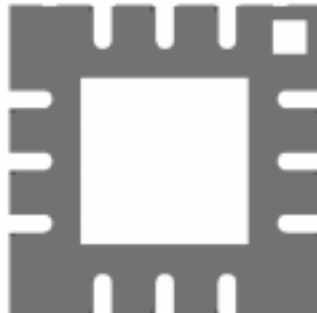


Ku-Band 3-Stage Driver Packaged Amplifier

TGA2507-EPU-SM



Top View



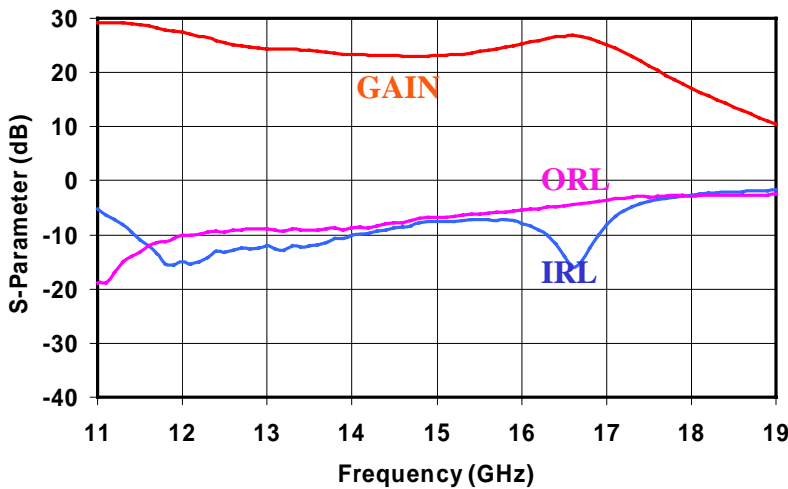
Bottom View

Key Features

- 11-17 GHz Bandwidth
- 25 dB Nominal Gain
- 17 dBm Norminal P1dB
- Bias: 5 - 7 V, 75 mA Self Bias
- PHEMT Technology
- Package Dimensions:
4.0 x 4.0 x 0.9 mm
(0.157 x 0.157 x 0.035 in)

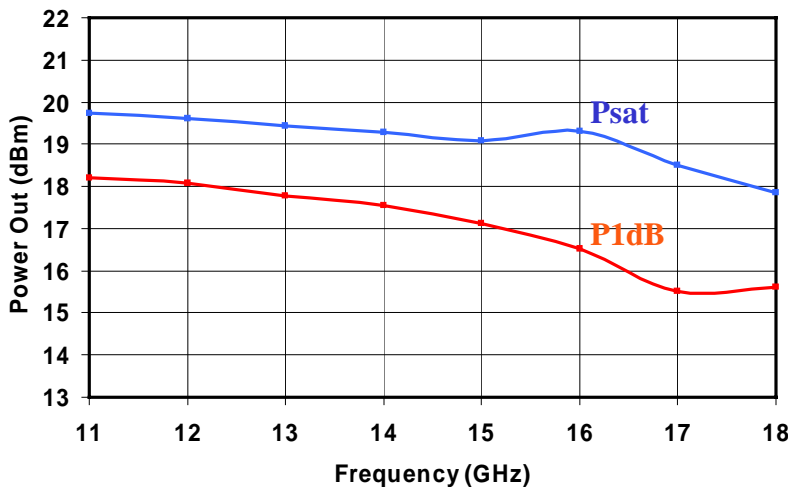
Preliminary Measured Data

Bias Conditions: Vd = 6 V, Id = 75 mA Self Bias



Primary Applications

- Point to Point Radio
- Military Ku-Band
- Ku-Band Space
- VSAT



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

**TABLE I
MAXIMUM RATINGS 1/**

SYMBOL	PARAMETER	VALUE	NOTES
V ⁺	Positive Supply Voltage	8 V	<u>2/</u>
I ⁺	Positive Supply Current	114 mA	<u>2/</u>
P _{IN}	Input Continuous Wave Power	20 dBm	
P _D	Power Dissipation	0.91 W	<u>2/ 3/</u>
T _{CH}	Operating Channel Temperature	150 °C	<u>4/ 5/</u>
T _M	Mounting Temperature (30 Seconds)	250 °C	
T _{STG}	Storage Temperature	-65 to 150 °C	
T _{CASE}	Package Operating Temperature	-40 to 110 °C	

- 1/ These ratings represent the maximum operable values for this device
- 2/ Combinations of supply voltage, supply current, input power, and output power shall not exceed P_D.
- 3/ When operated at this power dissipation with a base plate temperature of 70° C, the median life is 1.7 E+6 hrs.
- 4/ Combinations of supply voltage, supply current, input power, and output power shall not exceed P_D.
- 5/ These ratings apply to each individual FET.

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TABLE II
ELECTRICAL CHARACTERISTICS
(Ta = 25 °C, Nominal)

PARAMETER	TYPICAL	UNITS
Frequency Range	11 - 17	GHz
Drain Operating	6	V
Quiescent Current	75 (Self Bias)	mA
Small Signal Gain	25	dB
Input Return Loss	8	dB
Output Return Loss	8	dB
Output Power @ 1 dB Compression Gain	17	dBm

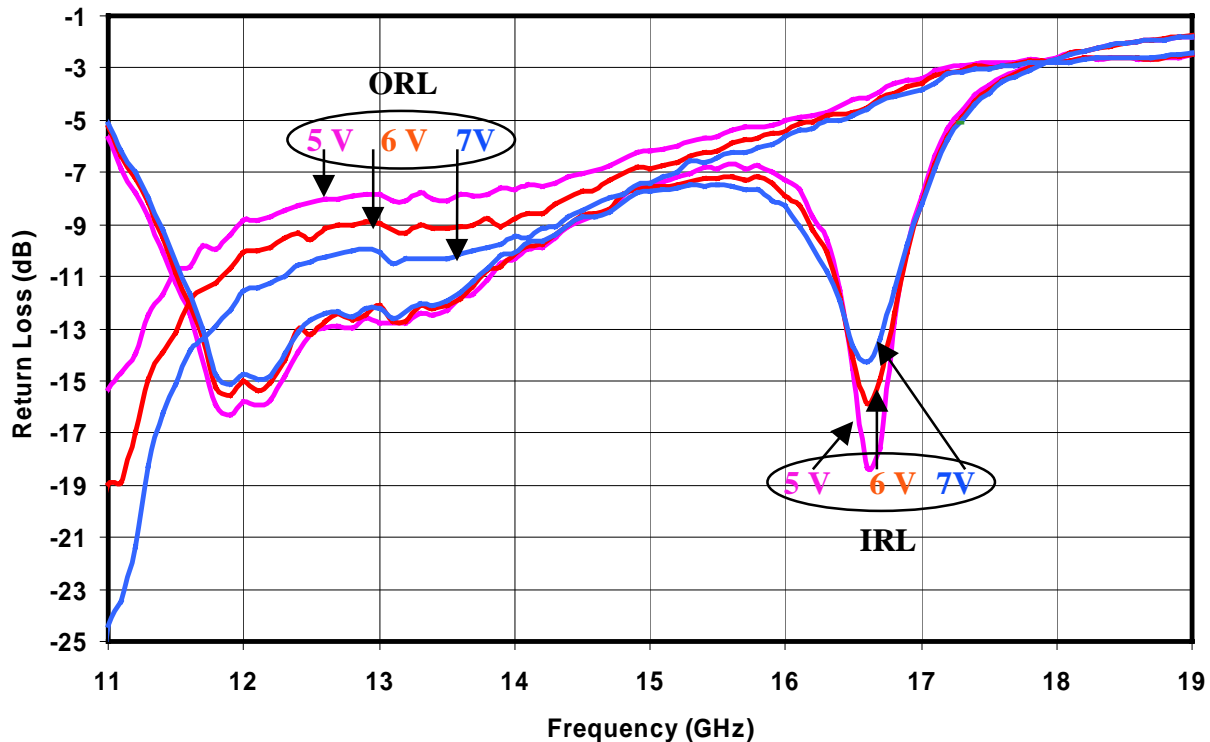
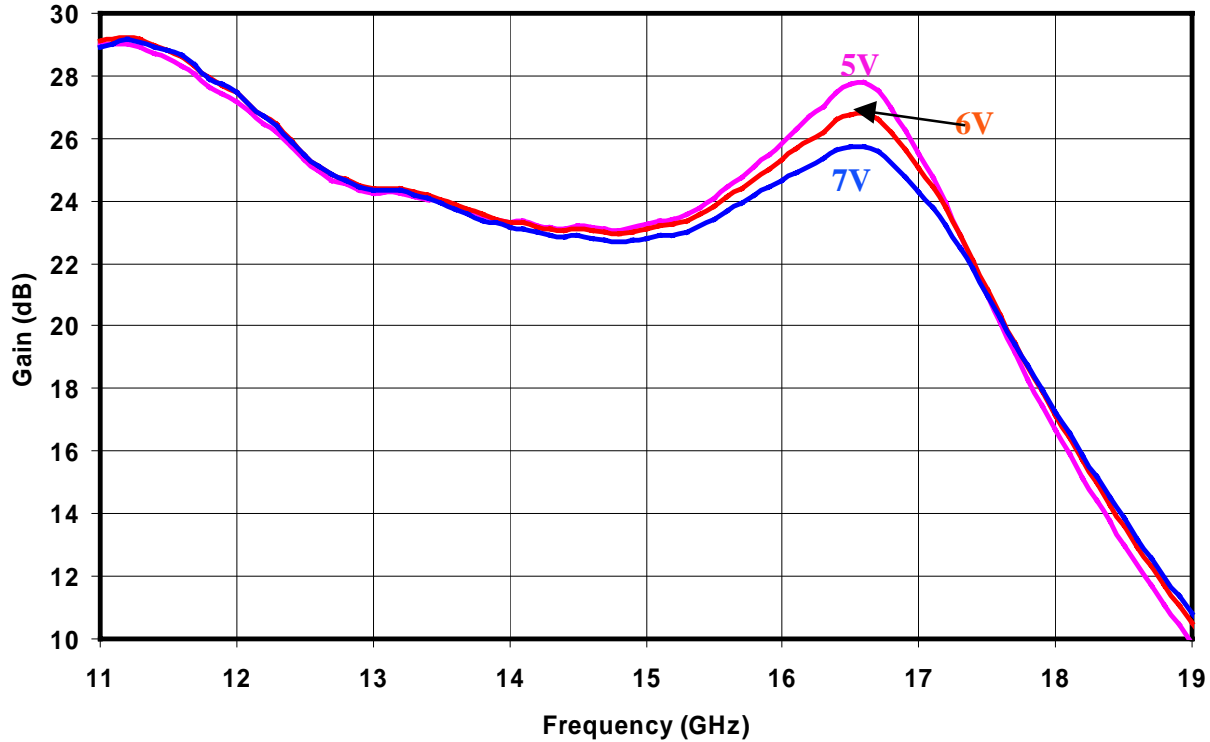
TABLE III
THERMAL INFORMATION

PARAMETER	TEST CONDITIONS	T _{CH} (°C)	R _{θJC} (°C/W)	T _M (HRS)
R _{θJC} Thermal Resistance (channel to Case)	Vd = 6 V Id = 80 mA P _{diss} = 0.48 W	109	81	4.7 E+7

Note: Worst case condition with no RF applied, 100% of DC power is dissipated, Case Temperature @ 70 °C

Preliminary Measured Data

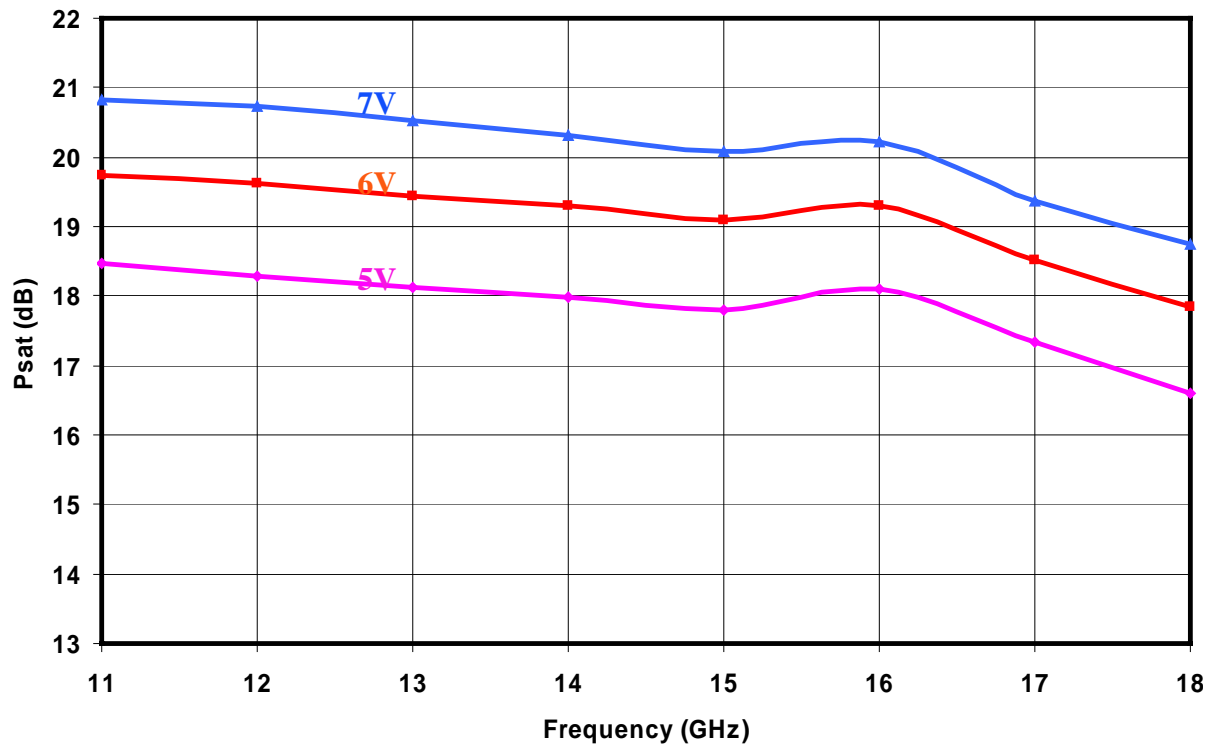
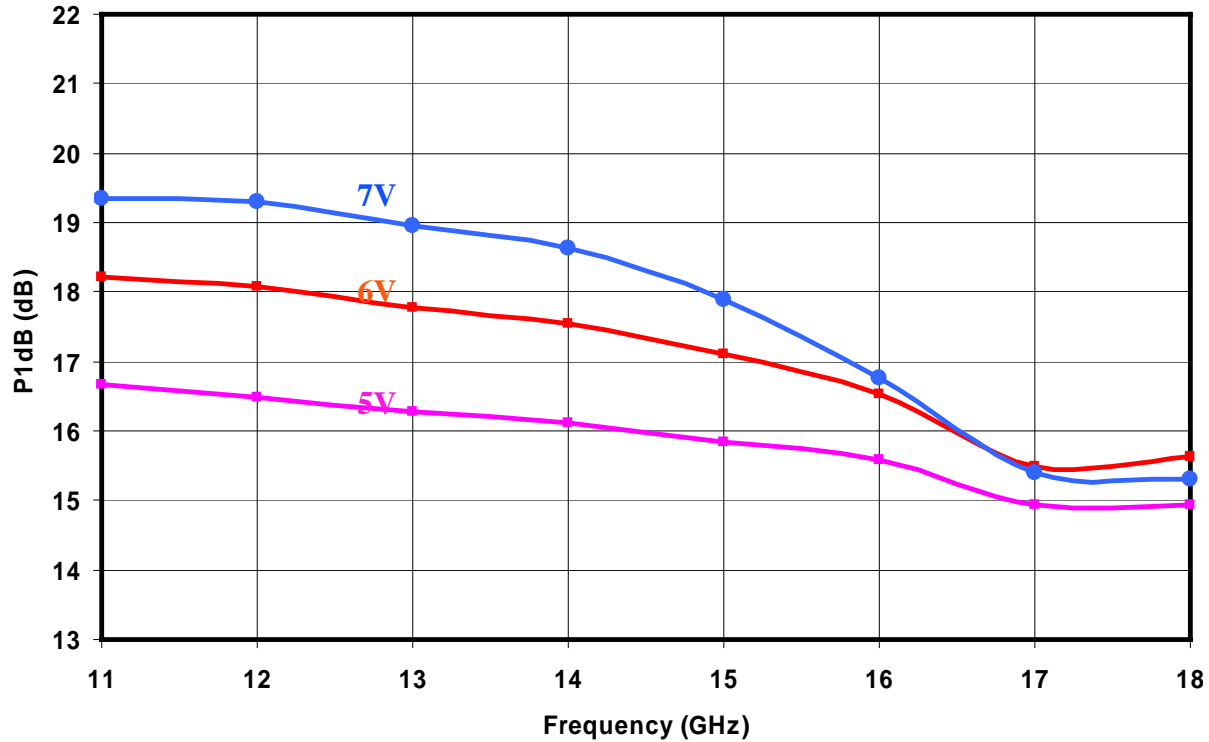
Bias Conditions: $V_d = 5-7\text{ V}$, $I_d = 75\text{ mA}$ Self Bias



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Preliminary Measured Data

Bias Conditions: $V_d = 5-7\text{ V}$, $I_d = 75\text{ mA}$ Self Bias

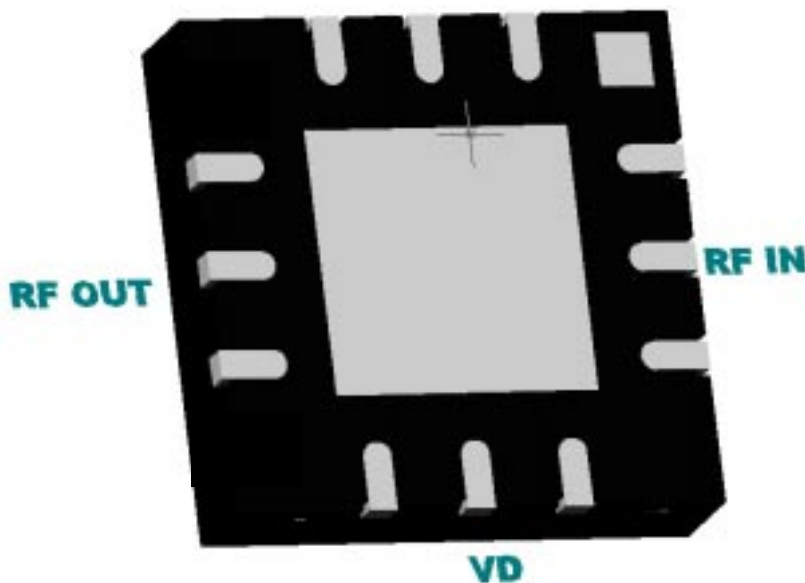


Note: Devices designated as EPU are typically early in their characterization process prior to finalizing all electrical and process specifications. Specifications are subject to change without notice

Package Layout



Top View

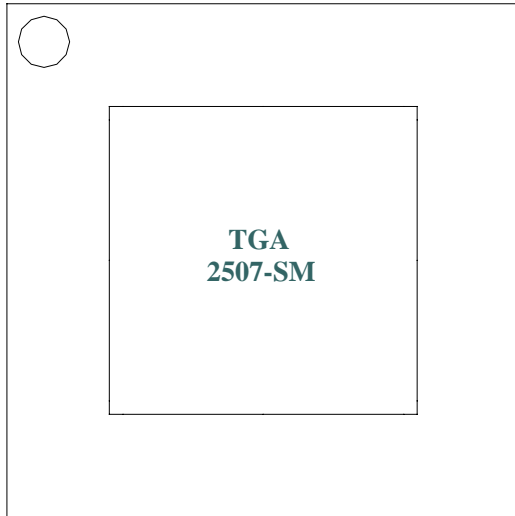


Bottom View

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

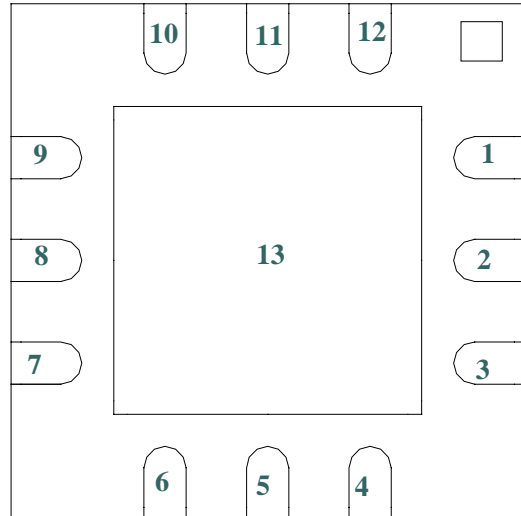
Note: Devices designated as EPU are typically early in their characterization process prior to finalizing all electrical and process specifications. Specifications are subject to change without notice

Package Pinout Diagram



Top Side

Dot indicates Pin 1

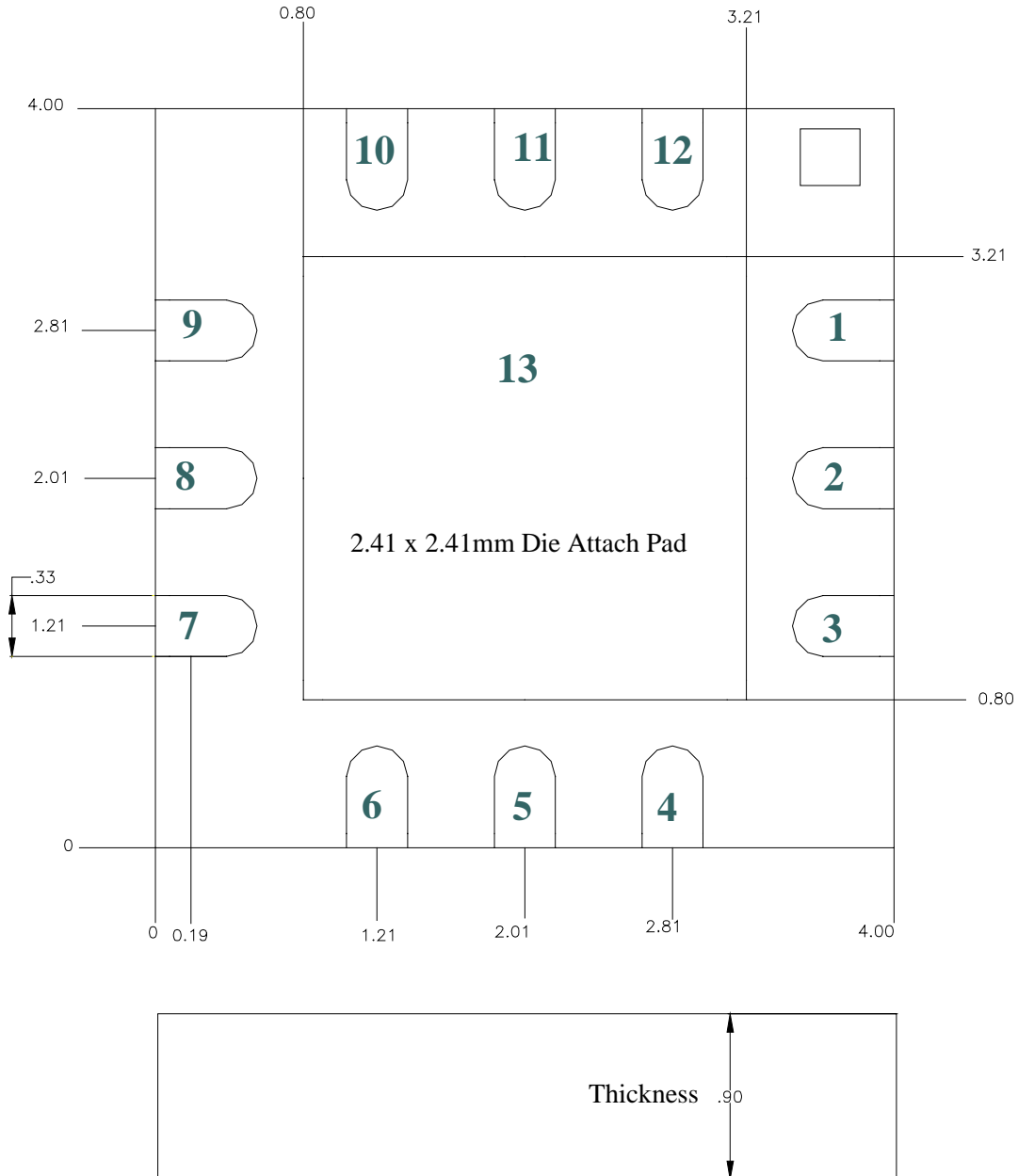


Bottom Side

Pin	Description
1	NC
2	RF Input
3, 4	NC
5	Vd
6, 7	NC
8	RF Output
9 -12	NC
13	GND

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 Drawing
(Bottom Side)



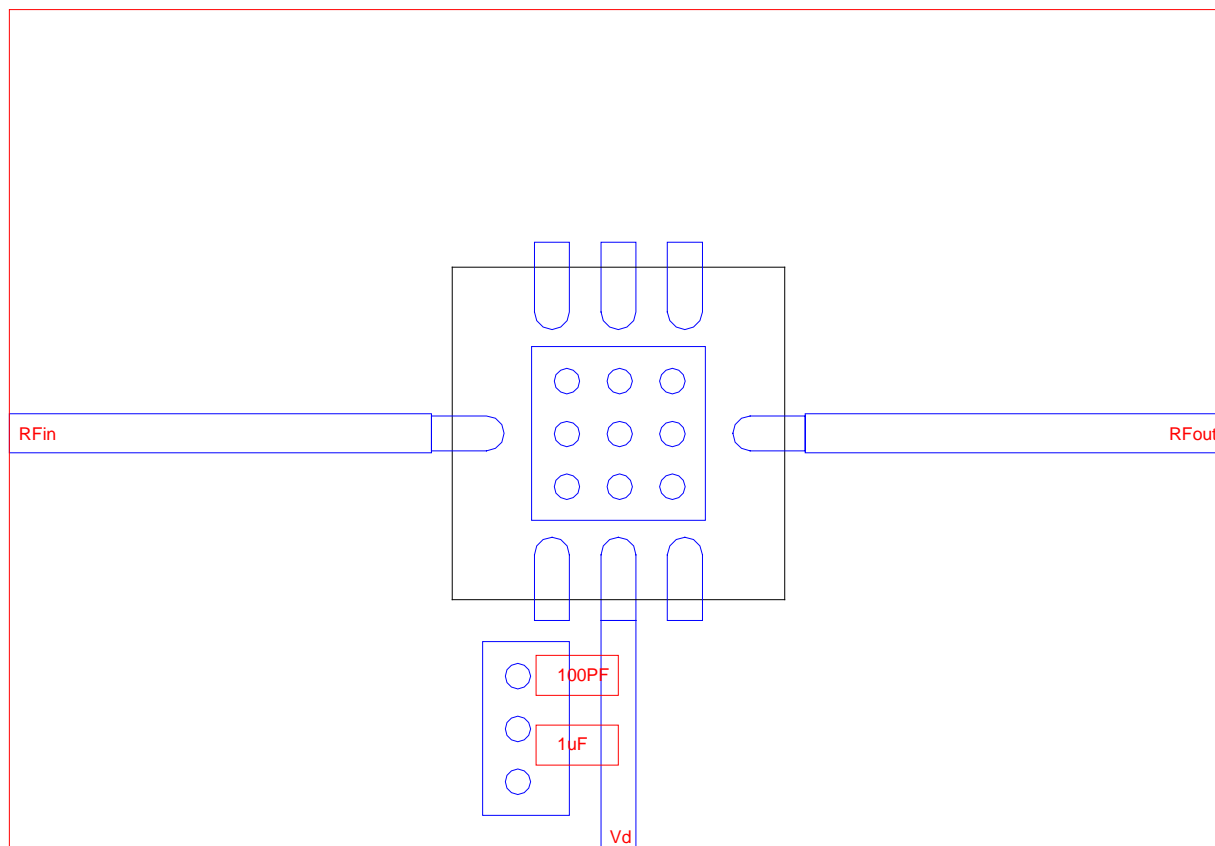
Units: Millimeters

Package tolerance: +/- 0.10

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

Recommended Board Layout Assembly



All measurement was made with part solder to 0.008 in thick of RO4003

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