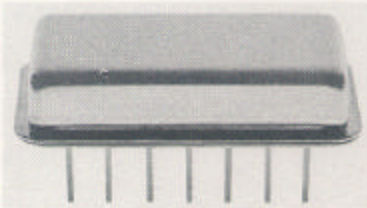


VS-21  
High  
Isolation  
RF Switch  
5-500 MHz  
SP2T

# VARI-L



## DESCRIPTION

VS-21 is a miniature high performance RF hybrid PIN diode switch with internal CMOS driver and internal 50 ohm terminations.

This switch exhibits high on/off isolation between ports, low insertion loss, and low power consumption. The sturdy construction and sealed package will withstand harsh environmental conditions.

CMOS compatible Welded package

## LIMITED WARRANTY

Vari-L Company, Inc. warrants its products against defects in parts and workmanship for a period of one year.

## GUARANTEED MINIMUM PERFORMANCE DATA

Overall Frequency Range:

5-500 MHz

Frequency Bands in MHz:

	5-100	100-500
Insertion Loss (dB)	0.7	0.9
Isolation (dB)	65	59
VSWR (on)	1.25	1.25

**NOTE:** Good case and lead ground contact is essential for optimum performance of this unit.

### Absolute Maximum Ratings:

Operating Temperature -54°C to +100°C:

Total RF input power 1W @ +25°C.  
Maximum DC supply voltage, +18V  
Switching (control) voltage: not to exceed supply voltage

### Normal Operating Ratings:

RF input power +10 dbm  
DC supply current 25 mA @ 15V  
Switching (control) voltage +15V

## ENVIRONMENTAL CONDITIONS

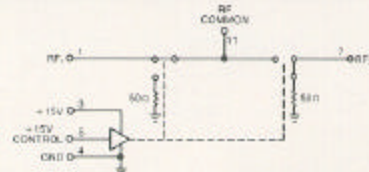
### Guaranteed Environmental Performance:

All units are designed to meet their specifications over -54°C to +100°C and after exposure to any or all of the following tests per MIL-STD-202E.

Exposure	Method	Test Condition
Thermal Shock	107D	B
Altitude	105C	G
H.F. Vibration	204C	D
Mechanical Shock	213B	C
Random Vibration (15 minutes per axis)	214	11F
Solderability	208C	
Terminal Strength	211A	C
Resistance to Soldering Heat	210A	B

These hermetically sealed units meet the requirements of method 5008 of MIL-STD-883B seal leak test procedures (5 x 10<sup>-7</sup> atm-cc/sec limit).

## FUNCTIONAL SCHEMATIC

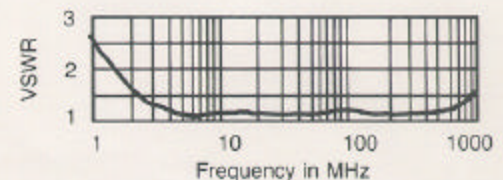
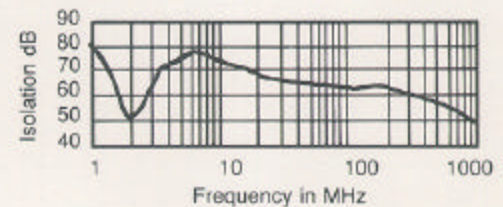
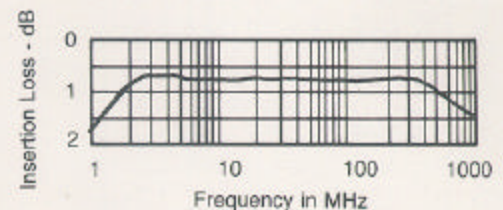


## TYPICAL PERFORMANCE

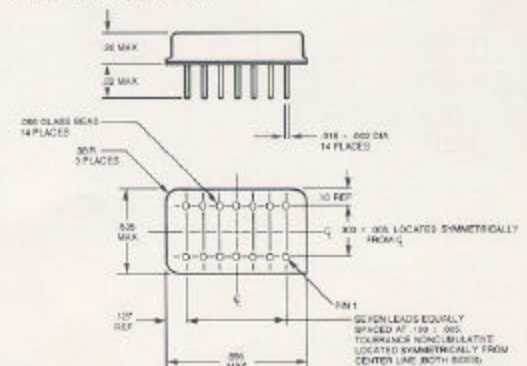
Impedance: 50 ohms

3rd Order Intercept Point: +35 dBm min. (on condition)

Switching speed (50% of control signal to 90% RF for turn on, 10% RF for turn off): 5 μs MAX 1 μs TYP.



Package: Kovar per MIL-STD-1276, Type K, gold plated per MIL-G-45204, Type I, Class I.  
Cover: Cold rolled steel per QQS-698, nickel plated per QQN-290, Class II.  
Leads: Kovar per MIL-STD-1276, Type K, gold plated per MIL-G-45204, Type II, Class I.  
Soldering of leads should be limited to 5 seconds at 500°F.



SWITCHES