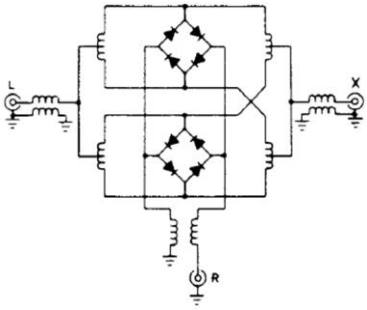
DBM-183

High Level Subminiature Flatpack Double Balanced Mixer 10MHz to 4000MHz

DBM-183 is a high performance double balanced mixer that offers extremely wide bandwidth while maintaining a high intercept point and isolations. The IF port is typically down only 1 dB at 4 GHz making it an ideal up/downconvertor in wideband applications. The linearity is virtually constant over the entire bandwidth due to unique transformer design and the use of beam lead Schottky diodes. The subminiature package is sealed, RFI shielded, and constructed to withstand severe environment.

Each DBM-183 is individually tested to RFMD's demanding quality and performance specifications.



Functional Schematic

Package: Flatpack

Features

- L and R Ports: 10MHz to 4000MHz Operation
- X Port: 5MHz to 4000MHz
- High Intercept Point and Isolations, Wide Bandwidth
- RFI Shielded, Constructed to Withstand Severe Environments

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
DS131104
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
Total Input Power at 25°C	400	mW
Total Input Power (Derated Linearly) at 100°C	100	mW

Specifications guaranteed with IF from 50 to 400MHz. 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 +13dBm (High side LO), RF -10dBm, IF 100MHz**
Operating Frequency Range					
L Port	10		4000	MHz	
R Port	10		4000	MHz	
X Port	5		4000	MHz	

Specifications guaranteed with IF from 50 to 400MHz. For higher IF frequencies, consult IF response curve for typical roll-off.

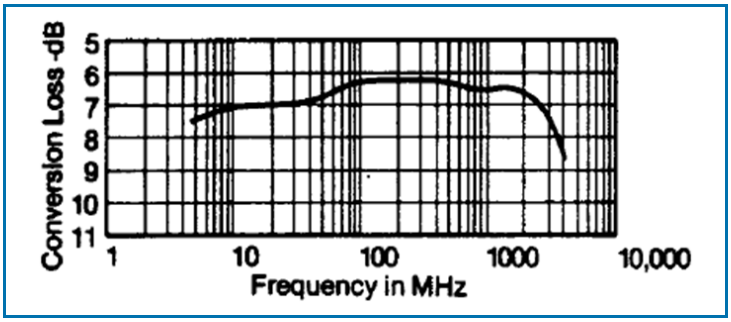
Frequency Bands

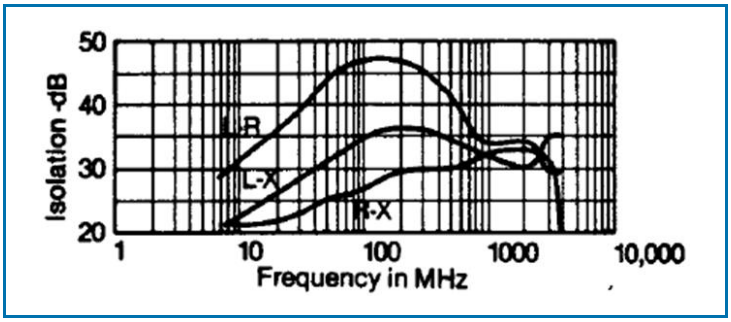
	10MHz to 50MHz (dB)	50MHz to 1000MHz (dB)	1000MHz to 2500MHz (dB)	2500MHz to 4000MHz (dB)
Conversion Loss	8.5	8.0	8.5	10.5
L-R Isolation	25	27	25	20
L-X Isolation	15	20	20	20
R-X Isolation	15	20	25	15

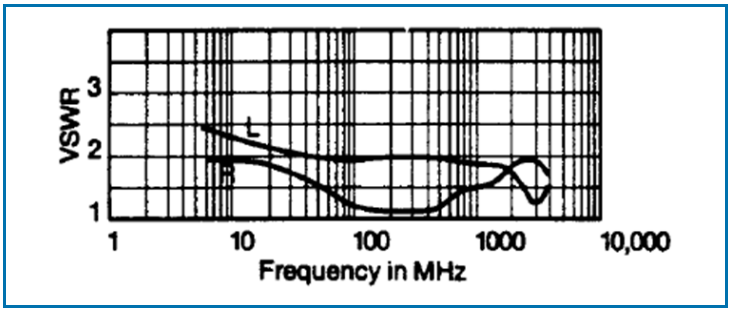
Specifications guaranteed with IF from 50 to 400MHz. For higher IF frequencies, consult IF response curve for typical roll-off.

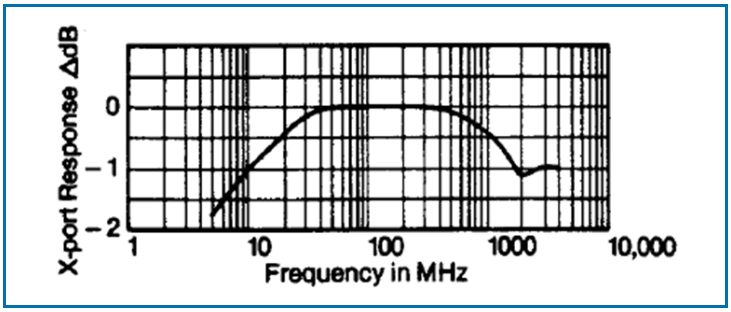
Typical Performance

Impedance: All ports 50Ω; 1dB compression point: +6dBm; 1dB desensitization point: +4dBm; 3rd order Intercept point: +20dBm; noise figure is within 1dB of conversion loss; LO power range: +10dBm to +20dBm









Package Drawing (Dimensions in millimeters)

Material: F15 Kovar per ASTM Standard F-15-68 (chemical composition per MIL-STD-1276, type K)

Finish: plating: all metal parts, gold per MIL-G-45204, type 1, grade A, class 1, over nickel per MIL-C-26074, class 1

Leads: Kovar per MIL-STD-1276, type K