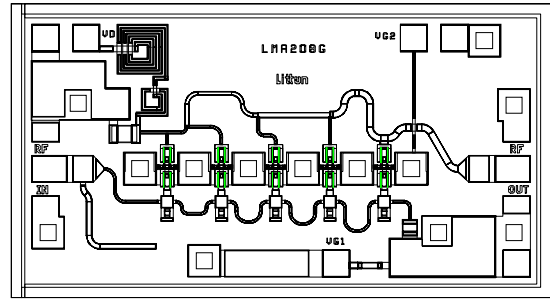


Features

- 10dB Typical Gain
- 19dBm 1-dB Gain Compression Power
- 15dB Input/Output Return Loss Typical
- 2-26GHz Frequency Bandwidth
- DC Decoupled RF Input and Output
- Chip Size : 1.986mmX1.082mm (.078"X.043")
- Chip Thickness : 100 μ m
- Pad Dimension : 100 μ m²



Description

The Filtronic LMA208G is a medium power PHEMT amplifier that operates from 2 to 26GHz. This 5-stage travelling wave amplifier provides 10dB nominal gain and 1-dB gain compression power output of greater than 19dBm. The LMA208G is designed for use as wideband driver amplifier in ECM (Electronic Counter-Measure) and commercial communication system applications. Ground is provided to the circuitry through vias to the backside metallization.

Electrical Specifications at T_a=25°C

(VDD=+4.0V, Z_{in}=Z_{out}=50 Ω)

Symbol	Parameter	Test Conditions	Limit			Units
			Min.	Typ.	Max.	
BW	Operating Bandwidth		2		26	GHz
S21	Small Signal Gain	@ .75Idss	8	10		dB
Idss	Drain Current at Saturation	Idss @ Vg=0 V	120	260	360	mA
Δ S21	Small Signal Gain Flatness			± 1.2	± 1.5	dB
RLin	Input Return Loss		-9.5	-13		dB
RLout	Output Return Loss		-6.5	-14		dB
S12	Reverse Isolation		-20	-30		dB
P-1dB	1-dB Gain Compression Power	@ .75Idss	16	19		dBm
Psat	Saturated Output Power			21		dBm

Absolute Maximum Ratings

Symbol	Parameter/Conditions	Min.	Max.	Units
Vdd	Drain Supply Voltage		7	Volts
Idd	Total Drain Current		225	mA
Pin	RF Input Power		12	dBm
Pt	Power Dissipation		1.5	W
Tch	Operating Channel Temperature		150	°C
Tstg	Storage Temperature	-65	165	°C
Tmax.	Max. Assembly Temp. (1 min. max.)		300	°C

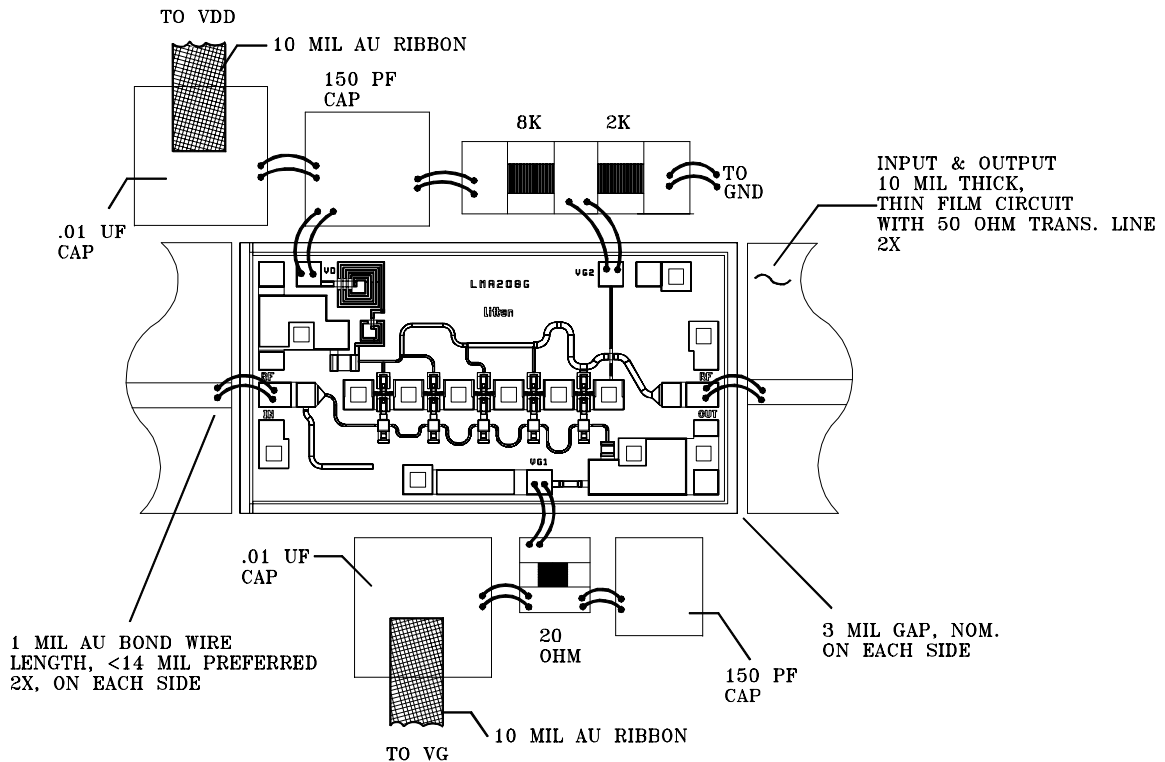
Notes:

1. This GaAs MMIC is susceptible to damage from Electrostatic Discharge. Proper precautions should be used when handling these devices.
2. Specifications subject to change without notice.

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Assembly Diagram

STANDARD BIAS



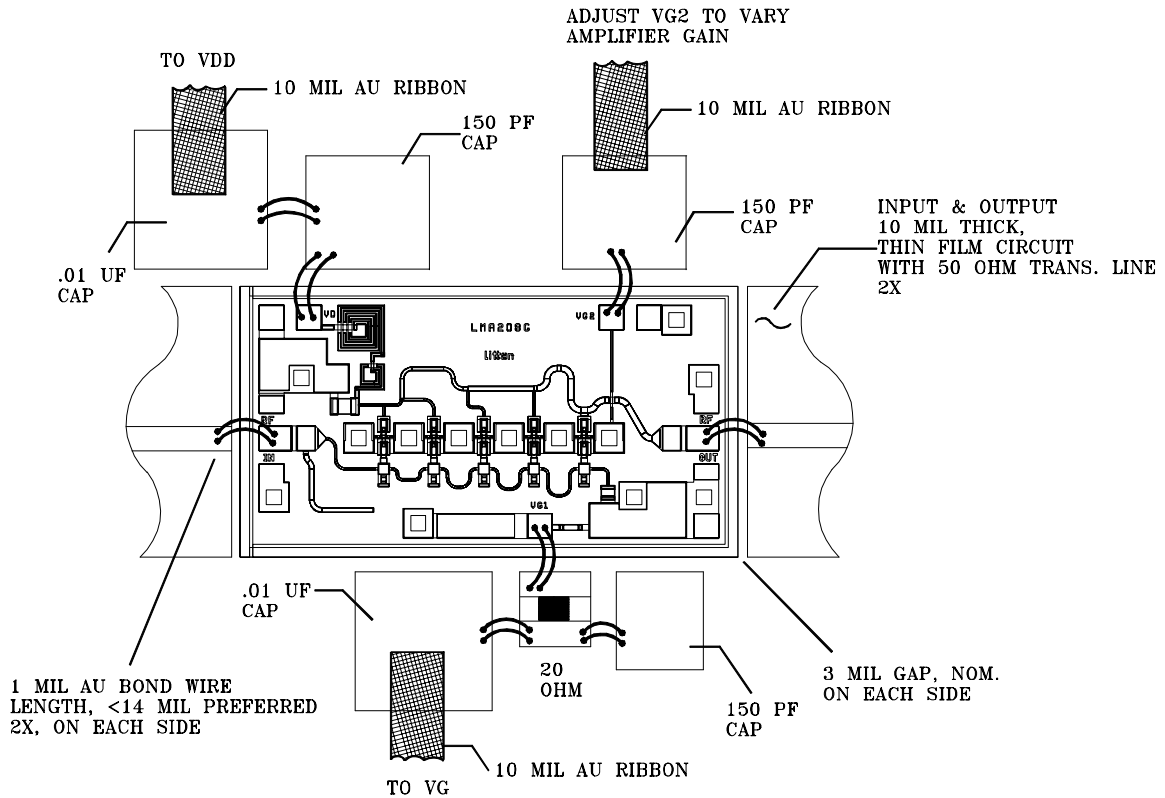
Notes:

- 1.) Recommended lead bond technique is thermo-compression wedge bonding with 0.001" (25µm) diameter wire. The bond tool force shall be 35-38 gram. Bonding stage temperature shall be 230-240°C, heated tool (150-160°C) is recommended. Ultrasonic bonding is not recommended.
- 2.) The recommended die attach is an eutectic 80/20 Gold/Tin solder, using a stage temperature of 285-290°C. Maximum time at temperature is 1 minute. Use of forming gas (90% N₂, 10% H₂) for best results.
- 3.) Bond on bond or stitch bond acceptable.
- 4.) Conductor over conductor acceptable. Conductors must not short.

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Assembly Diagram

VARIABLE BIAS

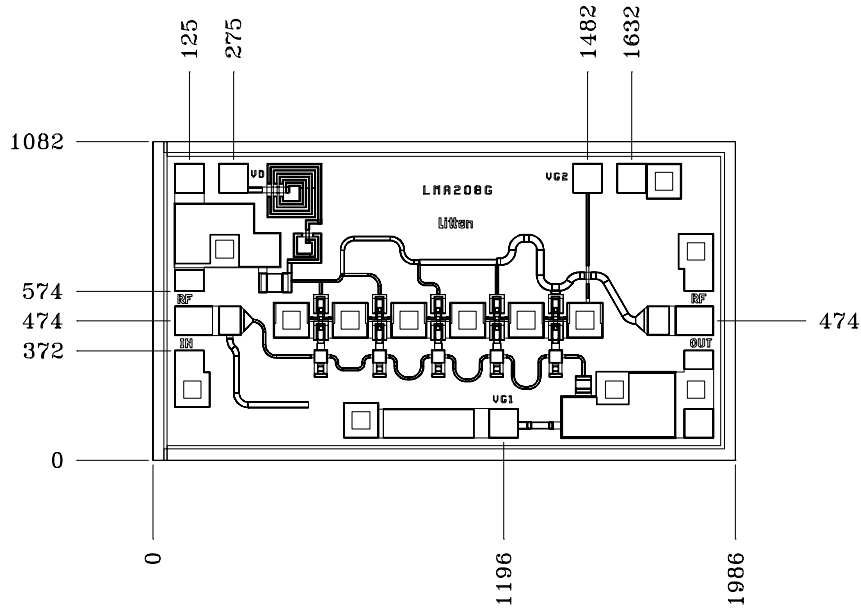


Notes:

- 1.) Recommended lead bond technique is thermo-compression wedge bonding with 0.001" (25µm) diameter wire. The bond tool force shall be 35-38 gram. Bonding stage temperature shall be 230-240°C, heated tool (150-160°C) is recommended. Ultrasonic bonding is not recommended.
- 2.) The recommended die attach is an eutectic 80/20 Gold/Tin solder, using a stage temperature of 285-290°C. Maximum time at temperature is 1 minute. Use of forming gas (90% N₂, 10% H₂) for best results.
- 3.) Bond on bond or stitch bond acceptable.
- 4.) Conductor over conductor acceptable. Conductors must not short.

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Mechanical Outline



Notes:

- 1.) Unless Otherwise specified.
- 2.) All units are in micron (μm).
- 3.) All bond pads are $100 \times 100 \mu\text{m}^2$.
- 4.) Bias pad (V_{DD}) size is $100 \times 121.5 \mu\text{m}^2$.

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