

Features

- 0.1 GHz to 20 GHz Frequency Range
- Typical P1dB power > +22dBm
- Gain 33 dB Typical
- Gain Flatness ± 1.5 dB Typical
- 2.7 dB Typical Noise Figure
- Internally Regulated
- Operates from Single +12V Supply
- Unconditionally Stable
- Available in Hermetic Laser sealed version
- State-of-the-Art GaAs Technology

Applications

- Radar
- Test Equipment
- Communications Systems
- EW Systems
- Lab Applications

General Description

LA10406 is a Broadband medium power amplifier with Low Noise Figure in a compact size. The amplifier I/Os are Internally matched to 50 Ohms and are DC blocked. The amplifier is ideal for use as medium power with low noise for test equipment, communication systems or where broadband amplification and power are required in a Hi-Rel communications system for Commercial or Military applications.



Electrical Specifications

Parameter	Symbol	Specification	Conditions
Frequency Range		0.1 to 20 GHz	
Small Signal Gain ²		29dB minimum	
Gain Flatness ²		±2.5dB maximum	
Noise Figure ²		5dB maximum	
Output Power (P1dB)		+22dBm typical	0.1 to 16 GHz, measured @10 GHz
Output Power (P1dB)		+21dBm typical	16 to 20 GHz
OIP3		30dBm typical	@ 10GHz Two tone F1- F2 = 10MHz
RF Input Impedance ²		1.8:1	Reference to 50Ω VSWR
RF Output Impedance ²		1.8:1	Reference to 50Ω VSWR
Supply Voltage Positive		+12V	Small Signal
Supply Current Positive		350mA maximum	

Maximum Ratings¹

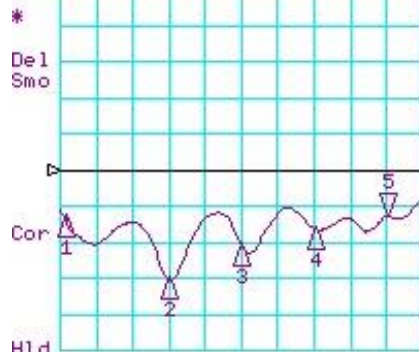
Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Operating Temperature	OTR	-40		+85	°C	
Storage Temperature	STR	-40		+125	°C	
RF Input power (CW)				+15	dBm	
Die Junction	T _J			+150	°C	
Positive Supply Voltage				+15	V	

Notes

Note 1	Unconditional Stability
Note 2	Possibly higher, below 300 MHz and above 18 GHz. NF Above 18 GHz Guaranteed by design

Simulation Plots

CH1 LOG 10 dB/ REF 0 dB
S11 5:-12.724 dB 18.000 000 000 GHz

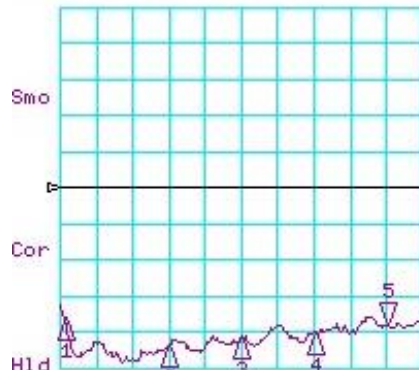


CH1 Markers

1:-12.778 dB
300.000 MHz
2:-30.006 dB
6.00000 GHz
3:-20.478 dB
10.0000 GHz
4:-16.074 dB
14.0000 GHz
5:-12.778 dB
18.0000 GHz

H1d
START 100.000 MHz STOP20000.000 MHz

CH3 LOG 10 dB/ REF -10 dB
S12 5:-48.293 dB 18.000 000 000 GHz

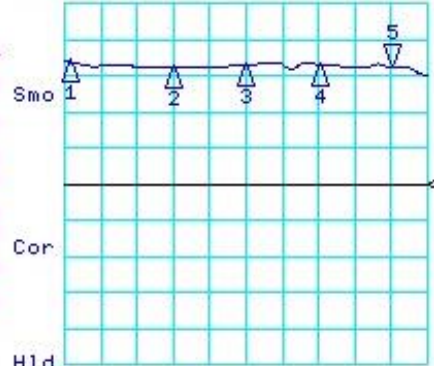


CH3 Markers

1:-46.228 dB
300.000 MHz
2:-53.805 dB
6.00000 GHz
3:-51.381 dB
10.0000 GHz
4:-50.181 dB
14.0000 GHz
5:-48.293 dB
18.0000 GHz

H1d
START 100.000 MHz STOP20000.000 MHz

CH2 LOG 10 dB/ REF 0 dB
S21 5: 32.173 dB 18.000 000 000 GHz

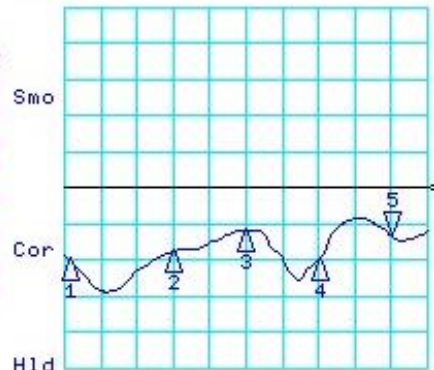


CH2 Markers

1: 33.956 dB
300.000 MHz
2: 32.454 dB
6.00000 GHz
3: 33.074 dB
10.0000 GHz
4: 33.154 dB
14.0000 GHz
5: 32.173 dB
18.0000 GHz

H1d
START 100.000 MHz STOP20000.000 MHz

CH4 LOG 10 dB/ REF 0 dB
S22 5:-13.112 dB 18.000 000 000 GHz

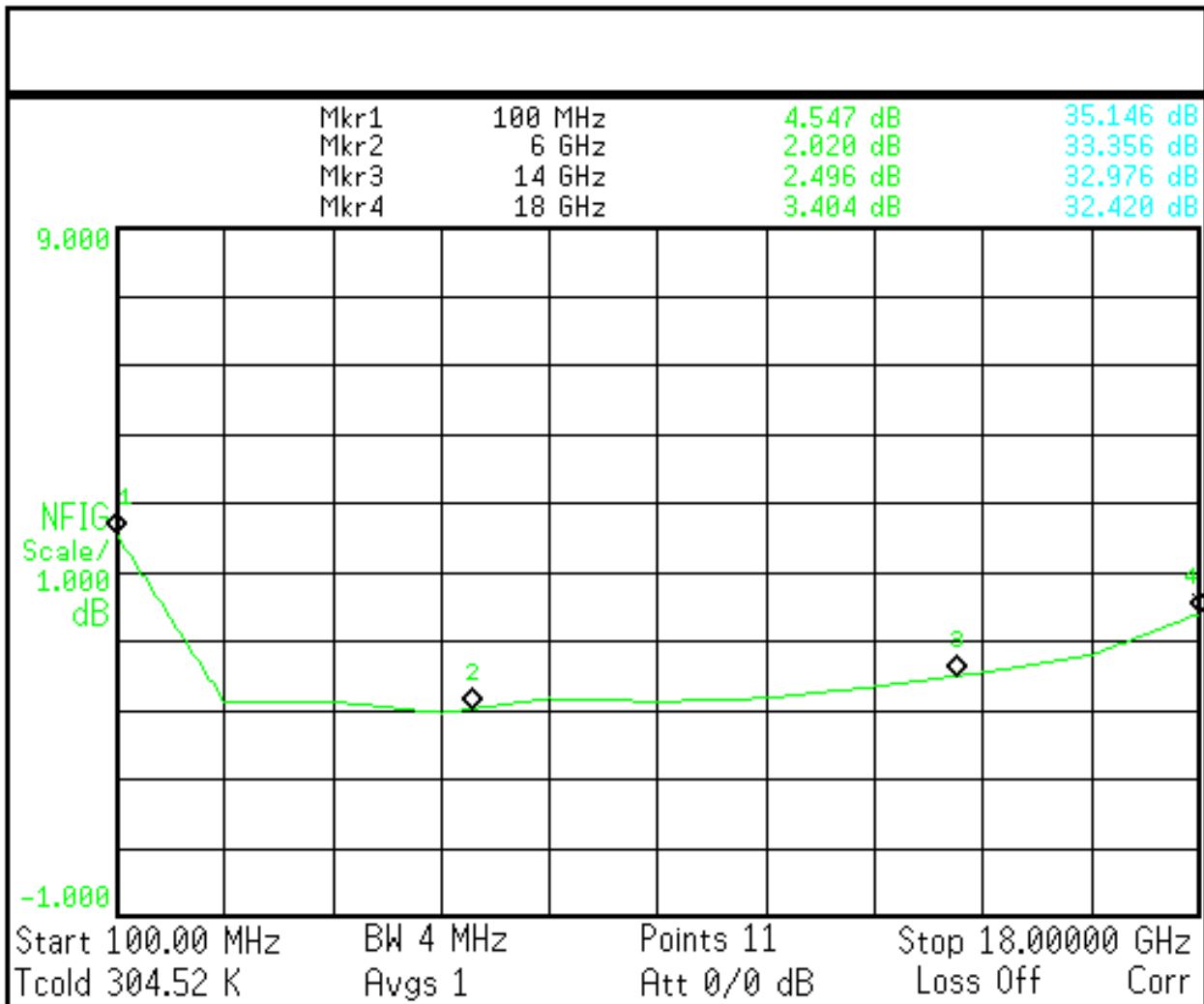


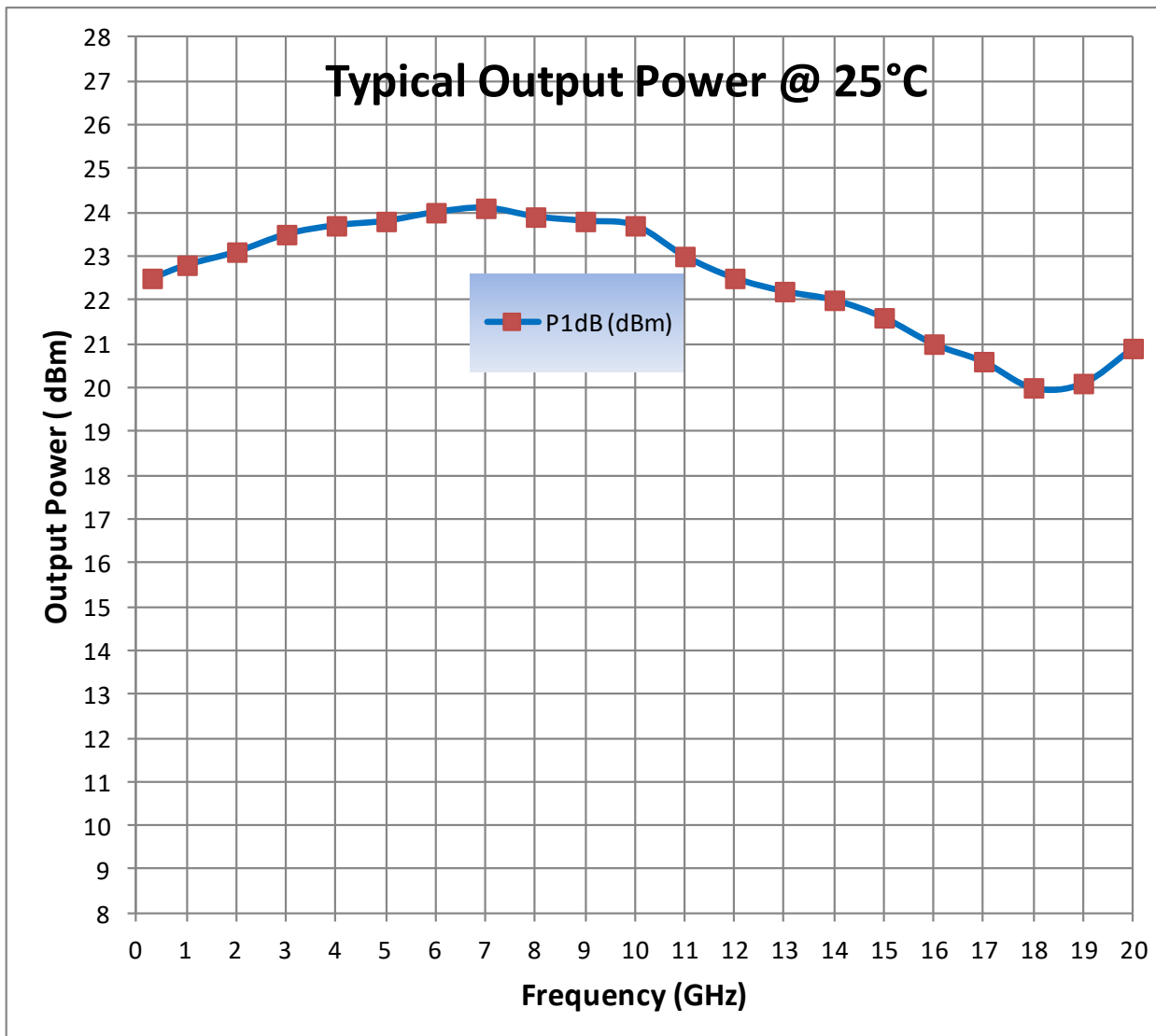
CH4 Markers

1:-19.572 dB
300.000 MHz
2:-17.636 dB
6.00000 GHz
3:-12.038 dB
10.0000 GHz
4:-19.999 dB
14.0000 GHz
5:-13.112 dB
18.0000 GHz

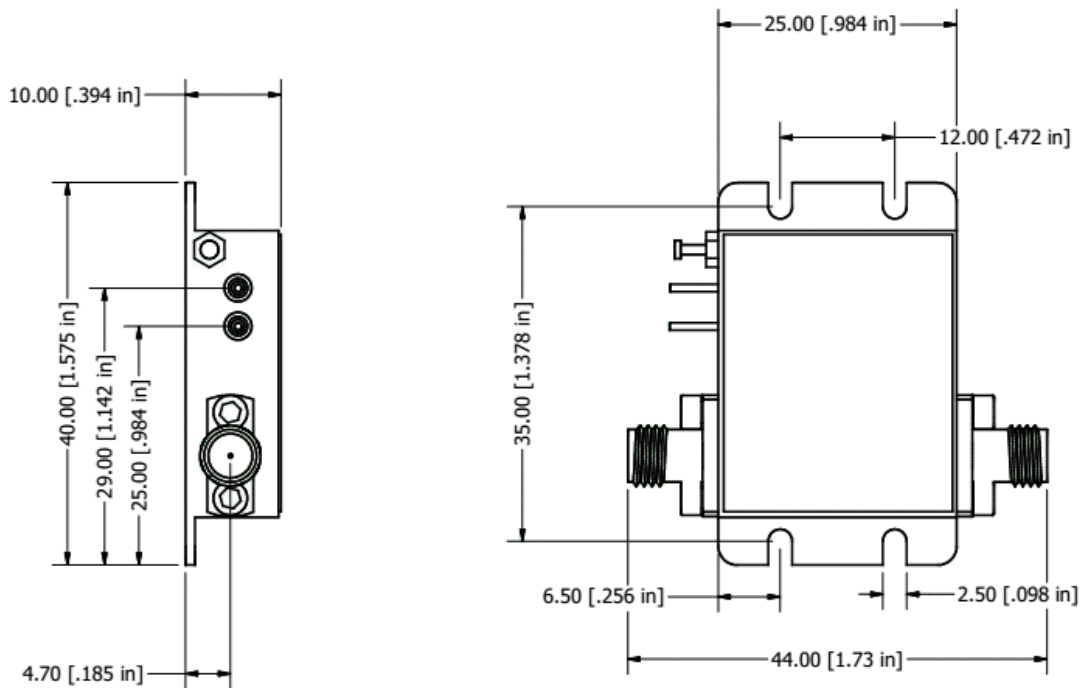
H1d
START 100.000 MHz STOP20000.000 MHz

Typical Noise Figure





Package Outline: SMA Connectorized



Field replaceable SMA Connectors, Removable Ground slug
Housing: Aluminum Gold over Nickel plated

Note: The unit must be attached to proper heat sink

Revision History

Date	Rev	Author	Details of Revision
04-22-25	0	AR	Initial Version