

# 27 - 32 GHz 1W Power Amplifier

# **TGA1172**



Chip Dimensions 2.69 mm x 1.37 mm

Small Signal Gain

### **Key Features**

- 0.25 um pHEMT Technology
- 18 dB Gain at 28 GHz
- 29 dBm Nominal P1dB
- 37dBm OTOI typical at 28GHz
- Input/Output RL < -10 dB
- Bias 6 7V @ 630 mA

## **Primary Applications**

- Point-to-Point Radio
- Point-to-Multipoint Communications
- Ka Band Sat-Com



Amplifier Topology

1



(dB)

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







March 21, 2000

TGA1172



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(2



## **Advance Product Information**

March 21, 2000

TGA1172



Chip Assembly and Bonding Diagram

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

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3



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March 21, 2000

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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

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4