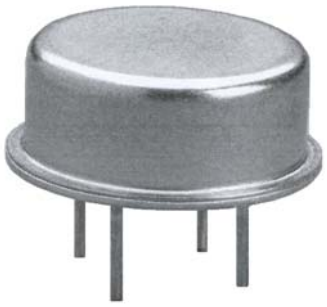
DBM-186
TO-8 Packaged Wideband Double Balanced Microwave Mixer
10-4000 MHz

SIRENZA® MICRODEVICES



DESCRIPTION

DBM-186 is a miniature double balanced mixer that combines microwave performance with the economy and convenience of a TO-8 package. Five unique transformers and eight matched Schottky diodes are sealed in a metal package to withstand severe environments.

Each DBM-186 mixer is individually tested to S.M.D.I.'s demanding quality and performance specifications.

GUARANTEED MINIMUM PERFORMANCE DATA

TEST CONDITION:

LO + 13 dBm (High side LO)
RF − 10 dBm
IF 100 MHz

NOTE:

Specifications below, guaranteed with IF from 50 to 1000 MHz. For higher IF frequencies, consult IF response curve for typical rolloff.

For best performance do not rely on 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
10-4000	10-4000	5-4000

FREQUENCY BANDS IN MHz:

	10-50	50-1000	1000-2500	2500-4000
Conversion Loss	8.5	8.0	8.5	10.5
L-R Isolation	25	25	15	15
L-X Isolation	15	20	15	15
R-X Isolation	15	20	15	10

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

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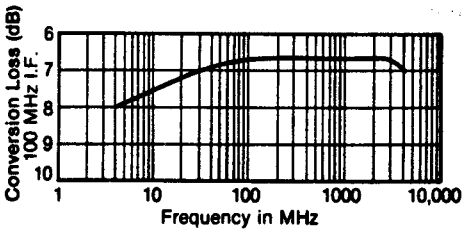
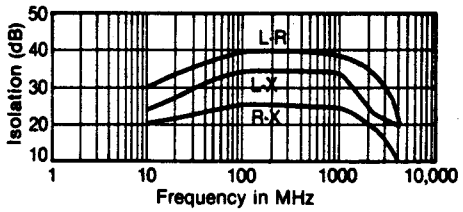
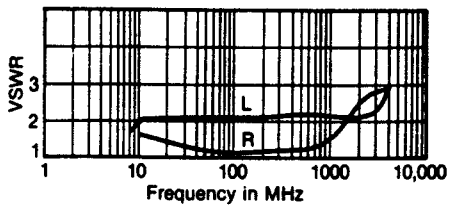
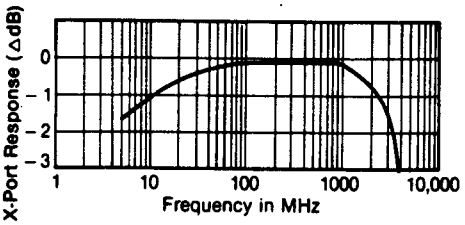
TYPICAL PERFORMANCE

Impedance: All ports 50 ohms
1 dB Compression Point: +6 dBm
1 dB Desensitization Point: +4 dBm
3rd Order Intercept Point: +17 dBm
Noise Figure is within 1 dB of conversion loss
LO Power Range: +10 to +20 dBm









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ENVIRONMENTAL CONDITIONS

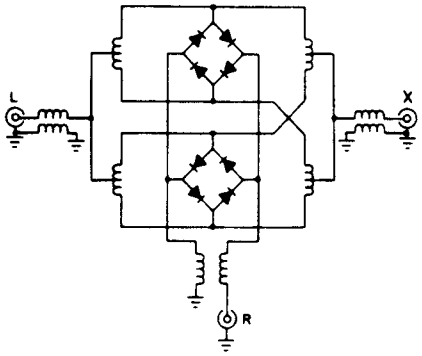
GUARANTEED ENVIRONMENTAL PERFORMANCE:

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	IIF
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



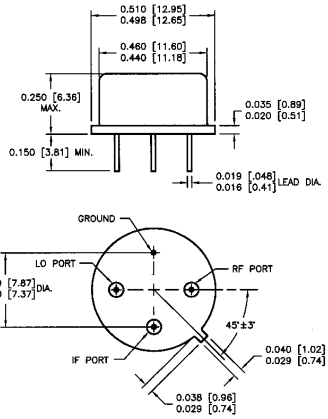
PACKAGE

CASE 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



8.20.04 Rev A