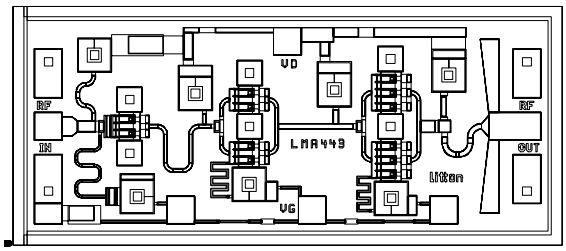
Filtronic
Solid State

31 GHz Medium Power Amplifier

LMA443

PRELIMINARY

Typical Specifications



- +21dBm Output Power @ 1dB Gain Compression
- 18dB Typical Gain
- 10dB Input/Output Return Loss
- +5Volts Dual Bias Supply
- DC Decoupled RF Input and Output
- Chip Size : 0.85mmX1.95mm (.034"X.077")
- Chip Thickness : 100µm (.004")
- Pad Dimension : 100X100µm^2

Description

The LMA443 is a medium power PHEMT amplifier that operates from 28.5 to 31.5GHz. This 3-stage amplifier provides 18dB linear power gain with 1dB gain compression power output of greater than +21dBm. The LMA443 is designed for LMDS CPE (consumer premises equipment) applications. Ground is provided to the circuitry through vias to the backside metallization.

Electrical Specifications at T_a=25°C

(V_{DD}=+5V, Z_{IN}=Z_{OUT}=50Ω)

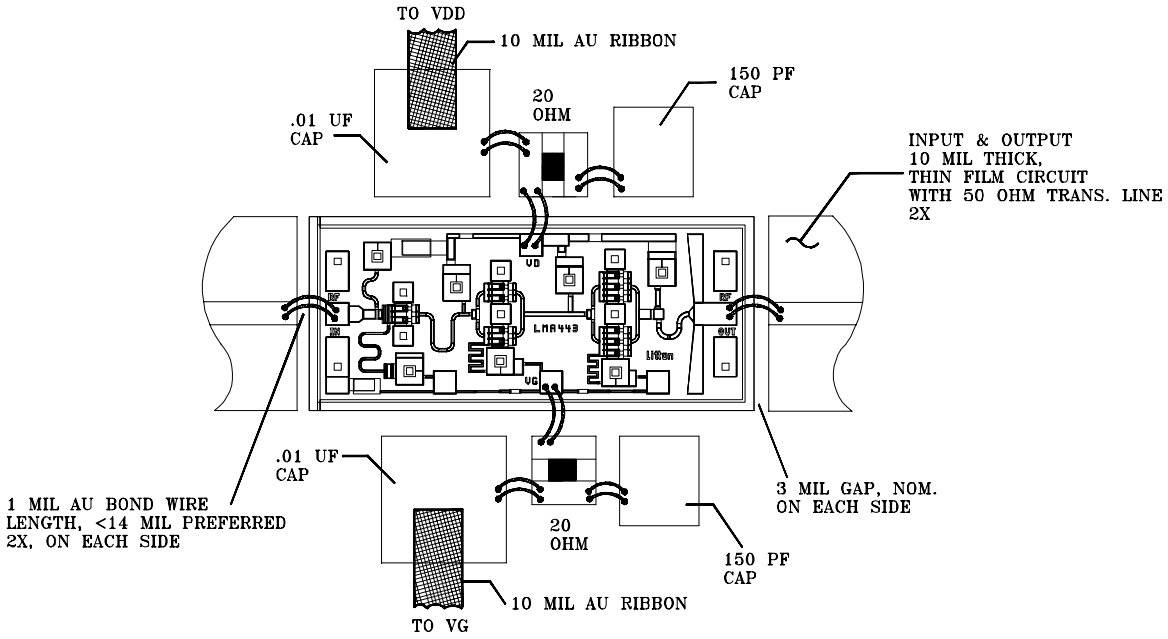
				Limit		
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BW	Operating Bandwidth		28.5		31.5	GHz
S_{21}	Small Signal Gain	@ .75 I_{DSS}	17	18		dB
I_{DSS}	Drain Current at Saturation	@ I_{DSS}	165	360	495	mA
ΔS_{21}	Small Signal Gain Flatness			±1	±2	dB
RL_{IN}	Input Return Loss			-10		dB
RL_{OUT}	Output Return Loss			-10		dB
S_{12}	Reverse Isolation			-40		dB
P_{-1dB}	1-dB Gain Compression Power	@ .75 I_{DSS}	17	19 [2]		dBm
P_{SAT}	Saturated Output Power			21		dBm

Absolute Maximum Ratings

Symbol	Parameter/Conditions	Min.	Max.	Units
V_{DD}	Drain Supply Voltage		8	Volts
I_{DD}	Total Drain Current		495	mA
P_{IN}	RF Input Power		15	dBm
Pt	Power Dissipation		4	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. Higher output power of greater than +23.5dBm can be achieved when applying higher V_{DD} of 5.5 volts.
3. Specifications subject to change without notice.

Assembly Diagram



Mechanical Outline