



Transfer Electromechanical Relay Failsafe Switch,
DC to 40 GHz, up to 10W, 2M Lifecycles, 12V,
Indicators, TTL, Suppression Diodes, 2.92mm

Electromechanical Relay Switches Technical Data Sheet

PE71S6451

Features

- Transfer Electromechanical Relay Switch
- DC to 40 GHz Frequency Range
- Failsafe Actuator
- TTL Logic Control
- Suppression Diodes
- Indicators
- 2M Lifecycle Rating
- Insertion Loss 0.6 dB typ
- Isolation > 80 dB typ
- VSWR as low as 1.2:1 max
- +12 Volt DC Bias
- Solder Terminal Pins for DC Command Control
- 2.92mm Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 10 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 PE71S6451 is a Transfer electromechanical relay switch that operates across a wide frequency range of DC to 40 GHz and can handle up to 10 Watts of Average power in a break before make condition. The 50 Ohm design features a Failsafe Actuator and is rated for 2 million lifecycles. Additional features include TTL control logic, suppression diodes which limit voltage spikes or reverse current, and indicators. Impressive typical performance includes 0.6 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 2.92mm 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	DPDT
Actuator Type	Failsafe
Switching Sequence	Break Before Make
Actuator Options	Indicators, 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		40	GHz
Impedance		50		Ohms
Operating Voltage	11	12	13	Volts
Actuating Set Current @ 12 Volts			800	mA
VSWR		1.4:1	1.8:1	

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 40 GHz, up to 10W, 2M Lifecycles, 12V, Indicators, TTL, Suppression Diodes, 2.92mm PE71S6451](#)



Transfer Electromechanical Relay Failsafe Switch,
DC to 40 GHz, up to 10W, 2M Lifecycles, 12V,
Indicators, TTL, Suppression Diodes, 2.92mm

Electromechanical Relay Switches Technical Data

PE71S6451

Insertion Loss		0.6	1	dB
Isolation	50	80		dB
Switching Time			20	ms Max

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 6	6 to 12.4	12.4 to 26.5	26.5 to 40		GHz
VSWR, Max	1.2:1	1.3:1	1.4:1	1.8:1		
Insertion Loss, Max	0.2	0.4	0.7	1		dB
Isolation, Min	85	80	65	50		dB

Mechanical Specifications

Size

Length	2 in [50.8 mm]
Width/Diameter	1.26 in [32 mm]
Height	1.26 in [32 mm]
Finish	NICKEL
Package Type	Connectorized
Operating Life	2,000,000 Cycles

Connectors

RF Connector Type	2.92mm Female
-------------------	---------------

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:

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 40 GHz, up to 10W, 2M Lifecycles, 12V, Indicators, TTL, Suppression Diodes, 2.92mm PE71S6451](#)

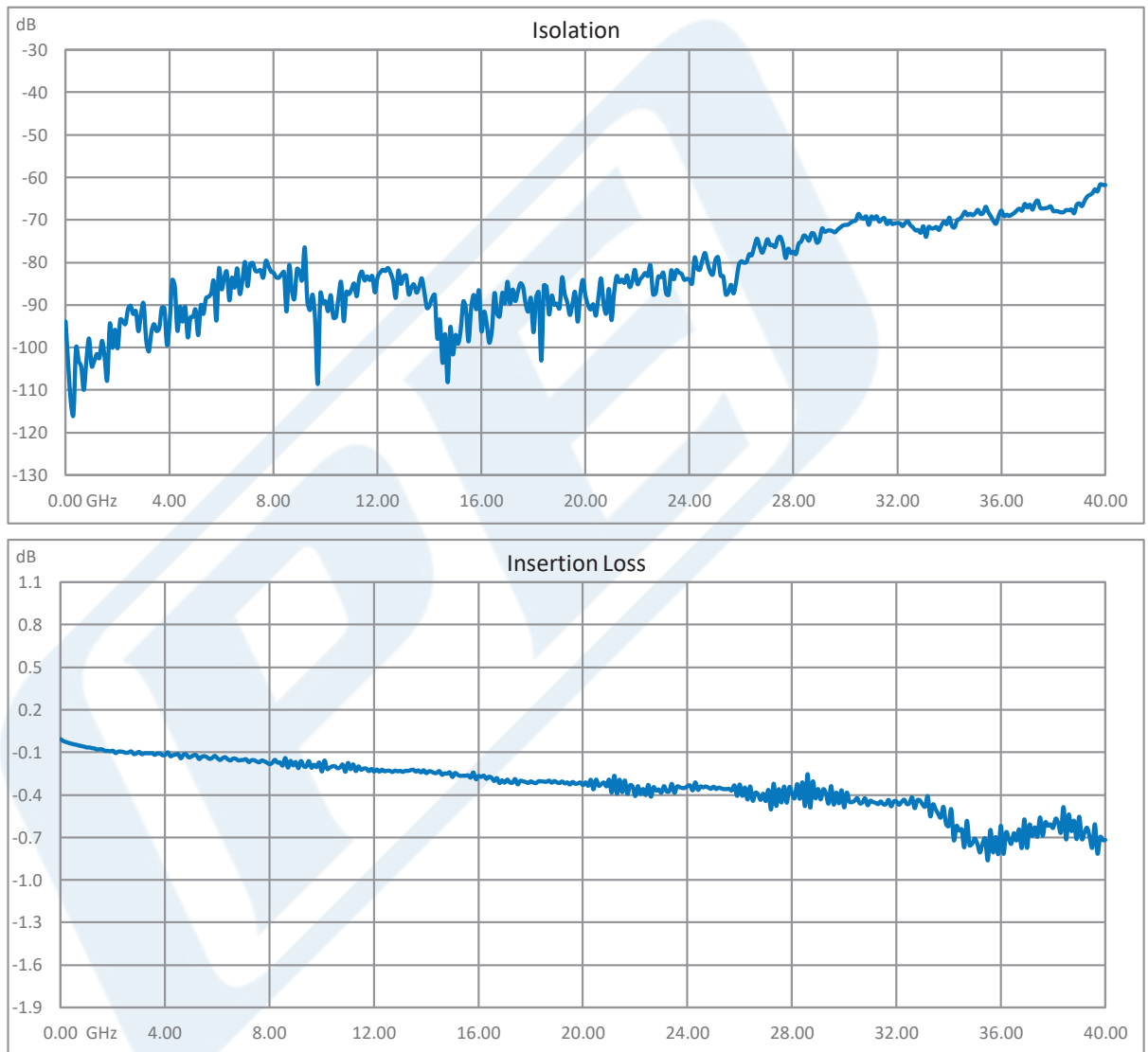


Transfer Electromechanical Relay Failsafe Switch,
DC to 40 GHz, up to 10W, 2M Lifecycles, 12V,
Indicators, TTL, Suppression Diodes, 2.92mm

Electromechanical Relay Switches Technical Data

PE71S6451

Typical Performance Data



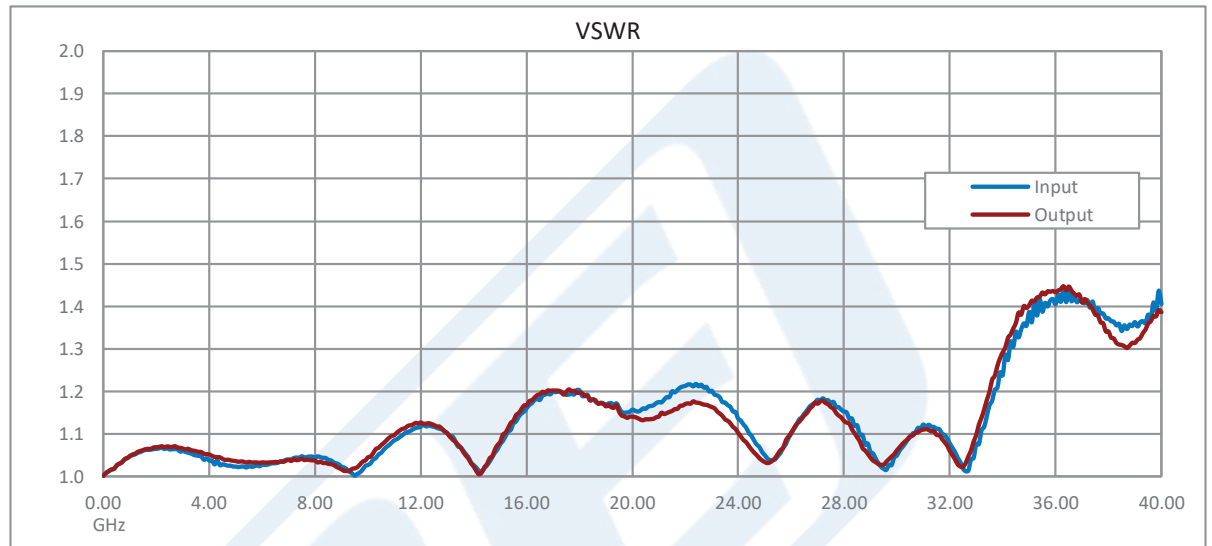
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Transfer Electromechanical Relay Failsafe Switch, DC to 40 GHz, up to 10W, 2M Lifecycles, 12V, Indicators, TTL, Suppression Diodes, 2.92mm PE71S6451](#)



Transfer Electromechanical Relay Failsafe Switch,
DC to 40 GHz, up to 10W, 2M Lifecycles, 12V,
Indicators, TTL, Suppression Diodes, 2.92mm

Electromechanical Relay Switches Technical Data

PE71S6451



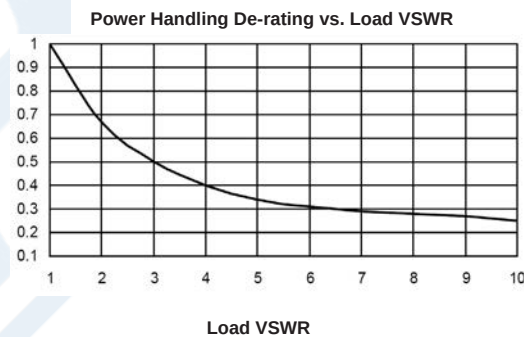
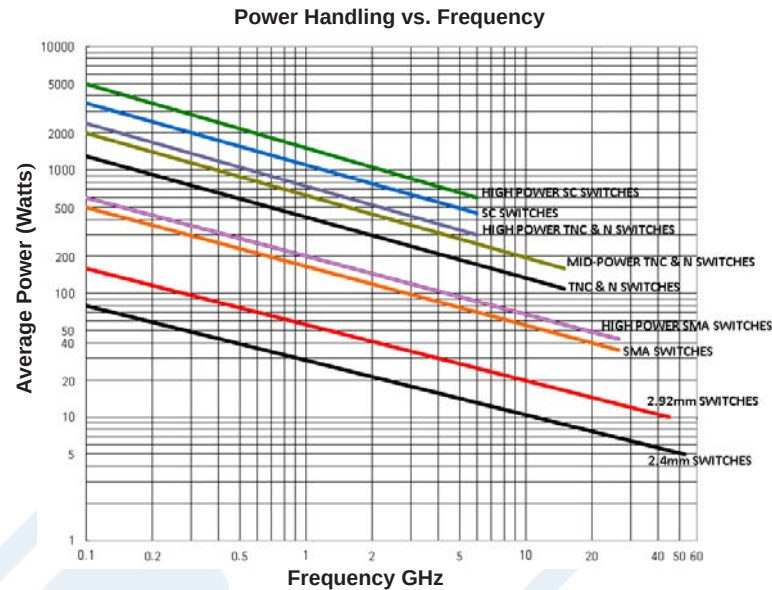
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Transfer Electromechanical Relay Failsafe Switch, DC to 40 GHz, up to 10W, 2M Lifecycles, 12V, Indicators, TTL, Suppression Diodes, 2.92mm PE71S6451](#)



Transfer Electromechanical Relay Failsafe Switch,
DC to 40 GHz, up to 10W, 2M Lifecycles, 12V,
Indicators, TTL, Suppression Diodes, 2.92mm

Electromechanical Relay Switches Technical Data

PE71S6451



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

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 40 GHz, up to 10W, 2M Lifecycles, 12V, Indicators, TTL, Suppression Diodes, 2.92mm PE71S6451](#)



Transfer Electromechanical Relay Failsafe Switch,
DC to 40 GHz, up to 10W, 2M Lifecycles, 12V,
Indicators, TTL, Suppression Diodes, 2.92mm

Electromechanical Relay Switches Technical Data

PE71S6451

Transfer Electromechanical Relay Failsafe Switch, DC to 40 GHz, up to 10W, 2M Lifecycles, 12V, Indicators, TTL, Suppression Diodes, 2.92mm 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: [Transfer Electromechanical Relay Failsafe Switch, DC to 40 GHz, up to 10W, 2M Lifecycles, 12V, Indicators, TTL, Suppression Diodes, 2.92mm PE71S6451](https://www.pasternack.com/dpdt-electromechanical-relay-failsafe-switch-40-ghz-12v-indicators-ttl-2.92mm-pe71s6451-p.aspx)

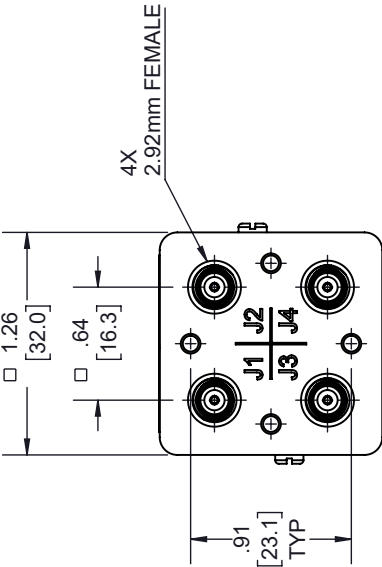
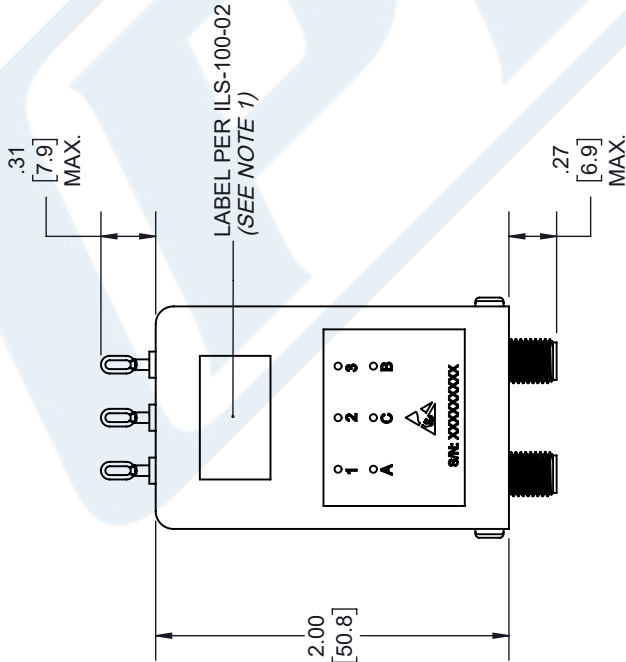
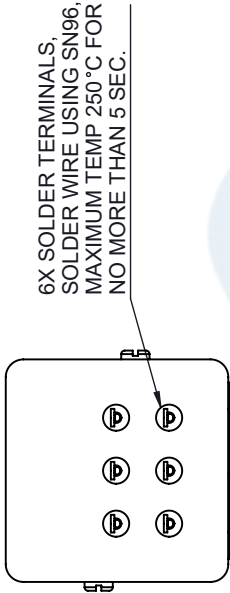
URL: <https://www.pasternack.com/dpdt-electromechanical-relay-failsafe-switch-40-ghz-12v-indicators-ttl-2.92mm-pe71s6451-p.aspx>

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.

PE71S6451 CAD Drawing

Transfer Electromechanical Relay Failsafe Switch, DC to 40 GHz, up to 10W,
2M Lifecycles, 12V, Indicators, TTL, Suppression Diodes, 2.92mm

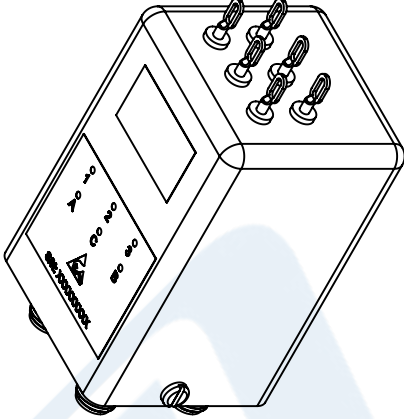
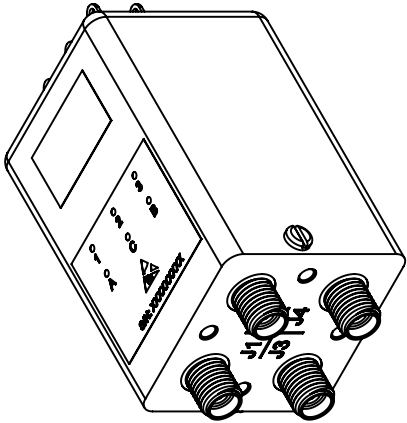
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	1/26/2021	T.GALLA



NOTES:

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

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.



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

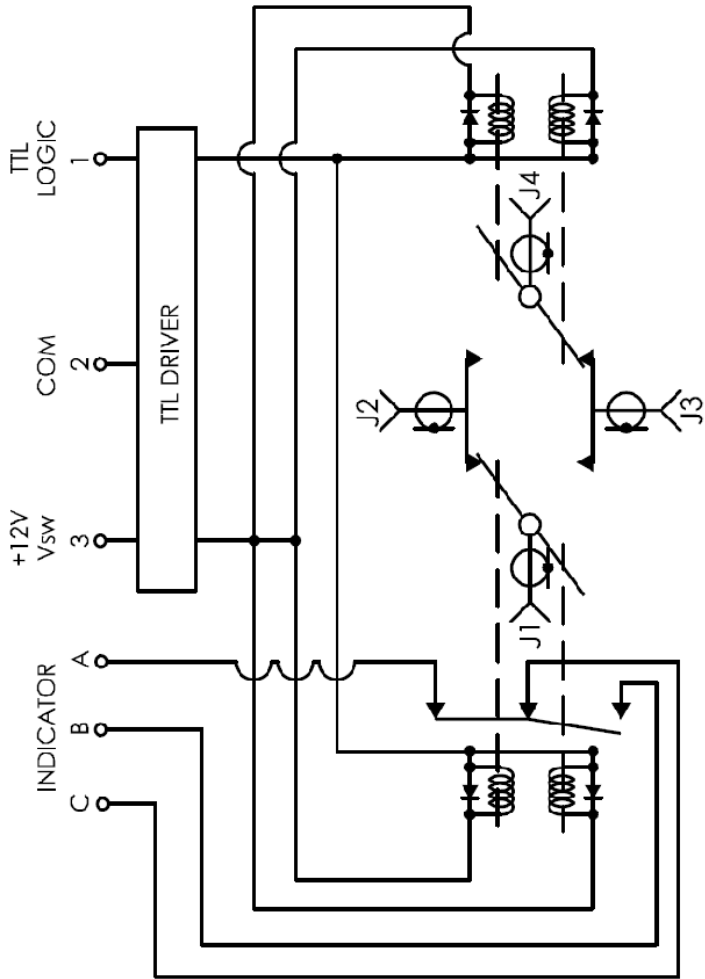
TOLERANCES:
X = ±.2 [5.08] FRACTIONS
.XX = ±.02 [.51] ± 1/32
.XXX = ±.005 [.13] ANGLES ± 1°
CABLE LENGTH (L) TOLERANCES:
L ≤ 12 [305] = +1 [25] / -0
12 [305] < L ≤ 60 [1524] = +2 [51] / -0
60 [1524] < L ≤ 120 [3048] = +4 [102] / -0
120 [3048] < L ≤ 300 [7620] = +6 [152] / -0
300 [7620] < L = +5% / -0
ALL DIMENSIONS SHOWN
ARE FOR REFERENCE ONLY.

PE PASTERNAK
an INFINITE brand

Pasternack Enterprises, Inc.
P.O. Box 16759, Irvine, CA 92623.
Phone: 1.949.261.1920 | 1.866.727.8376
Fax: 1.949.261.7451
Website: www.pasternack.com
E-mail: sales@pasternack.com
CAGE CODE: 53919 DRAWN BY: K.DANG
ITEM NO.: PE71S6451
SCALE: N/A
SHEET 1 OF 2
THIRD-ANGLE PROJECTION
THE INFORMATION AND
DESIGN IN THIS DOCUMENT
IS THE PROPERTY OF
PASTERNAK CORPORATION
ALL RIGHTS RESERVED.

PE71S6451 CAD Drawing

Transfer Electromechanical Relay Failsafe Switch, DC to 40 GHz, up to 10W,
2M Lifecycles, 12V, Indicators, TTL, Suppression Diodes, 2.92mm



SCHEMATIC

VOLTAGE	LOGIC INPUT	RF PATH	INDICATOR PATH
DE-ENERGIZED	OFF	J1-J2, J3-J4	A-C
ENERGIZED	ON	J1-J3, J2-J4	B-C

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

TOLERANCES:

X = ±.2 [.008] 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

ALL DIMENSIONS SHOWN
ARE FOR REFERENCE ONLY.

**PASTERNAK**
an INFINITE brand

Pasternack Enterprises, Inc.
P.O.Box 16759, Irvine, CA 92623.
Phone: 1.949.261.1920 | 1.866.727.8376
Fax: 1.949.261.7451
Website: www.pasternack.com
E-mail: sales@pasternack.com

SIZE	CAGE CODE	DRAWN BY	ITEM NO.
A	53919	K.DANG	PE71S6451



THIRD-ANGLE PROJECTION

THE INFORMATION AND
DESIGN IN THIS DOCUMENT
IS THE PROPERTY OF
PASTERNAK CORPORATION
ALL RIGHTS RESERVED.

SHEET	2	OF	2
SCALE	N/A		
REV	A		

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.