



## Transfer Electromechanical Relay Failsafe Switch, DC to 18 GHz, up to 90W, 12V, SMA

### Electromechanical Relay Switches Technical Data Sheet

PE71S6388

#### Features

- Transfer (DPDT)
- DC to 18 GHz Frequency Range
- Isolation greater than 70 dB typical
- 2M Cycle Min Operating Life
- +12 Volt DC
- 90 Watt average Power
- Failsafe Actuator
- -25 to +70°C Operating Temperature
- Insertion Loss as low as 0.2 dB Max
- VSWR as low as 1.2:1 max
- SMA Female RF connectors
- 9 Pin D-Sub Connector for DC Control
- Hot Switching Capability - Consult Factory
- S-Parameter Data available upon request

#### Applications

- High Performance Relay Switch
- Military Communications
- Communications Systems
- Test & Measurement

#### Description

The PE71S6388 is a Transfer (DPDT) electromechanical relay switch that operates across a wide frequency range of DC to 18 GHz and can handle up to 90 Watts of CW input power in a break before make condition. The design features a Failsafe actuator and is rated for 2M life cycles for high reliability operation. Impressive performance includes insertion loss less than 0.2 dB typical and isolation greater than 70 dB typical. The Failsafe actuator has a +12 Vdc bias voltage, and operates over a temperature range of -25°C to +70°C. The rugged and compact package assembly supports SMA Female connectors and a 9 Pin D-Sub Connector 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

Switch Type	Transfer
Actuator Type	Failsafe
Switching Sequence	Break before Make

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		18	GHz
Impedance		50		Ohms
Operating Voltage	11	12	13	Volts
Actuating Set Current @ 12 Volts		200		mA
VSWR		1.2:1	1.4:1	
Insertion Loss		0.2	0.5	dB
Isolation	60	70		dB
Input Power (CW)			60	Watts
Switching Time			20	ms Max

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Transfer Electromechanical Relay Failsafe Switch, DC to 18 GHz, up to 90W, 12V, SMA PE71S6388](#)



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### 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	0.2	0.3	0.5			dB
Isolation, Min	70	60	60			dB
Input Power, Typ (CW)	90	75	60			Watts

### Mechanical Specifications

#### Size

Body Material and Plating

Aluminum

Package Type

Connectorized

Operating Life

2,000,000 Cycles

#### Connectors

RF Connector Type

SMA Female

RF Connector Contact Material and Plating

Beryllium Copper, Gold

RF Connector Body Material and Plating

Aluminum, Nickel

Control Connector

9-Pin D-Subminiature

### Environmental Specifications

#### Temperature

Operating Range

-25 to +70 deg C

Storage Range

-55 to +100 deg C

Shock

MIL-STD-202 Method 213, Cond. D 500G Non Operating

Vibration

MIL-STD-202 Method 214, Cond. D 10G RMS Non Operating

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

### Plotted and Other Data

Notes:

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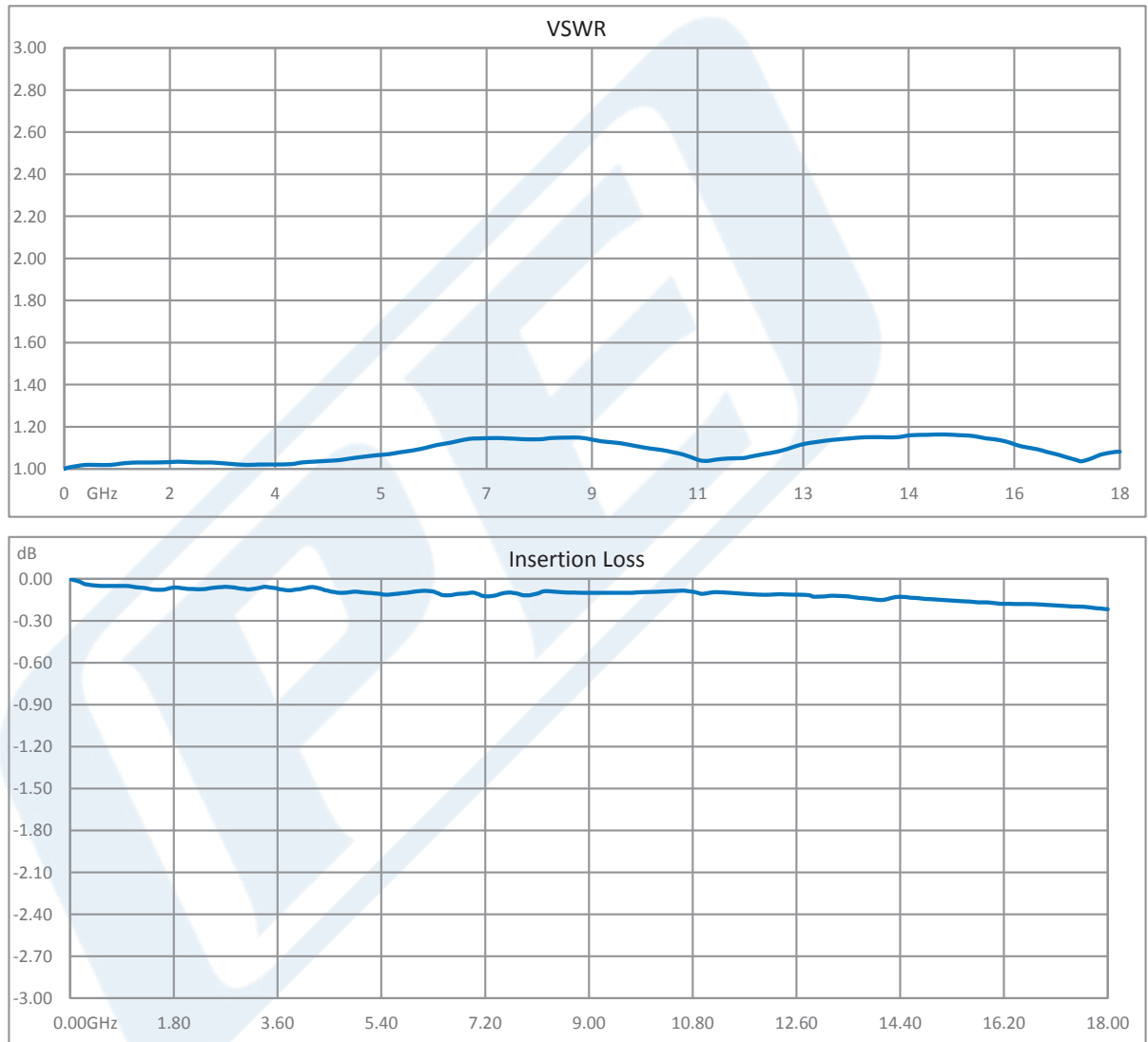


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Electromechanical Relay Switches Technical Data

PE71S6388

Typical Performance Data



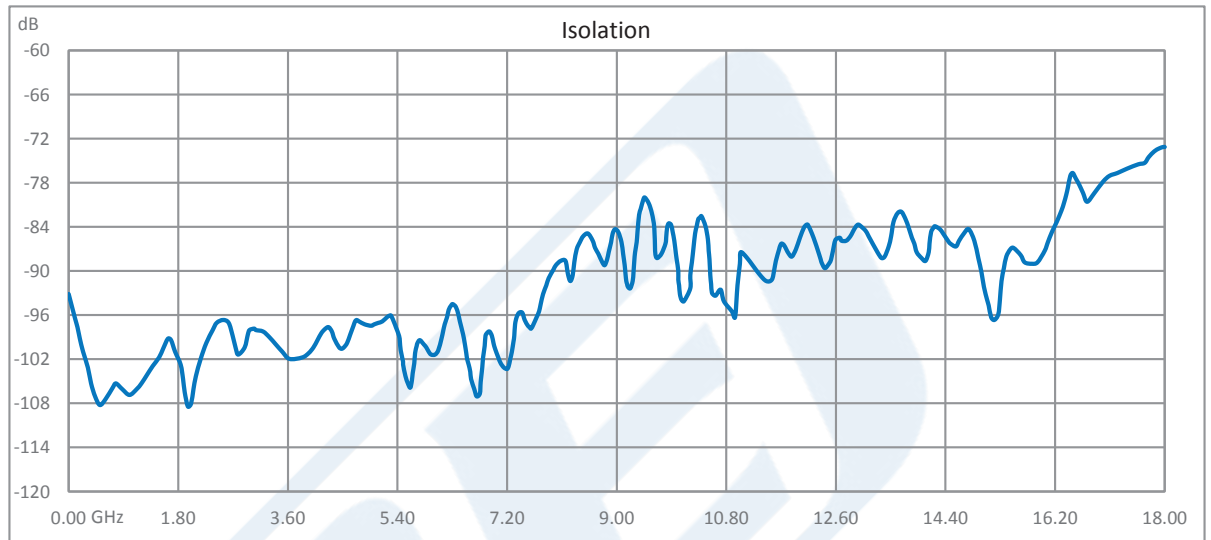
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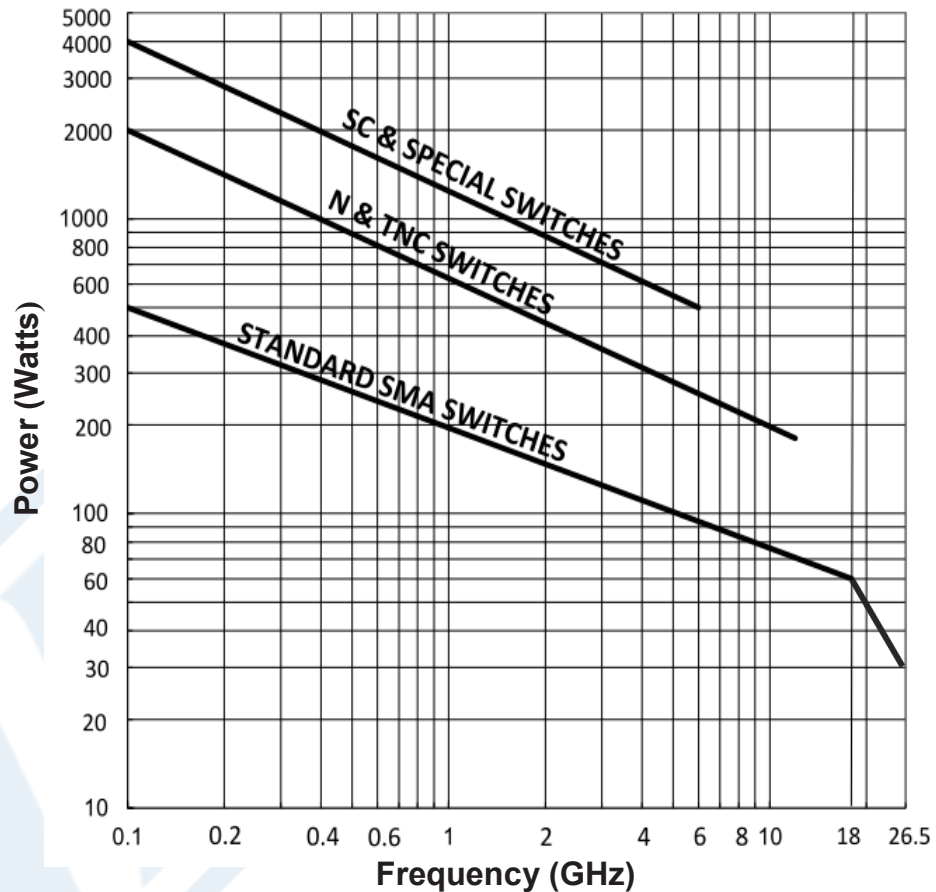


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**Power Handling vs. Frequency & Connector Type**



**Environmental and Test Conditions:**

- Ambient temperature of 25°C or less
- Altitude: Sea Level
- Load VSWR: 1.20:1 max.
- Cold Switching

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## Electromechanical Relay Switches Technical Data

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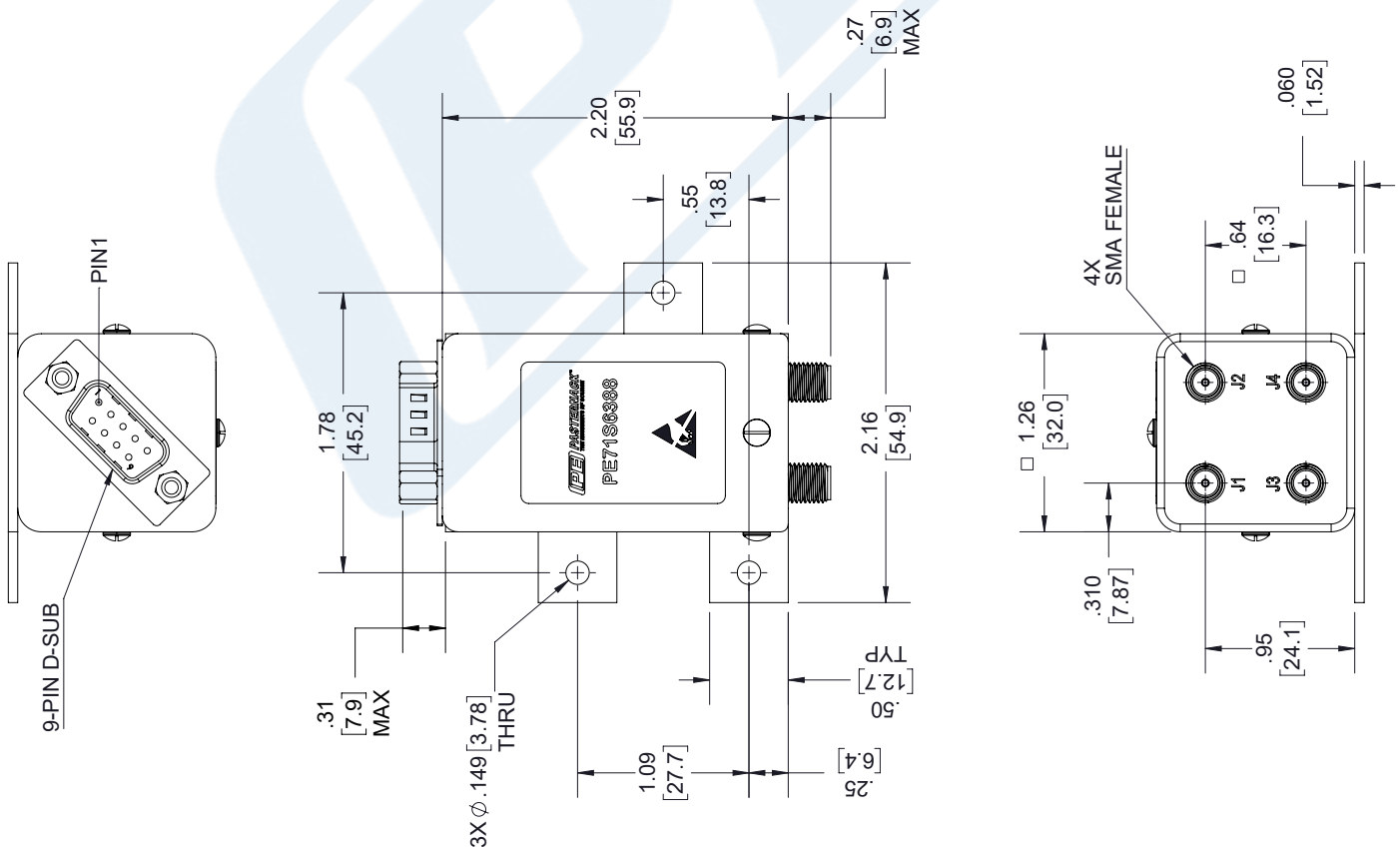
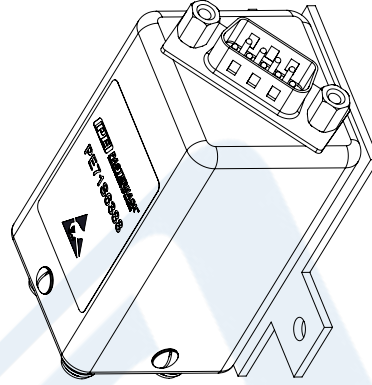
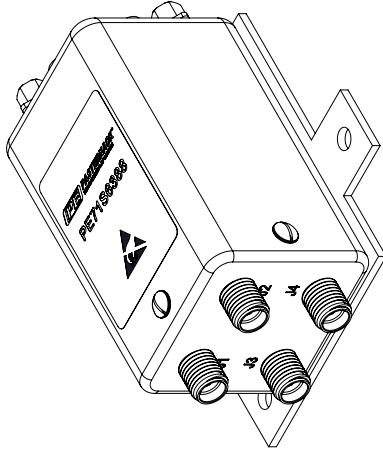
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# PE71S6388 CAD Drawing

Transfer Electromechanical Relay Failsafe Switch, DC to 18 GHz, up to 90W, 12V, SMA

REV.	DESCRIPTION	DATE	APPROVED
1	PCR PE71S6388	6/10/2021	T. GALLA

REVISIONS



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

TOLERANCES:

.X = ±.2 [5.08] | FRACTIONS ±.132  
 .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%L / -0

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

**THIRD-ANGLE PROJECTION**

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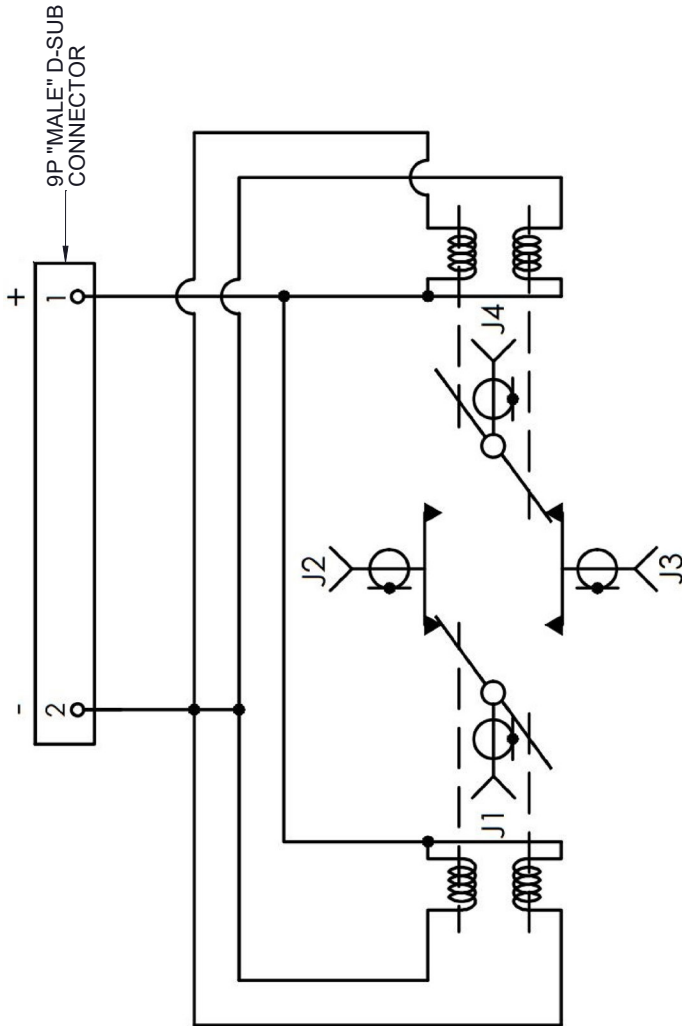
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SIZE A CAGE CODE 53919 DRAWN BY K.Dang REV A

# PE71S6388 CAD Drawing

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## SCHEMATIC SHOWN IN FAILSAFE POSITION

VOLTAGE	RF PATH
DE-ENERGIZED	J1-J2, J3-J4
ENERGIZED	J1-J3, J2-J4

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LEADING DIMENSIONS ARE INCHES  
DIMENSIONS IN [ ] ARE MILLIMETERS

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