

# Double-Balanced Mixer, 2.0 - 4.0 GHz

MDC-176

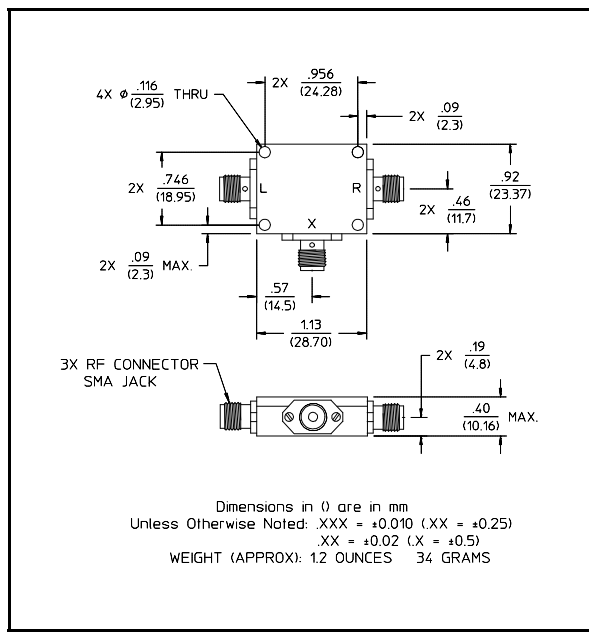
## Features

- Conversion Loss: 4.5 dB Typical Midband
- L-R Isolation: 25 dB Typical Midband
- Operable with Starved LO
- Impedance: 50 Ohms Nominal
- Maximum Input Power: 300 mW Max, Derated 3.2 mW/°C
- MIL-STD-883 Screening Available

## Description

Transformers convert the LO and RF paths to balanced lines connecting to a low barrier, Schottky diode ring quad. These transformers help provide excellent isolation between ports. Conversion loss is low. The direct connection of the IF port to the diode quad allows these mixers to be used as phase detectors and bi-phase modulators.

## C-3



## Electrical Specifications<sup>1</sup>: T<sub>A</sub> = -55°C to +85°C

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Frequency Range	RF, LO Ports IF Port (3 dB BW)	2.0 - 4.0 DC - 300	GHz MHz	— —	— —	— —
Conversion Loss <sup>2</sup>			dB	—	—	6
Isolation	LO to RF	2.0 - 3.0 GHz	dB	15	—	—
		3.0 - 4.0 GHz	dB	20	—	—
	LO to IF	2.0 - 3.0 GHz	dB	17	—	—
		3.0 - 4.0 GHz	dB	20	—	—
	RF to IF	2.0 - 4.0 GHz	dB	20	—	—
RF Input	1 dB Compression 1 dB Desensitization	— —	dBm dBm	— —	+2.5 0	— —
SSB Noise Figure	Within 1 dB of Conversion Loss Max	—	—	—	—	—
3rd Order Input Intercept		2.0 GHz	dBm	—	+7	—
		4.0 GHz	dBm	—	+7	—

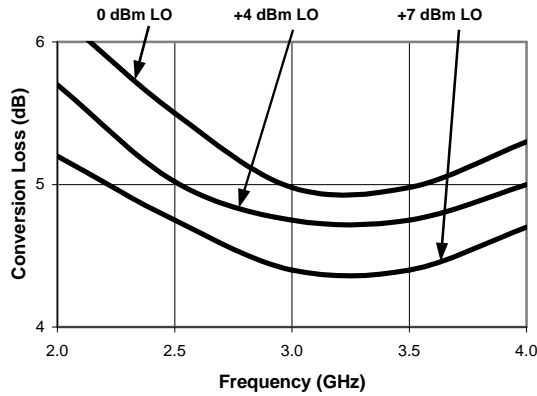
1. All specifications apply when operated at +7 dBm available LO power with 50 ohm source and load impedance.

2. For IF frequencies of DC - 100 MHz and an RF to -5 dBm or lower.

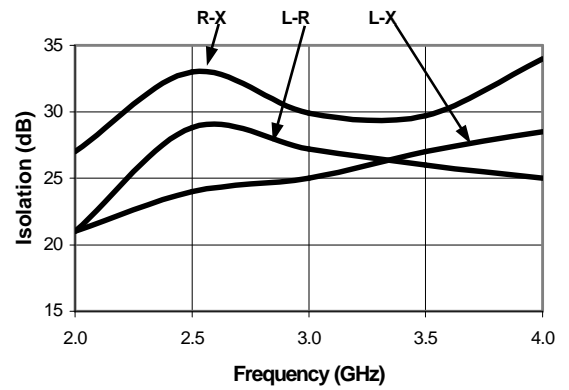
This product contains elements protected by United States Patent Number 4,224,572.

Typical Performance Curves

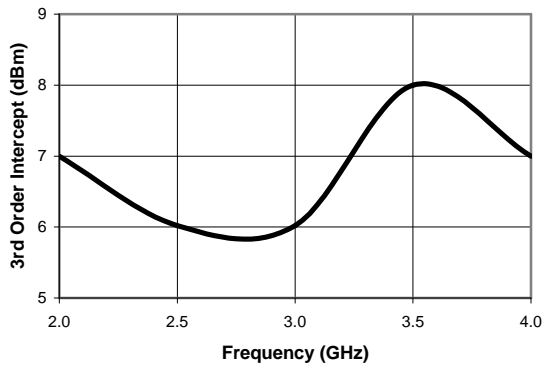
Conversion Loss



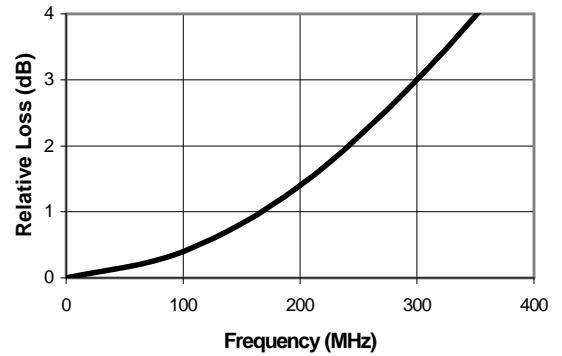
Isolation



3rd Order Intercept



IF Port Response



Ordering Information

Part Number	Package
MDC-176 SMA	C-3

Specifications subject to change without notice.

- North America: Tel. (800) 366-2266
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