



DBM-190
Ultra Low Level
Subminiature
Flatpack Double
Balanced Mixer
10-1000 MHz



DESCRIPTION

DBM-190 is a miniature double balanced mixer which combines very low LO power requirements with a rugged flatpack package.

Over reduced temperature range the mixer offers good overall performance with local oscillator power as low as -3 dBm. Four special low barrier Schottky diodes and two rugged transmission line transformers are sealed in the flatpack package and designed to withstand severe environments.

DBM-190 is recommended in applications where LO power conservation and a rugged package are essential.

Each DBM-190 mixer is individually tested to S.M.D.I.'s demanding quality and performance specifications.

GUARANTEED MINIMUM PERFORMANCE DATA

TEST CONDITION:

LO + 0 dBm (High side LO)
RF - 20 dBm
IF 100 MHz

NOTE:

Specifications below, guaranteed with IF from DC to 750 MHz. For higher IF frequencies, consult IF response curve for typical rolloff.

OVERALL FREQUENCY RANGE IN MHz:

L	R	X
10-1000	10-1000	DC-1000

FREQUENCY BANDS IN MHz:

	10-100	100-1000
Conversion Loss	9.5	9.0
L-R Isolation	40	30
L-X Isolation	35	20
R-X Isolation	30	15

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:

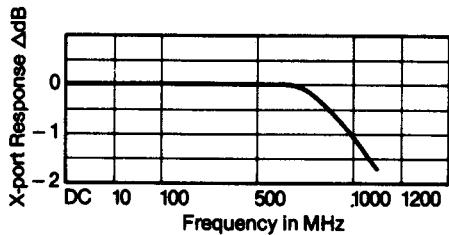
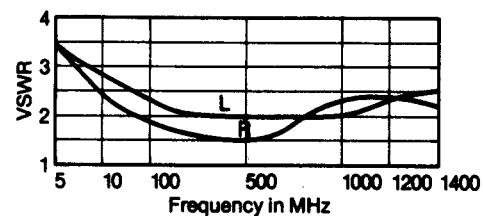
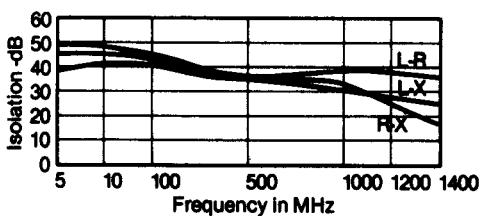
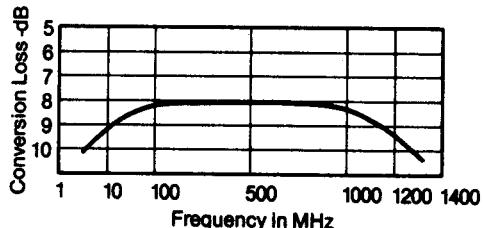
Negative with L and R port signals in-phase

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TYPICAL PERFORMANCE

Impedance: All ports 50 ohms
1 dB Compression Point: -8 dBm
1 dB Desensitization Point: -10 dBm
3rd Order Intercept Point: +7 dBm
Noise Figure is within 1 dB of conversion loss
LO Power Range: -3 to +5 dBm



ENVIRONMENTAL CONDITIONS

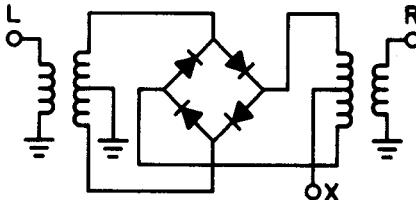
GUARANTEED ENVIRONMENTAL PERFORMANCE:

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
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:

F15 Kovar per ASTM Standard F15-68, (Chemical composition per MIL-STD-1276, Type K)

FINISH:

Plating, all metal parts: gold per MIL-G-45204, Type I, Grade A, Class 1, over nickel per MIL-C-26074, Class 1

LEADS:

Kovar per MIL-STD-1276, Type K

