Not Recommended for New Designs

TriQuint SEMICONDUCTOR®

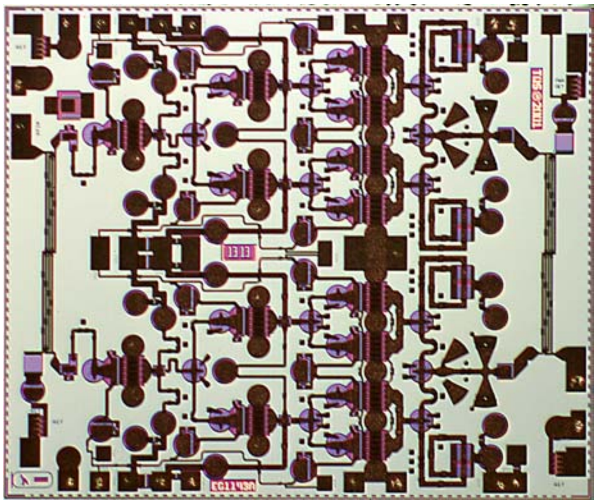
Advance Product Information

September 9, 2001

TriQuint Recommends the TGA4509-EPU be used for New Designs

27- 32 GHz Ka Band HPA

TGA1193-EPU



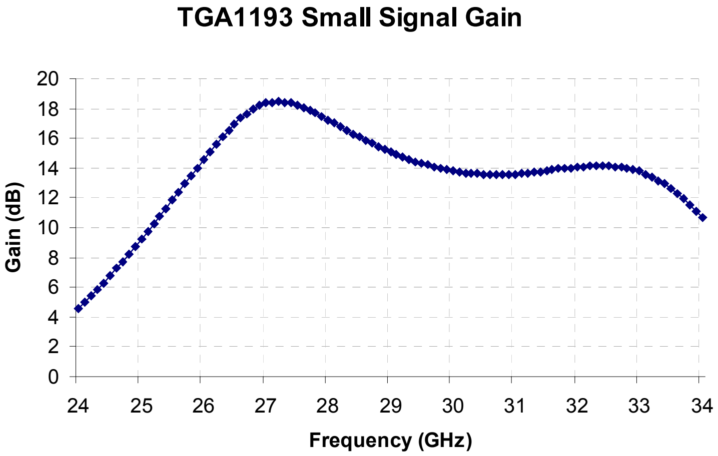
Key Features

- 0.25 um pHEMT Technology
- 15dB Nominal Gain at 30GHz
- 31.5dBm Psat @ 30GHz Typical
- 37dBm OTOI Typical at 30GHz
- Bias 7 V @ 1.26A
- Chip Dimensions 3.14 mm x 2.63 mm

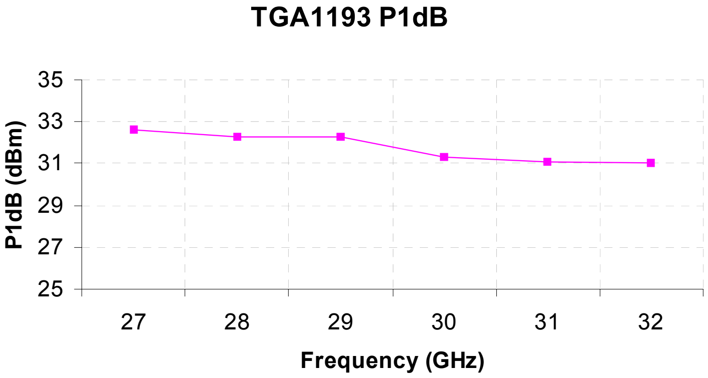
Primary Applications

- Ka Band Sat-Com Ground Terminals
- Point-to-Point Radio
- Point-to-Multipoint Hubs

Preliminary Measured Results



TGA1193 Small Signal Gain



TGA1193 P1dB

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

TGA1193Typical S-Parameters

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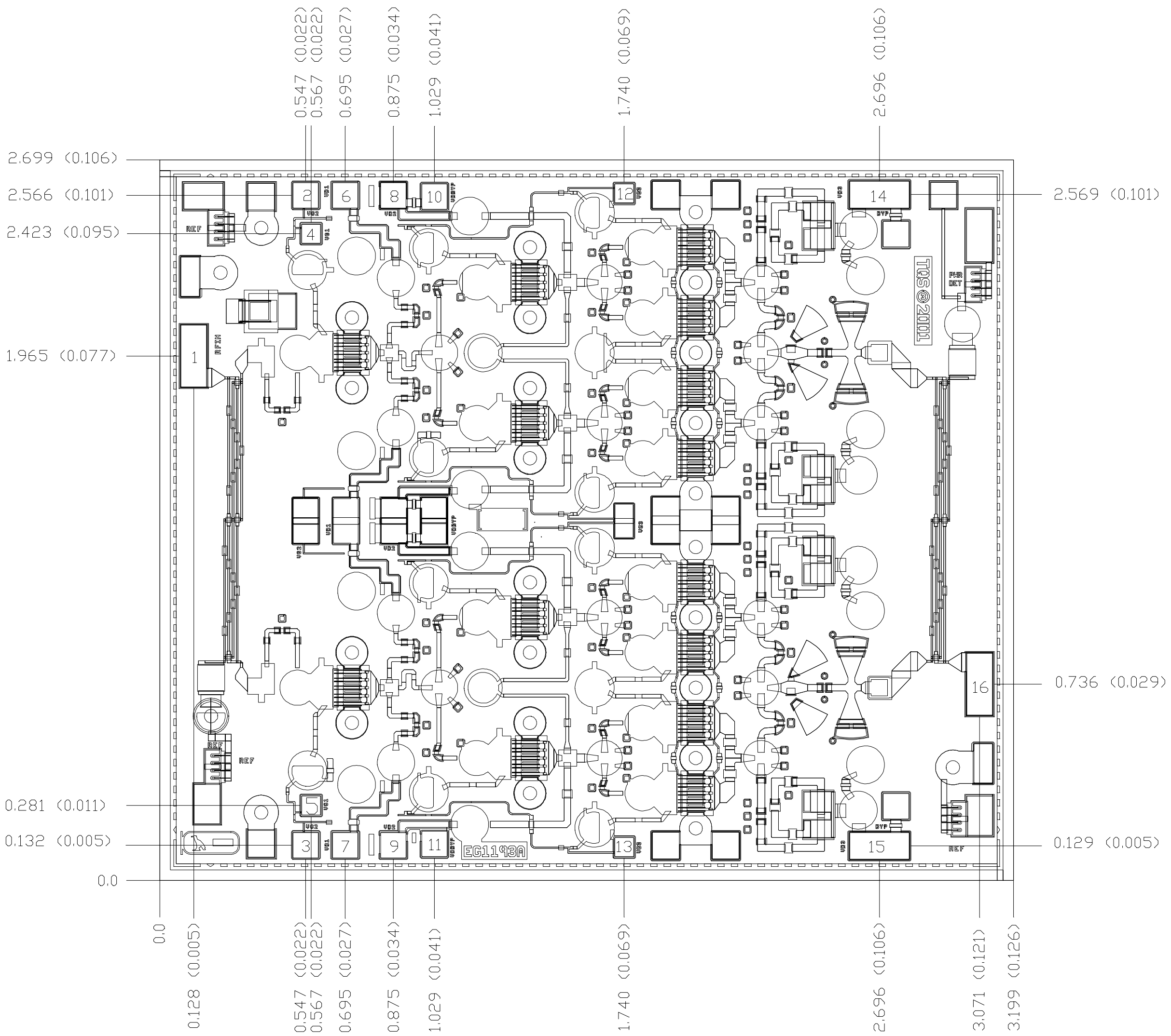

Units: millimeters (inches)
Thickness: 0.1016 (0.004)
Chip edge to bond pad dimensions are shown to center of bond pad
Chip size tolerance: +/- 0.051 (0.002)

Bond pad #1 (RF Input)	0.105 x 0.240 (0.004 x 0.009)
Bond pad #2,3 (VG2)	0.104 x 0.104 (0.004 x 0.004)
Bond pad #4,5 (VG1)	0.080 x 0.080 (0.003 x 0.003)
Bond pad #6,7 (VD1)	0.104 x 0.104 (0.004 x 0.004)
Bond pad #8,9 (VD2)	0.104 x 0.104 (0.004 x 0.004)
Bond pad #10,11 (VDBYP)	0.104 x 0.104 (0.004 x 0.004)
Bond pad #12,13 (VG3)	0.080 x 0.080 (0.003 x 0.003)
Bond pad #14,15 (VD3)	0.109 x 0.232 (0.004 x 0.009)
Bond pad #16 (RF Output)	0.105 x 0.240 (0.004 x 0.009)

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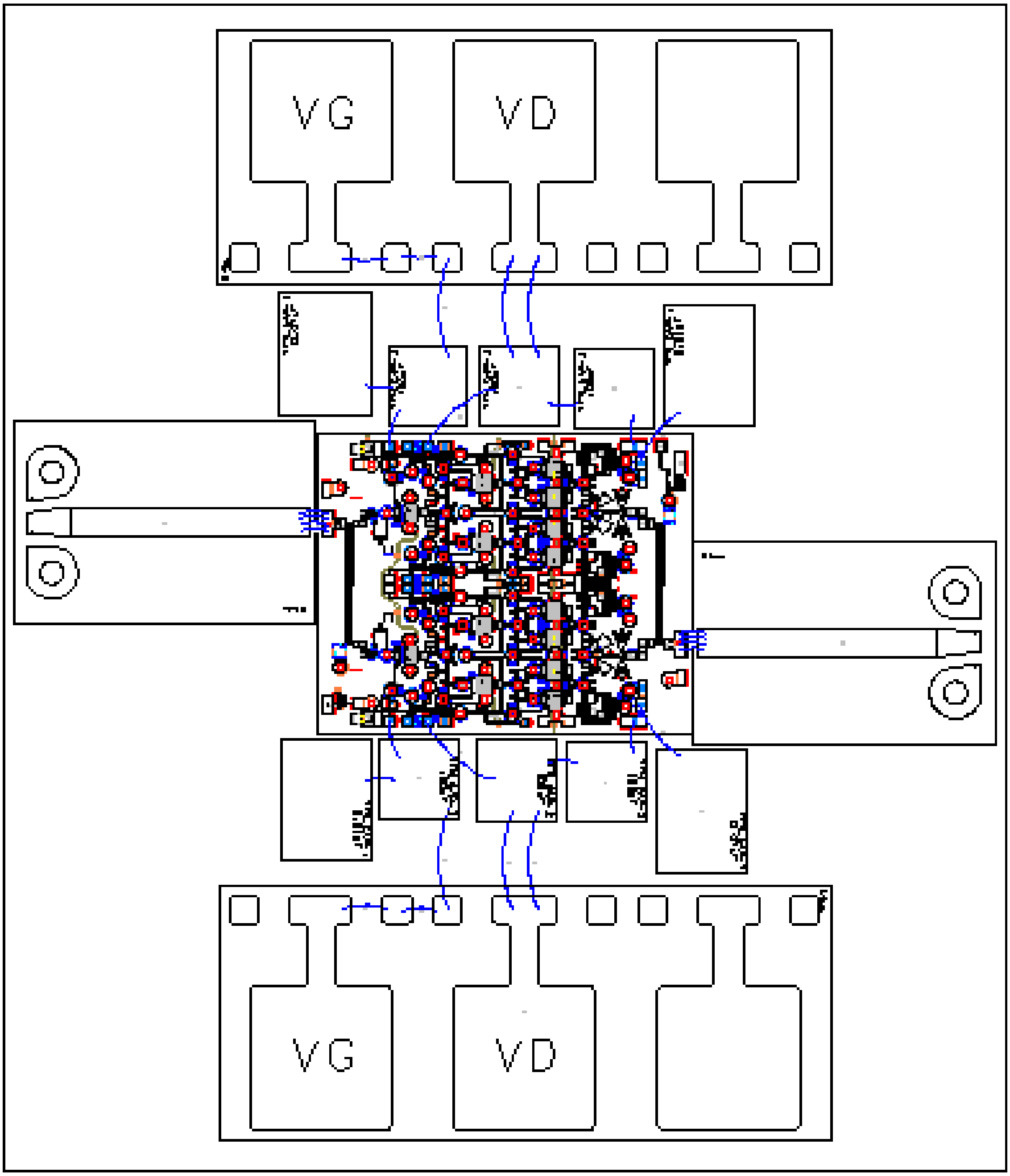

GaAs MMIC devices are susceptible to damage from Electrostatic Discharge. Proper precautions should be observed during handling, assembly and test.

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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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