EPX microwave

5G

Example: SPDT-0A-18A-D-S9

M SPDT - 0 A - 18 A - D - S9 - LP

M VERSION
Standard : -54 ~ +85°C
With TTL : -40 ~ +85°C
With Indicator : -40 ~ +85°C

TYPE
SPDT
TRAN
SPMT
MSPDT
MTRAN
MSPMT

CONNECTOR
0: SMA
1: N
5: SC (High Power)
7: 7/16 DIN
9: K (2.92mm)
10: MINI DIN
11: 2.4mm
12: V (1.85mm)

ACTUATOR TYPE
A: Failsafe without indicator
B: Failsafe with indicator
C: Latching without indicator
D: Latching with indicator
E: Normally open without indicator
F: Normally open with indicator

FREQUENCY RANGE
03: DC - 3GHz
12: DC - 12GHz
18: DC - 18GHz
26: DC - 26.5GHz
40: DC - 40GHz
43: DC - 43GHz
53: DC - 53GHz
67: DC - 67GHz

LOW PIM
Low PIM

CONTROL OPTIONS
SPDT / TRAN
Not Specified: Pin Terminal
S9: 9 Pins D-Sub Control
S15: 15 Pins D-Sub Control

SPMT
Not Specified: D-Sub Control
PIN: Pin Terminal Control

OPTIONS
H: High Power
T: Internal Terminations
- SPDT/SPMT, SMA & K connectors only

D: TTL Drivers with diodes
P: Postive + Common
- Latching or Normally Open only

A: Auto Reset
- SPMT, Latching only

S: Self Cutoff
- Latching only

I: Transient Suppression Didoes
E: Decoder
Y: Moisture Seal
N: Narrow Body
- SPDT only

L: High isolation (90dB)
C: Custom
- Customer specified requirement

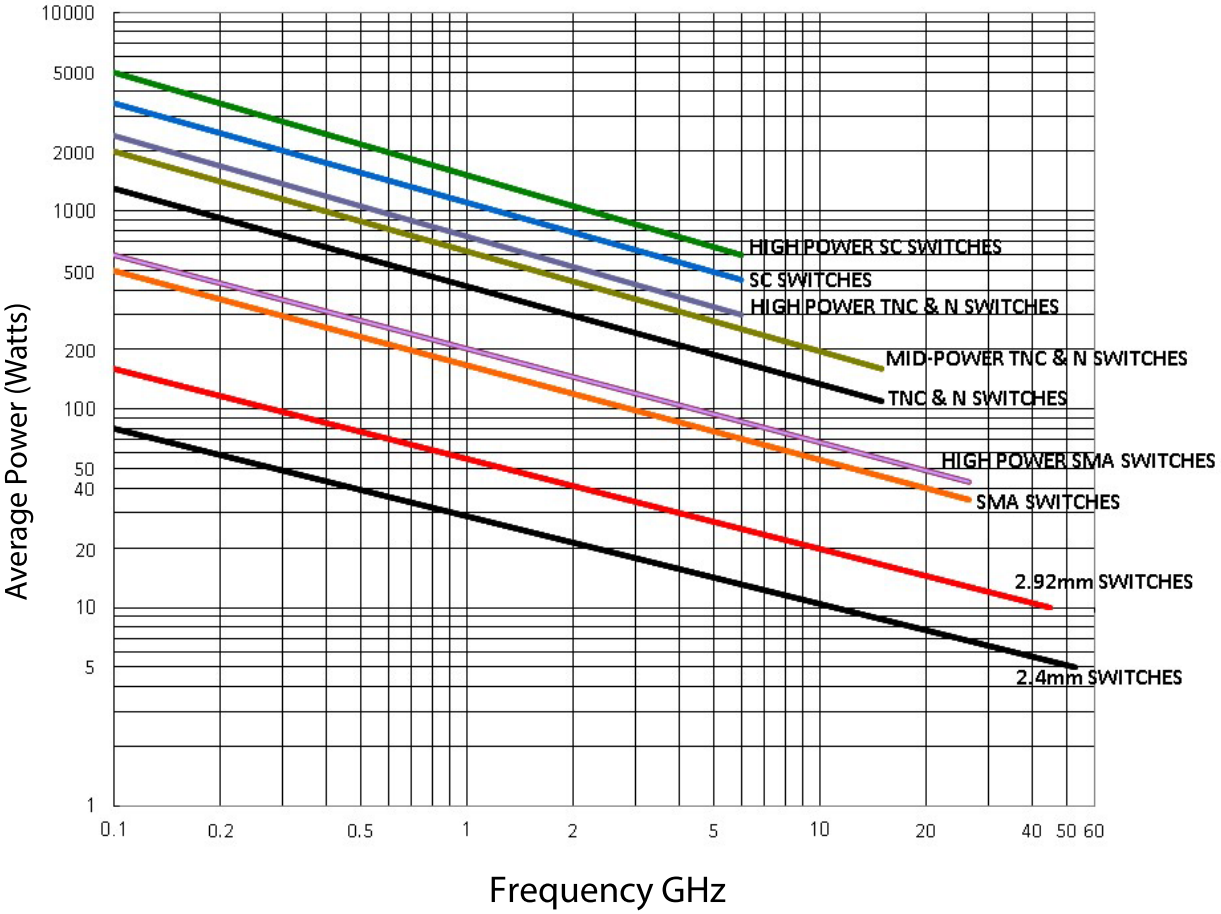
ACTUATOR VOLTAGE
A: 12VDC
B: 15VDC
C: 28VDC
D: 24VDC

ISO 9001: 2015
Certificate No. : Q1670

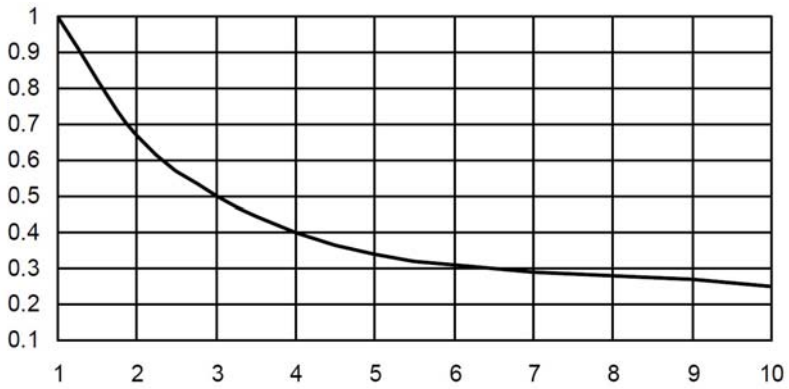
RoHS Compliant

Power Handling

POWER HANDLING vs. FREQUENCY



Power Handling Derating vs. Load VSWR



Power handling chart base on the following reference conditions:

- Ambient temperature of 40°C or less
- Sea level operation
- Load VSWR of 1.20:1 Maximum
- No high-power (hot) switching

Please contact EPX Microwave for testing factors when applications do not meet the foregoing reference conditions.

ISO 9001: 2015
Certificate No. : Q1670
RoHS Compliant

Single - Pole - Double - Throw (SPDT)

Failsafe/Latching - SMA/K/2.4mm - DC to 53 GHz

The Single Pole Double Throw (SPDT) switch is used to switch a microwave signal from a common input to either of the two outputs. Latching and Failsafe switching actuator versions are available.

A wide selection of connectors and features are available to meet most requirements. Others options include position of indicator contacts, TTL drivers. See Model Numbering System for other options.

High reliability and low loss performance makes these switches ideal for testing and end product applications. Good low to medium power handling.

M series SPDT switches with higher temperature range is available for environments where additional shock, vibration, and humidity tolerance is required.
Please visit EPX website or contact factory for details.

Specifications

SMA Connector - 18GHz / 26.5GHz

Frequency (GHz)	DC - 6	6 - 12	12 - 18	18 - 26.5
Ins. Loss dB (max)	0.20	0.25/0.40	0.40/0.50	0.60
Isolation dB (min)	80/70	70/60	65/60	50
VSWR (max)	1.20:1	1.30:1	1.40:1	1.70:1

K 2.92mm Connector - 43GHz

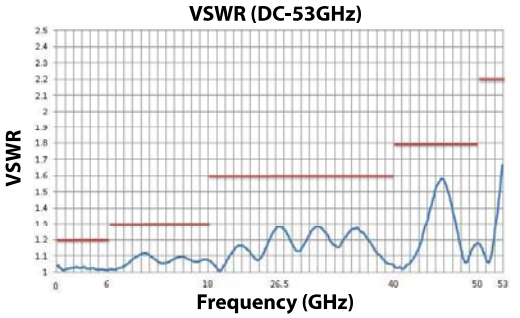
Frequency (GHz)	DC - 6	6 - 12	12 - 18	18 - 26.5	26.5 - 40	40 - 43
Ins. Loss dB (max)	0.20	0.30	0.40	0.50	0.70	1.20
Isolation dB (min)	85	80	80	75	60	40
VSWR (max)	1.15:1	1.35:1	1.40:1	1.45:1	1.50 :1	1.90:1

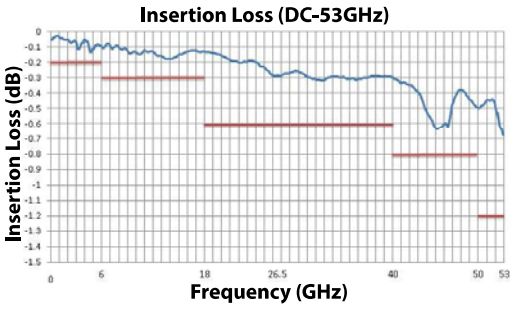
2.4mm Connector - 53GHz

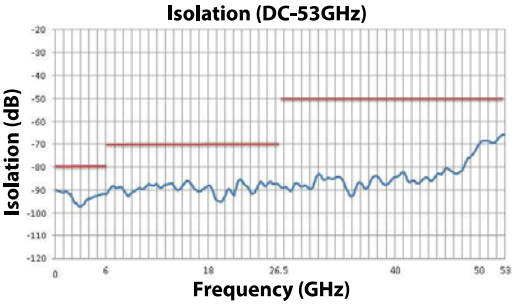
Frequency (GHz)	DC - 6	6 - 18	18 - 26.5	26.5 - 40	40 - 50	50 - 53
Ins. Loss dB (max)	0.20	0.30	0.60	0.60	0.80	1.20
Isolation dB (min)	80	70	70	70	50	50
VSWR (max)	1.20:1	1.30:1	1.60:1	1.60:1	1.80:1	2.20:1

-- RF DATA --

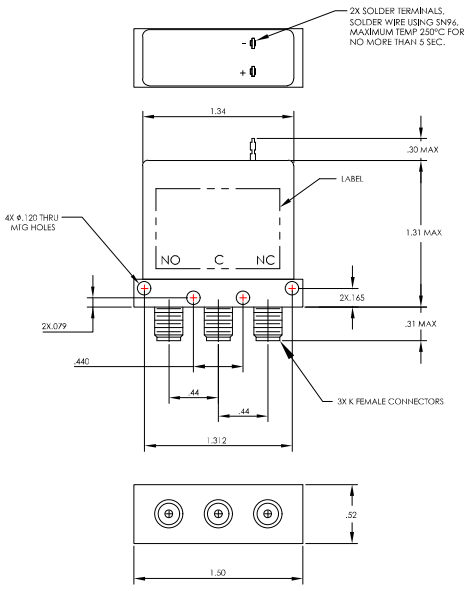
SPDT 2.4mm DC-53GHz



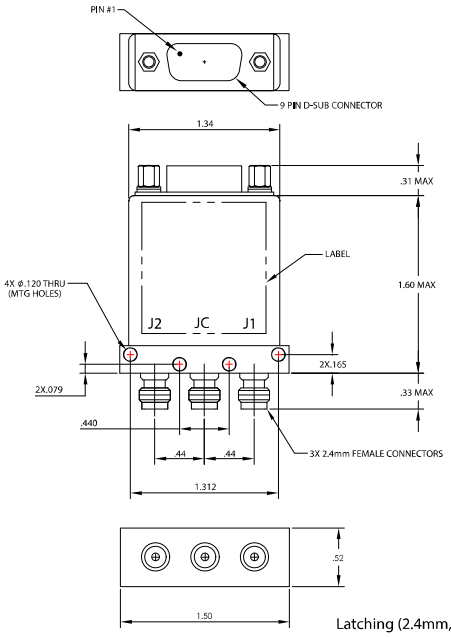




Outline



Failsafe (K, DC-43GHz)



Latching (2.4mm, DC-53GHz, D-Sub Control)

ISO 9001: 2015
Certificate No. : Q1670

RoHS Compliant

Single - Pole - Double - Throw (SPDT)

Failsafe/Latching - N - DC to 18 GHz

The Single Pole Double Throw (SPDT) switch is used to switch a microwave signal from a common input to either of the two outputs. Latching and Failsafe switching actuator versions are available.

A wide selection of connectors and features are available to meet most requirements. Others options include position of indicator contacts, TTL drivers. See Model Numbering System for other options.

High reliability and low loss performance makes these switches ideal for testing and end product applications. Good low to medium power handling.

M series SPDT switches with higher temperature range is available for environments where additional shock, vibration, and humidity tolerance is required.
Please visit EPX website or contact factory for details.

Specifications

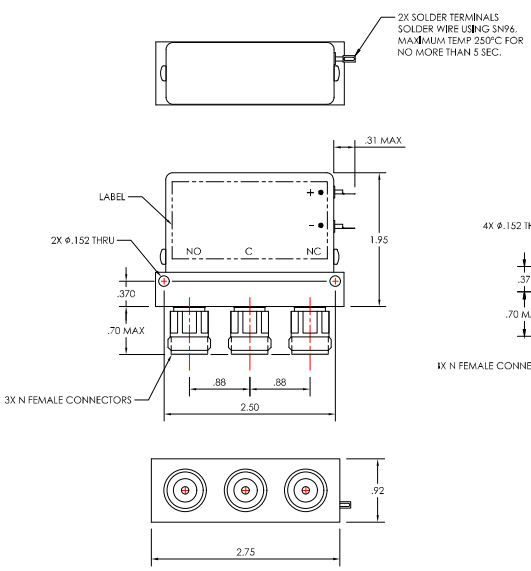
N Connector - 12GHz

Frequency (GHz)	DC - 1	1 - 4	4 - 8	8 - 12
Ins. Loss dB (max)	0.30	0.40	0.40	0.50
Isolation dB (min)	90	80	70	60
VSWR (max)	1.25:1	1.30:1	1.40:1	1.40:1

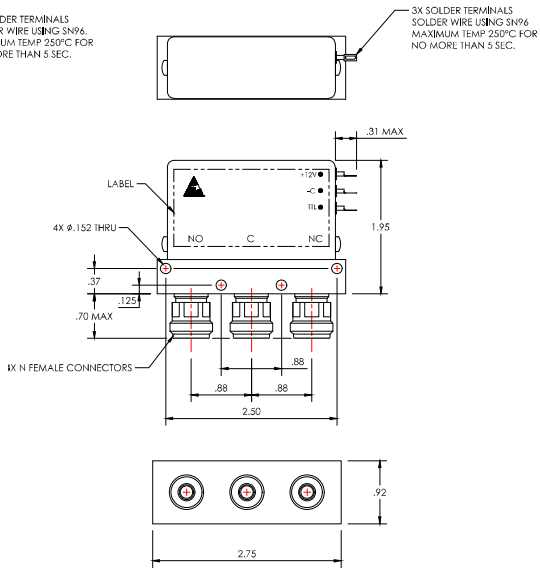
N Connector - 18GHz

Frequency (GHz)	DC - 3	3 - 8	8 - 12	12 - 18
Ins. Loss dB (max)	0.30	0.40	0.50	0.80
Isolation dB (min)	80	70	65	60
VSWR (max)	1.25:1	1.40:1	1.60:1	1.80:1

Outline



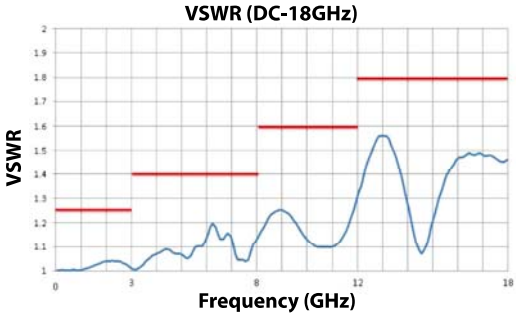
Failsafe (N, DC-12GHz)

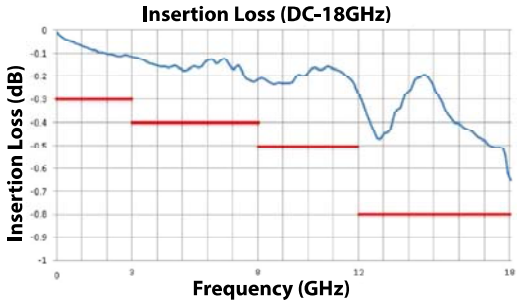


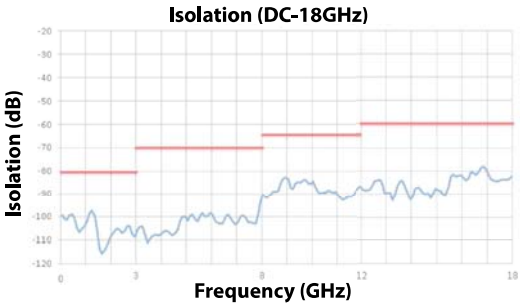
Failsafe (N, DC-18GHz with TTL Driver)

-- RF DATA --

SPDT N DC-18GHz







ISO 9001: 2015
Certificate No. : Q1670

RoHS Compliant

Double - Pole - Double - Throw (TRAN)

Failsafe/Latching - SMA/K/2.4mm - DC to 52 GHz

The Transfer (TRAN) is a four port switch with two independment pairs of RF pats. These pairs are actuated simultaneously. This actuation is similar to that of a double-pole-double-throw switch. Failsafe and latching switching actuator versions are available.

A wide selection of connectors and features are available to meet most requirements. Others options include position of indicator contacts, TTL drivers. See Model Numbering System for other options.

High reliability and low loss performance makes these switches ideal for testing and end product applications. Good low to medium power handling.

M series TRAN switches with higher temperature range is available for environments where additional shock, vibration, and humidity tolerance is required.
Please visit EPX website or contact factory for details.

Specifications

SMA Connector - 18GHz / 26.5GHz

Frequency (GHz)	DC - 6	6 - 12	12 - 18	18 - 26.5
Ins. Loss dB (max)	0.20	0.30	0.50	0.80
Isolation dB (min)	70/80	60/70	60/65	60
VSWR (max)	1.20:1	1.30:1	1.40:1	1.60:1

K 2.92mm Connector - 43GHz

Frequency (GHz)	DC - 6	6 - 12	12 - 26.5	26.5 - 40	40 - 43
Ins. Loss dB (max)	0.20	0.40	0.70	1.00	1.30
Isolation dB (min)	80	75	65	50	50
VSWR (max)	1.20:1	1.30:1	1.40:1	1.80:1	2.00:1

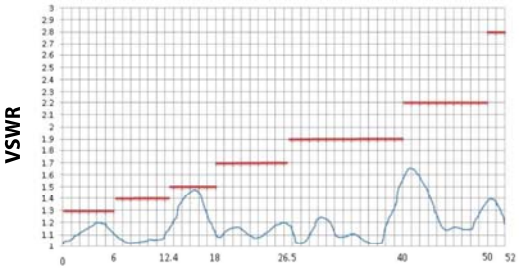
2.4mm Connector - 52GHz

Frequency (GHz)	DC - 6	6 - 12	12 - 18	18 - 26.5	26.5 - 40	40 - 50	50 - 52
Ins. Loss dB (max)	0.30	0.40	0.50	0.70	1.00	1.30	2.30
Isolation dB (min)	70	60	60	55	50	50	50
VSWR (max)	1.30:1	1.40:1	1.50:1	1.70:1	1.90:1	2.20:1	2.80:1

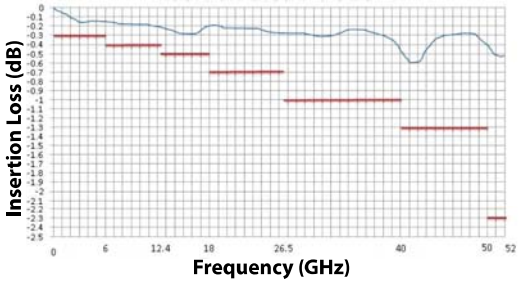
-- RF DATA --

TRAN 2.4mm DC-52GHz

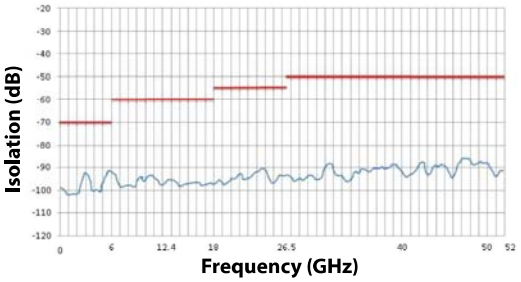
VSWR (DC-52GHz)



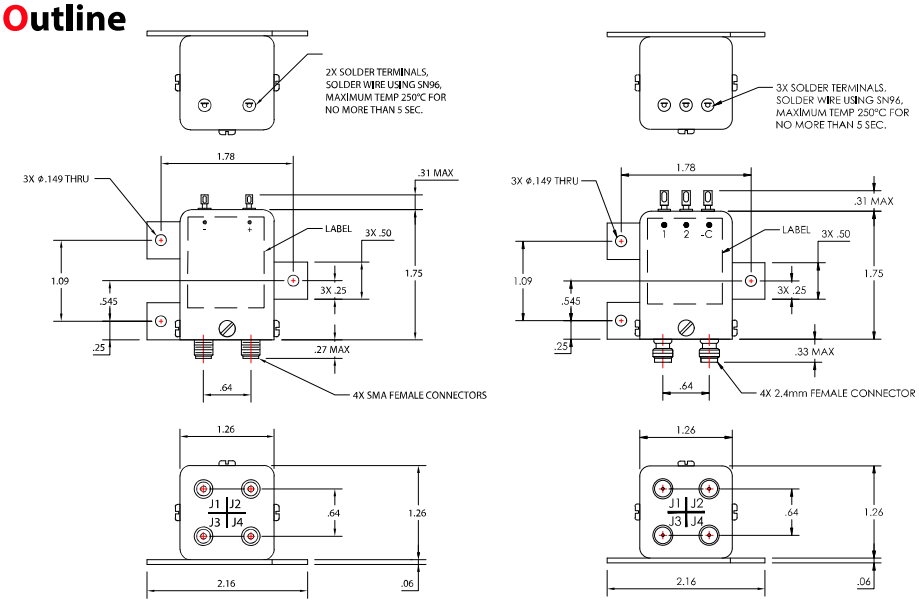
Insertion Loss (DC-52GHz)



Isolation (DC-52GHz)



Outline



Failsafe (SMA, DC-18GHz)

Latching (2.4mm, DC-52GHz)

ISO 9001: 2015
Certificate No. : Q1670

RoHS Compliant

Double - Pole - Double - Throw (TRAN)

Failsafe/Latching - N - DC to 18 GHz

The Transfer (TRAN) is a four port switch with two independent pairs of RF paths. These pairs are actuated simultaneously. This actuation is similar to that of a double-pole-double-throw switch. Failsafe and latching switching actuator versions are available.

A wide selection of connectors and features are available to meet most requirements. Other options include position of indicator contacts, TTL drivers. See Model Numbering System for other options.

High reliability and low loss performance makes these switches ideal for testing and end product applications. Good low to medium power handling.

M series TRAN switches with higher temperature range is available for environments where additional shock, vibration, and humidity tolerance is required. Please visit EPX website or contact factory for details.

Specifications

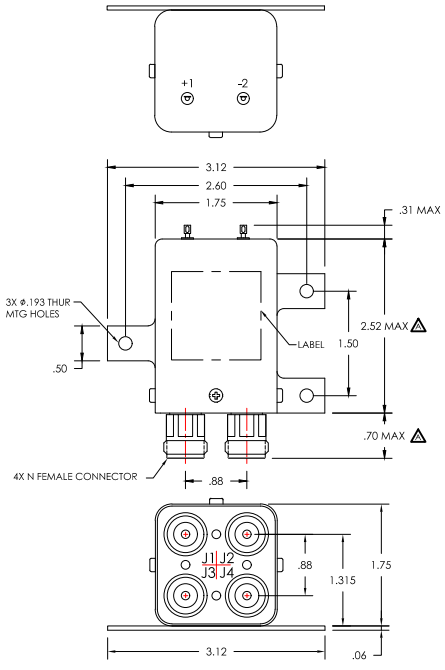
N Connector - 12GHz

Frequency (GHz)	DC - 1	1 - 4	4 -12
Ins. Loss dB (max)	0.20	0.30	0.70
Isolation dB (min)	70	70	60
VSWR (max)	1.25:1	1.30:1	1.70:1

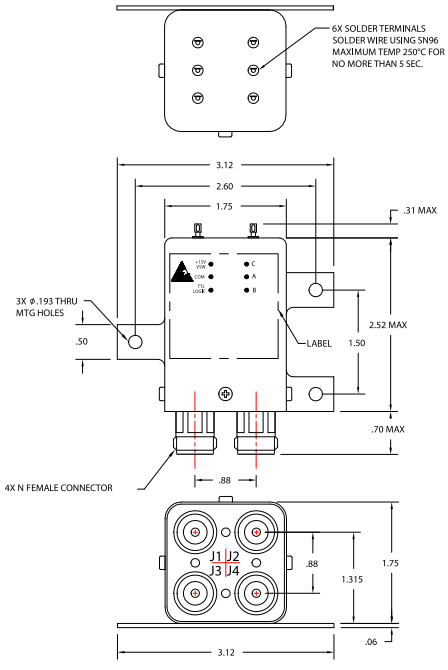
N Connector - 18GHz

Frequency (GHz)	DC - 3	3 - 8	8 - 12	12 - 18
Ins. Loss dB (max)	0.30	0.40	0.50	0.80
Isolation dB (min)	80	70	65	60
VSWR (max)	1.25:1	1.40:1	1.50:1	1.80:1

Outline



Failsafe (N, DC-12GHz)

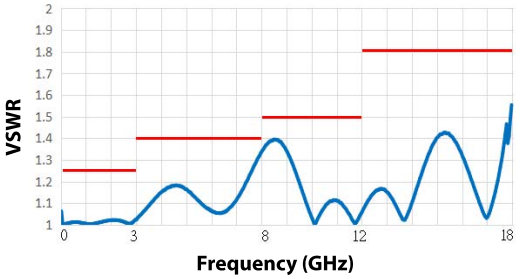


Failsafe (N, DC-8GHz with Indicator and TTL Driver)

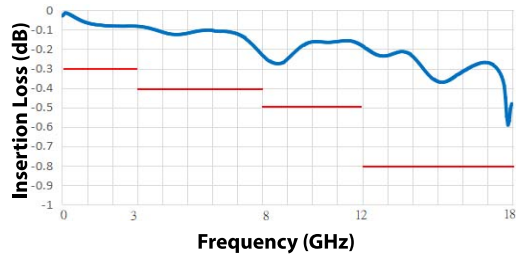
-- RF DATA --

TRAN N DC-18GHz

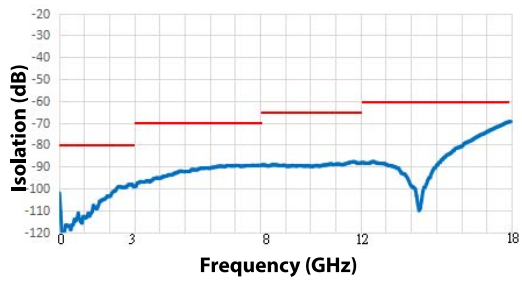
VSWR (DC-18GHz)



Insertion Loss (DC-18GHz)



Isolation (DC-18GHz)



ISO 9001: 2015
Certificate No. : Q1670

RoHS Compliant

Single - Pole - Multi - Throw (SP3T - SP6T)

Normally Open/Latching - SMA/K/2.4mm - DC to 52 GHz

The Single Pole Multi Throw (SP3T-SP6T) switch is a coaxial switch designed to switch a microwave signal from a common input to multiple outputs. The invdividual actuator mechanism allows random position selection. Normally open and latching actuator versions are available.

A wide selection of connectors and features are available to meet most requirements. Others options include position of indicator contacts, TTL drivers. See Model Numbering System for other options.

High reliability and low loss performance makes these switches ideal for testing and end product applications. Good low to medium power handling.

M series SPMT switches with higher temperature range is available for environments where additional shock, vibration, and humidity tolerance is required.
Please visit EPX website or contact factory for details.

Specifications

SMA Connector - 18GHz / 26.5GHz

Frequency (GHz)	DC - 6	6 - 12	12 - 18	18 - 26.5
Ins. Loss dB (max)	0.20	0.40	0.50	0.80
Isolation dB (min)	80/70	75/60	70/60	50
VSWR (max)	1.25:1	1.40:1	1.50:1	1.80:1

K 2.92mm Connector - 43GHz (with / without Termination)

Frequency (GHz)	DC - 6	6 - 12	12 - 18	18 - 26.5	26.5 - 32	32 - 40	40 - 43
Ins. Loss dB (max)	0.20	0.30/0.40	0.60/0.50	0.80/0.90	0.80/1.00	1.10/1.30	1.60
Isolation dB (min)	80/70	75/60	70/60	70/60	60	60/50	40
VSWR (max)	1.15/1.25:1	1.25/1.40:1	1.35/1.50:1	1.50/1.80:1	1.70/1.80:1	1.80:1	2.10:1

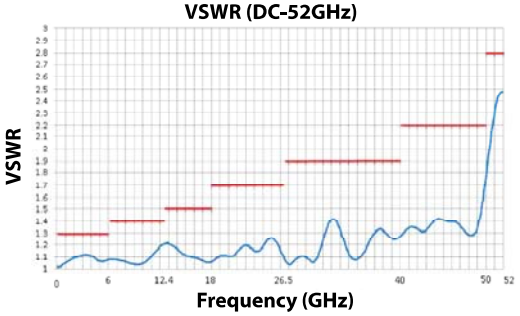
2.4mm Connector - 52GHz (with / without Termination)

Frequency (GHz)	DC - 6	6 - 12.4	12.4 - 18	18 - 26.5	26.5 - 40	40 - 50	50 - 52
Ins. Loss dB (max)	0.20	0.40	0.50	0.70	0.90	1.30/1.20	2.30/1.60
Isolation dB (min)	70/80	60/80	60/80	55/70	50/65	50/60	50/60
VSWR (max)	1.30:1	1.40:1	1.50:1	1.70/1.60:1	1.90/1.70:1	2.20/1.80:1	2.80/2.20:1

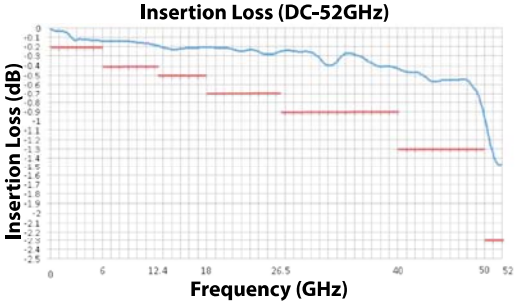
-- RF DATA --

SP3T - SP6T 2.4mm DC-52GHz

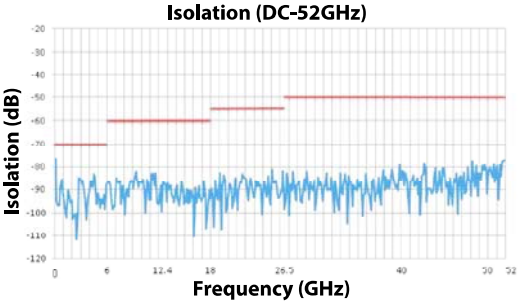
VSWR (DC-52GHz)



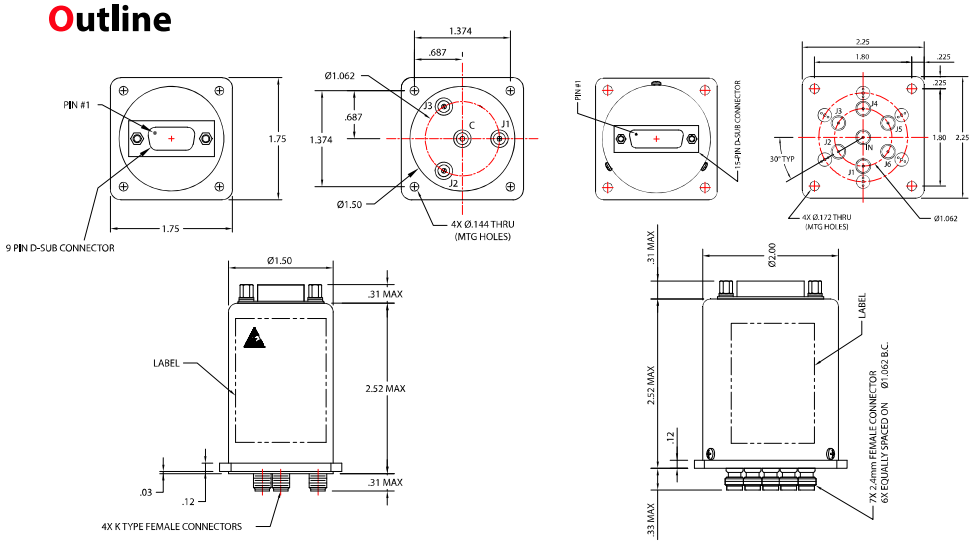
Insertion Loss (DC-52GHz)



Isolation (DC-52GHz)



Outline



Normally Open (SP3T, K, DC-43GHz with TTL Driver)

Latching (SP6T, 2.4mm, DC-52GHz with Termination)

ISO 9001: 2015
Certificate No. : Q1670

RoHS Compliant

Single - Pole - Multi - Throw (SP3T - SP6T)

Normally Open/Latching - N - DC to 18 GHz

The Single Pole Multi Throw (SP3T-SP6T) switch is a coaxial switch designed to switch a microwave signal from a common input to multiple outputs. The invdividual actuator mechanism allows random position selection. Normally open and latching actuator versions are available.

A wide selection of connectors and features are available to meet most requirements. Others options include position of indicator contacts, TTL drivers. See Model Numbering System for other options.

High reliability and low loss performance makes these switches ideal for testing and end product applications. Good low to medium power handling.

M series SPMT switches with higher temperature range is available for environments where additional shock, vibration, and humidity tolerance is required.
Please visit EPX website or contact factory for details.

Specifications

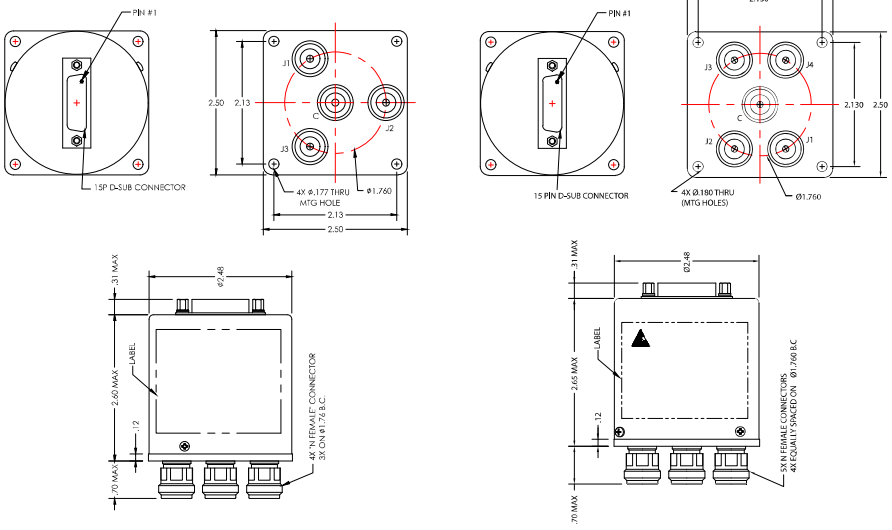
N Connector - 12GHz

Frequency (GHz)	DC - 1	1 - 4	4 - 8	8 - 12
Ins. Loss dB (max)	0.30	0.40	0.40	0.70
Isolation dB (min)	70	60	60	60
VSWR (max)	1.25:1	1.40:1	1.45:1	1.70:1

N Connector - 18GHz

Frequency (GHz)	DC - 3	3 - 8	8 - 12	12 - 18
Ins. Loss dB (max)	0.25	0.35	0.55	0.90
Isolation dB (min)	80	70	60	60
VSWR (max)	1.25:1	1.35:1	1.50:1	1.80:1

Outline



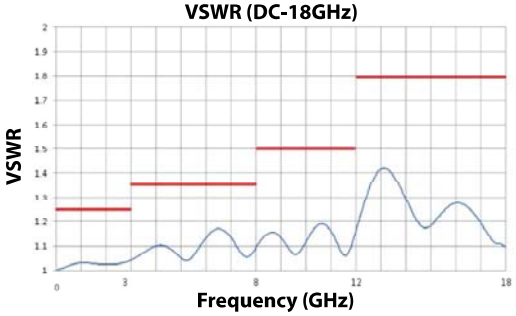
Latching (SP3T, N, DC-3GHz)

Latching (SP4T, N, DC-18GHz with TTL Driver)

-- RF DATA --

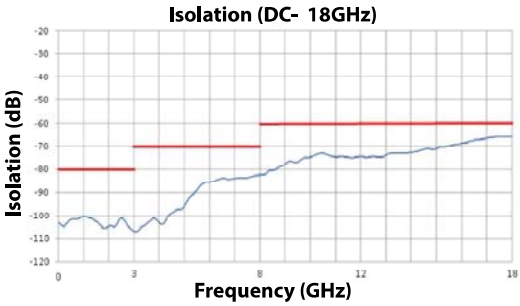
SP6T N DC-18GHz

VSWR (DC-18GHz)



Insertion Loss (DC-18GHz)

Isolation (DC- 18GHz)



ISO 9001: 2015
Certificate No. : Q1670

RoHS Compliant

Single - Pole - Multi - Throw (SP7T - SP8T)

Normally Open/Latching - SMA/K - DC to 40 GHz

The Single Pole Multi Throw (SP7T-SP8T) switch is a coaxial switch designed to switch a microwave signal from a common input to multiple outputs. The invdividual actuator mechanism allows random position selection. Normally open and latching actuator versions are available.

A wide selection of connectors and features are available to meet most requirements. Others options include position of indicator contacts, TTL drivers. See Model Numbering System for other options.

High reliability and low loss performance makes these switches ideal for testing and end product applications. Good low to medium power handling.

M series SPMT switches with higher temperature range is available for environments where additional shock, vibration, and humidity tolerance is required.
Please visit EPX website or contact factory for details.

Specifications

SMA Connector - 18GHz

Frequency (GHz)	DC - 6	6 - 12	12 - 18
Ins. Loss dB (max)	0.20	0.40	0.50
Isolation dB (min)	70	60	60
VSWR (max)	1.25:1	1.40:1	1.50:1

K 2.92mm Connector - 26.5GHz

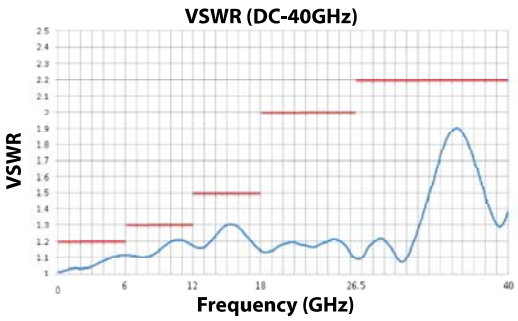
Frequency (GHz)	DC - 6	6 - 12	12 - 18	18 - 26	26 - 26.5
Ins. Loss dB (max)	0.25	0.45	0.60	0.90	1.30
Isolation dB (min)	80	75	70	65	60
VSWR (max)	1.20:1	1.40:1	1.50:1	1.70:1	2.10:1

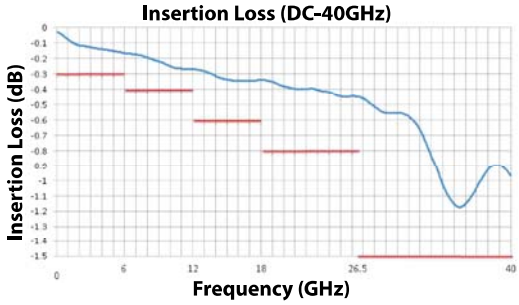
K 2.92mm Connector - 40GHz

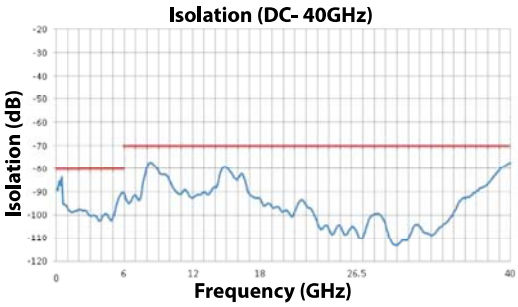
Frequency (GHz)	DC - 6	6 - 12	12 - 18	18 - 26.5	26.5 - 40
Ins. Loss dB (max)	0.30	0.40	0.60	0.80	1.50
Isolation dB (min)	80	70	70	70	70
VSWR (max)	1.20:1	1.30:1	1.50:1	2.00:1	2.20:1

-- RF DATA --

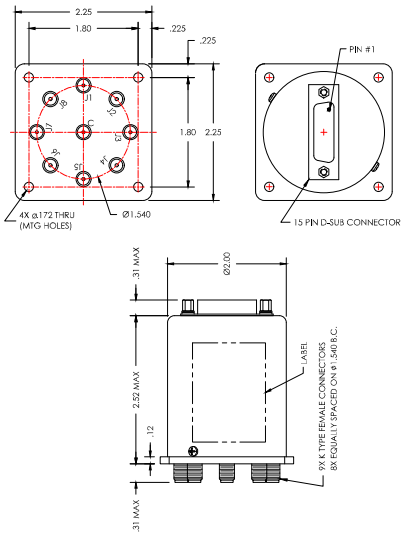
SP8T K DC-40GHz



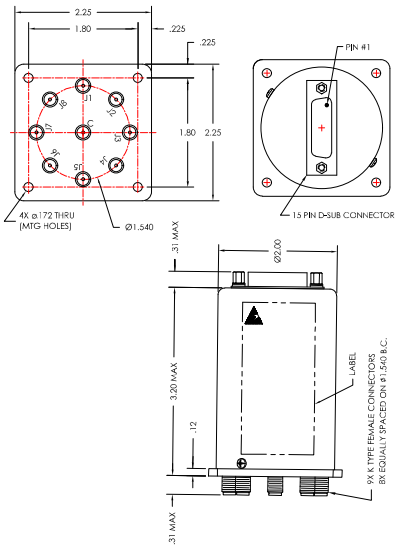




Outline



Latching (SP8T, K, DC-40GHz)



Failsafe (SP8T, K, DC-40GHz with TTL Driver)

ISO 9001: 2015
Certificate No. : Q1670

RoHS Compliant

Single - Pole - Multi - Throw (SP9T - SP12T)

Normally Open/Latching - SMA - DC to 18 GHz

The Single Pole Multi Throw (SP9T-SP12T) switch is a coaxial switch designed to switch a microwave signal from a common input to multiple outputs. The invdividual actuator mechanism allows random position selection. Normally open and latching actuator versions are available.

A wide selection of connectors and features are available to meet most requirements. Others options include position of indicator contacts, TTL drivers. See Model Numbering System for other options.

High reliability and low loss performance makes these switches ideal for testing and end product applications. Good low to medium power handling.

M series SPMT switches with higher temperature range is available for environments where additional shock, vibration, and humidity tolerance is required.
Please visit EPX website or contact factory for details.

Specifications

SMA Connector - 18GHz (SP9T - SP10T)

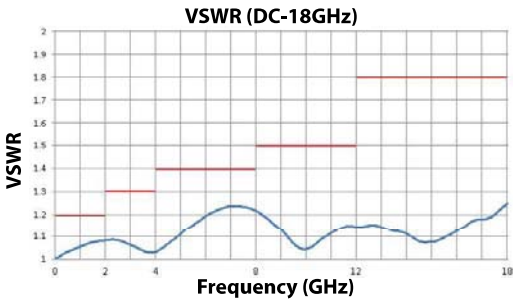
Frequency (GHz)	DC - 6	6 - 12	12 - 18
Ins. Loss dB (max)	0.30	0.40	0.60
Isolation dB (min)	80	75	75
VSWR (max)	1.25:1	1.35:1	1.60:1

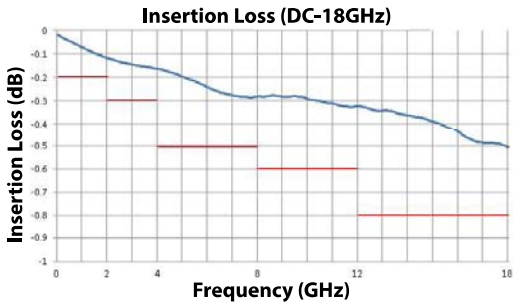
SMA Connector - 18GHz (SP11T - SP12T)

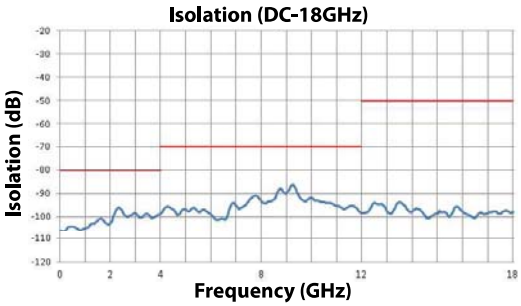
Frequency (GHz)	DC - 2	2 - 4	4 - 8	8 - 12	12 - 18
Ins. Loss dB (max)	0.20	0.30	0.50	0.60	0.80
Isolation dB (min)	80	80	70	70	50
VSWR (max)	1.20:1	1.30:1	1.40:1	1.50:1	1.80:1

-- RF DATA --

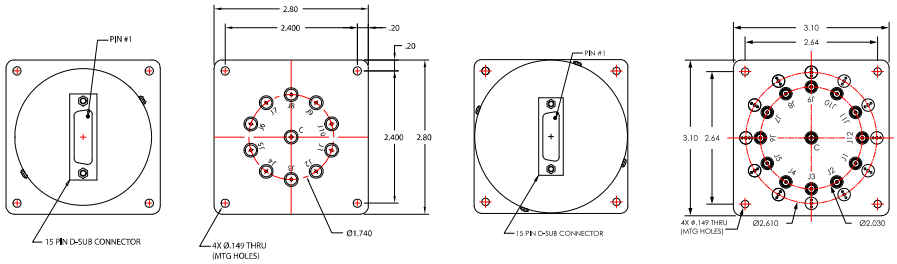
SP11T - SP12T SMA DC-18GHz

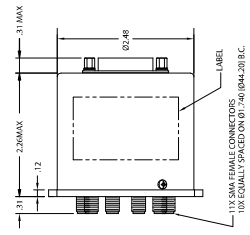




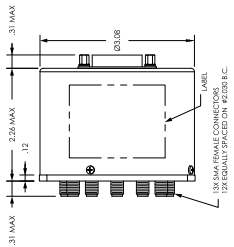


Outline





Normally open (SP10T, SMA, DC-18GHz)



Normally Open (SP12T, SMA, DC-18GHz with Termination)

ISO 9001: 2015
Certificate No. : Q1670

RoHS Compliant

EPX microwave

Since its foundation over 20 years ago, EPX Microwave has become known worldwide for its high-quality products and its continuous development of state-of-the-art RF/Microwave coaxial switching solutions.

Based in the United States with an office in Hong Kong to service Asia, EPX Microwave provides standard and custom switches to industry leading companies in telecom, wireless, medical, ATC, defense/aerospace, and consumer electronics applications.

EPX products are manufactured in a world class facility that is ISO 9001 certified and RoHS and REACH compliant. With many thousands of standard designs available, coupled with custom design options, EPX can meet the most exacting requirements with exceptional quality, performance, and reliability.

EPX specializes in testing applications from initial product development to full rate production ATE requirements, all optimized for enduring, consistent operation.

EPX focuses on fast delivery of standard designs as well as precision solutions for very high isolation, very low insertion loss, high RF power and low PIM requirements.

Let EPX Microwave be your partner for your demanding RF/Microwave switching solutions.