



CHARTER ENGINEERING, INC.

Precision RF Switches

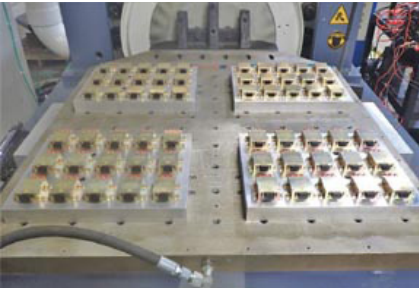
a dB Control / HEICO company



PRODUCT CATALOG



Highly Reliable
RF & Microwave Switches



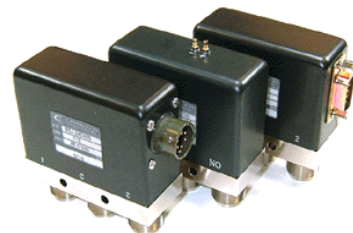
SWITCH TO CEI AND SWITCH FOR LIFE!



6729 55th Street N
Pinellas Park, FL 33781

PH: (727) 525-1025 FX: (727) 525-1050

www.ceiswitches.com



SWITCHING SOLUTIONS

PRECISION ELECTROMECHANICAL RF & MICROWAVE SWITCHES



Experience

The CEI engineering team offers more than (40) years of experience designing and manufacturing electromechanical switches. We understand every aspect of the RF Switch and the many special techniques used in the manufacturing process. We are committed to providing products that are distinguished by quality and reliability.

Our team seeks out the latest technology methods and quality assurance tools to provide the most cost effective solutions to our customers increasingly higher performance needs.

Our commitment of resources and dedication to our customers is the foundation of our first-class reputation in the RF and Microwave industry.

Quality

A CEI electromechanical switch is designed to give you absolute, unqualified measurement certainty. At CEI, quality is the top priority. It begins by partnering with vendors who supply us with quality material and reliable shipment dates, and continues with a rigorous quality control inspection that conforms to ISO 9001 and AS9100 . Official certification will soon follow. All products are meticulously tested on state of the art testing equipment. Every detail, from vendor qualification to final inspection is scrutinized to ensure that you receive a superior product-on time, every time.

Support

The process begins with an inquiry through our website, email, telephone call, representative, or distributor.

A quotation will typically be provided within one business day or sooner.

The delivery will be based on your need and on-time, everytime.

Our commitment to customer satisfaction and customer driven lead-time requirements ensures that we do everything possible to provide the highest quality RF switches when you need them.

Commitment

Charter Engineering is a dB Control Corp. and Heico company.

We maintain the values of a small business with the resources of a large corporation.

Charter Engineering Inc. manufactures all products in the USA.

Switch to Charter and Switch for life!



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DEFINITIONS AND TERMINOLOGY

Electromechanical Switch Models

BREAK-BEFORE-MAKE - DISCONNECTING THE RF POWER from the current RF circuit position before selecting a different position. All CHARTER ENGINEERING switches are break-before-make designs.

SPDT Switch - A single-pole, double-throw switch has one input or output port and two selectable input or output ports.

SPDT Terminated Switch - A single-pole, double-throw switch with one open output or input RF port internally terminated in a 50-ohm resistive load.

Multi-position Switch - A switch with one input or output and more than two output or input ports. Standard CEI multi-throw switches provide up to 6 selectable outputs or inputs from a single input or output port.

Multi-position Terminated Switch - A multi-position switch with each unused or open input or output RF port internally terminated in a 50-Ohm resistive load.

Actuator Terminology

Failsafe - A mode of operation in which the switch moves to the closed position when the actuating voltage is applied and always returns to a predetermined position when the voltage is removed.

Latching - A mode of operation in which the switch moves to the closed position when the actuating voltage is applied and will remain in the selected position regardless of whether the actuating voltage is removed or interrupted. In order to change to another position the voltage must then be reapplied to the position desired. The latching models can also operate by **pulse voltage** at a 30 millisecond pulse minimum. The pulse voltage technique can save power and will allow the system to run at cooler temperatures.

Momentary (normally open) - A mode of operation in which all output ports of the switch are disconnected from the input port until a voltage is applied to maintain a selected position. The switch returns to its open position with the removal of voltage.

Common Input Command Voltage: A mode of operation in which the supply voltage and control voltage can be positive or the return voltage be negative (this catalog designates the "+" or positive and the "-" or negative signs). To select a position using positive voltage the common voltage must be the return voltage. To select a position using return voltage the positive must be supplied at the common terminal.

Electromechanical Switch Options

INDICATOR CIRCUITRY: A set of internally mounted contacts mechanically connected to the switch actuator allowing external monitoring of switch RF status.

SUPPRESSION DIODES: This option offers fast-recovery rectifiers (diodes) connected in parallel with the coils of the switch to suppress any transient voltage generated by the coils. Suppression Diodes are recommended with TTL Logic.

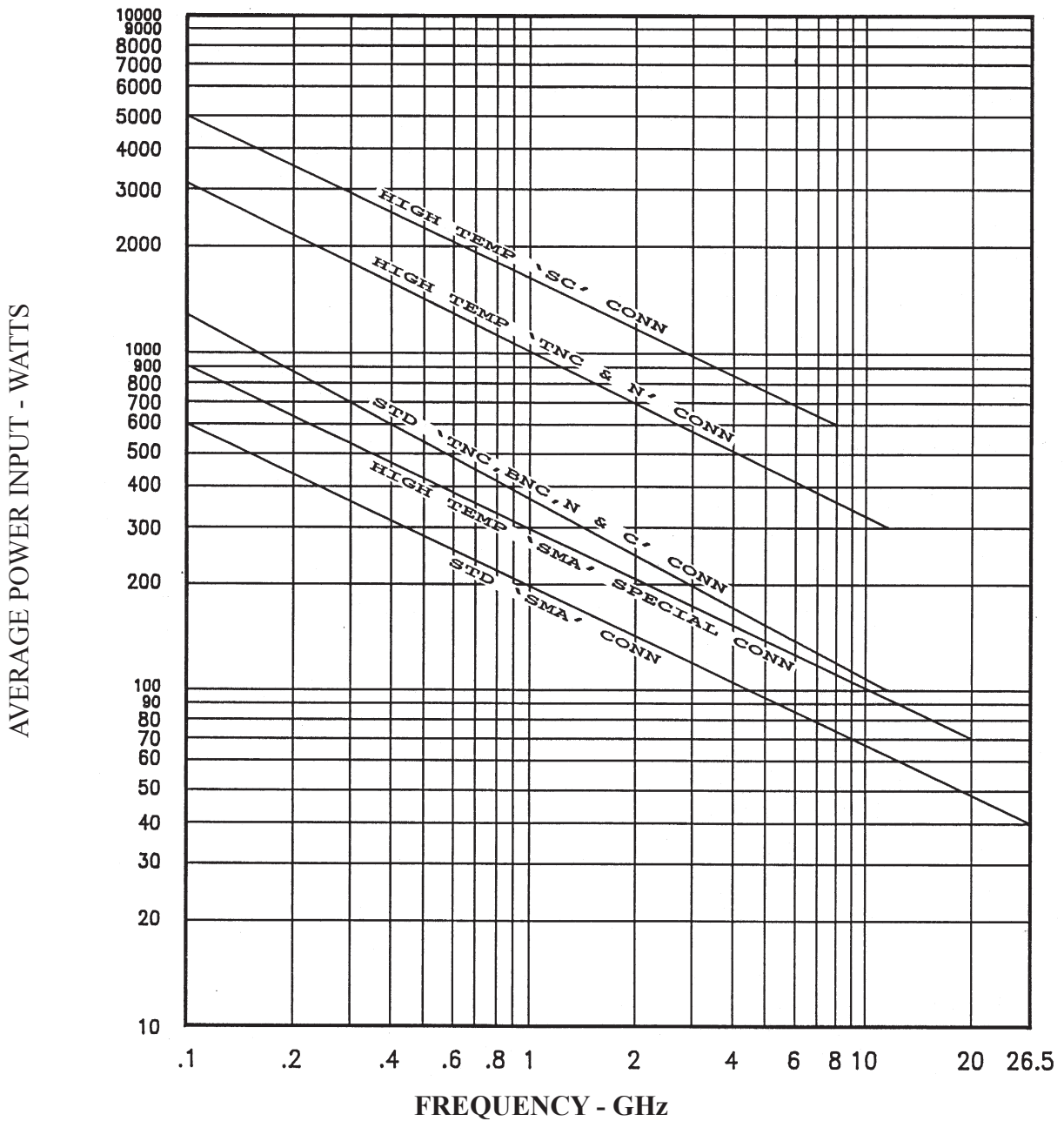
TTL LOGIC: Transistor-transistor-logic driver circuitry which enables the status of the switch to be controlled by the level of the TTL logic input.

BCD TTL DECODER: Completely contained within the switch housing, BDC logic circuitry establishes compatibility of the switch with binary logic inputs.

CUT OFF POWER CIRCUIT: This applies to a latching type switch only. A switch that has the ability to disconnect the actuator drive circuit so that D.C. current will not be consumed after switching has been accomplished.

LOW, ULTRA LOW, OR SUPERIOR PASSIVE INTERMODULATION (PIM): This option allows for a -110 dBc (LOW), 130 dBc (ULTRA LOW) or -160 dBc (SUPERIOR) passive intermodulation (PIM) level @ the PIM frequency. PIM is a form of signal distortion that occurs whenever signals at two or more frequencies conduct simultaneously in a passive device which contains some non-linear response.

POWER HANDLING VS. FREQUENCY CHART



CAPABILITY OF POWER HANDLING IS BASED ON THE FOLLOWING CONDITIONS:

- AMBIENT TEMPERATURE = 25° C
- ALTITUDE = SEA LEVEL
- LOAD VSWR = 1:1 RATIO

POWER HANDLING AND DERATING FACTORS

<u>Temp (Deg. C)</u>	<u>Factor</u>
25-40	1.00
60	0.89
80	0.79
100	0.69
120	0.59
140	0.49
160	0.39
180	0.29
200	0.20

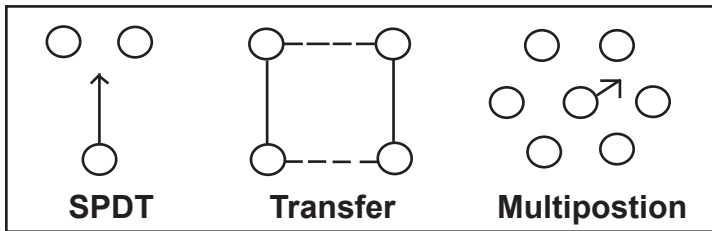
<u>Altitude (Ft.)</u>	<u>Factor</u>
10,000	0.91
15,000	0.86
20,000	0.81
25,000	0.76
30,000	0.71
35,000	0.67
40,000	0.62
45,000	0.58
50,000	0.53
60,000	0.44
65,000	0.40
70,000	0.36

<u>VSWR</u>	<u>Factor</u>
1.5 : 1	0.96
2.0 : 1	0.88
2.5 : 1	0.84
3.0 : 1	0.75
3.5 : 1	0.70
4.0 : 1	0.64
4.5 : 1	0.60
5.0 : 1	0.56

HOW TO SELECT A COAXIAL SWITCH

Consider the following parameters to select the most suitable switch for a specific application.

1. **RF Circuit** - The three most common circuit configurations are (1) single-pole-double-throw (SPDT), (2) Transfer (DPDT), and (3) Multi-Position. Select the simplest circuit to meet system requirements.



2. **Actuator** - The **Pulse Latching Actuator** is recommended. Actuation requires a pulse length equal to or greater than the switching time. This type of switch requires current only during switching and for a very short period of time. A pulse width of 30 milliseconds minimum will more than satisfy current requirements. There is also no need to supply DC power to hold the selected position. However, pulse latching can be operated with continuous DC power supplied to the unit with no degradation or decrease in life expectancy.

A latching switch with internally **cut off current circuitry** can be obtained from CEI in some models if your system is not equipped with pulse command circuitry. This option will disconnect the drive circuit so that DC current will not be consumed after switching has been accomplished.

The **Fail-Safe Actuator** is used where system requirements dictate the switch return to the normally closed or fail-safe position when actuator power is removed. Most Charter Engineering fail-safe switches utilize magnetics rather than springs for fail-safe holding power.

The **Momentary or Normally Open Actuator** is used where system requirements require all output ports of the switch to be disconnected from the input port until a voltage is applied to a selected position.

3. **Frequency** - Specify the actual frequency to be used as minimum bandwidth. This often results in reduced testing time and associated costs.

Generally, electromechanical switches are capable of higher-frequencies and greater bandwidths than necessary for the intended usage.

The following table correlates frequency and connector type:

Frequency	Connector	Note
18.0 GHz	SMA	Standard
26.5 GHz	SMA	Standard
40.0 GHz	2.92 mm	Standard
12.4 GHz	N	Standard
14.0 GHz	N	Special Order
6.0 GHz	SC	Standard

RF Connectors - Type SMA is the recommended connector expect for high power requirements. The normal frequency limit is 18.0 GHz however, Charter Engineering can supply switches which function up to 26.5 GHz. CEI can also supply a special SMA connector enabling higher power capability.

The Type N connector is recommended for optimum RF performance and operation at power levels greater than the SMA power rating. See CW Power Capability vs. Frequency Chart on page 4-5. CEI can also supply a special Type N connector enabling higher power capability.

The 2.92 mm connector is recommended for higher frequency and 5G applications.

The Type SC connector is recommended for high power applications in which large diameter cables are used for extremely low loss. SC is normally used up to 1000 MHz, but Charter Engineering has modified the design to operate up to 6.0 GHz.

CEI can also custom design switches using your required connector. Contact CEI for further details.

HOW TO SELECT A COAXIAL SWITCH

4. **Actuator Voltage** - All standard Charter Engineering switches offer the voltages below. Other voltages can be supplied depending on the switch model. The following list consists of available voltage options for most CEI switches:

SMA Connectors, 2.92 mm

Switch Series	Voltage (Vdc)
SPDT	28.0, 24.0, 15.0, 12.0
SPDT Terminated	28.0, 24.0, 15.0, 12.0
SP3T-SP6T	28.0, 24.0, 15.0, 12.0
SP3T-SP6T Terminated	28.0, 24.0, 15.0, 12.0
SP7T-SP8T	28.0, 24.0, 15.0, 12.0
SP7T-SP8T Terminated	28.0, 24.0, 15.0, 12.0
SP9T-SP12T	28.0, 24.0, 15.0, 12.0
SP9T-SP12T Terminated	28.0, 24.0, 15.0, 12.0
DPDT (Transfer)	28.0, 12.0, 15.0, 24.0

Type N Connectors, Type SC

Switch Series	Voltage (Vdc)
SPDT	28.0, 24.0, 15.0, 12.0
SPDT Terminated	28.0, 24.0, 15.0, 12.0
SP3T-SP6T	28.0, 24.0, 15.0, 12.0
DPDT (Transfer)	28.0, 24.0, 15.0, 12.0

5. **Polarity** - Each CEI switch offers the option of either a positive (+) or negative (-) common. The exception is the SPDT Failsafe series which does not require a common.

6. **Power Interface** - All CEI switches are provided with solder terminals. The MS connector (MIL-STANDARD) and D'SUB Miniature Series can be supplied instead of terminals on most switch series.

Many catalog pictures feature D'SUB connectors and MS Connectors which are readily available alternatives to solder terminals.

Charter Engineering can also supply other sources of power interface. Please contact CEI with your custom requirement.

7. Options -

CUT OFF POWER CIRCUIT- This applies to latching switches only. A switch that has the ability to disconnect the actuator drive circuit so that D.C. current will not be consumed after switching has been accomplished.

TTL LOGIC - Transistor-transistor-logic driver circuitry enables the status of the switch to be controlled by the level of the TTL Logic input. Users can apply the power voltage across a pair of designated power terminals and then control switch operation with a 5 volt control circuitry.

CEI'S TTL Logic has a remarkable circuitry which will allow the actuator to draw current only when the TTL is at a high state (5.0 Vdc) and to draw a current of only 5.0 mA max at a low state (0 Vdc). This amazing circuitry will enable your system to run cooler and will save a substantial power supply to the switches.

INDICATOR CIRCUITRY - CEI can supply a set of internally mounted contacts mechanically connected to the switch actuator allowing external monitoring of switch RF status.

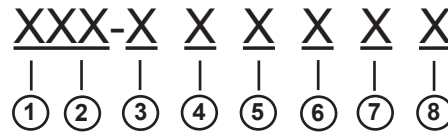
SUPPRESSION DIODES - CEI can supply fast-recovery rectifiers (diodes) connected in parallel with the coils of the switch to suppress any transient voltage generated by the coils. Suppression Diodes are recommended with TTL Logic.

8. **Intermodulation** - Passive Intermodulation (PIM) is a form of signal distortion that occurs whenever signals at two or more frequencies conduct simultaneously in a passive device (electromechanical switch) which contains some non-linear response. This interference phenomenon is attributable to many sources such as dissimilar metals, dirty interconnects, or other anodic effects. PIM is of particular concern whenever:

9. **Special Options** - CEI can provide switches with enhanced temperature and power handling capabilities.

For further details, please contact CEI.

PART NUMBER & ORDERING INFORMATION

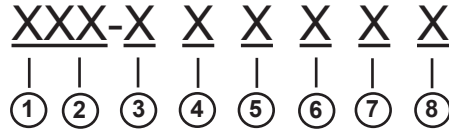


Example: B7N-542107, SPDT Terminated, Latching w/Indicator, DC-18.0 GHz, 28.0 Vdc, Negative Common, Solder Terminal, Low

①	Switch Model Series
B1	SPDT, 50 Ohms IMPEDANCE, MINIATURE (SMA)
B10	SPDT, 50 Ohms IMPEDANCE, MINIATURE (SMA)
B12	SPDT, 50 Ohms IMPEDANCE, MINIATURE (SMA)
B2	SPDT, 50 Ohms IMPEDANCE, MINIATURE (SMA)
B3	SPDT, 50 Ohms IMPEDANCE, MINIATURE (SMA)
B40	SPDT, 50 Ohms IMPEDANCE, MINIATURE (2.92 mm DC-40 GHz)
B5	SPDT, 50 Ohms IMPEDANCE, HIGH POWER, FULL SIZE, TYPE (N)
B6	SPDT, 50 Ohms IMPEDANCE, HIGH POWER, FULL SIZE, UNUSED PORT TERMINATED, TYPE (N)
B9	SPDT, 50 Ohms IMPEDANCE, VERY HIGH POWER, FULL SIZE, TYPE (SC)
B7	SPDT, 50 Ohms IMPEDANCE, UNUSED PORT TERMINATED, (SMA)
B70	SPDT, 50 Ohms IMPEDANCE, UNUSED PORT EXTERNALLY TERMINATED , (SMA)
B80	SPDT, 50 Ohms IMPEDANCE, UNUSED PORT EXTERNALLY TERMINATED, (2.92 mm DC-40 GHz)
B77	DP3T, 50 Ohms IMPEDANCE, 5 PORT (SMA)
B88	DP3T, 50 Ohms IMPEDANCE, 5 PORT (2.92 mm DC-40 GHz)
L1	DPDT, 50 Ohms IMPEDANCE, MINIATURE, WITH BRACKET (SMA)
L10	DPDT, 50 Ohms IMPEDANCE, MINIATURE, WITHOUT BRACKET (SMA)
L40	DPDT, 50 Ohms IMPEDANCE, MINIATURE, WITH BRACKET (2.92 mm DC-40 GHz)
L2	DPDT, 50 Ohms IMPEDANCE, HIGH POWER, FULL SIZE, TYPE (N)
L20	DPDT, 50 Ohms IMPEDANCE, HIGH POWER, FULL SIZE, TYPE (TNC)
F3 - F6	SP3T - SP6T, MOMENTARY (NORMALLY OPEN), MINIATURE, (SMA)
H3 - H6	SP3T - SP6T, LATCHING, FAILSAFE, MOMENTARY, MINIATURE, (SMA)
H30-H60	SP3T - SP6T, LATCHING, FAILSAFE, MOMENTARY, (2.92 mm DC-40 GHz)
G3 - G6	SP3T - SP6T, LATCHING, FAILSAFE, MOMENTARY, MINIATURE, WITH BRACKET (SMA)
P3 - P6	SP3T - SP6T, LATCHING, FAILSAFE, MOMENTARY, UNUSED PORTS TERMINATED, (SMA)
C3 - C6	SP3T - SP6T, LATCHING, FAILSAFE, MOMENTARY, EXTERNAL PORTS TERMINATED (SMA)
Q3 - Q6	SP3T - SP6T, LATCHING, FAILSAFE, MOMENTARY, UNUSED PORTS TERMINATED, WITH BRACKET, (SMA)
U3 - U6	SP3T - SP6T, LATCHING, FAILSAFE, MOMENTARY, HIGH POWER, FULL SIZE, TYPE (N)
W3 - W6	SP3T - SP6T, LATCHING, FAILSAFE, MOMENTARY, VERY HIGH POWER, FULL SIZE, TYPE (SC)
J7 - J8	SP7T - SP8T, MOMENTARY (NORMALLY OPEN), MINIATURE, (SMA)
K7 - K8	SP7T - SP8T, LATCHING, FAILSAFE, MOMENTARY, MINIATURE, (SMA)
N7 - N8	SP7T - SP8T, LATCHING, FAILSAFE, MOMENTARY, MINIATURE, (SMA)
O7 - O8	SP7T - SP8T, LATCHING, FAILSAFE, MOMENTARY, UNUSED PORTS TERMINATED, (SMA)
M7 - M8	SP7T - SP8T, LATCHING, FAILSAFE, MOMENTARY, UNUSED PORTS TERMINATED, (SMA)
S9 - S12	SP9T - SP12T, LATCHING, FAILSAFE, MOMENTARY, (SMA)
T9 - T12	SP9T - SP12T, LATCHING, FAILSAFE, MOMENTARY, UNUSED PORTS TERMINATED (SMA)
XC	CUSTOM ORDER

②	Electromechanical
F	FAILSAFE
G	FAILSAFE WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING
M	LATCHING WITH SUPPRESSION DIODE
N	LATCHING WITH INDICATOR
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR
R	MOMENTARY
S	MOMENTARY WITH SUPPRESSION DIODE
T	MOMENTARY WITH INDICATOR
U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
Y	OTHER (SPECIFY)

PART NUMBER & ORDERING INFORMATION



Example: B7N-542107, SPDT Terminated, Latching w/Indicator, DC-18.0 GHz, 28.0 Vdc, Negative Common, Solder Terminal, Low IM

③

Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	9	DC - 15.0 GHz
5	DC - 18.0 GHz	A	DC - 40.0 GHz

④

Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	∅	NOT REQUIRED

⑤

Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

⑥

Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)
2	SOLDER TERMINAL (SIDE OF SWITCH)
3	CONN MS3112E-XX-XXP SERIES OR EQUIVALENT (TOP OF SWITCH)
4	CONN MS3112E-XX-XXP SERIES OR EQUIVALENT (SIDE OF SWITCH)
5	D' SUB MINIATURE SERIES (TOP OF SWITCH) - (9 OR 15 PINS - TWO ROWS)
6	D' SUB MINIATURE SERIES (SIDE OF SWITCH) - (9 OR 15 PINS - TWO ROWS)
7	D' SUB MINIATURE SERIES (TOP OF SWITCH) - (26 PINS - 3 ROWS)
8	MICROMINIATURE D'SUB SERIES
9	D'SUB MINIATURE SERIES (15 PINS - 3 ROWS)

⑦

Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)
2	TTL LOGIC
3	CUT OFF POWER CIRCUIT & TTL LOGIC (LATCHING ONLY)
4	BCD TTL DECODER
5	CUT OFF POWER CIRCUIT & BCD TTL DECODER
0	NO OTHER OPTIONS REQUIRED

⑧

Intermodulation

7	LOW PASSIVE INTERMODULATION (-110 dBc MIN @ 2 20 TONES)
8	SUPERIOR PASSIVE INTERMODULATION (-160 dBc MIN @ 2 20 TONES)
9	ULTRA LOW PASSIVE INTERMODULATION (-130 dBc MIN @ 2 20 TONES)
0	STANDARD SWITCH

⑨

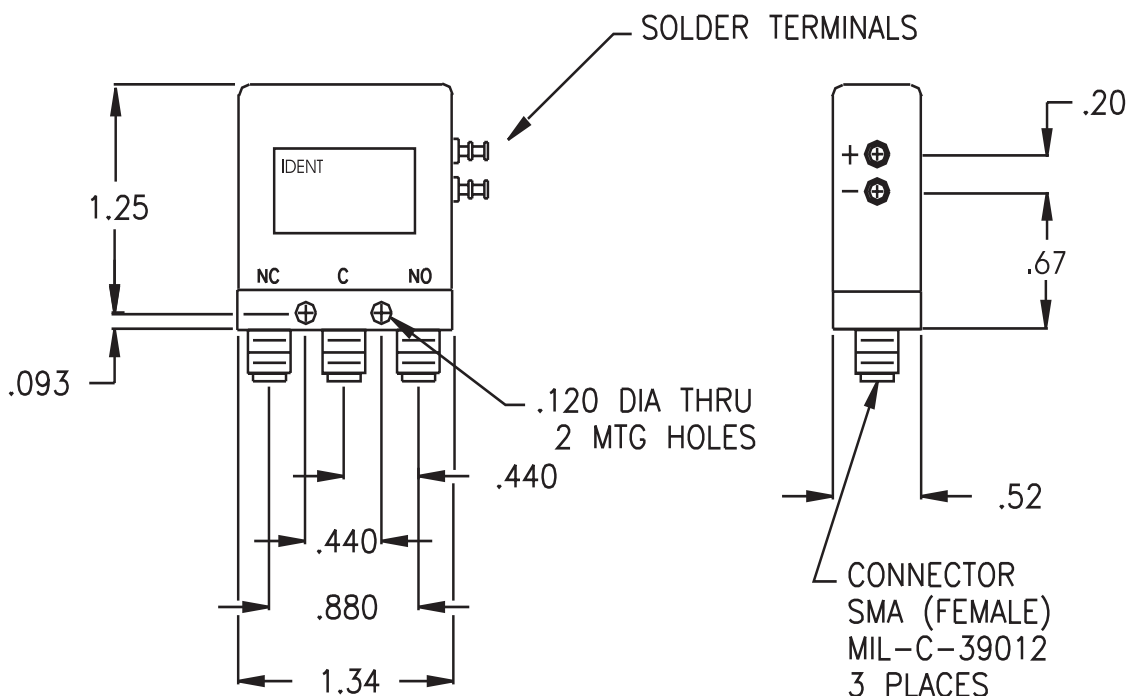
Special Options

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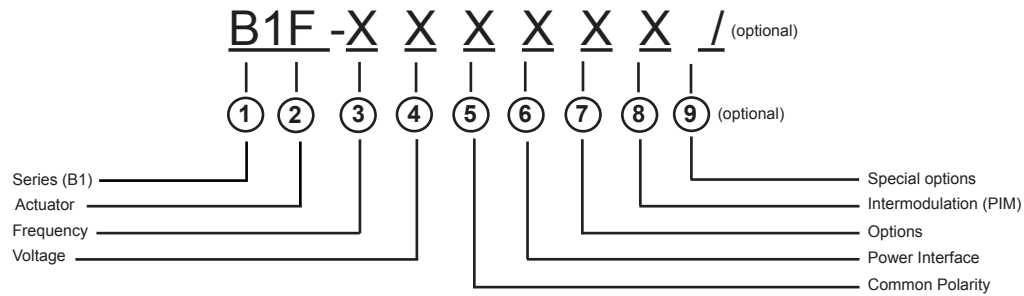
B1 SERIES SPDT FAILSAFE DC - 26.5 GHz



FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0	18.0 - 26.5
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1	1.65:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50	0.70
ISOLATION (MIN.)	90	80	80	70	60	50
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT	:	BREAK BEFORE MAKE				
ACTUATOR	:	FAILSAFE				
SWITCHING SPEED	:	20 mSEC MAX.				
ELECTRICAL						
ACTUATOR VOLTAGE	:	28.0, 12.0, 15.0, 24.0 Vdc				
ACTUATOR CURRENT	:	CONTACT CEI				
POWER HANDLING	:	200 WCW @ 1.0 GHz (STANDARD)				
	:	300 WCW @ 1.0 GHz (OPT. /P)				
ENVIRONMENTAL						
OPERATING TEMP	:	-40 DEG. C TO 85 DEG. C (STANDARD)				
	:	-54 DEG. C TO 90 DEG. C (OPT. /MS)				
SHOCK	:	50 G'S (SAWTOOTH)				
RANDOM VIBRATION	:	15 G'S rms (NON-OPERATING)				
LIFE	:	1,000,000 CYCLES				
FINISH						
RF CAVITY	:	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW PIM MODELS)				
ENCLOSURE	:	ALUMINUM, BLACK				
CONTACT	:	BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204				
CONNECTOR SHELL	:	CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074				
NOTE	:	FINISH MAY VARY FOR /MS VERSION				
AVAILABLE OPTIONS LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (PIM)						



B1 SERIES PART NUMBER & ORDERING INFORMATION



1 - Switch Series			
B1	SPDT SMA		
2 - Actuator			
F	FAILSAFE		
3 - Frequency Bandwidth			
1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	0	OTHER (SPECIFY)
5	DC - 18.0 GHz		
4 - Voltage			
1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED
5 - Common Polarity			
0	NOT REQUIRED		
6 - Power Interface			
1	SOLDER TERMINAL (SIDE OF SWITCH)		
7 - Options			
0	NO OTHER OPTIONS REQUIRED		
8 - Intermodulation			
7	LOW PASSIVE INTERMUDULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH
9 - Special Options (optional - leave blank if not required)			
/P	HIGH TEMP, HIGH POWER CONNECTOR		
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG		
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE		

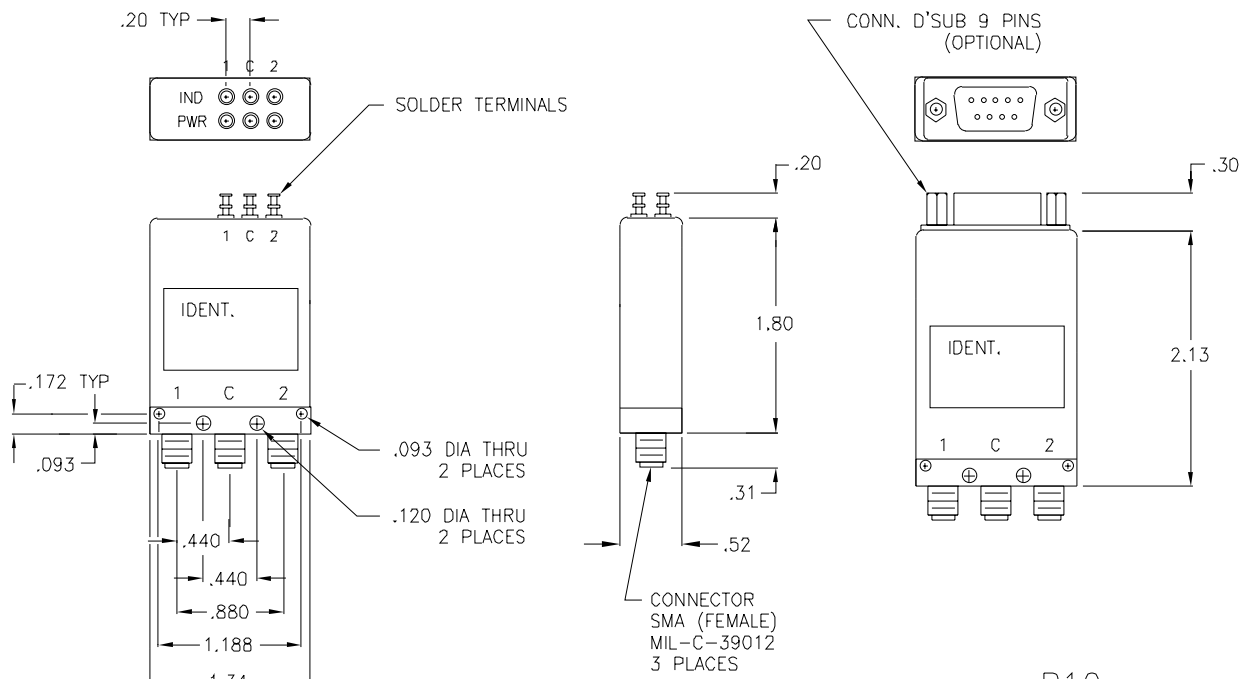
B10 SERIES SPDT DC - 26.5 GHz

4 MOUNTING HOLES



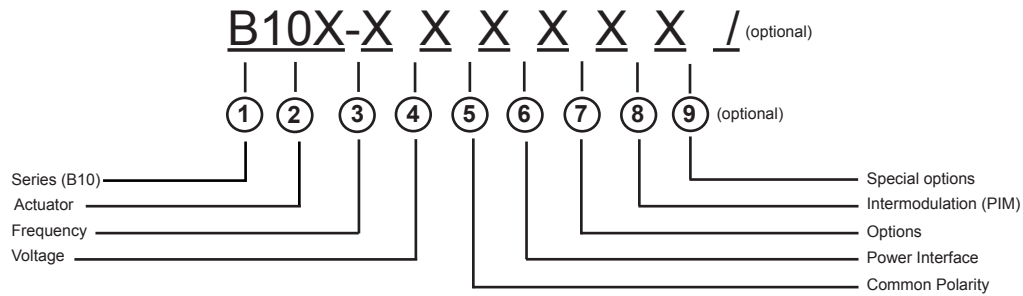
FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0	18.0 - 26.5
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1	1.65:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50	0.70
ISOLATION (MIN.)	90	80	80	70	60	50
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT	:	BREAK BEFORE MAKE				
ACTUATOR	:	FAILSAFE, LATCHING, MOMENTARY				
SWITCHING SPEED	:	20 mSEC MAX.				
ELECTRICAL						
ACTUATOR VOLTAGE	:	28.0, 12.0, 15.0, 24.0 Vdc				
ACTUATOR CURRENT	:	CONTACT CEI				
POWER HANDLING	:	200 WCW @ 1.0 GHz (STANDARD)				
	:	300 WCW @ 1.0 GHz (OPT. /P)				
ENVIRONMENTAL						
OPERATING TEMP	:	-40 DEG. C TO 85 DEG. C (STANDARD)				
	:	-54 DEG. C TO 90 DEG. C (OPT. M/S) **				
	:	(OPT /MS NOT AVAILABLE WITH TTL LOGIC)				
SHOCK	:	50 G's (SAWTOOTH)				
RANDOM VIBRATION	:	15 G's rms (NON-OPERATING)				
LIFE	:	1,000,000 CYCLES				
FINISH						
RF CAVITY	:	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS)				
ENCLOSURE	:	ALUMINUM, BLACK				
CONTACT	:	BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204				
CONNECTOR SHELL	:	CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074				
NOTE	:	FINISH MAY VARY WITH /MS VERSION				
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY	:	CUT OFF POWER CIRCUIT				
SUPPRESSION DIODE	:	D' SUB MINIATURE SERIES				
TTL LOGIC	:	CUSTOM DESIGNS				
	:	LOW, ULTRA LOW, OR SUPERIOR INTERMODULATION (IM)				

NOTE: REFERENCE FOR DIMENSIONS ONLY.
EACH SWITCH WILL HAVE A UNIQUE SCHEMATIC.



B10

B10 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

B10 SPDT SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	0	OTHER (SPECIFY)
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
		8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

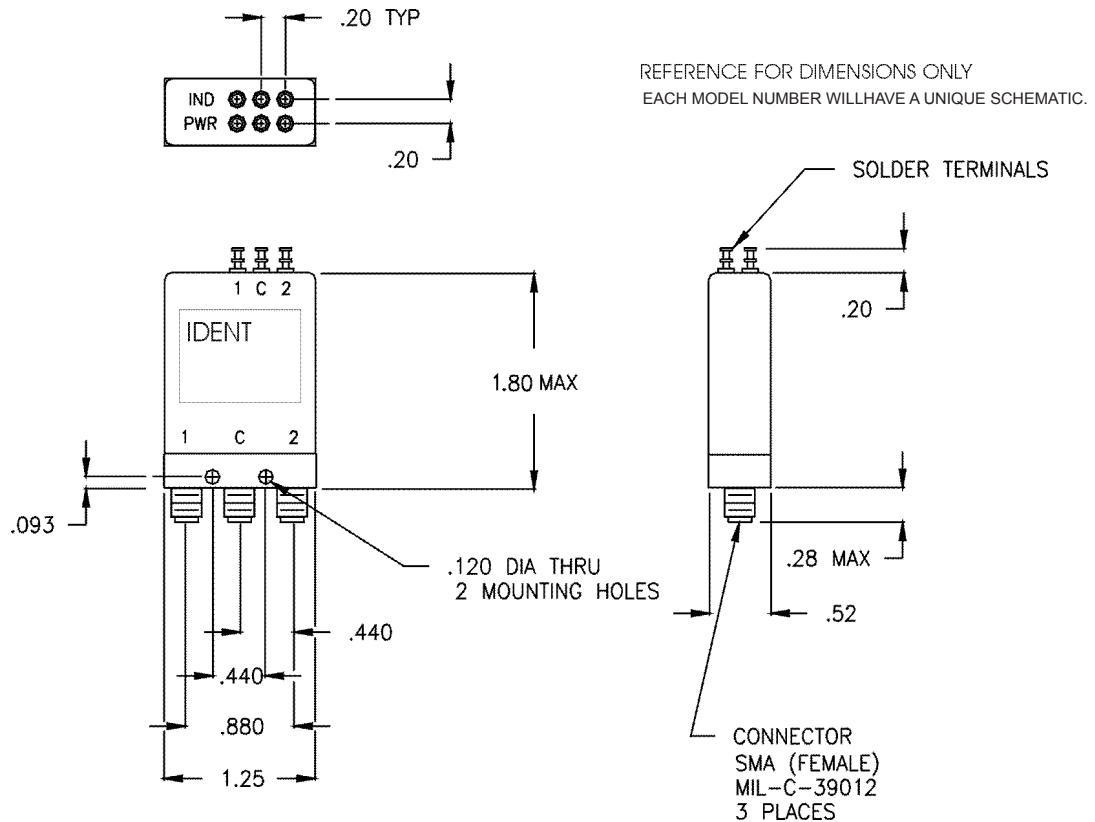
9 - Special Options (optional - leave blank if not required)

/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG (NOT AVAILABLE WITH TTL LOGIC OPTION)
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE (NOT AVAILABLE WITH TTL LOGIC OPTION)

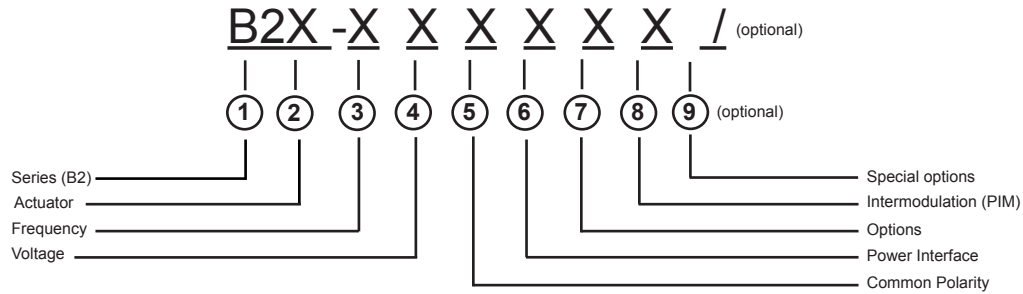
B2 SERIES SP2T DC - 26.5 GHz



FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0	18.0 - 26.5
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1	1.65:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50	0.70
ISOLATION (MIN.)	90	80	80	70	60	50
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT ACTUATOR SWITCHING SPEED	: BREAK BEFORE MAKE : FAILSAFE, LATCHING, MOMENTARY : 20 mSEC MAX.					
ELECTRICAL						
ACTUATOR VOLTAGE ACTUATOR CURRENT POWER HANDLING	: 28.0, 12.0, 15.0, 24.0 Vdc : CONTACT CEI : 200 WCW @ 1.0 GHz (STANDARD) : 300 WCW @ 1.0 GHz (OPT. /P)					
ENVIRONMENTAL						
OPERATING TEMP	: -40 DEG. C TO 85 DEG. C (STANDARD) : -54 DEG. C TO 90 DEG. C (OPT. /MS) (OPT. /MS NOT AVAILABLE WITH TTL LOGIC)					
SHOCK RANDOM VIBRATION LIFE	: 50 G's (SAWTOOTH) : 15 G's rms (NON-OPERATING) : 1,000,000 CYCLES					
FINISH						
RF CAVITY ENCLOSURE CONTACT CONNECTOR SHELL NOTE	: ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS) : ALUMINUM, BLUE OR BLACK : BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204 : CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074 : FINISH MAY VARY FOR /MS VERSION					
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY SUPPRESSION DIODE TTL LOGIC LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (IM)	: CUT OFF POWER CIRCUIT : CUSTOM DESIGNS : :					



B2 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

B2 SPDT SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	0	OTHER (SPECIFY)
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	8	OTHER
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7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

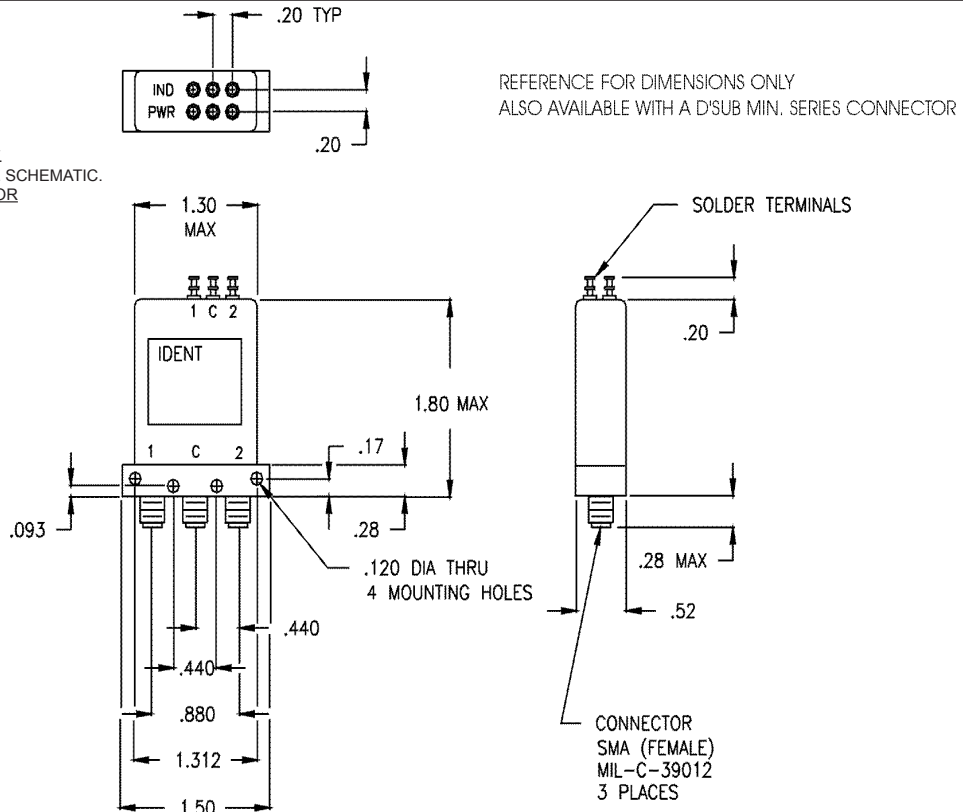
/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG (NOT AVAILABLE WITH TTL LOGIC OPTION)
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE (NOT AVAILABLE WITH TTL LOGIC OPTION)

B3 SERIES SP2T DC - 26.5 GHz

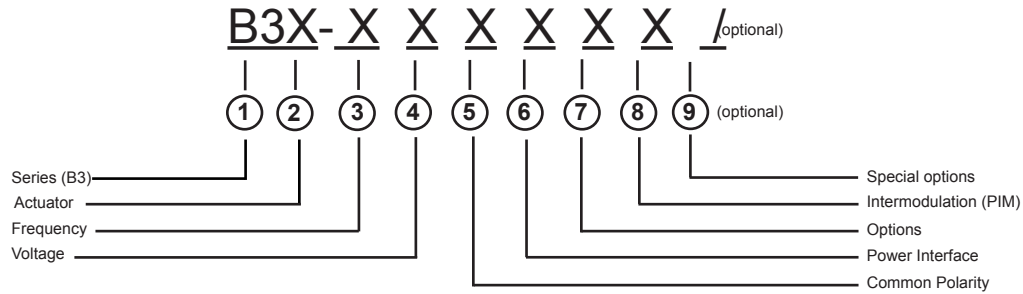


FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0	18.0 - 26.5
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1	1.65:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50	0.70
ISOLATION (MIN.)	90	80	80	70	60	50
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT ACTUATOR SWITCHING SPEED	BREAK BEFORE MAKE FAILSAFE, LATCHING, MOMENTARY 20 mSEC MAX.					
ELECTRICAL						
ACTUATOR VOLTAGE ACTUATOR CURRENT POWER HANDLING	28.0, 12.0, 15.0, 24.0 Vdc CONTACT CEI 200 WCW @ 1.0 GHz (STANDARD) 300 WCW @ 1.0 GHz (OPT. /P)					
ENVIRONMENTAL						
OPERATING TEMP SHOCK RANDOM VIBRATION LIFE	-40 DEG. C TO 85 DEG. C (STANDARD) -54 DEG. C TO 90 DEG. C (OPT. /MS) ** (OPT /MS NOT AVAILABLE WITH TTL LOGIC) 50 G's (SAWTOOTH) 15 G's rms (NON-OPERATING) 1,000,000 CYCLES					
FINISH						
RF CAVITY ENCLOSURE CONTACT CONNECTOR SHELL NOTE	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS) ALUMINUM, BLUE BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204 CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074 FINISH MAY VARY WITH /MS VERSION					
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY SUPPRESSION DIODE TTL LOGIC LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (IM)	CUT OFF POWER CIRCUIT D'SUB MINIATURE SERIES CUSTOM DESIGNS					

NOTE: REFERENCE FOR DIMENSIONS ONLY.
EACH MODEL NUMBER WILL HAVE A UNIQUE SCHEMATIC.
ALSO AVAILABLE WITH A D'SUB CONNECTOR



B3 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

B3 SPDT SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	0	OTHER (SPECIFY)
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
		8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC (NOT AVAILABLE WITH OPTION /MS)	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER (NOT AVAILABLE WITH OPTION /MS)		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

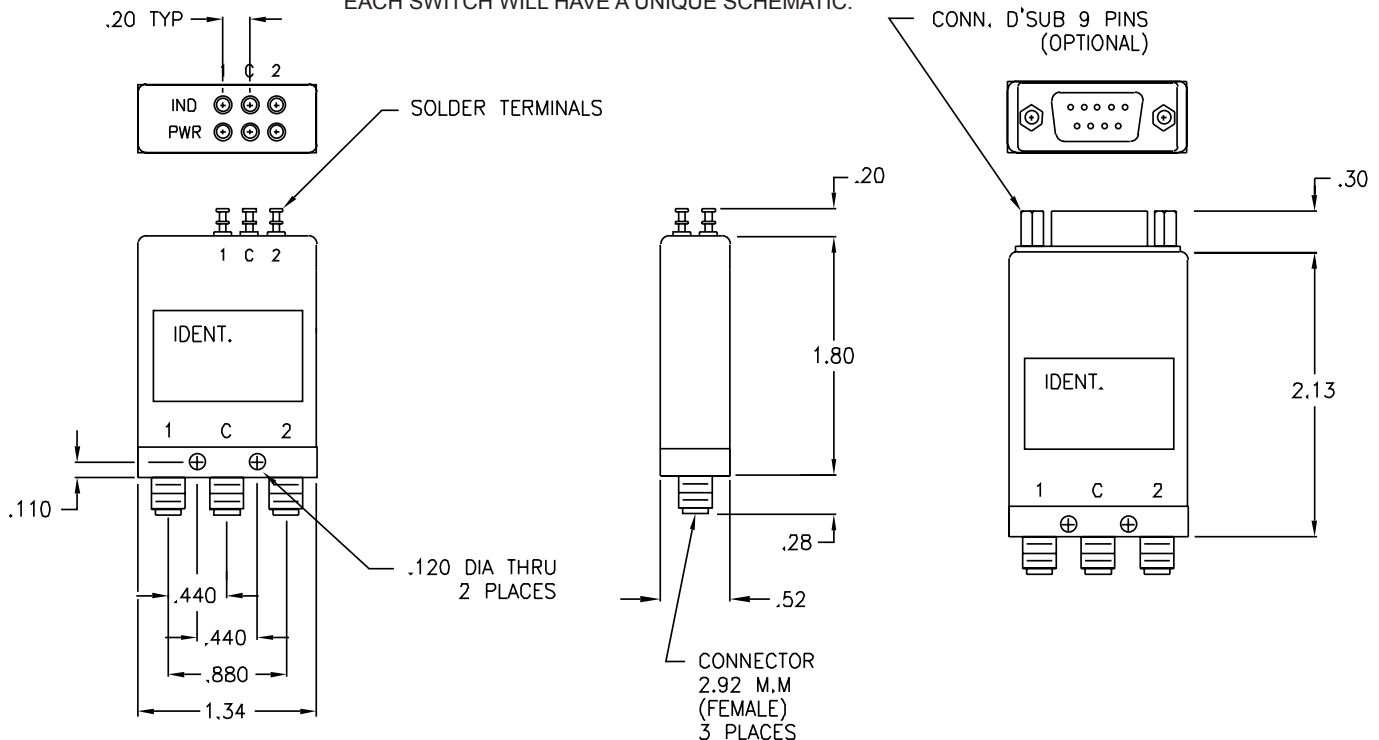
/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG (NOT AVAILABLE WITH TTL LOGIC OPTION OR BCD DECODER)
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE (NOT AVAILABLE WITH TTL LOGIC OPTION OR BCD DECODER)

B40 SERIES SPDT DC - 40.0 GHz 2.92 mm

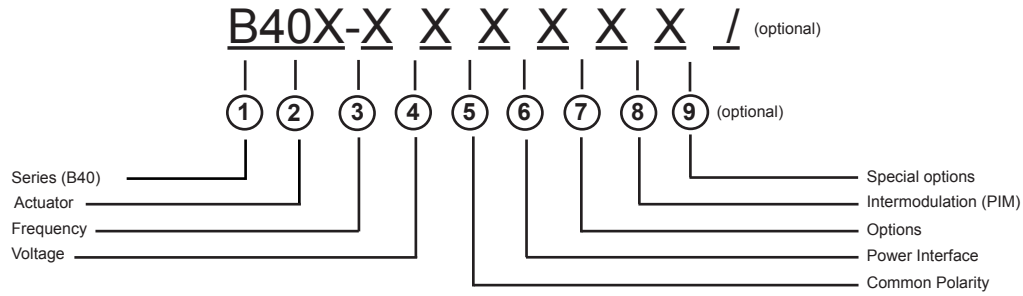


FREQUENCY: GHz	DC - 2.0	2.0 - 6.0	6.0 - 12.4	12.4 - 18.0	18.0 - 26.5	26.5 - 40.0
VSWR (MAX.)	1.20:1	1.30:1	1.40:1	1.50:1	1.60:1	1.60:1
INSERTION LOSS (MAX.)	0.20	0.30	0.40	0.50	0.60	0.60
ISOLATION (MIN.)	90	80	70	60	60	60
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT	:		BREAK BEFORE MAKE			
ACTUATOR	:		FAILSAFE, LATCHING, MOMENTARY			
SWITCHING SPEED	:		20 mSEC MAX.			
ELECTRICAL						
ACTUATOR VOLTAGE	:		28.0, 12.0, 15.0, 24.0 Vdc			
ACTUATOR CURRENT	:		CONTACT CEI			
POWER HANDLING	:		200 WCW @ 1.0 GHz			
ENVIRONMENTAL						
OPERATING TEMP	:		-40 DEG. C TO 85 DEG. C			
SHOCK	:		50 G's (SAWTOOTH)			
RANDOM VIBRATION	:		15 G's rms (NON-OPERATING)			
LIFE	:		1,000,000 CYCLES			
FINISH						
RF CAVITY	:		ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS)			
ENCLOSURE	:		ALUMINUM, BLUE OR BLACK			
CONTACT	:		BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204			
CONNECTOR SHELL	:		CRES, PASSIVATED PER QQ-P-35 OR BRASS			
NOTE	:		FINISH MAY VARY WITH /MS VERSION			
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY	:		CUT OFF POWER CIRCUIT			
SUPPRESSION DIODE	:		D'SUB MINIATURE SERIES			
TTL LOGIC	:		BCD DECODER			
LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (PIM)	:					

NOTE: REFERENCE FOR DIMENSIONS ONLY.
EACH SWITCH WILL HAVE A UNIQUE SCHEMATIC.



B40 SERIES PART NUMBER & ORDERING INFORMATION

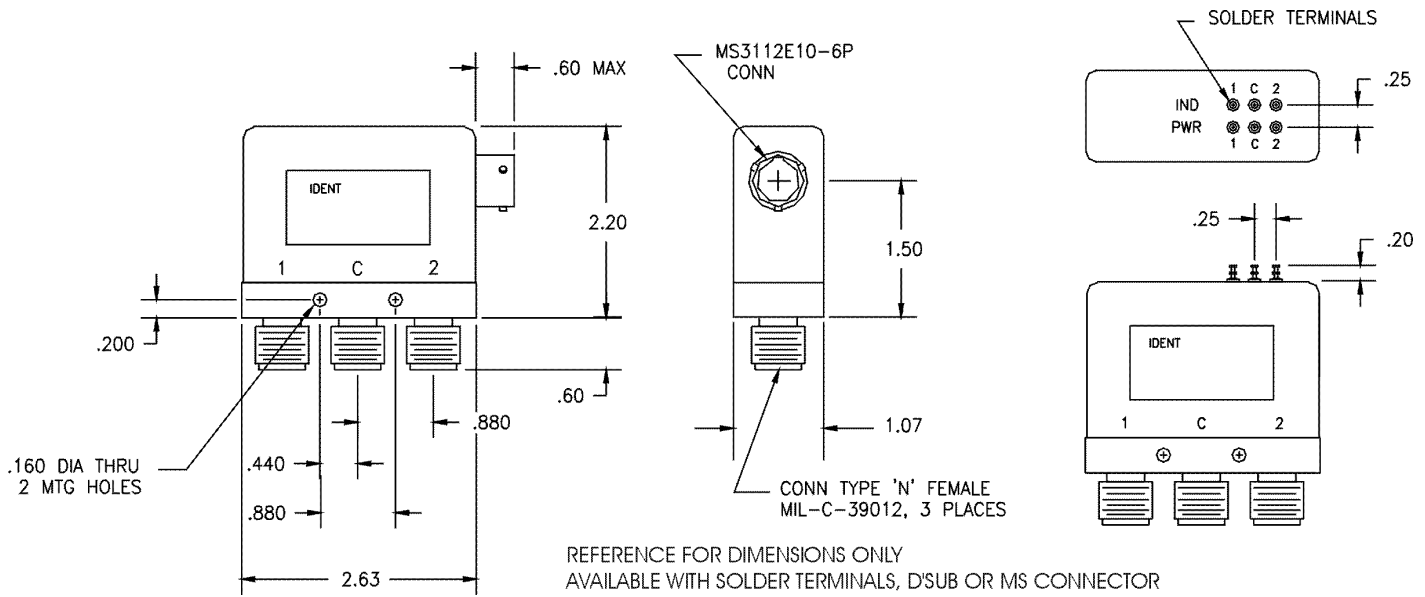


1 - Switch Series			
B40	SPDT 2.92 mm (DC - 40.0 GHz)		
2 - Actuator			
F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		
3 - Frequency Bandwidth			
A	DC - 40.0 GHz		
0	OTHER (SPECIFY)		
4 - Voltage			
1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED
5 - Common Polarity			
1	POSITIVE (+) COMMON		
2	NEGATIVE (-) OR RETURN Vdc COMMON		
0	NOT REQUIRED		
6 - Power Interface			
1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
		8	OTHER
7 - Options			
1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		
8 - Intermodulation			
7	LOW PASSIVE INTERMUDULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH
9 - Special Options (optional - leave blank if not required)			
NOT AVAILABLE			

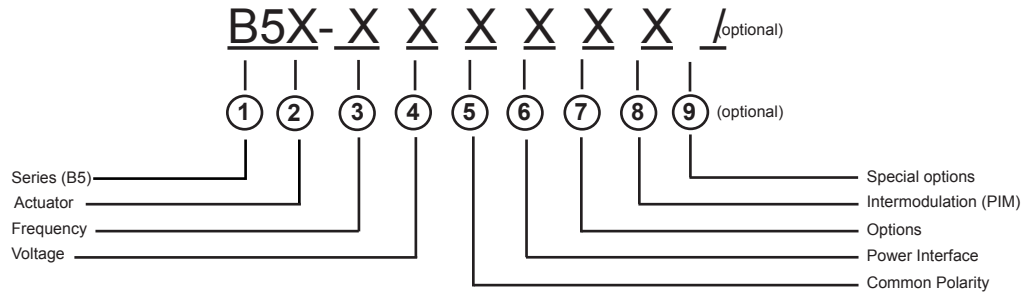
B5 SERIES SP2T DC - 12.4 GHz



FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4
VSWR (MAX.)	1.20:1	1.30:1	1.40:1	1.50:1
INSERTION LOSS (MAX.)	0.20	0.30	0.40	0.50
ISOLATION (MIN.)	80	70	70	60
IMPEDANCE	50 Ohms			
MECHANICAL				
CONTACT	:	BREAK BEFORE MAKE		
ACTUATOR	:	FAILSAFE, LATCHING, MOMENTARY		
SWITCHING SPEED	:	20 mSEC MAX.		
ELECTRICAL				
ACTUATOR VOLTAGE	:	28.0, 12.0, 15.0, 24.0 Vdc		
ACTUATOR CURRENT	:	CONTACT CEI		
POWER HANDLING	:	350 WCW @ 1.0 GHz (STANDARD)		
	:	950 WCW @ 1.0 GHz (OPT. /P)		
ENVIRONMENTAL				
OPERATING TEMP	:	-40 DEG. C TO 85 DEG. C (STANDARD)		
	:	-54 DEG. C TO 90 DEG. C (OPT. /MS)		
SHOCK	:	50 G's (SAWTOOTH)		
RANDOM VIBRATION	:	15 G's rms (NON-OPERATING)		
LIFE	:	1,000,000 CYCLES		
FINISH				
RF CAVITY	:	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS)		
ENCLOSURE	:	ALUMINUM, BLACK OR BLUE		
CONTACT	:	BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204		
CONNECTOR SHELL	:	CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074		
NOTE	:	FINISH MAY VARY FOR /MS VERSION		
AVAILABLE OPTIONS				
INDICATOR CIRCUITRY	:	CUT OFF POWER CIRCUIT		
SUPPRESSION DIODE	:	MS CONNECTOR OR EQUIV. (MIL-SPEC)		
TTL LOGIC	:	D'SUB MINIATURE SERIES		
	:	LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (IM)		



B5 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

B5 SPDT TYPE N

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz
2	DC - 2.0 GHz
3	DC - 12.4 GHz
4	DC - 4.0 GHz
6	DC - 6.0 GHz

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	6	D' SUB MINIATURE SERIES (SIDE OF SWITCH)
4	CONN MS3112E-XX-XXP OR EQUIV. (SIDE OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

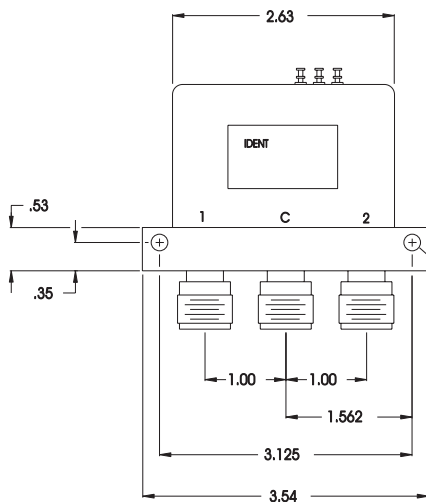
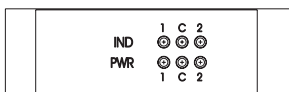
/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

B9 SERIES SPDT DC - 6.0 GHz TYPE SC CONNECTORS VERY HIGH POWER

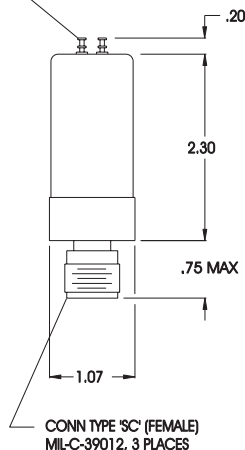


FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 6.0
VSWR (MAX.)	1.50:1	1.50:1	1.50:1
INSERTION LOSS (MAX.)	0.50	0.50	0.50
ISOLATION (MIN.)	70	70	60
IMPEDANCE	50 Ohms		
MECHANICAL			
CONTACT	:	BREAK BEFORE MAKE	
ACTUATOR	:	FAILSAFE, LATCHING, MOMENTARY	
SWITCHING SPEED	:	20 mSEC MAX.	
ELECTRICAL			
ACTUATOR VOLTAGE	:	28.0, 24.0, 15.0, 12.0 Vdc	
ACTUATOR CURRENT	:	CONTACT CEI	
POWER HANDLING	:	1.75 KWCW @ 1.0 GHz	
ENVIRONMENTAL			
OPERATING TEMP	:	-40 DEG. C TO 85 DEG. C (STANDARD) -54 DEG. C TO 90 DEG. C (OPT/MS)	
SHOCK	:	50 G's (SAWTOOTH)	
RANDOM VIBRATION	:	15 G's rms (NON-OPERATING)	
LIFE	:	1,000,000 CYCLES	
FINISH			
RF CAVITY	:	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW, ULTRA LOW & SUP. IM MODELS)	
ENCLOSURE	:	ALUMINUM, BLUE OR BLACK	
CONTACT	:	BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204	
CONNECTOR SHELL	:	GRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074	
NOTE:	:	FINISH MAY VARY FOR /MS VERSION	
AVAILABLE OPTIONS			
INDICATOR CIRCUITRY	:	CUT OFF POWER CIRCUIT	
SUPPRESSION DIODE	:	D' SUB MINIATURE SERIES	
TTL LOGIC	:	MS CONNECTOR OR EQUIV. (MIL-SPEC)	
LOW & ULTRA LOW & SUPERIOR INTERMODULATION (IM)	:		

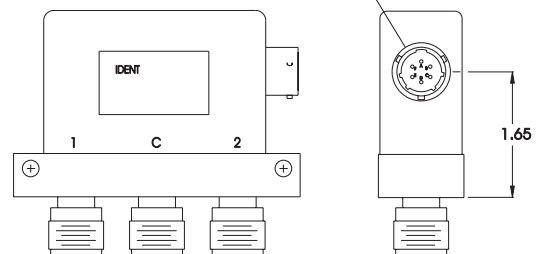
NOTE: SWITCH SHOWN WITH
INDICATOR OPTION. REFERENCE FOR DIMENSIONS ONLY.
EACH SWITCH WILL HAVE A UNIQUE SCHEMATIC.
ALSO AVAILABLE WITH D'SUB TYPE CONNECTOR.



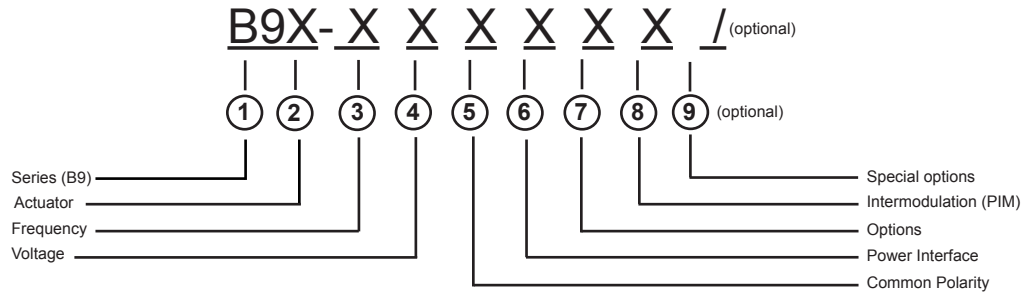
SOLDER TERMINALS



CONN. MS3112E10-6P
OR EQUIVALENT
(OPTIONAL)



B9 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

B9 SPDT TYPE SC

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

2	DC - 2.0 GHz
4	DC - 4.0 GHz
6	DC - 6.0 GHz
0	OTHER

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
4	CONN MS3112E-XX-XXP OR EQUIV. (SIDE OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

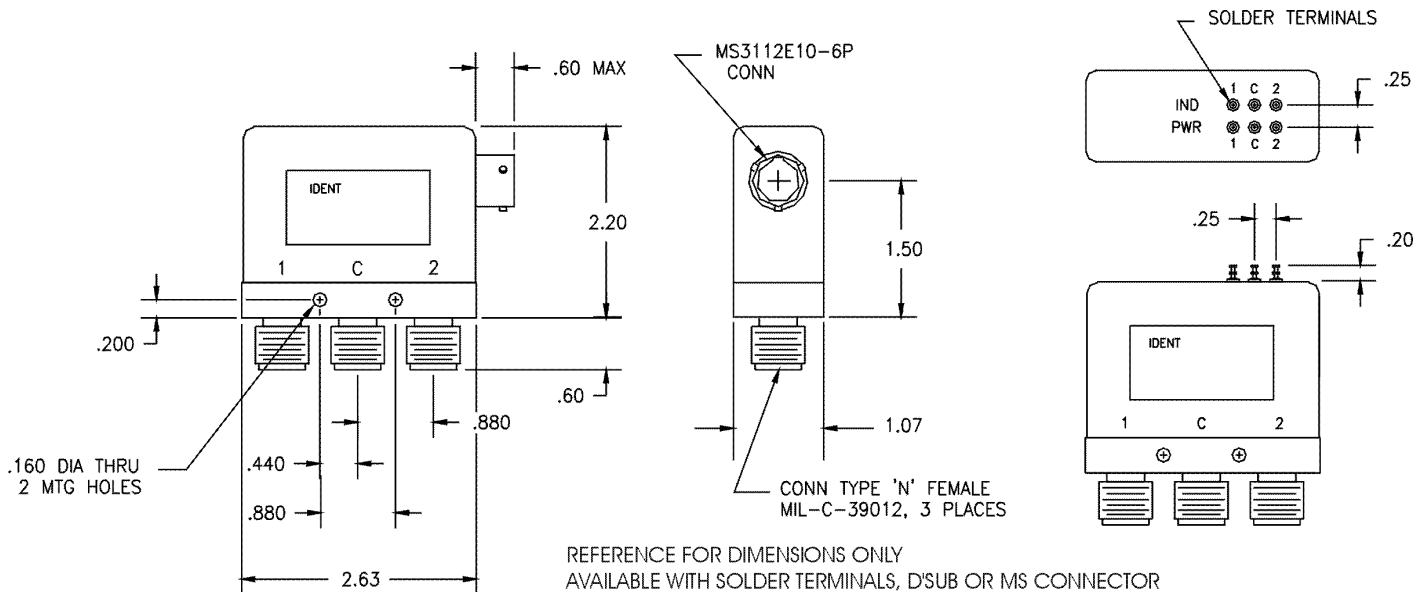
/MS EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG

B6 SERIES SPDT DC - 12.4 GHz

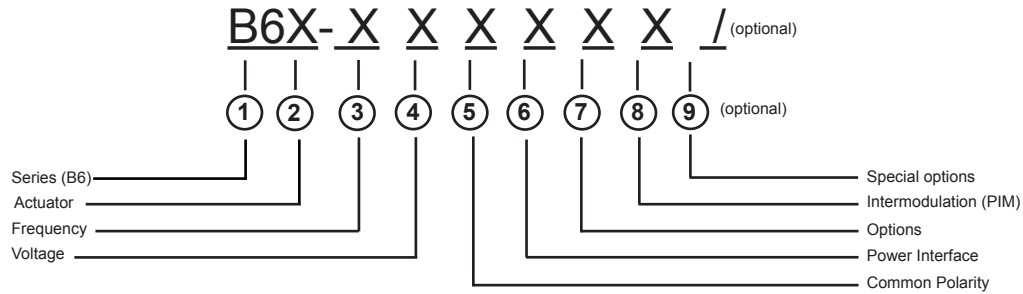
OPEN PORTS TERMINATED



FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4
VSWR (MAX.)	1.20:1	1.30:1	1.40:1	1.50:1
INSERTION LOSS (MAX.)	0.20	0.30	0.40	0.50
ISOLATION (MIN.)	80	70	70	60
IMPEDANCE	50 Ohms			
MECHANICAL				
CONTACT	:	BREAK BEFORE MAKE		
ACTUATOR	:	FAILSAFE, LATCHING, MOMENTARY		
SWITCHING SPEED	:	20 mSEC MAX.		
ELECTRICAL				
ACTUATOR VOLTAGE	:	28.0, 12.0, 15.0, 24.0 Vdc		
ACTUATOR CURRENT	:	CONTACT CEI		
POWER HANDLING	:	350 WCW @ 1.0 GHz (STANDARD)		
	:	950 WCW @ 1.0 GHz (OPT. /P)		
TERMINATION	:	8 WATTS MAX.		
ENVIRONMENTAL				
OPERATING TEMP	:	-40 DEG. C TO 85 DEG. C (STANDARD)		
	:	-54 DEG. C TO 90 DEG. C (OPT. /MS)		
SHOCK	:	50 G's (SAWTOOTH)		
RANDOM VIBRATION	:	15 G's rms (NON-OPERATING)		
LIFE	:	1,000,000 CYCLES		
FINISH				
RF CAVITY	:	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS)		
ENCLOSURE	:	ALUMINUM, BLACK OR BLUE		
CONTACT	:	BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204		
CONNECTOR SHELL	:	CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074		
NOTE	:	FINISH MAY VARY FOR /MS VERSION		
AVAILABLE OPTIONS				
INDICATOR CIRCUITRY	:	CUT OFF POWER CIRCUIT		
SUPPRESSION DIODE	:	MS CONNECTOR OR EQUIV. (MIL-SPEC)		
TTL LOGIC	:	D'SUB MINIATURE SERIES		
	:	LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (IM)		



B6 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

B6 SPDT TERMINATED TYPE N

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz
2	DC - 2.0 GHz
3	DC - 12.4 GHz
4	DC - 4.0 GHz
6	DC - 6.0 GHz

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	6	D' SUB MINIATURE SERIES (SIDE OF SWITCH)
4	CONN MS3112E-XX-XXP OR EQUIV. (SIDE OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

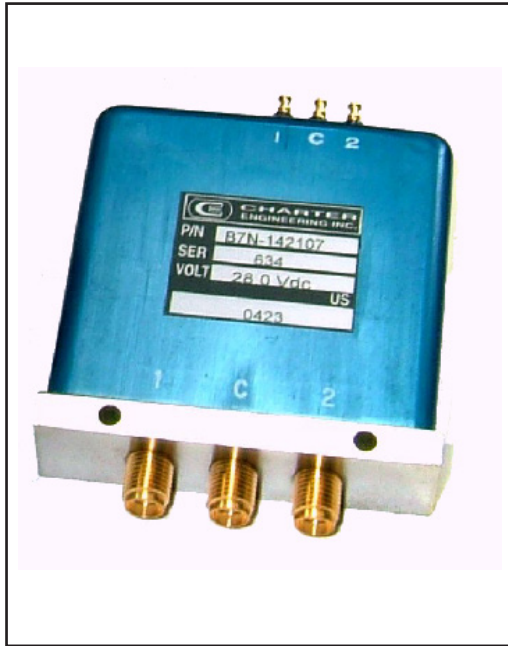
8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

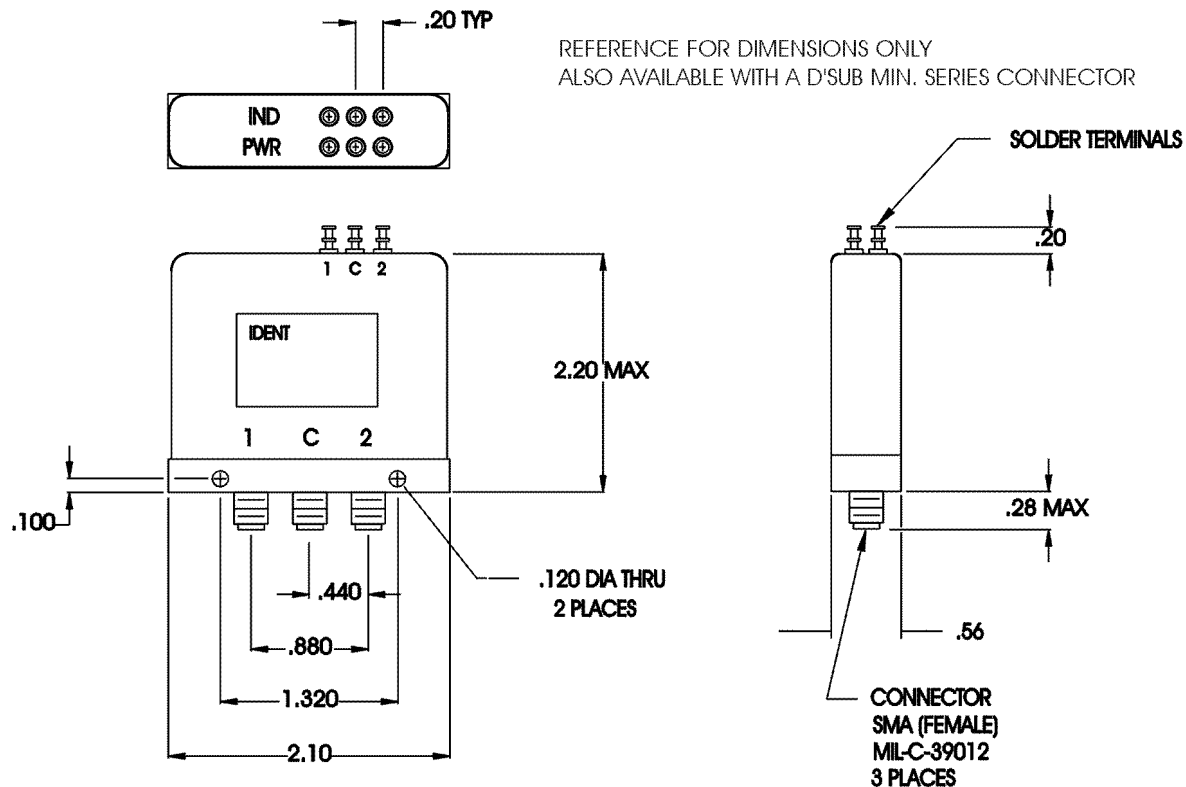
9 - Special Options (optional - leave blank if not required)

/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

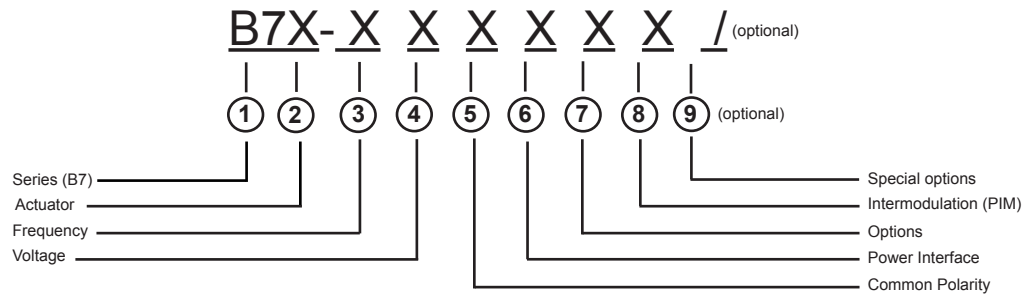
B7 SERIES SPDT DC - 26.5 GHz OPEN PORTS TERMINATED



FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0	18.0 - 26.5
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1	1.65:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50	0.70
ISOLATION (MIN.)	90	80	80	70	60	50
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT ACTUATOR SWITCHING SPEED	: BREAK BEFORE MAKE : FAILSAFE, LATCHING, MOMENTARY : 20 mSEC MAX.					
ELECTRICAL						
ACTUATOR VOLTAGE ACTUATOR CURRENT POWER HANDLING TERMINATION	: 28.0, 12.0, 15.0, 24.0 Vdc : CONTACT CEI : 200 WCW @ 1.0 GHz (STANDARD) : 300 WCW @ 1.0 GHz (OPT./P) : 8 WATTS MAX.					
ENVIRONMENTAL						
OPERATING TEMP SHOCK RANDOM VIBRATION LIFE	: -40 DEG. C TO 85 DEG. C : 50 G's (SAWTOOTH) : 15 G's rms (NON-OPERATING) : 1,000,000 CYCLES					
FINISH						
RF CAVITY ENCLOSURE CONTACT CONNECTOR SHELL NOTE	: ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS) : ALUMINUM, BLUE OR BLACK : BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204 : CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074 : FINISH MAY VARY					
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY SUPPRESSION DIODE TTL LOGIC LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (IM)	: CUT OFF POWER CIRCUIT : D'SUB MINIATURE SERIES : MS CONNECTOR OR EQUIV. (MIL-SPEC)					



B7 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

B7 SPDT TERMINATED SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	0	OTHER (SPECIFY)
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
		8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

/P HIGH TEMP, HIGH POWER CONNECTOR

B70 SERIES SPDT - 5 PORT DC - 26.5 GHz EXTERNALLY TERMINATED

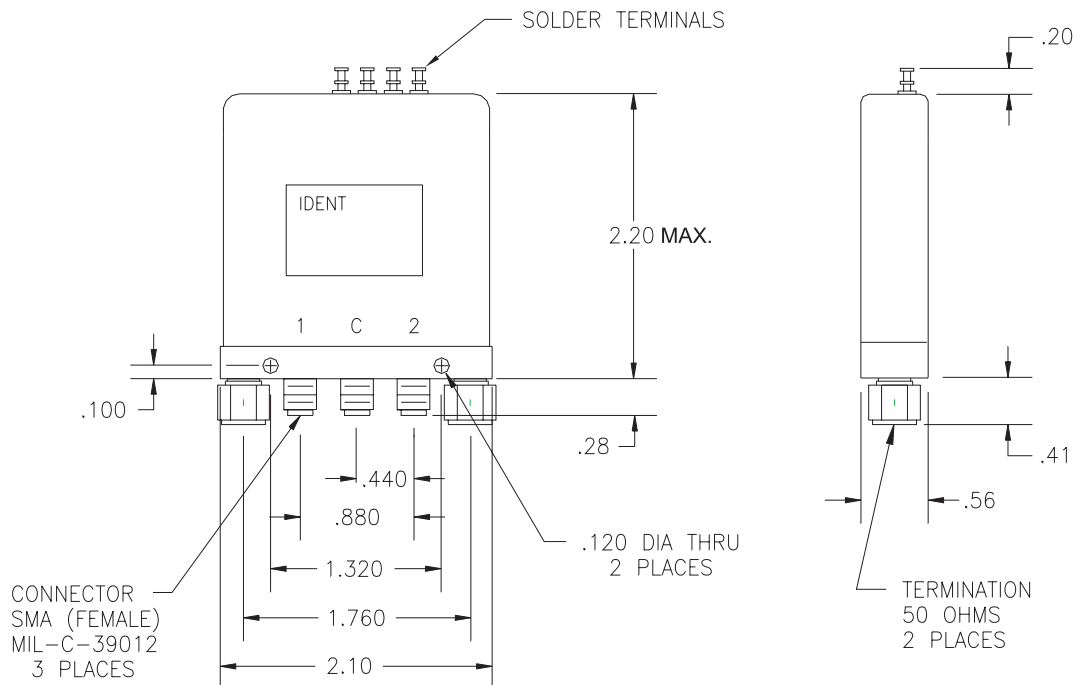


FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0	18.0 - 26.5
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1	1.70:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50	0.70
ISOLATION (MIN.)	90	80	80	70	60	50
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT ACTUATOR SWITCHING SPEED	BREAK BEFORE MAKE FAILSAFE, LATCHING, MOMENTARY 20 mSEC MAX.					
ELECTRICAL						
ACTUATOR VOLTAGE	28.0, 12.0, 15.0, 24.0 Vdc					
ACTUATOR CURRENT	CONTACT CEI					
POWER HANDLING	200 WCW @ 1.0 GHz (STANDARD) 300 WCW @ 1.0 GHz (OPT. /P)					
TERMINATION	1W EXTERNAL (2) INCLUDED					
ENVIRONMENTAL						
OPERATING TEMP	-40 DEG. C TO 85 DEG. C (STANDARD) -54 DEG. C TO 90 DEG. C (OPT. /MS)					
SHOCK	50 G's (SAWTOOTH)					
RANDOM VIBRATION	15 G's rms (NON-OPERATING)					
LIFE	1,000,000 CYCLES					
FINISH						
RF CAVITY	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS)					
ENCLOSURE	ALUMINUM, BLUE OR BLACK					
CONTACT	BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204					
CONNECTOR SHELL	CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074					
NOTE	FINISH MAY VARY FOR /MS VERSION					
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY	CUT OFF POWER CIRCUIT					
SUPPRESSION DIODE	D'SUB MINIATURE SERIES					
TTL LOGIC	MS CONNECTOR OR EQUIV. (MIL-SPEC)					
	LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (IM)					

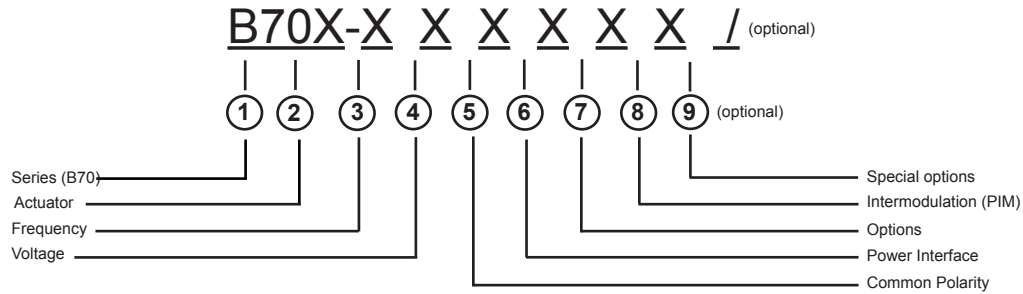
REFERENCE FOR DIMENSIONS ONLY.
EACH MODEL NUMBER WILL
HAVE A UNIQUE SCHEMATIC.



EXAMPLE ONLY (EACH SCHEMATIC IS UNIQUE)
ALSO AVAILABLE
WITH D'SUB CONNECTOR



B70 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

B70 SPDT EXTERNALLY TERMINATED SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	0	OTHER (SPECIFY)
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
		8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

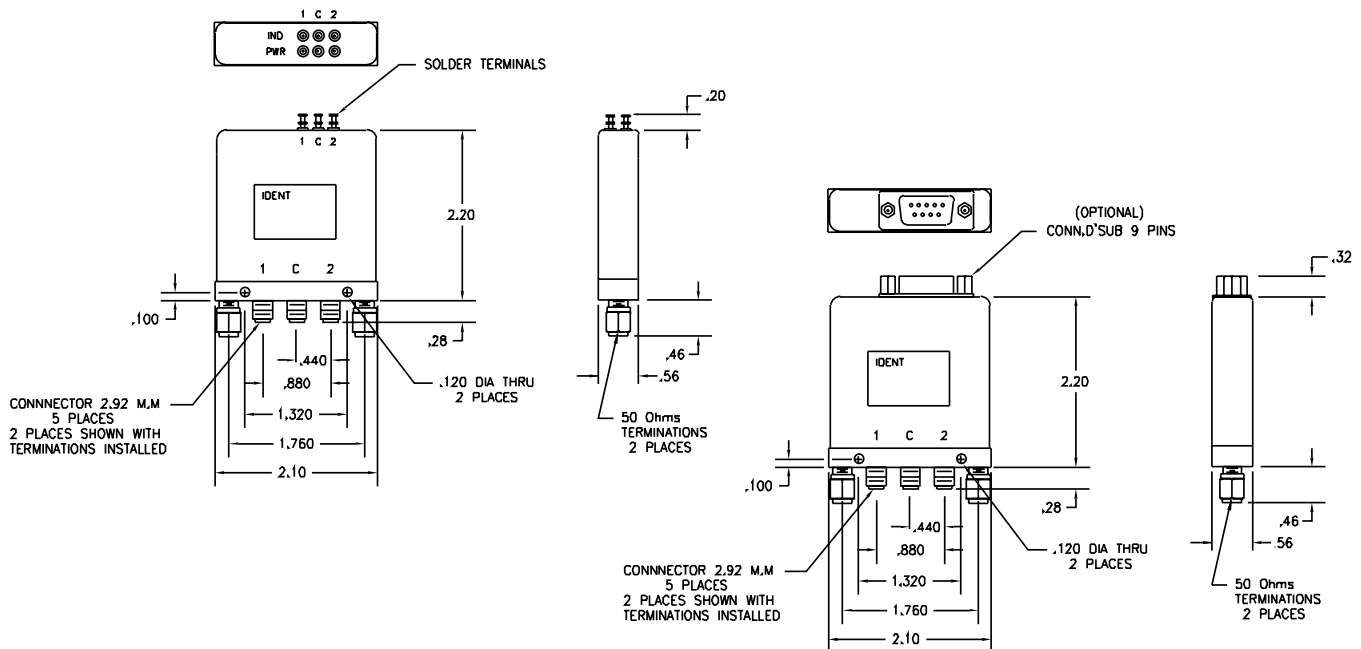
/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO +90 DEG C
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

B80 SERIES SPDT EXT TERMINATED DC - 40.0 GHz 2.92 mm

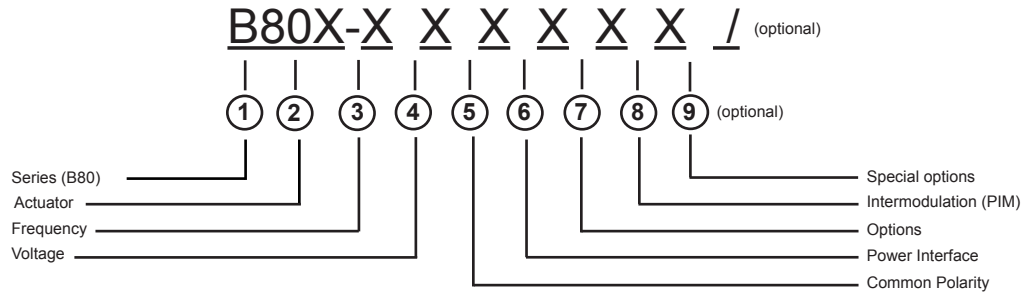


FREQUENCY: GHz	DC - 2.0	2.0 - 6.0	6.0 - 12.4	12.4 - 18.0	18.0 - 26.5	26.5 - 40.0
VSWR (MAX.)	1.20:1	1.30:1	1.40:1	1.50:1	1.60:1	1.60:1
INSERTION LOSS (MAX.)	0.20	0.30	0.40	0.50	0.60	0.60
ISOLATION (MIN.)	90	80	70	60	60	60
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT ACTUATOR SWITCHING SPEED	:			BREAK BEFORE MAKE FAILSAFE, LATCHING, MOMENTARY 20 mSEC MAX.		
ELECTRICAL						
ACTUATOR VOLTAGE ACTUATOR CURRENT POWER HANDLING	:			28.0, 12.0, 15.0, 24.0 Vdc CONTACT CEI 200 WCW @ 1.0 GHz (STANDARD)		
ENVIRONMENTAL						
OPERATING TEMP SHOCK RANDOM VIBRATION LIFE	:			-40 DEG. C TO 85 DEG. C (STANDARD) 50 G's (SAWTOOTH) 15 G's rms (NON-OPERATING) 1,000,000 CYCLES		
FINISH						
RF CAVITY ENCLOSURE CONTACT CONNECTOR SHELL NOTE	:			ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS) ALUMINUM, BLUE OR BLACK BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204 CRES, PASSIVATED PER QQ-P-35 OR BRASS FINISH MAY VARY		
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY SUPPRESSION DIODE TTL LOGIC LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (PIM)	:			CUT OFF POWER CIRCUIT D'SUB MINIATURE SERIES BCD DECODER CRES, PASSIVATED PER QQ-P-35 OR BRASS FINISH MAY VARY		

NOTE: REFERENCE FOR DIMENSIONS ONLY.
EACH MODEL NUMBER WILL HAVE A UNIQUE SCHEMATIC.



B80 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

B80 SPDT EXT TERMINATED 2.92 mm (DC - 40.0 GHz)

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

A	DC - 40.0 GHz
0	OTHER (SPECIFY)

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
		8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

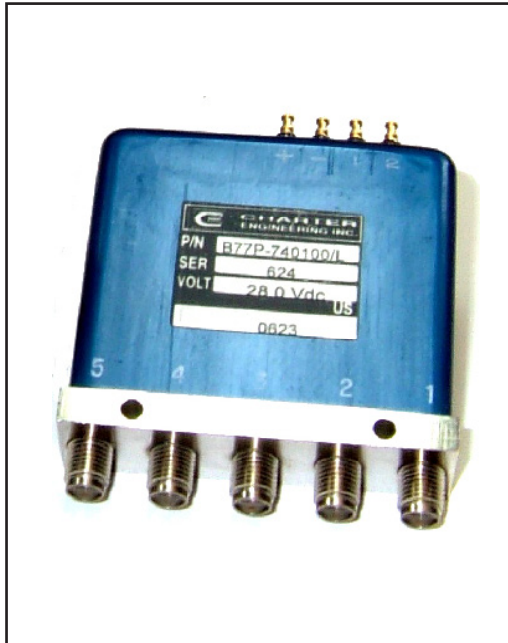
8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

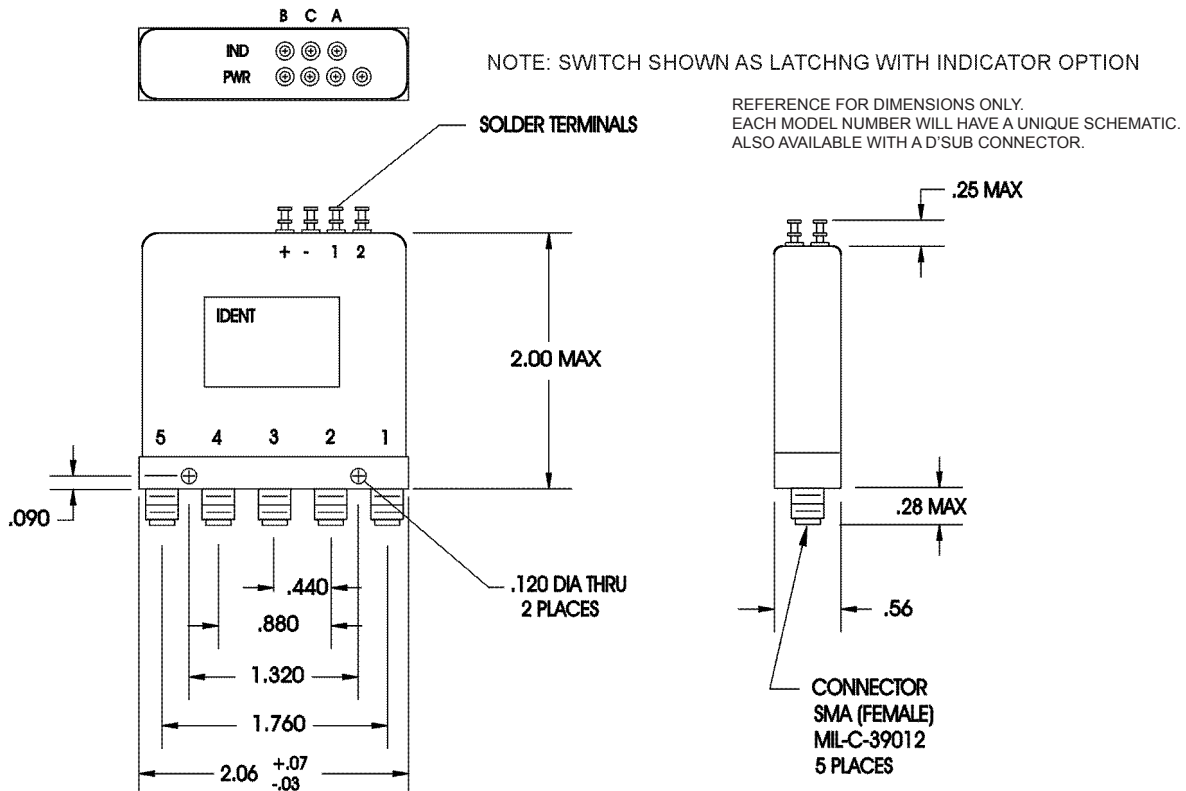
9 - Special Options (optional - leave blank if not required)

NOT AVAILABLE

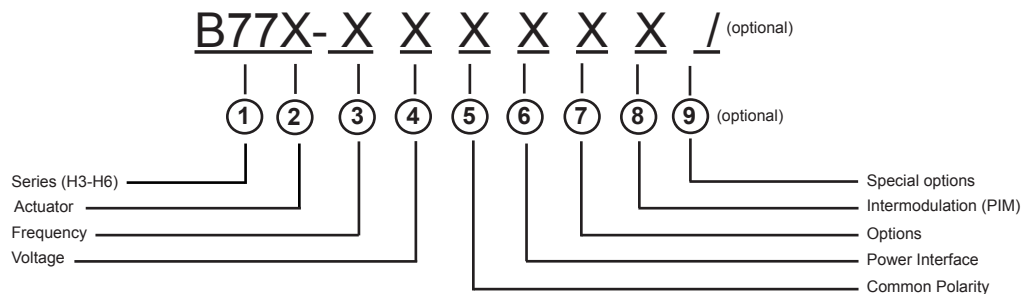
B77 SERIES SPDT - 5 PORT DC - 26.5 GHz DP3T



FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0	18.0 - 26.5
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1	1.70:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50	0.70
ISOLATION (MIN.)	90	80	80	70	60	50
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT : BREAK BEFORE MAKE						
ACTUATOR : FAILSAFE, LATCHING, MOMENTARY						
SWITCHING SPEED : 20 mSEC MAX.						
ELECTRICAL						
ACTUATOR VOLTAGE : 28.0, 12.0, 15.0, 24.0 Vdc						
ACTUATOR CURRENT : CONTACT CEI						
POWER HANDLING : 200 WCW @ 1.0 GHz (STANDARD)						
300 WCW @ 1.0 GHz (OPT. /P)						
ENVIRONMENTAL						
OPERATING TEMP : -40 DEG. C TO 85 DEG. C (STANDARD)						
: -54 DEG. C TO 90 DEG. C (OPT. /MS)						
SHOCK : 50 G's (SAWTOOTH)						
RANDOM VIBRATION : 15 G's ms (NON-OPERATING)						
LIFE : 1,000,000 CYCLES						
FINISH						
RF CAVITY : ALUMINUM ELECTROLESS NICKEL PLATED						
PER MIL-C-26074, CLASS 4						
(EXCEPT LOW OR ULTRA LOW IM MODELS)						
ENCLOSURE : ALUMINUM, BLUE						
CONTACT : BERYLLIUM COPPER, GOLD PLATED						
PER MIL-G-45204						
CONNECTOR SHELL : CRES, PASSIVATED PER QQ-P-35 OR BRASS,						
ELECTROLESS NICKEL PLATED						
PER MIL-C-26074						
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY : CUT OFF POWER CIRCUIT						
SUPPRESSION DIODE : D'SUB MINIATURE SERIES						
TTL LOGIC : MS CONNECTOR OR EQUIV. (MIL-SPEC)						
LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (IM)						



B77 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

B77 SPDT 5-PORT DP3T

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	0	OTHER (SPECIFY)
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
		8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

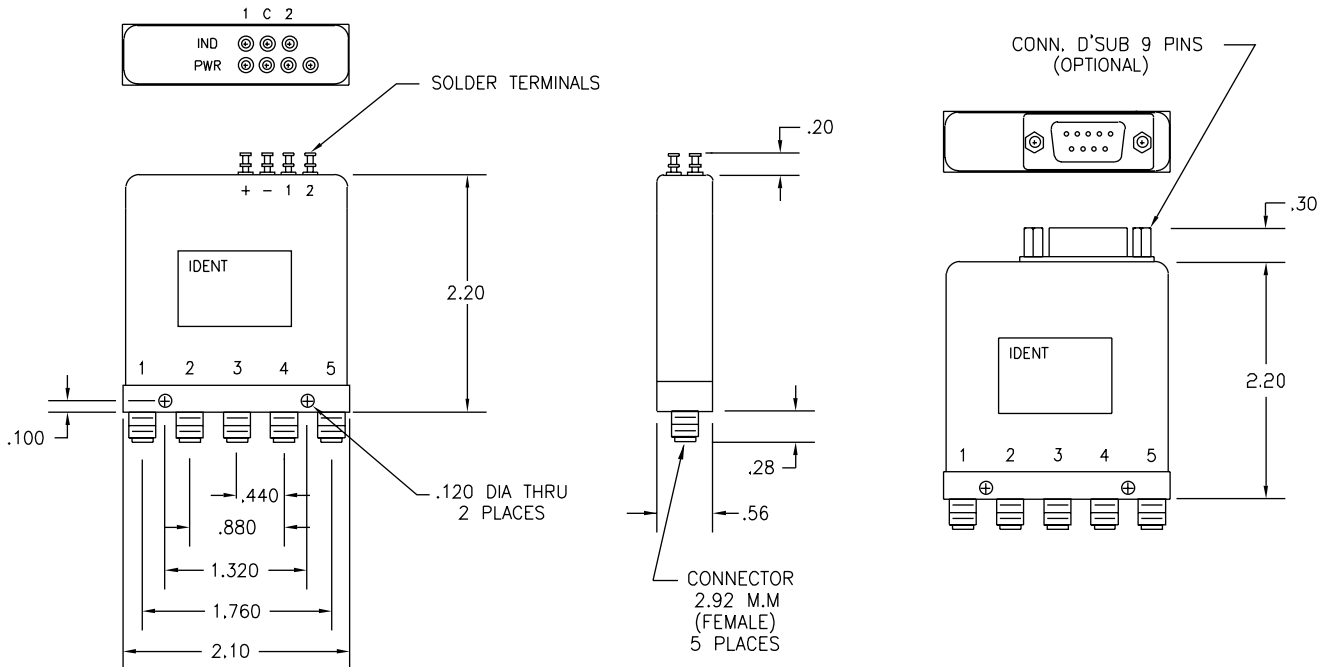
/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

B88 SERIES DP3T - 5 PORT DC - 40.0 GHz 2.92 mm

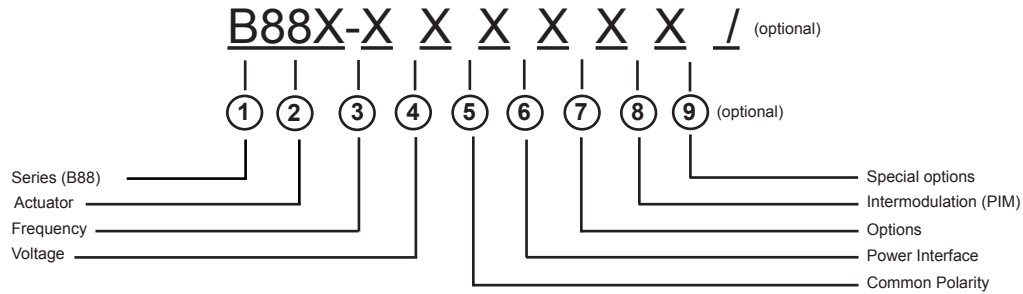


FREQUENCY: GHz	DC - 2.0	2.0 - 6.0	6.0 - 12.4	12.4 - 18.0	18.0 - 26.5	26.5 - 40.0
VSWR (MAX.)	1.20:1	1.30:1	1.40:1	1.50:1	1.60:1	1.60:1
INSERTION LOSS (MAX.)	0.20	0.30	0.40	0.50	0.60	0.60
ISOLATION (MIN.)	90	80	70	60	60	60
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT : BREAK BEFORE MAKE						
ACTUATOR : FAILSAFE, LATCHING, MOMENTARY						
SWITCHING SPEED : 20 mSEC MAX.						
ELECTRICAL						
ACTUATOR VOLTAGE : 28.0, 12.0, 15.0, 24.0 Vdc						
ACTUATOR CURRENT : CONTACT CEI						
POWER HANDLING : 200 WCW @ 1.0 GHz						
ENVIRONMENTAL						
OPERATING TEMP : -40 DEG. C TO 85 DEG. C						
SHOCK : 50 G's (SAWTOOTH)						
RANDOM VIBRATION : 15 G's rms (NON-OPERATING)						
LIFE : 1,000,000 CYCLES						
FINISH						
RF CAVITY : ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS)						
ENCLOSURE : ALUMINUM, BLUE OR BLACK						
CONTACT : BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204						
CONNECTOR SHELL : CRES, PASSIVATED PER QQ-P-35 OR BRASS						
NOTE : FINISH MAY VARY						
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY : CUT OFF POWER CIRCUIT						
SUPPRESSION DIODE : D'SUB MINIATURE SERIES						
TTL LOGIC : BCD DECODER						
LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (PIM)						

NOTE: REFERENCE FOR DIMENSIONS ONLY.
EACH MODEL NUMBER WILL HAVE A UNIQUE SCHEMATIC.



B88 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

B88 DP3T 5-PORT 2.92 mm (DC - 40.0 GHz)

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

A DC - 40.0 GHz
 0 OTHER (SPECIFY)

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1 POSITIVE (+) COMMON
 2 NEGATIVE (-) OR RETURN Vdc COMMON
 0 NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
		8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

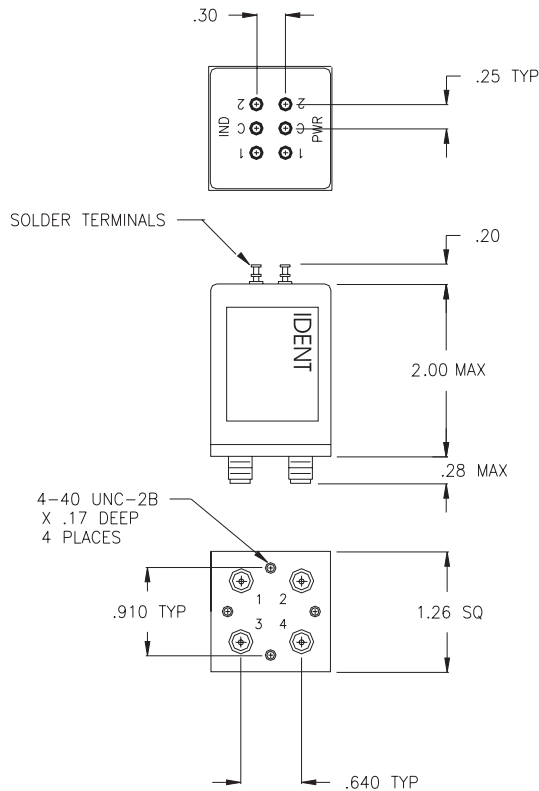
9 - Special Options (optional - leave blank if not required)

NOT AVAILABLE

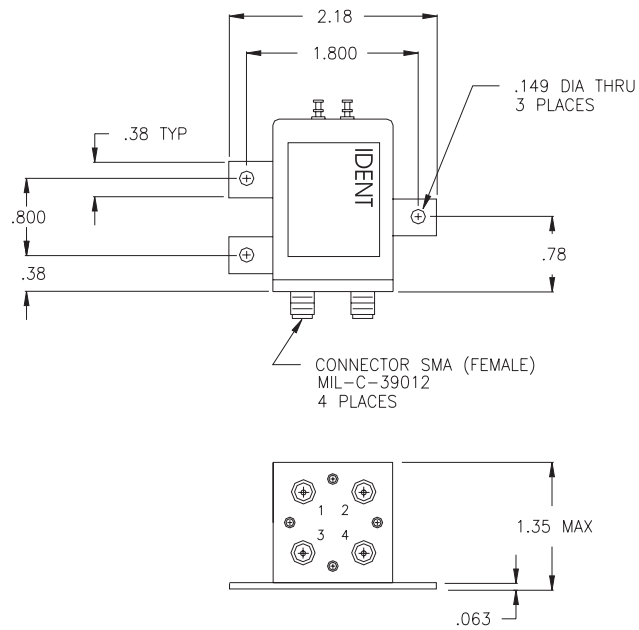
L1 SERIES DPDT (TRANSFER) DC - 26.5 GHz



FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0	18.0 - 26.5
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1	1.65:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50	0.70
ISOLATION (MIN.)	90	80	80	70	60	50
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT	:					BREAK BEFORE MAKE
ACTUATOR	:					FAILSAFE, LATCHING, MOMENTARY
SWITCHING SPEED	:					20 mSEC MAX.
ELECTRICAL						
ACTUATOR VOLTAGE	:					28.0, 12.0, 15.0, 24.0 Vdc
ACTUATOR CURRENT	:					CONTACT CEI
POWER HANDLING	:					200 WCW @ 1.0 GHz (STANDARD) 300 WCW @ 1.0 GHz (OPT. /P)
ENVIRONMENTAL						
OPERATING TEMP	:					-40 DEG. C TO 85 DEG. C (STANDARD) -54 DEG. C TO 90 DEG. C (OPT. /MS)
SHOCK	:					50 G's (SAWTOOTH)
RANDOM VIBRATION	:					15 G's rms (NON-OPERATING)
LIFE	:					1,000,000 CYCLES
FINISH						
RF CAVITY	:					ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS)
ENCLOSURE	:					ALUMINUM, BLUE OR BLACK
CONTACT	:					BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204
CONNECTOR SHELL	:					CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074
NOTE	:					FINISH MAY VARY FOR /MS VERSION
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY	:					CUT OFF POWER CIRCUIT
SUPPRESSION DIODE	:					D'SUB MINIATURE SERIES
TTL LOGIC	:					MS CONNECTOR OR EQUIV. (MIL-SPEC)
LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (IM)	:					

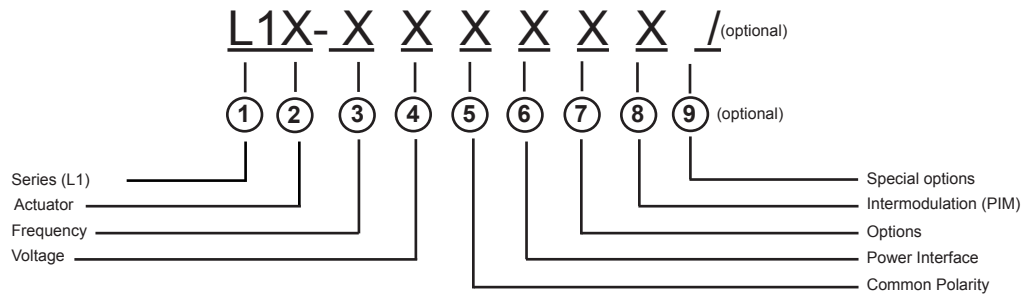


NOTE: REFERENCE FOR DIMENSIONS ONLY.
EACH MODEL NUMBER WILLHAVE A UNIQUE SCHEMATIC.
ALSO AVAILABLE WITH A D'SUB, MICRO D'SUB OR MS SERIES CONNECTOR.



ALSO AVAILABLE WITH D'SUB
OR MS3112E SERIES CONNECTOR

L1 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

L1 DPDT TRANSFER SMA

2 - Actuator

F	FAILSAFE	Y	OTHER (SPECIFY)
G	FAILSAFE WITH SUPPRESSION DIODE		
H	FAILSAFE WITH INDICATOR		
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR		
L	LATCHING		
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	0	OTHER (SPECIFY)
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

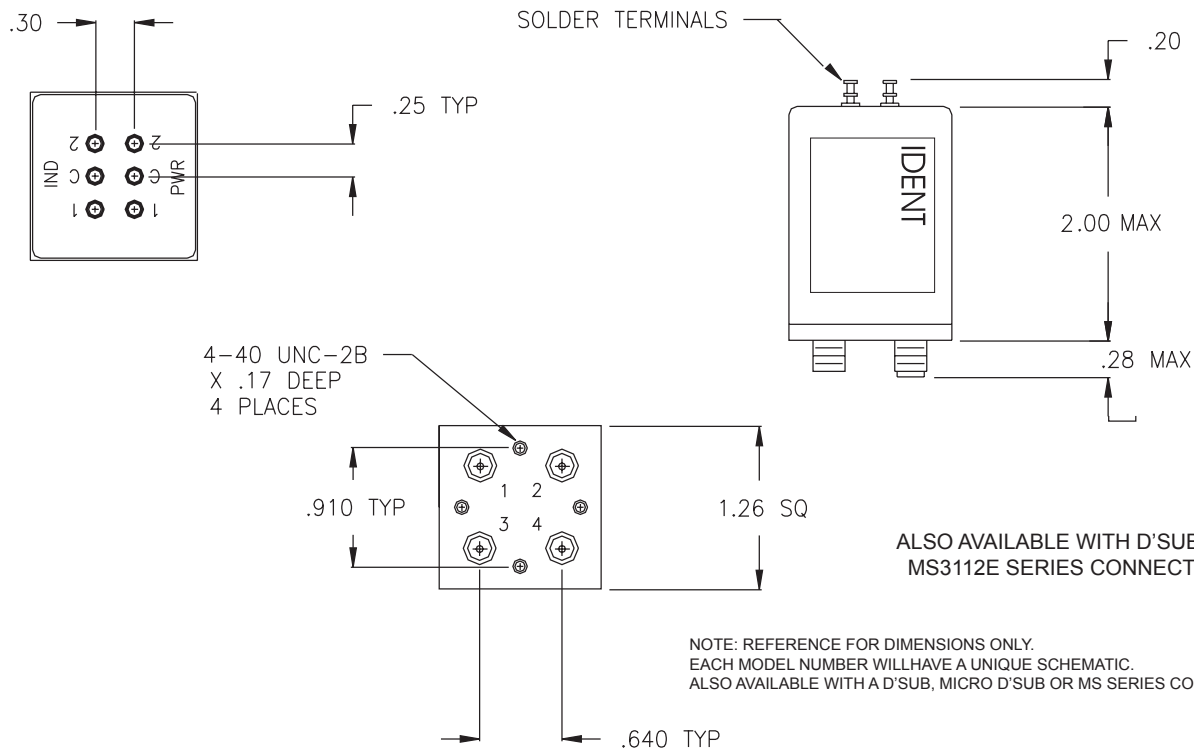
9 - Special Options (optional - leave blank if not required)

/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

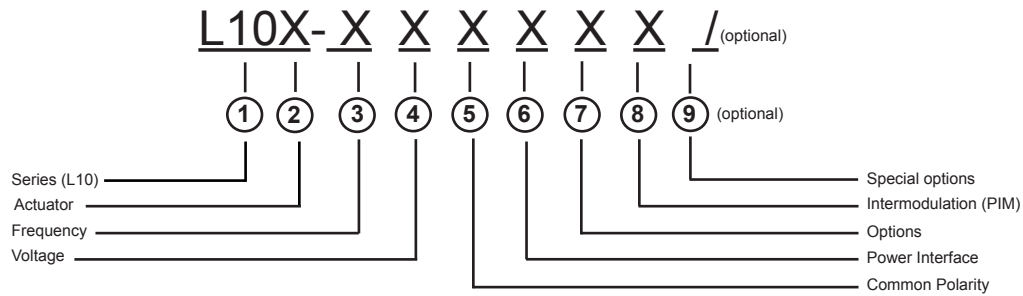
L10 SERIES DPDT (TRANSFER) NO BRACKET DC - 26.5 GHz



FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0	18.0 - 26.5
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1	1.65:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50	0.70
ISOLATION (MIN.)	90	80	80	70	60	50
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT	BREAK BEFORE MAKE					
ACTUATOR	FAILSAFE, LATCHING, MOMENTARY					
SWITCHING SPEED	20 mSEC MAX.					
ELECTRICAL						
ACTUATOR VOLTAGE	28.0, 12.0, 15.0, 24.0 Vdc					
ACTUATOR CURRENT	CONTACT CEI					
POWER HANDLING	200 WCW @ 1.0 GHz (STANDARD) 300 WCW @ 1.0 GHz (OPT. /P)					
ENVIRONMENTAL						
OPERATING TEMP	-40 DEG. C TO 85 DEG. C (STANDARD) -54 DEG. C TO 90 DEG. C (OPT. /MS)					
SHOCK	50 G's (SAWTOOTH)					
RANDOM VIBRATION	15 G's rms (NON-OPERATING)					
LIFE	1,000,000 CYCLES					
FINISH						
RF CAVITY	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS)					
ENCLOSURE	ALUMINUM, BLUE OR BLACK					
CONTACT	BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204					
CONNECTOR SHELL	CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074					
NOTE	FINISH MAY VARY FOR /MS VERSION					
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY	CUT OFF POWER CIRCUIT					
SUPPRESSION DIODE	D'SUB MINIATURE SERIES					
TTL LOGIC	MS CONNECTOR OR EQUIV. (MIL-SPEC)					
LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (IM)						



L10 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

L10 DPDT TRANSFER SMA

2 - Actuator

F	FAILSAFE	Y	OTHER (SPECIFY)
G	FAILSAFE WITH SUPPRESSION DIODE		
H	FAILSAFE WITH INDICATOR		
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR		
L	LATCHING		
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	0	OTHER (SPECIFY)
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

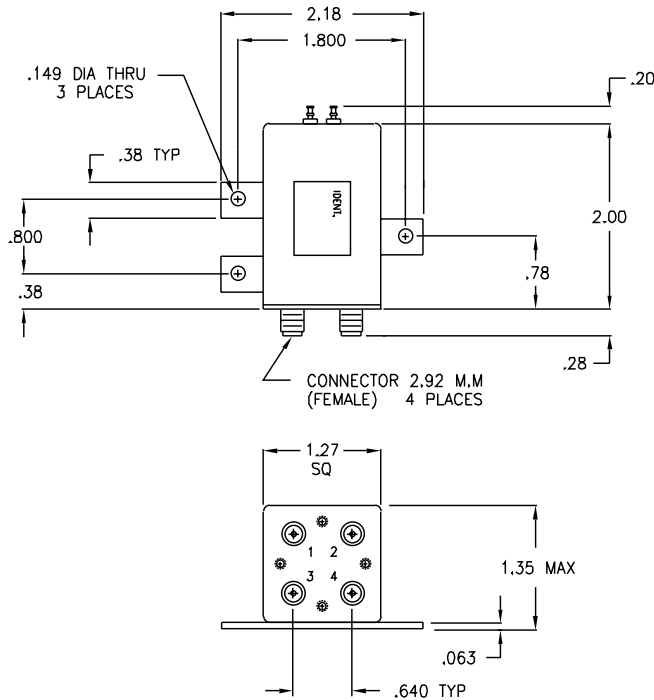
/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

L40 SERIES DPDT - TRANSFER DC - 40.0 GHz 2.92 mm

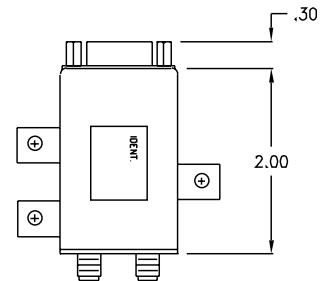
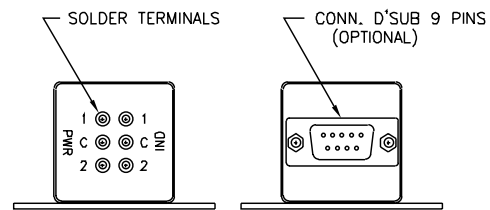


FREQUENCY: GHz	DC - 2.0	2.0 - 6.0	6.0 - 12.4	12.4 - 18.0	18.0 - 26.5	26.5 - 40.0
VSWR (MAX.)	1.20:1	1.30:1	1.40:1	1.50:1	1.60:1	1.60:1
INSERTION LOSS (MAX.)	0.20	0.30	0.40	0.50	0.60	0.60
ISOLATION (MIN.)	90	80	70	60	60	60
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT ACTUATOR SWITCHING SPEED	BREAK BEFORE MAKE FAILSAFE, LATCHING 20 mSEC MAX.					
ELECTRICAL						
ACTUATOR VOLTAGE ACTUATOR CURRENT POWER HANDLING	28.0, 12.0, 15.0, 24.0 Vdc CONTACT CEI 200 WCW @ 1.0 GHz					
ENVIRONMENTAL						
OPERATING TEMP SHOCK RANDOM VIBRATION LIFE	-40 DEG. C TO 85 DEG. C 50 G's (SAWTOOTH) 15 G's rms (NON-OPERATING) 1,000,000 CYCLES					
FINISH						
RF CAVITY ENCLOSURE CONTACT CONNECTOR SHELL	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS) ALUMINUM, BLUE OR BLACK BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204 CRES, PASSIVATED PER QQ-P-35 OR BRASS					
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY SUPPRESSION DIODE TTL LOGIC LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (PIM)	CUT OFF POWER CIRCUIT D'SUB MINIATURE SERIES BCD DECODER					

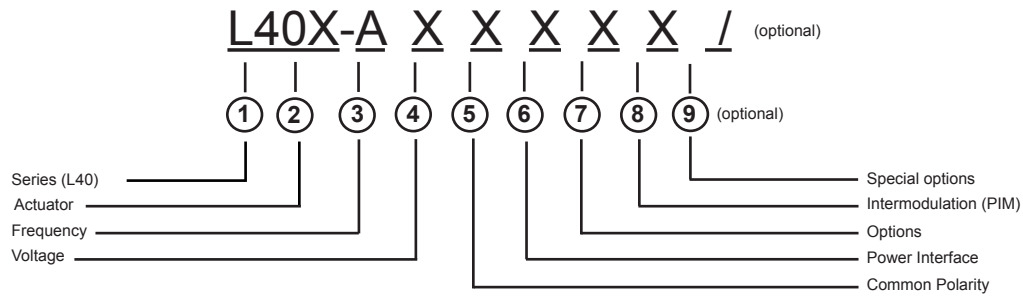
NOTE: REFERENCE FOR DIMENSIONS ONLY



EACH MODEL NUMBER WILL HAVE A UNIQUE SCHEMATIC.
ALSO AVAILABLE WITH A D'SUB, MICRO D'SUB OR MS SERIES CONNECTOR.



L40 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

L40 DPDT (TRANSFER) 2.92 mm (DC - 40.0 GHz)

2 - Actuator

F	FAILSAFE	Y	OTHER (SPECIFY)
G	FAILSAFE WITH SUPPRESSION DIODE		
H	FAILSAFE WITH INDICATOR		
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR		
L	LATCHING		
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

A DC - 40.0 GHz

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
		8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

NOT AVAILABLE

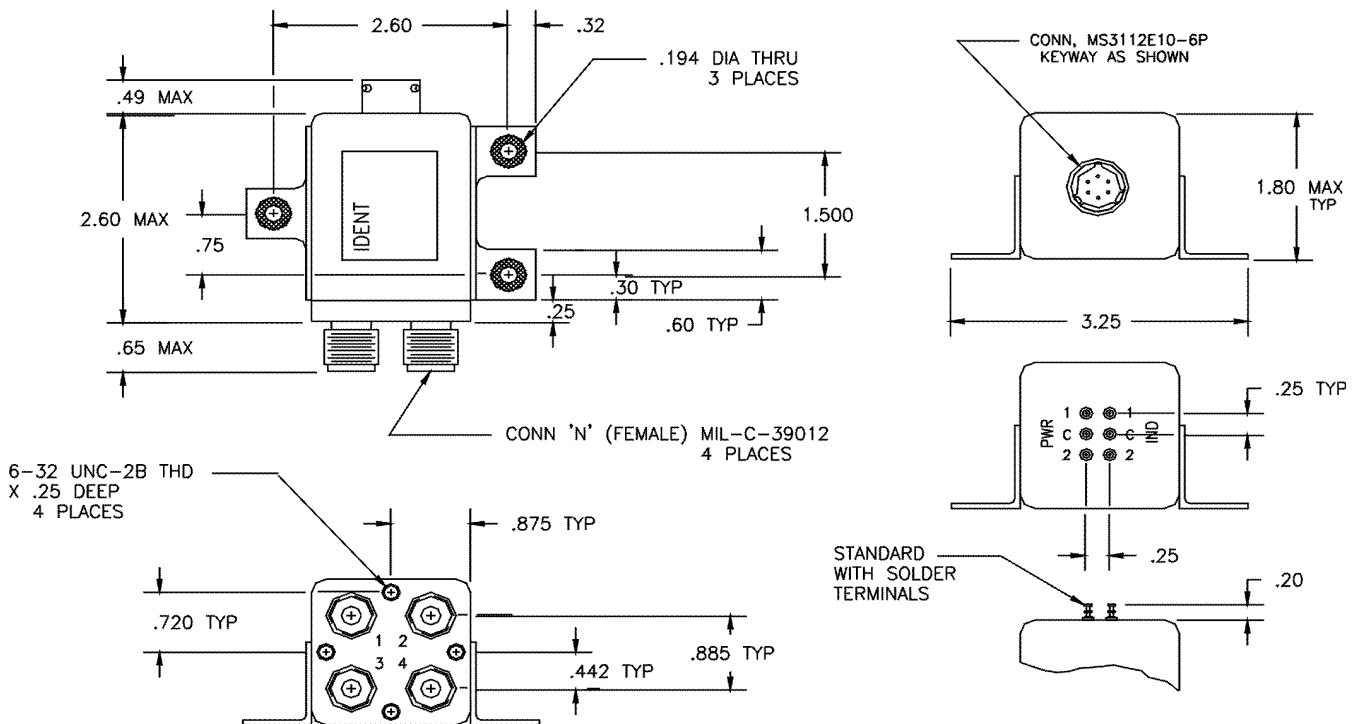
L2 SERIES DPDT (TRANSFER) DC - 12.4 GHz



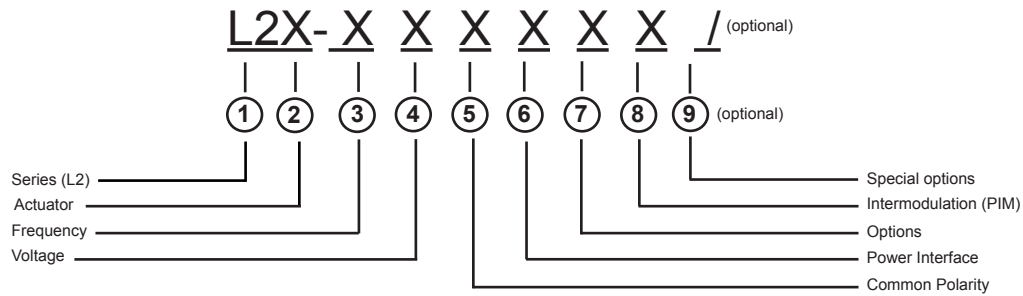
FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4
VSWR (MAX.)	1.20:1	1.30:1	1.40:1	1.50:1
INSERTION LOSS (MAX.)	0.20	0.30	0.40	0.50
ISOLATION (MIN.)	80	70	70	60
IMPEDANCE	50 Ohms			
MECHANICAL				
CONTACT	:	BREAK BEFORE MAKE		
ACTUATOR	:	FAILSAFE, LATCHING, MOMENTARY		
SWITCHING SPEED	:	20 mSEC MAX.		
ELECTRICAL				
ACTUATOR VOLTAGE	:	28.0, 12.0, 15.0, 24.0 Vdc		
ACTUATOR CURRENT	:	CONTACT CEI		
POWER HANDLING	:	350 WCW @ 1.0 GHz (STANDARD)		
	:	950 WCW @ 1.0 GHz (OPT. /P)		
ENVIRONMENTAL				
OPERATING TEMP	:	-40 DEG. C TO 85 DEG. C (STANDARD)		
	:	-54 DEG. C TO 90 DEG. C (OPT. /MS)		
SHOCK	:	50 G's (SAWTOOTH)		
RANDOM VIBRATION	:	15 G's rms (NON-OPERATING)		
LIFE	:	1,000,000 CYCLES		
FINISH				
RF CAVITY	:	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS)		
ENCLOSURE	:	ALUMINUM, BLACK OR BLUE		
CONTACT	:	BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204		
CONNECTOR SHELL	:	CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074		
NOTE	:	FINISH MAY VARY FOR /MS VERSION		
AVAILABLE OPTIONS				
INDICATOR CIRCUITRY	:	CUT OFF POWER CIRCUIT		
SUPPRESSION DIODE	:	MS CONNECTOR OR EQUIV. (MIL-SPEC)		
TTL LOGIC	:	D'SUB MINIATURE SERIES		
	:	LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (IM)		

EACH MODEL NUMBER WILL HAVE A UNIQUE SCHEMATIC.

REFERENCE FOR DIMENSIONS ONLY
AVAILABLE WITH SOLDER TERMINALS, D'SUB OR MS CONNECTOR



L2 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

L2 DPDT TRANSFER TYPE N

2 - Actuator

F	FAILSAFE	Y	OTHER (SPECIFY)
G	FAILSAFE WITH SUPPRESSION DIODE		
H	FAILSAFE WITH INDICATOR		
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR		
L	LATCHING		
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz
2	DC - 2.0 GHz
3	DC - 12.4 GHz
4	DC - 4.0 GHz
6	DC - 6.0 GHz

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

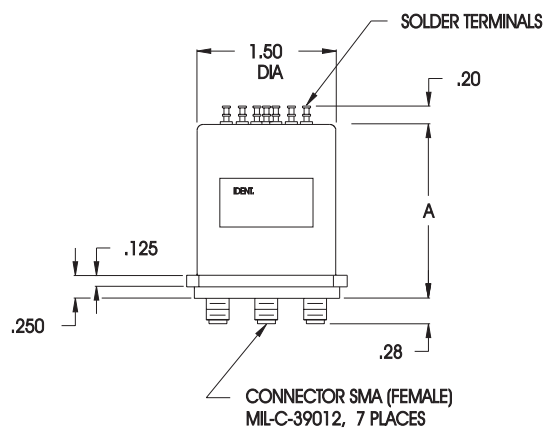
9 - Special Options (optional - leave blank if not required)

/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

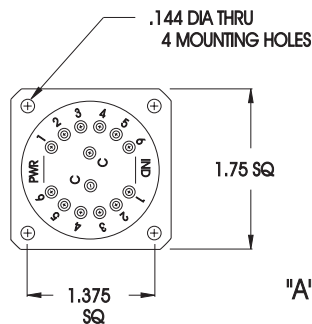
F3-F6 SERIES SP3T-SP6T DC - 26.5 GHz



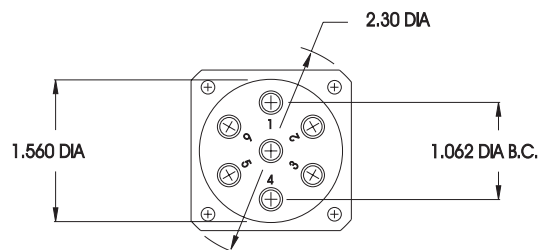
FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0	18.0 - 26.5
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1	1.65:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50	0.70
ISOLATION (MIN.)	90	80	80	70	60	50
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT ACTUATOR SWITCHING SPEED	BREAK BEFORE MAKE MOMENTARY (NORMALLY OPEN) 20 mSEC MAX.					
ELECTRICAL						
ACTUATOR VOLTAGE ACTUATOR CURRENT POWER HANDLING	28.0, 12.0, 15.0, 24.0 Vdc CONTACT CEI 200 WCW @ 1.0 GHz (STANDARD) 300 WCW @ 1.0 GHz (OPT. /P)					
ENVIRONMENTAL						
OPERATING TEMP SHOCK RANDOM VIBRATION LIFE	-40 DEG. C TO 85 DEG. C (STANDARD) -54 DEG. C TO 90 DEG. C (OPT. /MS) 50 G's (SAWTOOTH) 15 G's rms (NON-OPERATING) 1,000,000 CYCLES					
FINISH						
RF CAVITY ENCLOSURE CONTACT CONNECTOR SHELL	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS) ALUMINUM, BLUE OR BLACK BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204 CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074 FINISH MAY VARY FOR /MS VERSION					
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY SUPPRESSION DIODE TTL LOGIC LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (IM)	CUSTOM DESIGNS MS CONNECTOR OR EQUIV. (MIL-SPEC)					



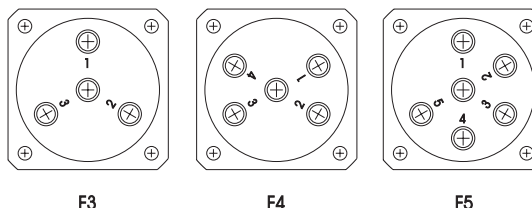
NOTE: REFERENCE FOR DIMENSIONS ONLY.
EACH MODEL NUMBER WILL HAVE A UNIQUE SCHEMATIC.
ALSO AVAILABLE WITH A D'SUB, MICRO D'SUB OR MS SERIES CONNECTOR.



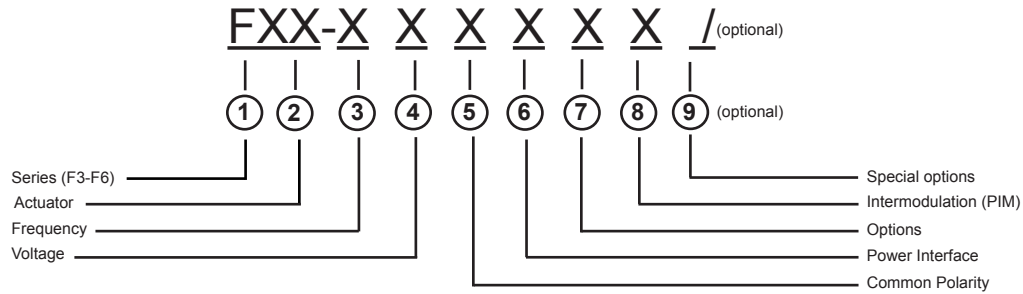
W/INDICATOR & TTL LOGIC = 2.15
W/INDICATOR ONLY = 2.15
W/TTL LOGIC ONLY = 1.80
W/NO OPTIONS = 1.80
CUSTOM HEIGHT AVAILABLE CONTACT CEI



F3-F6



F3-F6 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

F3	SP3T SMA
F4	SP4T SMA
F5	SP5T SMA
F6	SP6T SMA

2 - Actuator

R	MOMENTARY
S	MOMENTARY WITH SUPPRESSION DIODE
T	MOMENTARY WITH INDICATOR
U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
Y	OTHER (SPECIFY)

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	0	OTHER (SPECIFY)
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	MICRO D'SUB SERIES (TOP OF SWITCH)

7 - Options

2	TTL LOGIC	8	OTHER (SPECIFY)
4	BCD TTL DECODER	9	CUSTOM (ORDER)
		0	NO OTHER OPTIONS REQUIRED

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

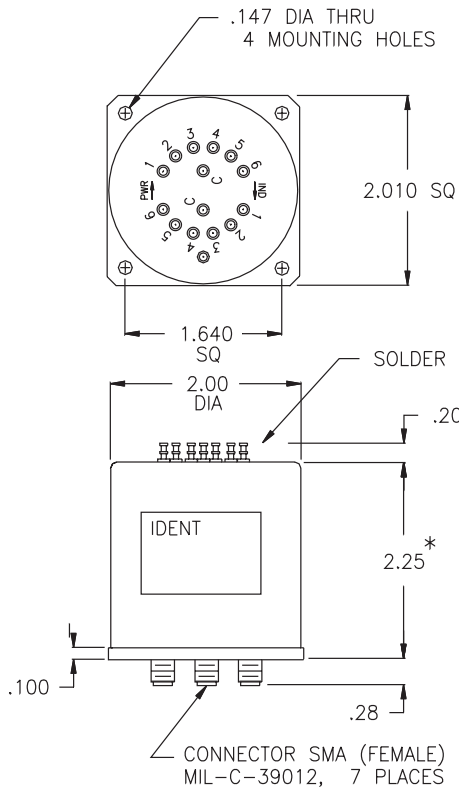
9 - Special Options (optional - leave blank if not required)

/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

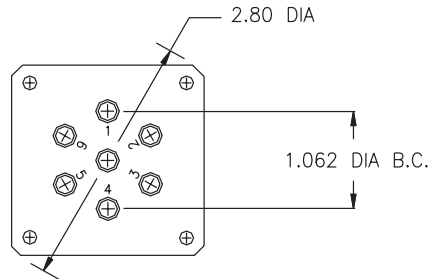
H3 - H6 SERIES SP3T - SP6T DC - 26.5 GHz



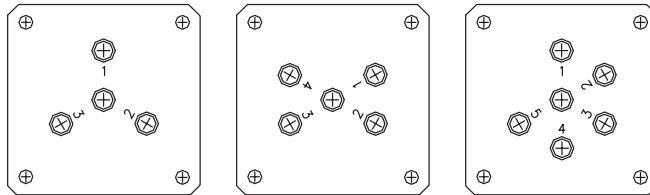
FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0	18.0 - 26.5
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1	1.65:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50	0.70
ISOLATION (MIN.)	90	80	80	70	60	50
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT	:	BREAK BEFORE MAKE				
ACTUATOR	:	FAILSAFE, LATCHING, MOMENTARY				
SWITCHING SPEED	:	20 mSEC MAX.				
ELECTRICAL						
ACTUATOR VOLTAGE	:	28.0, 12.0, 15.0, 24.0 Vdc				
ACTUATOR CURRENT	:	CONTACT CEI				
POWER HANDLING	:	200 WCW @ 1.0 GHz (STANDARD) 300 WCW @ 1.0 GHz (OPT. /P)				
ENVIRONMENTAL						
OPERATING TEMP	:	-40 DEG. C TO 88 DEG. C (STANDARD) -54 DEG. C TO 90 DEG. C (OPT. /MS)				
SHOCK	:	50 G's (SAWTOOTH)				
RANDOM VIBRATION	:	15 G's rms (NON-OPERATING)				
LIFE	:	1,000,000 CYCLES				
FINISH						
RF CAVITY	:	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS)				
ENCLOSURE	:	ALUMINUM, BLUE OR BLACK				
CONTACT	:	BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204				
CONNECTOR SHELL	:	CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074				
NOTE	:	FINISH MAY VARY FOR /MS VERSION				
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY	:	CUT OFF POWER CIRCUIT				
SUPPRESSION DIODE	:	D'SUB MINIATURE SERIES				
TTL LOGIC	:	MS CONNECTOR OR EQUIV. (MIL-SPEC)				
BCD TTL DECODER	:	LOW, ULTRA, AND SUP INTERMODULATION (IM)				



REFERENCE FOR DIMENSIONS ONLY
ALSO AVAILABLE WITH A D'SUB OR MS CONECTOR



NOTE: REFERENCE FOR DIMENSIONS ONLY.
EACH MODEL NUMBER WILLHAVE A UNIQUE SCHEMATIC.
ALSO AVAILABLE WITH A D'SUB, MICRO D'SUB OR MS SERIES CONNECTOR.



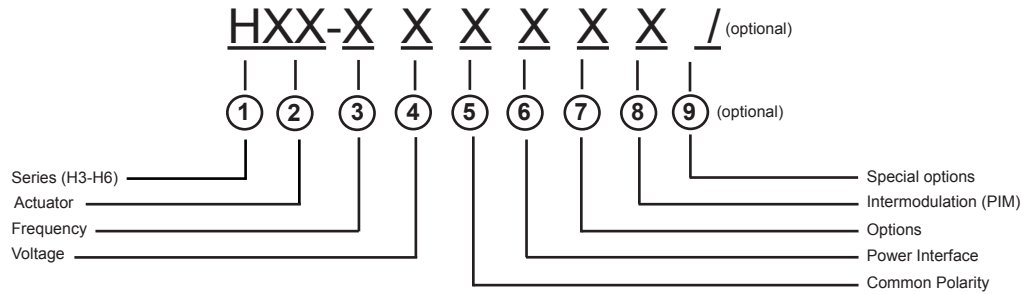
H3

H4

H5

* SWITCH WITH TTL LOGIC OR PWR.CONNECTOR
THIS DIMENSION TO BE 2.60 MAXIMUM.

H3-H6 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

H3	SP3T SMA
H4	SP4T SMA
H5	SP5T SMA
H6	SP6T SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	0	OTHER (SPECIFY)
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER (NOT AVAILABLE WITH OPTION /MS)		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

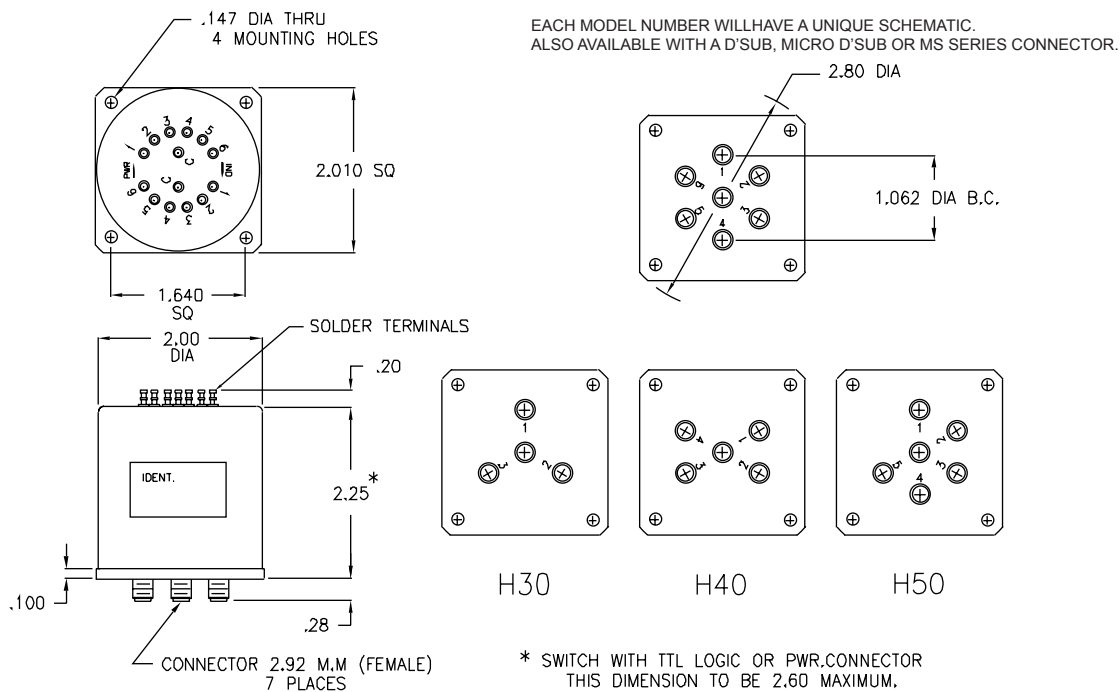
/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

H30 - H60 SERIES SP3T - SP6T DC - 40.0 GHz 2.92 mm



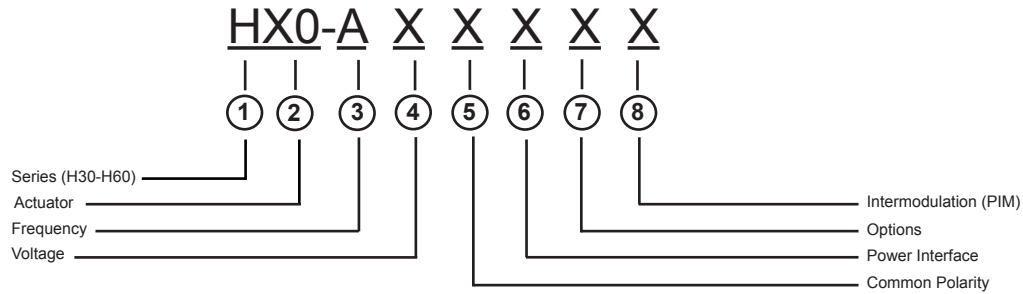
FREQUENCY: GHz	DC - 2.0	2.0 - 6.0	6.0 - 12.4	12.4 - 18.0	18.0 - 26.5	26.5 - 40.0
VSWR (MAX.)	1.20:1	1.30:1	1.40:1	1.50:1	1.60:1	1.60:1
INSERTION LOSS (MAX.)	0.20	0.30	0.40	0.50	0.60	0.60
ISOLATION (MIN.)	90	80	70	60	60	60
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT : BREAK BEFORE MAKE						
ACTUATOR : FAILSAFE, LATCHING, MOMENTARY						
SWITCHING SPEED : 20 mSEC MAX.						
ELECTRICAL						
ACTUATOR VOLTAGE : 28.0, 12.0, 15.0, 24.0 Vdc						
ACTUATOR CURRENT : CONTACT CEI						
POWER HANDLING : 200 WCW @ 1.0 GHz						
ENVIRONMENTAL						
OPERATING TEMP : -40 DEG. C TO 85 DEG. C						
SHOCK : 50 G's (SAWTOOTH)						
RANDOM VIBRATION : 15 G's rms (NON-OPERATING)						
LIFE : 1,000,000 CYCLES						
FINISH						
RF CAVITY : ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS)						
ENCLOSURE : ALUMINUM, BLUE OR BLACK						
CONTACT : BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204						
CONNECTOR SHELL : CRES, PASSIVATED PER QQ-P-35 OR BRASS						
NOTE : FINISH MAY VARY WITH /MS VERSION						
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY : CUT OFF POWER CIRCUIT						
SUPPRESSION DIODE : D'SUB MINIATURE SERIES						
TTL LOGIC : BCD DECODER						
LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (PIM)						

NOTE: REFERENCE FOR DIMENSIONS ONLY



H30-H60

H30-H60 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

H30	SP3T SMA
H40	SP4T SMA
H50	SP5T SMA
H60	SP6T SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

A	DC - 40.0 GHz
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4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER (NOT AVAILABLE WITH OPTION /MS)		

8 - Intermodulation

7	LOW PASSIVE INTERMUDULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

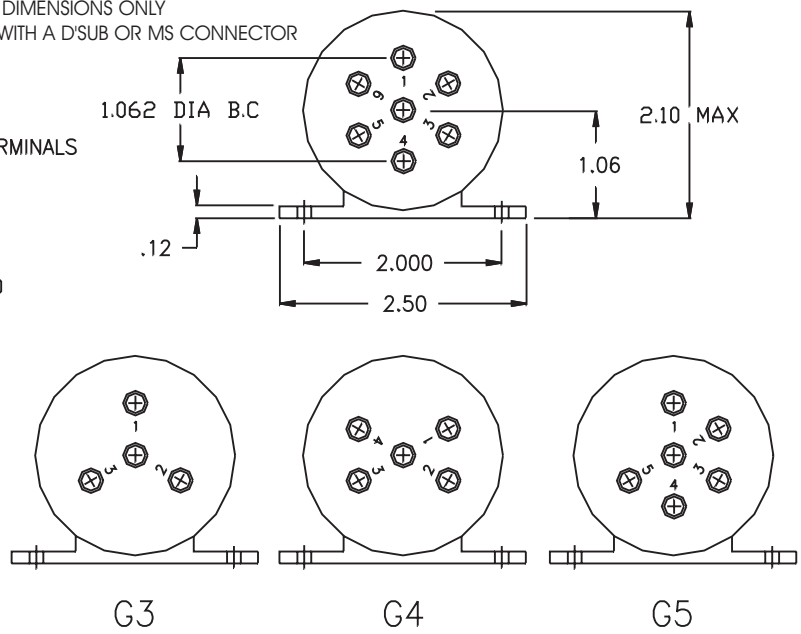
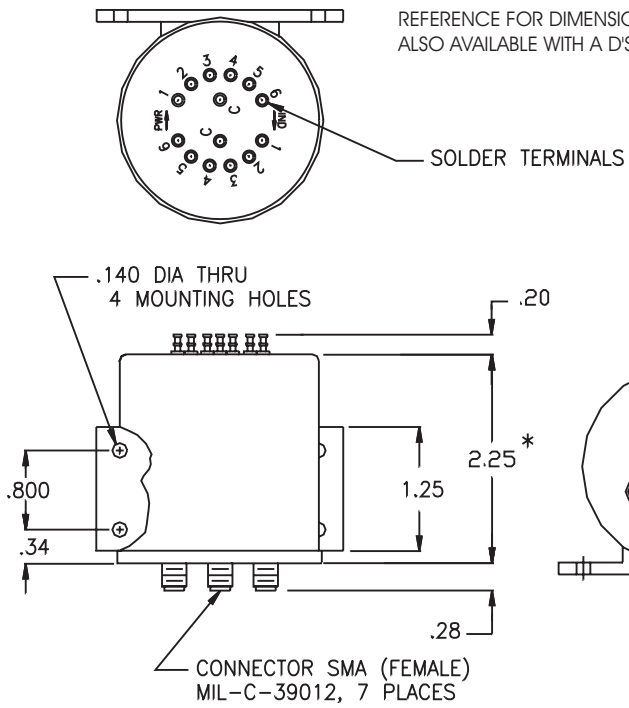
9 - Special Options (Not Available)

G3 - G6 SERIES SP3T - SP6T DC - 26.5 GHz MOUNTING BRACKET



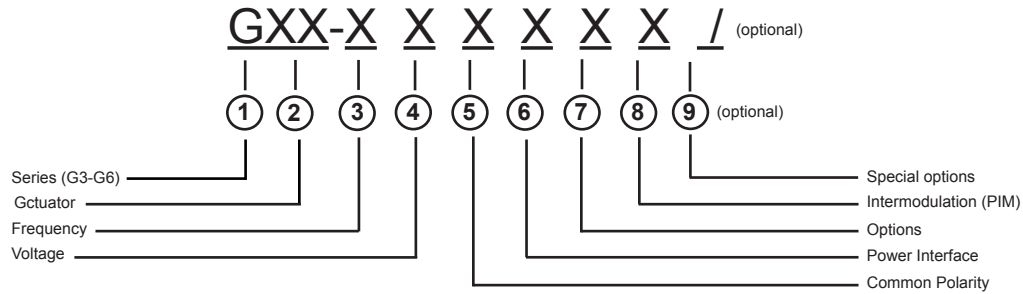
FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0	18.0 - 26.5
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1	1.65:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50	0.70
ISOLATION (MIN.)	90	80	80	70	60	50
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT ACTUATOR SWITCHING SPEED :	BREAK BEFORE MAKE FAILSAFE, LATCHING, MOMENTARY 20 mSEC MAX.					
ELECTRICAL						
ACTUATOR VOLTAGE :	28.0, 12.0, 15.0, 24.0 Vdc					
ACTUATOR CURRENT :	CONTACT CEI					
POWER HANDLING :	200 WCW @ 1.0 GHz (STANDARD) 300 WCW @ 1.0 GHz (OPT. /P)					
ENVIRONMENTAL						
OPERATING TEMP :	-40 DEG. C TO 85 DEG. C (STANDARD) -54 DEG. C TO 90 DEG. C (OPT. /MS)					
SHOCK :	50 G's (SAWTOOTH)					
RANDOM VIBRATION :	15 G's rms (NON-OPERATING)					
LIFE :	1,000,000 CYCLES					
FINISH						
RF CAVITY :	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS)					
ENCLOSURE :	ALUMINUM, BLUE OR BLACK					
CONTACT :	BERYLLIUM COPPER, GOLD PLATED					
CONNECTOR SHELL :	PER MIL-G-45204 CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074					
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY :	CUT OFF POWER CIRCUIT					
SUPPRESSION DIODE :	D'SUB MINIATURE SERIES					
TTL LOGIC :	MS CONNECTOR OR EQUIV. (MIL-SPEC)					
BCD TTL DECODER :	LOW, ULTRA, AND SUP INTERMODULATION (IM)					

NOTE: REFERENCE FOR DIMENSIONS ONLY.
EACH MODEL NUMBER WILL HAVE A UNIQUE SCHEMATIC.
ALSO AVAILABLE WITH A D'SUB, MICRO D'SUB OR MS SERIES CONNECTOR.



* SWITCH WITH TTL LOGIC OR PWR. CONNECTOR
THIS DIMENSION TO BE 2.60 MAXIMUM

G3-G6 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

G3	SP3T SMA
G4	SP4T SMA
G5	SP5T SMA
G6	SP6T SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	0	OTHER (SPECIFY)
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

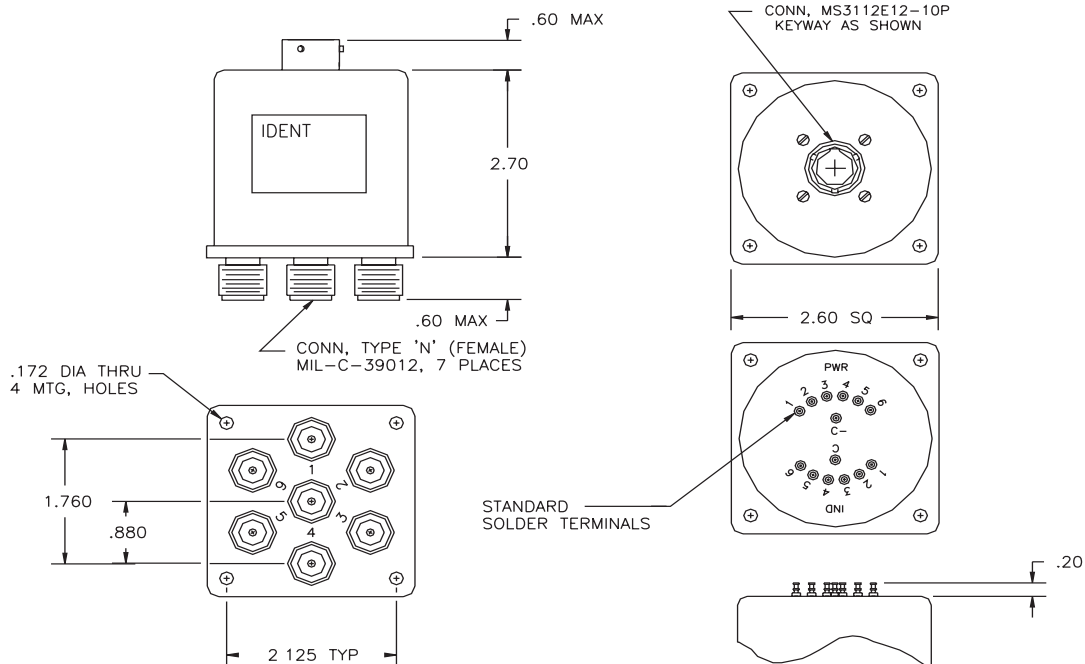
U3 - U6 SERIES SP3T - SP6T DC - 12.4 GHz



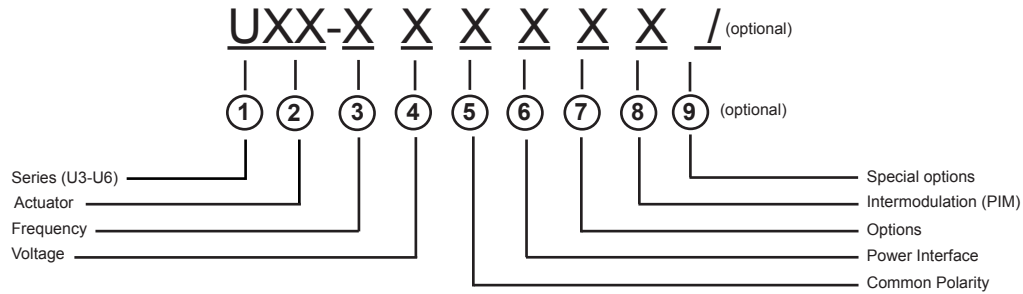
FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4
VSWR (MAX.)	1.20:1	1.30:1	1.40:1	1.50:1
INSERTION LOSS (MAX.)	0.20	0.30	0.40	0.50
ISOLATION (MIN.)	80	70	70	60
IMPEDANCE	50 Ohms			
MECHANICAL				
CONTACT	:	BREAK BEFORE MAKE		
ACTUATOR	:	FAILSAFE, LATCHING, MOMENTARY		
SWITCHING SPEED	:	20 mSEC MAX.		
ELECTRICAL				
ACTUATOR VOLTAGE	:	28.0, 12.0, 15.0, 24.0 Vdc		
ACTUATOR CURRENT	:	CONTACT CEI		
POWER HANDLING	:	350 WCW @ 1.0 GHz (STANDARD)		
	:	950 WCW @ 1.0 GHz (OPT. /P)		
ENVIRONMENTAL				
OPERATING TEMP	:	-40 DEG. C TO 80 DEG. C (STANDARD)		
	:	-54 DEG. C TO 90 DEG. C (OPT. /MS)		
SHOCK	:	50 G's (SAWTOOTH)		
RANDOM VIBRATION	:	15 G's rms (NON-OPERATING)		
LIFE	:	1,000,000 CYCLES		
FINISH				
RF CAVITY	:	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS)		
ENCLOSURE	:	ALUMINUM, BLACK OR BLUE		
CONTACT	:	BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204		
CONNECTOR SHELL	:	CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074		
NOTE	:	FINISH MAY VARY FOR /MS VERSION		
AVAILABLE OPTIONS				
INDICATOR CIRCUITRY	:	CUT OFF POWER CIRCUIT		
SUPPRESSION DIODE	:	MS CONNECTOR OR EQUIV. (MIL-SPEC)		
TTL LOGIC	:	D'SUB MINIATURE SERIES		
BCD TTL DECORDER	:	LOW, ULTRA, AND SUPERIOR (PIM)		

EACH MODEL NUMBER WILL HAVE A UNIQUE SCHEMATIC.

REFERENCE FOR DIMENSIONS ONLY
AVAILABLE WITH SOLDER TERMINALS, D'SUB OR MS CONNECTOR



U3-U6 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

U3	SP3T TYPE N
U4	SP4T TYPE N
U5	SP5T TYPE N
U6	SP6T TYPE N

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz
2	DC - 2.0 GHz
3	DC - 12.4 GHz
4	DC - 4.0 GHz
6	DC - 6.0 GHz

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN V _{dc} COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

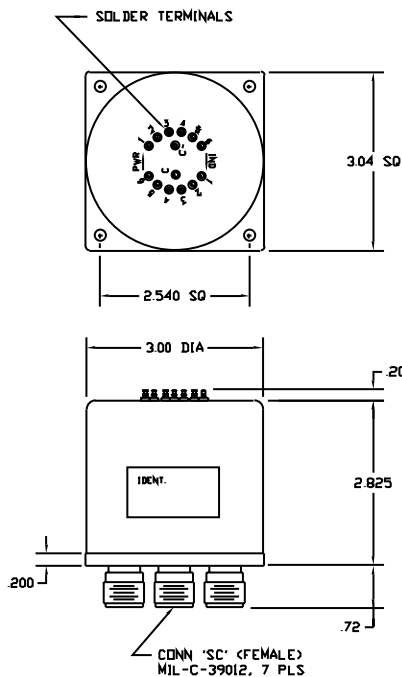
9 - Special Options (optional - leave blank if not required)

/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

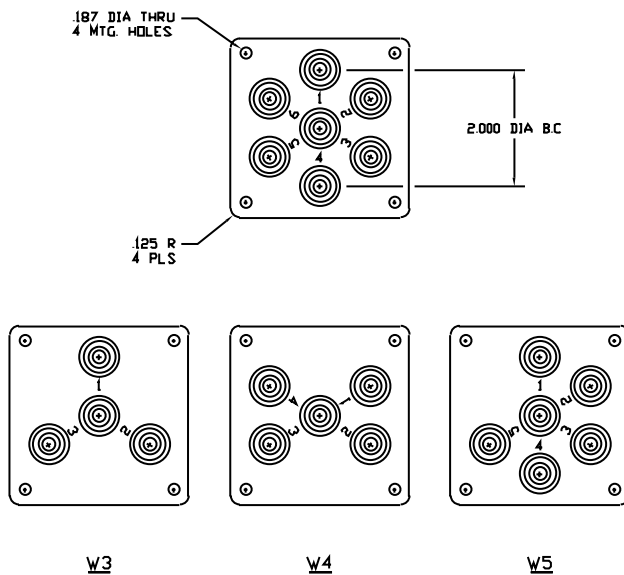
W3-W6 SERIES SP3T - SP6T DC - 6.0 GHz TYPE SC CONNECTORS HIGH POWER



FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 6.0
VSWR (MAX.)	1.25:1	1.35:1	1.50:1
INSERTION LOSS (MAX.)	0.25	0.35	0.50
ISOLATION (MIN.)	80	70	60
IMPEDANCE	50 Ohms		
MECHANICAL			
CONTACT	:	BREAK BEFORE MAKE	
ACTUATOR	:	FAILSAFE, LATCHING, MOMENTARY	
SWITCHING SPEED	:	20 mSEC MAX.	
ELECTRICAL			
ACTUATOR VOLTAGE	:	28.0, 24.0, 15.0, 12.0 Vdc	
ACTUATOR CURRENT	:	CONTACT CEI	
POWER HANDLING	:	1.75 KWCW @ 1.0 GHz	
ENVIRONMENTAL			
OPERATING TEMP	:	-40 DEG. C TO 80 DEG. C	
	:	-54 DEG. C TO 90 DEG. C (OPT. /MS)	
SHOCK	:	50 G's (SAW-TOOTH)	
RANDOM VIBRATION	:	15 G's rms (NON-OPERATING)	
LIFE	:	1,000,000 CYCLES	
FINISH			
RF CAVITY	:	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS)	
ENCLOSURE	:	ALUMINUM, BLACK OR BLUE	
CONTACT	:	BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204	
CONNECTOR SHELL	:	CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074	
AVAILABLE OPTIONS			
INDICATOR CIRCUITRY	:	CUT OFF POWER CIRCUIT	
SUPPRESSION DIODE	:	D' SUB MINIATURE SERIES	
TTL LOGIC	:	MS CONNECTOR (MIL-SPEC)	
CUSTOM DESIGNS	:	LOW & ULTRA LOW PIM (IM)	

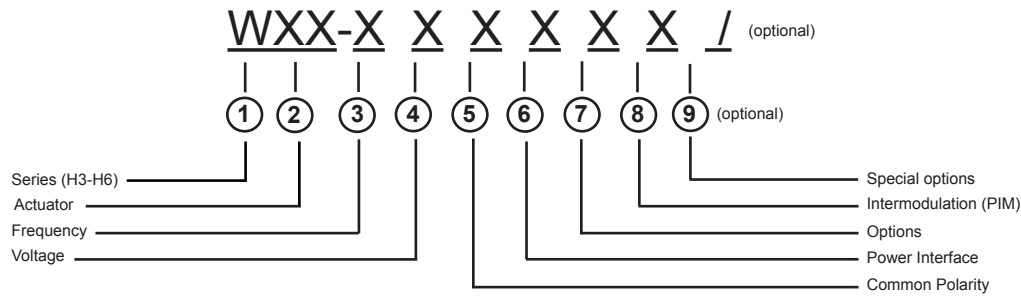


NOTE: REFERENCE FOR DIMENSIONS ONLY. EACH MODEL NUMBER WILL HAVE A UNIQUE SCHEMATIC. ALSO AVAILABLE WITH A D'SUB, MICRO D'SUB OR MS SERIES CONNECTOR.



W3-W6

W3-W6 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

W3	SP3T TYPE SC
W4	SP4T TYPE SC
W5	SP5T TYPE SC
W6	SP6T TYPE SC

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

2	DC - 2.0 GHz
4	DC - 4.0 GHz
6	DC - 6.0 GHz
0	OTHER

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	24 - 32 Vdc (28.0 NOMINAL)
2	13 - 18 Vdc (15.0 NOMINAL)	5	OTHER
3	20 - 30 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

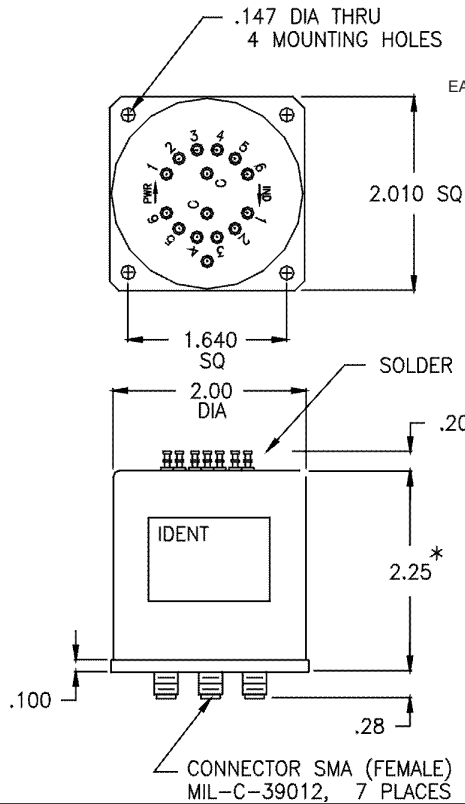
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG
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P3 - P6 SERIES SP3T - SP6T DC - 26.5 GHz

OPEN PORTS TERMINATED

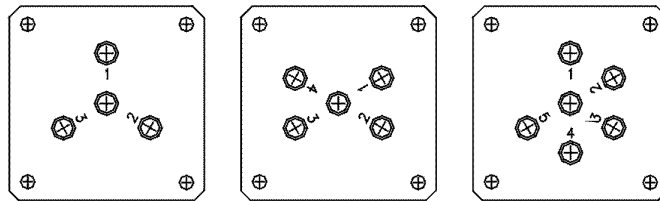
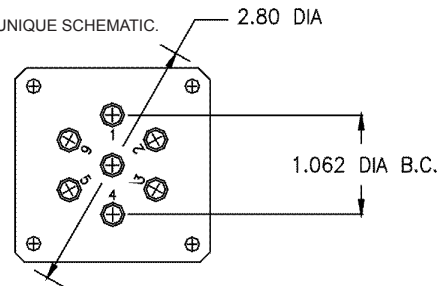


FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0	18.0 - 26.5
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1	1.65:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50	0.70
ISOLATION (MIN.)	90	80	80	70	60	50
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT ACTUATOR SWITCHING SPEED	: BREAK BEFORE MAKE : FAILSAFE, LATCHING, MOMENTARY : 20 mSEC MAX.					
ELECTRICAL						
ACTUATOR VOLTAGE ACTUATOR CURRENT POWER HANDLING TERMINATION	: 28.0, 12.0, 15.0, 24.0 Vdc : CONTACT CEI : 200 WCW @ 1.0 GHz (STANDARD) : 300 WCW @ 1.0 GHz (OPT /P) : 8 WATTS MAX.					
ENVIRONMENTAL						
OPERATING TEMP SHOCK RANDOM VIBRATION LIFE	: -40 DEG. C TO 85 DEG. C : 50 G's (SAWTOOTH) : 15 G's rms (NON-OPERATING) : 1,000,000 CYCLES					
FINISH						
RF CAVITY ENCLOSURE CONTACT CONNECTOR SHELL NOTE	: ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS) : ALUMINUM, BLUE OR BLACK : BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204 : CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074 : FINISH MAY VARY FOR /MS VERSION					
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY SUPPRESSION DIODE TTL LOGIC BCD TTL DECODER	: CUT OFF POWER CIRCUIT : D'SUB MINIATURE SERIES : MS CONNECTOR OR EQUIV. (MIL-SPEC) : LOW, ULTRA, AND SUP INTERMODULATION (IM)					



REFERENCE FOR DIMENSIONS ONLY
ALSO AVAILABLE WITH A D'SUB OR MS CONNECTOR

EACH MODEL NUMBER WILLHAVE A UNIQUE SCHEMATIC.



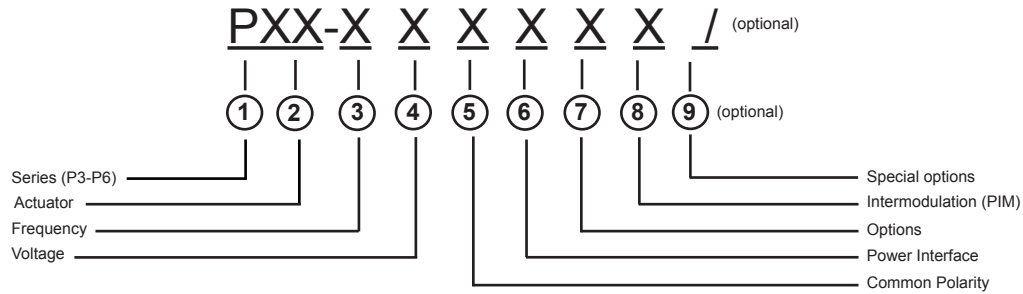
P3

P4

P5

* SWITCH WITH TTL LOGIC OR PWR.CONNECTOR THIS DIMENSION TO BE 2.60 MAXIMUM.

P3-P6 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

P3	SP3T TERMINATED SMA
P4	SP4T TERMINATED SMA
P5	SP5T TERMINATED SMA
P6	SP6T TERMINATED SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	0	OTHER (SPECIFY)
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

/P	HIGH TEMP, HIGH POWER CONNECTOR
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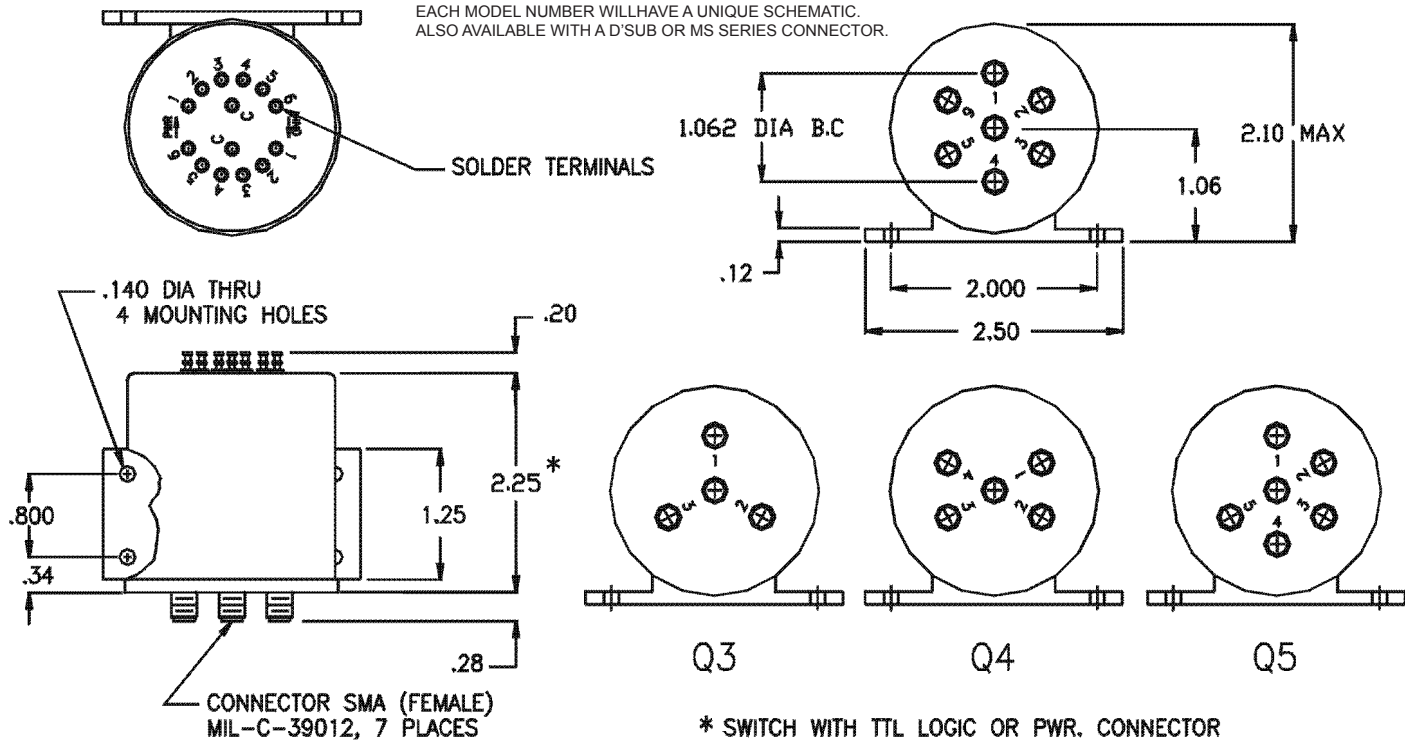
Q3 - Q6 SERIES SP3T - SP6T DC - 26.5 GHz

OPEN PORTS TERMINATED MOUNTING BRACKET

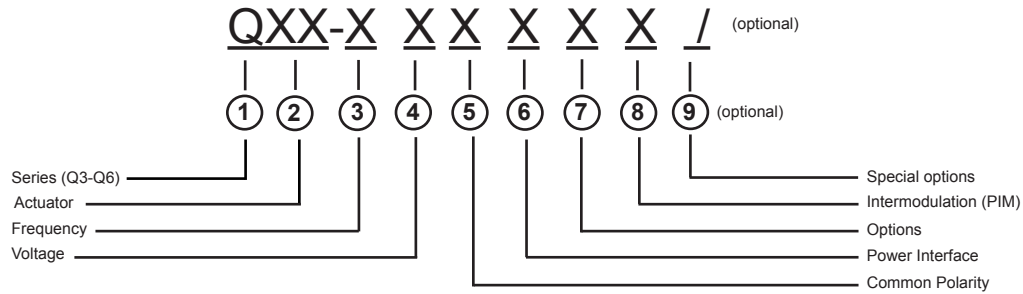


FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0	18.0 - 26.5
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1	1.65:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50	0.70
ISOLATION (MIN.)	90	80	80	70	60	50
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT ACTUATOR SWITCHING SPEED	BREAK BEFORE MAKE FAILSAFE, LATCHING, MOMENTARY 20 mSEC MAX.					
ELECTRICAL						
ACTUATOR VOLTAGE ACTUATOR CURRENT POWER HANDLING TERMINATION	28.0, 12.0, 15.0, 24.0 Vdc CONTACT CEI 200 WCW @ 1.0 GHz (STANDARD) 300 WCW @ 1.0 GHz (OPT /P) 8 WATTS MAX.					
ENVIRONMENTAL						
OPERATING TEMP SHOCK RANDOM VIBRATION LIFE	-40 DEG. C TO 85 DEG. C (STANDARD) 50 G's (SAWTOOTH) 15 G's rms (NON-OPERATING) 1,000,000 CYCLES					
FINISH						
RF CAVITY ENCLOSURE CONTACT CONNECTOR SHELL	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS) ALUMINUM, BLUE OR BLACK BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204 CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074					
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY SUPPRESSION DIODE TTL LOGIC LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (IM)	CUT OFF POWER CIRCUIT D'SUB MINIATURE SERIES MS CONNECTOR OR EQUIV. (MIL-SPEC)					

NOTE: REFERENCE FOR DIMENSIONS ONLY.
EACH MODEL NUMBER WILL HAVE A UNIQUE SCHEMATIC.
ALSO AVAILABLE WITH A D'SUB OR MS SERIES CONNECTOR.



Q3-Q6 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

Q3	SP3T TERMINATED SMA
Q4	SP4T TERMINATED SMA
Q5	SP5T TERMINATED SMA
Q6	SP6T TERMINATED SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	0	OTHER (SPECIFY)
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN V _{dc} COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

/P	HIGH TEMP, HIGH POWER CONNECTOR
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C3 - C6 SERIES SP3T - SP6T DC - 18.0 GHz

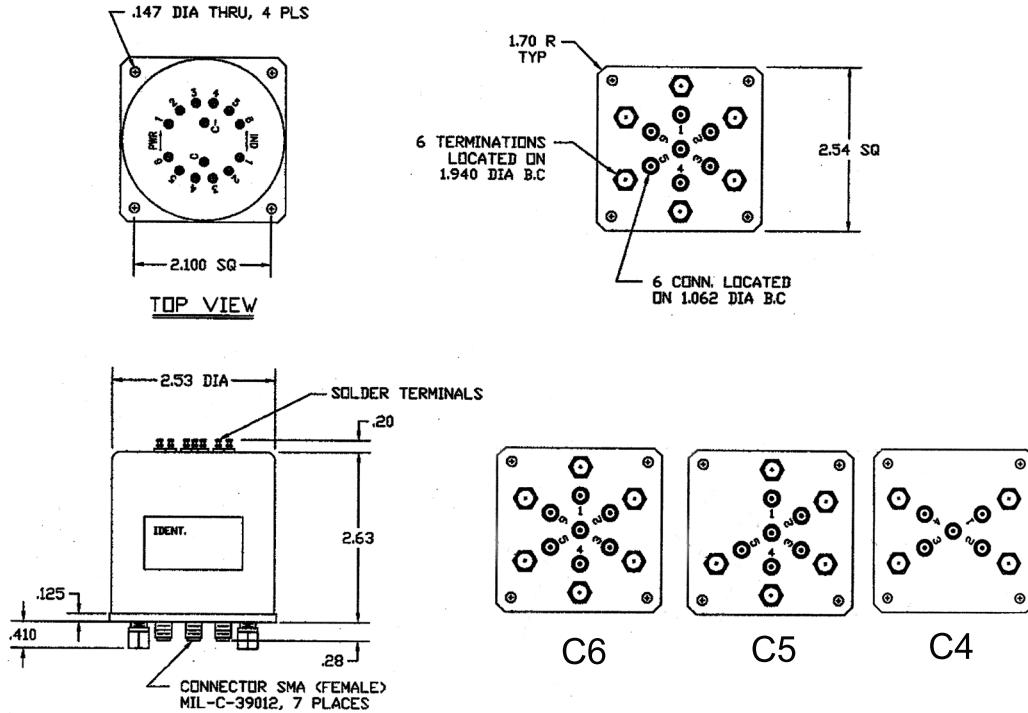
EXTERNAL PORTS TERMINATED



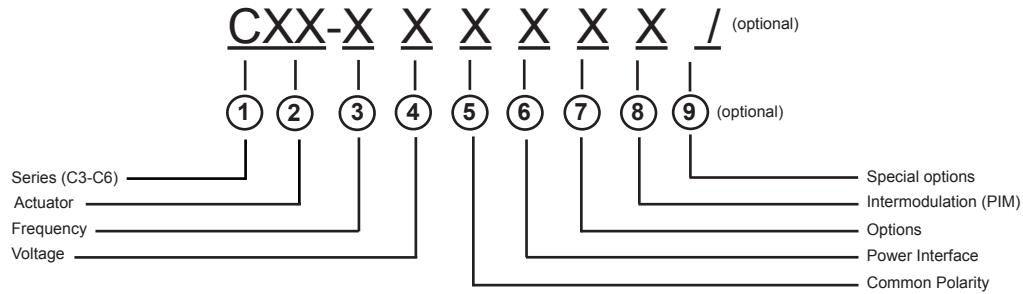
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FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50
ISOLATION (MIN.)	90	80	80	70	60
IMPEDANCE	50 Ohms				
MECHANICAL					
CONTACT	:	BREAK BEFORE MAKE			
ACTUATOR	:	FAILSAFE, LATCHING, MOMENTARY			
SWITCHING SPEED	:	20 mSEC MAX.			
ELECTRICAL					
ACTUATOR VOLTAGE	:	28.0, 24.0, 15.0, 12.0 Vdc			
ACTUATOR CURRENT	:	CONTACT CEI			
POWER HANDLING	:	200 WCW @ 1.0 GHz (STANDARD) 300 WCW @ 1.0 GHz (OPT /P)			
TERMINATION	:	1 WATT EXTERNAL (INCLUDED)			
ENVIRONMENTAL					
OPERATING TEMP	:	-40 DEG. C TO 85 DEG. C (STANDARD) -54 DEG. C TO 90 DEG. C (OPT /MS)			
SHOCK	:	50 G's (SAWTOOTH)			
RANDOM VIBRATION	:	15 G's rms (NON-OPERATING)			
LIFE	:	1,000,000 CYCLES			
FINISH					
RF CAVITY	:	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT ULTRA LOW OR SUP. IM MODELS)			
ENCLOSURE	:	ALUMINUM, BLUE			
CONTACT	:	BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204			
CONNECTOR SHELL	:	CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074			
NOTE	:	FINISH MAY VARY WITH /MS VERSION			
AVAILABLE OPTIONS					
INDICATOR CIRCUITRY	:	CUT OFF POWER CIRCUIT			
SUPPRESSION DIODE	:	D' SUB MINIATURE SERIES			
TTL LOGIC	:	CUSTOM DESIGNS			
BCD TTL DECODER	:	LOW, ULTRA, OR SUP INTERMODULATION			

NOTE: REFERENCE FOR DIMENSIONS ONLY.
EACH MODEL NUMBER WILL HAVE A UNIQUE SCHEMATIC.
ALSO AVAILABLE WITH A D'SUB, MICRO D'SUB OR MS SERIES CONNECTOR.



C3-C6 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

C3	SP3T EXTERNALLY TERMINATED SMA
C4	SP4T EXTERNALLY TERMINATED SMA
C5	SP5T EXTERNALLY TERMINATED SMA
C6	SP6T EXTERNALLY TERMINATED SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	0	OTHER (SPECIFY)
3	DC - 12.4 GHz		
4	DC - 4.0 GHz		
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

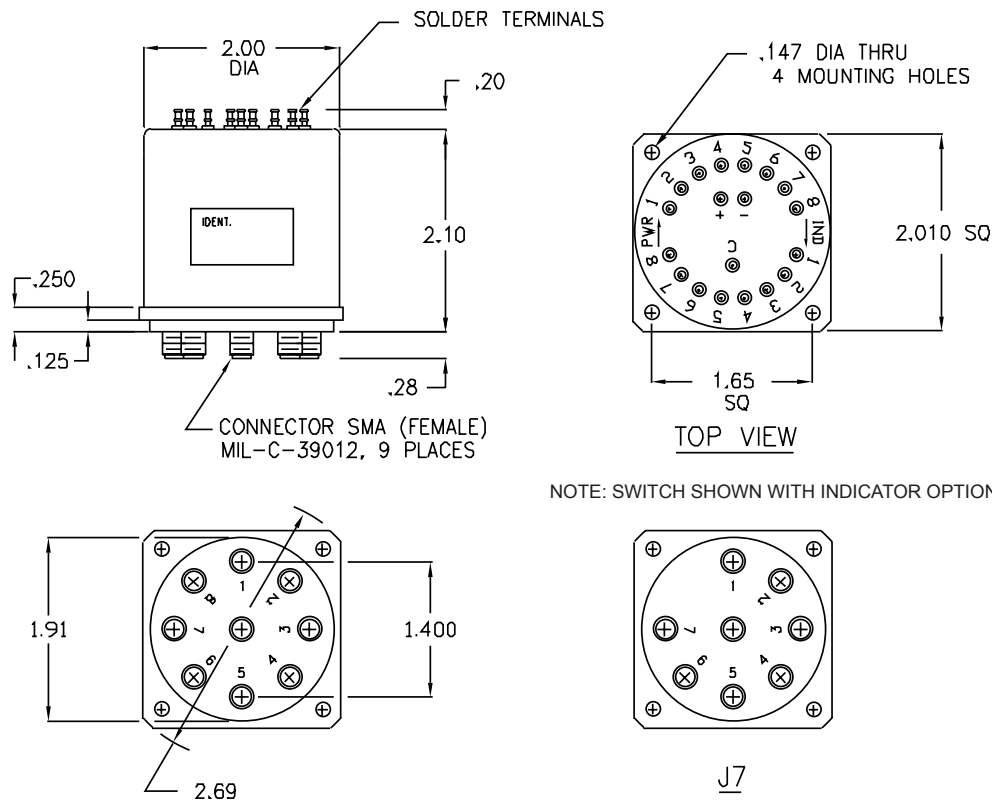
9 - Special Options (optional - leave blank if not required)

/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO +90 DEC C
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

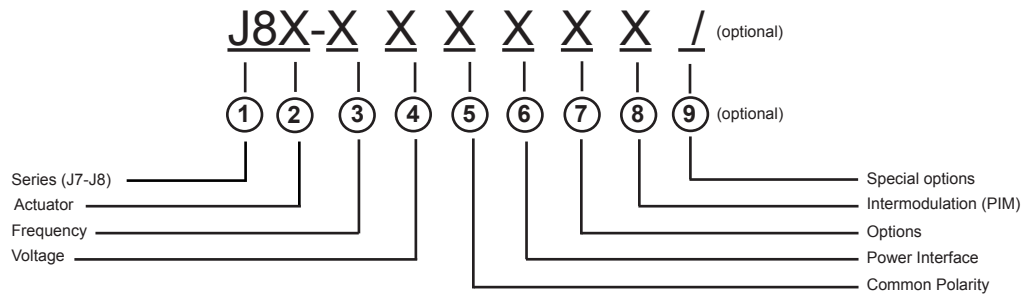
J8 SERIES SP8T MOMENTARY (MINIATURE) DC - 20.0 GHz



FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0	18.0 - 20.0
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.60:1	1.65:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.70	0.70
ISOLATION (MIN.)	90	80	80	70	60	50
IMPEDANCE	50 Ohms					
MECHANICAL						
CONTACT	:	BREAK BEFORE MAKE				
ACTUATOR	:	MOMENTARY (NORMALLY OPEN)				
SWITCHING SPEED	:	20 mSEC MAX.				
ELECTRICAL						
ACTUATOR VOLTAGE	:	28.0, 24.0, 15.0 Vdc				
ACTUATOR CURRENT	:	CONTACT CEI				
POWER HANDLING	:	200 WCW @ 1.0 GHz 300 WCW @ 1.0 GHz (OPT. /P)				
ENVIRONMENTAL						
OPERATING TEMP	:	-40 DEG. C TO 85 DEG. C -54 DEG. C TO 90 DEG. C (OPT. /MS)				
SHOCK	:	50 G's (SAWTOOTH)				
RANDOM VIBRATION	:	15 G's rms (NON-OPERATING)				
LIFE	:	1,000,000 CYCLES				
FINISH						
RF CAVITY	:	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW PIM MODELS)				
ENCLOSURE	:	ALUMINUM, BLUE OR BLACK				
CONTACT	:	BERYLLIUM COPPER, GOLD PLATED				
CONNECTOR SHELL	:	PER MIL-G-45204 CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074				
AVAILABLE OPTIONS						
INDICATOR CIRCUITRY	:	D' SUB MINIATURE SERIES				
SUPPRESSION DIODE	:	MS CONNECTOR (MIL-SPEC)				
TTL LOGIC	:	LOW OR ULTRA LOW (PIM)				
CUSTOM DESIGNS	:					



J8 SERIES PART NUMBER & ORDERING INFORMATION



1 - Switch Series

J7	SP7T SMA
J8	SP8T SMA

2 - Actuator

R	MOMENTARY
S	MOMENTARY WITH SUPPRESSION DIODE
T	MOMENTARY WITH INDICATOR
U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
Y	OTHER (SPECIFY)

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	7	DC - 26.5 GHz
3	DC - 12.4 GHz	8	DC - 20.0 GHz
4	DC - 4.0 GHz	0	OTHER (SPECIFY)
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	MICRO D'SUB SERIES (TOP OF SWITCH)

7 - Options

2	TTL LOGIC	8	OTHER (SPECIFY)
4	BCD TTL DECODER	9	CUSTOM (ORDER)
		0	NO OTHER OPTIONS REQUIRED

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

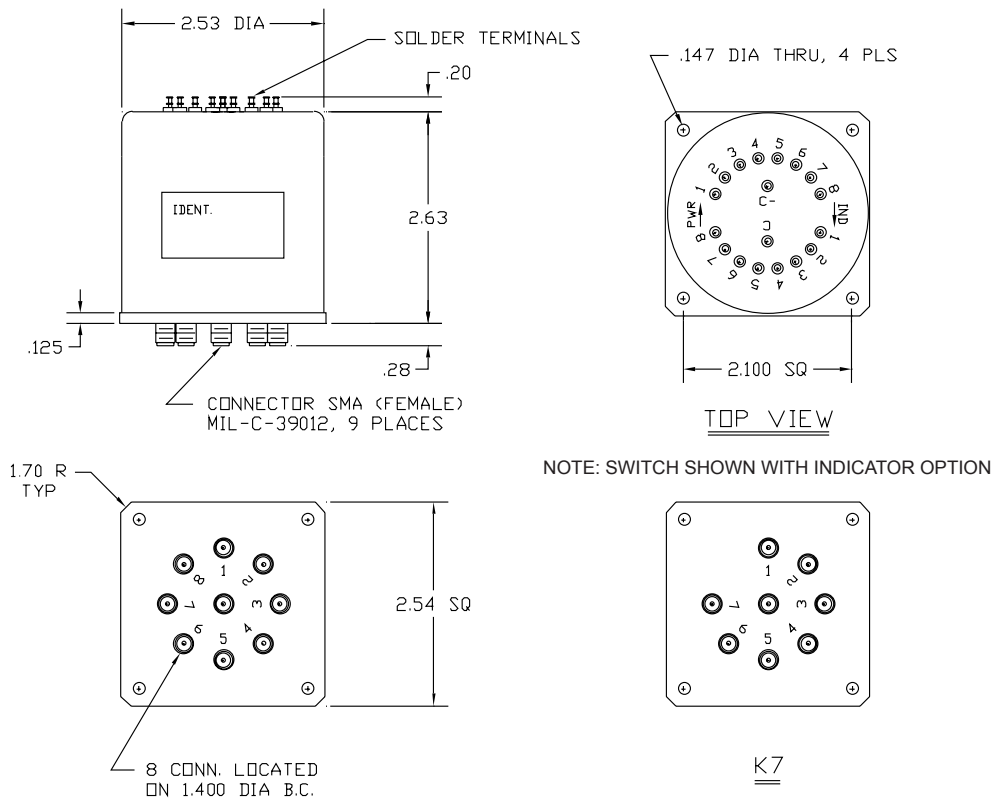
9 - Special Options (optional - leave blank if not required)

/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

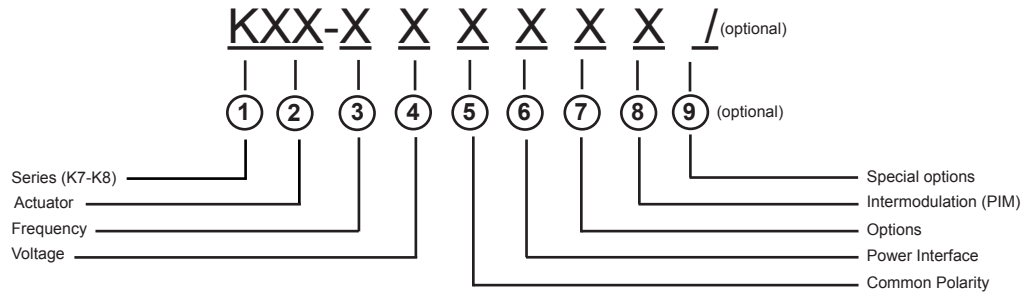
K8 SERIES SP8T DC - 18.0 GHz



FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.50:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.50
ISOLATION (MIN.)	90	80	80	70	60
IMPEDANCE	50 Ohms				
MECHANICAL					
CONTACT	:	BREAK BEFORE MAKE			
ACTUATOR	:	FAILSAFE, LATCHING, MOMENTARY			
SWITCHING SPEED	:	20 mSEC MAX.			
ELECTRICAL					
ACTUATOR VOLTAGE	:	28.0, 24.0, 15.0, 12.0 Vdc			
ACTUATOR CURRENT	:	CONTACT CEI			
POWER HANDLING	:	200 WCW @ 1.0 GHz (STANDARD) 300 WCW @ 1.0 GHz (OPT. /P)			
ENVIRONMENTAL					
OPERATING TEMP	:	-40 DEG. C TO 85 DEG. C (STANDARD)			
	:	-54 DEG. C TO 90 DEG. C (OPT. M/S)			
SHOCK	:	50 G's (SAWTOOTH)			
RANDOM VIBRATION	:	15 G's rms (NON-OPERATING)			
LIFE	:	1,000,000 CYCLES			
FINISH					
RF CAVITY	:	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT ULTRA LOW OR SUP. IM MODELS)			
ENCLOSURE	:	ALUMINUM, BLUE OR BLACK			
CONTACT	:	BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204			
CONNECTOR SHELL	:	CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074			
NOTE	:	FINISH MAY VARY FOR /MS VERSION			
AVAILABLE OPTIONS					
INDICATOR CIRCUITRY	:	CUT OFF POWER CIRCUIT			
SUPPRESSION DIODE	:	D' SUB MINIATURE SERIES			
TTL LOGIC	:	CUSTOM DESIGNS			
BCD TTL DECODER	:	LOW, ULTRA, OR SUP INTERMODULATION (IM)			



K7-K8 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

K7	SP7T SMA
K8	SP8T SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	0	OTHER (SPECIFY)
3	DC - 12.4 GHz		
4	DC - 4.0 GHz		
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN V _{dc} COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER (NOT AVAILABLE WITH OPTION /MS)		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

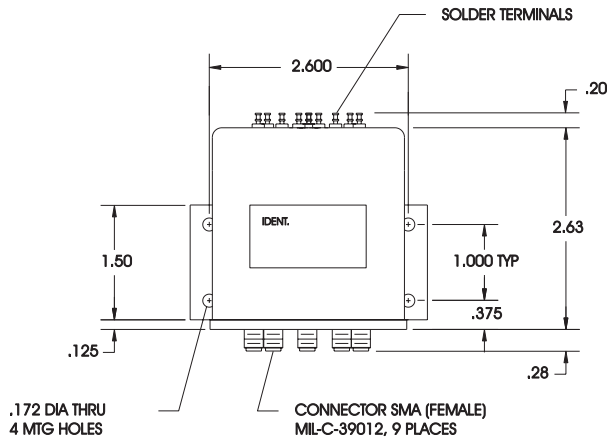
/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

N8 SERIES SP8T DC - 18.0 GHz

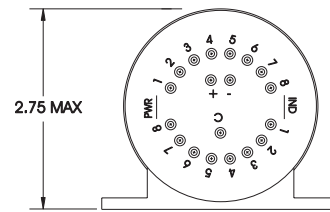
MOUNTING BRACKET



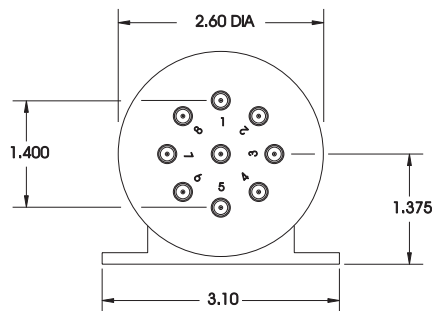
FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.60:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.70
ISOLATION (MIN.)	90	80	80	70	60
IMPEDANCE	50 Ohms				
MECHANICAL					
CONTACT	:	BREAK BEFORE MAKE			
ACTUATOR	:	FAILSAFE, LATCHING, MOMENTARY			
SWITCHING SPEED	:	20 mSEC MAX.			
ELECTRICAL					
ACTUATOR VOLTAGE	:	28.0, 24.0, 15.0, 12 Vdc			
ACTUATOR CURRENT	:	CONTACT CEI			
POWER HANDLING	:	200 WCW @ 1.0 GHz 300 WCW @ 1.0 GHz (OPT. /P)			
ENVIRONMENTAL					
OPERATING TEMP	:	-40 DEG. C TO 85 DEG. C (STANDARD) -54 DEG. C TO 90 DEG. C (OPT. /MS)			
SHOCK	:	50 G's (SAWTOOTH)			
RANDOM VIBRATION	:	15 G's rms (NON-OPEARTING)			
LIFE	:	1,000,000 CYCLES			
FINISH					
RF CAVITY	:	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW PIM MODELS)			
ENCLOSURE	:	ALUMINUM, BLUE OR BLACK			
CONTACT	:	BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204			
CONNECTOR SHELL	:	CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074			
NOTE	:	FINISH MAY VARY FOR /MS VERSION			
AVAILABLE OPTIONS					
INDICATOR CIRCUITRY	:	CUT OFF POWER CIRCUIT			
SUPPRESSION DIODE	:	D' SUB MINIATURE SERIES			
TTL LOGIC	:	MS CONNECTOR (MIL-SPEC)			
BCD TTL DECODER	:	LOW, ULTRA, OR SUP INTERMODULATION (IM)			



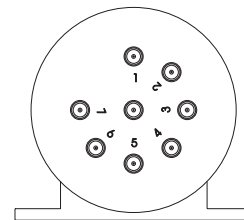
NOTE: REFERENCE FOR DIMENSIONS ONLY.
EACH MODEL NUMBER WILL HAVE A UNIQUE SCHEMATIC.
ALSO AVAILABLE WITH A D'SUB, MICRO D'SUB OR MS SERIES CONNECTOR.



TOP VIEW

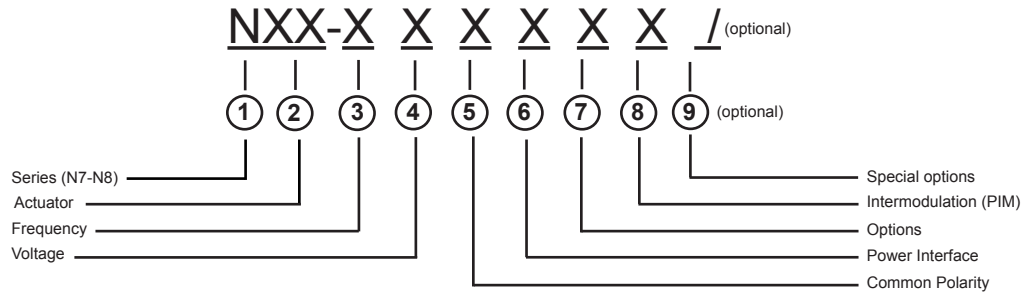


NOTE: SWITCH SHOWN WITH INDICATOR OPTION



O7

N7-N8 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

N7	SP7T SMA
N8	SP8T SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	0	OTHER (SPECIFY)
3	DC - 12.4 GHz		
4	DC - 4.0 GHz		
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	24 - 32 Vdc (28.0 NOMINAL)
2	13 - 18 Vdc (15.0 NOMINAL)	5	OTHER
3	20 - 30 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

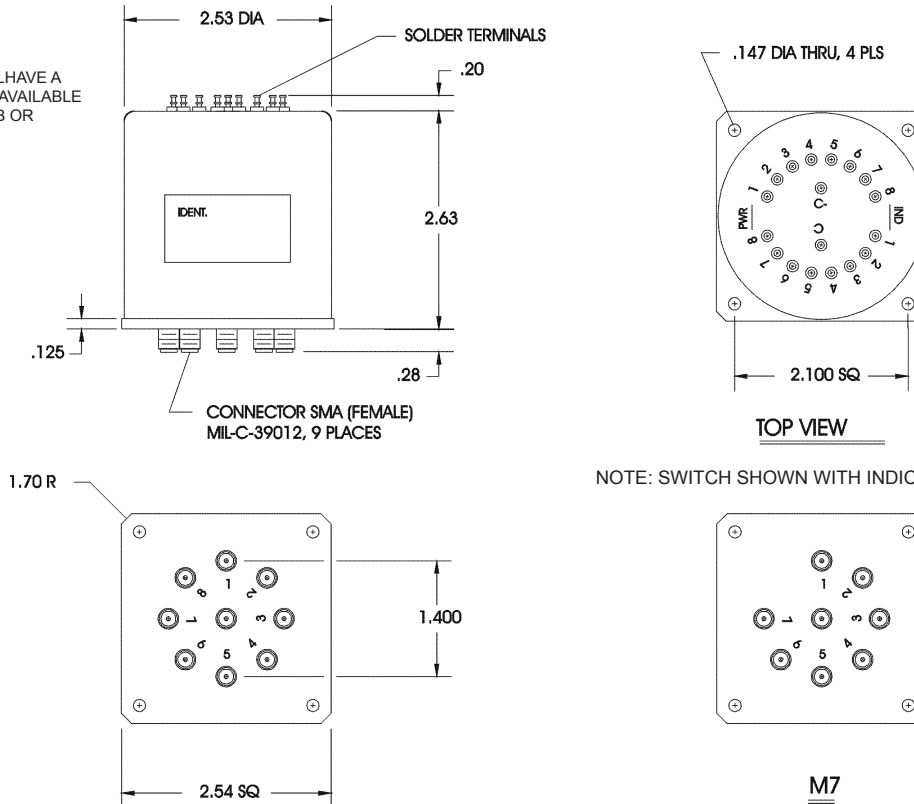
M8 SERIES SP8T DC - 18.0 GHz

OPEN PORTS TERMINATED

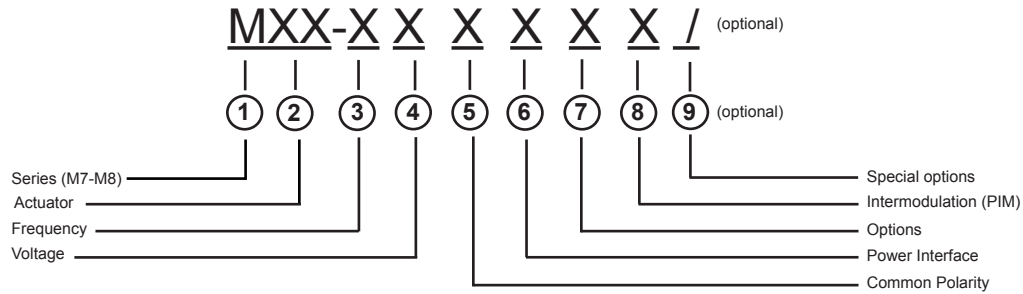


FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0
VSWR (MAX.)	1.20:1	1.25:1	1.30:1	1.40:1	1.60:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.40	0.70
ISOLATION (MIN.)	90	80	80	70	60
IMPEDANCE	50 Ohms				
MECHANICAL					
CONTACT	:	BREAK BEFORE MAKE			
ACTUATOR	:	FAILSAFE, LATCHING, MOMENTARY			
SWITCHING SPEED	:	20 mSEC MAX.			
ELECTRICAL					
ACTUATOR VOLTAGE	:	28.0, 24.0, 15.0, 12.0 Vdc			
ACTUATOR CURRENT	:	CONTACT CEI			
POWER HANDLING	:	200 WCW @ 1.0 GHz (STANDARD) 300 WCW @ 1.0 GHz (OPT / P) 8 WATTS MAX.			
TERMINATION	:				
ENVIRONMENTAL					
OPERATING TEMP	:	-40 DEG. C TO 85 DEG. C			
SHOCK	:	50 G's (SAWTOOTH)			
RANDOM VIBRATION	:	15 G's rms (NON-OPERATING)			
LIFE	:	1,000,000 CYCLES			
FINISH					
RF CAVITY	:	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT ULTRA LOW OR SUP. IM MODELS)			
ENCLOSURE	:	ALUMINUM, BLUE			
CONTACT	:	BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204			
CONNECTOR SHELL	:	CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074			
AVAILABLE OPTIONS					
INDICATOR CIRCUITRY	:	CUT OFF POWER CIRCUIT			
SUPPRESSION DIODE	:	D' SUB MINIATURE SERIES			
TTL LOGIC	:	CUSTOM DESIGNS			
LOW, ULTRA LOW, OR SUPERIOR INTERMODULATION (IM)	:				

NOTE: REFERENCE FOR DIMENSIONS ONLY. EACH MODEL NUMBER WILL HAVE A UNIQUE SCHEMATIC. ALSO AVAILABLE WITH A D'SUB, MICRO D'SUB OR MS SERIES CONNECTOR.



M7-M8 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

M7	SP7T TERMINATED SMA
M8	SP8T TERMINATED SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	0	OTHER (SPECIFY)
3	DC - 12.4 GHz		
4	DC - 4.0 GHz		
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN V _{dc} COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

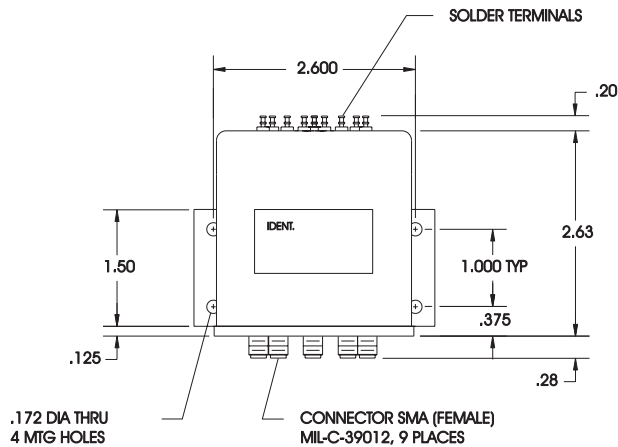
/P	HIGH TEMP, HIGH POWER CONNECTOR
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O8 SERIES SP8T DC - 18.0 GHz

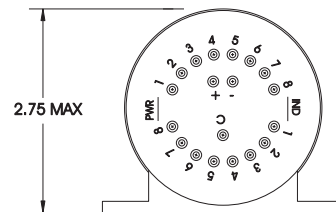
**OPEN PORTS TERMINATED
& MOUNTING BRACKET**



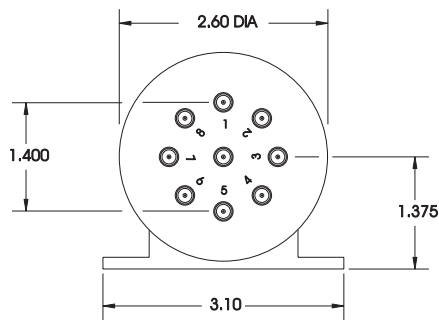
FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 18.0
	VSWR (MAX.)				
	1.20:1	1.25:1	1.30:1	1.40:1	1.60:1
	INSERTION LOSS (MAX.)				
	0.20	0.25	0.30	0.40	0.70
ISOLATION (MIN.)					
90	80	80	70	60	
IMPEDANCE					
50 Ohms					
MECHANICAL					
CONTACT		: BREAK BEFORE MAKE			
ACTUATOR		: FAILSAFE, LATCHING, MOMENTARY			
SWITCHING SPEED		: 20 mSEC MAX.			
ELECTRICAL					
ACTUATOR VOLTAGE		: 28.0, 24.0, 15.0, 12.0 Vdc			
ACTUATOR CURRENT		: SEE TABLE			
POWER HANDLING		: 200 WCW @ 1.0 GHz (STANDARD)			
		: 300 WCW @ 1.0 GHz (OPT. /P)			
TERMINATION		: 8 WATTS MAX.			
ENVIRONMENTAL					
OPERATING TEMP		: -40 DEG. C TO 85 DEG. C (STANDARD)			
SHOCK		: 50 G's (SAWTOOTH)			
RANDOM VIBRATION		: 15 G's rms (NON-OPERATING)			
LIFE		: 1,000,000 CYCLES			
FINISH					
RF CAVITY		: ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT ULTRA LOW OR SUP. IM MODELS)			
ENCLOSURE		: ALUMINUM, BLUE			
CONTACT		: BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204			
CONNECTOR SHELL		: CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074			
AVAILABLE OPTIONS					
INDICATOR CIRCUITRY		: CUT OFF POWER CIRCUIT			
SUPPRESSION DIODE		: D' SUB MINIATURE SERIES			
TTL LOGIC		: CUSTOM DESIGNS			
LOW, ULTRA LOW, OR SUPERIOR INTERMODULATION (IM)					



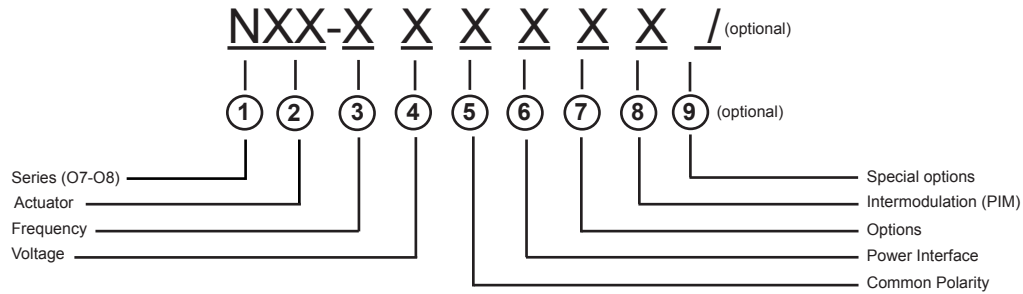
NOTE: REFERENCE FOR DIMENSIONS ONLY.
EACH MODEL NUMBER WILLHAVE A UNIQUE SCHEMATIC.
ALSO AVAILABLE WITH A D'SUB, MICRO D'SUB OR MS SERIES CONNECTOR.



NOTE: SWITCH SHOWN WITH INDICATOR OPTION



07-08 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

O7	SP7T SMA
O8	SP8T SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	0	OTHER (SPECIFY)
3	DC - 12.4 GHz		
4	DC - 4.0 GHz		
5	DC - 18.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN V _{dc} COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED
4	BCD TTL DECODER		

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

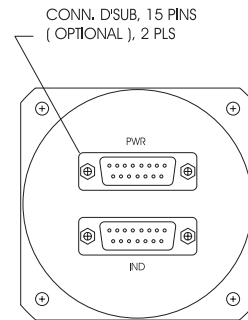
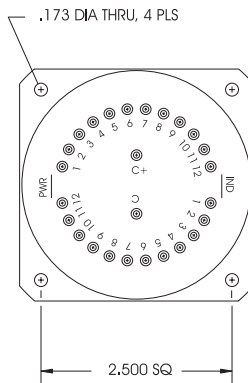
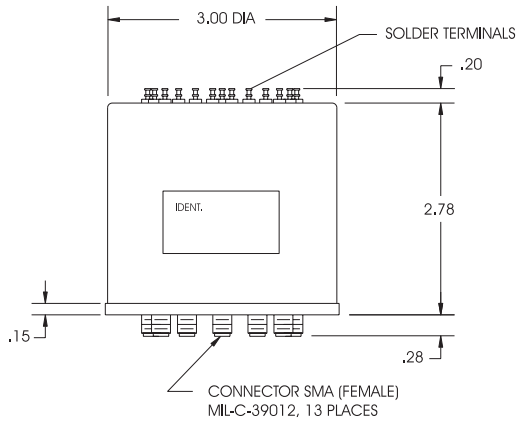
9 - Special Options (optional - leave blank if not required)

/P	HIGH TEMP, HIGH POWER CONNECTOR
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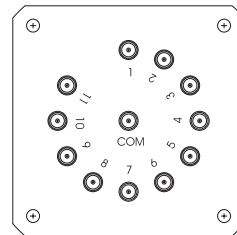
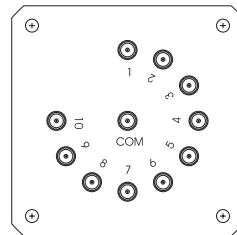
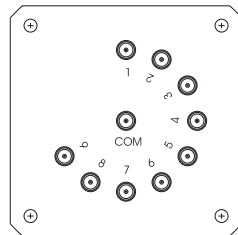
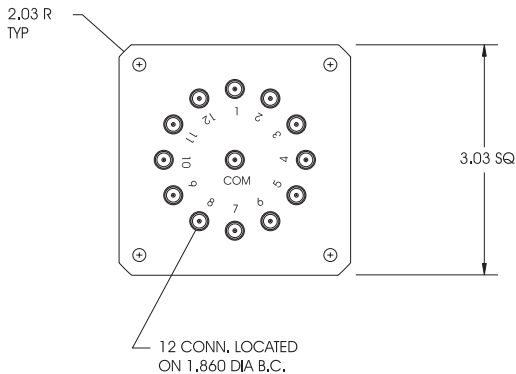
S9 - S12 SERIES SP9T - SP12T DC - 15.0 GHz



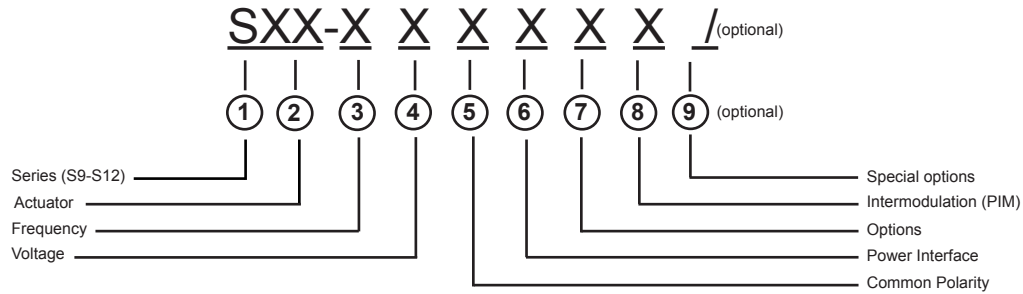
FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 15.0
VSWR (MAX.)	1.25:1	1.30:1	1.35:1	1.60:1	1.70:1
INSERTION LOSS (MAX.)	0.20	0.25	0.30	0.60	0.70
ISOLATION (MIN.)	90	80	80	70	60
IMPEDANCE	50 Ohms				
MECHANICAL					
CONTACT ACTUATOR SWITCHING SPEED	:	BREAK BEFORE MAKE FAILSAFE, LATCHING, MOMENTARY 20 mSEC MAX.			
ELECTRICAL					
ACTUATOR VOLTAGE ACTUATOR CURRENT POWER HANDLING	:	28.0, 12.0, 15.0, 24.0 Vdc CONTACT CEI 200 WCW @ 1.0 GHz (STANDARD) 300 WCW @ 1.0 GHz (OPT. /P)			
ENVIRONMENTAL					
OPERATING TEMP SHOCK RANDOM VIBRATION LIFE	:	-40 DEG. C TO 85 DEG. C (STANDARD) -54 DEG. C TO 90 DEG. C (OPT. /MS) 50 G's (SAWTOOTH) 15 G'S rms (NON-OPERATING) 1,000,000 CYCLES			
FINISH					
RF CAVITY ENCLOSURE CONTACT CONNECTOR SHELL	:	ALUMINUM ELECTROLESS NICKEL PLATED PER MIL-C-26074, CLASS 4 (EXCEPT LOW OR ULTRA LOW IM MODELS) ALUMINUM, BLUE OR BLACK BERYLLIUM COPPER, GOLD PLATED PER MIL-G-45204 CRES, PASSIVATED PER QQ-P-35 OR BRASS, ELECTROLESS NICKEL PLATED PER MIL-C-26074			
AVAILABLE OPTIONS					
INDICATOR CIRCUITRY SUPPRESSION DIODE TTL LOGIC LOW, ULTRA LOW, AND SUPERIOR INTERMODULATION (IM)	:	CUT OFF POWER CIRCUIT D'SUB MINIATURE SERIES MS CONNECTOR OR EQUIV. (MIL-SPEC)			



NOTE: REFERENCE FOR DIMENSIONS ONLY.
EACH MODEL NUMBER WILL HAVE A UNIQUE SCHEMATIC.
ALSO AVAILABLE WITH A D'SUB OR MS SERIES CONNECTOR.



S9-S12 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

S9	SP9T SMA
S10	SP10T SMA
S11	SP11T SMA
S12	SP12T SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	0	OTHER (SPECIFY)
3	DC - 12.4 GHz		
4	DC - 4.0 GHz		
9	DC - 15.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

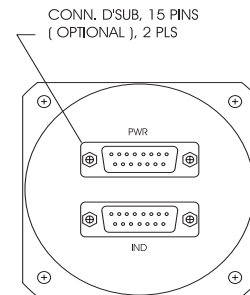
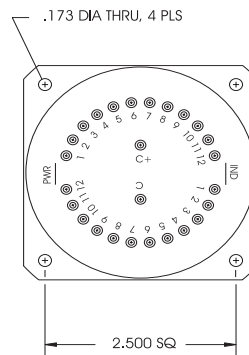
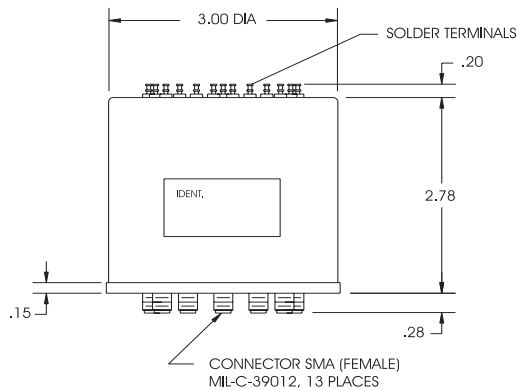
/P	HIGH TEMP, HIGH POWER CONNECTOR
/MS	EXTENDED TEMP RANGE -54 DEG C TO + 90 DEG
/MSP	HIGH TEMP, HIGH POWER CONNECTOR AND EXTENDED TEMP RANGE

T9 - T12 SERIES SP9T - SP12T DC - 15.0 GHz

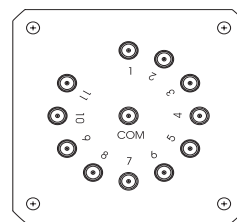
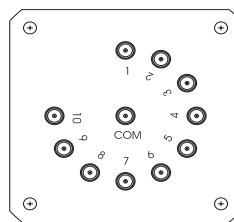
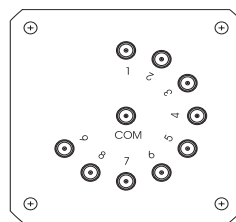
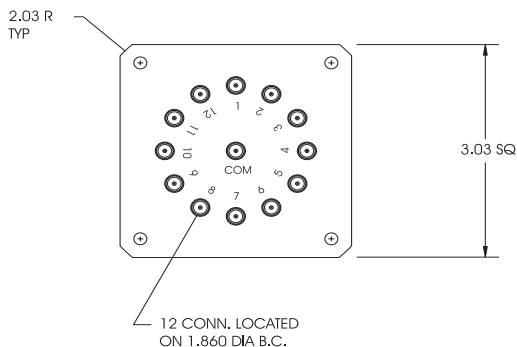
OPEN PORTS TERMINATED



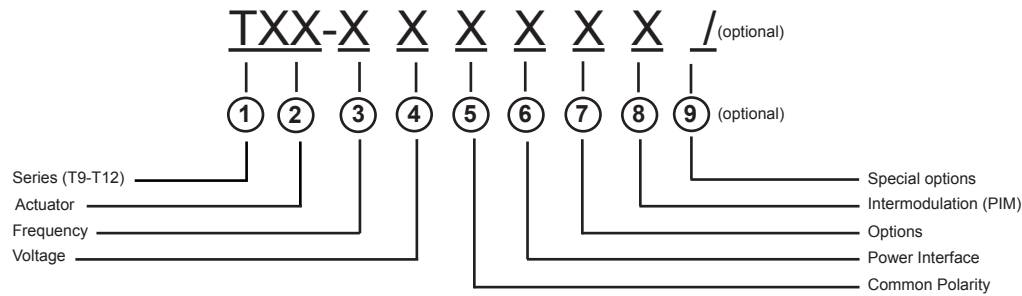
FREQUENCY: GHz	DC - 2.0	2.0 - 4.0	4.0 - 8.0	8.0 - 12.4	12.4 - 15.0
VSWR (MAX.)	1.20:1	1.25:1	1.40:1	1.60:1	1.70:1
INSERTION LOSS (MAX.)	0.20	0.25	0.40	0.60	0.70
ISOLATION (MIN.)	90	80	70	60	60
IMPEDANCE	50 Ohms				
MECHANICAL					
CONTACT ACTUATOR SWITCHING SPEED	: BREAK BEFORE MAKE : FAILSAFE, LATCHING, MOMENTARY : 20 mSEC MAX.				
ELECTRICAL					
ACTUATOR VOLTAGE ACTUATOR CURRENT POWER HANDLING TERMINATION	: 28.0, 12.0, 15.0, 24.0 Vdc : CONTACT CEI : 200 WCW @ 1.0 GHz (STANDARD) : 300 WCW @ 1.0 GHz (OPT /P) : 8 WATTS MAX.				
ENVIRONMENTAL					
OPERATING TEMP SHOCK RANDOM VIBRATION LIFE	: -40 DEG. C TO 85 DEG. C : 50 G's (SAWTOOTH) : 15 G's rms (NON-OPERATING) : 1,000,000 CYCLES				
FINISH					
RF CAVITY ENCLOSURE CONTACT CONNECTOR SHELL	: ALUMINUM ELECTROLESS NICKEL PLATED : PER MIL-C-26074, CLASS 4 : (EXCEPT LOW OR ULTRA LOW IM MODELS) : ALUMINUM, BLUE OR BLACK : BERYLLIUM COPPER, GOLD PLATED : PER MIL-G-45204 : CRES, PASSIVATED PER QQ-P-35 OR BRASS, : ELECTROLESS NICKEL PLATED : PER MIL-C-26074				
AVAILABLE OPTIONS					
INDICATOR CIRCUITRY SUPPRESSION DIODE TTL LOGIC BCD TTL DECODER	: CUT OFF POWER CIRCUIT : D'SUB MINIATURE SERIES : MS CONNECTOR OR EQUIV. (MIL-SPEC) : LOW, ULTRA, AND SUP INTERMODULATION (IM)				



NOTE: REFERENCE FOR DIMENSIONS ONLY.
EACH MODEL NUMBER WILL HAVE A UNIQUE SCHEMATIC.
ALSO AVAILABLE WITH A D'SUB OR MS SERIES CONNECTOR.



T9-T12 SERIES PART NUMBER & ORDERING INFORMATION

**1 - Switch Series**

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T11	SP11T SMA
T12	SP12T SMA

2 - Actuator

F	FAILSAFE	R	MOMENTARY
G	FAILSAFE WITH SUPPRESSION DIODE	S	MOMENTARY WITH SUPPRESSION DIODE
H	FAILSAFE WITH INDICATOR	T	MOMENTARY WITH INDICATOR
J	FAILSAFE WITH SUPPRESSION DIODE AND INDICATOR	U	MOMENTARY WITH SUPPRESSION DIODE AND INDICATOR
L	LATCHING	Y	OTHER (SPECIFY)
M	LATCHING WITH SUPPRESSION DIODE		
N	LATCHING WITH INDICATOR		
P	LATCHING WITH SUPPRESSION DIODE AND INDICATOR		

3 - Frequency Bandwidth

1	DC - 13.0 GHz	6	DC - 6.0 GHz
2	DC - 2.0 GHz	0	OTHER (SPECIFY)
3	DC - 12.4 GHz		
4	DC - 4.0 GHz		
9	DC - 15.0 GHz		

4 - Voltage

1	10 - 14 Vdc (12.0 NOMINAL)	4	26 - 30 Vdc (28.0 NOMINAL)
2	13 - 17 Vdc (15.0 NOMINAL)	5	OTHER
3	22 - 26 Vdc (24.0 NOMINAL)	0	NOT REQUIRED

5 - Common Polarity

1	POSITIVE (+) COMMON
2	NEGATIVE (-) OR RETURN Vdc COMMON
0	NOT REQUIRED

6 - Power Interface

1	SOLDER TERMINAL (TOP OF SWITCH)	5	D' SUB MINIATURE SERIES (TOP OF SWITCH)
3	CONN MS3112E-XX-XXP OR EQUIV. (TOP OF SWITCH)	8	OTHER

7 - Options

1	CUT OFF POWER CIRCUIT (LATCHING ONLY)	8	OTHER (SPECIFY)
2	TTL LOGIC	9	CUSTOM (ORDER)
3	CUT OFF PWR CIRCUIT & TTL LOGIC (LATCHING ONLY)	0	NO OTHER OPTIONS REQUIRED

8 - Intermodulation

7	LOW PASSIVE INTERMODULATION	9	ULTRA LOW PASSIVE INTERMODULATION
8	SUPERIOR PASSIVE INTERMODULATION	0	STANDARD SWITCH

9 - Special Options (optional - leave blank if not required)

/P	HIGH TEMP, HIGH POWER CONNECTOR
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ORDERING INFORMATION

How to Order:

To place an order please contact
Charter Engineering, Inc. (CEI) at:

Charter Engineering, Inc.
6729 55th Street North
Pinellas Park, FL 33781
Tel: (727) 525-1025
Fax: (727) 525-1050
Website: www.ceiswitches.com
Email: sales@ceiswitches.com

CAGE CODE: 1SWE8

Domestic Terms:

Domestic Terms are Net 30 days, F.O.B CEI factory upon credit approval unless otherwise specified.

Customers without credit approval are shipped C.O.D. unless payment has been received in advance.

Charter Engineering, Inc. also accepts
VISA, Mastercard, Discover, and AMEX.

International Terms:

International Terms require full payment in advance of shipment or against irrevocable letter of credit.

If payment is made via wire transfer, the customer is required to pay the wire transfer fee for both the sending and receiving banks. Freight charges, customs duty, custom clearance costs and applicable taxes are to be paid by the customer.

Shipping:

Domestic shipments are usually made via UPS Ground service unless otherwise specified. International shipments are made using a variety of carriers. Charter Engineering, Inc. will choose the most appropriate means of transportation unless specified by the customer. The customer has the option to bill their own account number or prepay and add the charges.

Certificate of Compliance:

Charter Engineering Inc. (CEI) will include a Certificate of Compliance with each purchase order.

Warranty:

Charter Engineering, Inc. (CEI) warranties each new product to be free from defects in material and workmanship from one (1) year of the date of shipment.

Any component found to be defective under normal use for a one year period will be either repaired or replaced without charge. Damage by the customer due to excessive power handling, hot switching, or similar may not be repairable and require purchase of a new unit. CEI shall not be liable for installation and consequential damages. Before returning any product, please contact CEI for a Return Material Authorizaion (RMA). When requesting an RMA, you will need to provide the model number, serial number, and as much information as possible about the nature of the difficulty or reason for return. For products not covered by the warranty, a quotation for repair charges will be provided for customer approval. CEI shall not be responsible for shipping payment to our facility. If the returned products are determined to be the fault of CEI manufacturing we shall ship the repaired/replaced units via ground service on our account. Please note any faster service other than ground must be paid by the customer.

Change Orders and Cancellations:

All orders are build to order based on thousands of model variations. A purchase order may not be cancelled without the express written consent of CEI. Any change order, cancellation, or return will be subject to a restocking fee determined by CEI at up to 100% of the original cost. Change Orders regarding price, delivery, or any conditions not specified on the original order, will be considered in effect after mutual agreement has been affirmed in writing between the customer and CEI. All cancellations, changes, and returns will be dependent upon customer's agreement to satisfy all charges incurred by Charter Engineering, Inc. and may not be cancellable.

Product and Price Changes:

Charter Engineering, Inc. reserves the right to alter price and specifications of all products without notice.