

MMIC Driver Amplifier, 3.0GHz to 4.5GHz

FEATURES

- ▶ P_{SAT} output power: 26dBm
- ▶ 40% PAE
- ▶ Output IP3: 36dBm
- ▶ High gain: 21dB
- ▶ V_S : 5V
- ▶ 8-lead mini small outline package with exposed pad

APPLICATIONS

- ▶ Microwave radios
- ▶ Broadband radio systems
- ▶ Wireless local loop driver amplifiers

FUNCTIONAL BLOCK DIAGRAM

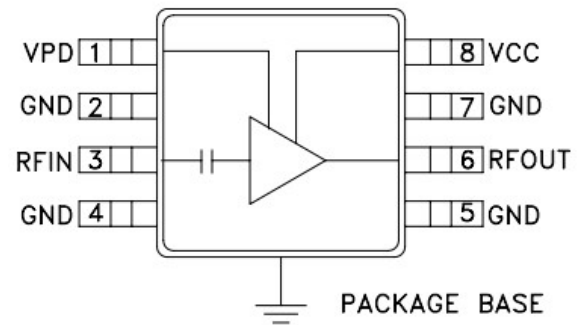


Figure 1. Functional Block Diagram

GENERAL DESCRIPTION

The HMC326A is a monolithic microwave IC (MMIC) driver amplifier that operates between 3.0GHz and 4.5GHz. The amplifier is packaged in a low cost, surface mount 8-leaded mini small outline package with exposed pad for improved RF and thermal performance. The amplifier provides 21dB of gain and 26dBm of saturated power (P_{SAT}) from a 5V supply voltage (V_S). A power-down capability is available to conserve current consumption when the amplifier is not in use. Internal circuit matching was optimized to provide greater than 40% power added efficiency (PAE).

SPECIFICATIONS

ELECTRICAL SPECIFICATIONS

$T_A = 25^\circ\text{C}$, $V_S = 5\text{V}$, and power-down voltage (V_{PD}) = 5V, unless otherwise noted.

Table 1. Electrical Specifications

Parameter	Test Conditions/ Comments	Min	Typ	Max	Unit
FREQUENCY RANGE		3.0		4.5	GHz
GAIN		18	21		dB
Variation Over Temperature			0.025	0.035	dB/°C
RETURN LOSS					
Input			12		dB
Output			7		dB
OUTPUT POWER FOR 1dB COMPRESSION (P1dB)		21	23.5		dBm
P_{SAT}			26		dBm
OUTPUT THIRD-ORDER INTERCEPT (IP3)		32	36		dBm
NOISE FIGURE			5		dB
CURRENT					
Supply (I_{CC})	$V_{PD} = 0\text{V}$		1		μA
	$V_{PD} = 5\text{V}$	110	130	160	mA
Control (I_{PD})			7		mA
SWITCHING SPEED	t_{ON}/t_{OFF}		10		ns

PIN CONFIGURATION AND FUNCTION DESCRIPTIONS

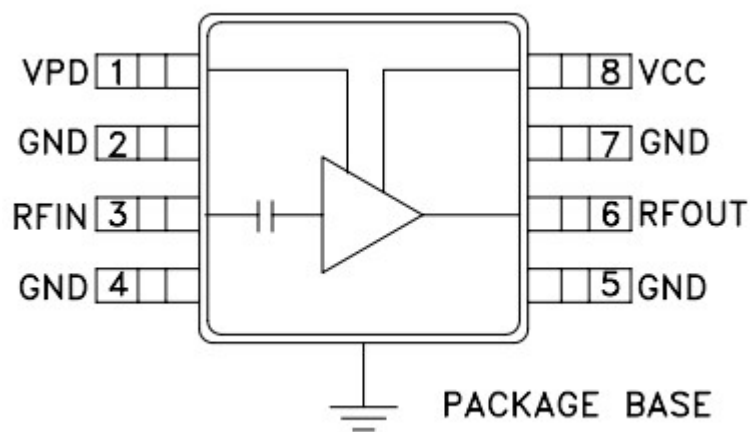


Figure 2. Pin Configuration

Table 2. Pin Function Descriptions

Pin No.	Mnemonic	Description
1	VPD	Power Down Pin.
2, 4, 5, 7	GND	Ground. Connect the GND pins to a ground plane that has low electrical and thermal impedance.
3	RFIN	RF Input.
6	RFOUT	RF Output.
8	VCC	Connect the VCC pin to positive supply voltage.

OUTLINE DIMENSIONS

Package Drawing Option	Package Type	Package Description
RH-8-1	MINI_SO_EP	8-Lead Mini Small Outline Package with Exposed Pad

For the latest package outline information and land patterns (footprints), go to [Package Index](#).

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