

v00.1115

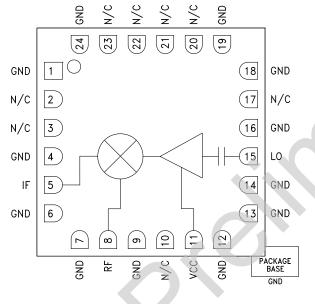
GaAs MMIC SUB-HARMONIC SMT MIXER, 24 - 34 GHz

Typical Applications

The HMC798ALC4 is ideal for:

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

Functional Diagram



Features

Integrated LO Amplifier: +4 dBm Input Sub-Harmonically Pumped (x2) LO Wideband IF: DC - 4 GHz Single Positive Supply: +5V @ 95mA 24 Lead 4x4mm SMT Package: 16mm²

General Description

The HMC798ALC4 is a 24 - 34 GHz Sub-harmonically Pumped (x2) MMIC Mixer with an integrated LO amplifier in a leadless RoHS compliant SMT package. The 2LO to RF isolation is excellent at 30 dB, eliminating the need for additional filtering. The LO amplifier is a single bias +5V design with a nominal +4 dBm drive requirement. The RF and LO ports are matched to 50 Ohms for ease of use while the IF covers DC to 4 GHz. The HMC798ALC4 eliminates the need for wire bonding, allowing use of surface mount manufacturing techniques.

Electrical Specifications, $T_A = +25^{\circ}C$, Vcc = 5V

Parameter	IF = 1 GHz LO = 4 dBm			IF = 1 GHz LO = 4 dBm			Units
	Min.	Тур.	Max.	Min.	Тур.	Max.	
Frequency Range, RF	24 - 29.5			29.5 - 34			GHz
Frequency Range, LO	12 - 16			13.5 - 17.75			GHz
Frequency Range, IF	DC - 4			DC - 4			GHz
Conversion Loss		11	13		10	12	dB
2LO to RF Isolation	25	30		20	25		dB
2LO to IF Isolation		45			35		dB
IP3 (Input)	17	20		19	22		dBm
1 dB Compression (Input)		10			12		dBm
Supply Current (Idd)		95	125		95	125	mA

*Unless otherwise noted, all measurements performed as upconverter, IF= 1 GHz, LO = 4 dBm

Information furnished by Analog Devices is believed to be accurate and reliable. However, no responsibility is assumed by Analog Devices for its use, nor for any infringements of patents or other rights of third parties that may result from its use. Specifications subject to change without notice. No license is granted by implication or otherwise under any patent or patent rights of Analog Devices. Trademarks and registered trademarks are the property of their respective owners.

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

HMC798A* PRODUCT PAGE QUICK LINKS

Last Content Update: 02/23/2017

View a parametric search of comparable parts.

DOCUMENTATION

Data Sheet

 HMC798ALC4: GaAs MMIC Sub-Harmonic SMT Mixer, 24 -34 GHz Preliminary Data Sheet

DESIGN RESOURCES

- HMC798A Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

DISCUSSIONS

View all HMC798A 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.



v00.1115

GaAs MMIC SUB-HARMONIC SMT MIXER, 24 - 34 GHz

Absolute Maximum Ratings

RF / IF Input (Vdd = +5V)	+13 dBm
LO Drive (Vdd = +5V)	+10 dBm
Vdd	5.5V
Channel Temperature	175 °C
Continuous Pdiss (Ta = 85 °C) (derate 8.33 mW/°C above 85 °C)	0.75 mW
Thermal Resistance (junction to ground paddle)	119 °C/W
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C



ELECTROSTATIC SENSITIVE DEVICE **OBSERVE HANDLING PRECAUTIONS**

MxN Spurious Outputs @ RF Port. Vdd = 5V

Measured as upconverter

	nLO						
mIF	2	1	0				
-3	68						
-2	53	71	66				
-1	0	49	32				
0	1	31					
1	1	45	31				
2	54	66	65				
3	66						
IF = 2 GHz @ -10 dBm LO = 15 GHz @ 4 dBm All values in dBc below IF power level (2LO - 1IF)							

Outline Drawing

PIN 24 0.157±0.005 0.36 .014 [4.00±0.13] .013 [0.32] REF 19 24 PIN 1 PIN 1 18 \square 1 57 ± 0.005 [4.00±0.13] D H798 D બંબં .022 0.56 0.44 D D .101 096 D 0 13 D 6 Ш M 12 .098 [2.50] LOT NUMBER SQUARE **EXPOSED** 0.040 [1.02] GROUND .122 [3.10] MAX PADDLE SEATING PLANE NOTES: 1. PACKAGE BODY MATERIAL: ALUMINA. -C-2. LEAD AND GROUND PADDLE PLATING: GOLD FLASH OVER NICKEL 3. DIMENSIONS ARE IN INCHES (MILLIMETERS). 4. LEAD SPACING TOLERANCE IS NON-CUMULATIVE.

BOTTOM VIEW

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.

Information furnished by Analog Devices is believed to be accurate and reliable. However, no responsibility is assumed by Analog Devices for its use, nor for any infringements of patents or other rights of third parties that may result from its use. Specifications subject to change without notice. No license is granted by implication or otherwise under any patent or patent rights of Analog Devices. Trademarks and registered trademarks are the property of their respective owners.

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