

DBM-1200
 Miniature
 Connectorized
 Double
 Balanced
 Mixer
 0.5-13.0 GHz



DESCRIPTION

DBM-1200 is a high performance miniature SMA connectorized double balanced mixer, utilizing precision matched beam-lead Schottky barrier diodes. The L and R ports have a bandwidth of 0.5 GHz to 13.0 GHz while the X port covers a bandwidth of 5 MHz to 5 GHz. Inputs to any two ports within their specified frequency range will produce the sum and difference frequency at the third port, with a minimum of undesired harmonic modulation products. The double balanced mixer may be used as an up converter, down converter, spectrum inverter or for any other frequency changing application. The broadband X port makes this mixer ideal for modern high frequency IF receiver design. Other uses are a double sideband suppressed carrier modulator, bi-phase modulator or frequency doubler.

The combination of S.M.D.I. broadband transformer techniques plus the use of beam-lead Schottky barrier diodes achieve consistent low mixer noise figures and stable isolations. Precise transformer and diode balance provide two-tone third order IM ratios typically better than 90 dB with - 30 dBm input signals. Unique transformer design allows almost constant intermodulation suppression over the mixer's entire operating frequency range.

This miniature SMA connectorized package is RFI shielded and internally constructed to withstand severe environments.

GUARANTEED MINIMUM PERFORMANCE DATA

TEST CONDITION:

LO + 13 dBm (High side LO)
 RF - 10 dBm
 IF 500 MHz

NOTE:

Specifications below guaranteed with IF from 5 to 1000 MHz. For higher IF frequencies, consult IF response curve for typical rolloff.

OVERALL FREQUENCY RANGE IN GHz:

L	R	X
.5-13	.5-13	.005-5

FREQUENCY BANDS IN GHz:

	1-4	4-8	8-12.4
Conversion Loss	8.0	8.5	10.5
L-R Isolation	17	20	14
L-X Isolation	25	17	15
R-X Isolation	25	25	17

ABSOLUTE MAXIMUM RATINGS:

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

Specifications subject to change without notice.

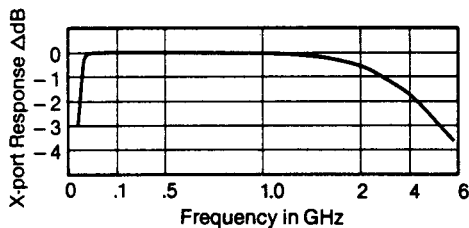
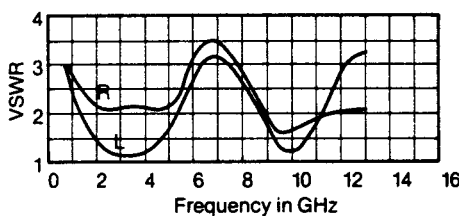
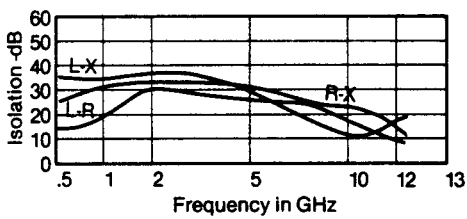
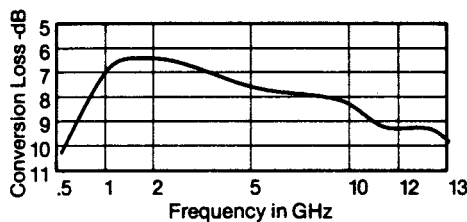
8.10.04 Rev. A

DBM-1200
 Miniature
 Connectorized
 Double
 Balanced
 Mixer
 0.5-13.0 GHz



TYPICAL PERFORMANCE

Impedance: All ports 50 ohms
 1 dB Compression Point: +6 dBm
 1 dB Desensitization Point: +4 dBm
 3rd Order Intercept Point: +15 dBm
 Noise Figure is within 1 dB of conversion loss
 LO Power Range: +10 to +17 dBm



Specifications subject to change without notice.

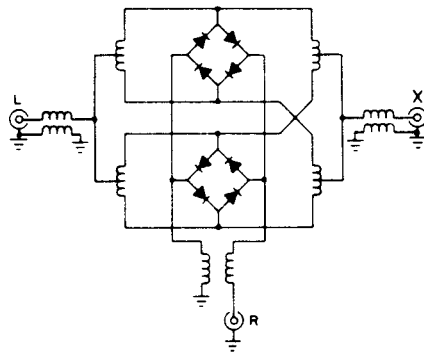
ENVIRONMENTAL CONDITIONS

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

FUNCTIONAL SCHEMATIC



PACKAGE

MATERIAL:

Aluminum, 6061-T6
 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:

Bright nickel per QQ-N-290, Class 1, Form SB, Grade E
 Connectors: Per paragraph 4.6.11 of MIL-C-39012
 Pins: Gold per MIL-G-45204, Type 1, Grade C, Class 2

