ANALOG DEVICES

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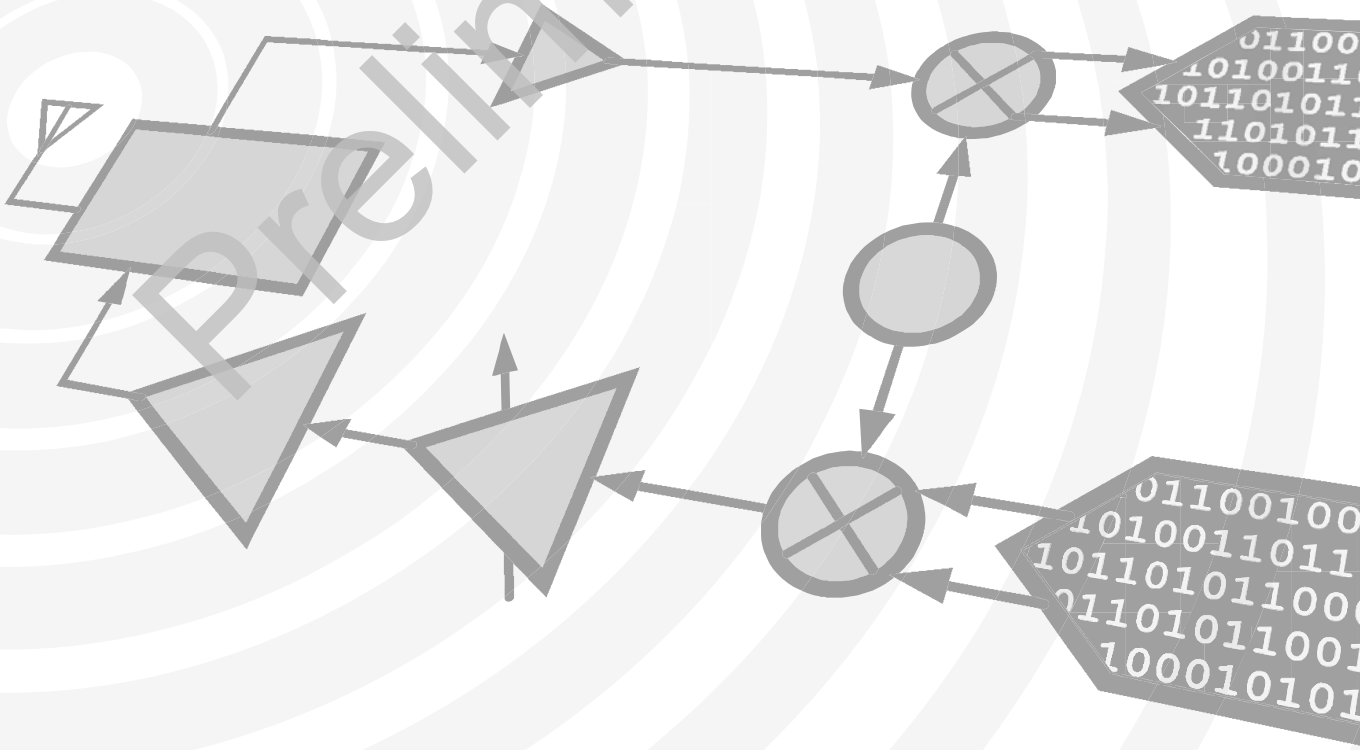
Analog Devices Welcomes Hittite Microwave Corporation



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HMC774ALC3B

v00.1115

GaAs MMIC FUNDAMENTAL MIXER, 7 - 34 GHz

Typical Applications

The HMC774ALC3B 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

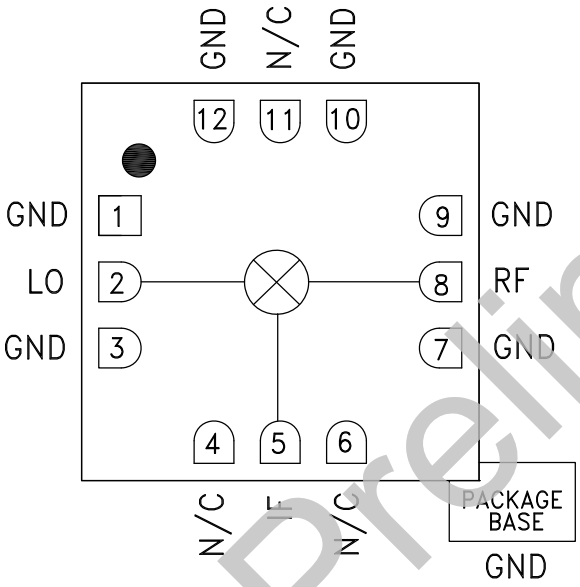
Input IP3: +22 dBm

LO/RF Isolation: 35 dB

Wide IF Bandwidth: DC - 8 GHz

12 Lead Ceramic 3x3 mm SMT Package: $9mm^2$

Functional Diagram



General Description

The HMC774ALC3B is a general purpose double balanced mixer in a leadless RoHS compliant SMT package that can be used as an upconverter or downconverter between 7 and 34 GHz. This mixer requires no external components or matching circuitry. The HMC774ALC3B provides excellent LO to RF and LO to IF suppression due to optimized balun structures. The mixer operates best with LO drive levels above +15 dBm. The HMC774ALC3B eliminates the need for wire bonding, allowing use of surface mount manufacturing techniques.

Electrical Specifications, T_A = +25° C, IF = 0.5 GHz, LO = +15 dBm*

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range, RF & LO		7 - 20			20 - 34		GHz
Frequency Range, IF		DC - 8			DC - 8		GHz
Conversion Loss		10	13		11	14	dB
LO to RF Isolation		35			35		dB
LO to IF Isolation	20	30		25	40		dB
RF to IF Isolation	7	10		14	20		dB
IP3 (Input)		20			22		dBm
IP2 (Input)		45			48		dBm
1 dB Gain Compression (Input)		12			13		dBm

Unless otherwise noted, all measurements performed as downconverter, IF = 0.5 GHz.

For price, delivery, and to place orders: Analog Devices, Inc., One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106
Phone: 781-329-4700 • Order online at www.analog.com
Application Support: Phone: 1-800-ANALOG-D

Absolute Maximum Ratings

RF / IF Input	+21 dBm
LO Drive	+27 dBm
Channel Temperature	150 °C
Continuous Pdiss (Ta = 85 °C) (derate 2.9 mW/°C above 85 °C)	189 mW
Thermal Resistance (channel to ground paddle)	343 °C/W
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C

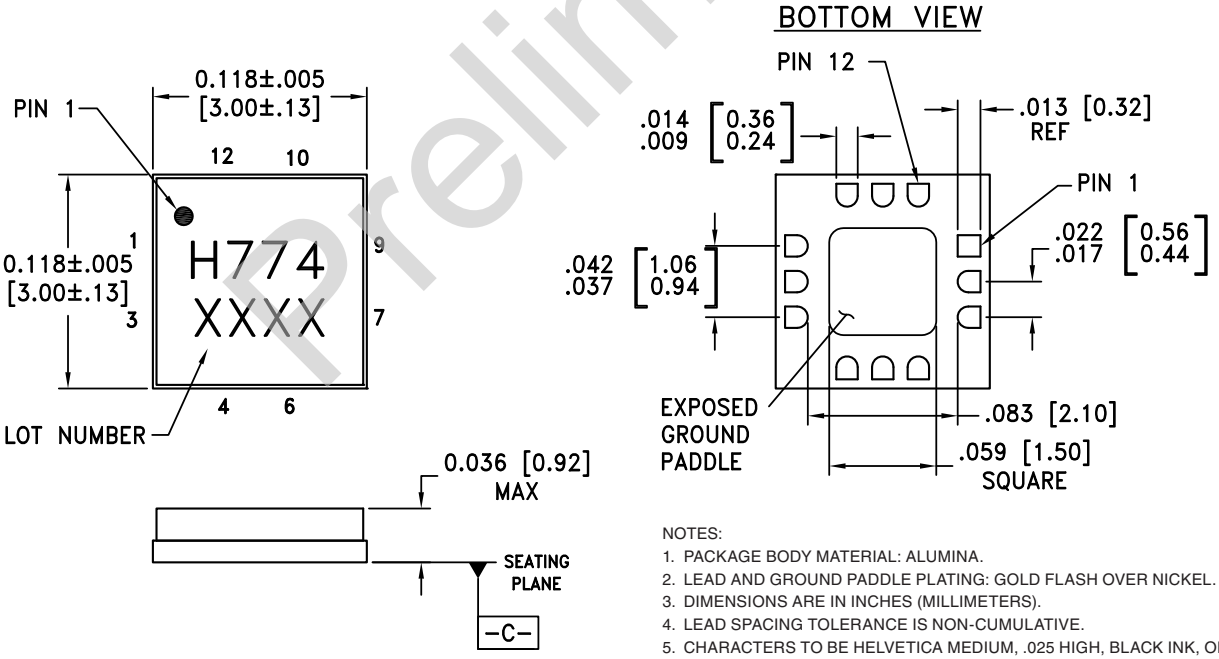
ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

MxN Spurious Outputs

	nLO				
mRF	0	1	2	3	4
0	xx	10	39	xx	xx
1	5	0	37	43	xx
2	30	49	47	55	68
3	xx	74	62	45	63
4	xx	xx	xx	77	71

RF = 17.5 GHz @ -10 dBm
LO = 18 GHz @ +15 dBm
All values in dBc below the IF output power level.

Outline Drawing



NOTES:
1. PACKAGE BODY MATERIAL: ALUMINA.
2. LEAD AND GROUND PADDLE PLATING: GOLD FLASH OVER NICKEL.
3. DIMENSIONS ARE IN INCHES (MILLIMETERS).
4. LEAD SPACING TOLERANCE IS NON-CUMULATIVE.
5. CHARACTERS TO BE HELVETICA MEDIUM, .025 HIGH, BLACK INK, OR LASER MARK LOCATED APPROX. AS SHOWN.
6. PACKAGE WARP SHALL NOT EXCEED 0.05MM DATUM – C –
7. ALL GROUND LEADS AND GROUND PADDLE MUST BE SOLDERED TO PCB RF GROUND.