

BROADBAND

SP7T SWITCH

HIGH ISOLATION-REFLECTIVE AND ABSORPTIVE 0.02-18 GHz

SERIES TB-7/TB-7-HA

GENERAL INFORMATION:

Series TB-7 and TB-7-HA broadband 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 +420 mA and -5 volts at -140 mA supplies. Logic is TTL "0" when "on" and "1" when "off". Different supply voltages and logic available if specified at time of order. Operating temperature from -55°C to +85°C.
- 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
- 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 MDB1-15SSL or equiv.

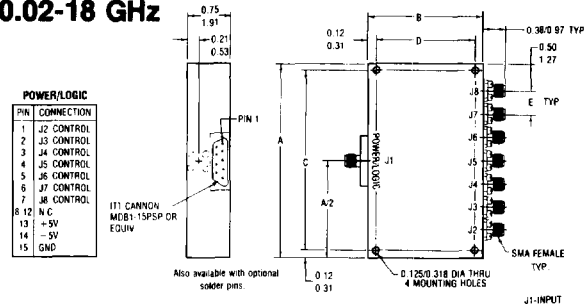
NOTES:

1. 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")
2. When ordering, add suffix for configuration desired to the model number. ('S' for rectangular, 'R' for eight sided) i.e. TB-710R.
3. If driver is required, add 'D' to the model number when ordering, i.e. Model TB-710R, with driver, becomes TB-710RD.
4. 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-730D-1 is a eight sided SP7T reflective switch with driver whose frequency range is 0.5 to 1.0 GHz and a switching speed of 100 nanosec.
5. Any unit listed can be supplied with pins instead of RF connectors. (Consult factory.)

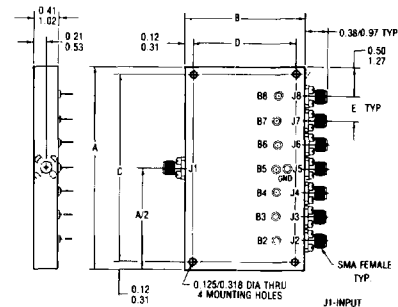
MECHANICAL OUTLINES

Outline	A Inches cm.	B Inches cm.	C Inches cm.	D Inches cm.	E Inches cm.
1	3.40 8.64	2.00 5.08	3.150 8.001	1.750 4.450	0.40 1.02
2	4.00 10.16	3.00 7.62	3.750 9.525	2.750 6.985	0.50 1.27
3	0.85 2.16	1.600 4.064	—	—	—
4	1.15 2.92	2.260 5.740	—	—	—
5	4.00 10.16	3.50 8.89	3.750 9.525	3.250 8.255	0.50 1.27
6	1.50 3.81	3.030 7.696	—	—	—
7	4.00 10.16	2.35 5.97	3.750 9.525	2.100 5.334	0.50 1.27

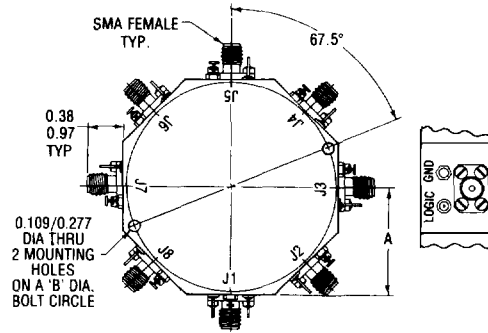
Inches/Centimeters
xx ± 0.3 xxx ± .010/ xx ± .08 xxx ± .025



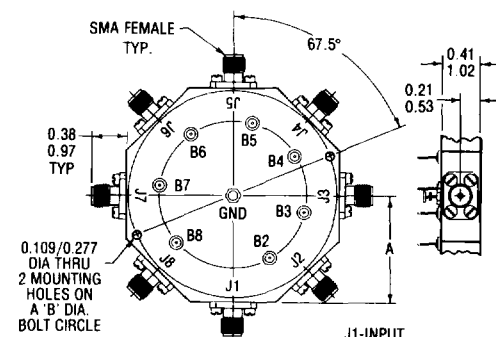
**CONFIGURATION S
OUTLINE WITH DRIVER**



**CONFIGURATION S
OUTLINE WITHOUT DRIVER**



**CONFIGURATION R
OUTLINE WITH DRIVER**



**CONFIGURATION R
OUTLINE WITHOUT DRIVER**

BROADBAND

SP7T SWITCH

SERIES TB-7/TB-7-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.	Speed Nanosec.
Reflective Model No.	Absorptive Model No.	Frequency Range GHz	Isolation Min. dB	‡Insertion Loss Max. dB Ref. / Abs.	VSWR† Max.	Outline Config. Square Ref. / Abs.	Outline Config. Round Ref. / Abs.				
TB-710	TB-710-HA	0.02-0.1	60	1.10 / 1.20	1.90	2 / 5	4 / 4	500	1.15 / 1.25	N/A	N/A
TB-712	TB-711-HA	0.02-0.1	80	1.20 / 1.30	1.90	2 / 5	4 / 4	500	1.25 / 1.35	N/A	N/A
TB-714	TB-712-HA	0.1-1.0	60	1.40 / 1.50	1.90	2 / 5	4 / 4	500	1.45 / 1.55	N/A	N/A
TB-716	TB-716-HA	0.1-1.0	80	1.50 / 1.60	1.90	2 / 5	4 / 4	500	1.55 / 1.65	N/A	N/A
TB-718	TB-719-HA	0.1-2.0	60	1.70 / 1.80	1.90	2 / 5	4 / 4	500	1.75 / 1.85	N/A	N/A
TB-720	TB-722-HA	0.1-2.0	80	1.80 / 1.90	1.90	2 / 5	4 / 4	500	1.85 / 1.95	N/A	N/A
TB-722	TB-723-HA	0.25-0.5	60	1.40 / 1.50	1.90	2 / 5	4 / 4	500	1.45 / 1.55	N/A	N/A
TB-724	TB-726-HA	0.25-0.5	80	1.50 / 1.60	1.90	2 / 5	4 / 4	500	1.55 / 1.65	N/A	N/A
TB-726	TB-727-HA	0.25-1.0	60	1.40 / 1.50	1.90	2 / 5	4 / 4	500	1.45 / 1.55	N/A	N/A
TB-728	TB-728-HA	0.25-1.0	80	1.50 / 1.60	1.90	2 / 5	4 / 4	500	1.55 / 1.65	N/A	N/A
TB-730	TB-731-HA	0.5-1.0	60	1.30 / 1.40	1.90	1 / 2	4 / 4	100	1.40 / 1.50	20	1.50 / 1.60
TB-732	TB-732-HA	0.5-1.0	80	1.40 / 1.50	1.90	1 / 2	4 / 4	100	1.50 / 1.60	20	1.60 / 1.70
TB-734	TB-734-HA	0.5-2.0	60	1.40 / 1.50	1.90	1 / 2	4 / 4	100	1.50 / 1.60	20	1.60 / 1.70
TB-736	TB-735-HA	0.5-2.0	80	1.50 / 1.60	1.90	1 / 2	4 / 4	100	1.60 / 1.70	20	1.70 / 1.80
TB-738	TB-738-HA	1.0-2.0	60	1.30 / 1.40	1.90	1 / 2	3 / 4	100	1.40 / 1.50	20	1.55 / 1.65
TB-740	TB-739-HA	1.0-2.0	80	1.40 / 1.50	1.90	1 / 2	3 / 4	100	1.50 / 1.60	20	1.60 / 1.70
TB-742	TB-742-HA	1.0-4.0	60	1.40 / 1.50	1.90	1 / 2	3 / 4	100	1.50 / 1.60	20	1.60 / 1.70
TB-744	TB-743-HA	1.0-4.0	80	1.50 / 1.60	1.90	1 / 2	3 / 6	100	1.60 / 1.70	20	1.70 / 1.80
TB-746	TB-744-HA	1.0-6.0	60	1.60 / 1.70	1.90	1 / 2	3 / 4	100	1.70 / 1.80	20	1.80 / 1.90
TB-748	TB-746-HA	1.0-6.0	80	1.70 / 1.80	1.90	1 / 2	3 / 6	100	1.80 / 1.90	20	1.90 / 2.00
TB-750	TB-748-HA	1.5-3.0	60	1.30 / 1.40	1.90	1 / 2	3 / 4	100	1.40 / 1.50	20	1.50 / 1.60
TB-752	TB-751-HA	1.5-3.0	80	1.40 / 1.50	1.90	1 / 2	3 / 6	100	1.50 / 1.60	20	1.60 / 1.70
TB-754	TB-752-HA	2.0-4.0	60	1.50 / 1.60	1.90	1 / 2	3 / 4	100	1.60 / 1.70	20	1.70 / 1.80
TB-756	TB-754-HA	2.0-4.0	80	1.60 / 1.70	1.90	1 / 2	3 / 8	100	1.70 / 1.80	20	1.80 / 1.90
TB-758	TB-755-HA	2.0-8.0	60	1.70 / 1.80	1.90	1 / 7	3 / 4	100	1.80 / 1.90	20	1.90 / 2.00
TB-760	TB-758-HA	2.0-8.0	80	1.80 / 1.90	1.90	1 / 7	3 / 8	100	1.90 / 2.00	20	2.00 / 2.10
TB-762	TB-762-HA	3.0-12.0	60	2.90 / 3.00	2.50	1 / 7	3 / 4	100	3.00 / 3.10	20	3.10 / 3.20
TB-764	TB-763-HA	3.0-12.0	80	3.00 / 3.10	2.50	1 / 7	3 / 4	100	3.10 / 3.20	20	3.30 / 3.40
TB-766	TB-766-HA	4.0-8.0	60	1.70 / 1.80	1.90	1 / 7	3 / 4	100	1.80 / 1.90	20	1.90 / 2.00
TB-768	TB-767-HA	4.0-8.0	80	1.80 / 1.90	1.90	1 / 7	3 / 8	100	1.90 / 2.00	20	2.00 / 2.10
TB-770	TB-768-HA	2.0-18.0	60	3.40 / 3.50	2.50	1 / 7	3 / 4	100	3.60 / 3.70	20	3.70 / 3.80
TB-772	TB-771-HA	2.0-18.0	80	3.70 / 3.80	2.50	1 / 7	3 / 4	100	3.80 / 3.90	20	3.90 / 4.00
TB-774	TB-772-HA	5.0-10.0	60	2.10 / 2.20	1.90	1 / 7	3 / 4	100	2.20 / 2.30	20	2.40 / 2.50
TB-776	TB-774-HA	5.0-10.0	80	2.20 / 2.30	1.90	1 / 7	3 / 8	100	2.30 / 2.40	20	2.50 / 2.60
TB-778	TB-775-HA	6.0-12.0	60	2.30 / 2.40	2.15	1 / 7	3 / 4	100	2.40 / 2.50	20	2.60 / 2.70
TB-780	TB-776-HA	6.0-12.0	80	2.40 / 2.50	2.15	1 / 7	3 / 4	100	2.50 / 2.60	20	2.60 / 2.70
TB-782	TB-778-HA	6.0-18.0	60	3.40 / 3.50	2.50	1 / 7	3 / 4	100	3.60 / 3.70	20	3.70 / 3.80
TB-784	TB-779-HA	6.0-18.0	80	3.70 / 3.80	2.50	1 / 7	3 / 4	100	3.80 / 3.90	20	3.90 / 4.00
TB-786	TB-782-HA	7.0-12.4	60	2.40 / 2.50	2.15	1 / 7	3 / 4	100	2.50 / 2.60	20	2.80 / 2.90
TB-788	TB-783-HA	7.0-12.4	80	2.50 / 2.60	2.15	1 / 7	3 / 4	100	2.60 / 2.70	20	2.90 / 3.00
TB-790	TB-784-HA	7.0-18.0	60	3.40 / 3.50	2.50	1 / 7	3 / 4	100	3.60 / 3.70	20	3.70 / 3.80
TB-791	TB-786-HA	7.0-18.0	80	3.70 / 3.80	2.50	1 / 7	3 / 4	100	3.80 / 3.90	20	3.90 / 4.00
TB-793	TB-788-HA	8.0-18.0	60	3.40 / 3.50	2.50	1 / 7	3 / 4	100	3.60 / 3.70	20	3.70 / 3.80
TB-794	TB-791-HA	8.0-18.0	80	3.70 / 3.80	2.50	1 / 7	3 / 4	100	3.80 / 3.90	20	3.90 / 4.00
TB-796	TB-794-HA	12.0-18.0	60	3.40 / 3.50	2.50	1 / 7	3 / 4	100	3.60 / 3.70	20	3.70 / 3.80
TB-797	TB-797-HA	12.0-18.0	80	3.70 / 3.80	2.50	1 / 7	3 / 4	100	3.80 / 3.90	20	3.90 / 4.00

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.

TYPICAL MODEL NO.

TB - or - or - D - X

XXX S
or or
XXXHA R

Hermetic Seal
and Mil STD 883
Screening Available

Model Freq Pkg Driver Speed
Series Code Style Option Option

(Note 2) (Note 3) (Note 4)

**KDI/triangle
ELECTRONICS**

31 Farinella Drive • East Hanover, NJ 07936 • Phone: (201) 884-1423
TWX: (710) 986-8202 • FAX: (201) 884-0445