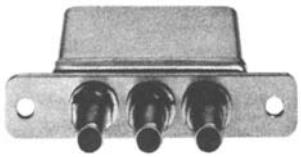
DBM-500 Microwave Double Balanced Mixer 1.7-4.2 GHz

SIRENZA® MICRODEVICES



DESCRIPTION

DBM-500 is SMA connector-equipped double balanced mixer especially suitable for communications equipment applications. The wide bandwidth allows use of this mixer both in the 2 GHz radio relay band as well as the 3.7-4.2 GHz Satellite communications band. Its very low conversion loss, typically 5 dB, is particularly valuable in designs where system noise figure is controlled mostly by the first mixers conversion loss.

The rugged transmission line transformers and a quad of precisely matched Schottky diodes are sealed in a sturdy package with a mounting bracket, simplifying mechanical installation.

Each DBM-500 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 100 MHz. For higher IF frequencies, consult IF response curve for typical rolloff.

OVERALL FREQUENCY RANGE IN GHz:

L	R	X
1.7-4.2	1.7-4.2	DC-1.5

FREQUENCY BANDS IN GHz:

	2-4	1.7-4.2
Conversion Loss	6.5	7.5
L-R Isolation	25	20
L-X Isolation	17	17
R-X Isolation	10	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

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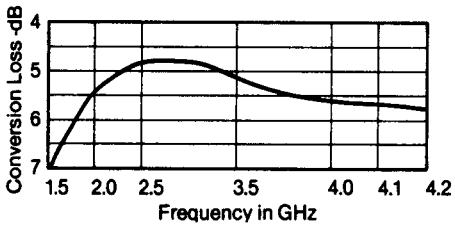
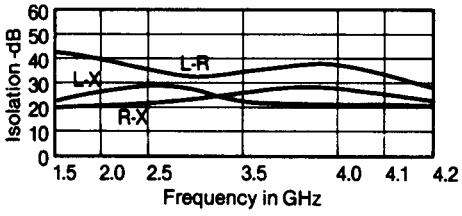
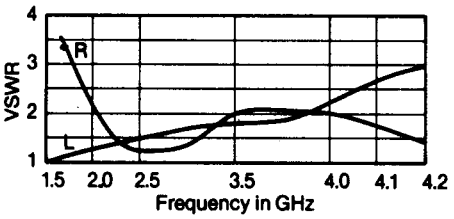
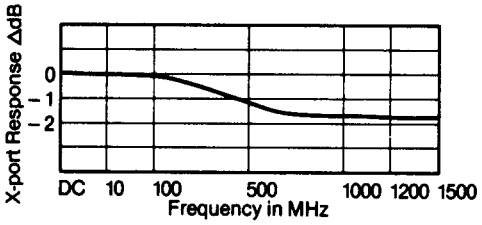
TYPICAL PERFORMANCE

Impedance: All ports 50 ohms
1 dB Compression Point: 0 dBm
1 dB Desensitization Point: −2 dBm
3rd Order Intercept Point: +8 dBm
Noise Figure is within 1 dB of conversion loss
LO Power Range: +4 to +13 dBm









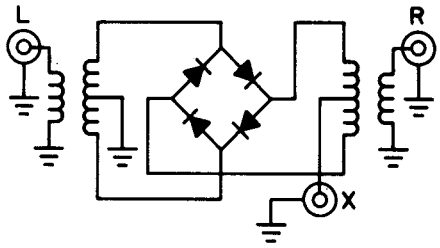
ENVIRONMENTAL CONDITIONS

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 (15 minutes per axis)	214	IIF

FUNCTIONAL SCHEMATIC



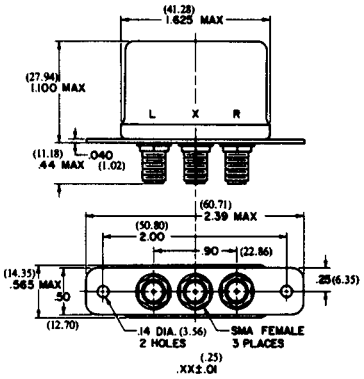
PACKAGE

MATERIAL:

Header and Plate: CRS per QQ-S-698
Cover: Terne Coated Steel per Federal Standard Specifications QQ-T-191b, Class 1, Type 2, Grade B
Base material conforms to QQ-S-698
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
Federal Specification L-P-403

FINISH:

Header, Plate, and Cover: bright nickel per QQ-N-290A, Class 1, Grade F, Form SB over copper per MIL-C-14550A, Class 3
Connector: Per paragraph 4,6,11 of MIL-C-39012
Pin: Gold per MIL-G-45204, Type 1, Grade C, Class 2



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