

SP7T SWITCH

REFLECTIVE AND ABSORPTIVE 0.02-18 GHz

GENERAL INFORMATION:

Series TL-7 and TB-7-A 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 $+85^{\circ}\text{C}$.

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. TL-712R.
3. If driver is required, add 'D' to the model number when ordering, i.e. Model TL-712R, with driver, becomes TL-712RD.
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 TL-731RD-1 is an 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.)

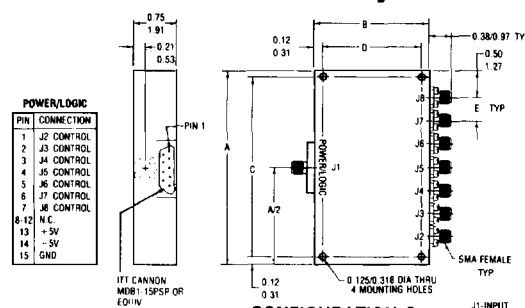
MECHANICAL OUTLINES

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

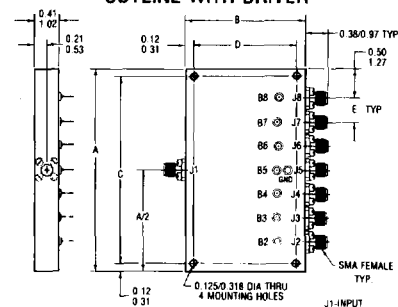
Inches / Centimeters

xx ±0.3 xxx±.010/ xx±.08 xxx±.025

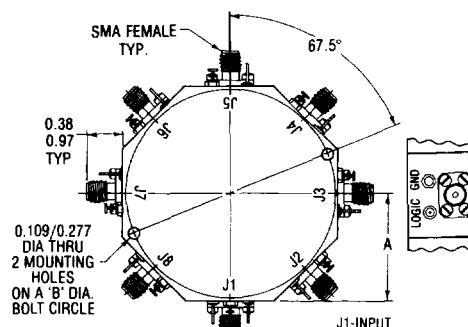
SERIES TL-7/TB-7-A



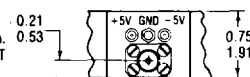
CONFIGURATION S OUTLINE WITH DRIVER



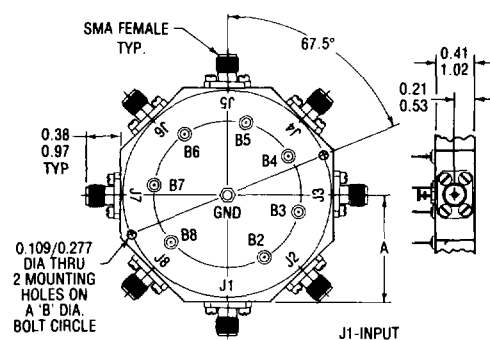
CONFIGURATION S OUTLINE WITHOUT DRIVER



Also available with optional multi-pin conn.
Package thickness will increase to 1.00 ITT
Cannon MDB1-15PSP equiv.



CONFIGURATION R OUTLINE WITH DRIVER



CONFIGURATION R
OUTLINE WITHOUT DRIVER

BROADBAND

SP7T SWITCH

REFLECTIVE AND ABSORPTIVE 0.02-18 GHz

SERIES TL-7/TB-7-A**ELECTRICAL PERFORMANCE**

STANDARD SWITCH							HIGH SPEED OPTION			
Isolation: 30 dB minimum Power: 1 watt average, 10 watts peak, survival 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	Insertion Loss Max. dB Ref. / Abs.	VSWR† Max.	OUTLINE					
					Config. Square Ref. / Abs.	Config. Round Ref. / Abs.				
TL-712	TB-713-A	0.02-0.1	1.00 / 1.10	1.90	2 / 5	4 / 4	500	1.05 / 1.15	N/A	N/A
TL-716	TB-717-A	0.1-1.0	1.40 / 1.50	1.90	2 / 5	4 / 4	500	1.45 / 1.55	N/A	N/A
TL-722	TB-721-A	0.1-2.0	1.70 / 1.80	1.90	2 / 5	4 / 4	500	1.75 / 1.85	N/A	N/A
TL-725	TB-725-A	0.25-0.5	1.40 / 1.50	1.90	2 / 5	4 / 4	500	1.45 / 1.55	N/A	N/A
TL-728	TB-729-A	0.25-1.0	1.40 / 1.50	1.90	2 / 5	4 / 4	500	1.45 / 1.55	N/A	N/A
TL-731	TB-733-A	0.5-1.0	1.20 / 1.30	1.90	1 / 2	4 / 4	100	1.30 / 1.40	20	1.40 / 1.50
TL-737	TB-737-A	0.5-2.0	1.40 / 1.50	1.90	1 / 2	4 / 4	100	1.50 / 1.60	20	1.60 / 1.70
TL-740	TB-741-A	1.0-2.0	1.20 / 1.30	1.90	1 / 2	3 / 4	100	1.30 / 1.40	20	1.50 / 1.60
TL-744	TB-745-A	1.0-4.0	1.60 / 1.70	1.90	1 / 2	3 / 4	100	1.70 / 1.80	20	1.90 / 2.00
TL-749	TB-749-A	1.0-6.0	1.60 / 1.70	1.90	1 / 2	3 / 4	100	1.70 / 1.80	20	1.90 / 2.00
TL-753	TB-753-A	1.5-3.0	1.30 / 1.40	1.90	1 / 2	3 / 4	100	1.55 / 1.65	20	1.80 / 1.90
TL-756	TB-757-A	2.0-4.0	1.60 / 1.70	1.90	1 / 2	3 / 4	100	1.70 / 1.80	20	1.90 / 2.00
TL-761	TB-761-A	2.0-8.0	1.70 / 1.80	1.90	1 / 6	3 / 4	100	1.90 / 2.00	20	2.10 / 2.10
TL-764	TB-765-A	3.0-12.0	2.80 / 2.90	2.50	1 / 6	3 / 4	100	3.05 / 3.15	20	3.30 / 3.40
TL-768	TB-769-A	4.0-8.0	1.90 / 2.00	1.90	1 / 6	3 / 4	100	2.05 / 2.15	20	2.30 / 2.40
TL-772	TB-773-A	2.0-18.0	3.20 / 3.30	2.50	1 / 6	3 / 4	100	3.45 / 3.55	20	3.70 / 3.80
TL-776	TB-777-A	5.0-10.0	2.30 / 2.40	1.90	1 / 6	3 / 4	100	2.45 / 2.55	20	2.70 / 2.80
TL-783	TB-781-A	6.0-12.0	2.40 / 2.50	2.15	1 / 6	3 / 4	100	2.65 / 2.75	20	2.85 / 2.95
TL-785	TB-785-A	6.0-18.0	3.20 / 3.30	2.50	1 / 6	3 / 4	100	3.45 / 3.55	20	3.70 / 3.80
TL-787	TB-789-A	7.0-12.4	2.40 / 2.50	2.15	1 / 6	3 / 4	100	2.65 / 2.75	20	2.90 / 3.00
TL-791	TB-793-A	7.0-18.0	3.20 / 3.30	2.50	1 / 6	3 / 4	100	3.45 / 3.55	20	3.70 / 3.80
TL-794	TB-796-A	8.0-18.0	3.20 / 3.30	2.50	1 / 6	3 / 4	100	3.45 / 3.55	20	3.70 / 3.80
TL-798	TB-798-A	12.0-18.0	3.20 / 3.30	2.50	1 / 6	3 / 4	100	3.45 / 3.55	20	3.70 / 3.80

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.

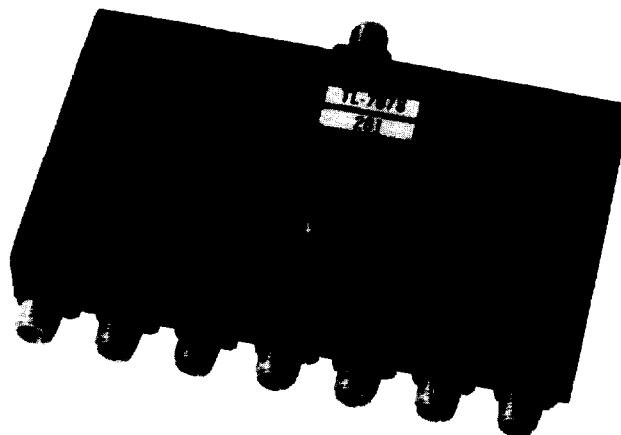
Absorptive Switch: VSWR measured in the 'ON' Input and 'ON' Output and 'OFF' Output Position.

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.

Hermetic Seal
and Mil STD 883
Screening Available

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



KDI/triangle
ELECTRONICS

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