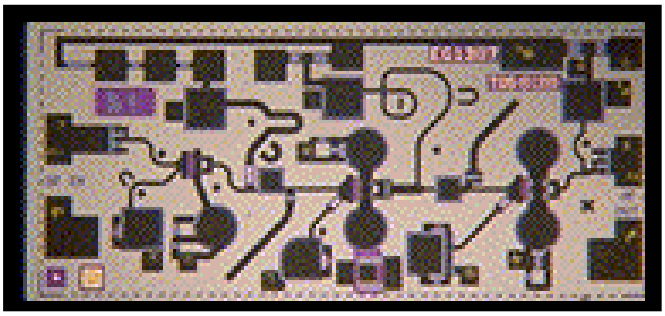
Ka Band Low Noise Amplifier TGA1307-EPU



Chip Dimensions 2.54 mm x 1.15 mm

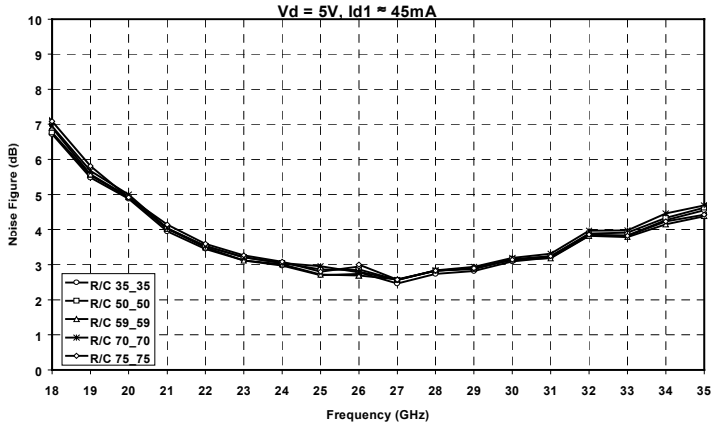
Key Features and Performance

- 0.25um pHEMT Technology
- 23-29 GHz Frequency Range
- 3.1 dB Nominal Noise Figure 28GHz
- 17 dB Nominal Gain
- OTOI > 22dBm
- 5V, 50 mA Self-Bias

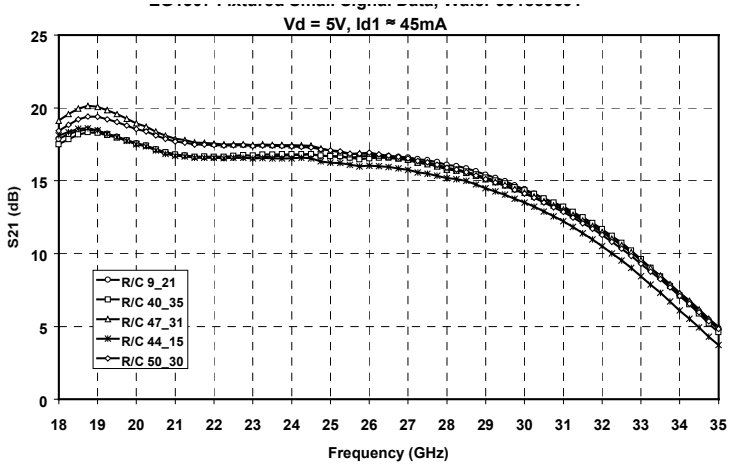
Primary Applications

- Point-to-Point Radio
- Point-to-Multipoint Communications

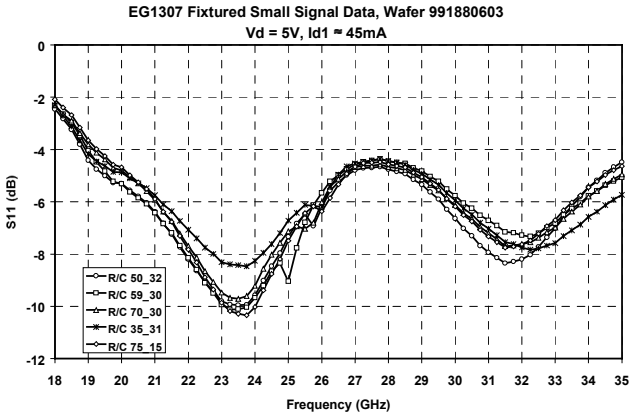
Typical NF @ 25C

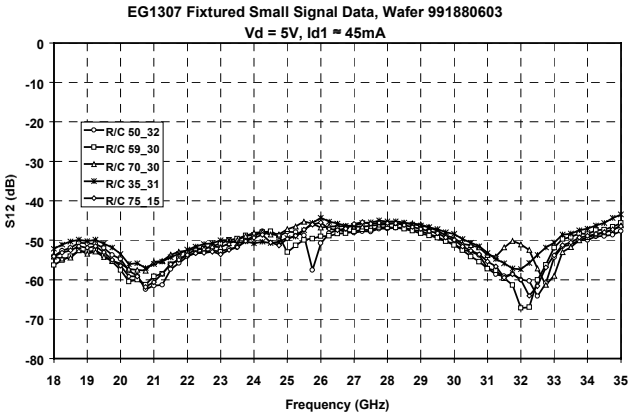


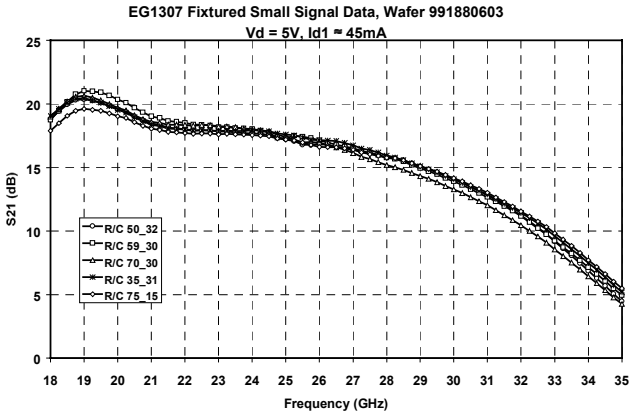
Typical Gain @ 25C

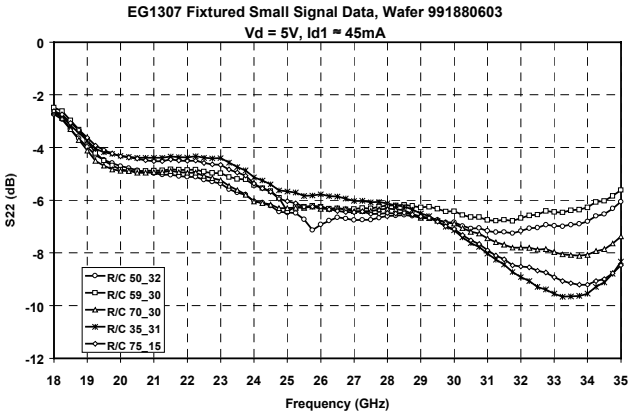


Note: Devices designated as EPU are typically early in their characterization process prior to finalizing all electrical and process specifications. Specifications subject to change without notice









Typical Small Signal S-parameters at 25C.

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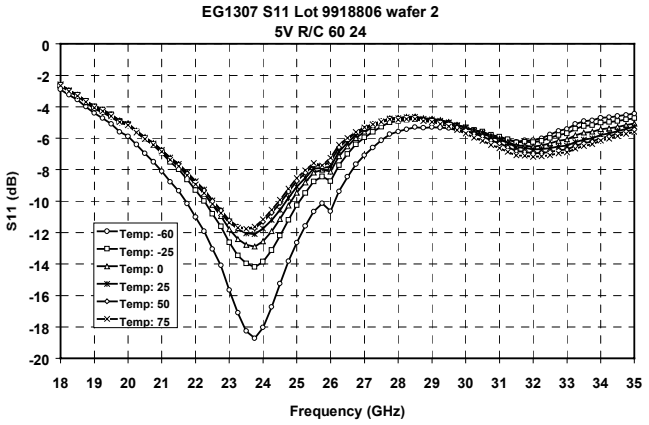

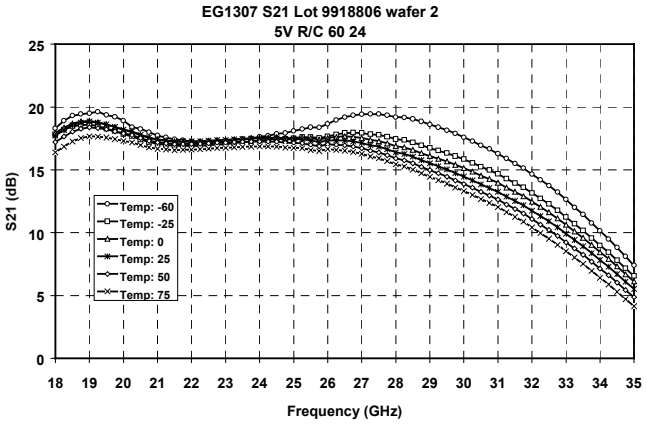

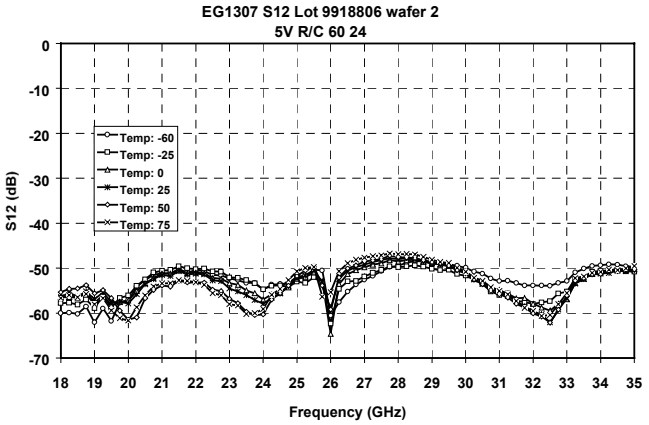

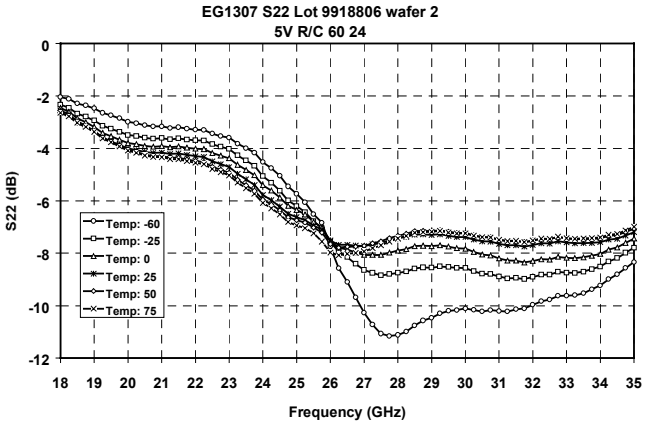

Small Signal S-parameters over temperature.

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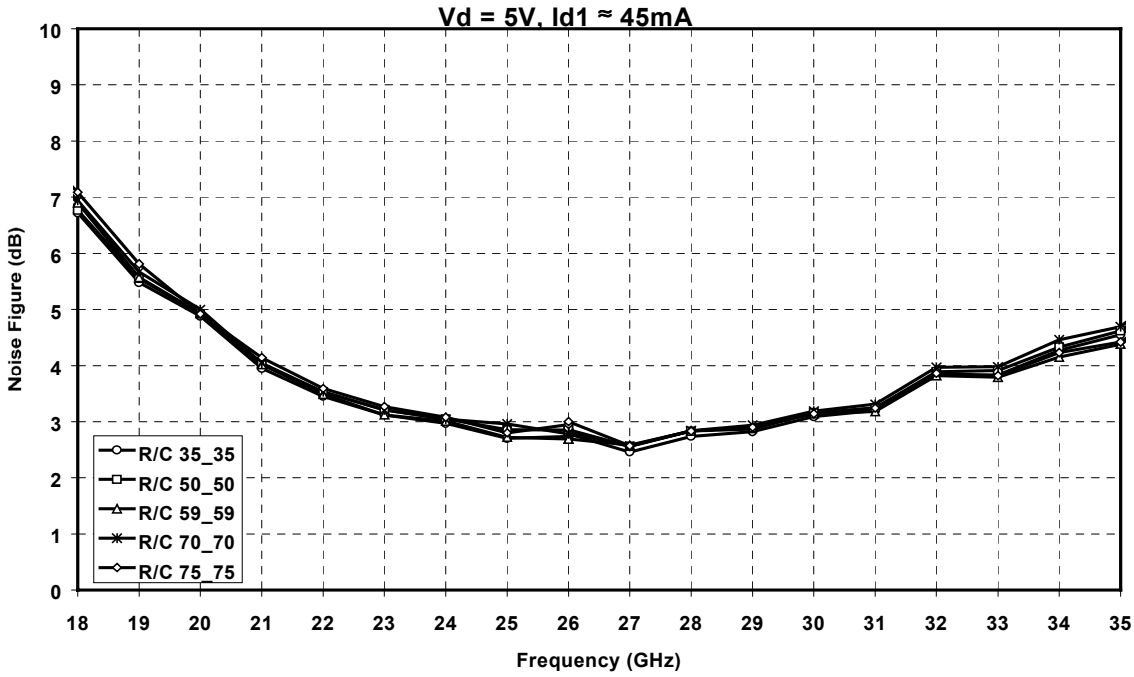

Typical Noise Figure - 5 devices

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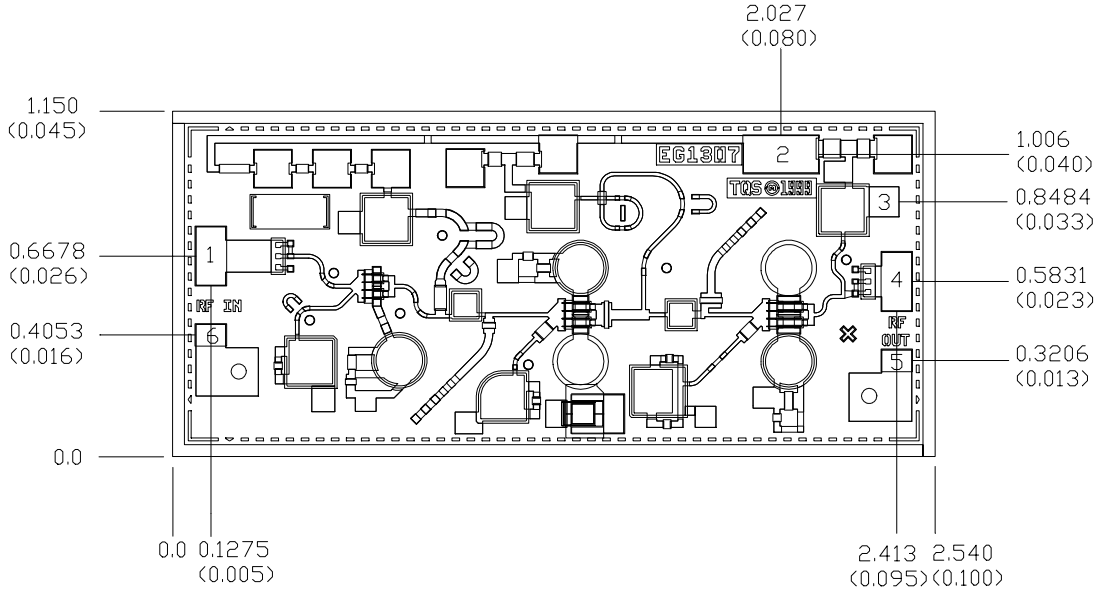

Units: millimeters (inches)
Thickness: 0.1016 (0.004) (reference only)
Chip to bond pad dimensions are shown to center of bond pad
Chip size tolerance: +/- 0.051 (0.002)

Bond Pad #1 (RF Input)	0.105 x 0.200 (0.004 x 0.008)
Bond Pad #2 (Vd)	0.130 x 0.253 (0.005 x 0.010)
Bond Pad #3 (GND)	0.100 x 0.100 (0.004 x 0.004)
Bond Pad #4 (RF Output)	0.105 x 0.200 (0.004 x 0.008)
Bond Pad #5 (GND)	0.075 x 0.105 (0.003 x 0.004)
Bond Pad #6 (GND)	0.075 x 0.105 (0.003 x 0.004)

TGA1307-EPU - Mechanical Drawing

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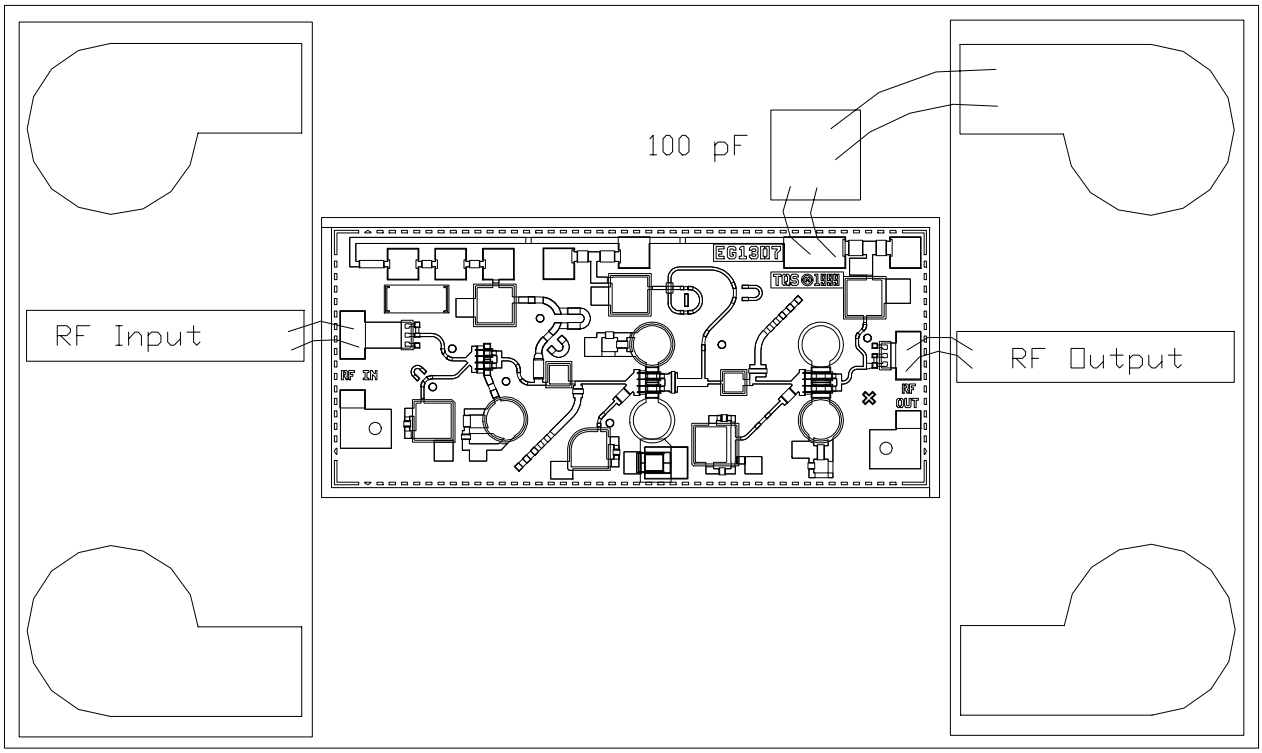

TGA1307-EPU - Recommended Assembly Drawing

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Assembly Process Notes

Reflow process assembly notes:

- AuSn (80/20) solder with limited exposure to temperatures at or above 300°C
- alloy station or conveyor furnace with reducing atmosphere
- no fluxes should be utilized
- coefficient of thermal expansion matching is critical for long-term reliability
- storage in dry nitrogen atmosphere

Component placement and adhesive attachment assembly notes:

- vacuum pencils and/or vacuum collets preferred method of pick up
- avoidance of air bridges during placement
- force impact critical during auto placement
- organic attachment can be used in low-power applications
- curing should be done in a convection oven; proper exhaust is a safety concern
- microwave or radiant curing should not be used because of differential heating
- coefficient of thermal expansion matching is critical

Interconnect process assembly notes:

- thermosonic ball bonding is the preferred interconnect technique
- force, time, and ultrasonics are critical parameters
- aluminum wire should not be used
- discrete FET devices with small pad sizes should be bonded with 0.0007-inch wire
- maximum stage temperature: 200°C

GaAs MMIC devices are susceptible to damage from Electrostatic Discharge. Proper precautions should be observed during handling, assembly and test.

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