Double-Balanced Mixer, 5 - 1500 MHz

V 3.00

MD-158

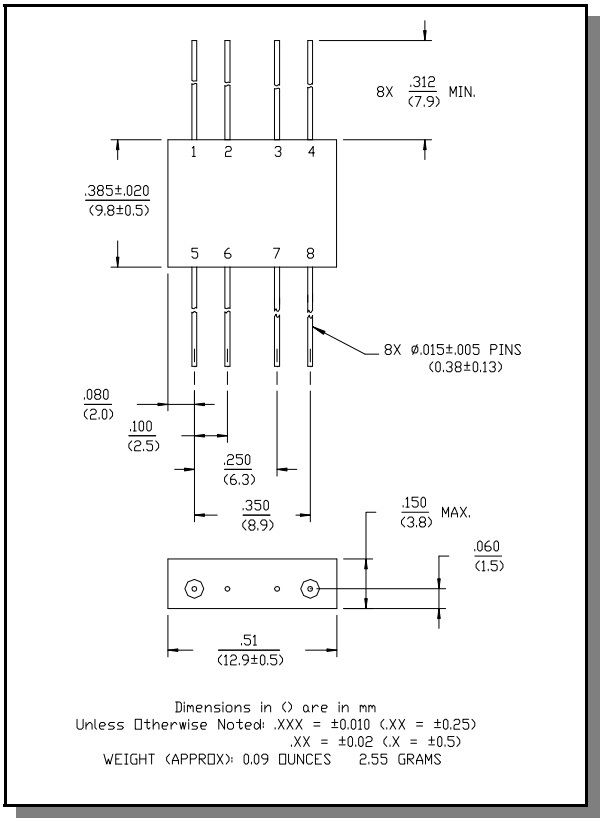
Features

- Low VSWR
- Conversion Loss: 6 dB Typical Midband
- LO-RF Isolation: 35 dB Typical Midband
- Conversion Loss Flatness: 1.5 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. Advanced transformer design yields improved VSWR.

FP-2



Pin Configuration

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

Electrical Specifications[1]: T_A = -55°C to +85°C

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Frequency Range	RF, LO Ports IF Port	5 - 1500 DC - 1000	MHz MHz	— —	— —	— —
Conversion Loss		5 - 1500 MHz 5 - 1000 MHz	dB dB	— —	— —	9 7
Isolation	LO to RF	5 - 1500 MHz 5 - 1000 MHz 5 - 600 MHz	dB dB dB	20 25 30	— — —	— — —
	LO to IF	5 - 1500 MHz 5 - 1000 MHz	dB dB	17 20	— —	— —
	RF to IF	5 - 1500 MHz 5 - 1000 MHz 5 - 600 MHz	dB dB dB	8 18 20	— — —	— — —
DC Polarity	Negative	—	—	—	—	—
DC Offset	—	—	mV	—	≤1	—
RF Input	1 dB Compression 1 dB Desensitization		dBm dBm	— —	+1 -1	— —

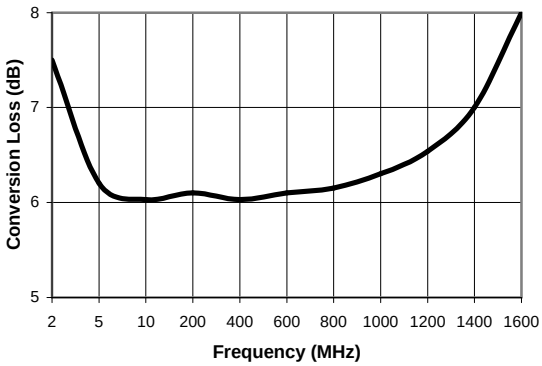
1. All specifications apply when operated at +7 dBm available LO power with 50 ohm source and load impedance.

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

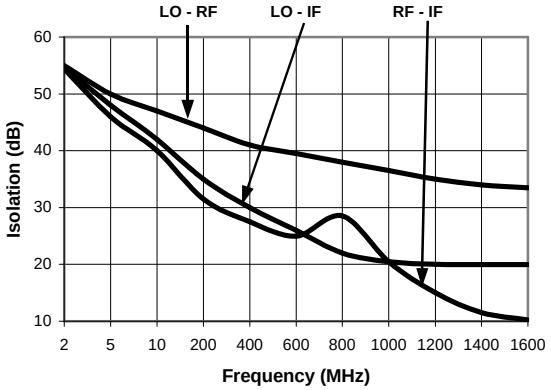
Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
SSB Noise Figure	Within 1 dB of Conversion Loss Max.	—	—	—	—	—
Typical Two-Tone IM Ratio	With –10 dBm input, each input 60 MHz and 70 MHz IF	300 MHz 1000 MHz	dB dB	— —	50 48	— —

Typical Performance Curves

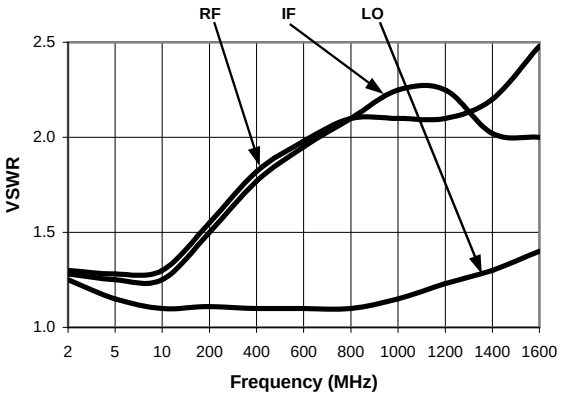
Conversion Loss



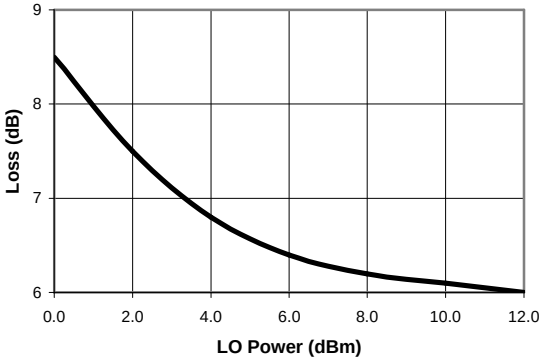
Isolation



VSWR



Conversion Loss vs. LO Power (RF @ 1000 MHz—10 dBm, IF = 50 MHz)



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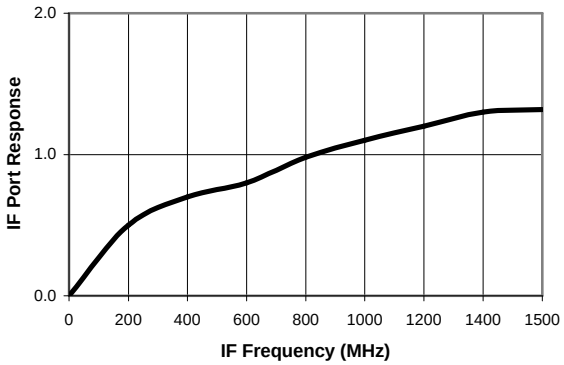
■ **Asia/Pacific:** Tel.+81-44-844-8296, Fax +81-44-844-8298
■ **Europe:** Tel. +44 (1344) 869 595, Fax+44 (1344) 300 020

Typical Performance Curves

IF Port Response



Ordering Information

Part Number	Package
MD-158 PIN	FP-2

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