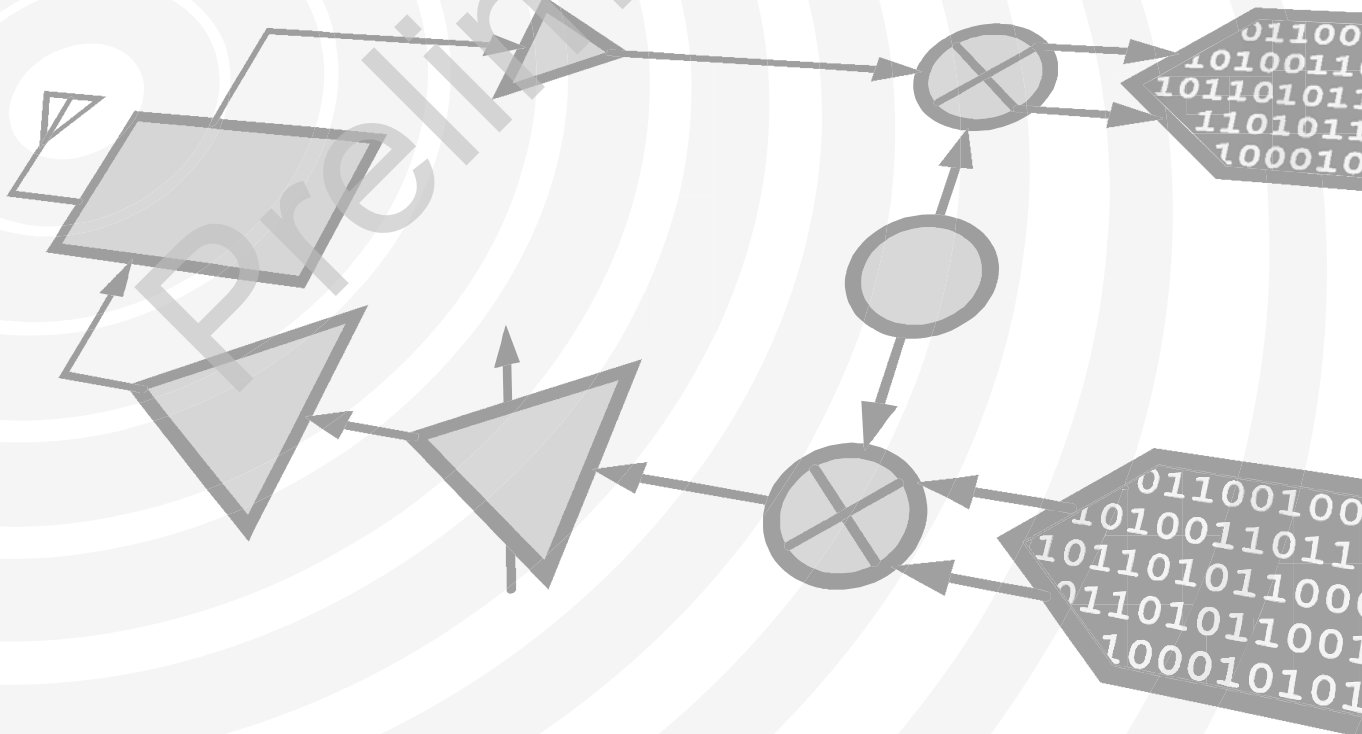


Analog Devices Welcomes Hittite Microwave Corporation



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Preliminary

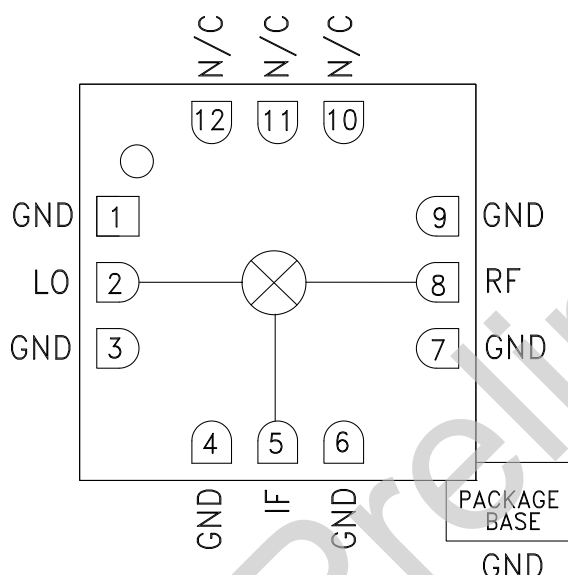
GAAS MMIC FUNDAMENTAL MIXER, 16 - 30 GHz

Typical Applications

The HMC292ALC3B is ideal for:

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

Functional Diagram



Features

Passive: No DC Bias Required

Input IP3: +20 dBm

LO/Rf Isolation: 40 dB

Wide IF Bandwidth: DC - 8 GHz

Robust 1000V ESD, Class 1C

12 Lead Ceramic 3x3 mm SMT Package: 9mm²

General Description

The HMC292ALC3B is a general purpose passive double balanced mixer in a leadless RoHS-Compliant SMT package that can be used as an upconverter or downconverter between 16 and 30 GHz. This mixer requires no external components or matching circuitry. The HMC292ALC3B provides excellent LO to RF and LO to IF suppression due to optimized balun structures. The mixer operates with LO drive levels above +9 dBm. The HMC292ALC3B eliminates the need for wire bonding, allowing use of surface mount manufacturing techniques.

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

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range, RF & LO		16 - 26		26 - 30			GHz
Frequency Range, IF		DC - 8		DC - 8			GHz
Conversion Loss		8	11		9.5	12.5	dB
Noise Figure (SSB)		8	11		9.5	12.5	dB
LO to RF Isolation	34	40		32	40		dB
LO to IF Isolation	24	32		28	34		dB
RF to IF Isolation	14	25		24	30		dB
IP3 (Input)	15	18		17	21		dBm
IP2 (Input)		48			50		dBm
1 dB Gain Compression (Input)	8	13		8	14		dBm

*Unless otherwise noted, all measurements performed as downconverter, IF= 1 GHz.

**GAAS MMIC FUNDAMENTAL
MIXER, 16 - 30 GHz**
Absolute Maximum Ratings

RF / IF Input	+13 dBm
LO Drive	+27 dBm
Channel Temperature	150 °C
Continuous Pdiss (Ta = 85 °C) (derate 4.0 mW/°C above 85 °C)	260 mW
Thermal Resistance (junction to ground paddle)	250 °C/W
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C
ESD Sensitivity (HBM)	Class 1C

MxN Spurious Outputs

	nLO				
mRF	0	1	2	3	4
0	xx	13	47	xx	xx
1	23	0	50	51	xx
2	87	72	64	72	89
3	xx	89	88	73	92
4	xx	xx	86	95	104

RF = 22 GHz @ -10 dBm
LO = 21 GHz @ +13 dBm
All values in dBc below the IF output power level.



**ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS**

Outline Drawing
