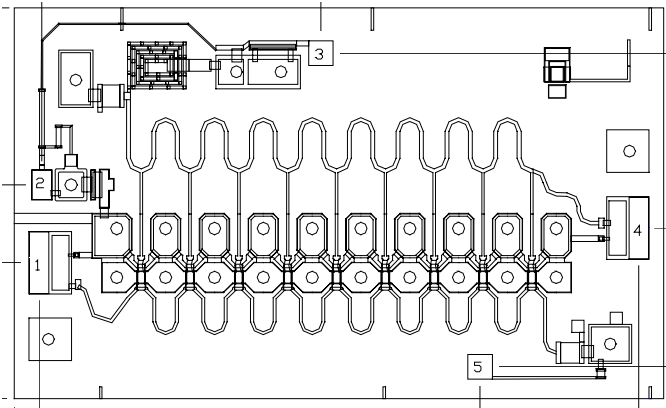


2 -20 GHz Wideband AGC Amplifier

TGA1342-EPU



Key Features and Performance

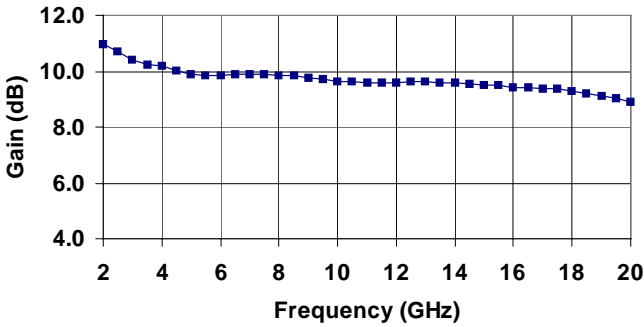
- 0.5 um MESFET Technology
- 9 dB Nominal Gain
- 3.5 dB NF Typical Midband
- 17.5 dBm Nominal Pout @ P1dB
- Bias 5-8V @ 60 mA
- Dimensions 3.378mm x 2.032mm

Primary Applications

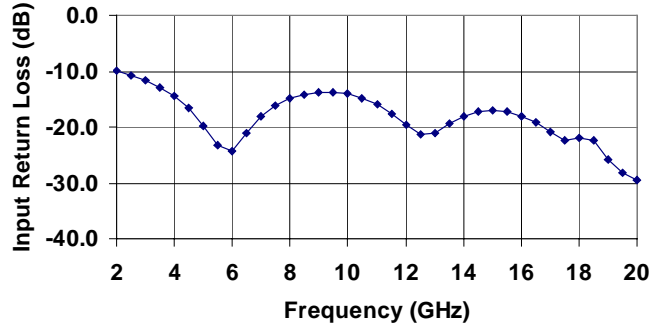
- Wideband Gain Block Amplifier
- Wideband Low Noise Amplifier

Typical Electrical Characteristics

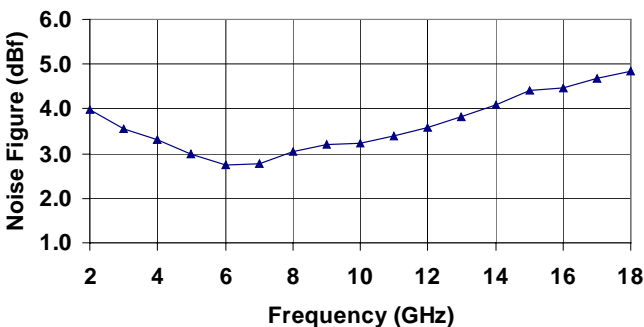
S21 Gain (dB)
VD=5v Id=60ma Temp=25C



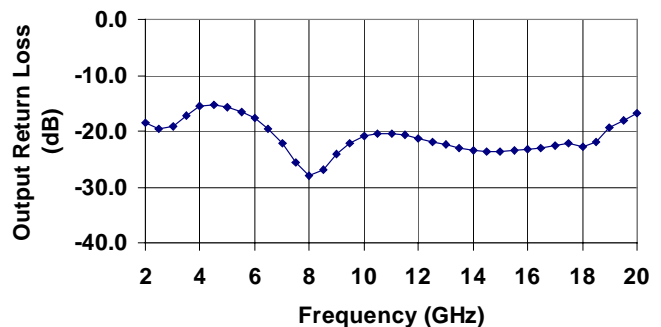
S11 Input Return Loss (dB)
VD=5v Id=60ma Temp=25C



Noise Figure (dBf)
VD=6v Id=60ma Temp=25C

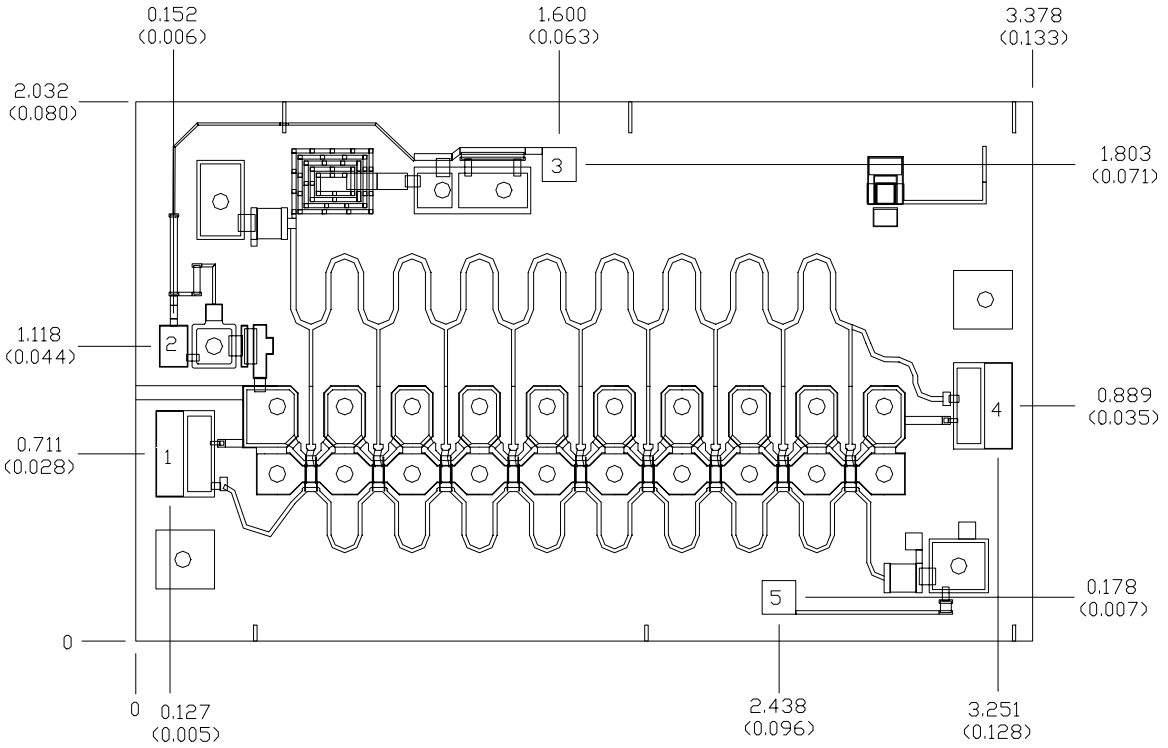


S22 Output Return Loss (dB)
VD=5v Id=60ma Temp=25C



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

Mechanical Characteristics



Units: millimeters (inches)

Thickness: 0.1016 (0.004) (reference only)

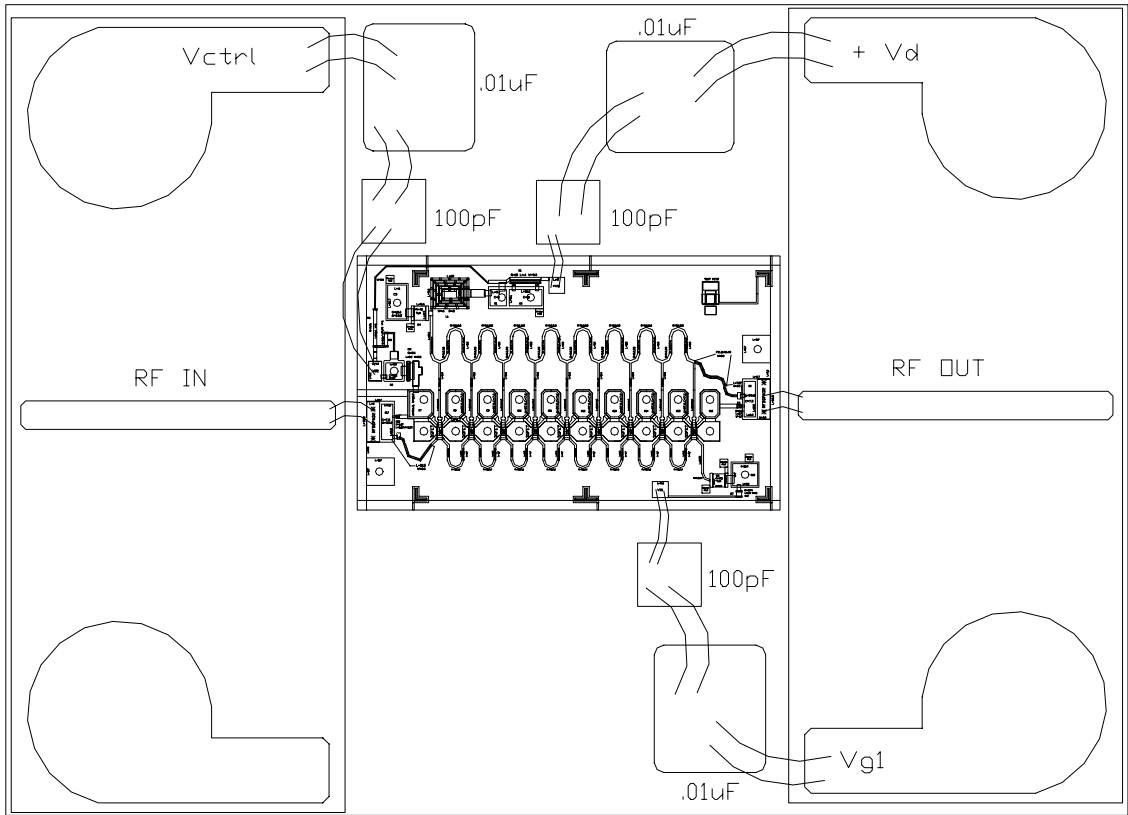
Chip edge to bond pad dimensions are shown to center of bond pads.

Chip size tolerance: ± 0.0508 (0.002)

Bond Pad #1 (RF Input)	0.102 × 0.330 (0.004 × 0.013)
Bond Pad #2 (Vg2) (Vcontrol)	0.102 × 0.152 (0.004 × 0.006)
Bond Pad #3 (Vd)	0.127 × 0.127 (0.005 × 0.005)
Bond Pad #4 (RF Output)	0.102 × 0.330 (0.004 × 0.013)
Bond Pad #5 (Vg1)	0.127 × 0.127 (0.005 × 0.005)

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.

Chip Assembly and Bonding Diagram



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.