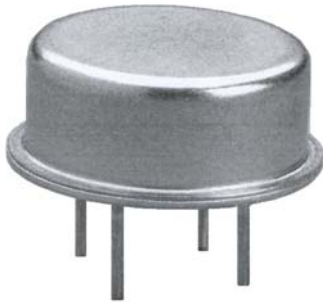




DBM-177  
 Low Level TO-8  
 Packaged Double  
 Balanced Mixer  
 5-1500 MHz



**DESCRIPTION**

DBM-177 is a miniature double balanced mixer combining very wide bandwidth with the convenience of a TO-8 package. Four closely matched diodes and two rugged transmission line transformers are sealed in this package.

DBM-177 is recommended in wide-band up/down frequency convertor applications requiring a miniature package and good overall electrical performance.

Each DBM-177 mixer is individually tested to S.M.D.I.'s demanding quality and performance specifications.

**GUARANTEED MINIMUM PERFORMANCE DATA**

**TEST CONDITION:**

LO + 7 dBm (High side LO)  
 RF - 10 dBm  
 IF 100 MHz

**NOTE:**

Specifications below, guaranteed with IF from DC to 500 MHz. For higher IF frequencies, consult IF response curve for typical rolloff.

For best performance do not rely on the ground pin alone for grounding. The above performance is guaranteed with the base surface of the header grounded to the circuit board ground plane. Use of conductive epoxy, or a mechanical clip is recommended.

**OVERALL FREQUENCY RANGE IN MHz:**

L	R	X
5-1500	5-1500	DC-1400

**FREQUENCY BANDS IN MHz:**

	5-50	50-700	700-1500
Conversion Loss	8.5	7.0	10.0
L-R Isolation	45	30	20
L-X Isolation	40	25	17
R-X Isolation	35	20	10

**ABSOLUTE MAXIMUM RATINGS:**

Operating Temp. - 54 to + 100°C  
 X-port Input Current 50 mA  
 Total Input Power 200 mW @ +25°C  
 Derate linearly to 50 mW @ 100°C

**DC POLARITY:**

Positive with L and R port signals in-phase.

Specifications subject to change without notice.

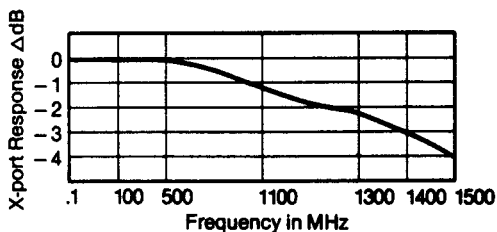
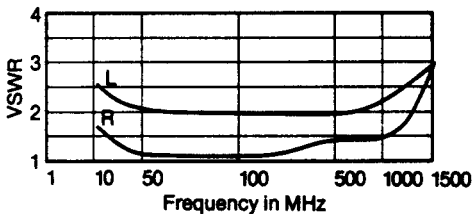
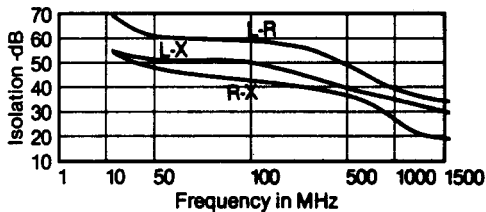
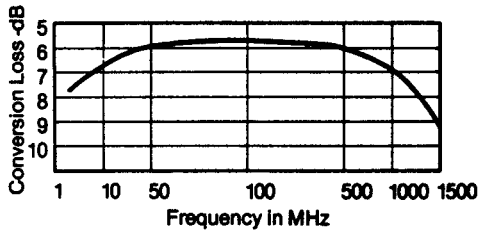
8.10.04 Rev. A

DBM-177  
 Low Level TO-8  
 Packaged Double  
 Balanced Mixer  
 5-1500 MHz



**TYPICAL PERFORMANCE**

Impedance: All ports 50 ohms  
 1 dB Compression Point: 0 dBm  
 1 dB Desensitization Point: -2 dBm  
 3rd Order Intercept Point: +10 dBm  
 Noise Figure is within 1 dB of conversion loss  
 LO Power Range: +4 to +13 dBm



Specifications subject to  
 change without notice.

**ENVIRONMENTAL  
 CONDITIONS**

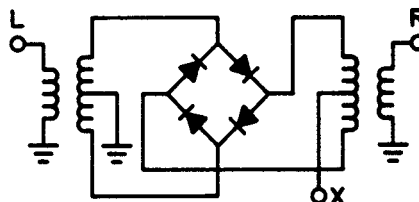
**GUARANTEED ENVIRONMENTAL  
 PERFORMANCE:**

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**



**PACKAGE**

**MATERIAL:**

Header: F15 Kovar per ASTM Standard F-15-68, (Chemical Composition per MIL-STD-1276, Type K)  
 Cover: Nickel 200 per ASTM B162-58T  
 Leads: Kovar, Chemical Composition per MIL-STD-1276, Type K  
 Seals: Glass

**FINISH:**

Header & Leads: Nickel per QQ-N-290, Class II  
 Cover: Nickel 200 per ASTM B162-58T

