

查询HMC-AUH256供应商

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# HMC-AUH256

## GaAs HEMT MMIC DRIVER AMPLIFIER, 17.5 - 41.0 GHz

### Typical Applications

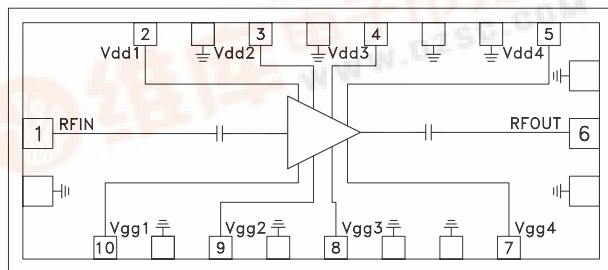
This HMC-AUH256 is ideal for:

- Point-to-Point Radios
- Point-to-Multi-Point Radios
- VSAT
- SATCOM

### Features

Gain: 21 dB  
 P1dB Output Power: +20 dBm  
 Wideband Performance: 17.5 to 40 GHz  
 Supply Voltage: +5V @ 295 mA  
 Small Chip Size: 2.1 x 0.92 x 0.1 mm

### Functional Diagram



### General Description

The HMC-AUH256 is a GaAs MMIC HEMT four stage Driver Amplifier which covers the frequency range of 17.5 to 40 GHz. The chip can easily be integrated into Multi-Chip-Modules (MCMs) due to its small (1.93 mm<sup>2</sup>) size. The HMC-AUH256 offers 21 dB of gain and +20 dBm output power at 1 dB compression from a bias supply of +5V @ 295 mA. The HMC-AUH256 may also be used as a frequency doubler. Detail bias condition to achieve doubler operation.

### Electrical Specifications <sup>[1]</sup>, $T_A = +25^\circ\text{C}$

$V_{dd1} = V_{dd2} = V_{dd3} = V_{dd4} = 5\text{V}$ ,  $I_{dd1} + I_{dd2} + I_{dd3} + I_{dd4} = 295\text{mA}$  <sup>[2]</sup>

Parameter	Min.	Typ.	Max.	Units
Frequency Range	17.5 - 41			GHz
Gain		21		dB
Input Return Loss		8		dB
Output Return Loss	20 - 30 GHz 30 - 45 GHz	15 8		dB dB
Output Power for 1 dB Compression		20		dBm
Saturated Output Power		23		dBm
Output IP3		27		dBm
Supply Current ( $I_{dd1} + I_{dd2} + I_{dd3} + I_{dd4}$ )		295		mA

[1] Unless otherwise indicated, all measurements are from probed die

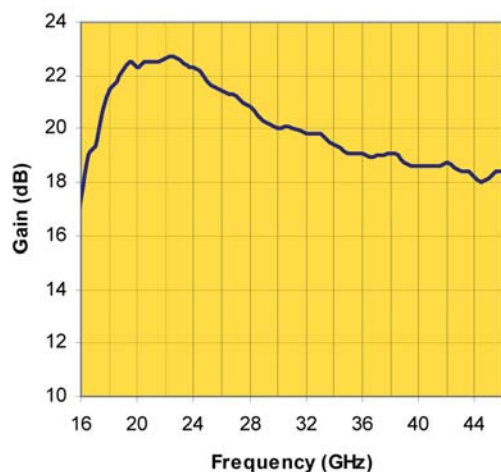
[2] Adjust Vgg1 = Vgg2 = Vgg3 = Vgg4 between -1V to +0.3V (Typ. -0.3V)



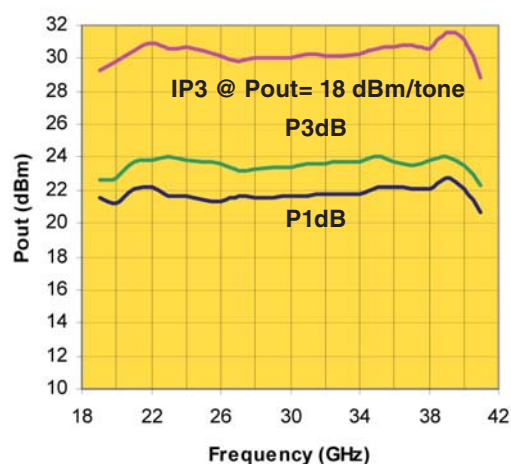
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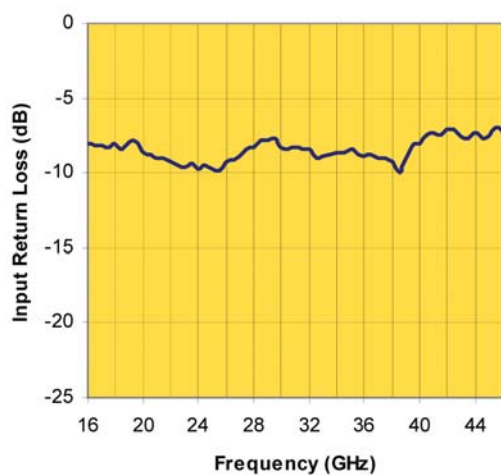
**Linear Gain vs. Frequency**



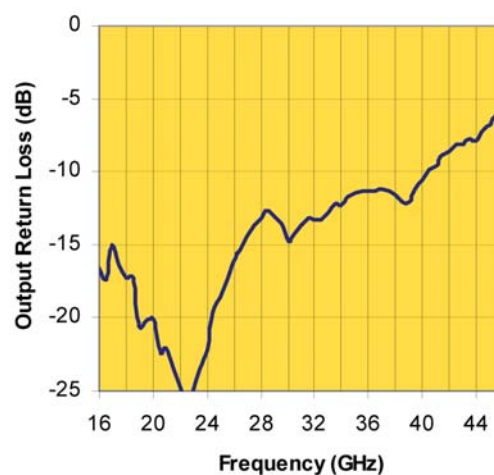
**Fixtured Pout vs. Frequency**



**Input Return Loss vs. Frequency**



**Output Return Loss vs. Frequency**



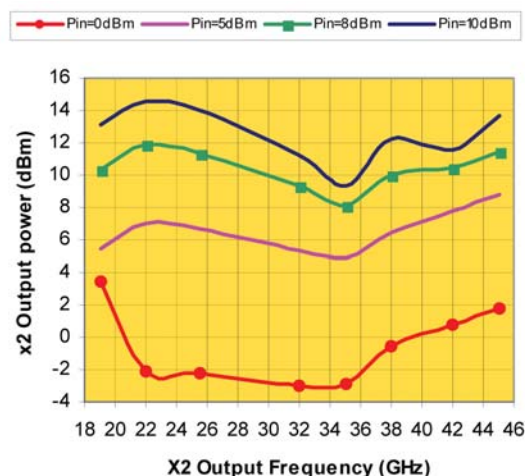
Note: Measured Performance Characteristics (Typical Performance at 25°C)  
Vd1= Vd2= Vd3= Vd4= 5V, Id1= 50mA, Id2= 50mA, Id3= 75mA, Id4= 120mA

For price, delivery, and to place orders, please contact Hittite Microwave Corporation:

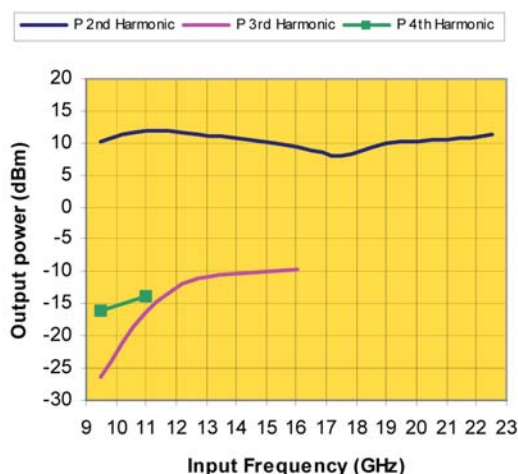
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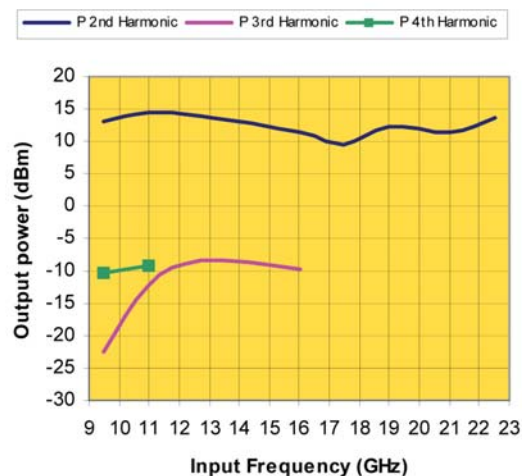
#### x2 Pout vs. Frequency (vs Pad)



#### Fixtured Pout vs. Frequency @ Pin= 8 dBm



#### Fixtured Pout vs. Frequency @ Pin= 10 dBm



#### Absolute Maximum Ratings

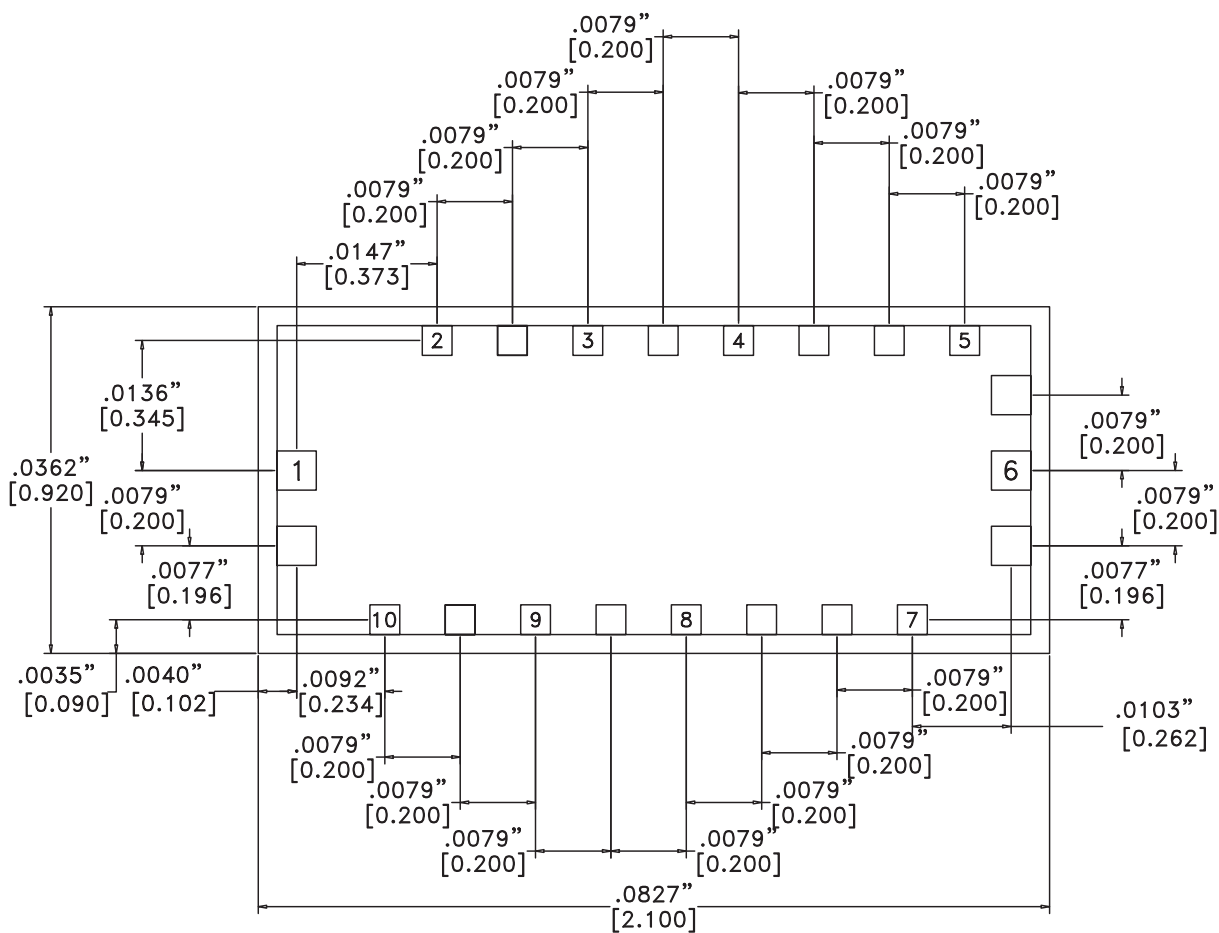
Drain Bias Voltage	+5.5 Vdc
RF Input Power	15 dBm
Drain Bias Current (Idd1, Idd2)	62 mA
Drain Bias Current (Idd3)	93 mA
Drain Bias Current (Idd4)	150 mA
Gate Bias Voltage	-1 to +0.3 Vdc
Channel Temperature	180 °C
Thermal Resistance (channel to die bottom)	77.5 °C/W
Storage Temperature	-65 to +150 °C



ELECTROSTATIC SENSITIVE DEVICE  
OBSERVE HANDLING PRECAUTIONS

Note: Multiplier Performance Characteristics (Typical Performance at 25°C)  
Vd1= 2V, Vd2= Vd3= Vd4= 5V, Id1= 5mA, Id2+Id3+Id4= 245mA

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**Outline Drawing**

**NOTES:**

1. ALL DIMENSIONS ARE IN INCHES [MM].
2. TYPICAL BOND PAD IS .004" SQUARE.
3. BACKSIDE METALLIZATION: GOLD.
4. BACKSIDE METAL IS GROUND.
5. BOND PAD METALLIZATION: GOLD.
6. CONNECTION NOT REQUIRED FOR UNLABELED BOND PADS.
7. OVERALL DIE SIZE  $\pm .002$ "