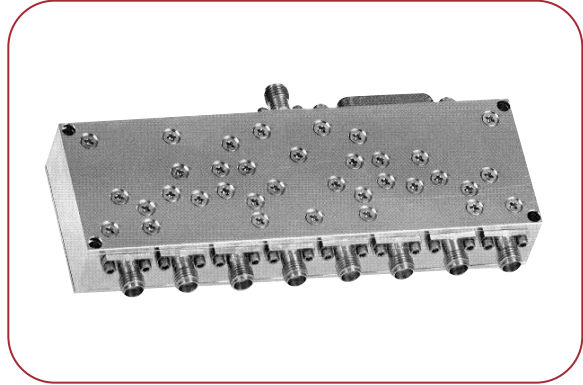


# SINGLE-POLE EIGHT-THROW SWITCHES

## FEATURES

- Wide frequency range ..... 1–18 GHz
- High Isolation ..... 50 dB minimum
- Low insertion loss ..... 4.5 dB maximum
- In/Out VSWR ..... 2:1 maximum
- Total switching speed..... <300 ns
- DC supply ..... +5, -12 VDC



Frequency Range (GHz)	Model Number	Insertion Loss (dB, Max.)	Isolation (dB, Min.)	VSWR (Max.)	Type	Rise/Fall Time (ns, Typ.)	On/Off Time (ns, Typ.)	On/Off Time (ns, Max.)	DC Power Positive (mA, Max.)	DC Power Negative (mA, Min.)
<b>STANDARD, MULTIOCTAVE BAND MODELS</b>										
0.2–2	SW8-002020RN1NF	1.5	65	1.7:1	Reflective	30/30	200	300	215	215
	SW8-002020AN1NF	2	65	1.7:1	Absorptive	30/30	200	300	215	215
0.5–2	SW8-005020RN1NF	1.5	65	1.7:1	Reflective	30/30	200	300	215	215
	SW8-005020AN1NF	2	65	1.7:1	Absorptive	30/30	200	300	215	215
2–8	SW8-020080RN1NF	2.2	65	2:1	Reflective	30/30	200	300	215	215
	SW8-020080AN1NF	2.9	65	2:1	Absorptive	30/30	200	300	215	215
4–12	SW8-040120RN1NF	2.7	65	2:1	Reflective	30/30	200	300	215	215
	SW8-040120AN1NF	3.2	65	2:1	Absorptive	30/30	200	300	215	215
2–18	SW8-020180RN1NF	3.8	60	2:1	Reflective	30/30	200	300	215	215
	SW8-020180AN1NF	4.2	60	2:1	Absorptive	30/30	200	300	215	215
1–18	SW8-010180RN1NF	3.9	60	2:1	Reflective	30/30	200	300	215	215
	SW8-010180AN1NF	4.5	60	2:1	Absorptive	30/30	200	300	215	215
<b>OPTIMIZED PERFORMANCE MODEL</b>										
1–18	SW8-010180AB3NF*	4.5	50	2:1	Absorptive	300	400	500	105	185

\* Includes built-in 3 bit TTL decoder.

Electrical performance of multioctave models can be optimized over narrower bandwidths, or for a particular parameter. Electrical options include: Lower insertion loss, lower VSWR, higher isolation, high power and flat amplitude response. Mechanical/Control options include: Custom packaging, single supply operation, ultra-fast on/off time and BCD decoder. Consult MITEQ for options.

# SINGLE-POLE EIGHT-THROW SWITCHES (CONT.)

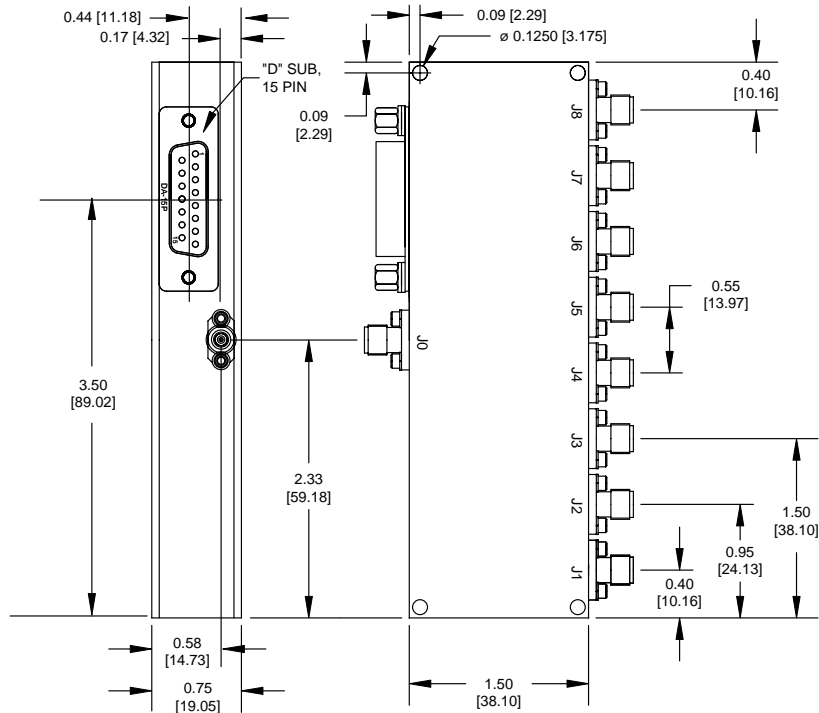
### TTL CONTROL LOGIC

Non-inverting	Logic 0 (low) (0 to 0.8 V)	Insertion loss
	Logic 1 (high) (2.4 to 4.7 V)	Isolation
Inverting	Logic 0 (low) (0 to 0.8 V)	Isolation
	Logic 1 (high) (2.4 to 4.7 V)	Insertion loss

15 Pin D Connector		Non-Inverting Control Input							Signal Path
Pin 1	Pin 9	Pin 2	Pin 10	Pin 5	Pin 6	Pin 7	Pin 8		
Low	High	High	High	High	High	High	High	J0 - J1	
High	Low	High	High	High	High	High	High	J0 - J2	
High	High	Low	High	High	High	High	High	J0 - J3	
High	High	High	Low	High	High	High	High	J0 - J4	
High	High	High	High	Low	High	High	High	J0 - J5	
High	High	High	High	High	Low	High	High	J0 - J6	
High	High	High	High	High	High	Low	High	J0 - J7	
High	High	High	High	High	High	High	Low	J0 - J8	

15 Pin D Connector		Non-Inverting Control Input						Signal Path
Pin 1	Pin 9	Pin 2	Pin 10	Pin 5	Pin 6	Pin 7	Pin 9	
High	Low	Low	Low	Low	Low	Low	Low	J0 - J1
Low	High	Low	Low	Low	Low	Low	Low	J0 - J2
Low	Low	High	Low	Low	Low	Low	Low	J0 - J3
Low	Low	Low	High	Low	Low	Low	Low	J0 - J4
Low	Low	Low	Low	High	Low	Low	Low	J0 - J5
Low	Low	Low	Low	Low	High	Low	Low	J0 -J6
Low	Low	Low	Low	Low	Low	High	Low	J0 - J7
Low	Low	Low	Low	Low	Low	Low	High	J0 - J8

## SP8T OUTLINE DRAWING



### GENERAL NOTES:

- Dimensions shown in brackets [ ] are in millimeters.
- Unless specified, all connectors are type SMA female field replaceable. SMA male also available, see ordering options.
- Tolerance as follows:  
 .xx = ±0.01 [xx = ±0.25]  
 .xxx = ±0.005 [xxx = ±0.13]



**MITEQ**

# SP8T SWITCH ORDERING INFORMATION

To order a switch, please include the model number derived from the following table. If requesting a quotation for a switch not listed in this catalog, please consult MITEQ. Include any additional specifications that are not listed.

	<i>SW</i>	<i>8</i>	<i>-</i>	<i>020</i>	<i>180</i>	<i>A</i>	<i>N</i>	<i>1</i>	<i>N</i>	<i>F</i>
<b>SWITCH</b> _____										
<b>Number of throw(s)</b> _____										
<b>Frequency (100's of MHz)</b>										
Lower frequency _____										
Upper frequency _____										
<b>Type</b> _____										
Absorptive .....						A				
Reflective .....						R				
<b>Logic</b> _____										
Non-inverting .....							N			
Built-in decoder .....							B			
<b>Power Supply</b> _____										
+5 V, -12 V .....								1		
+5 V, -15 V .....								3		
<b>Hermeticity</b> _____										
Non-hermetic .....									N	
Hermetic .....									H	
<b>Connectors</b> _____										
SMA-Female .....										F
SMA-Male .....										M

**AVAILABLE OPTIONS**

- Add suffix AM ..... Amplitude matching port-to-port
- Add suffix PM ..... Phase matching port-to-port
- Add suffix VL1 ..... Common port video filter
- Add suffix VL2 ..... Output port(s) video filter
- Add suffix VL3 ..... Both common port and output port(s) video filter
- Add suffix HP ..... Higher power (alternate package configurations)

Example:  
 The above illustrated part number SW8-020180AN1NF is for the following: Switch SP8T  
 2 to 18 GHz  
 Absorptive  
 Non-inverting  
 +5 V, -12 V  
 Non-hermetic  
 SMA-F connectors

Consult MITEQ for additional options.  
 When additional options are ordered, MITEQ will add a 4 digit number (-SXXXX) suffix to the part number.

# GENERAL SWITCH SPECIFICATIONS

Operating temperature .....	0 to 70°C	Power handling (full performance) .....	20 dBm
Storage temperature .....	-30 to +85°C	Power handling (no damage) .....	30 dBm
Humidity .....	95%, noncondensing	Input -1 dB compression .....	30 dBm typical
Vibration .....	12 g's rms, 20-2000 Hz Per MIL-STD-810B Method 514, Procedure 5	Input third-order intercept point .....	35 dBm typical
		Video leakage for "F" model (rms power) .....	< -53 dBm typical (> 2 GHz) < -42 dBm typical (< 2 GHz)