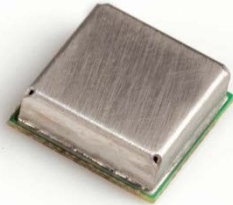


# Low Cost RF Amplifier

**Frequency Range: 10-500 MHz**



## Features

- Broad Bandwidth: 10-500 MHz
- Low Phase Noise Performance
- Low Cost Packaging
- Low Noise Figure: 3.0 dB Typical

Model LC8501 is a high performance low cost amplifier covering a wide 10-500 MHz bandwidth. This design utilizes a silicon based active for superior low phase noise performance. This standard model may also be modified or customized in order to optimize any one particular parameter. All specification ratings are based on measurements in a 50 Ω (ohm) system with a DC supply voltage tolerance of +/- 2%.

## Technical Specifications

Parameter	Unit	Typical	Min/Max
Frequency Range	MHz	10-500	10-500
Gain	dB	11	10
Noise Figure	dB	3.0	3.5
Output Power @ 1 dB Compression	dBm	8	7
Output 3 <sup>rd</sup> Order Intercept	dBm	21	-
Output 2 <sup>nd</sup> Order Intercept	dBm	31	-
Reverse Isolation	dB	15	-
Input VSWR	---	1.75:1	2.0:1
Output VSWR	---	1.75:1	2.0:1
Supply Voltage	volts	+5	+5
Supply Current	mA	16	20

## Mechanical & Electrical

Parameter	Specification
Specification Temperatures (Min/Max)	-40°C to +85°C
Housing Size	0.500" L x 0.500" W x 0.300" H
Housing Drawing	LC1

## Maximum Ratings

Storage Temperature	-55°C to +85°C
Operating Temperature	-40°C to +85°C
DC Voltage @ 25°C	+8 volts
Input Drive @ 25°C (CW)	+13 dBm

\* Typical values are measured at 25°C, but not guaranteed.

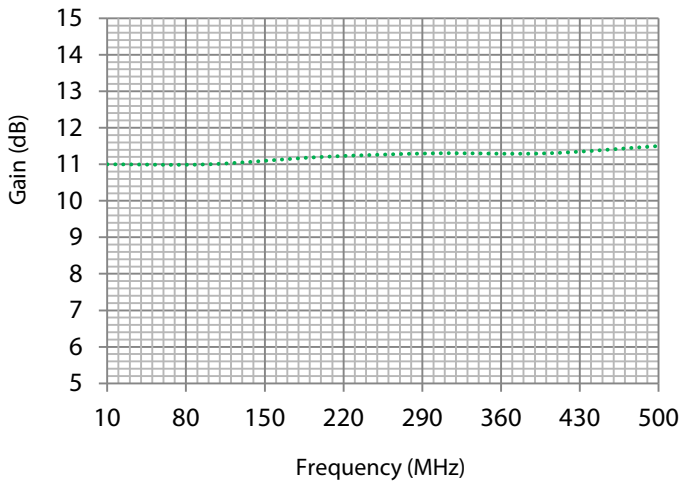
## Typical Phase Noise Performance\*\*

Frequency Offset	Phase Noise (dBc/Hz)
10 Hz	-142
100 Hz	-148
1 kHz	-155
10 kHz	-155
100 kHz	-158

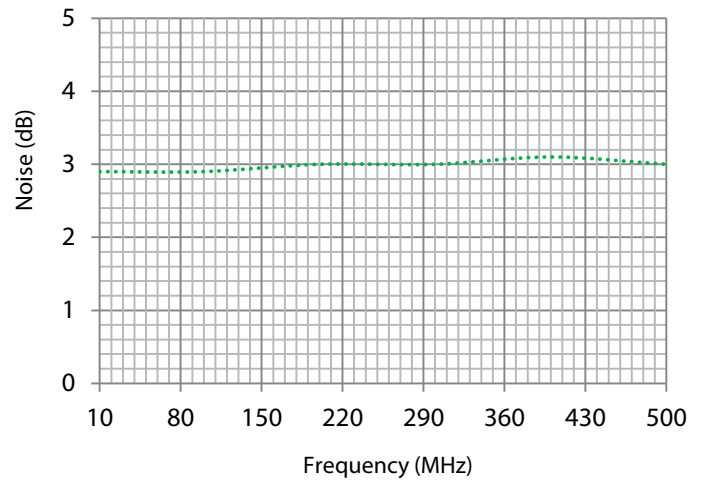
\*\* Typical values are measured at 500 MHz at 25°C, and are not guaranteed.

## Typical Performance Graphs

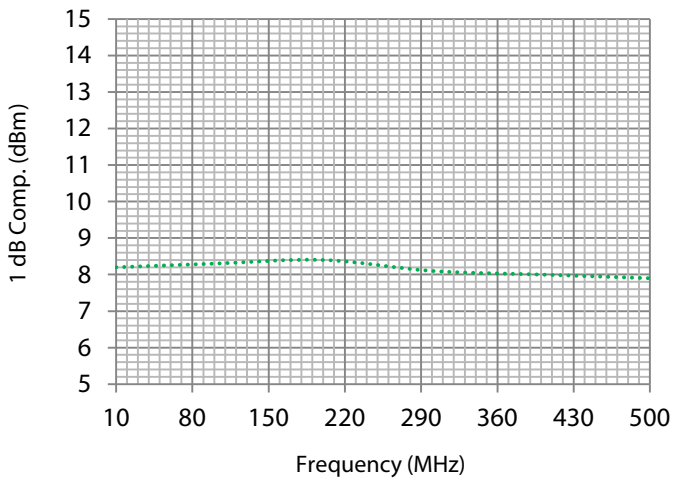
### Gain (dB)



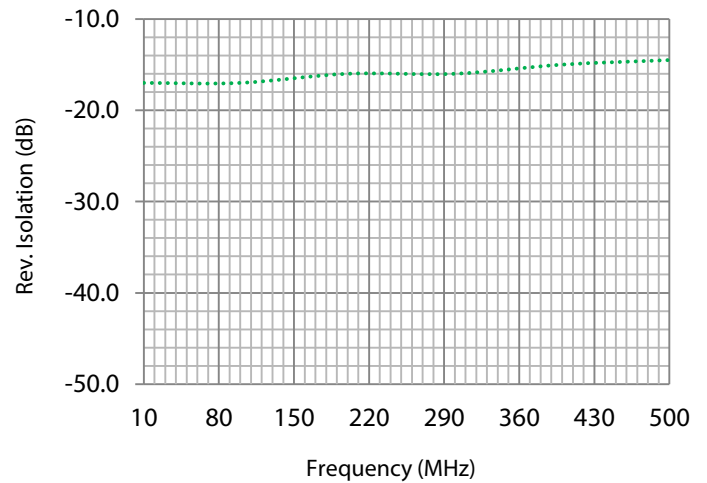
### Noise Figure (dB)



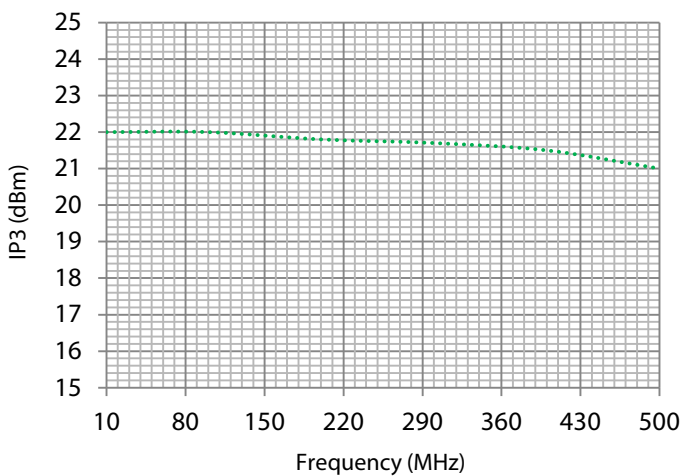
### 1 dB Compression (dBm)



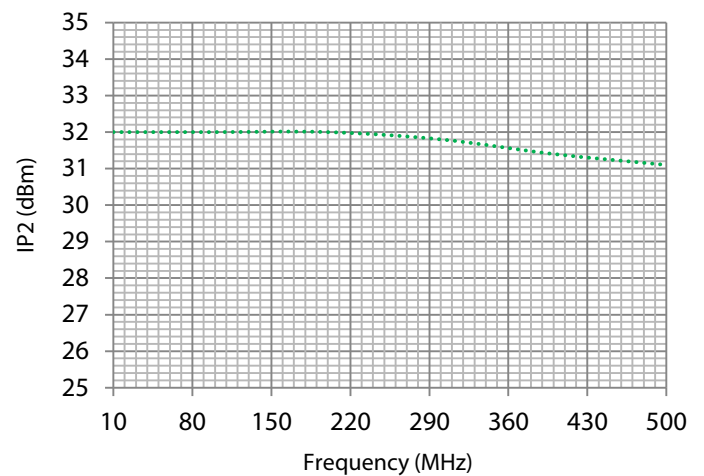
### Reverse Isolation (dB)



### 3<sup>rd</sup> Order Intercept (dBm)

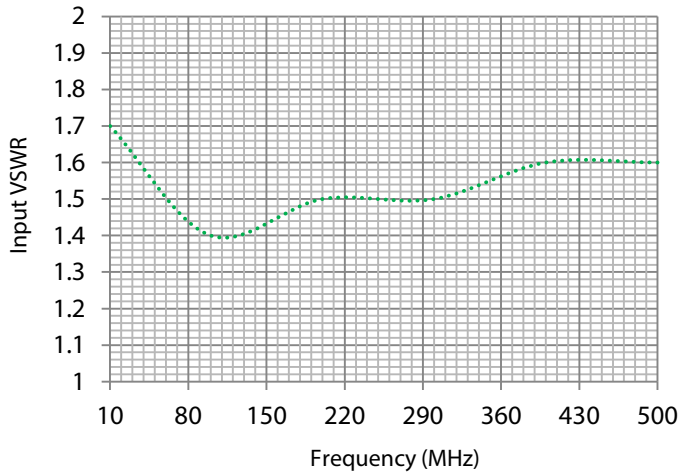


### 2<sup>nd</sup> Order Intercept (dBm)

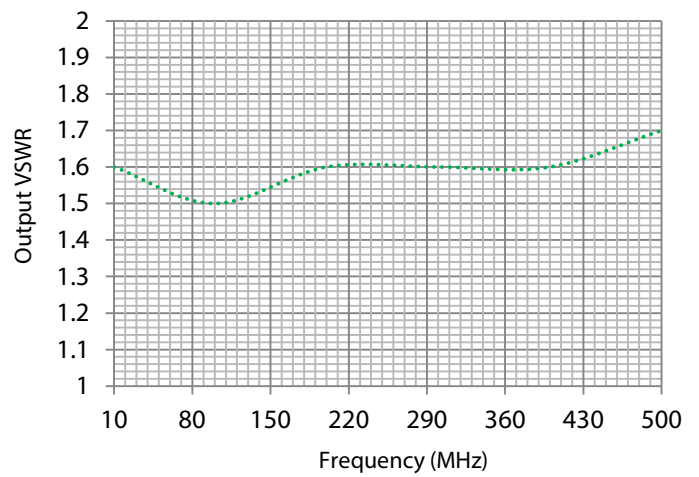


## Typical Performance Graphs

### Input VSWR



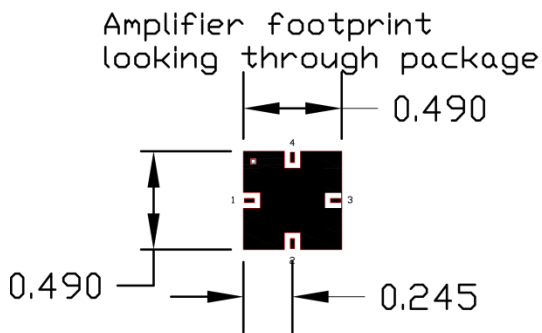
### Output VSWR



## Instructions

Grounding Instructions	Care should be taken to effectively ground each unit.
Revisions	API reserves the right to make revisions to both product and/or the information contained within their datasheets without advanced notice.
Min./Max. Values	Specifications are guaranteed when tested in a 50 Ω (ohm) system.
Typical performance graphs and values are measured at 25°C, but not guaranteed.	

## Outline Drawing



Pinout  
 1 RF input  
 2 GND  
 3 RF output  
 4 +5VDC  
 Ground pad - RF and DC ground

