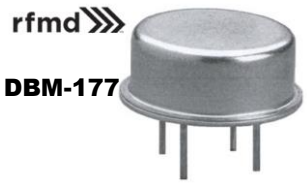
DBM-177

Low Level TO-8 Packaged Double Balanced Mixer 5MHz to 1500MHz

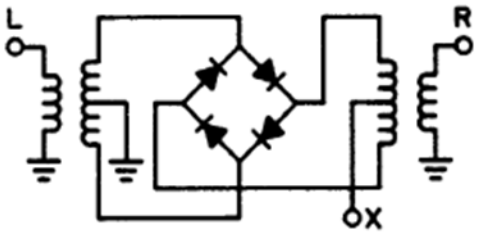


Package: TO-8

DBM-177 is a miniature double balanced mixer combining very wide bandwidth with the convenience of a TO-8 package. Four closely matched diodes and two rugged transmission line transformers are sealed in this package.

DBM-177 is recommended in wideband up/down frequency convertor applications requiring a miniature package and good overall electrical performance.

Each DBM-177 mixer is individually tested to RFMD's demanding quality and performance specifications.



Functional Schematic

Features

- L and R Ports: 5MHz to 1500MHz Operation
- X Port: DC to 1400MHz
- Wide Bandwidth
- Convenient TO-8 Package

Applications

- Milcom
- Electronic Warfare
- Industrial, Scientific, Medical
- Aerospace Avionics
- Military and Civilian Radar
- Satellite Communications

Ordering Information

Contact RFMD authorized sales agent or factory.

RF Micro Devices Inc. 7628 Thorndike Road, Greensboro, NC 27409-9421
DS131107
For sales or technical support, contact RFMD at +1.336.678.5570 or customerservice@rfmd.com.

Absolute Maximum Ratings

Parameter	Rating	Unit
Operating Temperature Range	-54 to +100	°C
X-Port Input Current	50	mA
Total Input Power at 25°C	200	mW
Total Input Power (Derated Linearly) at 100°C	50	mW

Specifications guaranteed with IF from DC to 500MHz. For higher IF frequencies, consult IF response curve for typical roll-off.

Environmental conditions: All units are designed to meet their specifications between -54°C and +100°C and after exposure to any or all of the following tests per MIL-STD-202E.

- Thermal Shock: Method 107D, Test Condition B
- Altitude: Method 105C, Test Condition G
- H.F. Vibration: Method 204C, Test Condition D
- Mechanical Shock: Method 213B, Test Condition C
- Random Vibration (15 minutes per axis): Method 214, Test Condition IIF
- Solderability: Method 208C
- Terminal Strength: Method 211A, Test Condition C
- Resistance to Soldering Heat: Method 210A, Test Condition B

Sealed units meet the requirements of Method 106D of MIL-STD-202E when exposed to humidity.

Caution! ESD sensitive device.

Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability. Specified typical performance or functional operation of the device under Absolute Maximum Rating conditions is not implied.

Nominal Operating Parameters

Parameter	Specification			Unit	Condition
	Min	Typ	Max		
General Performance					**LO +7dBm (High side LO), RF -10dBm, IF 100MHz**
Operating Frequency Range					
L Port	5		1500	MHz	
R Port	5		1500	MHz	
X Port	DC		1400	MHz	

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For best performance do not rely on the 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 the conductive epoxy or a mechanical clip is recommended.

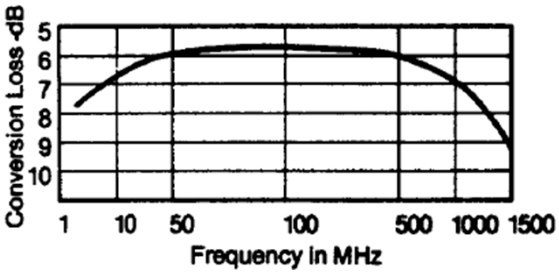
Frequency Bands

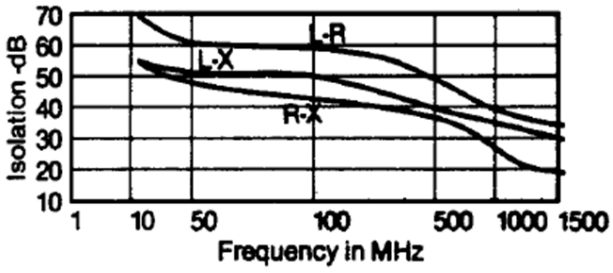
	5MHz to 50MHz (dB)	50MHz to 700MHz (dB)	700MHz to 1500MHz (dB)
Conversion Loss	8.5	7.0	10.0
L-R Isolation	45	30	20
L-X Isolation	40	25	17
R-X Isolation	35	20	10

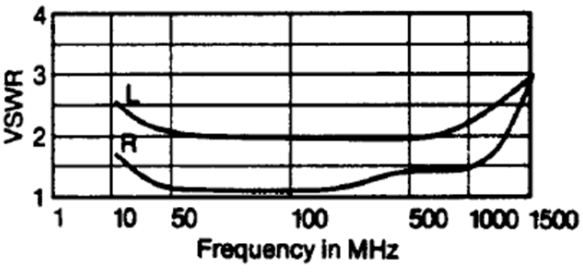
Specifications guaranteed with IF from DC to 500MHz. For higher IF frequencies, consult IF response curve for typical roll-off.

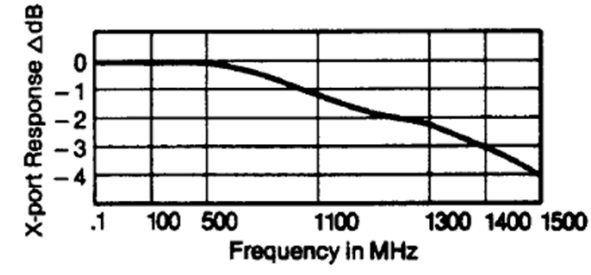
Typical Performance

Impedance: All ports 50Ω; 1dB compression point: 0dBm; 1dB desensitization point: -2dBm; 3rd order Intercept point: +10dBm; noise figure is within 1dB of conversion loss; LO power range: +4dBm to +13dBm









Package Drawing (Dimensions in millimeters)

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 and leads: nickel per QQ-N-290, class II; cover: nickel per ASTM B162-58T