

Surface Mount Double-Balanced Mixer, 200 KHz - 200 MHz

MDS-222

Features

- Fully Hermetic Package
- Three Decade Coverage
- Impedance: 50 Ohms Nominal
- Maximum Input Power: 400 mW Max @ 25°C, Derated linearly to 85°C @ 3.2 mW/°C
- X-Port Current: 50 mA Max.
- MIL-STD-883 Screening Available

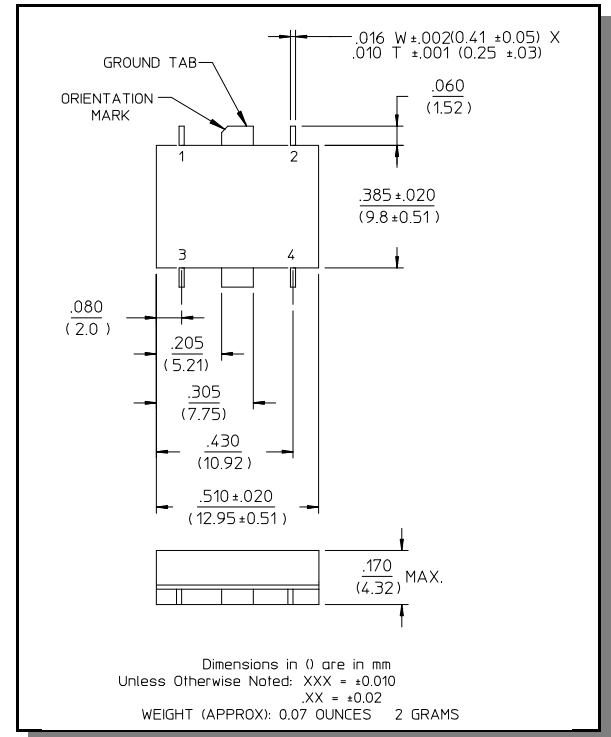
Description

Transformers convert the LO and RF paths to balanced lines connecting to a 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	3	LO
2	IF	4	RF

SF-1

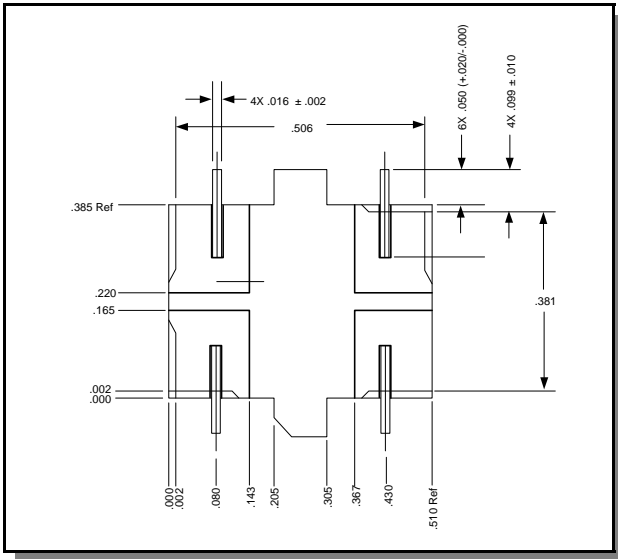


Electrical Specifications¹: T_A = -55°C to +85°C

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Frequency Range	RF, LO Ports IF Port	0.2 - 200 DC - 200	MHz MHz	—	—	—
Conversion Loss		0.2 - 50 MHz 50 - 200 MHz	dB dB	— —	— —	6.0 7.5
Isolation	LO to RF	0.2 - 50 MHz 50 - 200 MHz	dB dB	35 30	— —	— —
	LO to IF	0.2 - 50 MHz 50 - 200 MHz	dB dB	35 25	— —	— —
	RF to IF	0.2 - 50 MHz 50 - 200 MHz	dB dB	25 20	— —	— —
		DC Polarity	Negative	—	—	—
DC Offset	—	—	mV	—	≤3	—
RF Input ²	1 dB Compression	—	dBm	—	+2	—
	1 dB Desensitization	—	dBm	—	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	100 - 200 MHz	dB	—	50	—
		200 - 300 MHz	dB	—	36	—

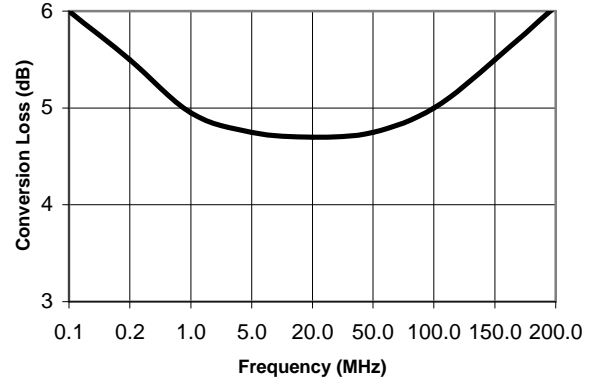
1. All specifications apply when operated at +7 dBm available LO power with 50 ohm source and load impedance.
 2. Measured at 100 MHz.

Bottom View of SF-1

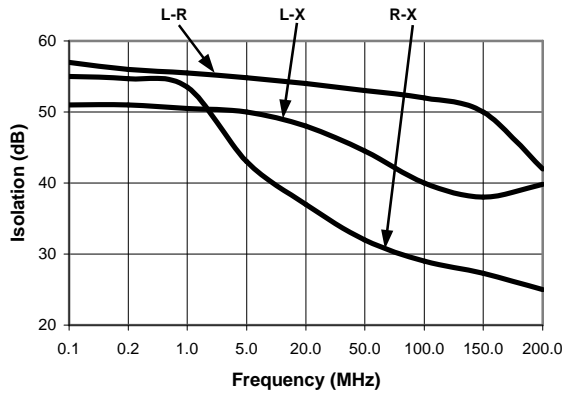


Typical Performance Curves

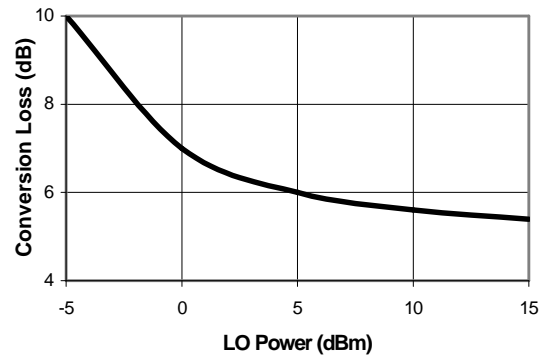
Conversion Loss



Isolation



Conversion Loss vs. LO Power



Ordering Information

Part Number	Package
MDS-222 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

