

LNA Series

10 – 250MHz Low Noise Amplifier

Features

- Frequency Range:10-250MHz
- Gain: 17dB
- P_{1dB}: +21dBm
- IP3: +39dBm
- Noise Figure: 1.4dB
- DC Power: 5V/160mA
- SMA Connector

Performance measured @ 125MHz

Description

LNA-250 is a high dynamic range Low Noise Amplifier as well as 100mW Driver Amplifier operates with frequency range from 10 to 250MHz.

Picture



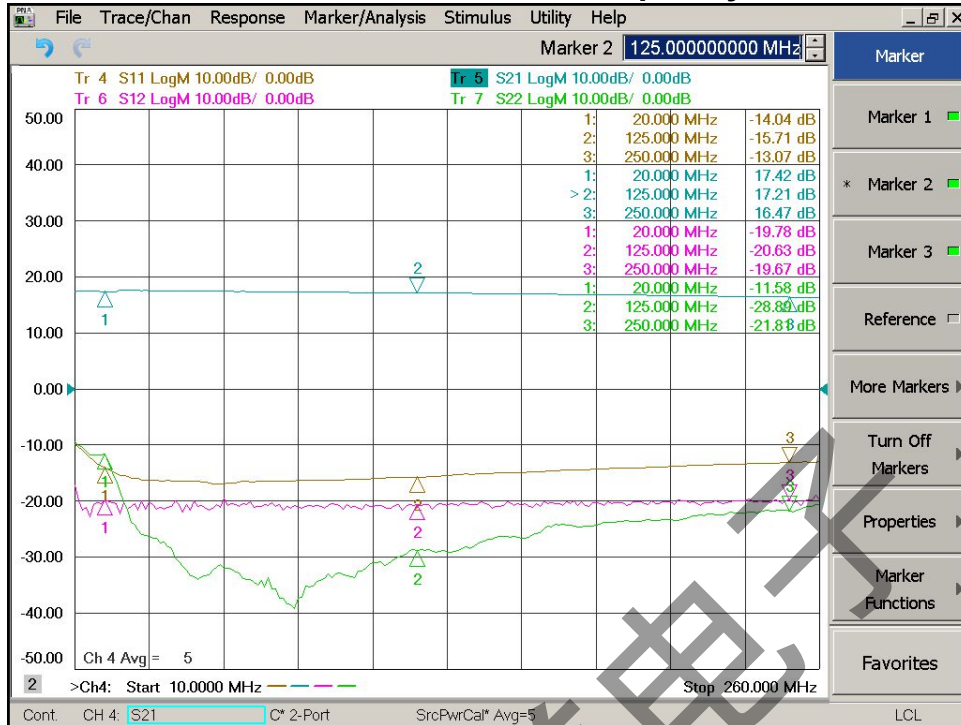
Electrical Specifications @ +25 °C, Z_{in} = Z_{out} = 50 Ω, DC Voltage = +5V

| Parameter | Unit | Minimum | Typical | Maximum |
|-----------------------------------|------|---------|---------|---------|
| Frequency Range | MHz | 10 | | 250 |
| Gain S ₂₁ f = 10MHz | dB | 15 | 17 | |
| f = 125MHz | dB | 15 | 17 | |
| f = 250MHz | dB | 14 | 16 | |
| Gain Flatness | dB | | ±0.5 | ±0.8 |
| P _{1dB} f = 125MHz | dBm | +19 | +21 | |
| IP3 f = 125MHz | dBm | +37 | +39 | |
| Noise Figure | dB | | 1.4 | 1.8 |
| Reverse Isolation S ₁₂ | dB | -17 | -20 | |
| VSWR f = 125MHz | | | | |
| Input VSWR S ₁₁ | | | 1.4:1 | 1.8:1 |
| Output VSWR S ₂₂ | | | 1.1:1 | 1.5:1 |
| DC Power Supply | V | 4.75 | 5 | 5.25 |
| Supply Current | mA | 140 | 160 | 180 |

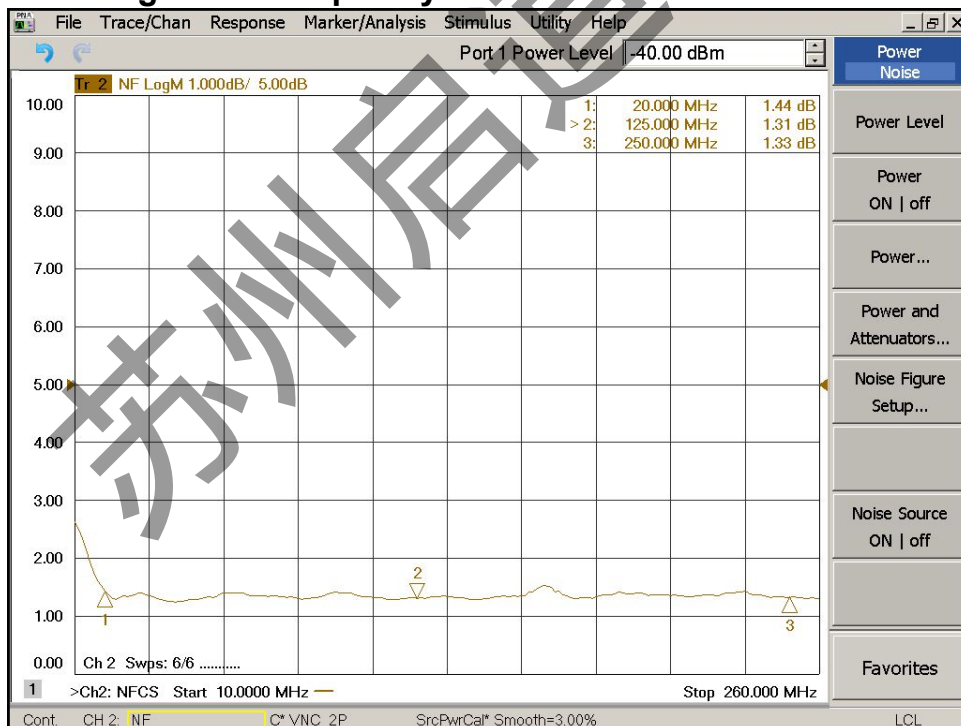
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Gain S21, Return Loss S11, S22 vs Frequency



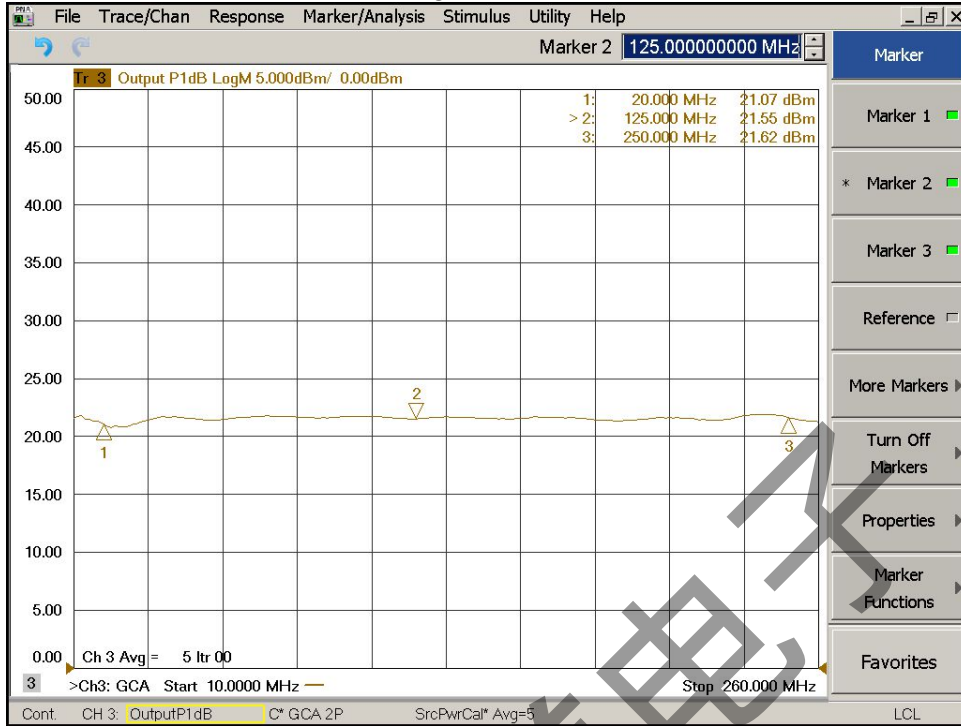
Noise Figure vs Frequency



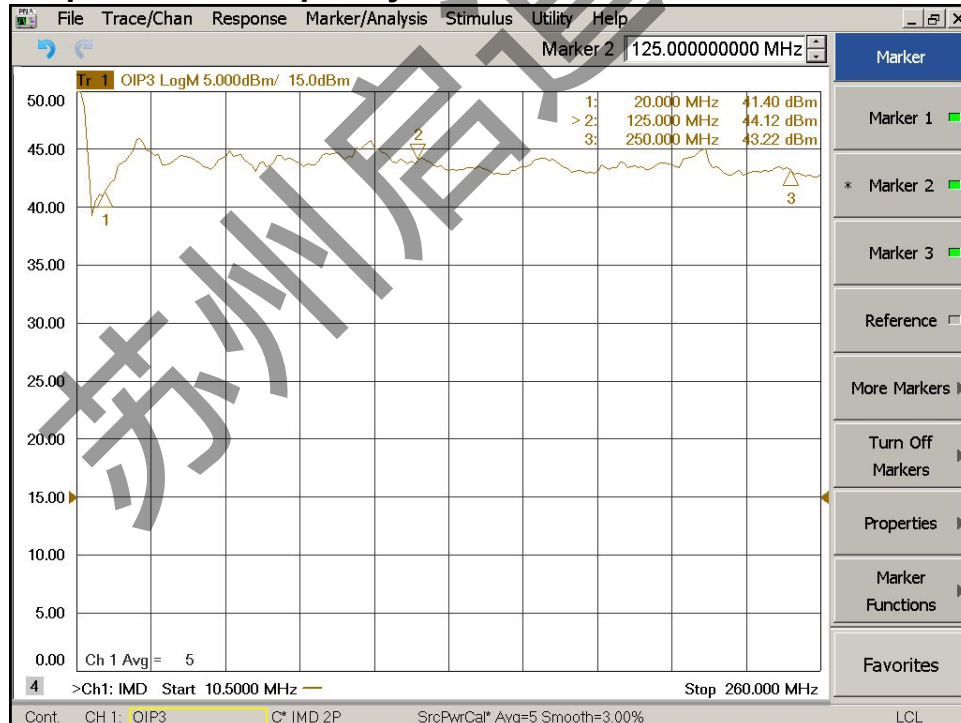
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Output P1dB vs Frequency



Output IP3 vs Frequency



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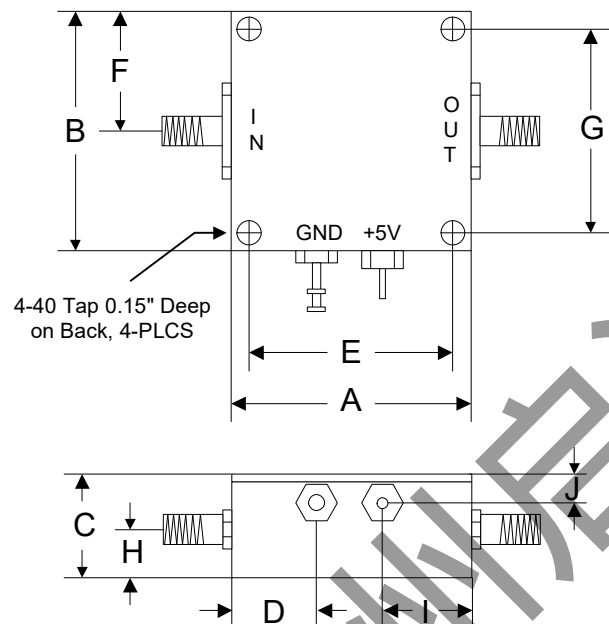
Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|-----------------------|-------------------|
| Supply Voltage | +6V |
| RF Input Power | +20dBm |
| Operating Temperature | -40 °C to +85 °C |
| Storage Temperature | -55 °C to +125 °C |

ESD Sensitive Material



Outline



| | A | B | C | D | E | F | G | H | I | J |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Inch | 1.250 | 1.250 | 0.563 | 0.450 | 1.000 | 0.625 | 1.000 | 0.250 | 0.500 | 0.187 |
| mm | 31.75 | 31.75 | 14.29 | 11.43 | 25.40 | 15.88 | 25.40 | 6.35 | 12.70 | 4.76 |