

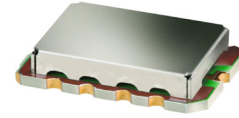
Low Noise Amplifier

TAMP-72LN+

50Ω 400 to 700 MHz

The Big Deal

- High IP3, 36 dBm typ.
- Low Noise Figure, 1.0 dB typ.
- Integrated Bias Matching and Stability Circuits



CASE STYLE: JQ1382

Product Overview

The TAMP-72LN+ (RoHS compliant) utilizes advanced E-PHEMT technology in a single stage low noise amplifier design built into a shielded case (size: .591"x.394"x.118"). The drop-in module offers low noise figure and moderate gain with good input and output return loss over the entire frequency range and without the need of external matching components.

Key Features

| Feature | Advantages |
|----------------------------------|--|
| High Output IP3 | At +36 dBm IP3, in combination with its low noise performance, the TAMP-72LN+ can improve a systems' spur-free dynamic range which is often the critical driver in many receiver applications. |
| Low NF | With only 1.0 dB NF, the TAMP-72LN+ enables greater sensitivity for receiver applications. It includes all matching and stability circuits making this Drop-in LNA module a turn-key solution for ensuring low system sensitivity in demanding applications. |
| Output Power, +21.5 dBm | Provides a good safety margin against damage or saturation from unwanted high power RF signals present at the input to a receiver. |
| Well Matched input/ output ports | With typical input VSWR of 1.35:1 and output VSWR of 1.15:1, the TAMP-72LN+ can be used in cascade with many 50 Ohm components and maintain minimal interaction or reflections. |
| Drop-in Module | Eliminates the need for designers to optimize low noise transistor bias and matching circuitry. The TAMP-72LN+ provides the outstanding combined performance and does not require any external elements. The case PCB area is smaller than most LNA transistor designs with external circuitry. |
| Metal Case | Provides a protective enclosure improving handling robustness in addition to shielding the sensitive high gain devices from close by circuitry. |
| Unconditionally stable | No adverse effects due to reactive loads at the input and output ports avoiding potential instability which can be a critical requirement when integrating high gain, high frequency devices on an open PCB assembly. |

Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
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Surface Mount

Low Noise Amplifier

TAMP-72LN+

50Ω

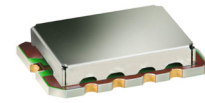
400 to 700 MHz

Features

- Ultra low noise figure, 1 dB typ.
- Output power, up to +21.5 dBm typ.
- Good output IP3, 36 dBm typ.
- Good VSWR, 1.2 dB typ.
- Unconditionally stable

Applications

- PSR (Public Safety Radio)
- Front-end amplifier
- Cellular
- Base station transceiver, tower mounted amplifier, repeater
- General purpose low noise amplifier



CASE STYLE: JQ1382

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Electrical Specifications at 25°C

| Parameter | Condition (MHz) | Min. | Typ. | Max. | Units |
|---|-----------------|------|-------|-------|-------|
| Frequency Range | | 400 | | 700 | MHz |
| Noise Figure | 400 - 700 | | 1.0 | 1.2 | dB |
| Gain | 400 - 700 | 16.5 | 20.0 | | dB |
| Gain Flatness | 400 - 700 | | ± 1.3 | ± 2.0 | dB |
| Output Power at 1dB compression | 400 - 700 | 18.5 | 21.5 | | dBm |
| Output third order intercept point (OIP3) | 400 - 700 | | 36 | | dBm |
| Input VSWR | 400 - 700 | | 1.35 | | :1 |
| Output VSWR | 400 - 700 | | 1.15 | | :1 |
| DC Supply Voltage | | | 5.0 | | V |
| DC Supply Current | | | 90 | 120 | mA |

Pin Connections

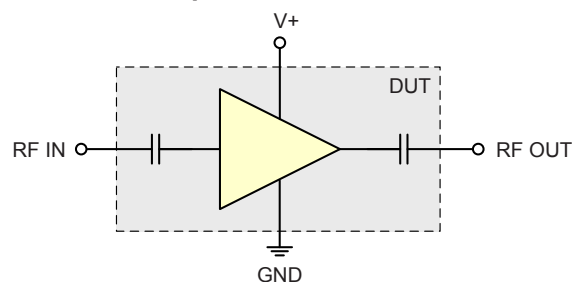
| | |
|--------|------------------|
| RF IN | 10 |
| RF OUT | 5 |
| V+ | 7 |
| GROUND | 1,2,3,4,6,8,9,11 |

Maximum Ratings

| Parameter | Ratings |
|----------------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Operating Voltage | 5.5 V |
| Input RF Power (no damage) | +27 dBm |
| Power Consumption | 660 mW |

Permanent damage may occur if any of these limits are exceeded.

Simplified Schematic



ESD Rating

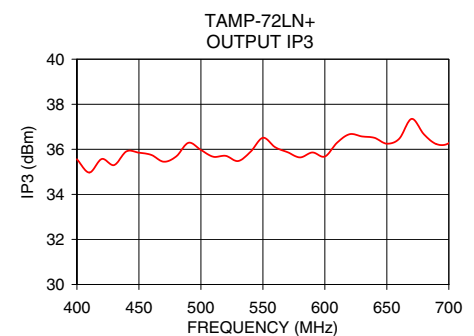
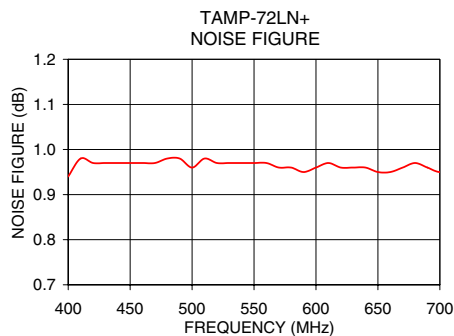
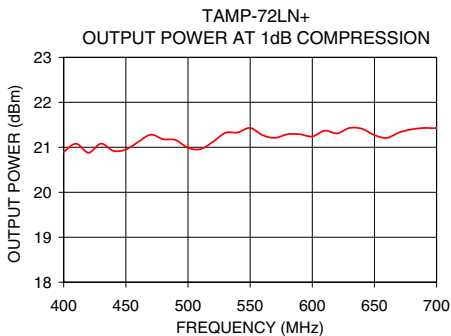
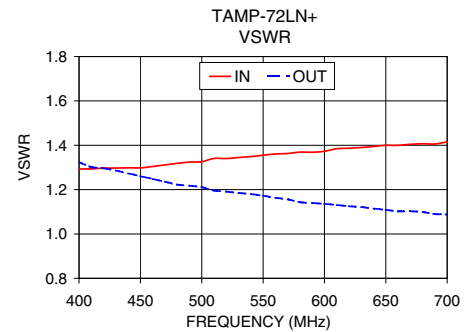
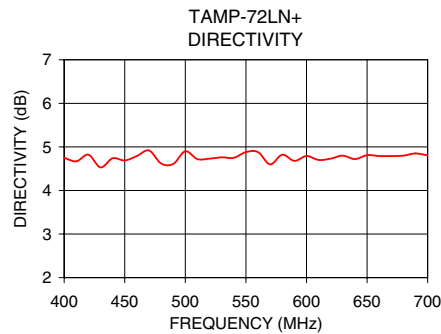
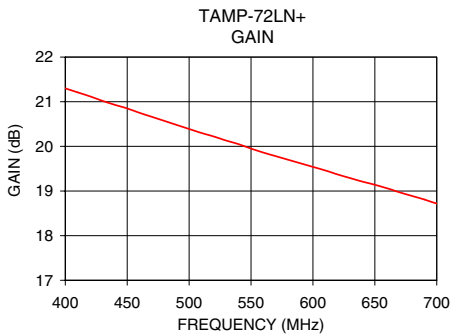
Human Body Model (HBM): Class 1B (500 v to < 1000 v) in accordance with ANSI/ESD STM 5.1 - 2001

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| FREQUENCY (MHz) | GAIN (dB) | DIRECTIVITY (dB) | VSWR IN (:1) | VSWR OUT (:1) | NOISE FIGURE (dB) | P. OUT @ 1dB COMPR. (dBm) | OUTPUT IP3 (dBm) |
|-----------------|-----------|------------------|--------------|---------------|-------------------|---------------------------|------------------|
| 400.00 | 21.30 | 4.75 | 1.29 | 1.32 | 0.94 | 20.90 | 35.56 |
| 420.00 | 21.12 | 4.82 | 1.30 | 1.30 | 0.97 | 20.88 | 35.59 |
| 440.00 | 20.93 | 4.74 | 1.30 | 1.27 | 0.97 | 20.92 | 35.92 |
| 460.00 | 20.75 | 4.79 | 1.30 | 1.25 | 0.97 | 21.12 | 35.71 |
| 480.00 | 20.57 | 4.62 | 1.32 | 1.22 | 0.98 | 21.18 | 35.65 |
| 500.00 | 20.39 | 4.90 | 1.33 | 1.21 | 0.96 | 20.99 | 36.00 |
| 520.00 | 20.22 | 4.73 | 1.34 | 1.19 | 0.97 | 21.12 | 35.71 |
| 540.00 | 20.05 | 4.75 | 1.35 | 1.18 | 0.97 | 21.33 | 35.87 |
| 560.00 | 19.86 | 4.88 | 1.36 | 1.16 | 0.97 | 21.27 | 36.13 |
| 570.00 | 19.78 | 4.60 | 1.36 | 1.16 | 0.96 | 21.21 | 35.86 |
| 580.00 | 19.70 | 4.82 | 1.37 | 1.14 | 0.96 | 21.29 | 35.64 |
| 590.00 | 19.62 | 4.68 | 1.37 | 1.14 | 0.95 | 21.29 | 35.82 |
| 600.00 | 19.54 | 4.79 | 1.37 | 1.14 | 0.96 | 21.24 | 35.67 |
| 610.00 | 19.46 | 4.70 | 1.38 | 1.13 | 0.97 | 21.37 | 36.22 |
| 620.00 | 19.37 | 4.73 | 1.39 | 1.12 | 0.96 | 21.31 | 36.73 |
| 630.00 | 19.29 | 4.80 | 1.39 | 1.12 | 0.96 | 21.43 | 36.53 |
| 640.00 | 19.21 | 4.72 | 1.39 | 1.11 | 0.96 | 21.41 | 36.48 |
| 660.00 | 19.06 | 4.79 | 1.40 | 1.10 | 0.95 | 21.21 | 36.43 |
| 680.00 | 18.89 | 4.80 | 1.41 | 1.10 | 0.97 | 21.40 | 36.71 |
| 700.00 | 18.72 | 4.81 | 1.41 | 1.09 | 0.95 | 21.43 | 36.20 |



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