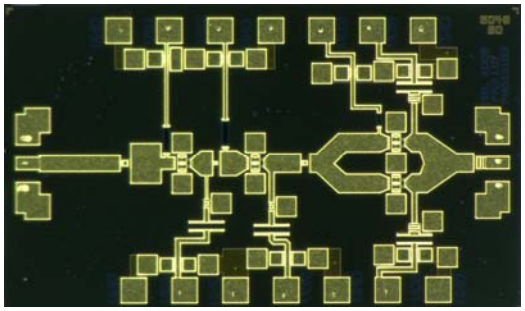
PA3-110



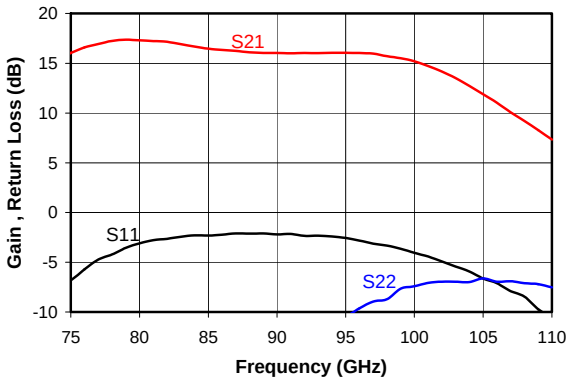
- **InP Power Amplifier**
- **W-Band operation**
- **75-110 GHz**
- **Medium Power Amplifier**

The PA3-110 is a 3 stage MMIC amplifier die fabricated using HRL's H2 InP HEMT process that is AS9100B certified. The amplifier has drain connections for each stage and independent gate biases for each stage. The third stage has a single gate connection and 2 drain connections that control the 2 devices for the output stage.

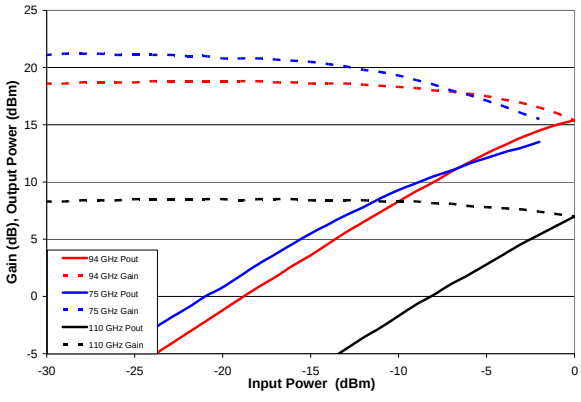
Electrical Specifications, T_A=25°C, Vd=2.0 V, Id=120 mA, 50 Ω Input and Output

Specification	Units	Min	Typ	Max
Frequency	GHz	75		105
Gain	dB	10	13	
Input Return Loss	dB		-3	-3
Output Return Loss	dB		-7	-5
Saturated Output Power	dBm		13	

Typical Gain & Return Loss



Typical Gain & Output Power



3/18/2011

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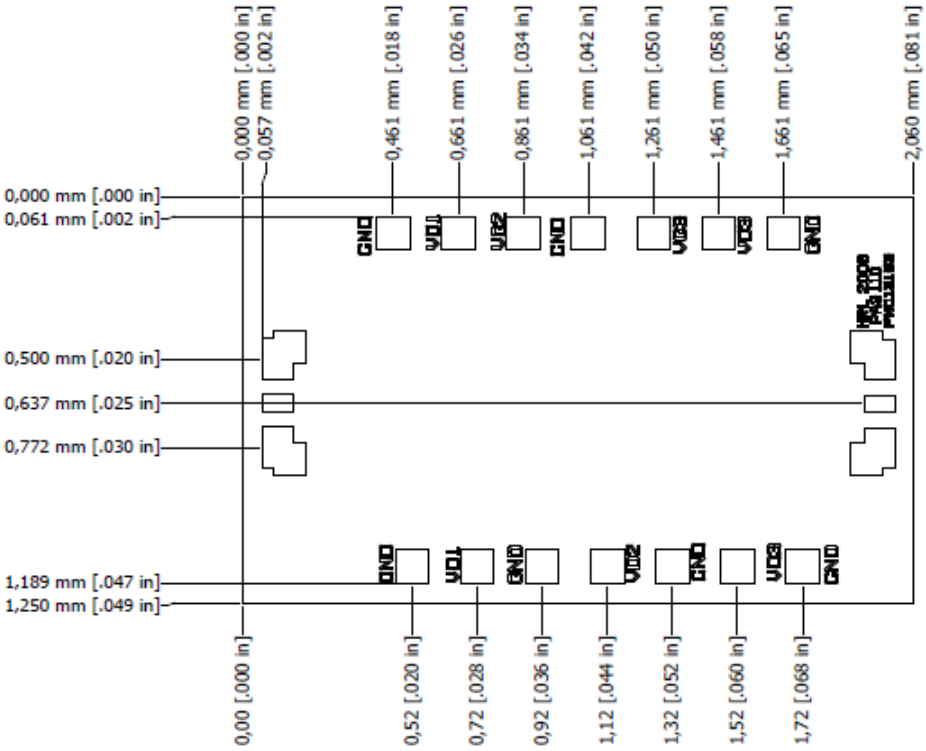
Table I Maximum Ratings

Symbol	Parameter	Value	Note
P_{IN}	Input Power	10 dBm	
V_{DS}	Drain to Source Voltage	2.0 V	
V_{GD}	Gate to Drain Voltage	-2.5 to 0.0 VDC	
V_{GS}	Gate to Source Voltage	-1.0 to 0.0 VDC	
T_M	Die Attach Temperature (30 seconds)	290^{o} C	

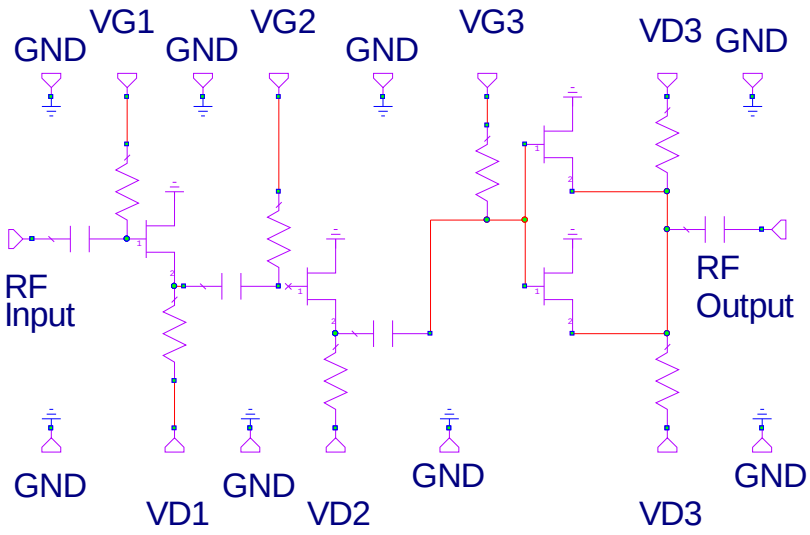
Outline Drawing



Bond pads are nominally 0.1 mm square
Bond pad locations shown from die edge to pad center
Die thickness is nominally 50 um

Solid models and CAD files available at
http://mmics.hrl.com

DC Schematic



Typical Assembly Drawing