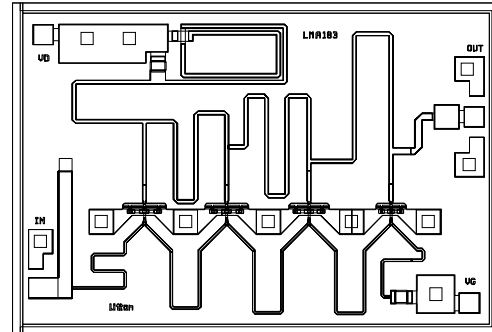


Features

- 5.5dB Typical Noise Figure
- 7.5dB Typical Gain
- 15dBm Saturated Output Power
- 12dB Input/Output Return Loss Typical
- 2-18GHz Frequency Bandwidth
- +4 Volts Dual Bias Supply
- DC Decoupled RF Output
- Chip Size : 1.62mmX2.38mm (.064"X.094")
- Chip Thickness : 100µm
- Pad Dimension : 100µm².



Description

The Filtronic LMA183 is a GaAs monolithic distributive amplifier which operates from 2 to 18GHz. This LMA183 amplifier produces a typical gain of 7.5dB and a noise figure of less than 5.5dB. The LMA183 is suitable for gain block, low noise and driver amplifier applications. DC decoupled output RF port. 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}=50Ω)

Symbol	Parameter	Test Conditions	Limit			Units
			Min.	Typ.	Max.	
BW	Operating Bandwidth		2		18	GHz
S ₂₁	Small Signal Gain	V _D =4V, I _{ds} =.5I _{dss}	6	7.5		dB
I _{dss}	Drain Current at Saturation		60	100	200	mA
ΔS ₂₁	Small Signal Gain Flatness			±.5	±1	dB
NF	Noise Figure	@ .5I _{dss}		5.5	7	dB
RL _{in}	Input Return Loss			-14	-10	dB
RL _{out}	Output Return Loss			-14	-10	dB
S ₁₂	Reverse Isolation		-13	-16		dB
P-1dB	1-dB Gain Compression Power		10	12		dBm

Absolute Maximum Ratings

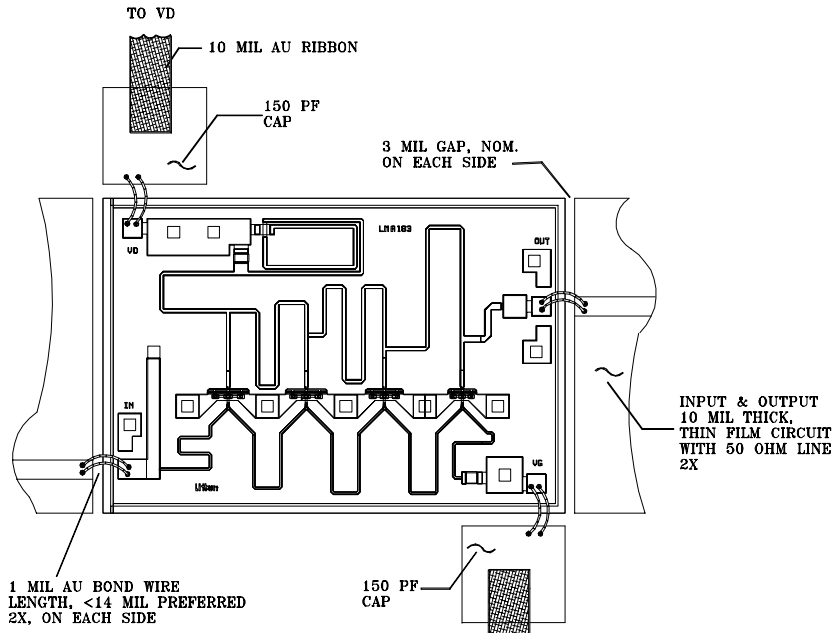
Symbol	Parameter/ Conditions	Min.	Max.	Units
V _{dd}	Drain Supply Voltage		8	Volts
I _{dd}	Total Drain Current		200	mA
P _{in}	RF Input Power		20	dBm
P _t	Power Dissipation		1.6	W
T _{ch}	Operating Channel Temperature		150	°C
T _{stg}	Storage Temperature	-65	165	°C
T _{max.}	Max. Assembly Temp. (1 min. 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

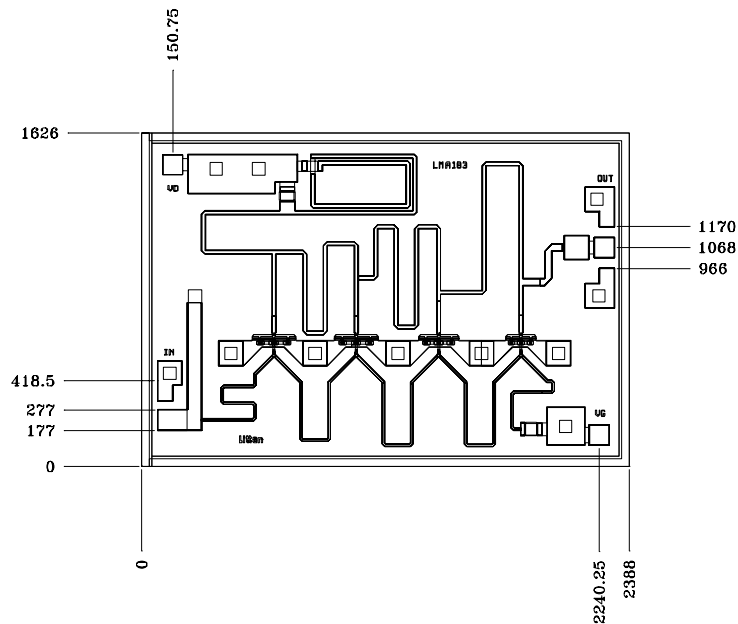


Notes:

- 1.) Recommended lead bond technique is thermocompression 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 Ablebond silver epoxy, the stabilize bake temperature is set at 150°C for 45 minutes.
- 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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