HMC8326LG

v01.0717

E-BAND LOW NOISE DOWNCONVERTER SIP 71 - 76 GHz

Typical Applications

The HMC8326LG is ideal for:

- E-Band Communication Systems
- High Capacity Wireless Backhaul
- Test & Measurement

Features

Conversion Gain: 12 dB typical

Image Rejection: 30 dBc typical

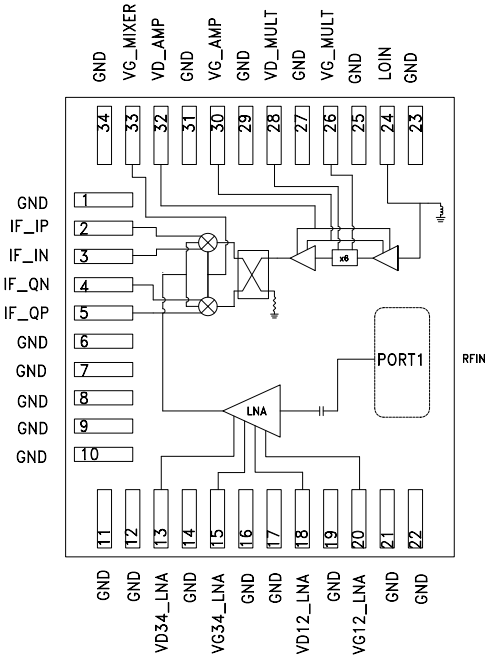
Noise Figure: 6 dB typical

Input Third-Order Intercept (IP3): 1 dBm typical

Input Power for P1dB Compression: -9 dBm typical

Fully Integrated In Surface Mount 34 Lead 13 mm x 11 mm Package

Functional Diagram



General Description

The HMC8326LG is a fully integrated System In Package (SiP) in-phase/quadrature (I/Q) downconverter that operates between an RF input frequency range of 71 GHz to 76 GHz and an IF output frequency range of DC to 2 GHz. This device provides a small signal conversion gain of 8 to 13 dB with 30 dBc of image rejection. The HMC8326LG utilizes a low noise amplifier followed by an image rejection mixer which is driven by a 6x LO multiplier. Differential I and Q mixer outputs are provided for direct conversion applications. Alternatively, the outputs can be combined using an external 90° hybrid and two external 180° hybrids for single-ended applications.

Electrical Specifications, T_A = -40°C to +85°C, IF = 1000 MHz, LO = 4 dBm, VDLNA = 3 V, VD_AMP = 4 V, VD_MULT = 1.5 V, VG_MIXER = -1 V [1]

Parameter	Min.	Typ. (25°C)	Max.	Units
RF Frequency Range	71		76	GHz
LO Frequency Range	11.5		13	GHz
IF Frequency Range	0		2	GHz
LO Input Level Range	0		8	dBm
Gain Flatness		2		dB
Conversion Gain		12		dB
Image Rejection		30		dBc
Input Power for 1 dB Compression (P1dB)		-9		dBm
Input Third-Order Intercept (IP3)		1		dBm
Input Second-Order Intercept (IP2)		32		dBm
6× LO Leakage at the RF Input Port (RFIN)		-55		dBm
I/Q Phase Balance [2]		5		degrees
I/Q Amplitude Balance [2]		0.2		dB
Noise Figure		6		dB

[1] Measurements performed as downconverter with lower sideband selected and two external 180° hybrids followed by one external 90° hybrid at the IF ports, unless otherwise noted.
[2] Measurements performed without external hybrids.

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

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Parameter	Min.	Typ. (25°C)	Max.	Units
RF Port Return Loss		14		dB
DC Power Dissipation		1.0		W
Input Waveguide port		WR-12		
Baseband Output Port Impedance (differential)		100		Ohm
Baseband Output Port Return Loss [2]		14		dB
LO Input Port Impedance		50		Ohm
LO Input Port Return Loss		13		dB
VG for the LNA	-2		0	V
VD for the LNA		3		V
VD for the Multiplier (VD_MULT)		1.5		V
VG for the Multiplier (VG_MULT)	-2		0	V
VG for the Mixer (VG_MIXER)	-2		0	V

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