

# 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

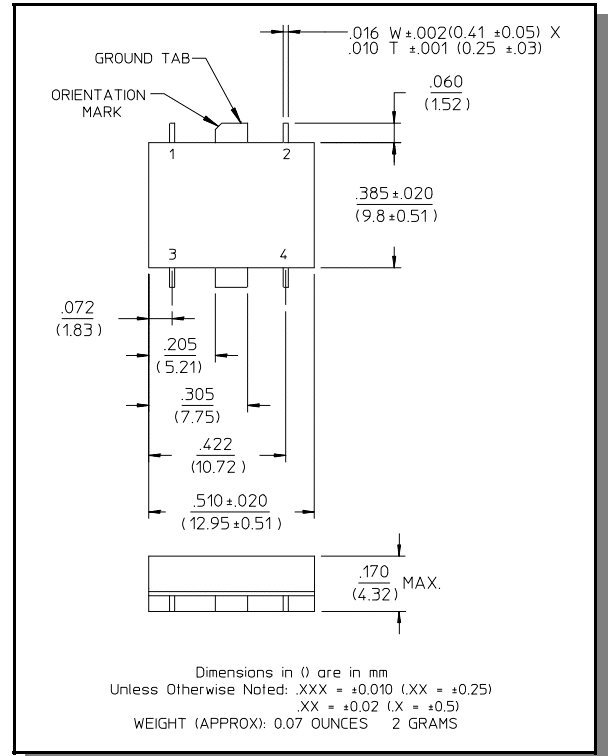
## Description

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

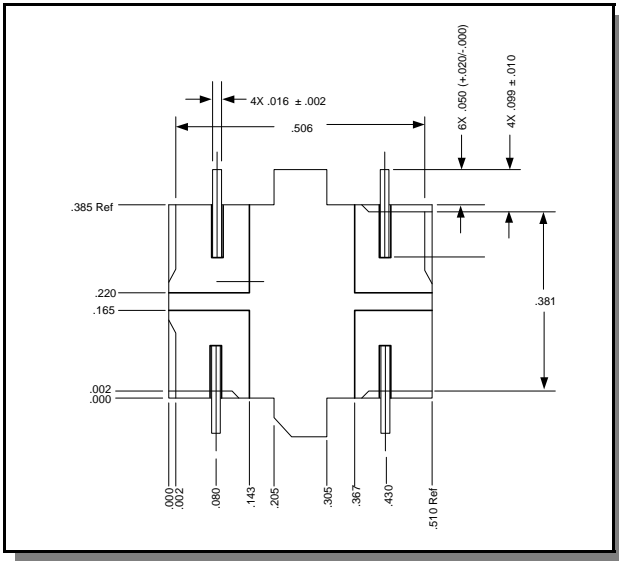


## Electrical Specifications<sup>1</sup>: T<sub>A</sub> = -55°C to +85°C

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	dB	35	—	—
	LO to IF	50 - 200 MHz	dB	30	—	—
	RF to IF	0.2 - 50 MHz	dB	35	—	—
	RF to RF	50 - 200 MHz	dB	25	—	—
DC Polarity	Negative	—	—	—	—	—
DC Offset	—	—	mV	—	≤3	—
RF Input <sup>2</sup>	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	—

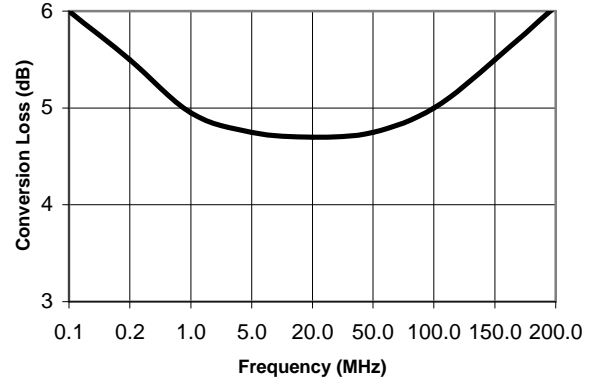
1. All specifications apply when operated at +7 dBm available LO power with 50 ohm source and load impedance.  
 2. Measured at 100 MHz.

Bottom View of SF-1

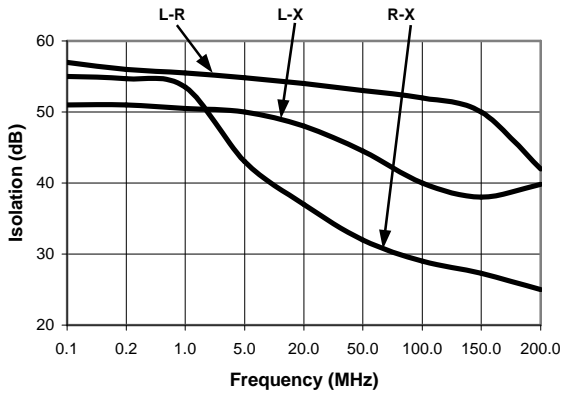


Typical Performance Curves

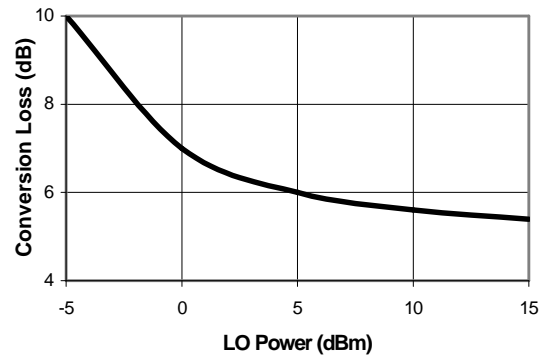
Conversion Loss



Isolation



Conversion Loss vs. LO Power



Ordering Information

Part Number	Package
MDS-222 PIN	SF-1

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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