

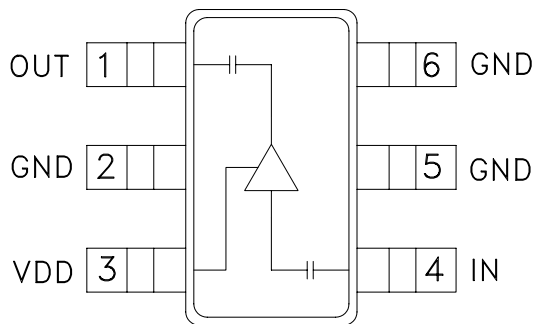
GENERAL PURPOSE 100 mW GaAs MMIC AMPLIFIER, 0.8 - 3.8 GHz

Typical Applications

Broadband or Narrow Band Applications:

- Cellular/PCS/3G
- Fixed Wireless & Telematics
- Cable Modem Termination Systems
- WLAN, Bluetooth & RFID

Functional Diagram



Features

- Gain: 18 dB
- P1dB Output Power: +17 dBm @ +5V
- Single Supply: +3V or +5V
- No External Components
- Integrated DC Blocks
- Ultra Small Package: SOT26

General Description

The HMC308 is a low cost MESFET MMIC amplifier that operates from a single +3 to +5V supply from 0.8 to 3.8 GHz. The surface mount SOT26 amplifier can be used as a broadband amplifier stage or used with external matching for optimized narrow band applications. With V_{dd} biased at +5V, the HMC308 offers 18 dB of gain and +20 dBm of saturated output power while requiring only 53 mA of current. This amplifier is ideal as a driver amplifier for transmitters or for use as a local oscillator (LO) amplifier to increase drive levels for passive mixers. The amplifier occupies 0.014 in² (9 mm²), making it ideal for compact radio designs.

Electrical Specifications, T_a = +25° C, as a function of V_{dd}

| Parameter | V _{dd} = +3V | | | V _{dd} = +5V | | | V _{dd} = +5V | | | V _{dd} = +5V | | | Units |
|--|-----------------------|-------|-------|-----------------------|-------|-------|-----------------------|-------|-------|-----------------------|-------|-------|-------|
| | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | |
| Frequency Range | 2.3 - 2.7 | | | 0.8 - 2.3 | | | 2.3 - 2.7 | | | 2.7 - 3.8 | | | GHz |
| Gain | 13 | 15.5 | | 14 | 18 | | 13 | 16 | | 10 | 13 | | dB |
| Gain Variation over Temperature | | 0.025 | 0.035 | | 0.025 | 0.035 | | 0.025 | 0.035 | | 0.025 | 0.035 | dB/°C |
| Input Return Loss | | 11 | | | 8 | | | 11 | | | 13 | | dB |
| Output Return Loss | | 17 | | | 13 | | | 12 | | | 13 | | dB |
| Output Power for 1 dB Compression (P1dB) | 12 | 14 | | 14 | 17 | | 13.5 | 16.5 | | 12 | 15 | | dBm |
| Saturated Output Power (P _{sat}) | | 17 | | | 20 | | | 19.5 | | | 17 | | dBm |
| Output Third Order Intercept (IP3) | 23 | 26 | | 27 | 30 | | 26 | 29 | | 24 | 27 | | dBm |
| Noise Figure | | 7 | | | 7.5 | | | 7 | | | 7 | | dB |
| Supply Current (I _{dd}) | | 50 | | | 53 | | | 53 | | | 53 | | mA |