



SPDT 0.03 dB Low Insertion Loss Repeatability  
 Relay Latching Switch, DC to 20 GHz, 1W, 24V,  
 Indicators, Self Cut Off, Terminated, SMA

## Electromechanical Relay Switches Technical Data Sheet

PE71S6337

### Features

- DC to 20 GHz SPDT Switch
- Guaranteed Low Insertion loss Repeatability: 0.03 dB max over 10 Million Lifecycles
- Insertion Loss: 0.5 dB max
- Isolation: up to 65 dB min
- +24 Vdc Nominal Voltage
- Hot Switching: 1W CW max
- Latching Self Cutoff Actuator
- Position Indicators
- Terminated
- Guaranteed to meet MIL-STD-202 Environmental Conditions
- SMA connectors
- -25°C to +75°C Operating Temperature
- 10 Million Lifecycles Minimum

### Applications

- Electronic Warfare
- Electronic Countermeasures
- Microwave Radio
- VSAT
- Radar
- Space Systems
- Test Instrumentation
- Research and Development
- Signal Monitoring Devices

### Description

The PE71S6337 is a single pole double throw (SPDT) electromechanical switch that operates across a wide frequency range from DC to 20 GHz and has guaranteed insertion loss repeatability of 0.03 dB max over a life span of 10 million switching cycles in a Break Before Make condition. Maximum Insertion loss is 0.5 dB and Isolation is rated up to 65 dB minimum. The model also supports a hot switching limit of up to 1W CW maximum. The Latching Self Cut-Off TTL Control actuator design includes indicators, a +24 Vdc operating voltage, and operates over a temperature range of -25°C to +75°C. The rugged and compact package assembly supports SMA connectors and solder pins for command control capability. And for highly reliable operation, the model is guaranteed to meet MIL-STD-202 environmental test conditions that include temperature cycle, vibration, and shock.

### Electrical Specifications

Switch Type	SPDT, Reflective
Actuator Type	Latching
Switching Sequence	Break Before Make
Actuator Options	Indicators, Self Cut Off, Terminated
Polarity	Positive Common

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		20	GHz
Impedance		50		Ohms
Operating Voltage	20	24	32	Volts
Actuating Current @ 24 Volts		140		mA
Insertion Loss			0.5	dB
Insertion Loss Repeatability			0.03	dB
Coil Resistance		175		Ohms
Third Order Intermodulation		-120		dBc
Input Power (CW)			1	Watts

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SPDT 0.03 dB Low Insertion Loss Repeatability Relay Latching Switch, DC to 20 GHz, 1W, 24V, Indicators, Self Cut Off, Terminated, SMA PE71S6337](#)



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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 20			GHz
VSWR, Max	1.15:1	1.25:1	1.3:1			
Insertion Loss, Max	0.3	0.4	0.5			dB
Isolation, Min	85	75	65			dB

Electrical Specification Notes:  
 Insertion Loss Repeatability at 25° is 0.03 dB

### Mechanical Specifications

#### Size

Length	1.25 in [31.75 mm]
Width/Diameter	1.25 in [31.75 mm]
Height	0.5 in [12.7 mm]
Weight	0.187 lbs [84.82 g]
Body Material and Plating	Aluminum, Nickel
Package Type	Connectorized
Operating Life	10,000,000 Cycles
Switching Time	15 ms Max

#### Connectors

RF Connector Type	SMA Female
RF Connector Contact Material and Plating	Beryllium Copper, Gold
RF Connector Body Material and Plating	Passivated Stainless Steel
Control Connector	Solder Pin

### Environmental Specifications

#### Temperature

Operating Range	-25 to +75 deg C
Storage Range	-55 to +85 deg C
Humidity	15 to 95% relative humidity
Shock	50g / 11 ms, sawtooth
Sine Vibration	10-2000 Hz, 20g
Random Vibration	16.91g (rms) 50-2000 Hz, 3 min/axis
Altitude	15000 ft

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Temperature Cycling  
ESD Sensitivity

-55 to +85 (10 Cycles)  
ESD Sensitive Material, Transport material in Approved  
ESD bags. Handle only in ESD Workstation.

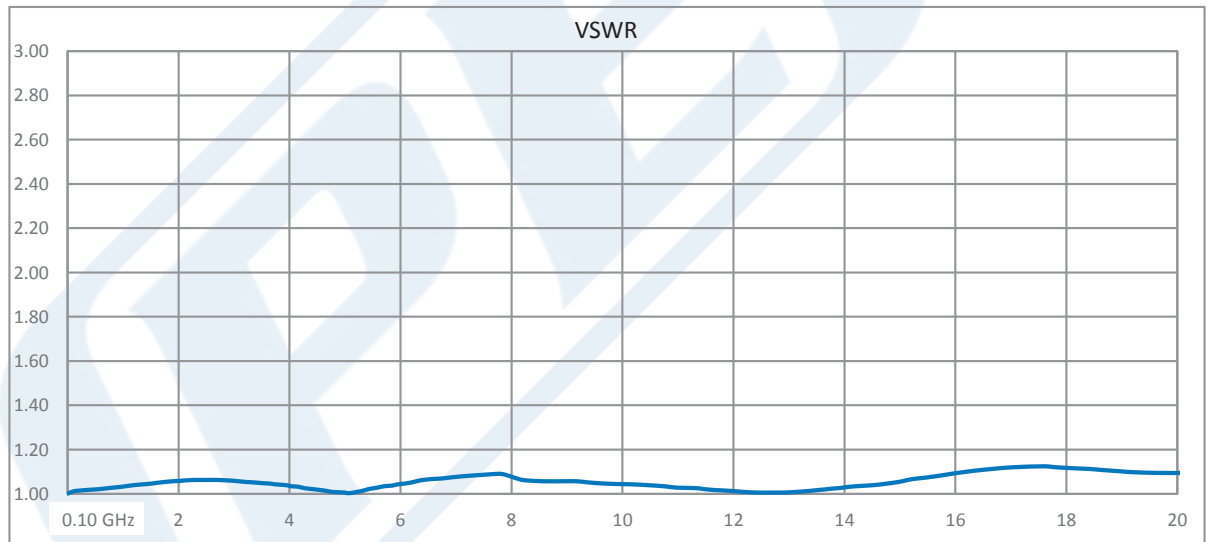


**Compliance Certifications** (see [product page](#) for current document)

**Plotted and Other Data**

Notes:

**Typical Performance Data**



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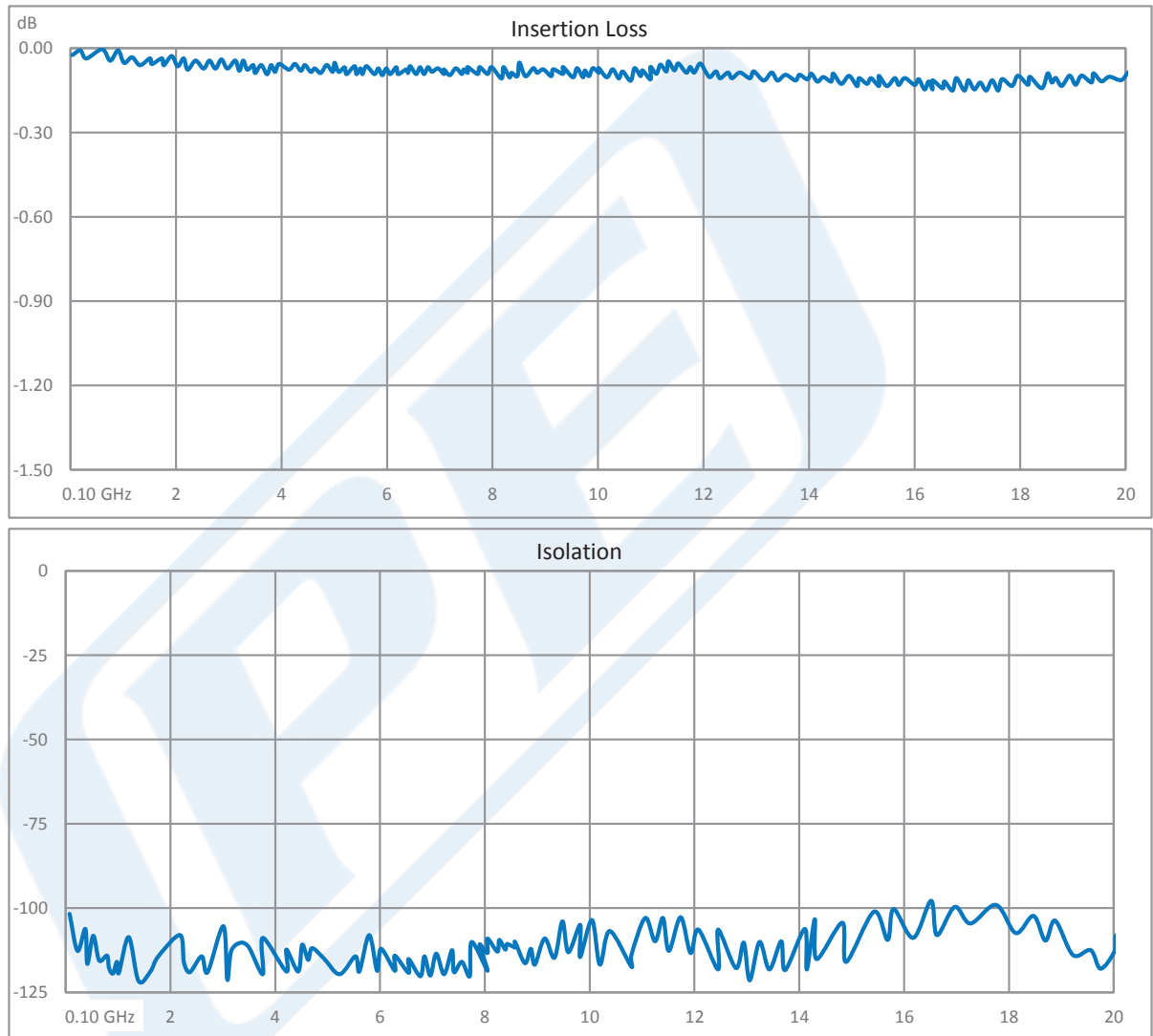




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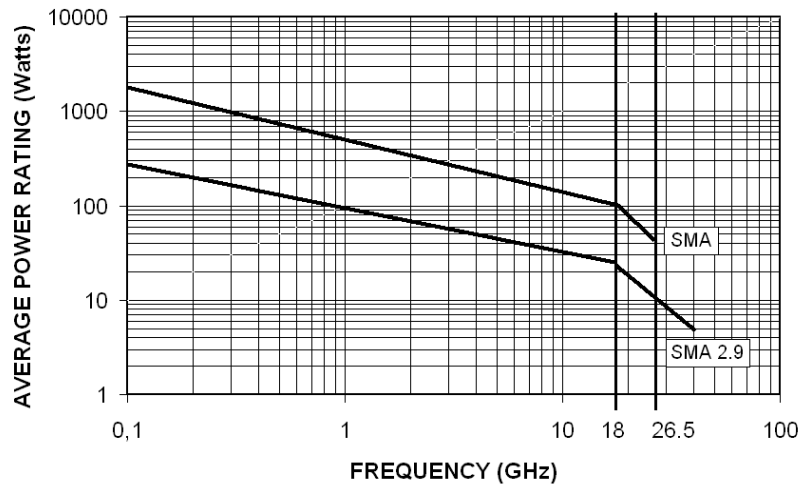
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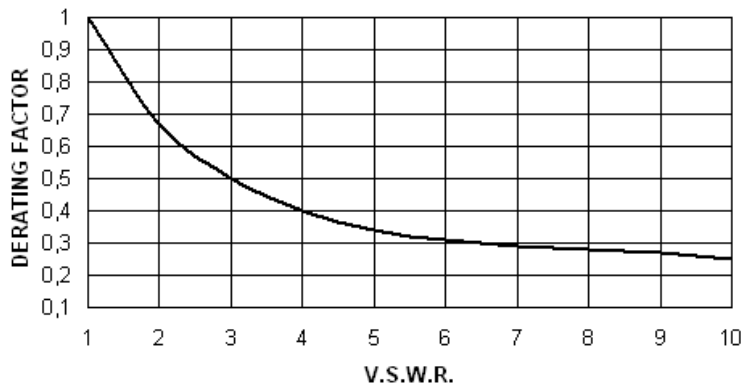
POWER RATING CHART

This graph is based on the following conditions :  
- Ambient temperature : + 25°C  
- Sea level  
- V.S.W.R. : 1 and cold switching



DERATING FACTOR VERSUS V.S.W.R.

The average power input must be reduced for load V.S.W.R. above 1.



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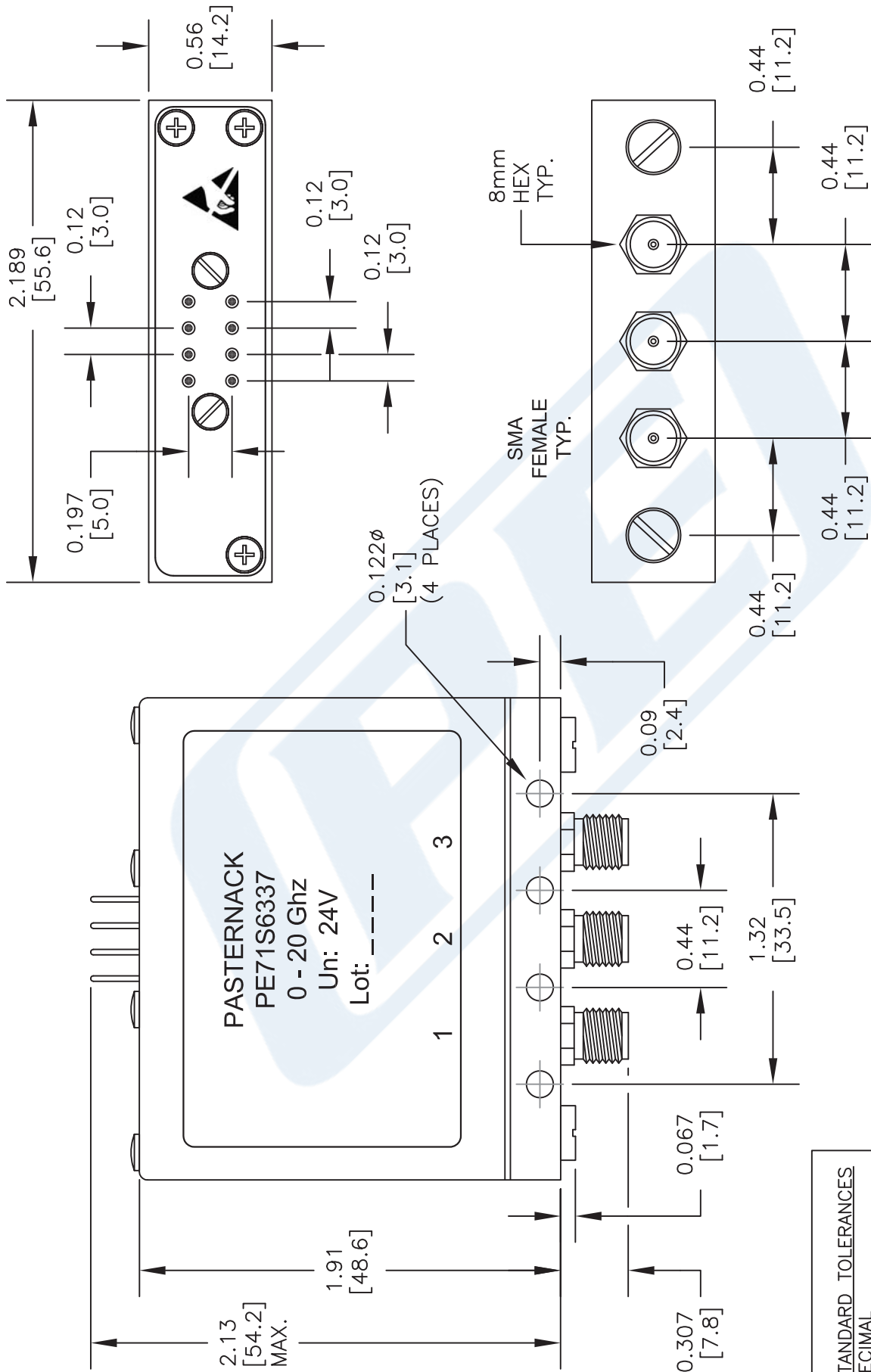
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The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements.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



# PE71S6337 CAD Drawing

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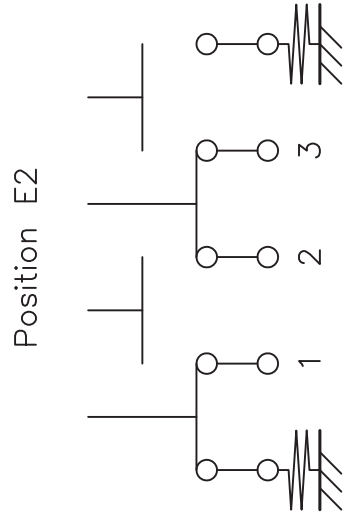
**STANDARD TOLERANCES**  
DECIMAL ±0.02

\*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES

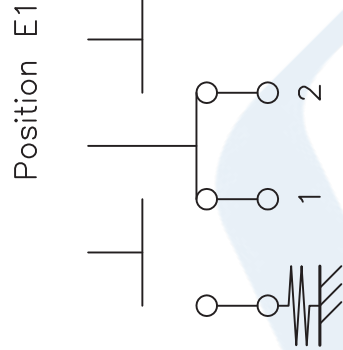
<b>DWG TITLE</b> <h2>PE71S6337</h2>		<b>NOTES:</b> 1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL. 2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME. 3. DIMENSIONS ARE IN INCHES [mm].	
<b>CAGE CODE</b> 53919		<b>CAD FILE</b> 022717	<b>SCALE</b> N/A
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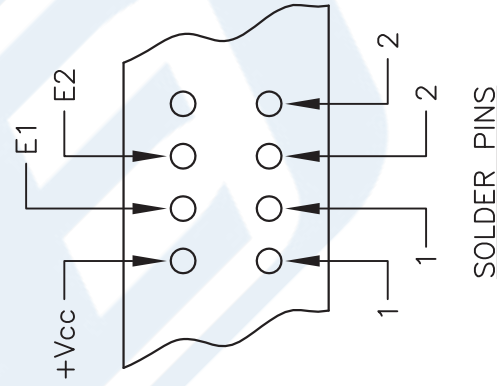
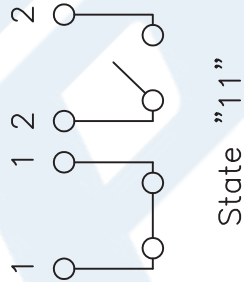
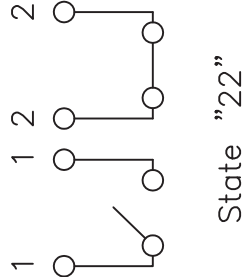
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RF SCHEMATIC  
DIAGRAM



INDICATORS  
POSITION



**Standard drive option "1" (Positive common):**

- Connect pin +Vcc to supply
- Select desired RF path by applying ground to the corresponding "Close" pin (Ex: ground pin E1 to switch to position E1. RF path 1-2 closed and RF path 2-3 open).
- To open desired path and close the new RF path, connect ground to the corresponding "Close" pin (Ex: ground pin E2 to open RF path 1-2 and close RF path 2-3).

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