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HMC972LP5E

GaAs MMIC ANALOG VARIABLE GAIN AMPLIFIER, 0.5 - 6.0 GHz

Typical Applications

The HMC972LP5E is ideal for:

- Cellular/3G Infrastructure
- WiBro / WiMAX / 4G
- Microwave Radio & VSAT
- Test Equipment and Sensors
- IF & RF Applications

Features

Wide Gain Control Range: -35 to +15 dB

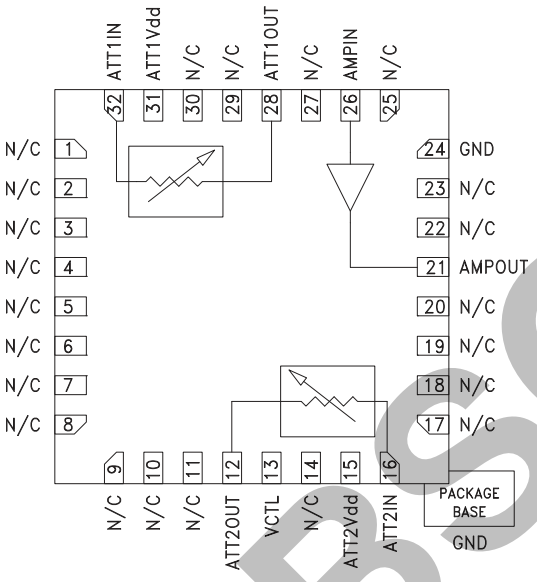
High Output IP3: +28 dBm

Positive Analog Control: 0 to +5V

Can be configured with 1 or 2 Attenuators

32 Lead 5x5 mm SMT Package: 25 mm^2

Functional Diagram



General Description

The HMC972LP5E is an analog controlled variable gain amplifier composed of two identical voltage variable attenuators in combination with an InGaP HBT gain block MMIC amplifier which operates from 0.5 to 6 GHz, and can be controlled to provide anywhere from 15 dB of gain to 35 dB of attenuation. The HMC972LP5E delivers noise figure of 7.5 dB in its maximum gain state, with output IP3 of up to +28 dBm. The HMC972LP5E is housed in a RoHS compliant 5x5 mm QFN leadless package, and requires no external matching components.

Electrical Specifications, T_A = +25° C, 50 Ohm System, Vdd = ATT1Vdd = ATT2Vdd = +5V [1]

Parameter	Frequency	Min.	Typ.	Max.	Units
Insertion Gain (Vctl = 0V)	0.5 - 2.7 GHz 2.7 - 4.0 GHz 4.0 - 6.0 GHz	10.5 6	13 9 0		dB dB
Gain Control Range	0.5 - 4.0 GHz 4.0 - 6.0 GHz		50 42		dB
Input Return Loss (Vctl = 0V)			12		dB
Output Return Loss (Vctl = 0V)			10		dB
Output Power for 1dB Compression (Vctl = 0V)	0.5 - 2.7 GHz 2.7 - 4.0 GHz 4.0 - 6.0 GHz		16 13 6		dBm dBm
Output Third Order Intercept Point (Two-Tone Output Power= 0 dBm Each Tone) (Vctl = 0V)	0.5 - 2.7 GHz 2.7 - 4.0 GHz 4.0 - 6.0 GHz		29 26 20		dBm dBm
Noise Figure (Vctl = 0V)			7.5		dB
Idd		75	85	102	mA
ATT1Idd			0.2	0.3	mA
ATT2Idd			0.2	0.3	mA

[1] Unless otherwise noted, test conditions: ATT1 + AMP + ATT2 in cascade.