# HMC129ALC4

v00.1115

## GaAs MMIC DOUBLE-BALANCED MIXER, 4 - 8 GHz

### Typical Applications

The HMC129ALC4 is ideal for:

- Microwave & VSAT Radios
- Test Equipment
- Military EW, ECM, C³I

### Features

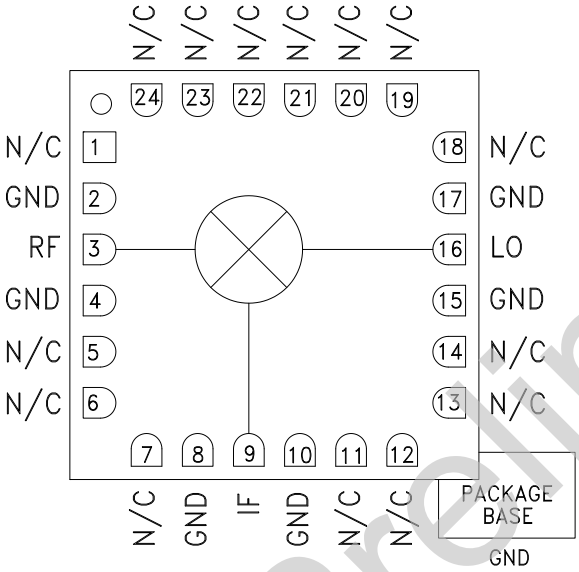
Conversion Loss: 7 dB

LO to RF and IF Isolation: 40 dB

Input IP3: +17 dBm

RoHS Compliant 4x4 mm SMT Package

### Functional Diagram




### General Description

The HMC129ALC4 is a general purpose double-balanced MMIC mixer housed in a leadless "PB Free" RoHS-Compliant SMT package which can be used as an upconverter or downconverter in the 4 to 8 GHz band. The HMC129ALC4 is ideally suited for applications where small size, no DC bias, and consistent IC performance are required. This mixer can operate over a wide LO drive input of +9 to +15 dBm. It performs equally well as a Bi-Phase modulator or demodulator. The HMC129ALC4 eliminates the need for wire bonding, allowing use of surface mount manufacturing techniques.



### Electrical Specifications, $T_A$ = +25° C, LO Drive = +15 dBm*

| Parameter | Min. | Typ. | Max. | Units |
|---|---|---|---|---|
| Frequency Range, RF & LO | | 4.0 - 8.0 | | GHz |
| Frequency Range, IF | | DC - 3.0 | | GHz |
| Conversion Loss | | 7 | 9 | dB |
| Noise Figure (SSB) | | 7 | 9 | dB |
| LO to RF Isolation | 30 | 40 | | dB |
| LO to IF Isolation | 32 | 40 | | dB |
| IP3 (Input) | | 17 | | dBm |
| IP2 (Input) | | 50 | | dBm |
| 1 dB Gain Compression (Input) | | 10 | | dBm |

** Unless otherwise noted, all measurements performed as downconverter, IF = 100 MHz*



*For price, delivery, and to place orders: Analog Devices, Inc., One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106*
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*Application Support: Phone: 1-800-ANALOG-D*

# HMC129ALC4* PRODUCT PAGE QUICK LINKS

**Last Content Update: 02/23/2017**

## COMPARABLE PARTS

View a parametric search of comparable parts.

## DOCUMENTATION

**Data Sheet**

- HMC129ALC4: GaAs MMIC Double-Balanced Mixer, 4 - 8 GHz Preliminary Data Sheet

## DESIGN RESOURCES

- HMC129ALC4 Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

## DISCUSSIONS

View all HMC129ALC4 EngineerZone Discussions.

## SAMPLE AND BUY

Visit the product page to see pricing options.

## TECHNICAL SUPPORT

Submit a technical question or find your regional support number.

## DOCUMENT FEEDBACK

Submit feedback for this data sheet.

# GaAs MMIC DOUBLE-BALANCED MIXER, 4 - 8 GHz



## MxN Spurious @ IF Port

| | nLO | | | | |
|---|---|---|---|---|---|
| mRF | 0 | 1 | 2 | 3 | 4 |
| 0 | xx | 10 | 25 | 13 | 41 |
| 1 | 9 | 0 | 33 | 44 | 46 |
| 2 | 78 | 76 | 70 | 78 | 86 |
| 3 | 88 | 91 | 87 | 64 | 81 |
| 4 | 97 | 102 | 104 | 109 | 110 |

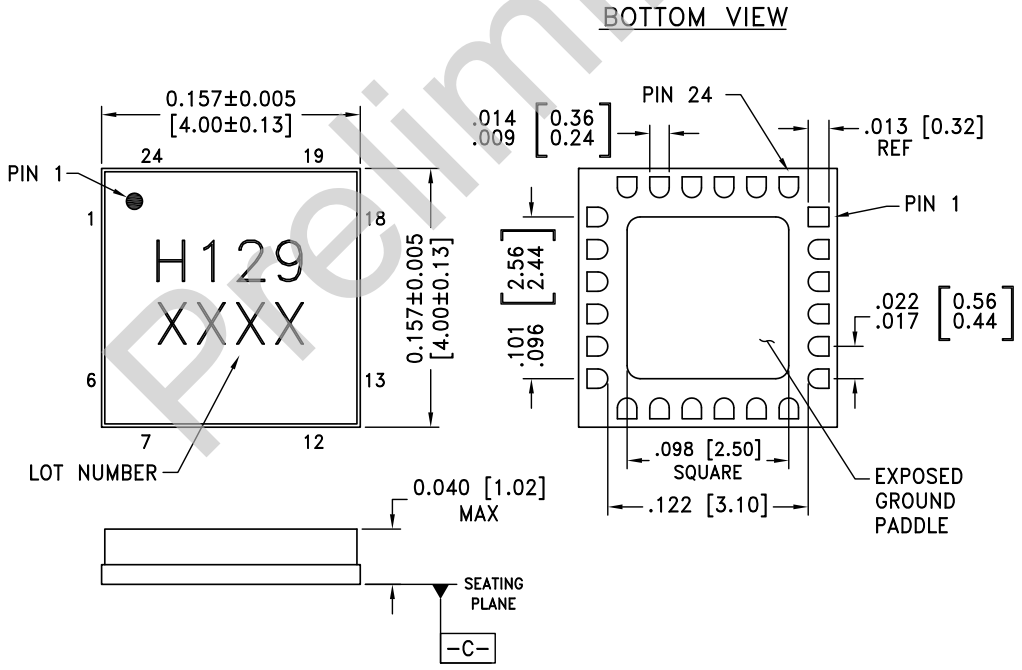
RF Freq. = 6.1 GHz @ -10 dBm
LO Freq. = 6.0 GHz @ +15 dBm
Measured as downconverter

## Absolute Maximum Ratings

| | |
|---|---|
| RF/IF Input | +15 dBm |
| LO Drive | +27 dBm |
| IF DC Current | 4 mA |
| Channel Temperature | 150 °C |
| Continuous Pdiss (T = 85 °C) (derate 4.957 mW/ °C above 85 °C) | 124 mW |
| Thermal Resistance (channel to ground paddle) | 131.4 °C/W |
| Storage Temperature | -65 to +150 °C |
| Operating Temperature | -40 to +85 °C |
| ESD Sensitivity (HBM) | Class 1A |

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

## Outline Drawing




NOTES:
1. PACKAGE BODY MATERIAL: ALUMINA
2. LEAD AND GROUND PADDLE PLATING: GOLD FLASH OVER Ni
3. DIMENSIONS ARE IN INCHES [MILLIMETERS]
4. LEAD SPACING TOLERANCE IS NON-CUMULATIVE
5. PACKAGE WARP SHALL NOT EXCEED 0.05mm DATUM -C-
6. ALL GROUND LEADS AND GROUND PADDLE MUST BE SOLDERED TO PCB RF GROUND





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