

BROADBAND

SP6T SWITCH

HIGH ISOLATION-REFLECTIVE-ABSORPTIVE 0.02-18 GHz

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:

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 seven sided) i.e. TB-610R.
3. If driver is required, add 'D' to the model number when ordering, i.e. Model TB-610R, with driver, becomes TB-610RD.
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-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.
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	3.00 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

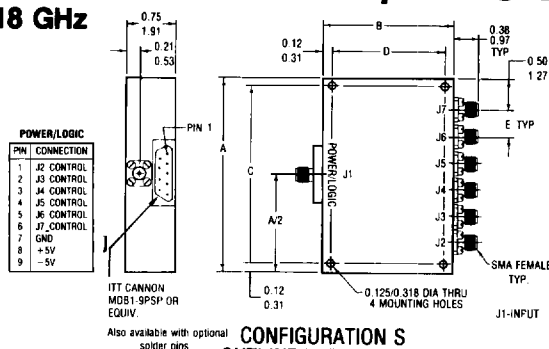
xx ± 0.3 xxx ± .010/ xx ± .08 xxx ± .025

TYPICAL MODEL NO.

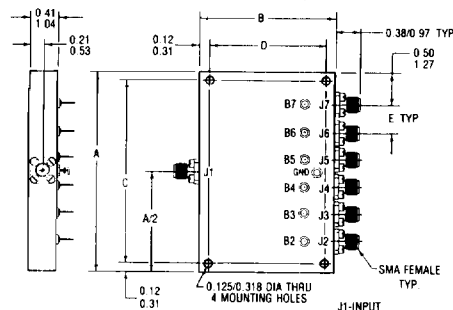
TB - XXX - S or R - D - X
 Model Series Freq Code Pkg Style Driver Option Speed Option
 (Note 2) (Note 3) (Note 4)

Hermetic Seal
and Mil STD 883
Screening Available

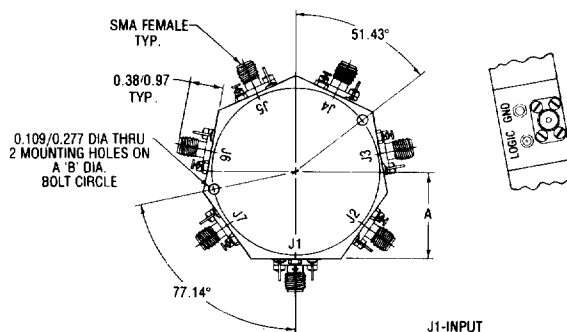
SERIES TB-6/TB-6-HA



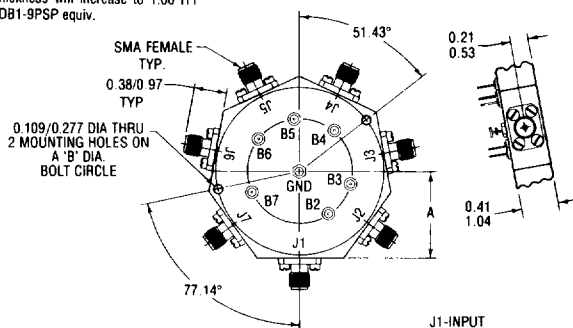
CONFIGURATION S
OUTLINE WITH DRIVER



CONFIGURATION S
OUTLINE WITHOUT DRIVER



CONFIGURATION R
OUTLINE WITH DRIVER



CONFIGURATION R
OUTLINE WITHOUT DRIVER

**KDI/triangle
ELECTRONICS**

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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			
Reflective Model No.	Absorptive Model No.	Frequency Range GHz	Isolation Min. dB.	Insertion Loss		VSWR† Max.	OUTLINE		Speed Nanosec.	Insertion Loss		Speed Nanosec.	Insertion Loss	
				Ref.	Max. dB Abs.		Config. Square Ref. / Abs.	Config. Round Ref. / Abs.		Ref.	Max. dB Abs.		Ref.	Max. dB 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	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	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	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	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	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	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	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	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	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	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	1.60
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	1.70
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	1.70
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	1.80
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	1.65
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	1.70
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	1.70
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	1.80
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	1.90
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	2.00
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	1.60
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	1.70
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	1.80
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	1.90
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	2.00
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	2.10
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	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	3.40
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	2.00
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	2.10
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	3.80
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	4.00
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	2.50
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	2.60
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	2.70
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	2.70
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	3.80
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	4.00
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	2.90
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	3.00
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	3.80
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	4.00
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	3.80
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	4.00
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	3.80
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	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.

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