HMC943ALP5DE

v09.0217

GaAs pHEMT MMIC 1.5 WATT POWER AMPLIFIER, 24 - 31.5 GHz

Typical Applications

The HMC943ALP5DE is ideal for:

- Point-to-Point Radios
- Point-to-Multi-Point Radios
- VSAT
- Military & Space

Features

Saturated Output Power: +34 dBm @ 24% PAE

High Output IP3: +41 dBm

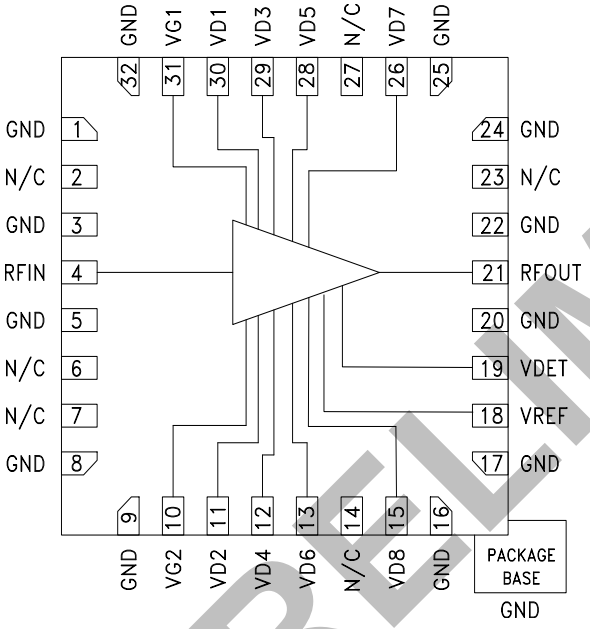
High Gain: 21 dB

DC Supply: +5.5V @ 1200 mA

No External Matching Required

32 Lead 5 x 5 mm SMT Package: 25 mm²

Functional Diagram



General Description

The HMC943ALP5DE is a four stage GaAs pHEMT MMIC 1.5 Watt Power Amplifier which operates between 24 and 31.5 GHz. The HMC943ALP5DE provides 21 dB of gain, and +34 dBm of saturated output power and 24% PAE from a +5.5V supply. The high output IP3 of +41 dBm makes the HMC943ALP5DE ideal for microwave radio applications.A power Detector output is also available The HMC943ALP5DE amplifier I/Os are internally matched to 50 Ohms and is packaged in a leadless QFN 5 x 5 mm surface mount package and requires no external matching components.

Electrical Specifications, T_A = +25° C, Vd1 = Vd8 = +5.5V, Idd = 1200 mA [1]

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range		24 - 26.5			26.5 - 31.5		GHz
Gain	18	21		16	19		dB
Gain Variation Over Temperature		0.03			0.028		dB/ °C
Input Return Loss		9			9.5		dB
Output Return Loss		12			12		dB
Output Power for 1 dB Compression (P1dB)	29	32		27	31		dBm
Saturated Output Power (Psat)		33			33		dBm
Output Third Order Intercept (IP3)[2]		41			39		dBm
Total Supply Current (Idd)		1200			1200		mA

[1] Adjust Vg1 and Vg2 between -2 to 0V to achieve Idd = 1200 mA typical.

[2] Measurement taken at +5.5V @ 1200 mA, Pout / Tone = +22 dBm

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

HMC943A* PRODUCT PAGE QUICK LINKS

Last Content Update: 02/23/2017

COMPARABLE PARTS

View a parametric search of comparable parts.

EVALUATION KITS

- HMC943A Evaluation Board

DOCUMENTATION

Application Notes

- AN-1363: Meeting Biasing Requirements of Externally Biased RF/Microwave Amplifiers with Active Bias Controllers

Data Sheet

- HMC943ALP5DE: GaAs pHEMT MMIC 1.5 Watt Power Amplifier, 24 - 31.5 GHz Preliminary Data Sheet

DESIGN RESOURCES

- HMC943A Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

DISCUSSIONS

View all HMC943A 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 pHEMT MMIC 1.5 WATT POWER AMPLIFIER, 24 - 31.5 GHz

Absolute Maximum Ratings

Drain Bias Voltage (Vd)	+7V
RF Input Power (RFIN)	+20 dBm
Channel Temperature	175 °C
Continuous Pdiss (T= 85 °C) (derate 135 mW/°C above 85 °C)	8.8 W
Thermal Resistance (channel to package bottom)	7.4 °C/W
Storage Temperature	-40 to +125 °C
Operating Temperature	-40 to +85 °C
ESD Sensitivity (HBM)	Class 0, 150V

Typical Supply Current vs. Vdd

Vdd (V)	Idd (mA)
+5.0	1200
+5.5	1200
+6.0	1200

Note: Amplifier will operate over full voltage ranges shown above Vgg adjusted to achieve Idd = 1200 mA

ELECTROSTATIC SENSITIVE DEVICE
OBSERVE HANDLING PRECAUTIONS

Outline Drawing