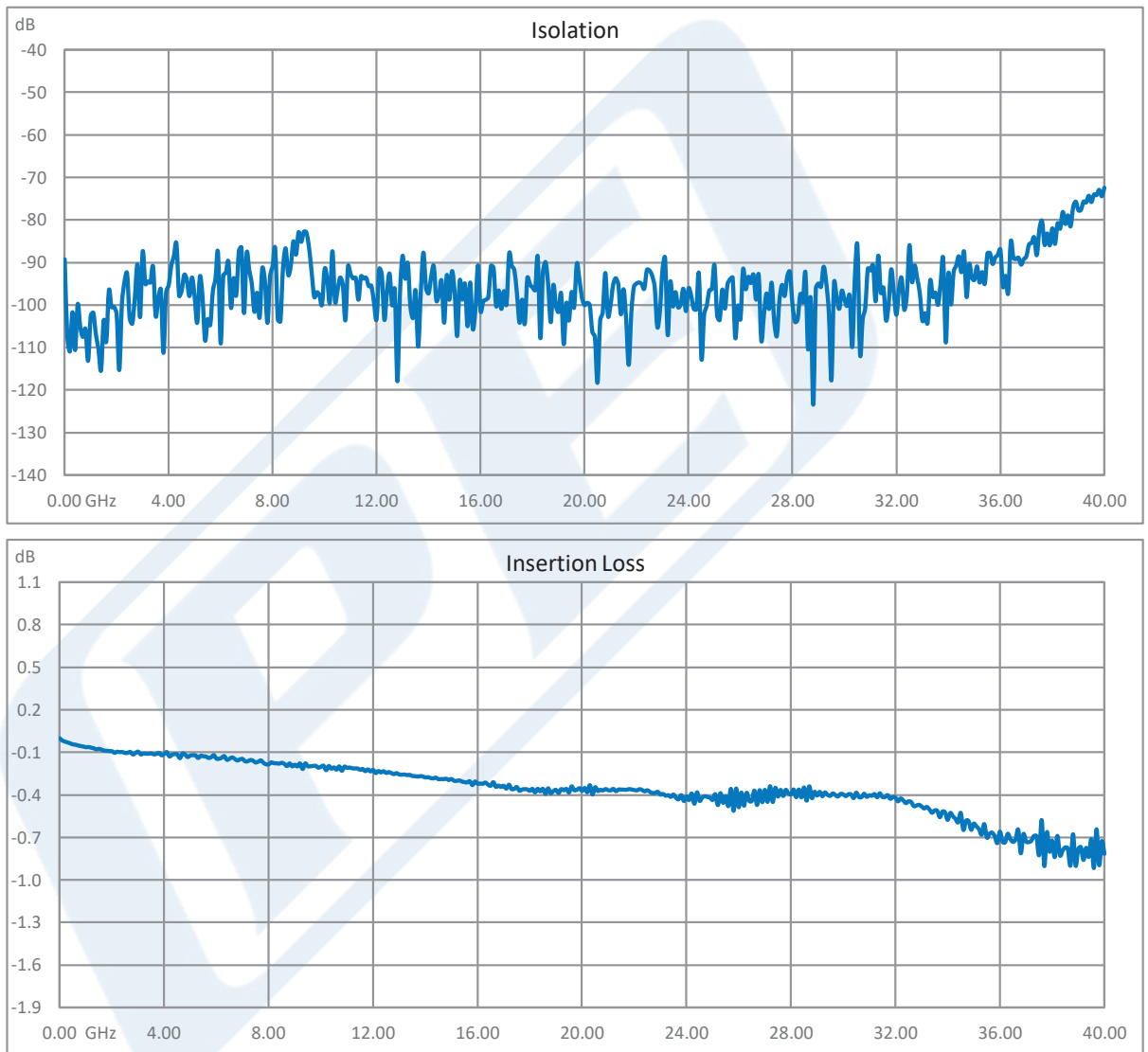


SP6T E-M Relay Latching Switch with Self Cut-Off, DC to 40 GHz, 10W, 2M Lifecycles, 28V, Auto Reset, +COM Supression Diodes, 2.92mm

Electromechanical Relay Switches Technical Data

PE71S6459

Typical Performance Data



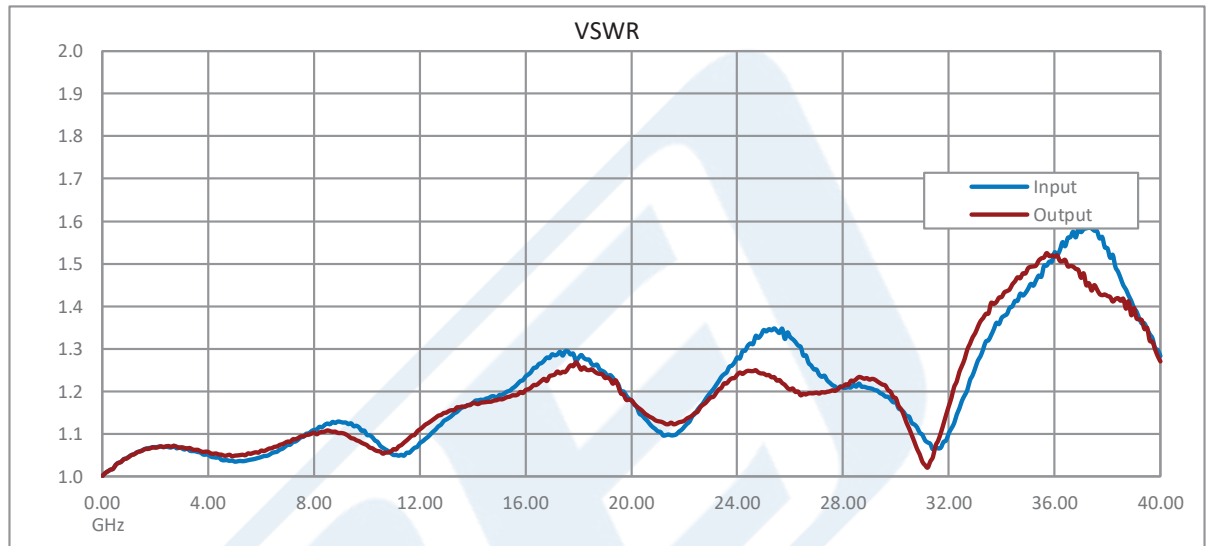
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T E-M Relay Latching Switch with Self Cut-Off, DC to 40 GHz, 10W, 2M Lifecycles, 28V, Auto Reset, +COM Supression Diodes, 2.92mm PE71S6459](#)



SP6T E-M Relay Latching Switch with Self Cut-Off, DC to 40 GHz, 10W, 2M Lifecycles, 28V, Auto Reset, +COM Supression Diodes, 2.92mm

Electromechanical Relay Switches Technical Data

PE71S6459



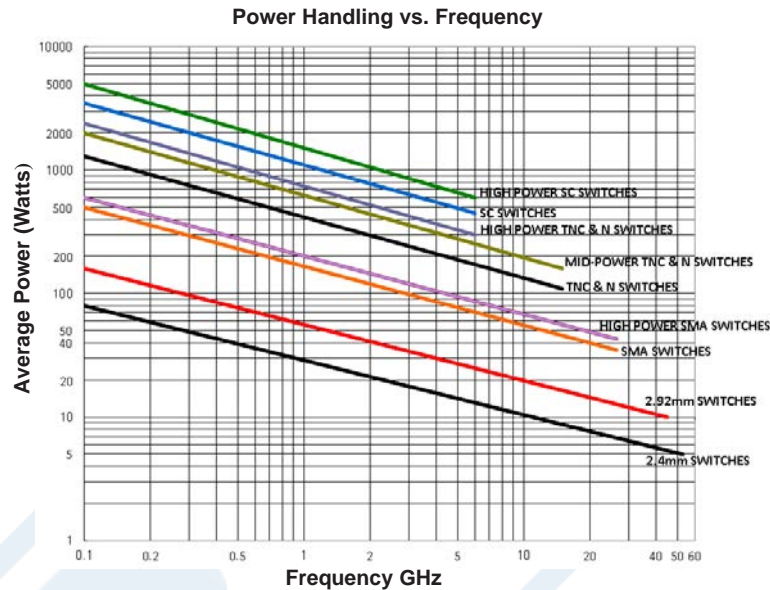
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T E-M Relay Latching Switch with Self Cut-Off, DC to 40 GHz, 10W, 2M Lifecycles, 28V, Auto Reset, +COM Supression Diodes, 2.92mm PE71S6459](#)



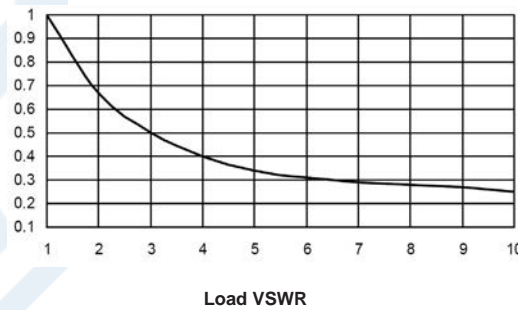
SP6T E-M Relay Latching Switch with Self Cut-Off, DC to 40 GHz, 10W, 2M Lifecycles, 28V, Auto Reset, +COM Supression Diodes, 2.92mm

Electromechanical Relay Switches Technical Data

PE71S6459



Power Handling De-rating vs. Load VSWR



Power Handling Chart and Derating Curves based on the following Test and Environmental Conditions:
 Ambient temperature: 20 - 25°C
 Altitude: Sea Level to 1,000 feet
 Relative Humidity: 50 - 55%
 Load VSWR: ≤ 1.20:1
 Operation: Cold Switching

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T E-M Relay Latching Switch with Self Cut-Off, DC to 40 GHz, 10W, 2M Lifecycles, 28V, Auto Reset, +COM Supression Diodes, 2.92mm PE71S6459](#)



SP6T E-M Relay Latching Switch with Self Cut-Off, DC to 40 GHz, 10W, 2M Lifecycles, 28V, Auto Reset, +COM Supression Diodes, 2.92mm

Electromechanical Relay Switches Technical Data

PE71S6459

SP6T E-M Relay Latching Switch with Self Cut-Off, DC to 40 GHz, 10W, 2M Lifecycles, 28V, Auto Reset, +COM Supression Diodes, 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.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T E-M Relay Latching Switch with Self Cut-Off, DC to 40 GHz, 10W, 2M Lifecycles, 28V, Auto Reset, +COM Supression Diodes, 2.92mm PE71S6459](https://www.pasternack.com/sp6t-electromechanical-relay-normally-open-switch-40-ghz-28v-com-2.92mm-pe71s6459-p.aspx)

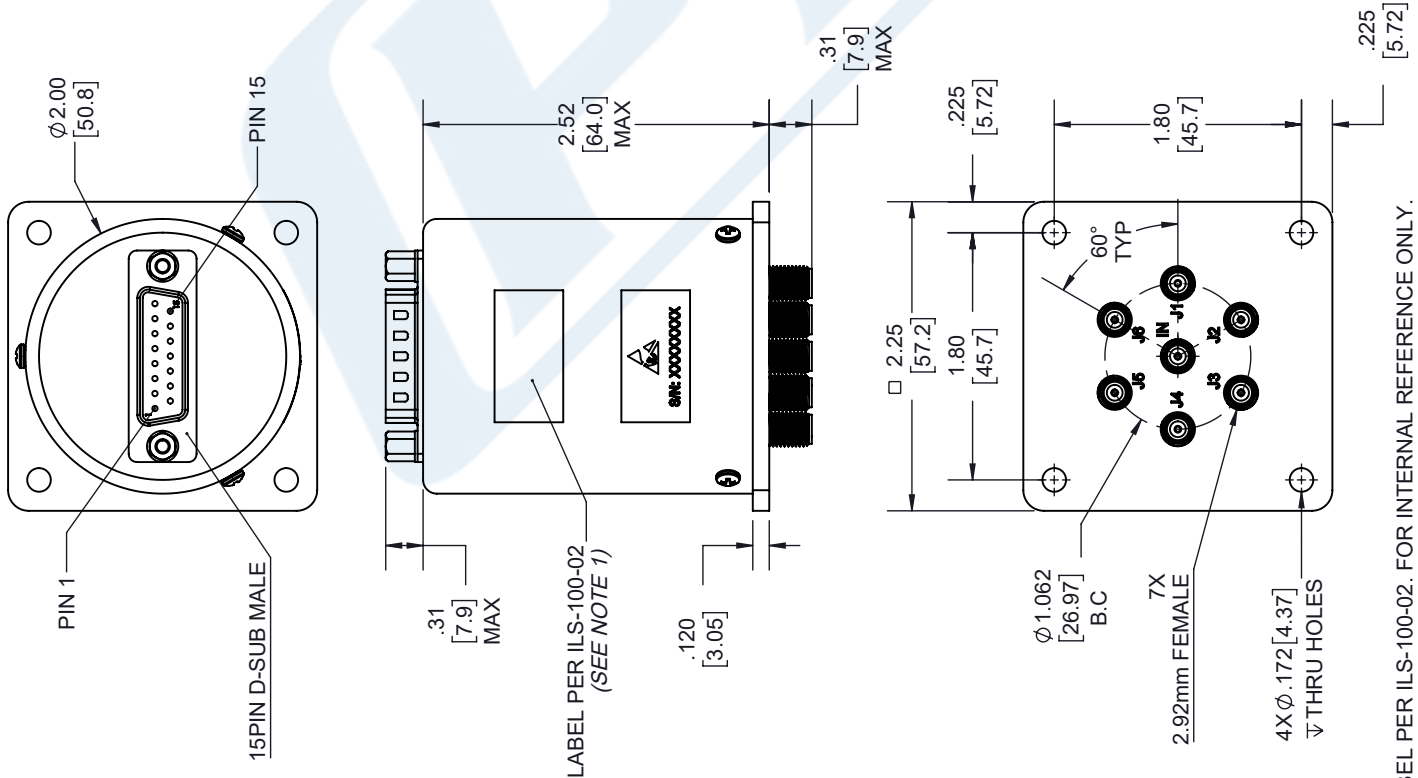
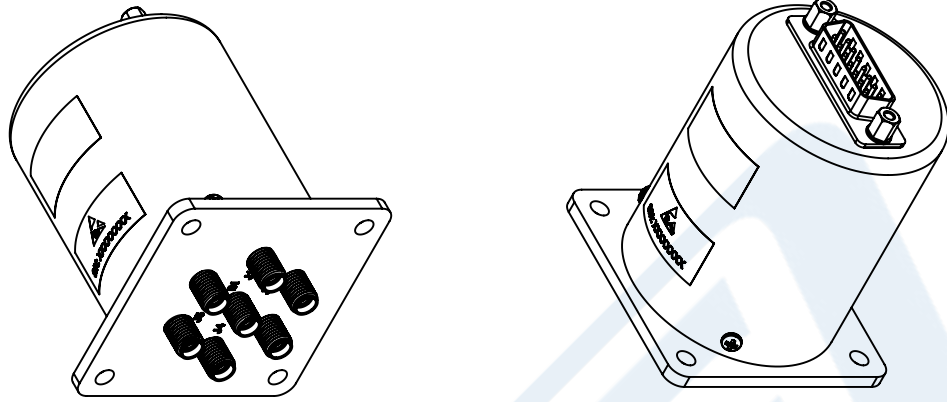
URL: <https://www.pasternack.com/sp6t-electromechanical-relay-normally-open-switch-40-ghz-28v-com-2.92mm-pe71s6459-p.aspx>

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.

PE71S6459 CAD Drawing

SP6T E-M Relay Latching Switch with Self Cut-Off, DC to 40 GHz, 10W,
2M Lifecycles, 28V, Auto Reset, +COM Suplestion Diodes, 2.92mm

REVISIONS		
REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	1/29/2021
		APPROVED
		T.GALLA



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

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

TOLERANCES:

.X = ±.2 [5.08] FRACTIONS ±.1032
 .XX = ±.02 [.51] ±.1032
 .XXX = ±.005 [.13] ANGLES ± 1°

CABLE LENGTH (L), TOLERANCES:
 L ≤ 12 [305] = +1 [25] / -0
 12 [305] < L ≤ 60 [1524] = +2 [51] / -0
 60 [1524] < L ≤ 120 [3048] = +4 [102] / -0
 120 [3048] < L ≤ 300 [7620] = +6 [152] / -0
 300 [7620] < L = +5% / -0

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

THIRD-ANGLE PROJECTION

THE INFORMATION AND DESIGN IN THIS DOCUMENT IS THE PROPERTY OF PASTERNAK CORPORATION ALL RIGHTS RESERVED.

SHEET 1 OF 2

SCALE N/A

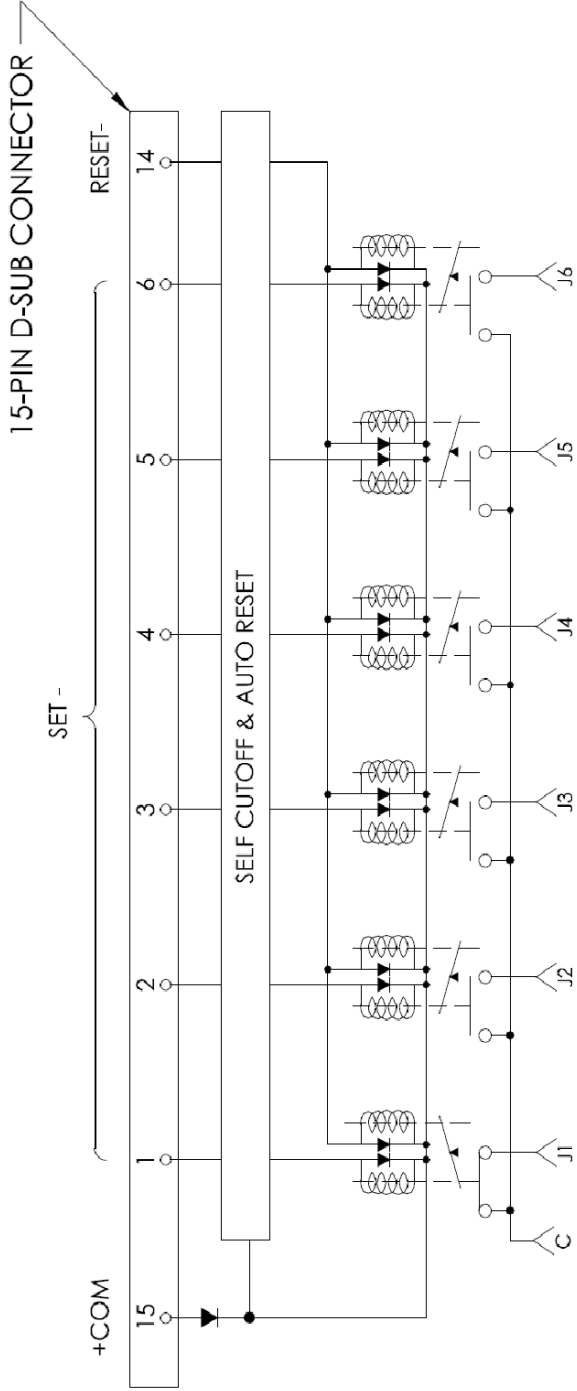
PE PASTERNAK
an INFINITE brand

Pasternack Enterprises, Inc.
 P. O. Box 16759, Irvine, CA 92623.
 Phone: 1.949.261.1920 | 1.866.727.8376
 Fax: 1.949.261.7451
 Website: www.pasternack.com
 E-mail: sales@pasternack.com

SIZE A CAGE CODE 53919 DRAWN BY K.DANG ITEM NO. PE71S6459 REV A

PE71S6459 CAD Drawing

SP6T E-M Relay Latching Switch with Self Cut-Off, DC to 40 GHz, 10W,
2M Lifecycles, 28V, Auto Reset, +COM Suppression Diodes, 2.92mm



SCHEMATIC

(COIL 1 SHOWN LAST ENERGIZED)

PIN ASSIGNMENT

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

PIN 15. +COM

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

TOLERANCES:
 .X = ±.2 [.008] FRACTIONS
 .XX = ±.02 [.51] ±.132
 .XXX = ±.005 [.13] ANGLES ± 1°

CABLE LENGTH (L), TOLERANCES:
 L ≤ 12 [305] = +1 [25] / -0
 12 [305] < L ≤ 60 [1524] = +2 [51] / -0
 60 [1524] < L ≤ 120 [3048] = +4 [102] / -0
 120 [3048] < L ≤ 300 [7620] = +6 [152] / -0
 300 [7620] < L = +5% / -0

ALL DIMENSIONS SHOWN
ARE FOR REFERENCE ONLY.

PE PASTERNAK
an INFINITE brand

Pasternack Enterprises, Inc.
P. O. Box 16759, Irvine, CA 92623.
Phone: 1.949.261.1920 | 1.866.727.8376
Fax: 1.949.261.7451
Website: www.pasternack.com
E-mail: sales@pasternack.com

SCALE N/A

SHEET 2 OF 2

THIRD-ANGLE PROJECTION

THE INFORMATION AND DESIGN IN THIS DOCUMENT IS THE PROPERTY OF PASTERNAK CORPORATION ALL RIGHTS RESERVED.

ITEM NO. PE71S6459

SIZE A

CAGE CODE 53919

DRAWN BY K.DANG

REV A

THESE COMMODITIES, TECHNOLOGY OR SOFTWARE WERE EXPORTED FROM THE UNITED STATES IN ACCORDANCE WITH THE EXPORT ADMINISTRATION REGULATIONS. DIVERSION CONTRARY TO U.S. LAW PROHIBITED.