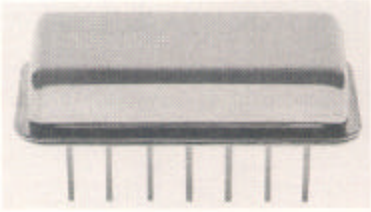
VS-100
High Speed Wideband RF Switch 2-500 MHz SP2T

VARI-L



DESCRIPTION

The VS-100 is a miniature high performance RF Schottky diode switch with internal drivers and internal 50 ohm terminations.

This switch exhibits high speed switching, low switching transients, and low insertion loss. The sturdy construction and sealed package will withstand harsh environmental conditions.

TTL compatible Soldered 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:

2-500 MHz

Frequency Bands in MHz:

	2-100	100-500
Insertion Loss (dB):	0.9	1.3
Isolation (dB):	50	38
VSWR (on):	1.25	1.3

Useable frequency range: 1-1000 MHz

Absolute Maximum Ratings:

Operating Temperature: −55°C to +115°C
Total RF input power: 1W @ +25°C.
Maximum DC supply current: 170 mA @ 5V
Switching (control) voltage: +5V

Normal Operating Ratings:
RF input power: +10 dbm
DC supply current: 130 mA @ 5V

ENVIRONMENTAL CONDITIONS

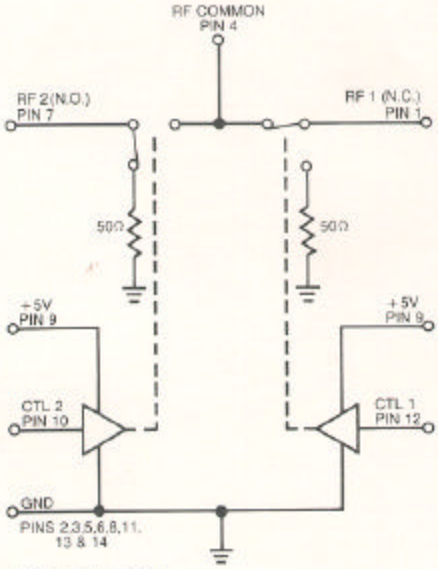
Guaranteed Environmental Performance:

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

Sealed units, meet the requirements of Method 106D of MIL-STD-202C when exposed to humidity.

FUNCTIONAL SCHEMATIC



PACKAGE

Case: Kovar per MIL-STD-1276 Type K, gold plated per MIL-G-45204 Type III, class 1.

Cover: Kovar per MIL-STD-1276 Type K, gold plated per MIL-G-45204 Type III, class 1.

Leads: Kovar per MIL-STD-1276 Type K, gold plated per MIL-G-45204 Type III, class 1. Soldering of leads should be limited to 5 seconds at 500°F.

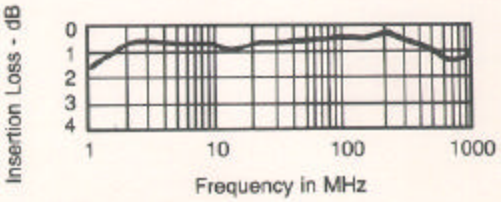
TYPICAL PERFORMANCE

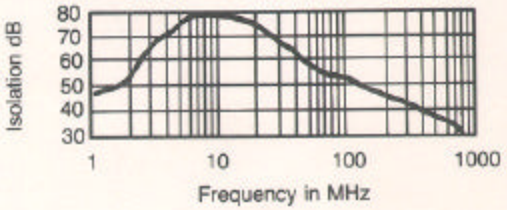
Impedance: 50 ohms

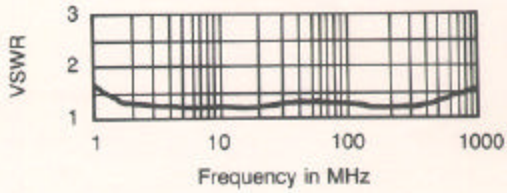
3rd Order Intercept Point: (on condition) +33 dBm

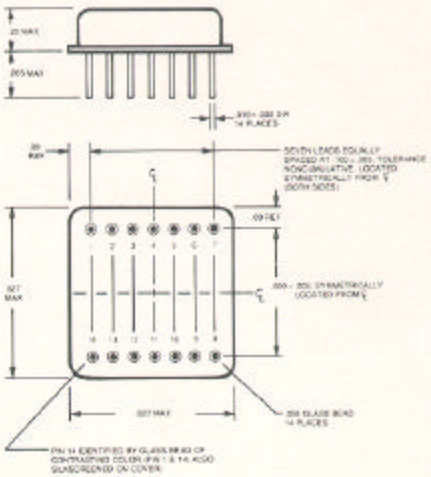
1 dB Compression Point: +25 dBm

Switching speed (50% of control signal to 90% RF for turn on, 10% RF for turn off): 30ns MAX 20ns TYP. Switching transients: 15 mV MAX, 10 mV TYP. RF rise and fall time, 10% to 90%; 5ns TYP. 8ns MAX.









SWITCHES