



SP6T Electromechanical Relay Normally Open
Switch, DC to 12 GHz, up to 600W, 2M Lifecycles,
12V, Indicators, TTL, Suppression Diodes, N

Electromechanical Relay Switches Technical Data Sheet

PE71S6465

Features

- Single Pole Six Throw Electromechanical Relay Switch
- DC to 12 GHz Frequency Range
- Normally Open Actuator
- TTL Logic Control
- Suppression Diodes
- Indicators
- 2M Lifecycle Rating
- Insertion Loss 0.2 dB typ
- Isolation > 80 dB typ
- VSWR as low as 1.25:1 max
- +12 Volt DC Bias
- Terminal Solder Pins for DC Command Control Functions
- N Type Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 600 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 PE71S6465 is a Single Pole Six Throw (SP6T) electromechanical relay switch that operates across a wide frequency range of DC to 12 GHz and can handle up to 600 Watts of Average power in a break before make condition. The 50 Ohm design is rated for 2 million lifecycles and features a Normally Open Actuator where the selected position remains active with constant voltage, all positions are open when voltage is removed. Additional features include TTL control logic, suppression diodes which limit voltage spikes or reverse current, and indicators. Impressive typical performance includes 0.2 dB insertion loss and isolation greater than 80 dB. This switch requires +12Vdc bias voltage and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports N Type female connectors and solder terminal pins for all 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	Indicators, Solder Pins, TTL Logic
TTL Control	on: 2.4 to 5 Volts off: 0 to 0.8 Volts

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		12	GHz
Impedance		50		Ohms
Operating Voltage	11	12	13	Volts
Actuating Set Current @ 12 Volts			600	mA

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 Normally Open Switch, DC to 12 GHz, up to 600W, 2M Lifecycles, 12V, Indicators, TTL, Suppression Diodes, N PE71S6465](#)



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VSWR		1.4:1	1.7:1	
Insertion Loss		0.2	0.5	dB
Isolation	60	80		dB
Input Power (CW) (CW at 400 MHz)			1	kWatts
Switching Time			20	ms Max

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 1	1 to 4	4 to 12			GHz
VSWR, Max	1.25:1	1.4:1	1.7:1			
Insertion Loss, Max	0.3	0.4	0.5			dB
Isolation, Min	70	60	60			dB
Input Power, Max (CW)	600	300	200			Watts

Mechanical Specifications

Size

Length	2.65 in [67.31 mm]
Width/Diameter	2.5 in [63.5 mm]
Height	2.5 in [63.5 mm]
Finish	NICKEL
Package Type	Connectorized
Operating Life	2,000,000 Cycles

Connectors

RF Connector Type	N 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)

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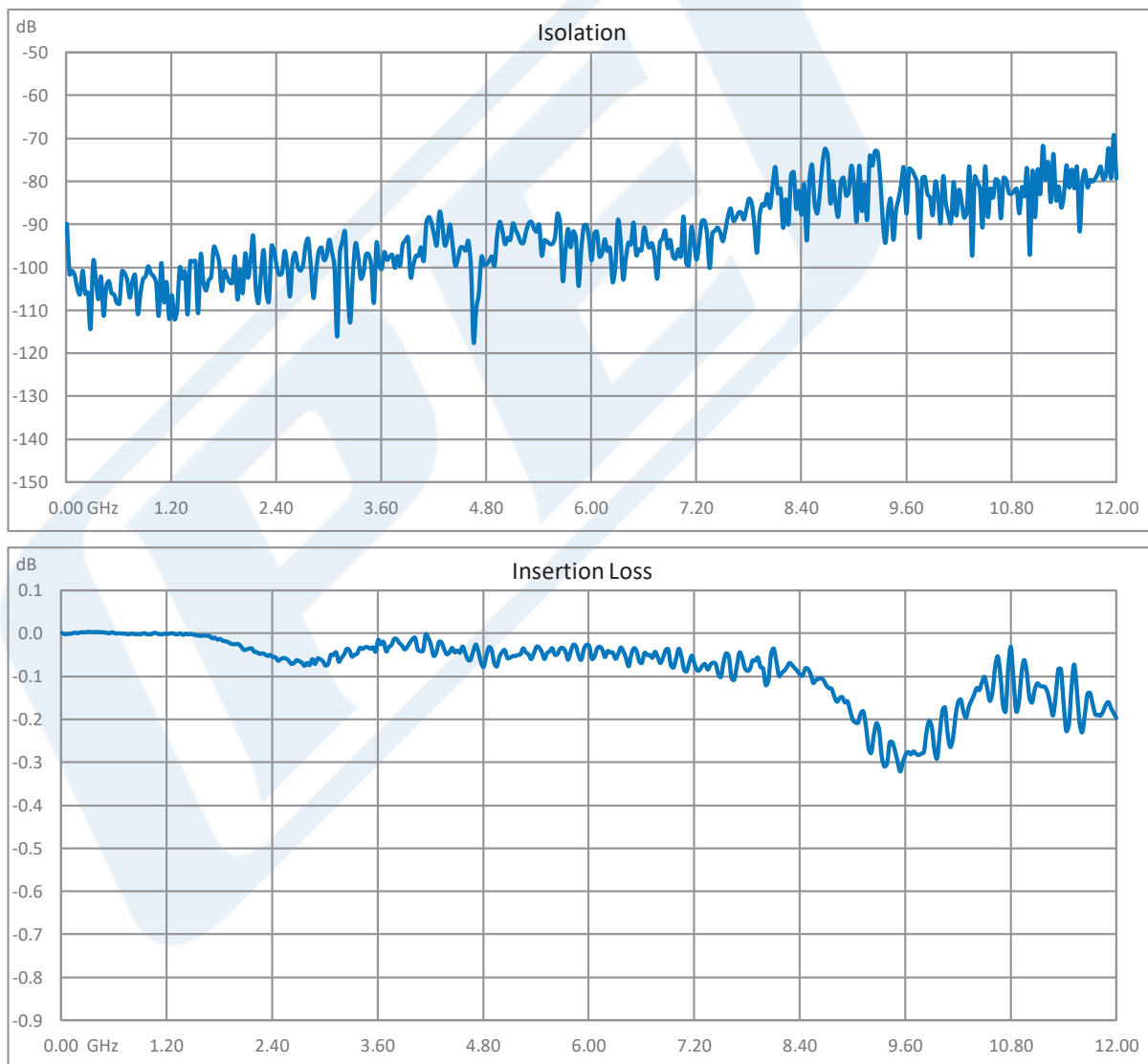
PE71S6465

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

Plotted and Other Data

Notes:

Typical Performance Data



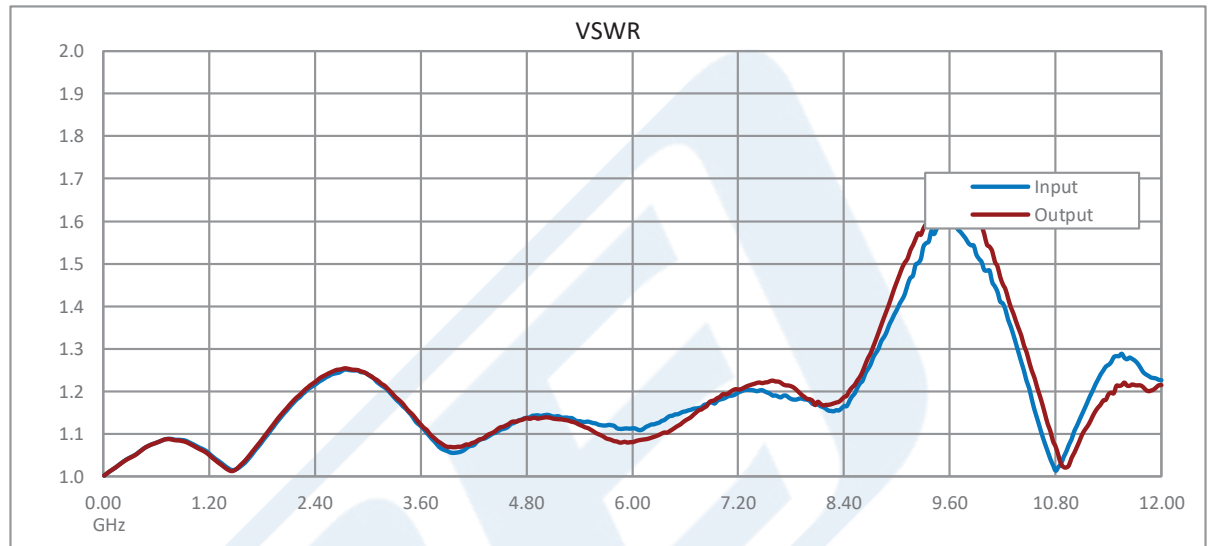
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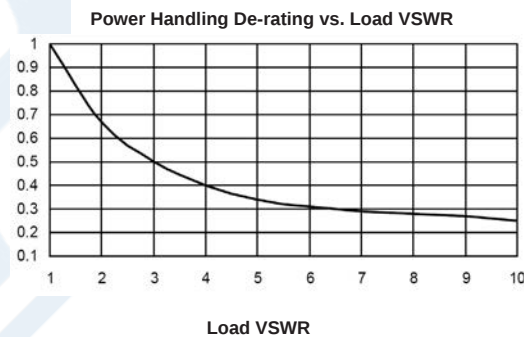
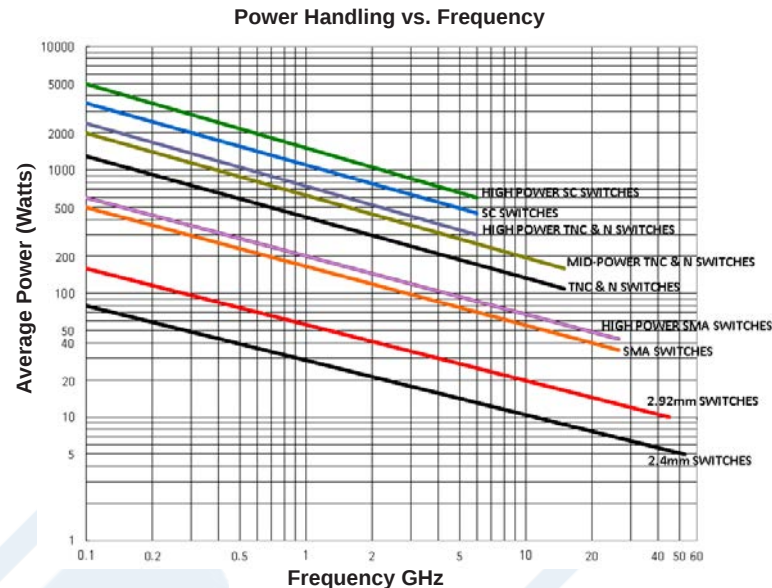
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Power Handling Chart and Derating Curves based on the following Test and Environmental Conditions:
Ambient temperature: 20 - 25°C
Altitude: Sea Level to 1,000 feet
Relative Humidity: 50 - 55%
Load VSWR: $\leq 1.20:1$
Operation: Cold Switching

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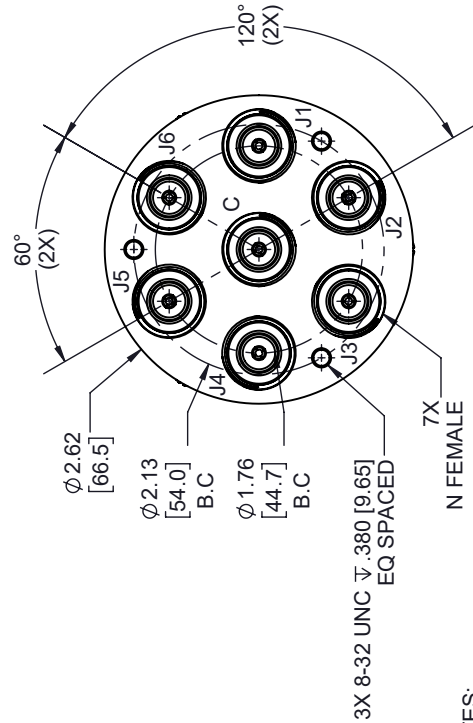
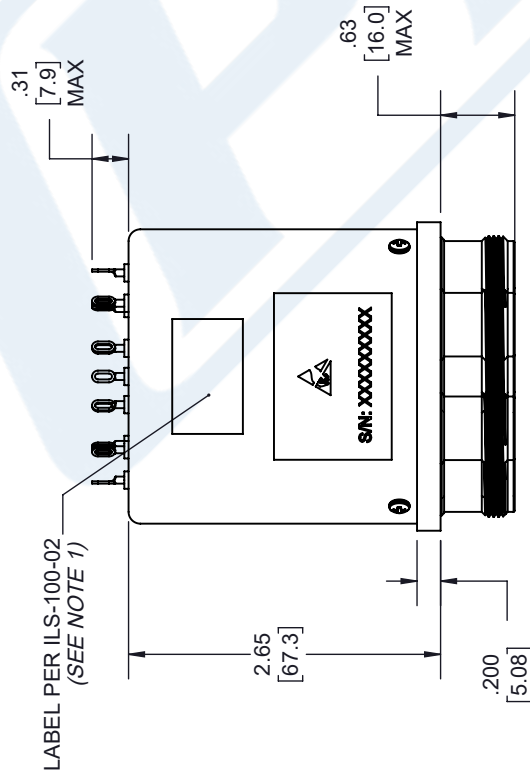
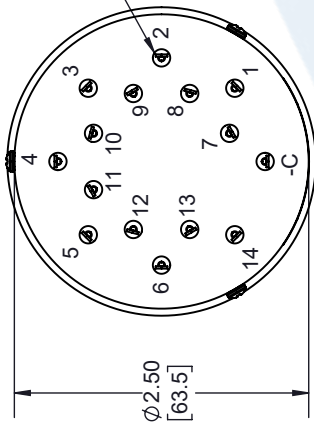
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PE71S6465 CAD Drawing

SP6T Electromechanical Relay Normally Open Switch, DC to 12 GHz, up to 600W, 2M Lifecycles, 12V, Indicators, TTL, Suppression Diodes, N

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/1/2021	T.GALLA

15X 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.

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TOLERANCES:

X = ±.2 [5.08] FRACTIONS

.XX = ±.02 [.51] ± 1/32

.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

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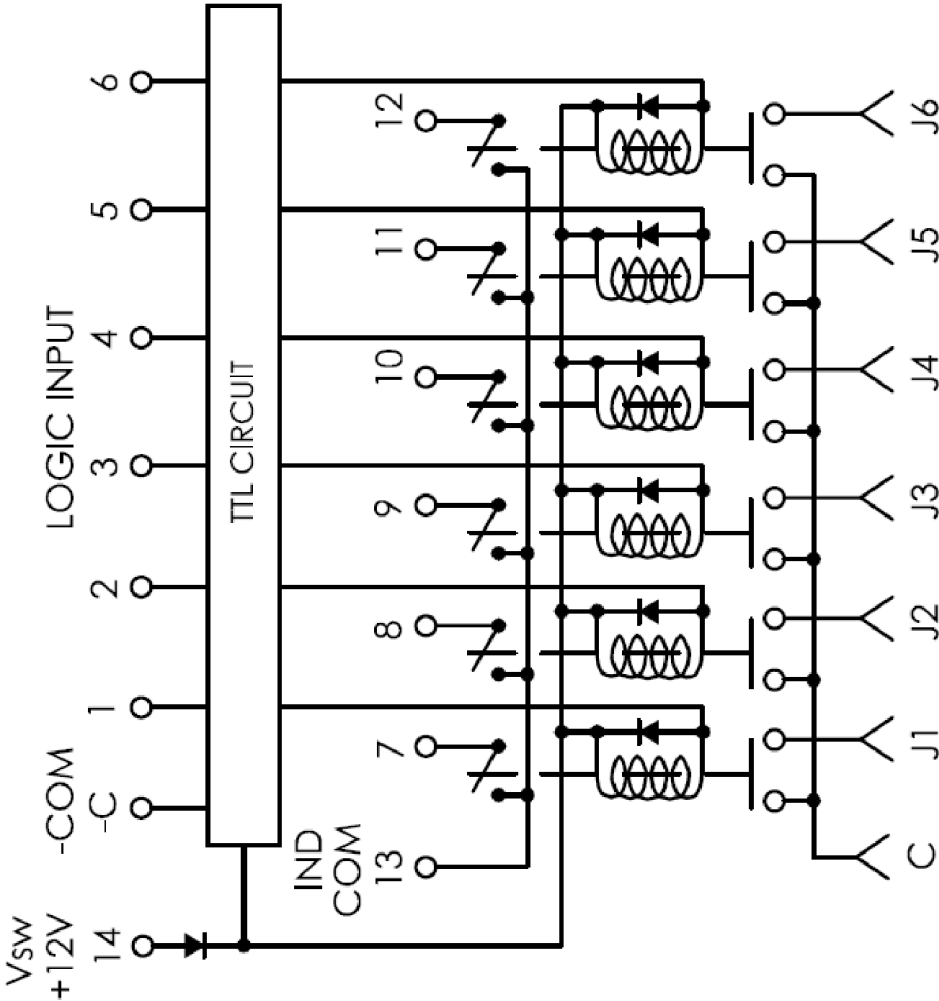
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PE71S6465 CAD Drawing

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PIN ASSIGNMENT

TERMINALS LOGIC INPUT PINS	RF PATH						INDICATOR					
	J1	J2	J3	J4	J5	J6	7	8	9	10	11	12
1 ("1")	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
2 ("1")	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
3 ("1")	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
4 ("1")	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
5 ("1")	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF
6 ("1")	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON

PIN -C. -COM
PIN 14. Vsw +12V
PIN 13. IND COM

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