

Double-Balanced Mixer, 500 KHz - 500 MHz

MD-124

Features

- Usable down to 200 KHz
- Conversion Loss: 6.5 dB Typical
- Impedance: 50 Ohms Nominal
- Maximum Input Power: 300 mW max. @ 25°C,
Derated to 85°C @ 3.2 mW/°C
- IF Port Current: 50 mA Max.
- MIL-STD-883 Screening Available

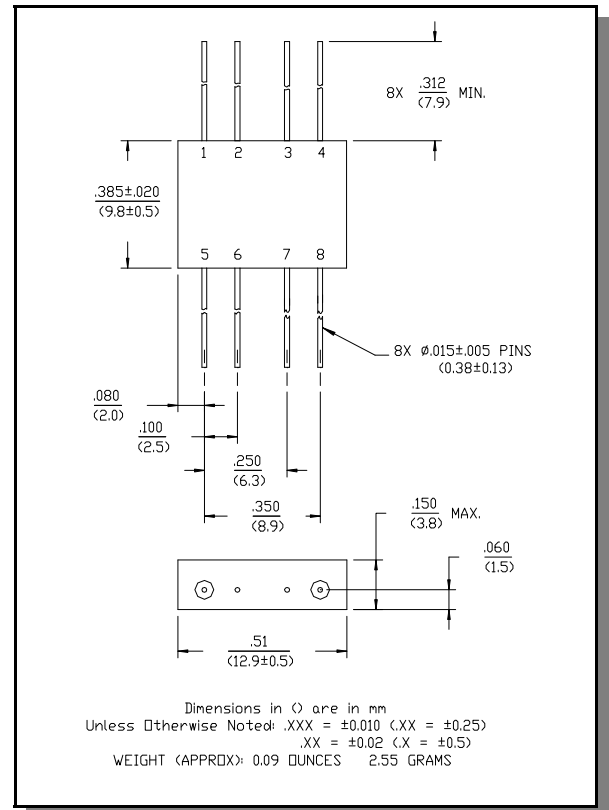
Description

Transformers convert to the LO and RF paths to balanced lines connecting 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	0.5 - 500	MHz	—	—	—
		DC - 500	MHz	—	—	—
Conversion Loss			dB	—	—	7.0
Isolation	LO to RF	0.5 - 10 MHz	dB	35	—	—
		10 - 200 MHz	dB	30	—	—
		200 - 500 MHz	dB	25	—	—
	LO to IF	0.5 - 10 MHz	dB	30	—	—
		10 - 200 MHz	dB	25	—	—
		200 - 500 MHz	dB	20	—	—
RF to IF	0.5 - 10 MHz	dB	25	—	—	
	10 - 200 MHz	dB	15	—	—	
	200 - 500 MHz	dB	15	—	—	
DC Polarity	Negative	—	—	—	—	
DC Offset	—	—	mV	—	≤3	—
RF Input	1 dB Compression 1 dB Desensitization		dBm	—	+2	—
			dBm	—	-2	—

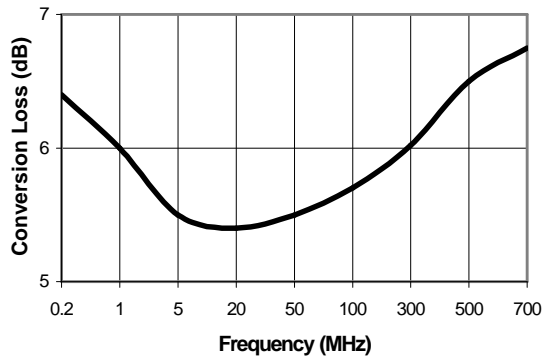
1. All specifications apply when operated at +7 dBm available LO power with 50 ohm source and load impedance.

Electrical Specifications: $T_A = -55^{\circ}\text{C}$ to $+85^{\circ}\text{C}$

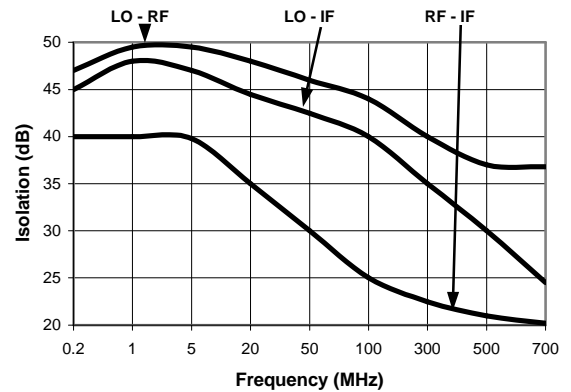
Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
SSB Noise Figure	Within 1 dB of Conversion Loss Max.	—	—	—	—	—
Typical Two Tone IM Ratio	With -10 dBm input, each input 25 MHz and 35 MHz IF	100 - 400 MHz 400 - 500 MHz	dB dB	— —	>50 >40	— —

Typical Performance Curves

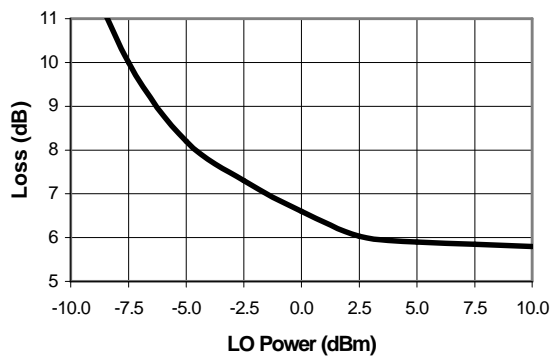
Conversion Loss (LO = +7 dBm, RF = -5 dBm)



Isolation



Conversion Loss vs. LO Power (LO = 35 MHz, RF = 30 MHz @ -20 dBm, IF = 5 MHz)



Ordering Information

Part Number	Package
MD-124 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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