



X=4490 μm Y=1310 μm

**Features**

- ◆ RF Frequency: 24 to 26.5 GHz
- ◆ Linear Gain: 17 dB Typ.
- ◆ P1dB: 29 dBm typ.
- ◆ IP3: 38 dBm typ.
- ◆ Die Size: 5.9 sq. mm.
- ◆ DC Power: 5VDC @ 0.95 A

**Applications**

- ◆ Point-to-Point Digital Radios
- ◆ Point-to-Multipoint Digital Radios

**Product Description**

The APH608 monolithic HEMT amplifier is a broadband, two-stage power device designed for use in commercial digital radios and wireless LANs. To ensure rugged and reliable operation, HEMT devices are fully passivated. Both bond pad and backside metallization are Ti/Au, which is compatible with conventional die attach, thermocompression, and thermosonic wire bonding assembly techniques.

APH608 is the new Designation for the APH518\_A.

**Performance Characteristics (Ta = 25°C)**

Specification	Min	Typ	Max	Unit
Frequency	24		26.5	GHz
Linear Gain	16	17		dB
P1dB	28	29		dBm
IP3	37	38		dBm
Input Return Loss	6	8		dB
Output Return Loss	8	12		dB
Vd1, Vd2		5		V
Vg1, Vg2		-0.5		V
Id1		350		mA
Id2		600		mA

**Absolute Maximum Ratings (Ta = 25°C)**

Parameter	Min	Max	Unit
Vd1, Vd2		5.5	V
Id1		600	mA
Id2		670	mA
Vg1, Vg2	-1	+0.3	V
Input drive level		15	dBm
Assy. Temperature (60 seconds)		300	deg. C

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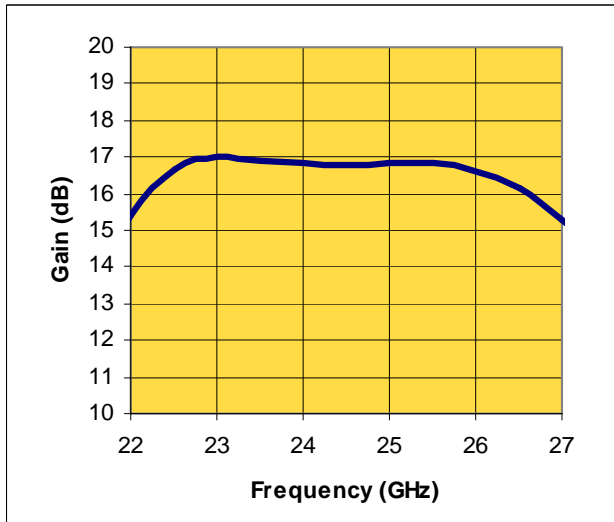


Product Datasheet

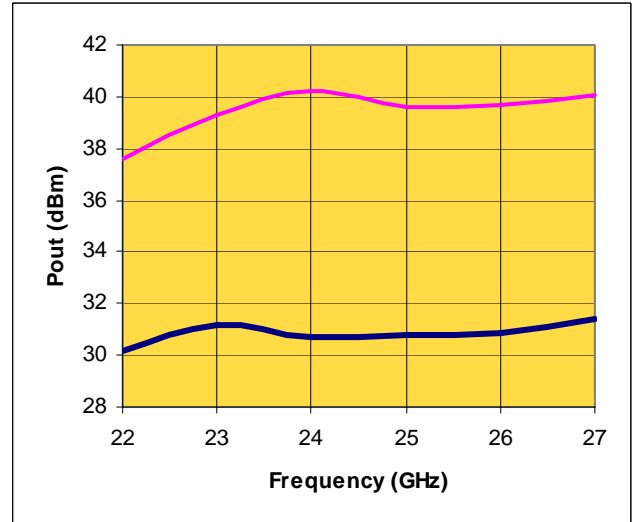
Revision: August 2007

Measured Performance Characteristics (Typical Performance at 25°C)  
Vd1 = Vd2 = 5.0V, Id1 = 350mA, Id2 = 600mA

Linear Gain Versus Frequency

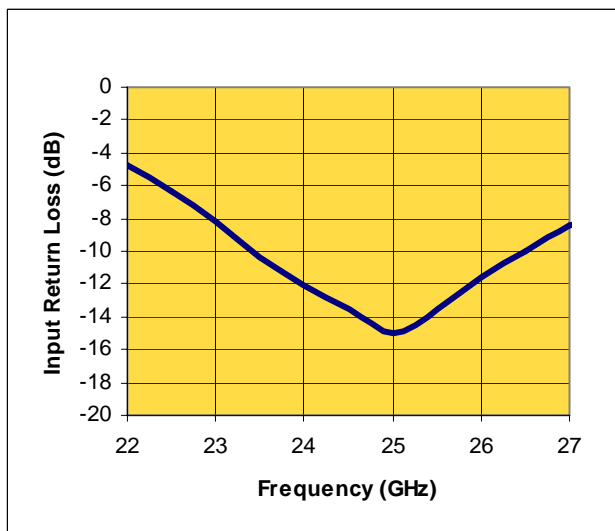


Fixtured Pout Versus Frequency

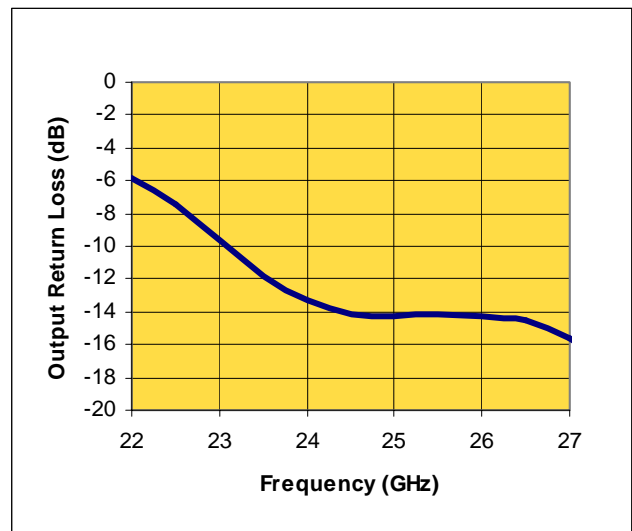


— P1dB — IP3 @ 18dBm per tone

Input Return Loss Versus Frequency



Output Return Loss Versus Frequency



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Product Datasheet

Revision: August 2007

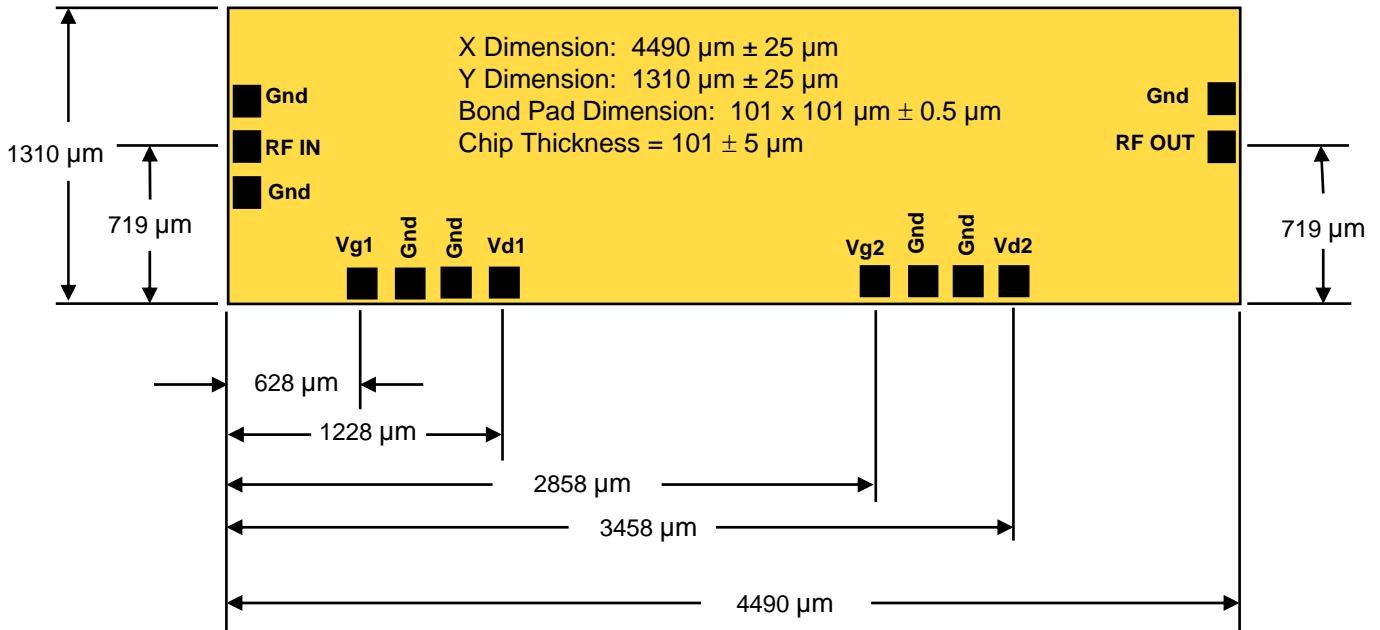
Measured Performance Characteristics (Typical Performance at 25°C)  
Vd1 = Vd2 = 5.0V, Id1 = 350mA, Id2 = 600mA

FREQ GHz	S11 MAG	S11 ANG	S21 MAG	S21 ANG	S12 MAG	S12 ANG	S22 MAG	S22 ANG
22	0.589	166.087	5.862	60.807	0.006	27.105	0.51	49.667
22.5	0.486	151.885	6.752	25.226	0.005	-13.601	0.432	32.759
23	0.39	140.311	7.075	-9.621	0.005	-56.812	0.335	18.056
23.5	0.302	130.989	7.019	-41.854	0.006	-88.334	0.261	6.678
24	0.248	122.722	7.004	-71.975	0.007	-134.716	0.224	-5.407
24.5	0.215	99.83	6.973	-101.22	0.007	-171.75	0.202	-18.527
25	0.177	68.989	7.057	-131.515	0.008	165.117	0.198	-38.896
25.5	0.206	27.858	7.03	-162.312	0.011	137.097	0.196	-60.804
26	0.261	-17.314	6.839	165.552	0.011	105.527	0.194	-87.269
26.5	0.321	-48.057	6.449	133.848	0.013	87.241	0.185	-112.142
27	0.381	-72.85	5.836	102.586	0.014	63.459	0.158	-139.45
27.5	0.396	-92.452	5.239	72.735	0.013	34.773	0.12	-157.324
28	0.41	-104.993	4.768	44.81	0.011	18.412	0.078	-178.56

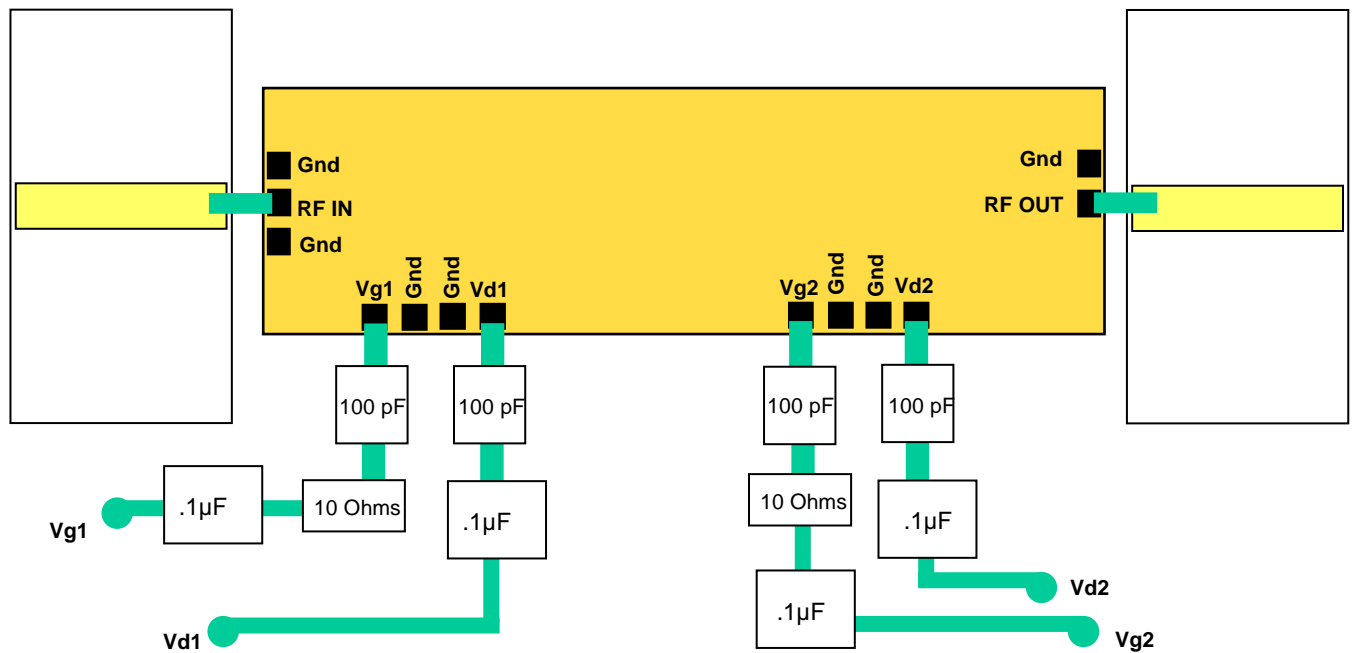
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Die Size and Bond Pad Locations



Suggested Bonding



Recommended Assembly Notes

1. Bypass caps should be 100 pF (approximately) ceramic (single-layer) placed no farther than 30 mils from the amplifier.
2. Best performance obtained from use of <10 mil (long) by 3 by 0.5 mil ribbons on input and output.

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