

3 dB NF, 500 MHz to 20 GHz, Low Noise Broadband Amplifier with 14 dBm, 14 dB Gain and SMA

SLNA-200-15-30-SMA-A is a broadband GaAs PHEMT MMIC-based coaxial Low Noise Amplifier, operating in the 500 MHz to 20.0 GHz frequency range. The amplifier offers 3dB typical Noise Figure, 14 dBm of P1dB and 14 dB small signal gain, with gain flatness of ± 1.75 dB. This amplifier requires only a single positive DC supply with internal voltage regulation, is unconditionally stable, operates over the temperature range of -20°C to 70°C, and characterized by a light weight (11 g) and small size (1.08"x0.53"x0.29"). The rugged package is designed to meet a series of MIL-STD-202F environmental conditions including humidity, shock, vibration, and temperature cycle, and features removable SMA connectors for drop mounting onto a PWB.

Electrical Specifications (TA= 25°C)

| Description | Min | Typ | Max | Unit |
|-----------------------------------|-------|------------|-----|-------|
| Frequency Range | 0.5 | | 20 | GHz |
| Gain | 13.25 | 14 | | dB |
| Gain Flatness | | ± 1.75 | | dB |
| P1dB | +12 | +14 | | dBm |
| IP3 | | +29 | | dBm |
| Noise Figure | | 3 | | dB |
| Input VSWR | | | 2:1 | |
| Output VSWR | | | 2:1 | |
| Operating DC Voltage 1 | 12 | | 15 | Volts |
| Operating DC Current | | 75 | | mA |
| Operating Temperature Range (OTR) | -20 | | +70 | °C |

Absolute Maximum Rating

| Parameter | Rating | Units |
|------------------------------------|-------------|-------|
| Source Voltage | +15 | Volts |
| RF input Power | +23 | dBm |
| Operating Temperature (base-plate) | -20 to +70 | °C |
| Storage Temperature | -55 to +125 | °C |



ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

Mechanical Specifications

Size *Excluding Connectors*

| | |
|------------------|------------------------------|
| Length | 1.08 in [27.43 mm] |
| Width | 0.36 in [9.14 mm] |
| Height | 0.18 in [4.57 mm] |
| Weight | 0.043 lbs [19.5 g] |
| Input Connector | Field Replaceable SMA Female |
| Output Connector | Field Replaceable SMA Female |



Features:

- 0.5 to 20 GHz Frequency Range
- P1dB: 14 dBm
- Small Signal Gain: 14 dB
- Gain Flatness: ± 1.75 dB
- Noise Figure: 3 dB
- Output IP3: +29 dBm
- 50 Ohm Input and Output Matched
- -20 to +70°C Operating Temperature
- Unconditionally Stable
- Single DC Positive Supply
- Built-in DC Voltage Regulator
- Small Size & Light Weight
- Field Replaceable SMA Connectors

Applications:

- Laboratory Applications
- R&D Labs
- Radar Systems
- Electronic Warfare
- Telecom Infrastructure
- Test Instrumentation
- Military & Space
- Communication Systems
- Satellite Communications
- Wireless Communications
- Unmanned Systems
- Microwave Radio Systems
- Power Amplifier
- Low Noise Amplifier
- General Purpose Amplification
- RF Front Ends

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Environmental Specifications

Temperature

Operating Range -20 to +70 deg C
Storage Range -55 to +125 deg C

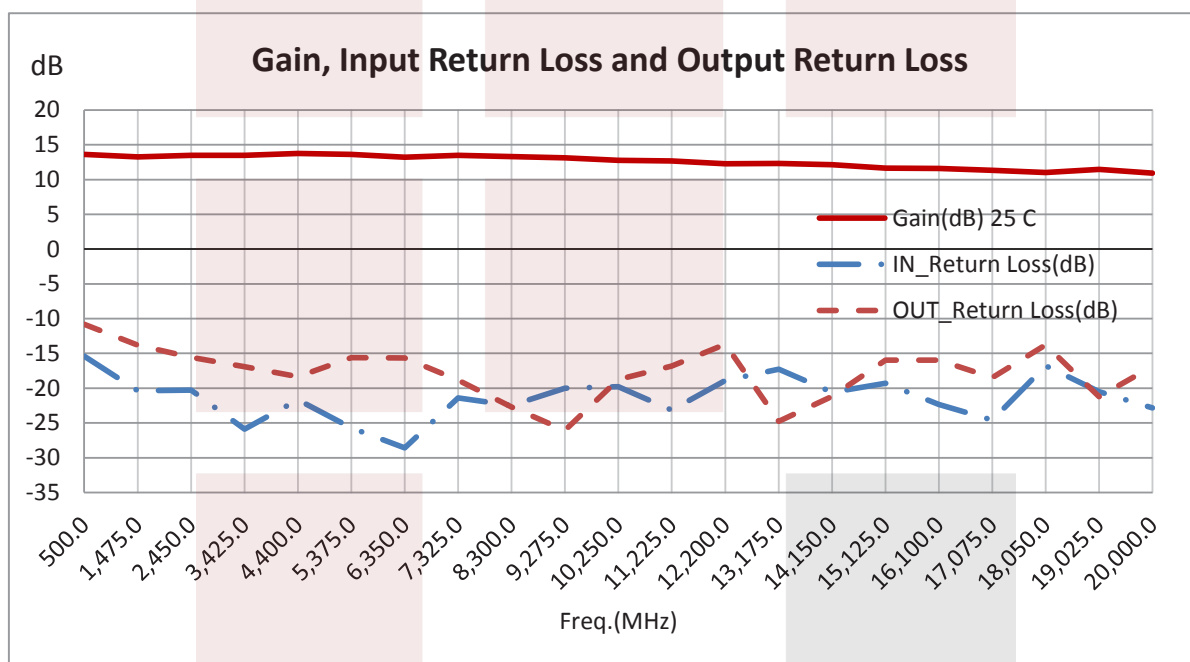
Humidity MIL-STD-202F, METHOD 103B COND B.
Shock MIL-STD-202F, METHOD 213B COND B.
Altitude MIL-STD-202F, METHOD 105C COND B.
Temperature Cycling MIL-STD-202F, METHOD 107D COND A.

Compliance Certifications (see [product page](#) for current document)

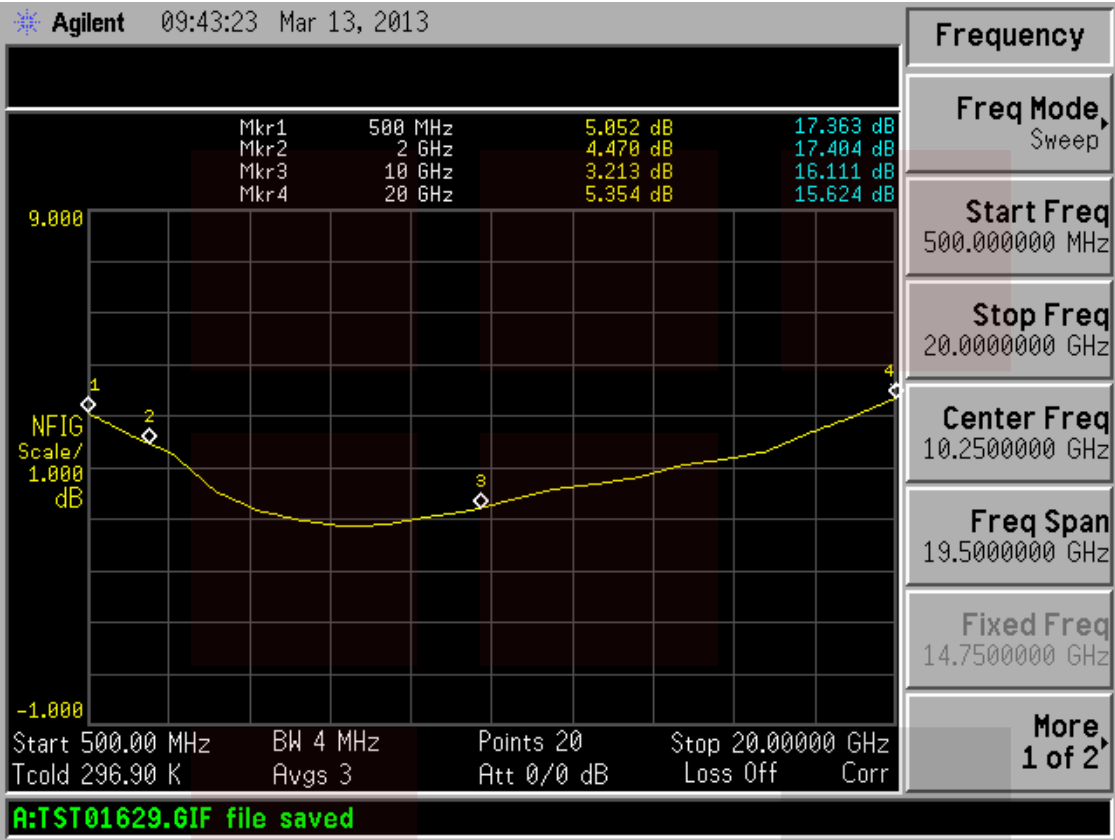
Plotted and Other Data

Notes:

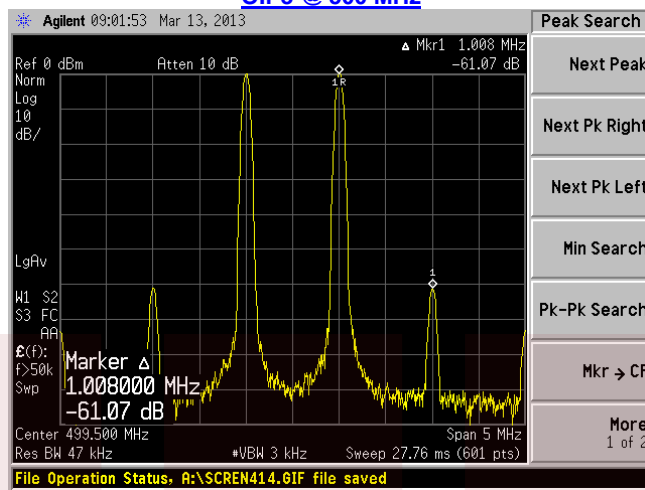
Typical Performance Data



Noise Figure Plot (500MHz to 20GHz)



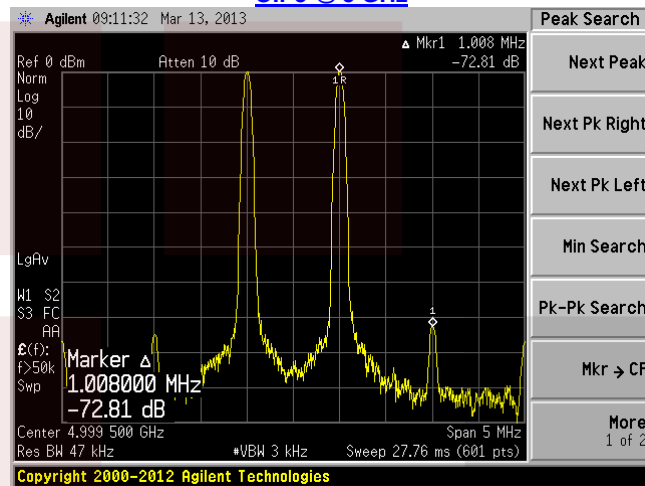
OIP3 @ 500 MHz



$$\text{OIP3} = \text{Pout} + \text{dBc}/2$$

$$+30.53\text{dBm} = 0 + (61.07/2)$$

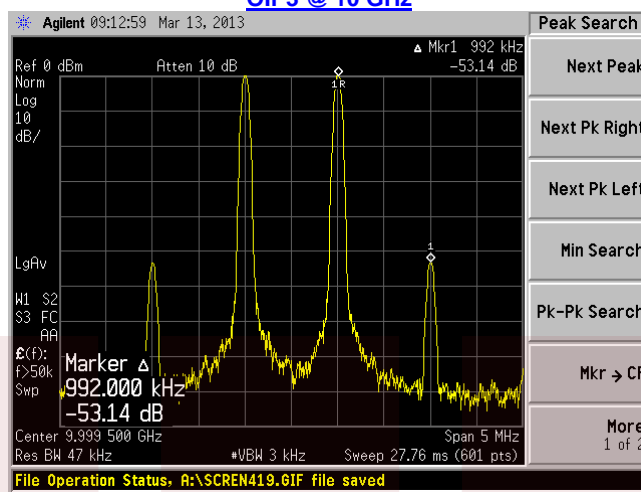
OIP3 @ 5 GHz



$$\text{OIP3} = \text{Pout} + \text{dBc}/2$$

$$+36.40\text{dBm} = 0 + (72.81/2)$$

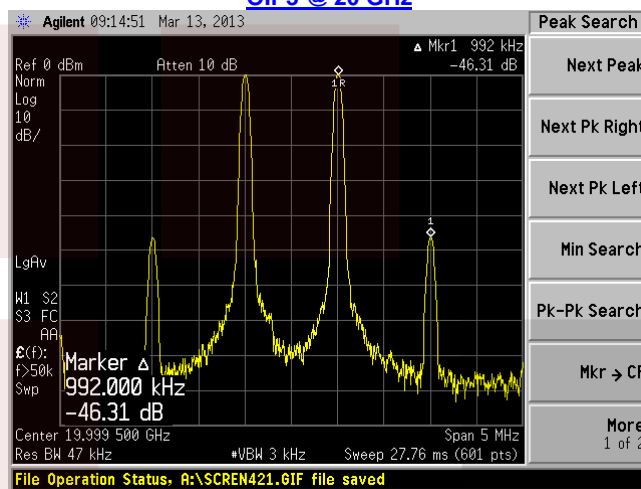
OIP3 @ 10 GHz



$$\text{OIP3} = \text{Pout} + \text{dBc}/2$$

$$+26.57\text{dBm} = 0 + (53.14/2)$$

OIP3 @ 20 GHz



$$\text{OIP3} = \text{Pout} + \text{dBc}/2$$

$$+23.15\text{dBm} = 0 + (46.31/2)$$

3 dB NF, 500 MHz to 20 GHz, Low Noise Broadband Amplifier with 14 dBm, 14 dB Gain and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

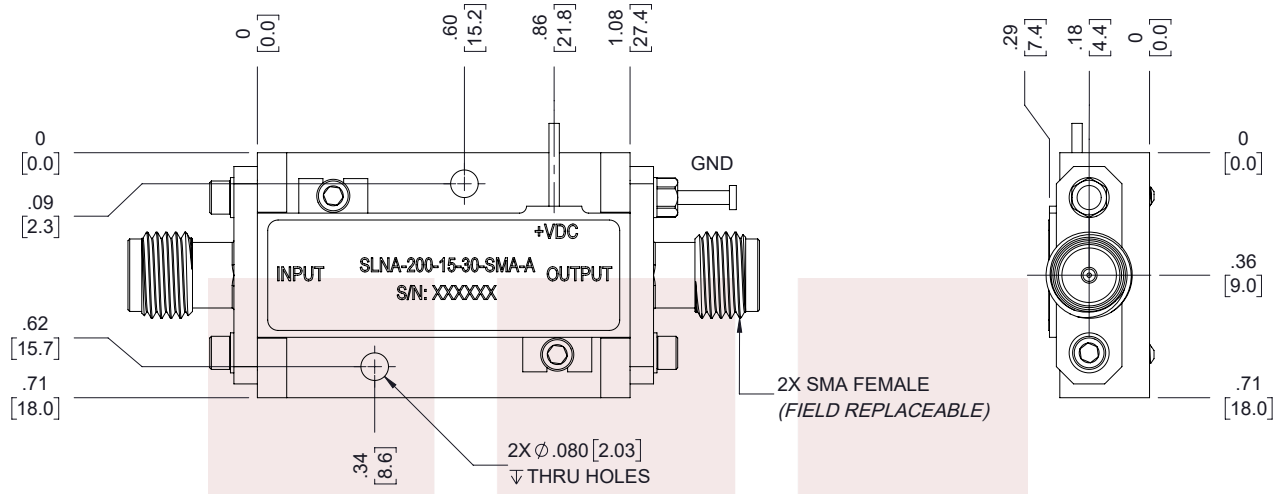
For additional information on this product, please click the following link: [3 dB NF, 500 MHz to 20 GHz, Low Noise Broadband Amplifier with 14 dBm, 14 dB Gain and SMA SLNA-200-15-30-SMA-A](#)

URL: <https://www.fairviewmicrowave.com/500-mhz-20-ghz-low-noise-broadband-amplifier-slna-200-15-30-sma-a-p.aspx>

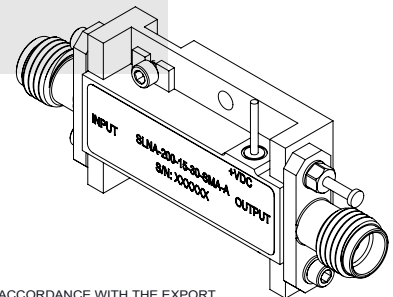
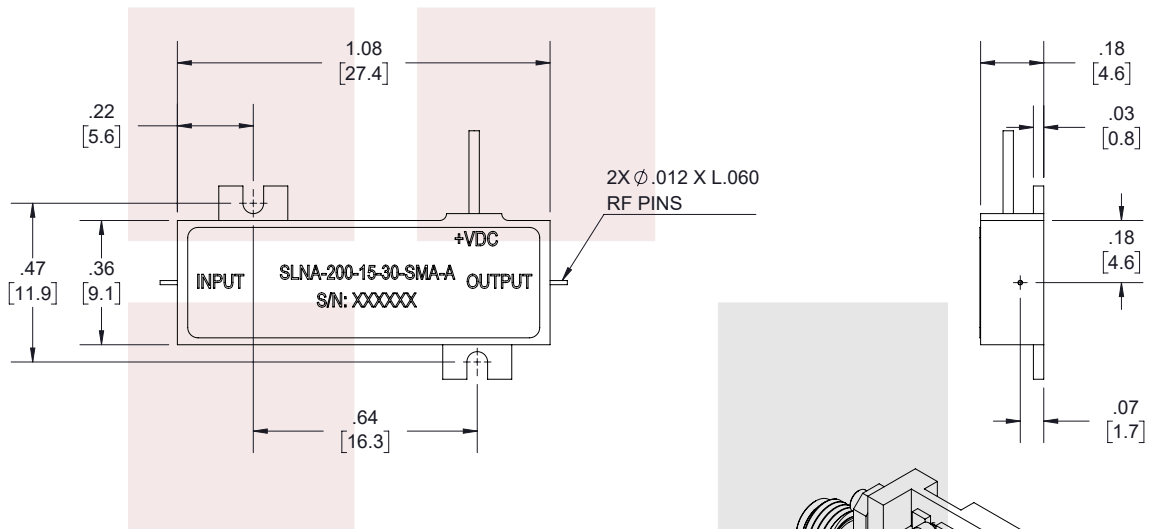
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| REVISIONS | | | |
|-----------|-----------------|----------|----------|
| REV. | DESCRIPTION | DATE | APPROVED |
| A | INITIAL RELEASE | 11/06/19 | T.GALLA |

AMPLIFIER HOUSING WITH CARRIER



AMPLIFIER HOUSING WITHOUT CARRIER



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TITLE

3 dB NF, 500 MHz to 20 GHz, Low Noise Broadband Amplifier with 14 dBm, 14 dB Gain and SMA

UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES
DIMENSIONS IN [] ARE MILLIMETERS

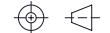
TOLERANCES:

.X = ±.2 [5.08] FRACTIONS
.XX = ±.02 [51] ± 1/32
.XXX = ±.005 [13] ANGLES ± 1°

CABLE LENGTH (L) TOLERANCES:

L ≤ 12 [305] = +1 [25] / -0
12 [305] < L ≤ 60 [1524] = +2 [51] / -0
60 [1524] < L ≤ 120 [3048] = +4 [102] / -0
120 [3048] < L ≤ 300 [7620] = +6 [152] / -0
300 [7620] < L = +5%L / -0

THIRD-ANGLE PROJECTION



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SHEET 1 OF 1

SCALE N/A

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

| SIZE | CAGE CODE | DRAWN BY | PART NUMBER | REV |
|------|-----------|----------|----------------------|-----|
| A | 3FKR5 | K.DANG | SLNA-200-15-30-SMA-A | A |

T-Rev.D