



SPDT E-M Relay Latching Switch with Self Cut-Off,  
Terminated, DC to 26.5 GHz, 90W, 5M Lifecycles,  
12V, Suppression Diodes, TTL, SMA

## Electromechanical Relay Switches Technical Data Sheet

PE71S6470

### Features

- Single Pole Double Throw Electromechanical Relay Switch
- DC to 26.5 GHz Frequency Range
- Latching Actuator with Self Cut-Off
- TTL Logic Control
- Suppression Diodes
- 5M Lifecycle Rating
- Insertion Loss 0.3 dB typ
- Isolation > 80 dB typ
- Internally Terminated
- VSWR as low as 1.2:1 max
- +12 Volt DC Bias
- Solder Terminal Pins for DC Command Control
- SMA Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 90 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 PE71S6470 is a Single Pole Double Throw (SPDT) electromechanical relay switch that operates across a wide frequency range of DC to 26.5 GHz and can handle up to 90 Watts of Average power in a break before make condition. The design is rated for 5 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. The output port is terminated in 50 ohms when switched in the isolation (off) state. Additional features include TTL control logic, and suppression diodes which limit voltage spikes or reverse current. Impressive typical performance includes 0.3 dB insertion loss and isolation greater than 80 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 SMA female connectors and solder terminal pins 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	SPDT, Terminated
Actuator Type	Latching
Switching Sequence	Break Before Make
Actuator Options	Self Cut Off, TTL Logic
TTL Control	on: 2.4 to 5.5 Volts off: 0 to 0.8 Volts

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		26.5	GHz
Impedance		50		Ohms
Operating Voltage	11	12	13	Volts
Actuating Set Current @ 12 Volts			420	mA

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SPDT E-M Relay Latching Switch with Self Cut-Off, Terminated, DC to 26.5 GHz, 90W, 5M Lifecycles, 12V, Suppression Diodes, TTL, SMA PE71S6470](#)



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VSWR		1.4:1	1.5:1	
Insertion Loss		0.3	0.5	dB
Isolation	40	80		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		GHz
VSWR, Max	1.2:1	1.3:1	1.4:1	1.7:1		
Insertion Loss, Max	0.15	0.25	0.35	0.6		dB
Isolation, Min	80	70	60	50		dB

### Mechanical Specifications

#### Size

Length	1.85 in [46.99 mm]
Width/Diameter	2.25 in [57.15 mm]
Height	0.56 in [14.22 mm]

Finish	NICKEL
Package Type	Connectorized
Operating Life	5,000,000 Cycles

#### Connectors

RF Connector Type	SMA Female
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### 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:

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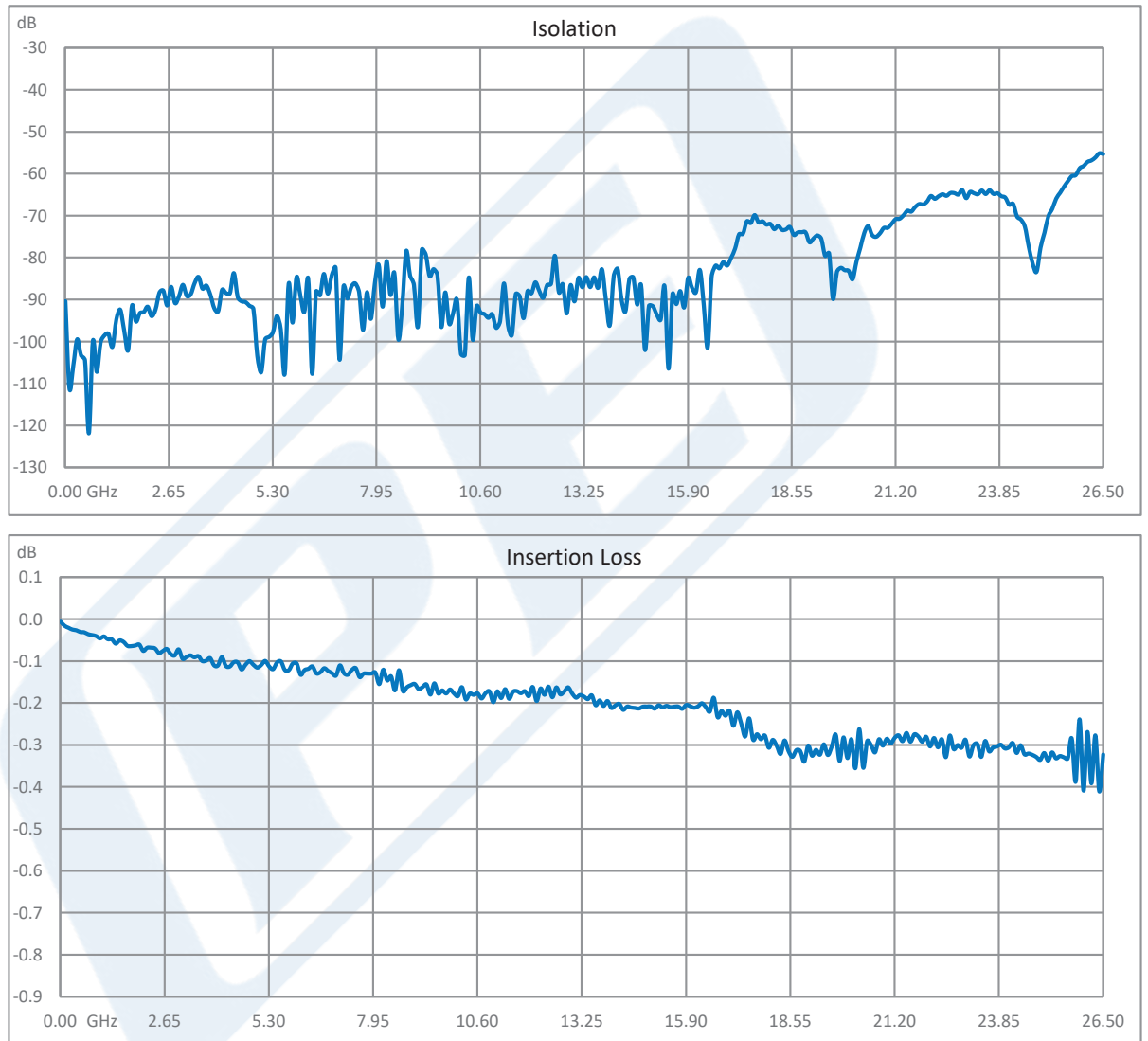


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Electromechanical Relay Switches Technical Data

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Typical Performance Data



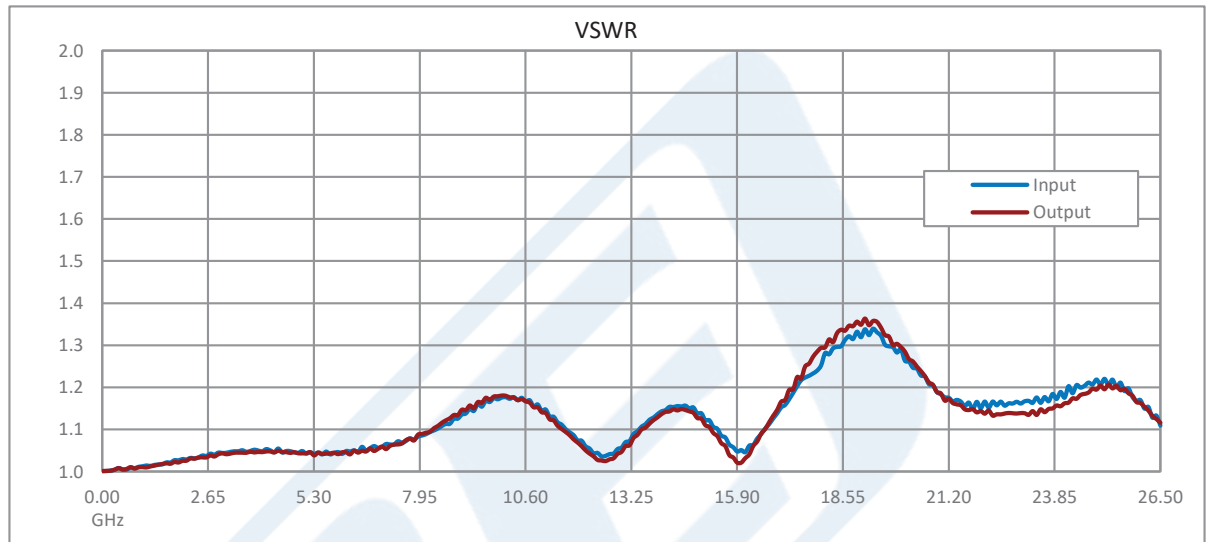
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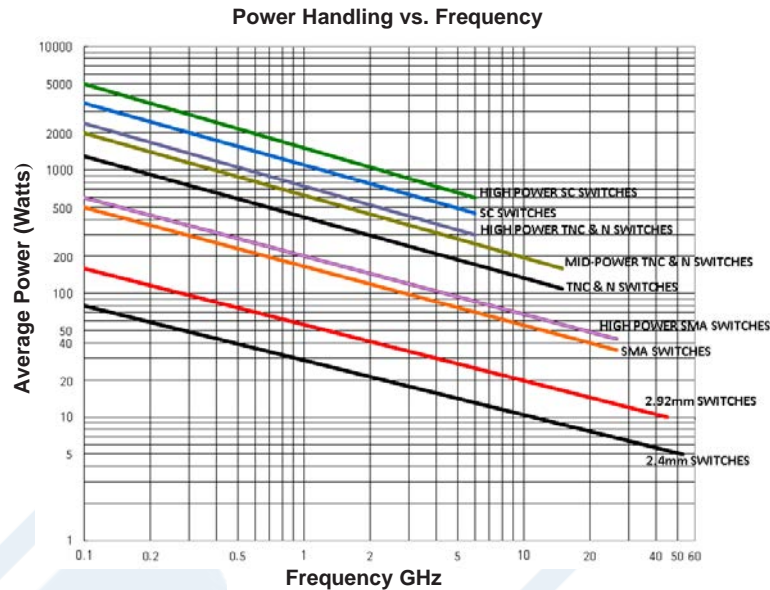
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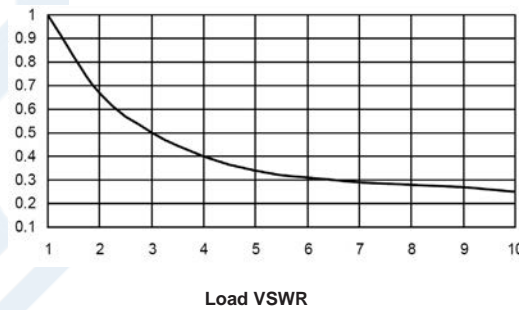
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Power Handling De-rating vs. Load VSWR



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:  $\leq 1.20:1$   
Operation: Cold Switching

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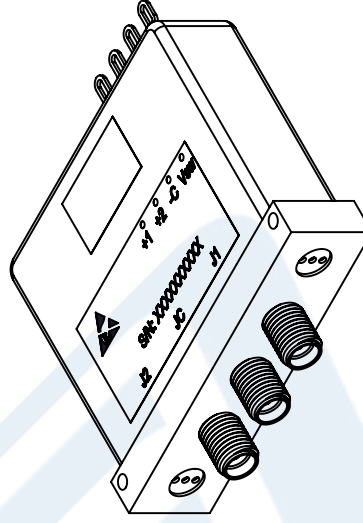
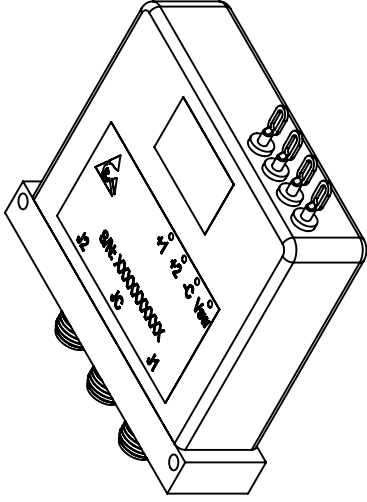
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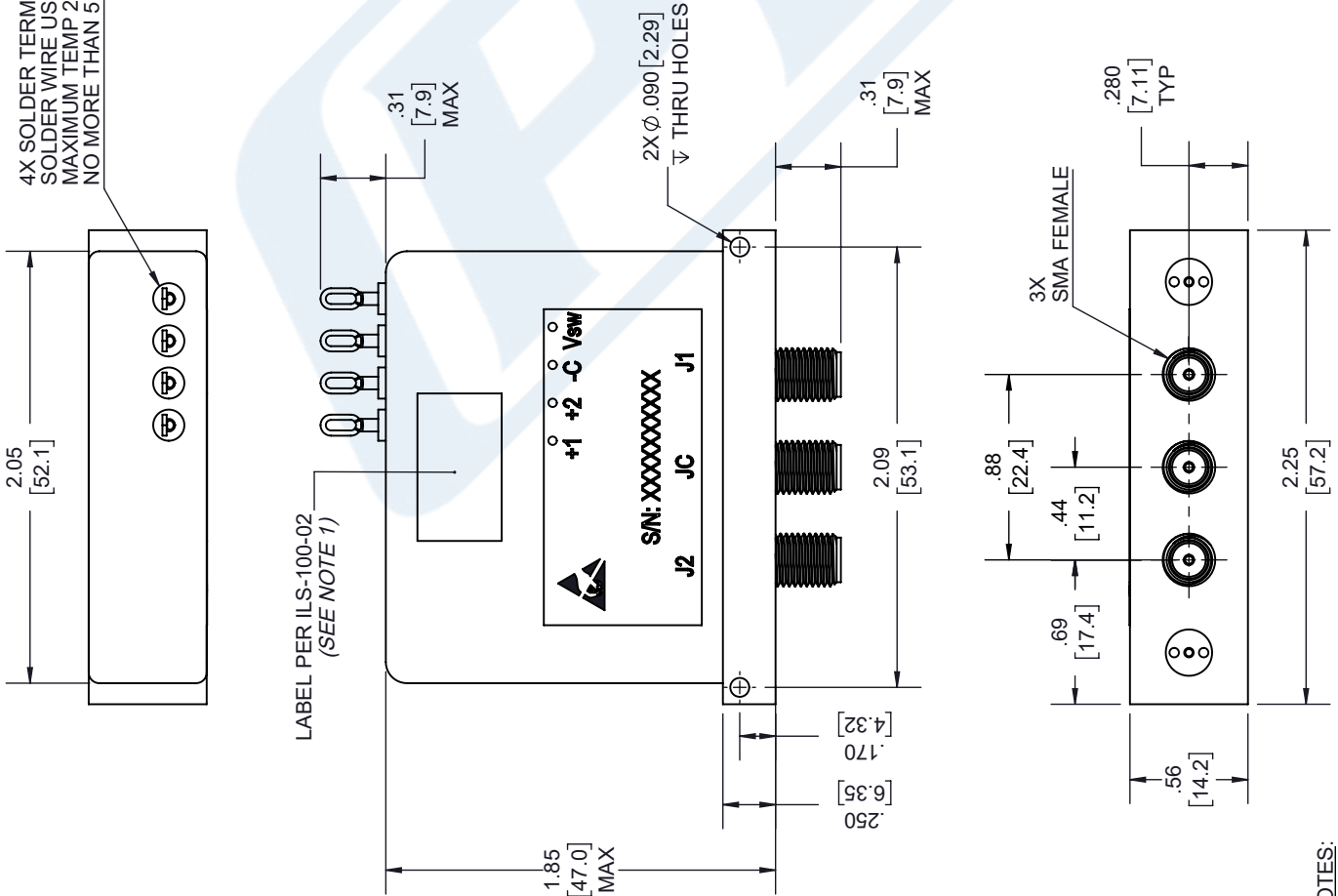
# PE71S6470 CAD Drawing

SPDT E-M Relay Latching Switch with Self Cut-Off, Terminated, DC to 26.5 GHz, 90W, 5M Lifecycles, 12V, Suppression Diodes, TTL, SMA

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/2/2021	T.GALLA



4X SOLDER TERMINALS,  
SOLDER WIRE USING SN96  
MAXIMUM TEMP 250 °C FOR  
NO MORE THAN 5 SEC.



NOTES:  
1. 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.

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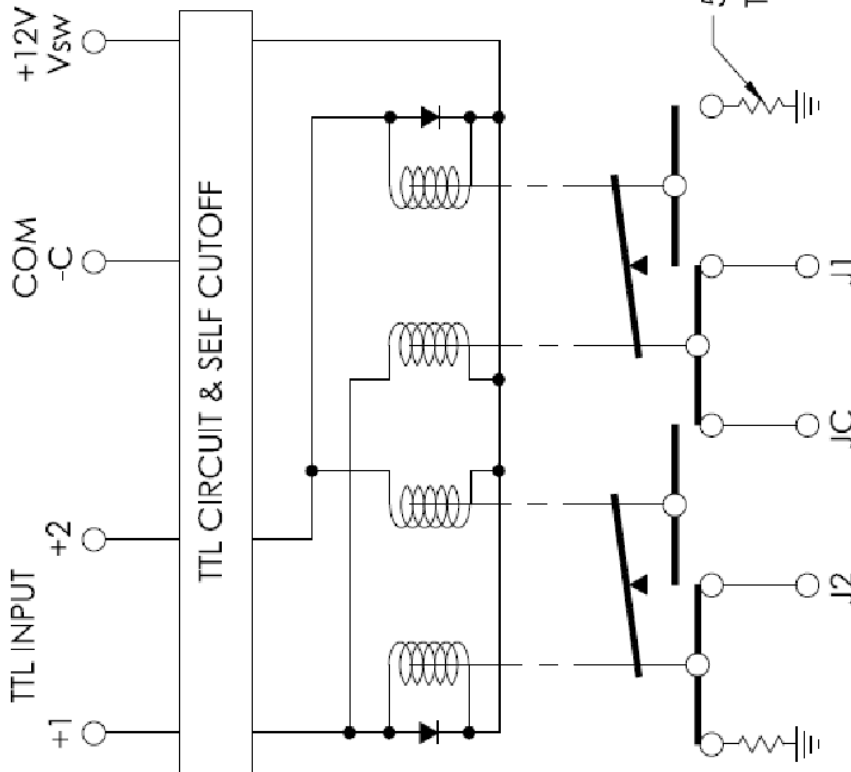
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SCALE N/A

SIZE A    CAGE CODE 53919    DRAWN BY K.DANG    ITEM NO. PE71S6470    REV A

# PE71S6470 CAD Drawing

SPDT E-M Relay Latching Switch with Self Cut-Off, Terminated, DC to 26.5 GHz, 90W, 5M Lifecycles, 12V, Suppression Diodes, TTL, SMA



SCHEMATIC

OPERATIONAL LOGIC TABLE				
TERMINALS	RF PORTS			TERMINATION
	J1-JC	J2-JC	J2 TERMINATED	J1 TERMINATED
1	2	J1-JC	J2 TERMINATED	J1 TERMINATED
0	0	NO CHANGE	NO CHANGE	NO CHANGE
0	1	OFF	ON	OFF
1	0	ON	OFF	ON
1	1	FORBIDDEN	FORBIDDEN	FORBIDDEN

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

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THIRD-ANGLE PROJECTION

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