

BROADBAND SP8T SWITCH

HIGH ISOLATION-REFLECTIVE-ABSORPTIVE 0.02-18 GHz

GENERAL INFORMATION:

Series TB-8 and TB-8-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 +480 mA and -5 volts at -160 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:

- 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 nine sided) i.e. TB-810R.
- If driver is required, add 'D' to the model number when ordering, i.e. Model TB-810R, with driver, becomes TB-810RD.
- 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-830RD-1 is a nine sided SP8T 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.)

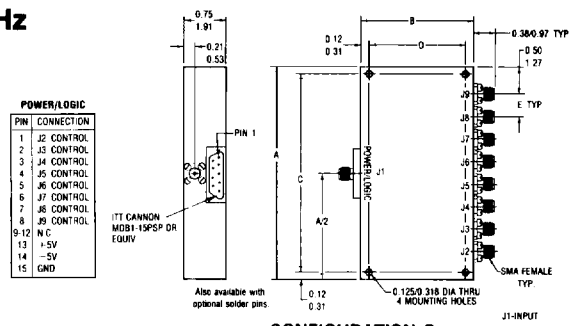
MECHANICAL OUTLINES

Outline	A Inches cm.	B Inches cm.	C Inches cm.	D Inches cm.	E Inches cm.
1	3.80 8.64	2.00 5.08	3.550 9.017	1.750 4.450	0.40 1.02
2	4.50 10.16	3.00 7.62	4.250 10.795	2.750 6.985	0.50 1.27
3	1.02 2.59	1.950 4.953	—	—	—
4	1.30 3.30	2.550 6.477	—	—	—
5	4.50 11.43	3.50 8.89	4.250 10.795	3.250 8.255	0.50 1.27
6	1.70 4.32	2.550 6.477	3.40 8.630	—	—
7	4.50 11.43	2.35 5.97	4.250 10.795	2.100 5.334	0.50 1.27

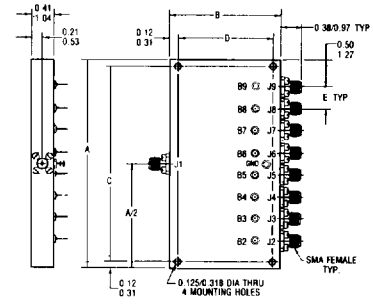
Inches/Centimeters

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

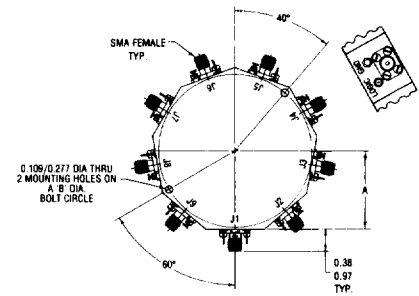
SERIES TB-8/TB-8-HA



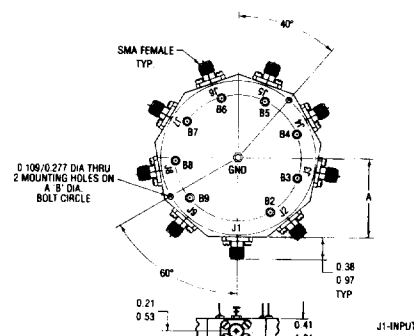
CONFIGURATION S
OUTLINE WITH DRIVER



CONFIGURATION S
OUTLINE WITHOUT DRIVER



CONFIGURATION R
OUTLINE WITH DRIVER



CONFIGURATION R
OUTLINE WITHOUT DRIVER

BROADBAND

SP8T SWITCH

SERIES TB-8/TB-8-HA

HIGH ISOLATION-REFLECTIVE-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 Max. dB Ref. / Abs.	VSWR† Max.	Config. Square Ref. / Abs.	Config. Round Ref. / Abs.				
TB-810	TB-810-HA	0.02-0.1	60	1.20 / 1.30	1.95	2 / 5	4 / 4	500	1.25 / 1.35	N/A	N/A
TB-812	TB-811-HA	0.02-0.1	80	1.30 / 1.40	1.95	2 / 5	4 / 4	500	1.35 / 1.45	N/A	N/A
TB-814	TB-812-HA	0.1-1.0	60	1.50 / 1.60	1.95	2 / 5	4 / 4	500	1.55 / 1.65	N/A	N/A
TB-816	TB-816-HA	0.1-1.0	80	1.60 / 1.70	1.95	2 / 5	4 / 4	500	1.65 / 1.75	N/A	N/A
TB-818	TB-819-HA	0.1-2.0	60	1.80 / 1.90	1.95	2 / 5	4 / 4	500	1.85 / 1.95	N/A	N/A
TB-820	TB-822-HA	0.1-2.0	80	1.90 / 2.00	1.95	2 / 5	4 / 4	500	1.95 / 2.05	N/A	N/A
TB-822	TB-823-HA	0.25-0.5	60	1.50 / 1.60	1.95	2 / 5	4 / 4	500	1.55 / 1.65	N/A	N/A
TB-824	TB-826-HA	0.25-0.5	80	1.60 / 1.70	1.95	2 / 5	4 / 4	500	1.65 / 1.75	N/A	N/A
TB-826	TB-827-HA	0.25-1.0	60	1.50 / 1.60	1.95	2 / 5	4 / 4	500	1.55 / 1.65	N/A	N/A
TB-828	TB-828-HA	0.25-1.0	80	1.60 / 1.70	1.95	2 / 5	4 / 4	500	1.65 / 1.75	N/A	N/A
TB-830	TB-831-HA	0.5-1.0	60	1.40 / 1.50	1.95	1 / 2	4 / 4	100	1.50 / 1.60	20	1.60 / 1.70
TB-832	TB-832-HA	0.5-1.0	80	1.50 / 1.60	1.95	1 / 2	4 / 4	100	1.60 / 1.70	20	1.70 / 1.80
TB-834	TB-834-HA	0.5-2.0	60	1.50 / 1.60	1.95	1 / 2	4 / 4	100	1.60 / 1.70	20	1.70 / 1.80
TB-836	TB-835-HA	0.5-2.0	80	1.60 / 1.70	1.95	1 / 2	4 / 4	100	1.70 / 1.80	20	1.80 / 1.90
TB-838	TB-838-HA	1.0-2.0	60	1.40 / 1.50	1.95	1 / 2	3 / 4	100	1.50 / 1.60	20	1.65 / 1.75
TB-840	TB-839-HA	1.0-2.0	80	1.50 / 1.60	1.95	1 / 2	3 / 4	100	1.60 / 1.70	20	1.70 / 1.80
TB-842	TB-842-HA	1.0-4.0	60	1.50 / 1.60	1.95	1 / 2	3 / 4	100	1.60 / 1.70	20	1.70 / 1.80
TB-844	TB-843-HA	1.0-4.0	80	1.60 / 1.70	1.95	1 / 2	3 / 6	100	1.70 / 1.80	20	1.80 / 1.90
TB-846	TB-844-HA	1.0-6.0	60	1.70 / 1.80	1.95	1 / 2	3 / 4	100	1.80 / 1.90	20	1.90 / 2.00
TB-848	TB-846-HA	1.0-6.0	80	1.80 / 1.90	1.95	1 / 2	3 / 6	100	1.90 / 2.00	20	2.00 / 2.10
TB-850	TB-848-HA	1.5-3.0	60	1.40 / 1.50	1.95	1 / 2	3 / 4	100	1.50 / 1.60	20	1.60 / 1.70
TB-852	TB-851-HA	1.5-3.0	80	1.50 / 1.60	1.95	1 / 2	3 / 6	100	1.60 / 1.70	20	1.70 / 1.80
TB-854	TB-852-HA	2.0-4.0	60	1.60 / 1.70	1.95	1 / 2	3 / 4	100	1.70 / 1.80	20	1.80 / 1.90
TB-856	TB-854-HA	2.0-4.0	80	1.70 / 1.80	1.95	1 / 2	3 / 6	100	1.80 / 1.90	20	1.90 / 2.00
TB-858	TB-855-HA	2.0-8.0	60	1.80 / 1.90	1.95	1 / 7	3 / 4	100	1.90 / 2.00	20	2.00 / 2.10
TB-860	TB-858-HA	2.0-8.0	80	1.90 / 2.00	1.95	1 / 7	3 / 6	100	2.00 / 2.10	20	2.10 / 2.20
TB-862	TB-862-HA	3.0-12.0	60	3.00 / 3.10	2.50	1 / 7	3 / 4	100	3.10 / 3.20	20	3.20 / 3.30
TB-864	TB-863-HA	3.0-12.0	80	3.10 / 3.20	2.50	1 / 7	3 / 4	100	3.20 / 3.30	20	3.40 / 3.50
TB-866	TB-866-HA	4.0-8.0	60	1.80 / 1.90	1.95	1 / 7	3 / 4	100	1.90 / 2.00	20	2.00 / 2.10
TB-868	TB-867-HA	4.0-8.0	80	1.90 / 2.00	1.95	1 / 7	3 / 6	100	2.00 / 2.10	20	2.10 / 2.20
TB-870	TB-868-HA	2.0-18.0	60	3.50 / 3.60	2.50	1 / 7	3 / 4	100	3.70 / 3.80	20	3.80 / 4.00
TB-872	TB-871-HA	2.0-18.0	80	3.80 / 3.90	2.50	1 / 7	3 / 4	100	3.90 / 4.00	20	4.00 / 4.10
TB-874	TB-872-HA	5.0-10.0	60	2.20 / 2.30	1.95	1 / 7	3 / 4	100	2.30 / 2.40	20	2.50 / 2.60
TB-876	TB-874-HA	5.0-10.0	80	2.30 / 2.40	1.95	1 / 7	3 / 6	100	2.40 / 2.50	20	2.60 / 2.70
TB-878	TB-875-HA	6.0-12.0	60	2.40 / 2.50	2.20	1 / 7	3 / 4	100	2.50 / 2.60	20	2.70 / 2.80
TB-880	TB-876-HA	6.0-12.0	80	2.50 / 2.60	2.20	1 / 7	3 / 4	100	2.60 / 2.70	20	2.70 / 2.80
TB-882	TB-878-HA	6.0-18.0	60	3.50 / 3.60	2.50	1 / 7	3 / 4	100	3.70 / 3.80	20	3.80 / 4.00
TB-884	TB-879-HA	6.0-18.0	80	3.80 / 3.90	2.50	1 / 7	3 / 4	100	3.90 / 4.00	20	4.00 / 4.10
TB-886	TB-882-HA	7.0-12.4	60	2.50 / 2.60	2.20	1 / 7	3 / 4	100	2.60 / 2.70	20	2.90 / 3.00
TB-888	TB-883-HA	7.0-12.4	80	2.60 / 2.70	2.20	1 / 7	3 / 4	100	2.70 / 2.80	20	3.00 / 3.10
TB-890	TB-884-HA	7.0-18.0	60	3.50 / 3.60	2.50	1 / 7	3 / 4	100	3.70 / 3.80	20	3.80 / 4.00
TB-891	TB-886-HA	7.0-18.0	80	3.80 / 3.90	2.50	1 / 7	3 / 4	100	3.90 / 4.00	20	4.00 / 4.10
TB-893	TB-888-HA	8.0-18.0	60	3.50 / 3.60	2.50	1 / 7	3 / 4	100	3.70 / 3.80	20	3.80 / 4.00
TB-894	TB-891-HA	8.0-18.0	80	3.80 / 3.90	2.50	1 / 7	3 / 4	100	3.90 / 4.00	20	4.00 / 4.10
TB-896	TB-894-HA	12.0-18.0	60	3.50 / 3.60	2.50	1 / 7	3 / 4	100	3.70 / 3.80	20	3.80 / 4.00
TB-897	TB-897-HA	12.0-18.0	80	3.80 / 3.90	2.50	1 / 7	3 / 4	100	3.90 / 4.00	20	4.00 / 4.10

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.

