



SPDT, IP64 Rated Electromechanical Relay Failsafe
 Switch, Terminated, DC to 18 GHz, 90W, 28VDC, SMA

Electromechanical Relay Switches Technical Data Sheet

PE71S6546

Features

- Single Pole Double Throw (SP2T) Ruggedized Electromechanical Relay Switch
- IP64 Level 1 Rated
- DC to 12 GHz Frequency Range
- Failsafe Actuator
- Terminated
- 2M Lifecycle Rating
- Insertion Loss 0.2 dB typ
- Isolation > 85 dB typ
- VSWR as low as 1.2:1 max
- Solder Terminal Pins for DC Control
- +28 Volt DC Bias
- SMA Female Connectors
- -54°C to +85°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 PE71S6546 is a Ruggedized Single Pole Double Throw (SP2T) electromechanical relay switch that operates across a broadband frequency range from DC to 18 GHz and can handle up to 90 Watts of average power in a break before make condition. The 50 Ohm design is IP64 compliant with a Level 1 moisture seal and specially designed to operate reliably in harsh usage environments and conditions, such as over extreme temperatures and wet or dusty environments. Intrusion protection offers full protection against dust and other particulates. Moisture protection enables resistance to splashes in all directions. The switch has a Failsafe actuator and is rated for 2 million lifecycles. The output ports are terminated in 50 ohms when switched in the isolation (off) state. Impressive typical performance includes 0.2 dB insertion loss and isolation greater than 85 dB. The switch requires +28 Vdc bias voltage and operates over a wide temperature range of -54°C to +85°C. The rugged and compact package assembly supports SMA female connectors and solder terminal pins for DC control. 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 SPDT
 Actuator Type Failsafe

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		18	GHz
Impedance		50		Ohms
Operating Voltage	26	28	30	Volts
Actuating Set Current			200	mA
VSWR		1.1:1	1.4:1	
Insertion Loss		0.2	0.4	dB

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SPDT, IP64 Rated Electromechanical Relay Failsafe Switch, Terminated, DC to 18 GHz, 90W, 28VDC, SMA PE71S6546](#)



SPDT, IP64 Rated Electromechanical Relay Failsafe
Switch, Terminated, DC to 18 GHz, 90W, 28VDC, SMA

Electromechanical Relay Switches Technical Data

PE71S6546

Isolation	65	90	dB
Switching Time		<20	ms Typ

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 6	6 to 12	12 to 18			GHz
VSWR, Max	1.2:1	1.3:1	1.4:1			
Insertion Loss, Max	0.15	0.25	0.4			dB
Isolation, Min	85	70	65			dB

Mechanical Specifications

Size

Length	2.05 in [52.07 mm]
Width/Diameter	1.5 in [38.1 mm]
Height	0.52 in [13.21 mm]
Weight	0.068 lbs [30.84 g]

Connectors

RF Connector Type	Terminal Female
Control Connector	Solder Terminals

Environmental Specifications

Temperature

Operating Range	-54 to +85 deg C
Storage Range	-55 to +100 deg C

Ingress Protection (IP) Rating	IP64
Shock	MIL-STD-202 Method 213, Condition D, 500 G (non oper)
Vibration	MIL-STD-202 Method 204, 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: [SPDT, IP64 Rated Electromechanical Relay Failsafe Switch, Terminated, DC to 18 GHz, 90W, 28VDC, SMA PE71S6546](#)

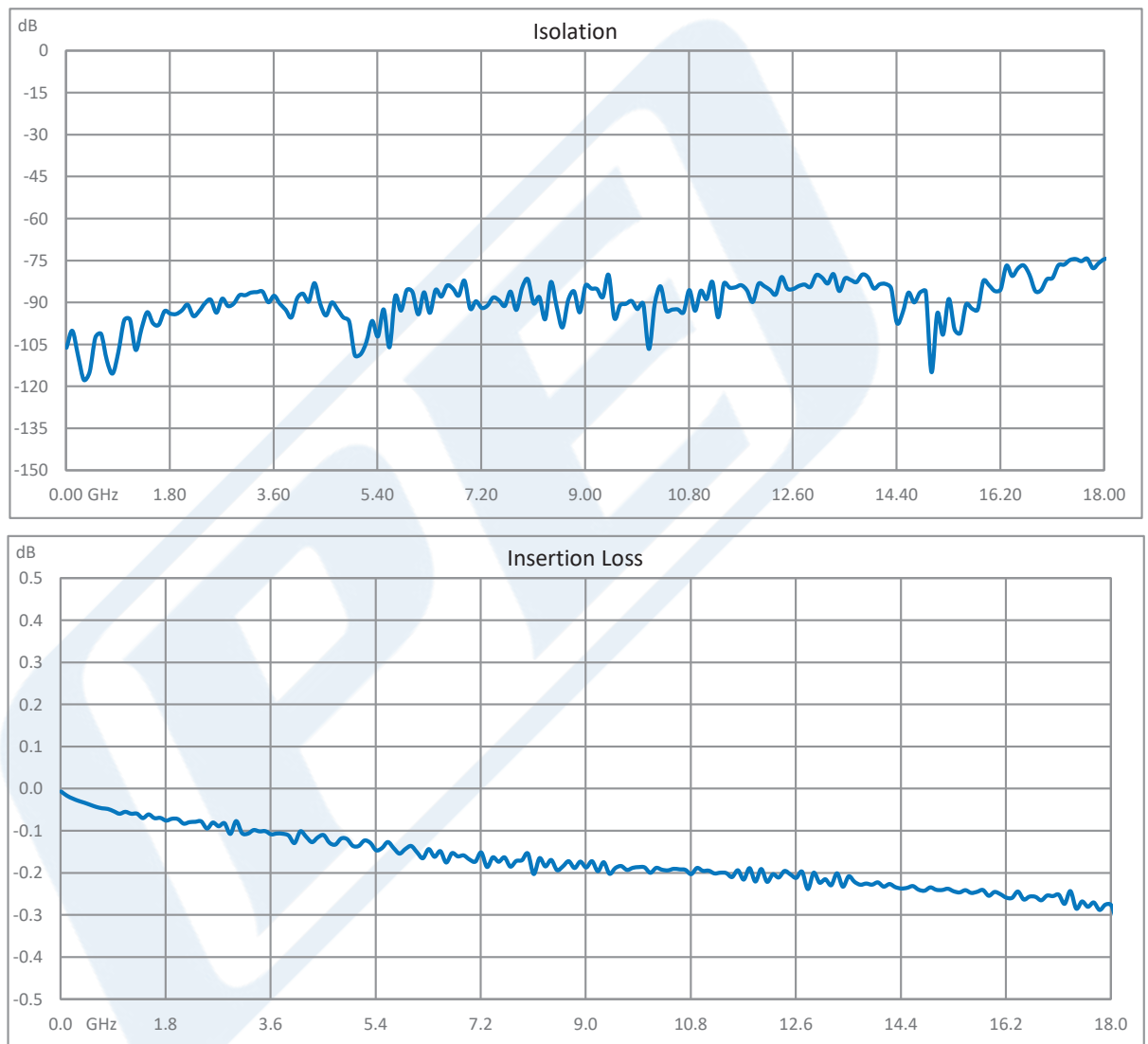


SPDT, IP64 Rated Electromechanical Relay Failsafe
Switch, Terminated, DC to 18 GHz, 90W, 28VDC, SMA

Electromechanical Relay Switches Technical Data

PE71S6546

Typical Performance Data



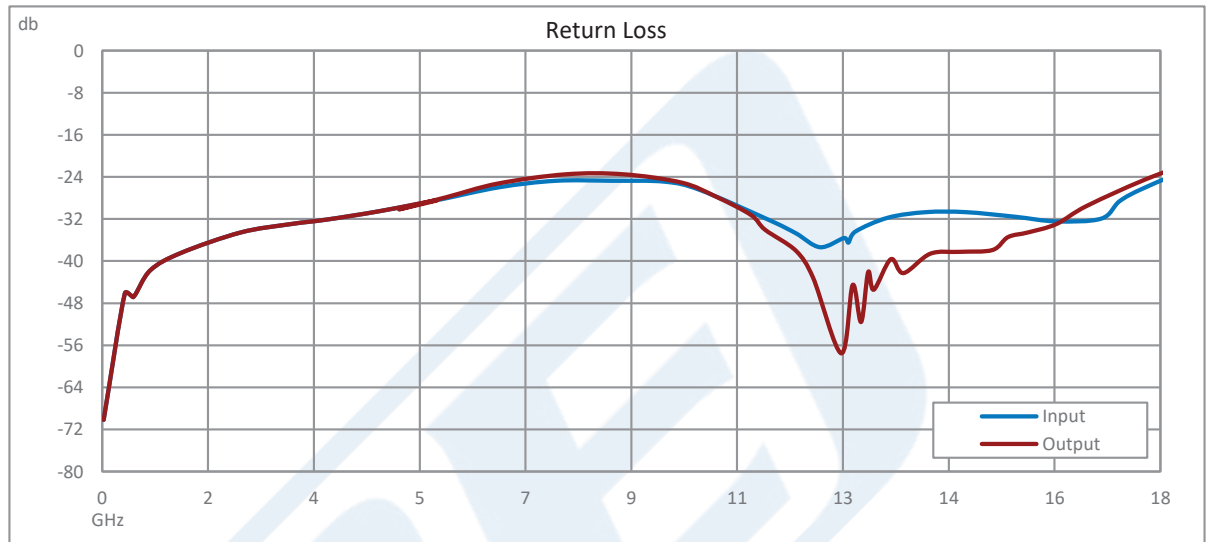
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SPDT, IP64 Rated Electromechanical Relay Failsafe Switch, Terminated, DC to 18 GHz, 90W, 28VDC, SMA PE71S6546](#)



SPDT, IP64 Rated Electromechanical Relay Failsafe
Switch, Terminated, DC to 18 GHz, 90W, 28VDC, SMA

Electromechanical Relay Switches Technical Data

PE71S6546



Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SPDT, IP64 Rated Electromechanical Relay Failsafe Switch, Terminated, DC to 18 GHz, 90W, 28VDC, SMA PE71S6546](#)

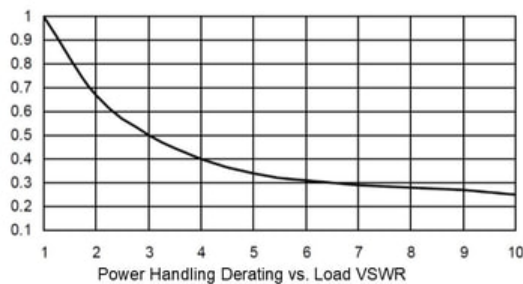


SPDT, IP64 Rated Electromechanical Relay Failsafe
Switch, Terminated, DC to 18 GHz, 90W, 28VDC, SMA

Electromechanical Relay Switches Technical Data

PE71S6546

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

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SPDT, IP64 Rated Electromechanical Relay Failsafe Switch, Terminated, DC to 18 GHz, 90W, 28VDC, SMA PE71S6546](#)



SPDT, IP64 Rated Electromechanical Relay Failsafe
Switch, Terminated, DC to 18 GHz, 90W, 28VDC, SMA

Electromechanical Relay Switches Technical Data

PE71S6546

SPDT, IP64 Rated Electromechanical Relay Failsafe Switch, Terminated, DC to 18 GHz, 90W, 28VDC, SMA 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.

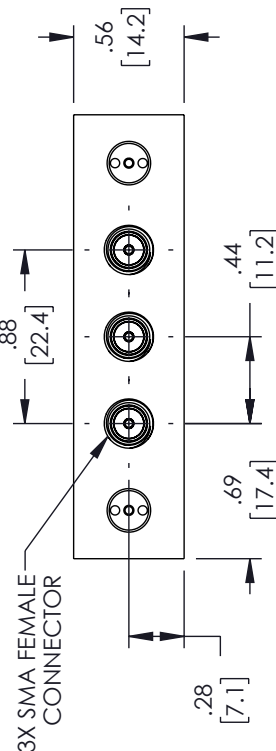
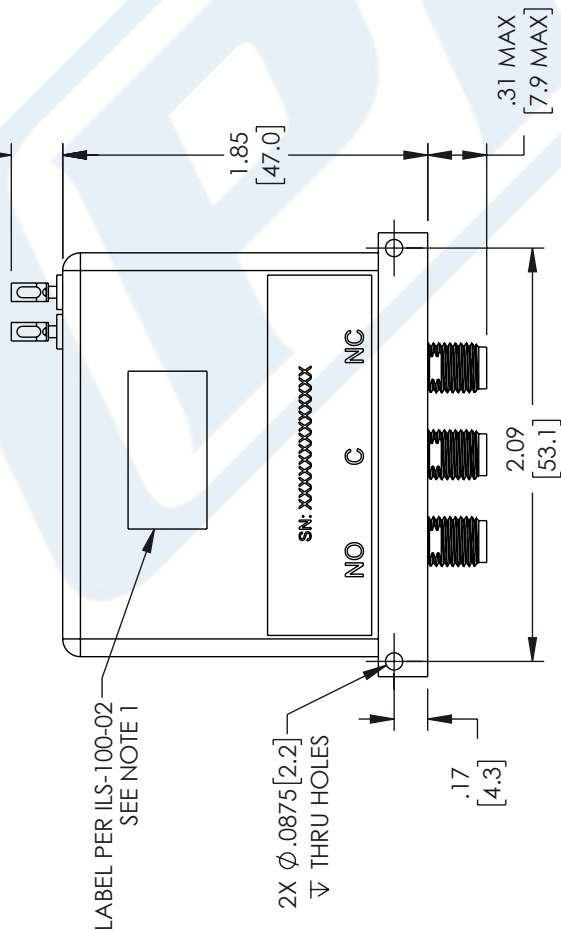
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SPDT, IP64 Rated Electromechanical Relay Failsafe Switch, Terminated, DC to 18 GHz, 90W, 28VDC, SMA PE71S6546](#)

URL: <https://www.pasternack.com/spdt-electromechanical-relay-failsafe-switch-18-ghz-pe71s6546-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.

SPDT, IP64 Rated Electromechanical Relay Failsafe Switch, Terminated, DC to 18 GHz, 90W, 28VDC, SMA

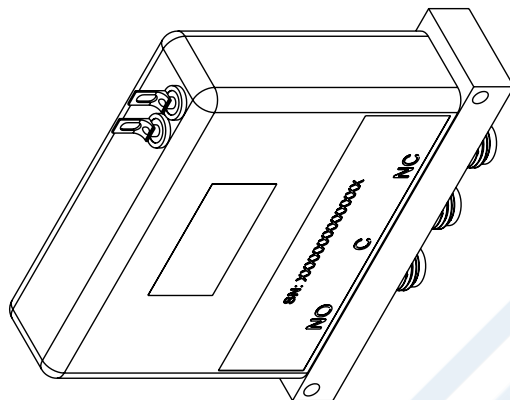
REVISION					
ZONE	REV.	DESCRIPTION	DATE	CHANGED BY	APPROVED BY
	A	INITIAL RELEASE	02/07/2023	DMAY	TGALLA



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

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF INFINITE ELECTRONICS, INC. ANY REPRODUCTION IN WHOLE OR PART WITHOUT THE WRITTEN PERMISSION OF INFINITE ELECTRONICS, INC. IS PROHIBITED.

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.



TOLERANCES:		
$X = \pm 2$	$[.5]$	FRACTIONS
$XX = \pm .02$	$[.5]$	$+1/32$
$XXX = \pm .005$	$[.13]$	ANGLES $\pm 1^\circ$

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. ALL DIMENSIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

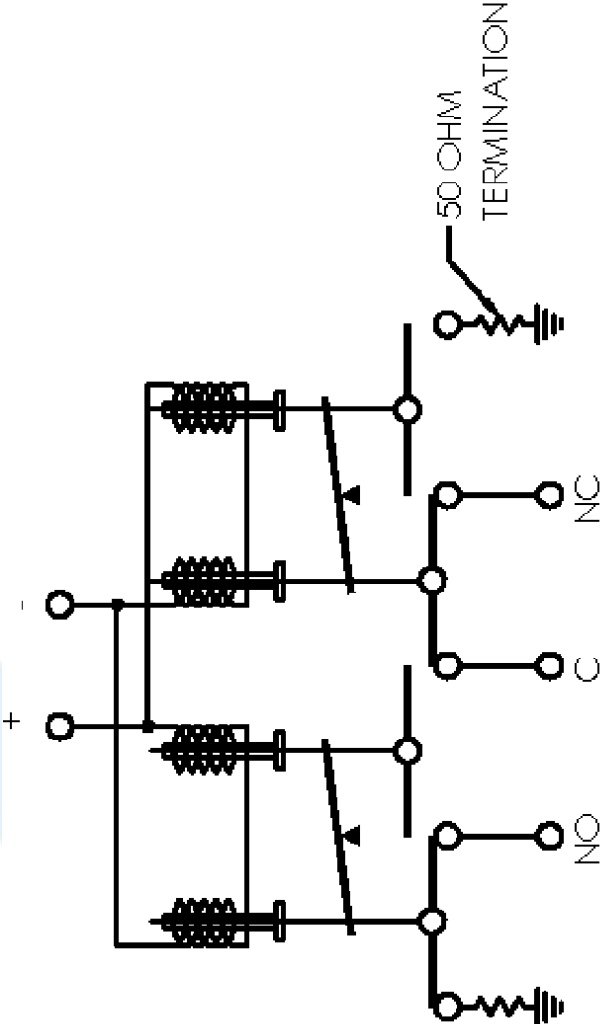
(PE) PASTERNAK®
an INFINITO brand

Website: www.Pasternack.com
Phone: 1.866.727.8376 | 1.949.261.1920

DESCRIPTION

SPDT, TERMINATION, SMA, FAILSAFE, 18GHZ, 28VDC, SOLDER
TERMINAL, RUGGEDIZED

SIZE	CAGE CODE	DRAWN BY	ITEM NO.	REV
A	53919	DMAY	PE71S6546	A



SCHEMATIC (FAILSAFE POSITION)

 an INFINITI® brand Website: www.Pasternack.com Phone: 1.866.727.8376 1.949.261.1920	INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5	
	SCALE	SHEET
	NONE	2 OF 2
DESCRIPTION		
SPDT, TERMINATION, SMA, FAILSAFE, 18GHz, 28VDC, SOLDER TERMINAL, RUGGEDIZED		
SIZE	CAGE CODE	ITEM NO.
A	53919	PE71S6546
REV	DRAWN BY	REV
A	DMAY	A

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

TOLERANCES:

X = ±.2	[.5]	FRACTIONS
.XX = ±.02	[.5]	± 1/32
.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

ALL DIMENSIONS ARE FOR REFERENCE ONLY
AND SUBJECT TO CHANGE WITHOUT NOTICE

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF INFINITE ELECTRONICS, INC. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF INFINITE ELECTRONICS, INC. IS PROHIBITED.
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.