

INS2097

2400-2500MHz 100W High-Power Amplifier

Description

The Model INS2097 is a high power, class AB solid state amplifier which utilizes LDMOS Power Devices to offer excellent efficiency and linearity Characteristics from 2400MHz to 2500MHz. Inspower's ISO9001 quality management system assures consistent performance and the highest reliability.

Product Features

- 50Ω RF impedance, Fully Integrated Matching
- 100W minimum Output at Psat
- Gain Adjustable
- Built-in monitoring functions
- High reliability and ruggedness



Electrical Specifications @ 25°C, 50 Ω System

Symbol	Parameter	Unit	Min.	Typ.	Max.
BW	Operating Frequency	MHz	2400		2500
P _{SAT}	Power Output Saturated	Watt	100	130	
P _{1dB}	Power Output P1dB	Watt	80		
G _{1dB}	Power Gain	dB	50		
ΔG _{SS}	Small Signal Gain Flatness	dB			±1.0
ΔG _P	Power Gain Flatness	dB			± 0.5
P _{IN}	Input Power for Rated P _{SAT}	dBm		0	3
VVA	Gain Adjustment Range	dB	15	20	
S11	Input Return Loss	dB			-10
IP ₃	Third Order Intercept Point 2-Tone @ 40dBm/Tone, 1MHz Spacing	dBm		+51	
H	Harmonics @ Pout = 100W	dBc			-45
Spur	Spurious Signal	dBc		-70	-60
V _{DC}	Operation Voltage	Volt	26	28	30
I _{DQ}	Quiescent Current	Amp		1.0	
I _{DD}	Current Consumption @ Pout = 100W	Amp			10
T _{ON/OFF}	Switching Time	uSec		2	5

Mechanical Specifications

Parameters	Value	Unit
Dimensions (L x W x H)	140 * 125 * 25 mm	mm
RF Connectors Input/ Output	SMA – Female / SMA - Female	
DC Interface Connector	D-Sub 3W3 Male	
I/O Connector	D-Sub 9pinMale	
Weight	1	Kg
Cooling	External Heat-sink	

Environmental Characteristics

Parameters	Specifications	Remark
Operating Case Temperature Range	-30°C to +80°C	
Storage Temperature	-40°C to +85°C	
Relative humidity w/o condensation	95%	

Protection

Item	Specifications for Activation	Remark
Input Overdrive	+10 dBm max	
Output Protection	Mismatch Protected by Output Isolator	

Connector (D-sub 3W3 male)

Pin No	Pin Description	Specifications	Remark
A1	VDD	+28V DC	
A2	GND	Ground	
A3	N/C	No Connection	

I/O Interface (D-sub 9pin Male)

Pin No	Pin Description	Specifications	Remark
1	Forward Power Monitor	2V±0.05V@ 50dBm, slope≈50mV/dB	
2	Reverse Power Monitor	2V±0.05V@ 50dBm, slope≈50mV/dB	
3	Current Monitor	Analog Voltage Relative to IDD @ 25mV/100mA	
4	Temperature Monitor	Vout=10mV/°C×Temp+500mV	
5	Shut Down	Enable: TTL Low (0V) or Open Disable: TTL High (+3.3 - +5.0V)	
6	VVA	Control voltage range: 0 - 3.5VDC Maximum Gain: 0VDC, Minimum Gain: 3.5VDC	
7	NC	Not Connect	
8	GND	Ground	
9	GND	Ground	

Typical Characteristics



