

Double-Balanced Mixer, 10 - 1500 MHz

MD-/MDS-148

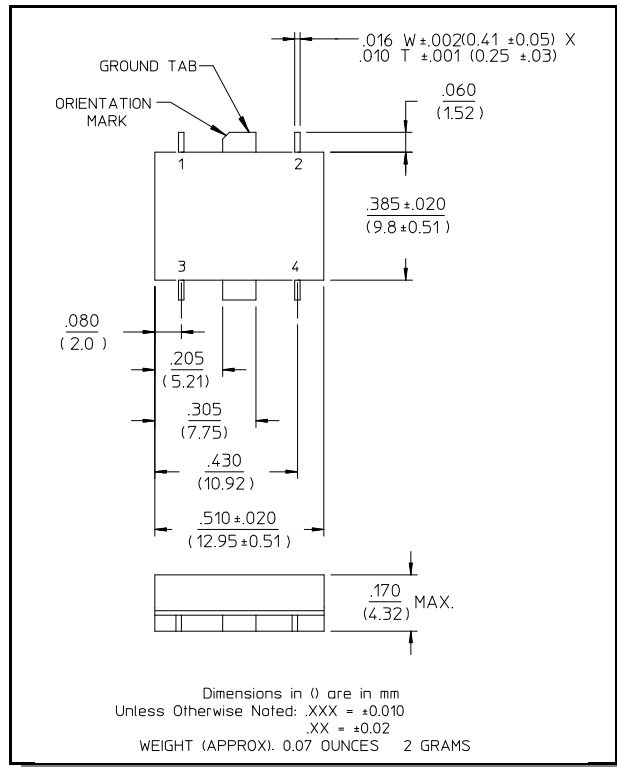
Features

- Fully Hermetic Package
- 1 dB Compression Point: +5 dBm
- Conversion Loss: 6 dB Typical Midband
- LO-RF/LO-IF Isolation: 40 dB Typical Midband
- Impedance: 50 Ohms Nominal
- Maximum Input Power: 300 mW Max, Derated to 85°C @ 3.2 mW/°C
- X Port Current: 50 mA Max.
- MIL-STD-883 Screening Available

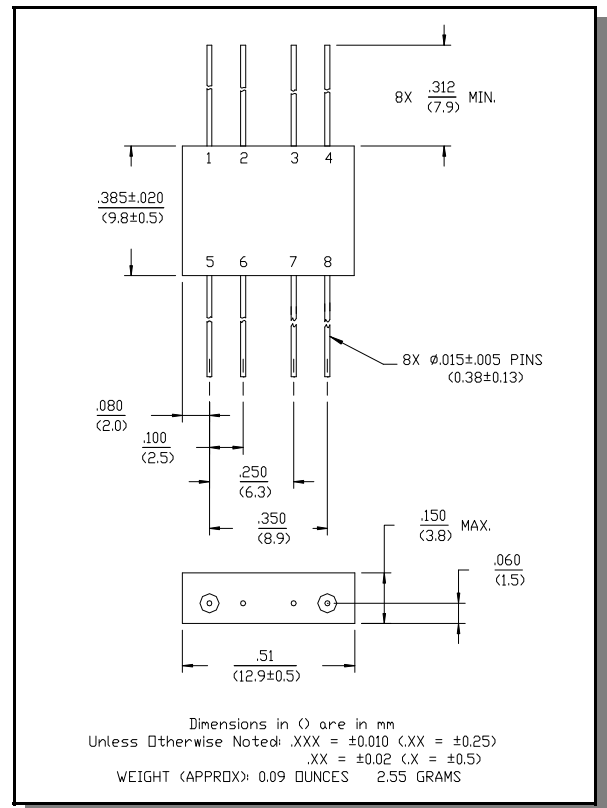
Description

Transformers convert the LO and RF paths to balanced lines connecting to a medium 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.

SF-1 (MDS-148)



FP-2 (MD-148)



Pin Configuration (MD-148)

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

Pin Configuration (MDS-148)

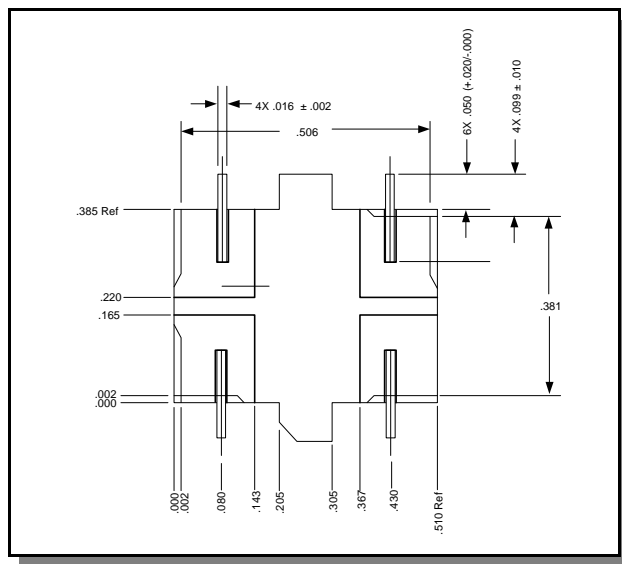
Pin No.	Function	Pin No.	Function
1	GND	3	LO
2	IF	4	RF

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

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Frequency Range	RF, LO Ports IF Port	10 - 1500 DC - 1500	MHz MHz	—	—	—
Conversion Loss		10 - 800 MHz 800 - 1500 MHz	dB dB	— —	— —	7.5 10
Isolation	LO to RF	10 - 100 MHz	dB	35	—	—
		100 - 1000 MHz	dB	25	—	—
		1000 - 1500 MHz	dB	20	—	—
	LO to IF	10 - 100 MHz	dB	35	—	—
		100 - 1000 MHz	dB	20	—	—
		1000 - 1500 MHz	dB	12	—	—
	RF to IF	10 - 100 MHz	dB	30	—	—
		100 - 1000 MHz	dB	18	—	—
		1000 - 1500 MHz	dB	8	—	—
DC Polarity	Negative	—	—	—	—	—
DC Offset	—	—	mV	—	≤10	—
RF Input	1 dB Compression 1 dB Desensitization	—	dBm	—	+5	—
		—	dBm	—	+3	—
SSB Noise Figure	Within 1 dB of Conversion Loss Max	—	—	—	—	—
Typical Two-Tone IM Ratio ²	with a -10 dBm input, each input, 25 MHz and 35 MHz IF	1500 MHz	dB	—	50	—

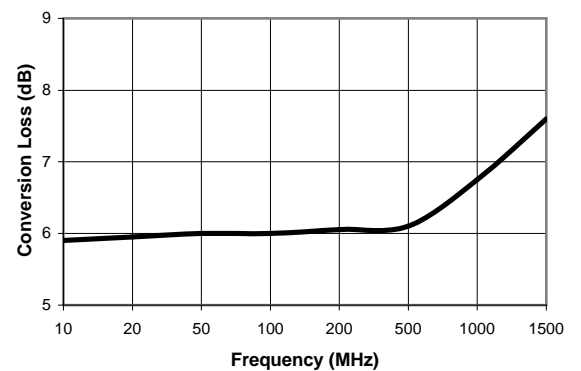
1. All specifications apply when operated at +10 dBm available LO power with 50 ohm source and load impedance.
2. Measured at 1500 MHz.

Bottom View of SF-1



Typical Performance Curves

Conversion Loss



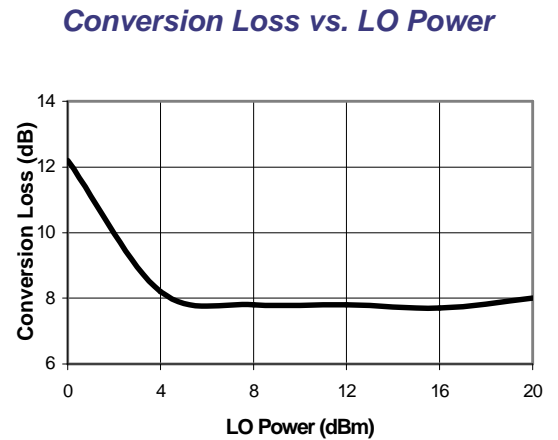
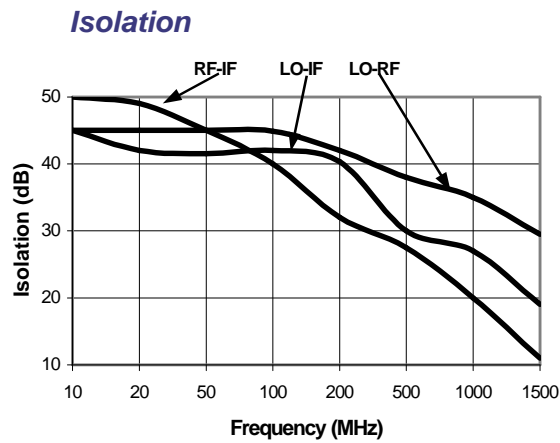
M/A-COM Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice. M/A-COM makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does M/A-COM assume any liability whatsoever arising out of the use or application of any product(s) or information.

Visit www.macom.com for additional data sheets and product information.

- 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



Typical Performance Curves



Ordering Information

Part Number	Package
MD-148 PIN	FP-2
MDS-148 PIN	SF-1

M/A-COM Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice. M/A-COM makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does M/A-COM assume any liability whatsoever arising out of the use or application of any product(s) or information.

Visit www.macom.com for additional data sheets and product information.

- 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

