

BROADBAND SPST SWITCH REFLECTIVE AND ABSORPTIVE 0.02-18 GHz

GENERAL INFORMATION:

Series QL/QB 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 +50 mA max. for the "off" condition. For the "on" condition models QN-10 through QN-38 and QN-11-HA through QN-99-HA require -5 volts at -60 mA max and models QN-40 through QN-99 require -5 volts at 0 mA. Switches with drivers require a ± 5 volt supply at ± 70 mA. Logic is TTL "0" when "on" and "1" when "off". Different supply voltages and logic available when specified at time 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, MIL-STD-202, MIL-E-16400 MIL-STD-883 (Special request only).
Connectors:	RF connectors are SMA. Other connectors available (if specified when order is placed) include types N, TNC, and BNC.

NOTES:

1. Drive connection is normally supplied as a solder feedthrough terminal. Other connectors available (if specified when order is placed) include SMA and SMC.
2. If driver is required, add "D" to the model number when ordering, i.e. Model QL-15, with driver, becomes QL-15D.
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 QL-71D-2 is a SPST reflective switch, with driver, whose frequency range is 6.0 to 18.0 GHz and a switching speed of 10 nanosecs.
4. Any unit listed can be supplied with pins instead of RF connectors. (Consult factory.)
5. Any of the switches listed are available with absorptive input and output on request.

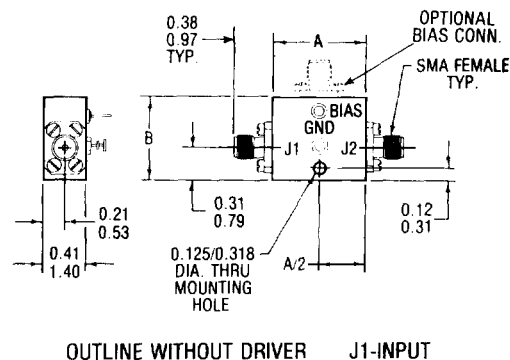
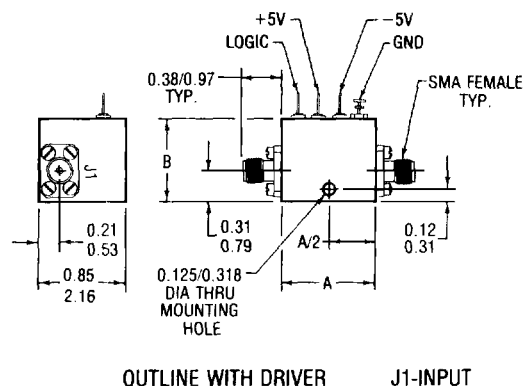
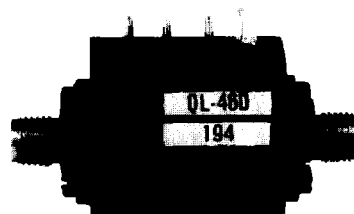
MECHANICAL OUTLINES

Outline	A Inches cm.	B Inches cm.
1	0.91 2.31	0.76 1.93
2	1.10 2.79	1.26 3.20
3	1.00 2.54	1.06 2.69
4	1.10 2.79	0.71 1.80
5	0.90 2.29	1.11 2.82
6	1.10 2.79	1.06 2.69

Inches/Centimeters

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

SERIES QL/QB-A



TYPICAL MODEL NO.

QL or QB	- XX or XXA	- D	- X
Model Series	Freq Code	Driver Option	Speed Option
		(Note 2)	(Note 3)

Hermetic Seal
and Mil STD 883
Screening Available

**KDI/triangle
ELECTRONICS**

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BROADBAND
SPST SWITCH
REFLECTIVE AND ABSORPTIVE 0.02-18 GHz

SERIES QL/QB-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. Ref. / Abs.	Insertion Loss Max. dB Ref. / Abs.
Reflective Model No.	Absorptive Model No.	Frequency Range GHz	Insertion Loss Max. dB Ref. / Abs.	VSWR† Max.	Outline Ref. / Abs.				
QL-15	QB-11-A	0.02-0.1	0.40 / 0.50	1.50	3 / 5	500	0.45 / 0.55	N/A	N/A
QL-19	QB-13-A	0.1-1.0	0.75 / 0.90	1.50	1 / 5	500	0.80 / 0.95	N/A	N/A
QL-22	QB-22-A	0.1-2.0	1.05 / 1.20	1.50	1 / 5	500	1.10 / 1.25	N/A	N/A
QL-24	QB-28-A	0.25-0.5	0.75 / 0.90	1.50	1 / 5	500	0.80 / 0.95	N/A	N/A
QL-29	QB-31-A	0.25-1.0	0.75 / 0.90	1.50	1 / 5	500	0.80 / 0.95	N/A	N/A
QL-31	QB-35-A	0.5-1.0	0.60 / 0.70	1.50	1 / 5	100	0.70 / 0.80	10 / 20	0.80 / 0.90
QL-35	QB-37-A	0.5-2.0	0.75 / 0.90	1.50	1 / 5	100	0.85 / 1.00	10 / 20	1.00 / 1.10
QL-37	QB-39-A	1.0-2.0	0.60 / 0.70	1.50	1 / 5	100	0.70 / 0.90	10 / 20	0.80 / 1.00
QL-41	QB-42-A	1.0-4.0	0.75 / 1.00	1.50	4 / 5	100	0.85 / 1.20	10 / 20	1.00 / 1.35
QL-43	QB-44-A	1.0-6.0	0.80 / 1.00	1.50	4 / 5	100	0.90 / 1.20	10 / 20	1.00 / 1.35
QL-46	QB-46-A	1.5-3.0	0.75 / 0.75	1.50	4 / 5	100	0.85 / 1.00	10 / 20	1.00 / 1.25
QL-49	QB-51-A	2.0-4.0	0.60 / 1.00	1.50	2 / 5	100	0.70 / 1.20	10 / 20	0.80 / 1.35
QL-52	QB-53-A	2.0-8.0	0.90 / 1.10	1.50	4 / 6	100	1.00 / 1.30	10 / 20	1.10 / 1.50
QL-57	QB-55-A	3.0-12.0	1.75 / 2.00	2.00	1 / 6	100	1.90 / 2.30	10 / 20	2.00 / 2.50
QL-59	QB-57-A	4.0-8.0	0.90 / 1.25	1.50	4 / 6	100	1.00 / 1.40	10 / 20	1.25 / 1.60
QL-61	QB-62-A	2.0-18.0	2.25 / 2.50	2.50	1 / 6	100	2.50 / 2.75	10 / 20	2.75 / 3.00
QL-64	QB-64-A	5.0-10.0	1.30 / 1.50	1.50	1 / 6	100	1.40 / 1.75	10 / 20	1.60 / 2.00
QL-66	QB-71-A	6.0-12.0	1.50 / 1.75	2.00	1 / 6	100	1.75 / 2.00	10 / 20	2.00 / 2.25
QL-71	QB-75-A	6.0-18.0	2.25 / 2.50	2.50	1 / 6	100	2.50 / 2.75	10 / 20	2.75 / 3.00
QL-75	QB-82-A	7.0-12.4	1.50 / 1.75	1.60	1 / 6	100	1.75 / 2.00	10 / 20	2.00 / 2.25
QL-78	QB-86-A	7.0-18.0	2.25 / 2.50	2.50	1 / 6	100	2.50 / 2.75	10 / 20	2.75 / 3.00
QL-81	QB-95-A	8.0-18.0	2.25 / 2.50	2.20	1 / 6	100	2.50 / 2.75	10 / 20	2.75 / 3.00
QL-83	QB-98-A	12.0-18.0	2.25 / 2.50	2.00	1 / 6	100	2.50 / 2.75	10 / 20	2.75 / 3.00

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, 'ON' Output, and 'OFF' Input Position.

Insertion Loss measured with input power less than 100 mW.