

## GaAs MMIC FUNDAMENTAL MIXER, 24 - 32 GHz

### Typical Applications

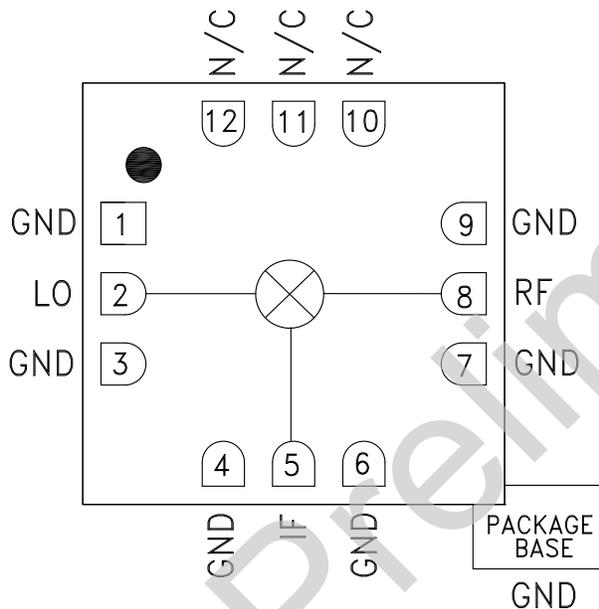
The HMC329ALC3B is ideal for:

- Point-to-Point Radios
- Point-to-Multi-Point Radios & VSAT
- Test Equipment & Sensors
- Military End-Use

### Features

- Passive: No DC Bias Required
- Input IP3: +18 dBm
- LO/RF Isolation: 38 dB
- Wide IF Bandwidth: DC - 8 GHz
- Robust 500V ESD, Class 1B
- 12 Lead Ceramic 3x3 mm SMT Package: 9mm<sup>2</sup>

### Functional Diagram



### General Description

The HMC329ALC3B is a general purpose double balanced mixer in a leadless RoHS compliant SMT package that can be used as an upconverter or downconverter between 24 and 32 GHz. This mixer requires no external components or matching circuitry. The HMC329ALC3B provides excellent LO to RF and LO to IF suppression due to optimized balun Preliminarystructures. The mixer operates with LO drive levels above +9 dBm. The HMC329ALC3B eliminates the need for wire bonding, allowing use of surface mount manufacturing techniques.

### Electrical Specifications, $T_A = +25^\circ\text{C}$ , $IF = 1\text{ GHz}$ , $LO = +13\text{ dBm}$ \*

Parameter	Min.	Typ.	Max.	Units
Frequency Range, RF & LO	24 - 32			GHz
Frequency Range, IF	DC - 8			GHz
Conversion Loss		10.5	12.5	dB
Noise Figure (SSB)		10.5	12.5	dB
LO to RF Isolation	32	38		dB
LO to IF Isolation	20	40		dB
RF to IF Isolation	20	30		dB
IP3 (Input)		18		dBm
IP2 (Input)		40		dBm
1 dB Gain Compression (Input)		13		dBm

\*Unless otherwise noted, all measurements performed as downconverter,  $IF = 1\text{ GHz}$ .

# HMC329ALC3B\* PRODUCT PAGE QUICK LINKS

Last Content Update: 10/05/2017

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## COMPARABLE PARTS

View a parametric search of comparable parts.

## EVALUATION KITS

- HMC329ALC3B Evaluation Board

## DOCUMENTATION

### Data Sheet

- HMC329ALC3B: GaAs MMIC FUNDAMENTAL MIXER, 24 - 32 GHz Data Sheet

## DESIGN RESOURCES

- HMC329ALC3B Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

## DISCUSSIONS

View all HMC329ALC3B 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.

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Last Content Update: 02/23/2017

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## GaAs MMIC FUNDAMENTAL MIXER, 24 - 32 GHz

### Absolute Maximum Ratings

RF / IF Input	+13 dBm
LO Drive	+27 dBm
Channel Temperature	150 °C
Continuous P <sub>diss</sub> (T <sub>a</sub> = 85 °C) (derate 5.88 mW/°C above 85 °C)	382 mW
Thermal Resistance (junction to ground paddle)	170 °C/W
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C
ESD Sensitivity (HBM)	Class 1B

### MxN Spurious Outputs

mRF	nLO				
	0	1	2	3	4
0	xx	9	xx	xx	xx
1	20	0	42	xx	xx
2	xx	72	58	80	xx
3	xx	xx	98	70	90
4	xx	xx	xx	100	104

RF = 28 GHz @ -10 dBm  
LO = 27 GHz @ +13 dBm  
All values in dBc below the IF output power level.



ELECTROSTATIC SENSITIVE DEVICE  
OBSERVE HANDLING PRECAUTIONS

### Outline Drawing

