

- InP Power Amplifier
- W-Band operation
- 70-100 GHz
- Medium Power Amplifier

The LSPA2 is a 3 stage MMIC amplifier die fabricated using HRL's H2 InP HEMT process that is AS9100B certified. The amplifier has a drain connection for each stage and independent gate biases for each stage. The third stage has a single gate pad and 2 drain pads that control the 2 devices that form the output stage.

Electrical Specifications, $T_A=25^\circ\text{C}$, $V_d=2.0\text{ V}$, $I_d=120\text{ mA}$, $50\ \Omega$ Input and Output

Specification	Units	Min	Typ	Max
Frequency	GHz	70		100
Gain	dB	10	13	
Input Return Loss	dB		-7	-5
Output Return Loss	dB		-7	-5
Saturated Output Power	dBm		13	

Typical Gain and Return Loss Performance

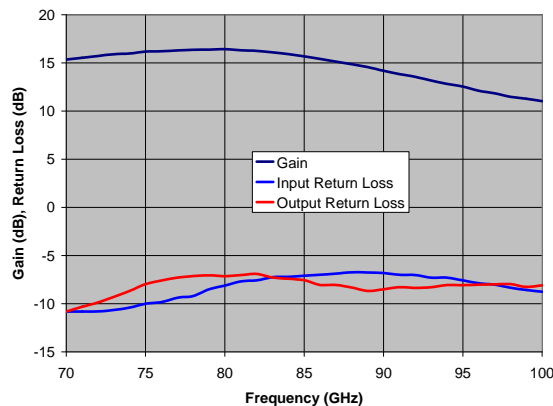
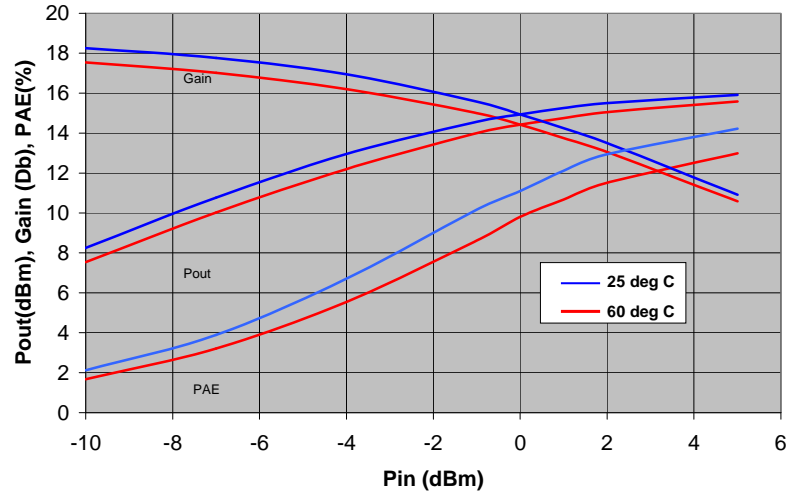


Table I Maximum Ratings

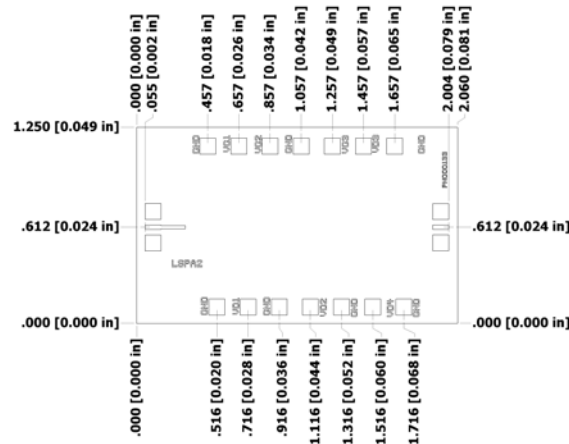
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Symbol	Parameter	Value	Note
P_{IN}	Input Power	10 dBm	
V_{DS}	Drain to Source Voltage	2.0 V	
V_{GD}	Gate to Drain Voltage	-2.5 to 0.0 VDC	
V_{GS}	Gate to Source Voltage	-1.0 to 0.0 VDC	
T_M	Die Attach Temperature (30 seconds)	290° C	

Typical Performance over Temperature



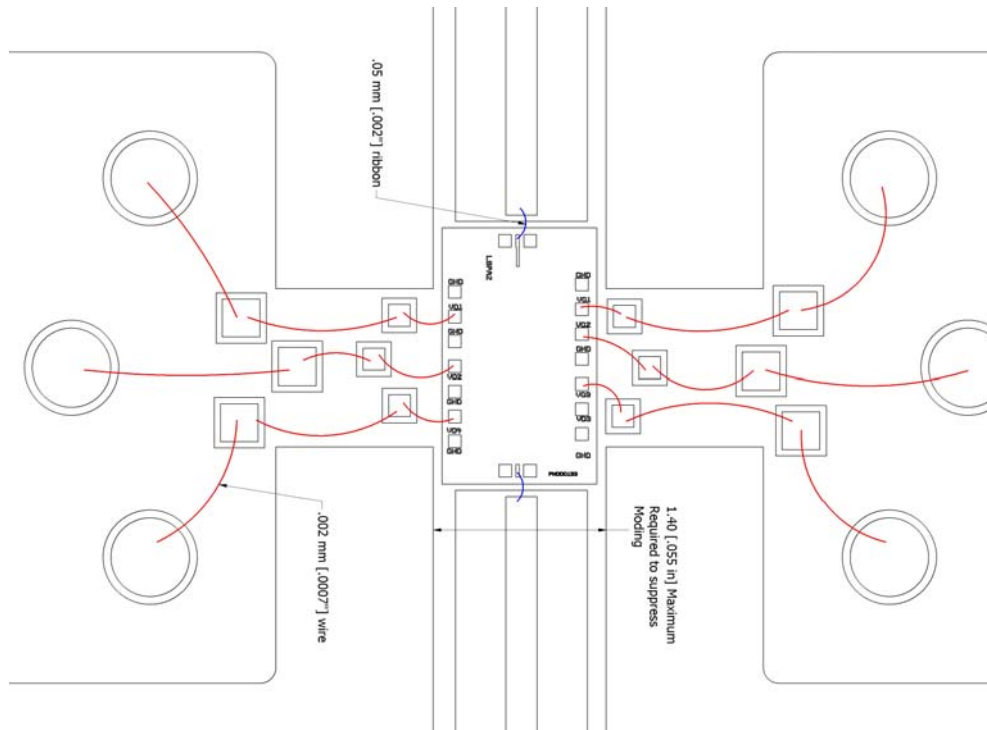
Outline Drawing



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

Assembly Drawing

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To enable the high performance that this MMIC provides a small RF pad is used that can only support the attachment of a single gold wire bond. The following are some sample bonding schedules that can assist the user in setting up their particular bonding schedule.

Table I Typical Bonder setting for the RF pads

Parameter	Units			
Bonder		Westbond 7476	Westbond 747677E-79	Hybond 572A-40
Force	grams	18	18	19.8
Power	W	0.6	0.22	0.55
Time	mS	20	20	24.5
Stage temp	deg C	100	100	120
bonding Tip	Gaiser	2145-1515-3/4-F-CER	4445-1507-3/4-F	
Gold Wire	inches	0.0008	0.0007	0.0007

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