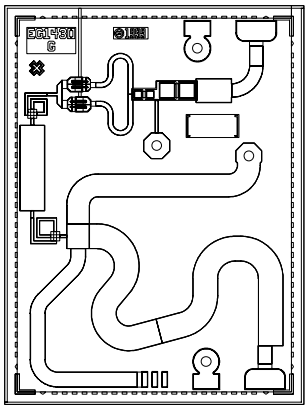
20 - 40 GHz X3 Frequency Multiplier TGC1430G



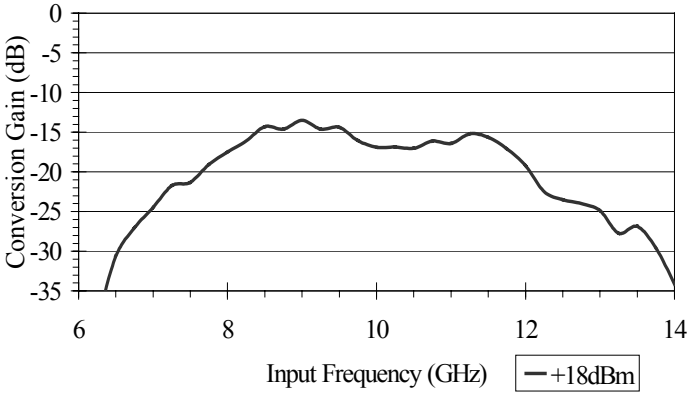
Chip Dimensions 1.50 mm x 2.0 mm

Key Features and Performance

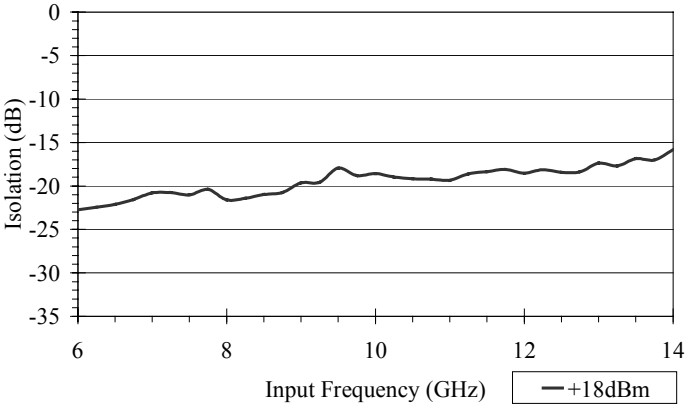
- 0.25um pHEMT Technology
- 20 - 40 GHz Output Frequencies
- 8.5 - 13.5 GHz Fundamental Frequencies
- -15 +/- 2dB Conversion Gain
- 18 dBm Input Drive Optimum
- 15dB Fundamental Isolation
- 30dB 2nd Harmonic Isolation

Primary Applications

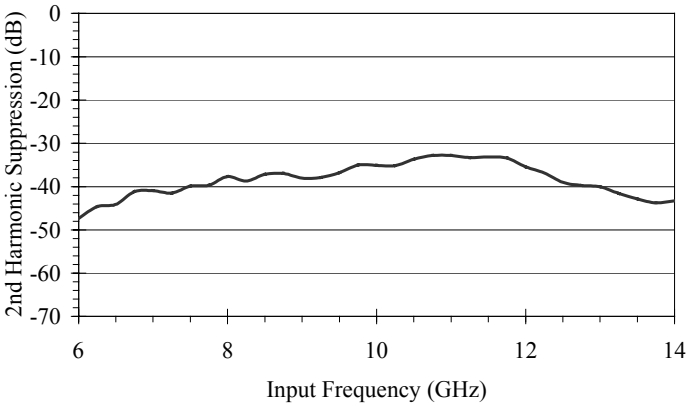
- Point-to-Point Radio
- Point-to-Multipoint Communications



Conversion Gain vs Input Frequency (Input @ 18dBm)

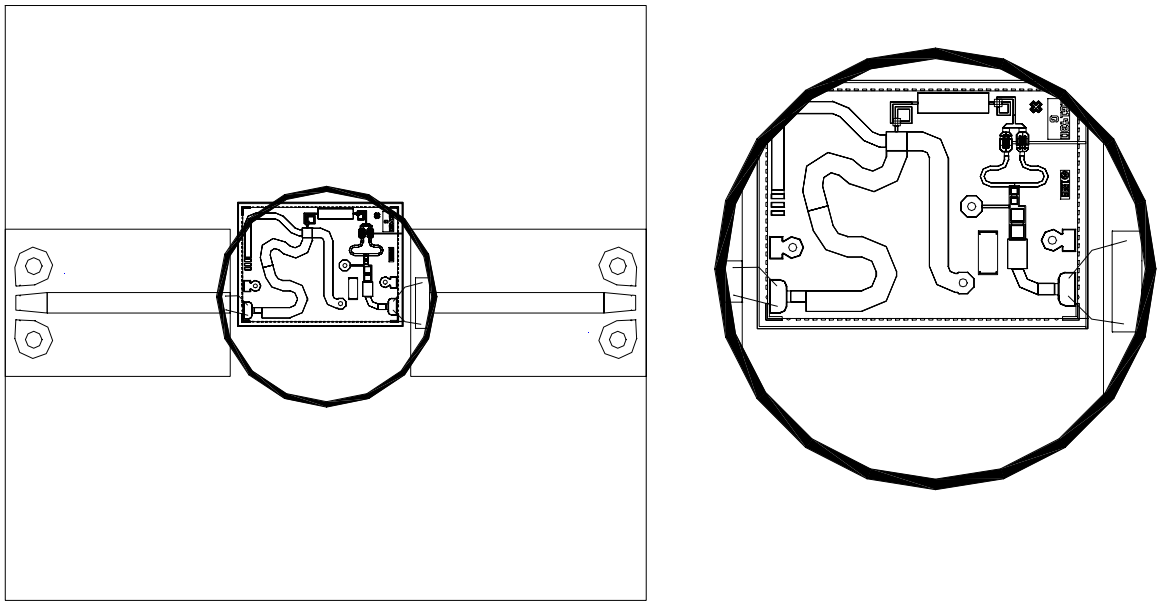


Fundamental Isolation



2nd Harmonic Suppression

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



TGC1430G - 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.

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