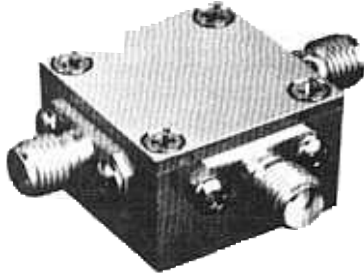


**DBM-701S**  
**High Level SMA**  
**Connectorized Double**  
**Balanced Mixer**  
**Mismatch Insensitive**  
**1-3500 MHz**



MIXERS



**DESCRIPTION**

DBM-701S is a high performance double balanced mixer that offers extremely wide bandwidth. This mixer features intermodulation performance that is virtually insensitive to mismatches on any or all of its ports. Due to almost constant linearity across its entire band, the DBM-701S's 3rd order IM products are essentially flat. This mixer is ideal to use in applications where elaborate and expensive matching networks are prohibitive. This miniature SMA connectorized package is RFI shielded and constructed to withstand severe environments.

**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**

**TEST CONDITION:**

LO + 10 dBm (High side LO)  
 RF - 10 dBm  
 IF 100 MHz

**NOTE:**

Specifications below, guaranteed with IF from 50 to 800 MHz. For higher IF frequencies, consult IF response curve for typical rolloff.

**OVERALL FREQUENCY RANGE IN MHz:**

L	R	X
1-3500	1-3500	5-2500

**FREQUENCY BANDS IN MHz:**

	100-1000	1000-1800	1800-3500
Conversion Loss	7.5	8.5	10.5
L-R Isolation	25	20	20
L-X Isolation	20	20	20
R-X Isolation	20	20	15

**ABSOLUTE MAXIMUM RATINGS:**

Operating Temp. - 54 to +100°C  
 Total Input Power 400 mW @ +25°C  
 Derate linearly to 100 mW @ +100°C(4mW/°C)

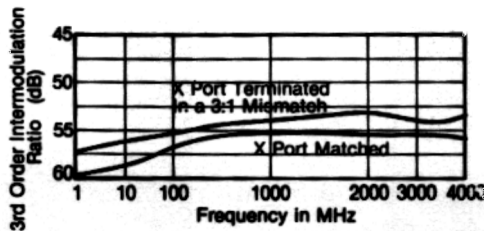
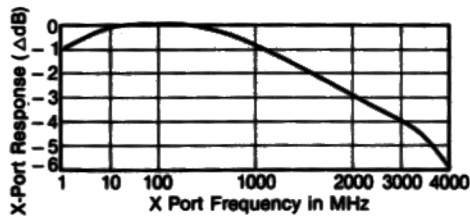
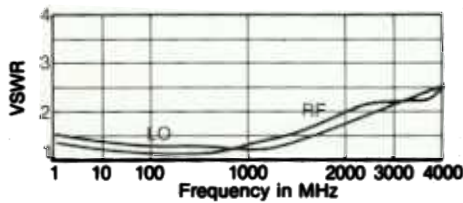
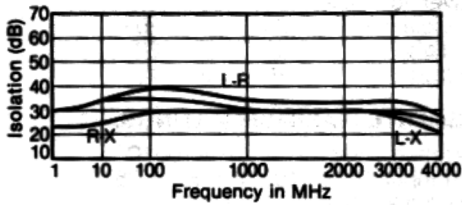
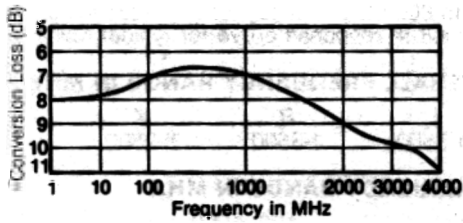
DBM-701S  
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MIXERS

### TYPICAL PERFORMANCE

Impedance: All ports 50 ohms  
1 dB Compression Point: +7 dBm  
1 dB Desensitization Point: +5 dBm  
3rd Order Intercept Point: +17 dBm  
Noise Figure is within 1 dB of conversion loss  
LO Power Range: +10 to +20 dBm  
3rd order intermodulation Ratio  
Degradation 3 dB typical @ I.F.VSWR of 3.0:1



### ENVIRONMENTAL CONDITIONS

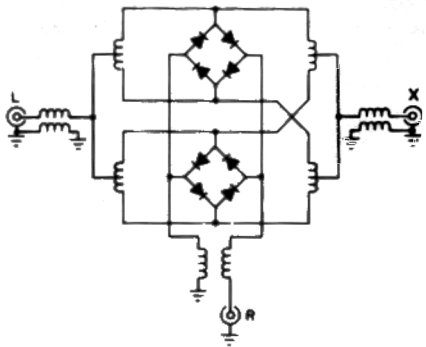
#### GUARANTEED ENVIRONMENTAL PERFORMANCE:

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	214	IIF

(15 minutes per axis)

### FUNCTIONAL SCHEMATIC

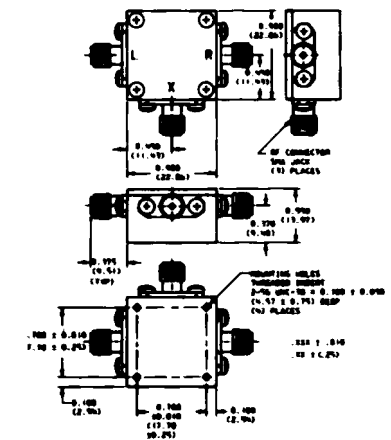


### PACKAGE MATERIAL:

Housing and Cover: Aluminum  
Connector body: Stainless Steel per QQ-S-764, Class 303.  
Cond. A  
Contacts: Beryllium Copper per QQ-C-530. Half hard  
Dielectric: Polytetrafluorethylene per MIL-P-19468 Fed. Std. L-P-403

### FINISH:

Housing and Covers: Bright Nickel per QQ-N-290, Class 1, Form SB, Grade F.  
Contacts: Gold per MIL-G-45204, Type 1, Grade C, Class 2



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