

BROADBAND

SP6T SWITCH

HIGH ISOLATION-REFLECTIVE-ABSORPTIVE 0.02-18 GHz

SERIES TB-6/TB-6-HA

GENERAL INFORMATION:

Series TB-6 and TB-6-HA switches are medium power devices that operate over relatively wide frequency ranges. Carefully selected diodes placed in either series, series-shunt, or shunt configurations produce excellent electrical performance from UHF through KU bands.

GENERAL SPECIFICATIONS:

Frequency Coverage: 0.02 to 18.0 GHz.
RF Impedance: 50 OHMS.
RF Power: +20 dBm operational. Consult factory for high power options.

DC Requirements: For switches without drivers, each path requires +60 mA for the "off" condition and -60 mA for the "on" condition. Switches with drivers require +5 volts at +360 mA and -5 volts at -130 mA supplies. Logic is TTL "0" when "on" and "1" when "off". Different supply voltages and logic available if specified at time of order.

Temperature Information: Operating temperature from -55°C to +85°C.

Switching Speed: 10% to 90% or 90% to 10% of RF. There is an additional 30 nanosec of driver delay.

Environment: MIL-E-5400, MIL-STD-202, MIL-E-16400 MIL-STD-883 (Special request only).

Connectors: RF connectors are SMA. Other connectors available (when specified at time of order) include types N, TNC, and BNC. Mating connector supplied for all units with multipin connector; ITT Cannon MDB1-9SSL or equiv.

NOTES:

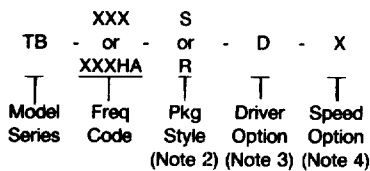
- All switches, with drivers, are available with either solder pins, or a multi-pin connector for the drive connection, when specified at time of order. (see "outlines with driver")
- When ordering, add suffix for configuration desired to the model number. ('S' for rectangular, 'R' for seven sided) i.e. TB-610R.
- If driver is required, add 'D' to the model number when ordering, i.e. Model TB-610R, with driver, becomes TB-610RD.
- When ordering, the complete model number should be given. The model number consists of the model number for a standard switch plus the dash number for any options, i.e. Model TB-630RD-1 is a seven sided SP6T reflective switch with driver whose frequency range is 0.5 to 1.0 GHz and a switching speed of 100 nanosec.
- Any unit listed can be supplied with pins instead of RF connectors. (Consult factory.)

MECHANICAL OUTLINES

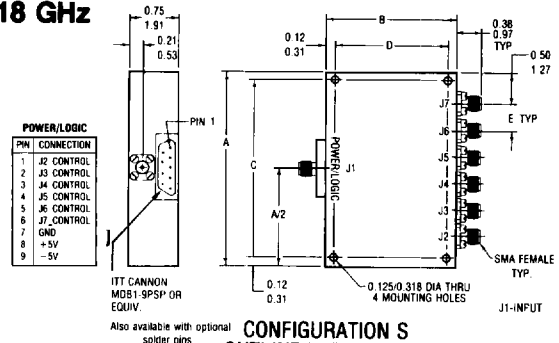
Outline	A Inches cm.	B Inches cm.	C Inches cm.	D Inches cm.	E Inches cm.
1	3.00 7.62	2.00 5.08	2.750 6.985	1.750 4.450	0.40 1.02
2	3.50 8.89	3.00 7.62	3.250 8.255	2.750 6.985	0.50 1.27
3	0.71 1.80	1.350 3.429	—	—	—
4	1.00 2.54	2.000 5.080	—	—	—
5	3.50 8.89	3.50 8.89	3.250 8.255	3.250 8.255	0.50 1.27
6	1.25 3.18	2.550 6.477	—	—	—

Inches/Centimeters
 xx ± 0.3 xxx ± .010/ xx ± .08 xxx ± .025

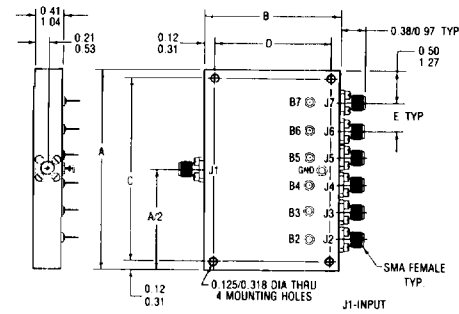
TYPICAL MODEL NO.



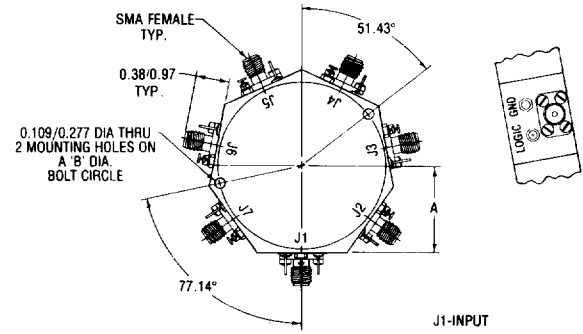
Hermetic Seal
 and Mil STD 883
 Screening Available



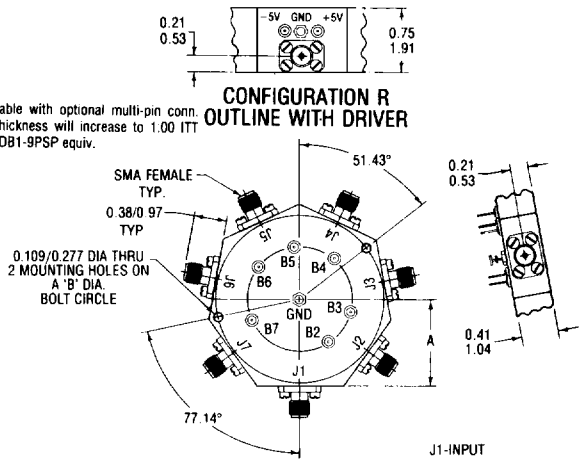
**CONFIGURATION S
 OUTLINE WITH DRIVER**



**CONFIGURATION S
 OUTLINE WITHOUT DRIVER**



**CONFIGURATION R
 OUTLINE WITH DRIVER**



**CONFIGURATION R
 OUTLINE WITHOUT DRIVER**

BROADBAND

SP6T SWITCH

SERIES TB-6/TB-6-HA

HIGH ISOLATION-REFLECTIVE AND ABSORPTIVE 0.02-18 GHz

ELECTRICAL PERFORMANCE

Power: 1 watt average, 10 watts peak, survival

STANDARD SWITCH								HIGH SPEED OPTION			
Isolation: 60 dB or 80 dB minimum Speed: 2 microsec. maximum								MODEL-1		MODEL-2	
								Speed Nanosec.	Insertion Loss Max. dB Ref. / Abs.	Speed Nanosec.	Insertion Loss Max. dB Ref. / Abs.
Reflective Model No.	Absorptive Model No.	Frequency Range GHz	Isolation Min. dB	Insertion Loss Ref. / Abs. Max. dB	VSWR† Max.	Config. Square Ref. / Abs.	Config. Round Ref. / Abs.				
TB-610	TB-610-HA	0.02-0.1	60	1.00 / 1.10	1.85	2 / 5	4 / 4	500	1.05 / 1.15	N/A	N/A
TB-612	TB-611-HA	0.02-0.1	80	1.10 / 1.20	1.85	2 / 5	4 / 4	500	1.15 / 1.25	N/A	N/A
TB-614	TB-612-HA	0.1-1.0	60	1.30 / 1.40	1.85	2 / 5	4 / 4	500	1.35 / 1.45	N/A	N/A
TB-616	TB-616-HA	0.1-1.0	80	1.40 / 1.50	1.85	2 / 5	4 / 4	500	1.45 / 1.55	N/A	N/A
TB-618	TB-619-HA	0.1-2.0	60	1.60 / 1.70	1.85	2 / 5	4 / 4	500	1.65 / 1.75	N/A	N/A
TB-620	TB-622-HA	0.1-2.0	80	1.70 / 1.80	1.85	2 / 5	4 / 4	500	1.75 / 1.85	N/A	N/A
TB-622	TB-623-HA	0.25-0.5	60	1.30 / 1.40	1.85	2 / 5	4 / 4	500	1.35 / 1.45	N/A	N/A
TB-624	TB-626-HA	0.25-0.5	80	1.40 / 1.50	1.85	2 / 5	4 / 4	500	1.45 / 1.55	N/A	N/A
TB-626	TB-627-HA	0.25-1.0	60	1.30 / 1.40	1.85	2 / 5	4 / 4	500	1.35 / 1.45	N/A	N/A
TB-628	TB-628-HA	0.25-1.0	80	1.40 / 1.50	1.85	2 / 5	4 / 4	500	1.45 / 1.55	N/A	N/A
TB-630	TB-631-HA	0.5-1.0	60	1.20 / 1.30	1.85	1 / 2	4 / 4	100	1.30 / 1.40	20	1.40 / 1.50
TB-632	TB-632-HA	0.5-1.0	80	1.30 / 1.40	1.85	1 / 2	4 / 4	100	1.40 / 1.50	20	1.50 / 1.60
TB-634	TB-634-HA	0.5-2.0	60	1.30 / 1.40	1.85	1 / 2	4 / 4	100	1.40 / 1.50	20	1.50 / 1.60
TB-636	TB-635-HA	0.5-2.0	80	1.40 / 1.50	1.85	1 / 2	4 / 4	100	1.50 / 1.60	20	1.60 / 1.70
TB-638	TB-638-HA	1.0-2.0	60	1.20 / 1.30	1.85	1 / 2	3 / 4	100	1.30 / 1.40	20	1.45 / 1.55
TB-640	TB-639-HA	1.0-2.0	80	1.30 / 1.40	1.85	1 / 2	3 / 4	100	1.40 / 1.50	20	1.50 / 1.60
TB-642	TB-642-HA	1.0-4.0	60	1.30 / 1.40	1.85	1 / 2	3 / 4	100	1.40 / 1.50	20	1.50 / 1.60
TB-644	TB-643-HA	1.0-4.0	80	1.40 / 1.50	1.85	1 / 2	3 / 6	100	1.50 / 1.60	20	1.60 / 1.70
TB-646	TB-644-HA	1.0-6.0	60	1.50 / 1.60	1.85	1 / 2	3 / 4	100	1.60 / 1.70	20	1.70 / 1.80
TB-648	TB-646-HA	1.0-6.0	80	1.60 / 1.70	1.85	1 / 2	3 / 6	100	1.70 / 1.80	20	1.80 / 1.90
TB-650	TB-648-HA	1.5-3.0	60	1.20 / 1.30	1.85	1 / 2	3 / 4	100	1.30 / 1.40	20	1.40 / 1.50
TB-652	TB-651-HA	1.5-3.0	80	1.30 / 1.40	1.85	1 / 2	3 / 6	100	1.40 / 1.50	20	1.50 / 1.60
TB-654	TB-652-HA	2.0-4.0	60	1.40 / 1.50	1.85	1 / 2	3 / 4	100	1.50 / 1.60	20	1.60 / 1.70
TB-656	TB-654-HA	2.0-4.0	80	1.50 / 1.60	1.85	1 / 2	3 / 6	100	1.60 / 1.70	20	1.70 / 1.80
TB-658	TB-655-HA	2.0-8.0	60	1.60 / 1.70	1.85	1 / 7	3 / 4	100	1.70 / 1.80	20	1.80 / 1.90
TB-660	TB-658-HA	2.0-8.0	80	1.70 / 1.80	1.85	1 / 7	3 / 6	100	1.80 / 1.90	20	1.90 / 2.00
TB-662	TB-662-HA	3.0-12.0	60	2.80 / 2.90	2.50	1 / 7	3 / 4	100	2.90 / 3.00	20	3.10 / 3.10
TB-664	TB-663-HA	3.0-12.0	80	2.90 / 3.00	2.50	1 / 7	3 / 4	100	3.00 / 3.10	20	3.20 / 3.30
TB-666	TB-666-HA	4.0-8.0	60	1.60 / 1.70	1.85	1 / 7	3 / 4	100	1.70 / 1.80	20	1.80 / 1.90
TB-668	TB-667-HA	4.0-8.0	80	1.70 / 1.80	1.85	1 / 7	3 / 6	100	1.80 / 1.90	20	1.90 / 2.00
TB-670	TB-668-HA	2.0-18.0	60	3.30 / 3.40	2.50	1 / 7	3 / 4	100	3.50 / 3.60	20	3.60 / 3.70
TB-672	TB-671-HA	2.0-18.0	80	3.60 / 3.70	2.50	1 / 7	3 / 4	100	3.70 / 3.80	20	3.80 / 3.90
TB-674	TB-672-HA	5.0-10.0	60	2.00 / 2.10	1.85	1 / 7	3 / 4	100	2.10 / 2.20	20	2.30 / 2.40
TB-676	TB-674-HA	5.0-10.0	80	2.10 / 2.20	1.85	1 / 7	3 / 6	100	2.20 / 2.30	20	2.40 / 2.50
TB-678	TB-675-HA	6.0-12.0	60	2.20 / 2.30	2.10	1 / 7	3 / 4	100	2.30 / 2.40	20	2.50 / 2.60
TB-680	TB-676-HA	6.0-12.0	80	2.30 / 2.40	2.10	1 / 7	3 / 4	100	2.40 / 2.50	20	2.50 / 2.60
TB-682	TB-678-HA	6.0-18.0	60	3.30 / 3.40	2.50	1 / 7	3 / 4	100	3.50 / 3.60	20	3.60 / 3.70
TB-684	TB-679-HA	6.0-18.0	80	3.60 / 3.70	2.50	1 / 7	3 / 4	100	3.70 / 3.80	20	3.80 / 3.90
TB-686	TB-682-HA	7.0-12.4	60	2.30 / 2.40	2.10	1 / 7	3 / 4	100	2.40 / 2.50	20	2.70 / 2.80
TB-688	TB-683-HA	7.0-12.4	80	2.40 / 2.50	2.10	1 / 7	3 / 4	100	2.50 / 2.60	20	2.80 / 2.90
TB-690	TB-684-HA	7.0-18.0	60	3.30 / 3.40	2.50	1 / 7	3 / 4	100	3.50 / 3.60	20	3.60 / 3.70
TB-691	TB-686-HA	7.0-18.0	80	3.60 / 3.70	2.50	1 / 7	3 / 4	100	3.70 / 3.80	20	3.80 / 3.90
TB-693	TB-688-HA	8.0-18.0	60	3.30 / 3.40	2.50	1 / 7	3 / 4	100	3.50 / 3.60	20	3.60 / 3.70
TB-694	TB-691-HA	8.0-18.0	80	3.60 / 3.70	2.50	1 / 7	3 / 4	100	3.70 / 3.80	20	3.80 / 3.90
TB-696	TB-694-HA	12.0-18.0	60	3.30 / 2.50	2.50	1 / 7	3 / 4	100	3.50 / 3.60	20	3.60 / 3.70
TB-697	TB-697-HA	12.0-18.0	80	3.60 / 3.70	2.50	1 / 7	3 / 4	100	3.70 / 3.80	20	3.80 / 3.90

If improvement of any of the electrical specifications listed above is required, consult factory.

† Reflective Switch: VSWR measured in the 'ON' input and 'ON' Output Position.
Absorptive Switch: VSWR measured in the 'ON' Input and 'ON' Output and 'OFF' Output Position.

Insertion Loss measured with input power less than 100 mW. Increase insertion loss by 20% for outer arms, for rectangular (S) package.