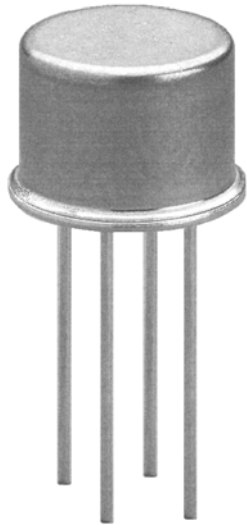


DBM-141  
Subminiature  
TO-5 Double  
Balanced  
Mixer  
.4-400 MHz



**DESCRIPTION**

DBM-141 is a subminiature double balanced mixer which combines wide bandwidth and low conversion loss to 400 MHz with the convenience of a TO-5 package suitable for wave solder installations. A quad of precision matched beam lead Schottky diodes and two rugged transformers are sealed in the TO-5 package.

DBM-141 is recommended for applications where state of the art in miniaturization is required without sacrificing electrical performance.

**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 MHz:**

L	R	X
.4-400	4-400	DC-400

**FREQUENCY BANDS IN MHz:**

	.4-1.0	1-100	100-400
Conversion Loss	7.0	6.5	7.5
L-R Isolation	45	40	30
L-X Isolation	40	35	25
R-X Isolation	20	20	20

**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.

Specifications subject to change without notice.

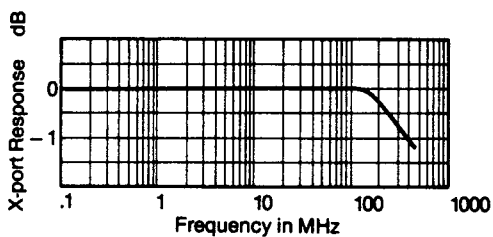
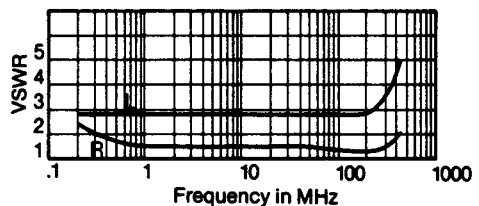
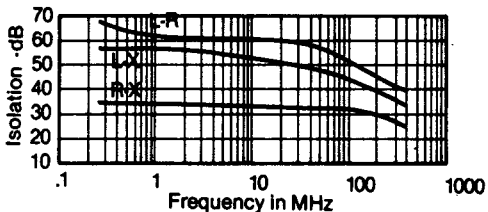
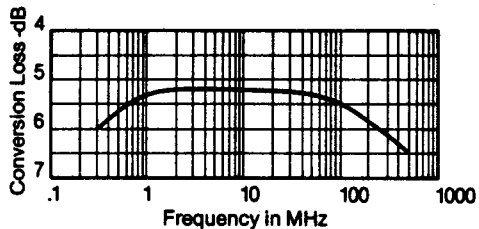
8.10.04 Rev. A

DBM-141  
 Subminiature  
 TO-5 Double  
 Balanced  
 Mixer  
 .4-400 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

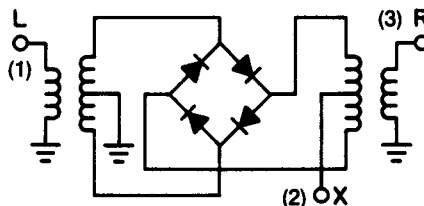
#### GUARANTEED ENVIRONMENTAL PERFORMANCE:

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

#### FINISH:

Header & Leads: Gold plating per MIL-G-45204, Type I, Grade A Class 1, over nickel per QQ-N-290, Class 1, Form SB  
 Cover: Nickel 200 per ASTM B162-58T

