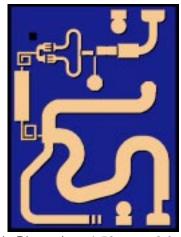


### **Advance Product Information**

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## 20 - 40 GHz X3 Frequency Multiplier

# TGC1430G-EPU



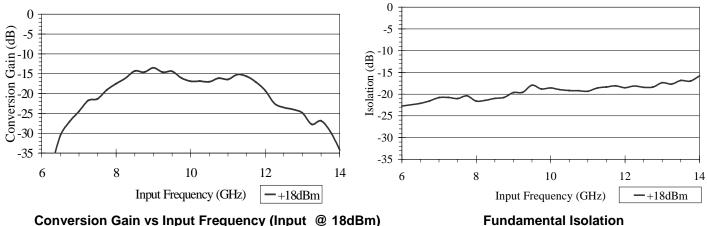
Chip Dimensions 1.50 mm x 2.0 mm

#### **Key Features and Performance**

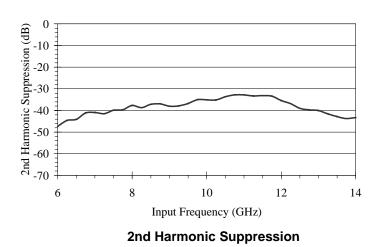
- 0.25um pHEMT Technology
- 20 40 GHz Output Frequencies
- 8.5 13.5 GHz Fundamental Frequencies
- -15 +/- 2dB Conversion Gain
- 18 dBm Input Drive Optimum
- 15dB Fundamental Isolation
- 30dB 2nd Harmonic Isolation

#### **Primary Applications**

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



Conversion Gain vs Input Frequency (Input @ 18dBm)



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

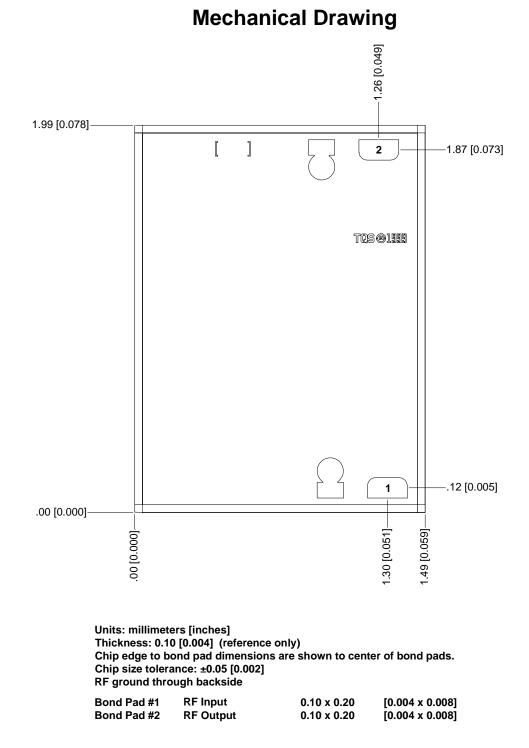
TriQuint Semiconductor Texas: Phone (972)994-8465 Fax (972)994-8504 Email: Info-mmw@tqs.com Web: www.triquint.com

1



June 29, 2004

#### TGC1430G-EPU



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

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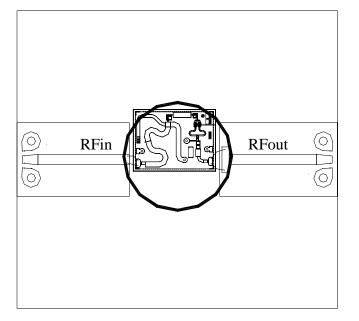
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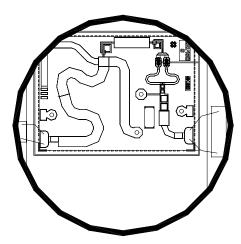
2)



TGC1430G-EPU

## **Recommended Assembly Drawing**





Attach 2 TFNs and MMIC to carrier plate as shown using conductive epoxy. Bond 4 wieres as shown using minimum length.

3

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#### TGC1430G-EPU

## **Assembly Process Notes**

Reflow process assembly notes:

- Use AuSn (80/20) solder with limited exposure to temperatures at or above 300<sup>0</sup>C (30 seconds max).
- An alloy station or conveyor furnace with reducing atmosphere should be used.
- No fluxes should be utilized.
- Coefficient of thermal expansion matching is critical for long-term reliability.
- Devices must be stored in a dry nitrogen atmosphere.

Component placement and adhesive attachment assembly notes:

- Vacuum pencils and/or vacuum collets are the preferred method of pick up.
- Air bridges must be avoided during placement.
- The force impact is 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.
- Maximum stage temperature is 200<sup>o</sup>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.