

BROADBAND

SPDT SWITCH

HIGH ISOLATION-REFLECTIVE AND ABSORPTIVE 0.02-18 GHz

SERIES XB/XB-HA

GENERAL INFORMATION:

Series XB 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:	Switches without drivers require +60 mA max per path for the "off" condition and -60 mA for the "on" condition. Switches with drivers require ± 5 volt supply at ± 70 mA. Logic "1" turns J2 "on" and J3 "off". Logic "0" turns J3 "on" and J2 "off". Different supply voltages and logic available if specified when order is placed.
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 type N, TNC, and BNC.

NOTES:

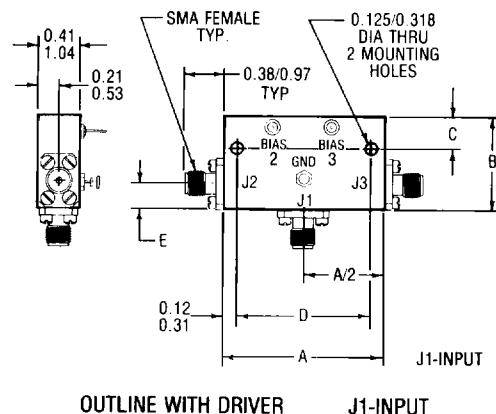
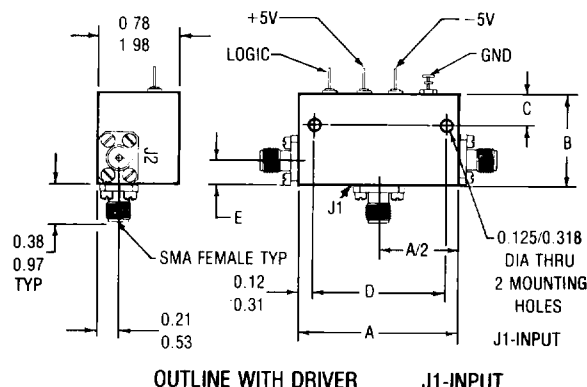
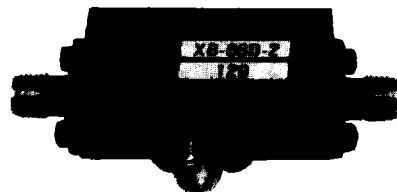
1. Drive connection is normally supplied as a solder feedthrough terminal. Separate inputs for each path are available on request. Other connectors available (when specified at time of order) include SMA and SMC.
2. If driver is required, add "D" to the model number when ordering, i.e. Model XB-28, with driver, becomes XB-28D.
3. 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 XB-82D-2 is a SPDT reflective switch with driver whose frequency range is 6.0 to 18.0 GHz and a switching speed of 20 nanosecs.
4. Any unit listed can be supplied with pins instead of RF connectors. (Consult factory.)
5. Switches are available with output connectors in line with input. Sizes may change and a special part number may be assigned. (Consult factory.)

MECHANICAL OUTLINES

Outline	A Inches cm.	B Inches cm.	C Inches cm.	D Inches cm.	E Inches cm.
1	1.55 3.56	0.90 2.29	0.30 0.76	1.300 3.327	0.25 0.64
2	1.30 3.30	0.75 1.91	0.20 0.51	1.050 2.692	0.25 0.64
3	1.55 3.56	0.95 2.41	0.30 0.76	1.300 3.327	0.35 0.89
4	2.00 5.08	1.00 2.54	0.35 0.89	1.750 4.470	0.30 0.76
5	1.55 3.94	0.95 2.41	0.30 0.76	1.300 3.327	0.25 0.64
6	1.55 3.94	1.20 3.05	0.50 1.27	1.300 3.327	0.25 0.64
7	1.55 3.94	0.90 2.29	0.30 0.76	1.300 3.327	0.25 0.64

Inches/Centimeters

xx $\pm$ 0.3 xxx $\pm$.010/ xx $\pm$.08 xxx $\pm$.025



XB - XX or XXHA - D - X
 Model Series Freq Code Driver Option Option
 (Note 2) (Note 3)

Hermetic Seal and Mil STD 883 Screening Available

TYPICAL MODEL NO.

**KDI/triangle
ELECTRONICS**

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

BROADBAND

SPDT SWITCH**SERIES XB/XB-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 Max. dB Ref. / Abs.	VSWR† Max.	Outline Ref. / Abs.		Speed Nanosec.	Insertion Loss Max. dB Ref. / Abs.	Speed Nanosec.	Insertion Loss Max. dB Ref. / Abs.
XB-11	XB-11-HA	0.02-0.1	60	0.60 / 0.70	1.65	1 / 4		500	0.65 / 0.75	N/A	N/A
XB-13	XB-13-HA	0.02-0.1	80	0.70 / 0.80	1.65	1 / 4		500	0.75 / 0.85	N/A	N/A
XB-15	XB-15-HA	0.1-1.0	60	0.90 / 1.00	1.65	1 / 4		500	0.95 / 1.05	N/A	N/A
XB-17	XB-17-HA	0.1-1.0	80	1.00 / 1.10	1.65	1 / 4		500	1.05 / 1.15	N/A	N/A
XB-19	XB-19-HA	0.1-2.0	60	1.20 / 1.30	1.65	1 / 4		500	1.25 / 1.35	N/A	N/A
XB-21	XB-20-HA	0.1-2.0	80	1.30 / 1.40	1.65	1 / 4		500	1.35 / 1.45	N/A	N/A
XB-22	XB-22-HA	0.25-0.5	60	0.90 / 1.00	1.65	1 / 4		500	0.95 / 1.05	N/A	N/A
XB-24	XB-24-HA	0.25-0.5	80	1.00 / 1.10	1.65	1 / 4		500	1.05 / 1.15	N/A	N/A
XB-26	XB-26-HA	0.25-1.00	60	0.90 / 1.00	1.65	1 / 4		500	0.95 / 1.05	N/A	N/A
XB-28	XB-28-HA	0.25-1.0	80	1.00 / 1.10	1.65	1 / 4		500	1.05 / 1.15	N/A	N/A
XB-31	XB-31-HA	0.5-1.0	60	0.80 / 0.90	1.65	2 / 5		100	0.90 / 1.00	20	1.00 / 1.10
XB-33	XB-33-HA	0.5-1.0	80	0.90 / 1.00	1.65	2 / 4		100	1.00 / 1.10	20	1.10 / 1.20
XB-35	XB-35-HA	0.5-2.0	60	0.90 / 1.00	1.65	2 / 5		100	1.00 / 1.10	20	1.10 / 1.20
XB-37	XB-37-HA	0.5-2.0	80	1.00 / 1.10	1.65	2 / 4		100	1.10 / 1.20	20	1.20 / 1.30
XB-39	XB-39-HA	1.0-2.0	60	0.80 / 0.90	1.65	2 / 5		100	0.90 / 1.00	20	1.10 / 1.20
XB-41	XB-40-HA	1.0-2.0	80	0.90 / 1.00	1.65	2 / 4		100	1.00 / 1.10	20	1.10 / 1.20
XB-42	XB-42-HA	1.0-4.0	60	0.90 / 1.00	1.65	3 / 5		100	1.00 / 1.10	20	1.10 / 1.20
XB-44	XB-44-HA	1.0-4.0	80	1.00 / 1.10	1.65	3 / 4		100	1.10 / 1.20	20	1.20 / 1.30
XB-46	XB-46-HA	1.0-6.0	60	1.10 / 1.20	1.65	3 / 5		100	1.20 / 1.30	20	1.30 / 1.40
XB-48	XB-48-HA	1.0-6.0	80	1.20 / 1.30	1.65	3 / 4		100	1.30 / 1.40	20	1.40 / 1.50
XB-51	XB-51-HA	1.5-3.0	60	0.80 / 0.90	1.65	3 / 5		100	0.90 / 1.00	20	1.00 / 1.10
XB-53	XB-53-HA	1.5-3.0	80	0.90 / 1.00	1.65	3 / 4		100	1.00 / 1.10	20	1.10 / 1.20
XB-55	XB-55-HA	2.0-4.0	60	1.00 / 1.10	1.65	3 / 6		100	1.10 / 1.20	20	1.20 / 1.30
XB-57	XB-57-HA	2.0-4.0	80	1.10 / 1.20	1.65	3 / 6		100	1.20 / 1.30	20	1.30 / 1.40
XB-59	XB-59-HA	2.0-8.0	60	1.20 / 1.30	1.65	3 / 6		100	1.30 / 1.40	20	1.40 / 1.50
XB-61	XB-60-HA	2.0-8.0	80	1.30 / 1.40	1.65	3 / 6		100	1.40 / 1.50	20	1.50 / 1.60
XB-62	XB-62-HA	3.0-12.0	60	2.25 / 2.40	2.10	3 / 6		100	2.50 / 2.60	20	2.75 / 2.80
XB-64	XB-64-HA	3.0-12.0	80	2.40 / 2.50	2.10	3 / 6		100	2.60 / 2.70	20	2.80 / 2.90
XB-66	XB-66-HA	4.0-8.0	60	1.20 / 1.30	1.70	3 / 6		100	1.30 / 1.40	20	1.40 / 1.50
XB-68	XB-68-HA	4.0-8.0	80	1.30 / 1.40	1.70	3 / 6		100	1.40 / 1.50	20	1.50 / 1.60
XB-71	XB-71-HA	2.0-18.0	60	2.70 / 2.90	2.50	3 / 7		100	2.90 / 3.10	20	3.10 / 3.30
XB-73	XB-73-HA	2.0-18.0	80	2.90 / 3.10	2.50	3 / 7		100	3.10 / 3.30	20	3.30 / 3.50
XB-75	XB-75-HA	5.0-10.0	60	1.60 / 1.70	1.70	3 / 6		100	1.70 / 1.80	20	1.90 / 2.00
XB-77	XB-77-HA	5.0-10.0	80	1.70 / 1.80	1.70	3 / 6		100	1.85 / 1.95	20	2.00 / 2.10
XB-79	XB-79-HA	6.0-12.0	60	1.80 / 1.90	1.90	3 / 7		100	2.00 / 2.10	20	2.10 / 2.20
XB-81	XB-80-HA	6.0-12.0	80	1.90 / 2.00	1.90	3 / 7		100	2.10 / 2.20	20	2.25 / 2.30
XB-82	XB-82-HA	6.0-18.0	60	2.70 / 2.90	2.50	2 / 7		100	2.90 / 3.10	20	3.10 / 3.30
XB-84	XB-84-HA	6.0-18.0	80	2.90 / 3.10	2.50	2 / 7		100	3.10 / 3.30	20	3.30 / 3.50
XB-86	XB-86-HA	7.0-12.4	60	1.90 / 2.00	1.80	2 / 7		100	2.10 / 2.20	20	2.30 / 2.40
XB-88	XB-88-HA	7.0-12.4	80	2.00 / 2.10	1.80	2 / 7		100	2.25 / 2.35	20	2.40 / 2.50
XB-91	XB-91-HA	7.0-18.0	60	2.70 / 2.90	2.50	2 / 7		100	2.90 / 3.10	20	3.10 / 3.30
XB-93	XB-93-HA	7.0-18.0	80	2.90 / 3.10	2.50	2 / 7		100	3.10 / 3.30	20	3.30 / 3.50
XB-95	XB-95-HA	8.0-18.0	60	2.70 / 2.90	2.50	2 / 7		100	2.90 / 3.10	20	3.10 / 3.30
XB-97	XB-97-HA	8.0-18.0	80	2.90 / 3.10	2.50	2 / 7		100	3.10 / 3.30	20	3.30 / 3.50
XB-98	XB-98-HA	12.0-18.0	60	2.70 / 2.90	2.30	2 / 7		100	2.90 / 3.10	20	3.10 / 3.30
XB-99	XB-99-HA	12.0-18.0	80	2.90 / 3.10	2.30	2 / 7		100	3.10 / 3.30	20	3.30 / 3.50

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.

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