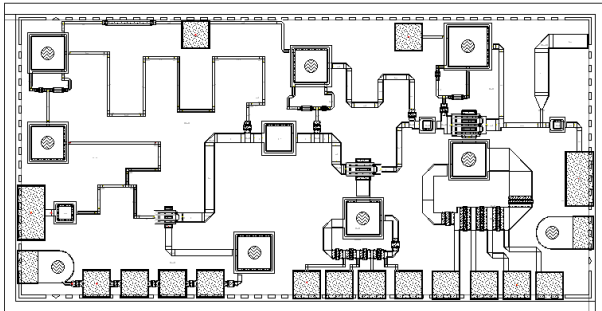


**Ka Band Low Noise Amplifier**

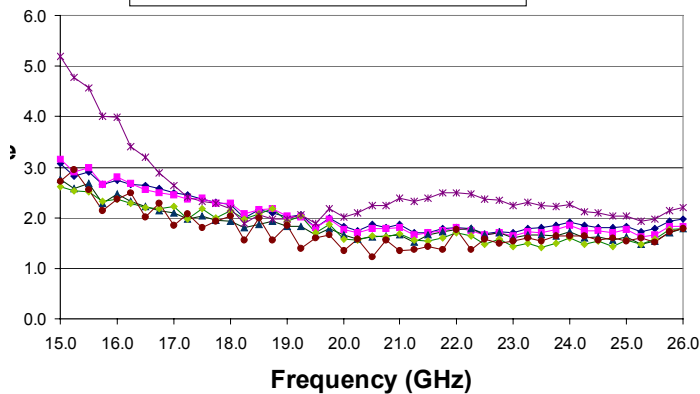
**TGA1319B**



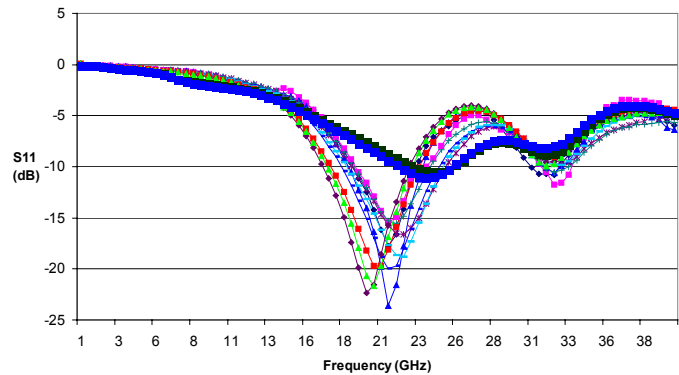
Chip Dimensions 2.235 mm x 1.145 mm

Preliminary Data, 6-10 Fixtured samples @ 25C

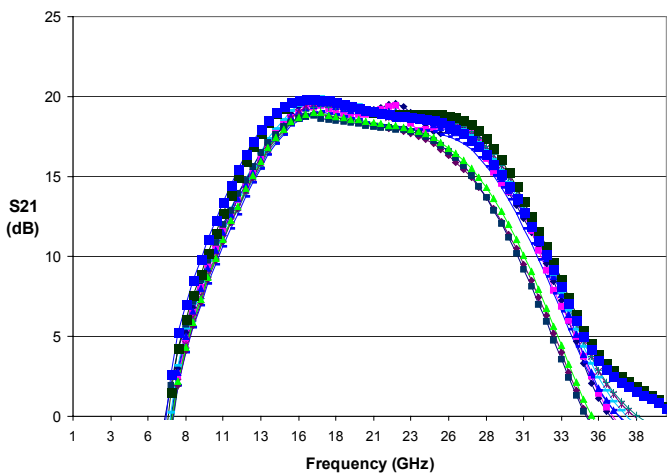
two 1-mil ball bonds at RF interconnects



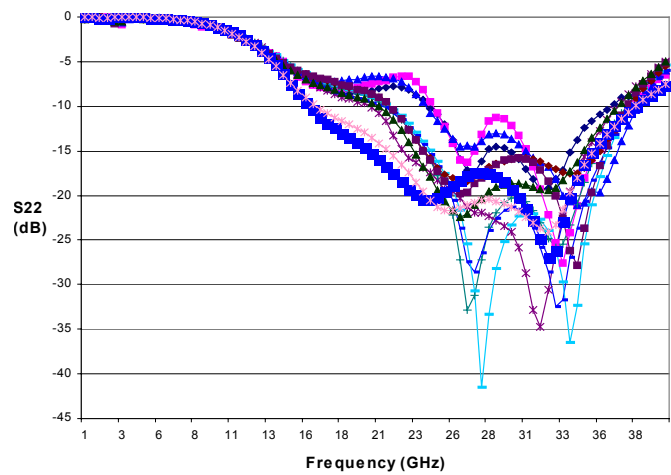
NF @ 25C



S11 @ 25C



Gain @ 25C



S22 @ 25C

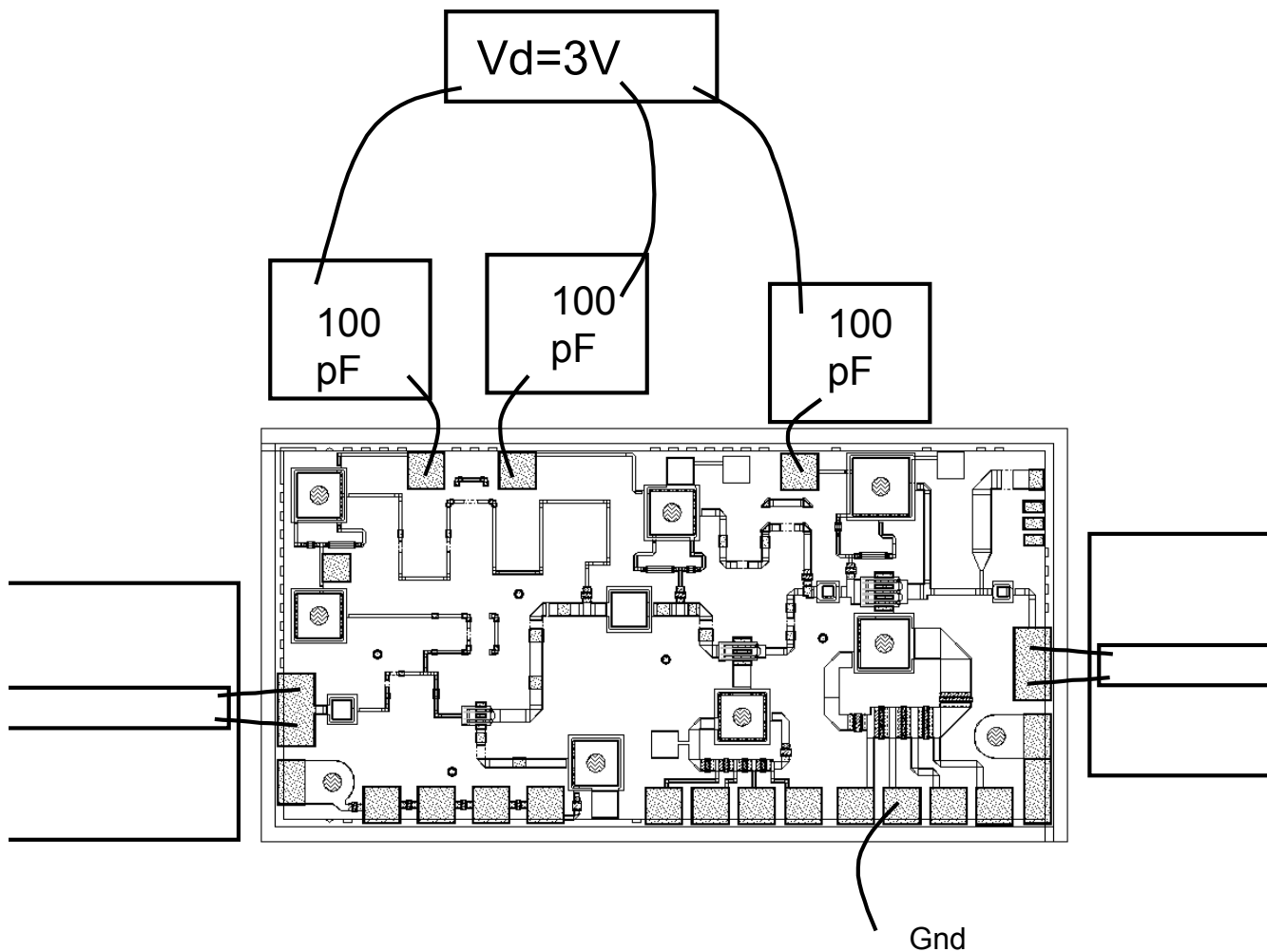
**Key Features and Performance**

- 0.15um pHEMT Technology
- 21-27 GHz Frequency Range
- 1.75 dB Nominal Noise Figure
- 19 dB Nominal Gain
- 8dBm Pout
- 3V, 45 mA Self -biased

**Primary Applications**

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

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



TGA1319B - Recommended Assembly Drawing

*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*

## 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.***

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

