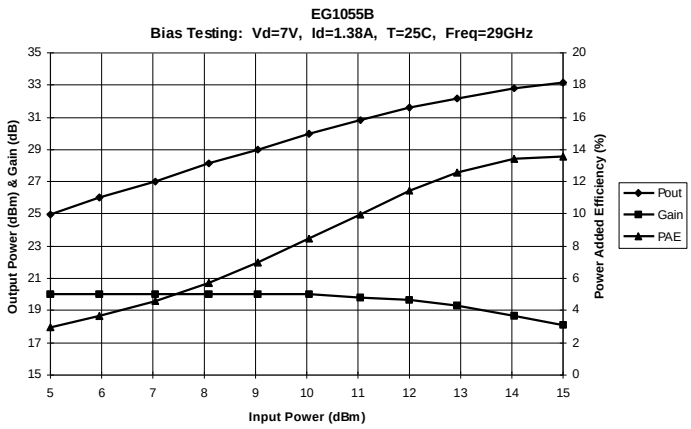
Ka Band 2 Watt Power Amplifier TGA1055-EPU

Key Features and Performance

- 0.25 um pHEMT Technology
- 20 dB Nominal Gain
- 2W Nominal Pout
- -30 dBc IMR3 @ 26 dBm SCL
- Bias 7V @ 1.4 A
- Chip Dimensions 5.89 mm x 3.66 mm



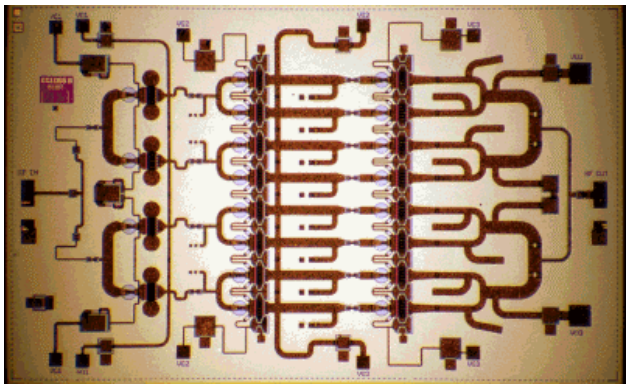
Preliminary Pout, Gain and PAE Data at 29GHz

Primary Applications

- LMDS
- Point-to-Point Radio
- Satellite Ground Terminal

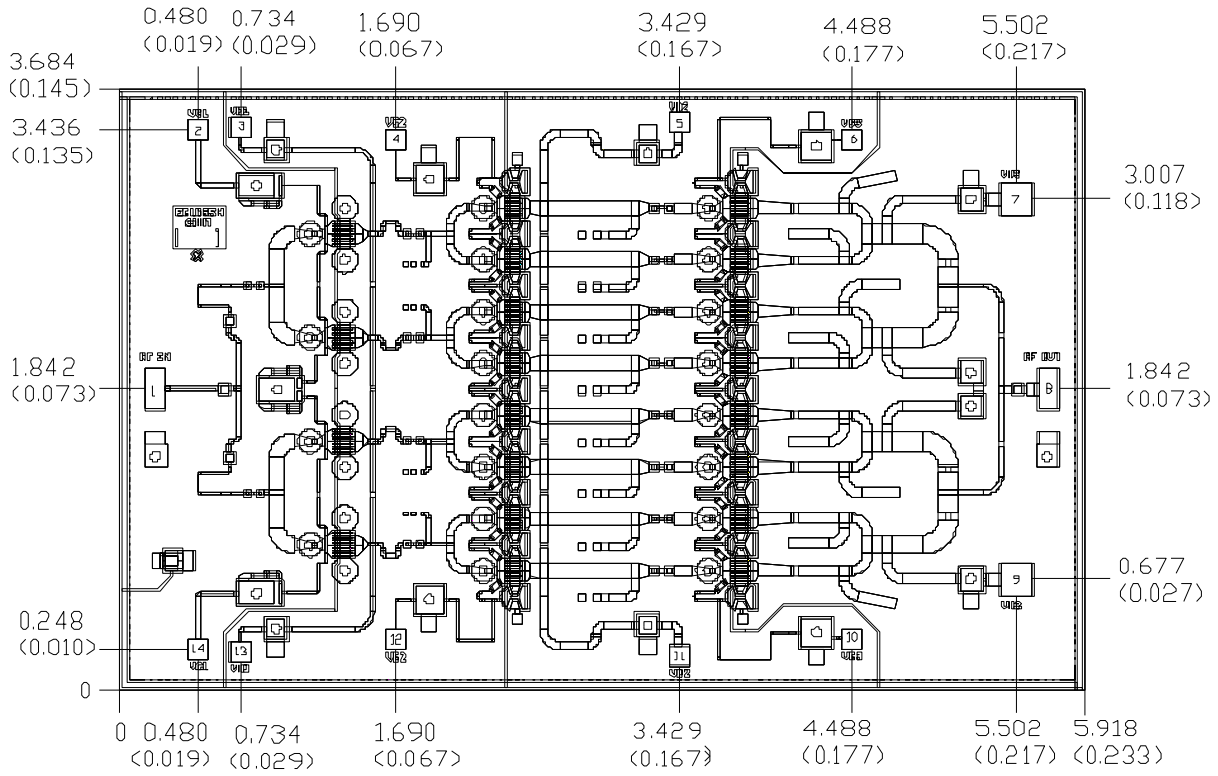
Release Status

- Currently shipping Engineering Prototype Units



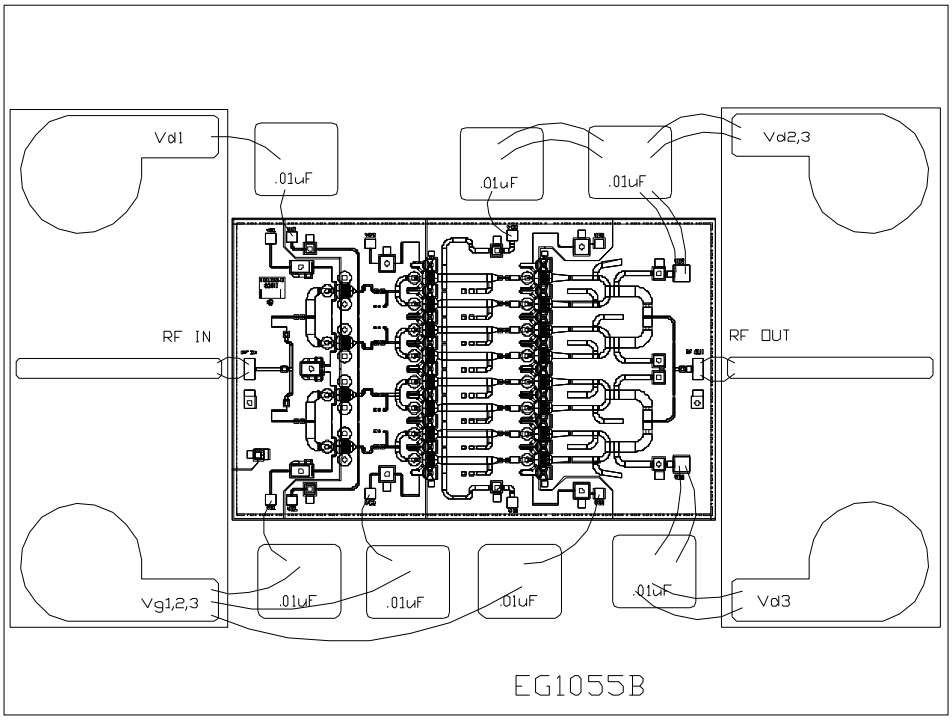
Chip Dimensions 5.89 mm x 3.66 mm

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.



Units: millimeters (inches)
Thickness: 0.1016 (0.004) (reference only)
Chip edge to bond pad dimensions are shown to center of bond pad
Chip side tolerance: +/- 0.0508 (0.002)

Bond Pad #1 (RF Input)	0.125 x 0.250	(0.005 x 0.001)
Bond Pad #2, & #14 (Vg1)	0.125 x 0.125	(0.005 x 0.005)
Bond Pad #3, & #13 (Vd1)	0.125 x 0.125	(0.005 x 0.005)
Bond Pad #4, & #12 (Vg2)	0.125 x 0.125	(0.005 x 0.005)
Bond Pad #5, & #11 (Vd2)	0.125 x 0.125	(0.005 x 0.005)
Bond Pad #6, & #10 (Vg3)	0.125 x 0.125	(0.005 x 0.005)
Bond Pad #7, & #9 (Vd3)	0.200 x 0.200	(0.008 x 0.008)
Bond Pad #8 (RF Output)	0.125 x 0.250	(0.005 x 0.001)



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.