


**DBM-188**  
**Very High Level**  
**+ 30 dBm**  
**Intercept**  
**Point Double**  
**Balanced Mixer**  
**.5-450 MHz**



MIXERS

	<p><b>DESCRIPTION</b></p> <p>DBM-188 is a miniature double balanced mixer that offers superior signal handling capability, (typically better than +30 dBm intercept point) with only +20 dBm L.O. power. Mid-band isolations are typically better than 40 dB.</p> <p>Relatively constant linearity over the frequency range is made possible with the use of unique transformers and optimized biasing networks. In systems where the mixer is the limiting factor, the DBM-188 may offer substantial improvement in overall system linearity without a severe penalty in LO power increase.</p> <p>DBM-188 is designed to withstand</p> <p>Each DBM-188 is Vari-L's demand performance spec</p> <p><b>LIMITED WARRANTY</b></p> <p>Vari-L Company, Inc. warrants its products against defects in parts and workmanship for a period of one year</p>	<p><b>GUARANTEED MINIMUM PERFORMANCE DATA</b></p> <p><b>TEST CONDITION:</b></p> <p>LO + 20 dBm (High side LO)          RF - 10 dBm          IF 100 MHz</p> <p><b>NOTE</b></p> <p>Specifications below, guaranteed with IF from DC to 100 MHz. For higher IF frequencies, consult IF response curve for typical rolloff.</p> <p><b>OVERALL FREQUENCY RANGE (in MHz)</b></p> <table style="margin-left: 40px;"> <tr> <td style="text-align: center;">L</td> <td style="text-align: center;">R</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">.5-450</td> <td style="text-align: center;">.5-450</td> <td style="text-align: center;">DC-800</td> </tr> </table> <p><b>FREQUENCY BANDS IN MHz:</b></p> <table style="margin-left: 40px;"> <tr> <td>Conversion L</td> <td style="text-align: center;">7.5</td> <td></td> <td></td> </tr> <tr> <td>L-R Isolation</td> <td style="text-align: center;">45</td> <td style="text-align: center;">45</td> <td></td> </tr> <tr> <td>L-X Isolation</td> <td style="text-align: center;">45</td> <td style="text-align: center;">25</td> <td style="text-align: center;">20</td> </tr> <tr> <td>R-X Isolation</td> <td style="text-align: center;">35</td> <td style="text-align: center;">30</td> <td style="text-align: center;">25</td> </tr> </table> <p><b>ABSOLUTE MAXIMUM RATINGS:</b></p> <p>Operating Temp. - 54 to +100°C          X-port Input Current 50 mA          Total Input Power 400 mW @ +25°C          Derate linearly to 100 mW @ 100°C</p> <p><b>DC POLARITY</b></p> <p>Positive with L and R ports</p>	L	R	X	.5-450	.5-450	DC-800	Conversion L	7.5			L-R Isolation	45	45		L-X Isolation	45	25	20	R-X Isolation	35	30	25
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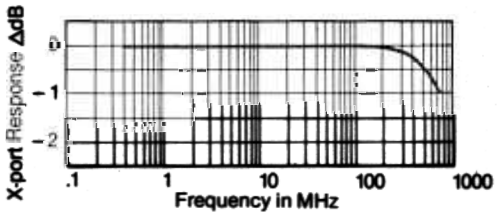
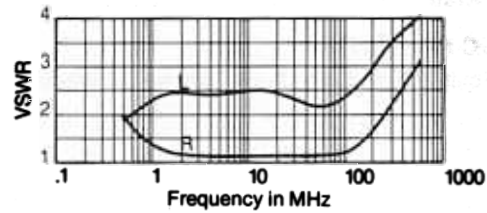
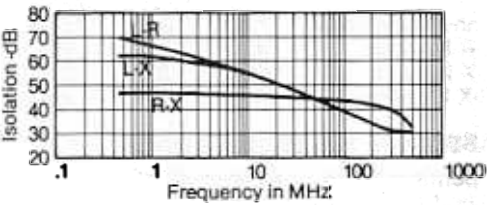
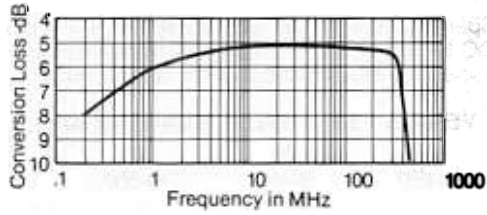
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**TYPICAL PERFORMANCE**

Impedance: All ports 50 ohms  
 1 dB Compression Point: +15 dBm  
 1 dB Desensitization Point: +13 dBm  
 3rd Order Intercept Point: +30 dBm  
 Noise Figure is within 1 dB of conversion loss  
 LO Power Range: +13 to +23 dBm



**ENVIRONMENTAL CONDITIONS**

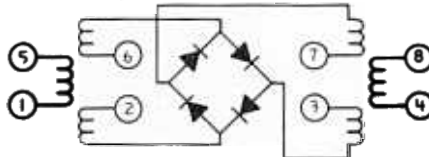
**GUARANTEED ENVIRONMENTAL PERFORMANCE:**

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)		
Solderability	208C	
Terminal Strength	211A	C
Resistance to Soldering Heat	210A	B

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

**FUNCTIONAL SCHEMATIC**



**PIN CONNECTIONS**

- LO 1
- RF 8
- IF 3,7
- GROUND 2,4,5,6
- CASE —
- GROUND 2,6

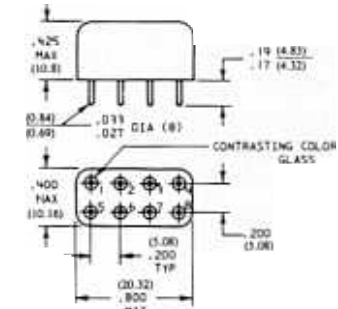
**PACKAGE**

**MATERIAL:**

Header: 1010 CRS  
 Pins: #52 Alloy  
 Seals: Glass  
 Cover: 18% Grade A Nickel Silver per ASTM B112-66, Alloy 2; QQ-C-585-1, Comp. 2, CDA-752 (65% Copper, 18% Nickel, 17% Zinc)

**FINISH:**

Cover: Nickel Silver  
 Header: Bright Tin Dip per MIL-T-10727 Class II  
 Pins: Bright Tin Dip per MIL-T-10727 Class II



XXX ± .010  
 (XX ± .25)

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