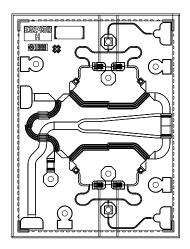


## 20 - 40 GHz IQ Mixer



Chip Dimensions 1.50 mm x 2.0 mm

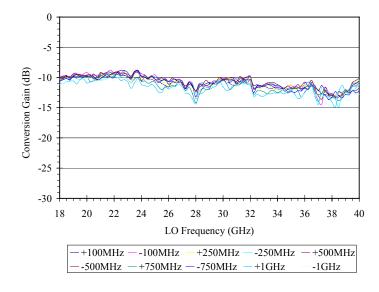
## **TGC1430H**

## **Key Features and Performance**

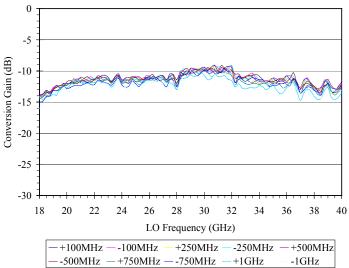
- 0.25um pHEMT Technology
- 20 40 GHz RF/LO Frequencies
- DC 1GHz IF
- -11 +/- 1dB Conversion Gain
- 15 dBm Input Drive

## **Primary Applications**

- Point-to-Point Radio
- Point-to-Multipoint Communications
- **Image Reject Mixers**



Conversion Gain vs IF Frequency (LO Input @ +15dBm) In-Phase IF Port



Conversion Gain vs IF Frequency (LO Input @ +15dBm) Quadrature IF Port

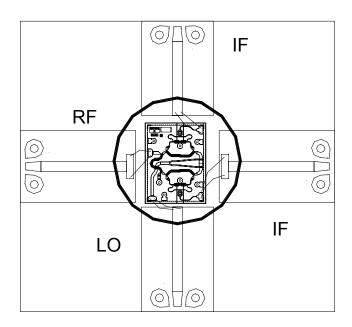
Note: Devices designated as EPU are typically early in their characterization process prior to finalizing all electrical and process specifications. Specifications subject to change without notice

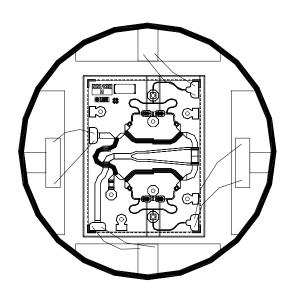


## **Advance Product Information**

August 29, 2000

**TGC1430H** 





TGC1430G - Recommended Assembly Drawing



# Advance Product Information August 29, 2000

TGC1430H

## **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.