

Double-Balanced Mixer, 0.7 - 2 GHz

V 3.00

MD-614

Features

- Fully Hermetic Package
- Conversion Loss: 6 dB Typical Midband
- Isolation: 25 dB Typical
- Impedance: 50 Ohms Nominal
- Maximum Input Power: 300 mW Max, Derated to 85°C @ 3.2 mW/°C
- IF Port Current: 50 mA Max.
- MIL-STD-883 Screening Available

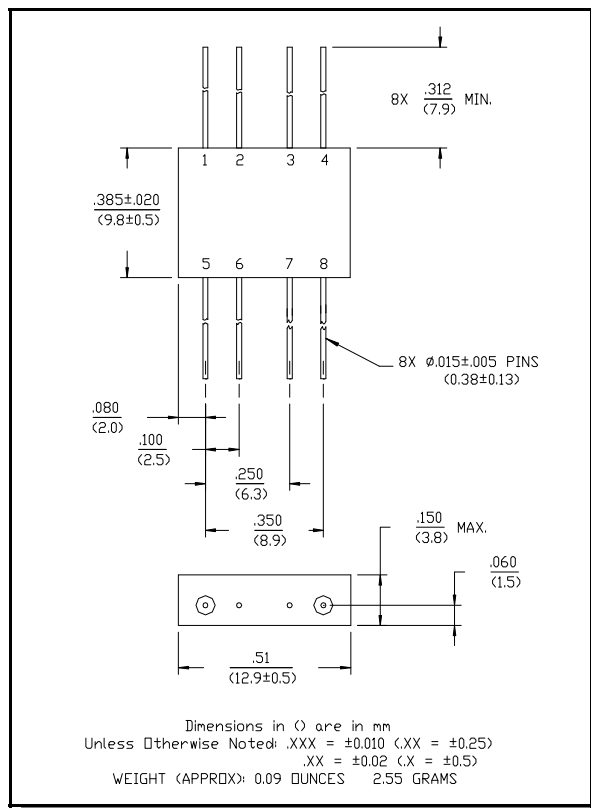
Description

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.

Pin Configuration

Pin No.	Function	Pin No.	Function
1	GND	5	LO
2	GND	6	GND
3	GND	7	GND
4	IF	8	RF

FP-2



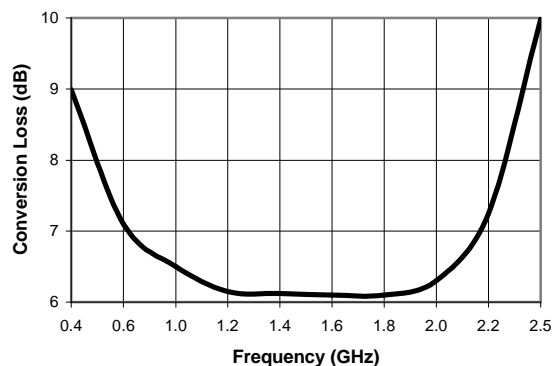
Electrical Specifications¹: T_A = -55°C to +85°C

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Frequency Range	RF, LO Ports IF Port	0.7 - 2.0 DC - 300	GHz MHz	— —	— —	— —
Conversion Loss			dB	—	—	8
Isolation	LO to RF	0.7 - 1 GHz 1 - 2 GHz	dB dB	23 20	— —	— —
	LO to IF	0.7 - 1 GHz 1 - 2 GHz	dB dB	20 12	— —	— —
	RF to IF	0.7 - 1 GHz 1 - 2 GHz	dB dB	23 15	— —	— —
DC Polarity	Negative	—	—	—	—	—
DC Offset	—	—	mV	—	≤3	—
RF Input	1 dB Compression	—	dBm	—	0	—
	1 dB Desensitization	—	dBm	—	-3.0	—
SSB Noise Figure	Within 1 dB of Conversion Loss Max	—	—	—	—	—
Typical Two-Tone IM Ratio	with a -10 dBm input, each input, 25 MHz and 35 MHz IF	600 - 2000 MHz	dB	—	≥36	—

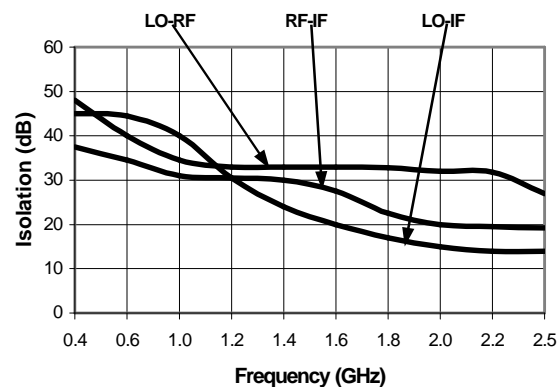
1. All specifications apply when operated at +7 dBm available LO power with 50 ohm source and load impedance.

Typical Performance Curves

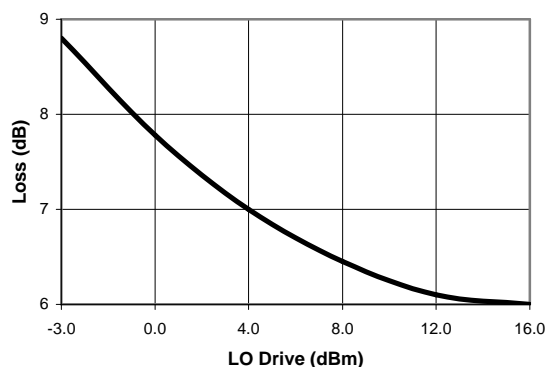
Conversion Loss



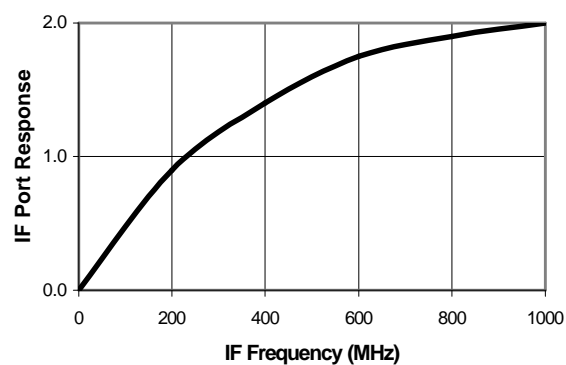
Isolation



Conversion Loss vs. Drive Level
 $(F_L = 2.0 \text{ GHz}, F_R = 1.5 \text{ GHz}, -10 \text{ dBm},$
 $IF = 500 \text{ MHz})$



IF Port Response



Ordering Information

Part Number	Package
MD-614 PIN	FP-2

Specifications subject to change without notice.

- North America: Tel. (800) 366-2266
- Asia/Pacific: Tel.+81-44-844-8296, Fax +81-44-844-8298
- Europe: Tel. +44 (1344) 869 595, Fax+44 (1344) 300 020

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