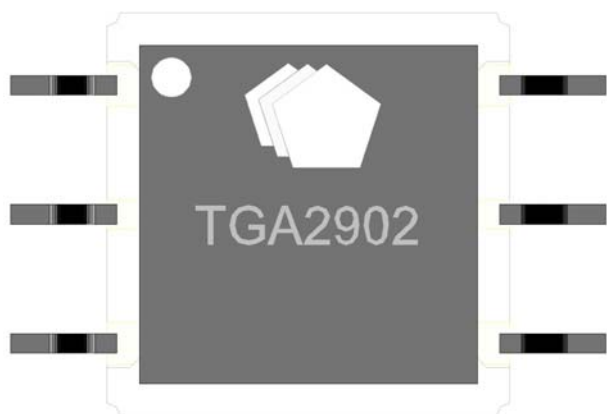
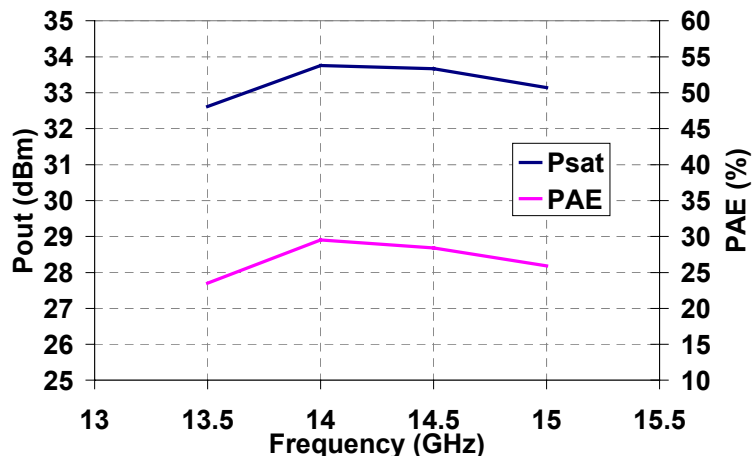
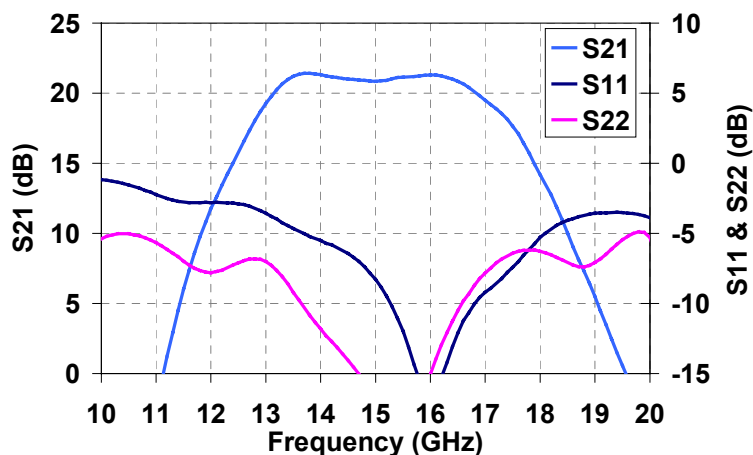


13 - 15 GHz 2 Watt Packaged Amplifier TGA2902-EPU-SG



Preliminary Measured Performance

Bias Conditions: $V_d=7V$ $I_d=640mA$



Key Features and Performance

- 33.5 dBm Midband Pout
- 22 dB Nominal Gain
- 8 dB Typical Input Return Loss
- 10 dB Typical Output Return Loss
- Directional Power Detector with Reference
- 0.5 μ m pHEMT Technology
- Bias Conditions: 7V, 640mA
- Chip dimensions: 2.0 x 1.4 x 0.1 mm (80 x 55 x 4 mils)

Primary Applications

- VSAT
- Point to Point

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**

Symbol	Parameter <u>4/</u>	Value	Notes
V^+	Positive Supply Voltage	8 V	<u>3/</u>
V^-	Negative Supply Voltage Range	-5V to 0V	
I^+	Positive Supply Current (Quiescent)	TBD	<u>3/</u>
$ I_G $	Gate Supply Current	18 mA	
P_{IN}	Input Continuous Wave Power	24 dBm	<u>3/</u>
P_D	Power Dissipation	TBD	<u>3/</u>
T_{CH}	Operating Channel Temperature	150 °C	<u>1/</u> <u>2/</u>
T_M	Mounting Temperature (30 Seconds)	320 °C	
T_{STG}	Storage Temperature	-65 to 150 °C	

- 1/ These ratings apply to each individual FET.
- 2/ Junction operating temperature will directly affect the device median time to failure (T_M). For maximum life, it is recommended that junction temperatures be maintained at the lowest possible levels.
- 3/ Combinations of supply voltage, supply current, input power, and output power shall not exceed P_D .
- 4/ These ratings represent the maximum operable values for this device.

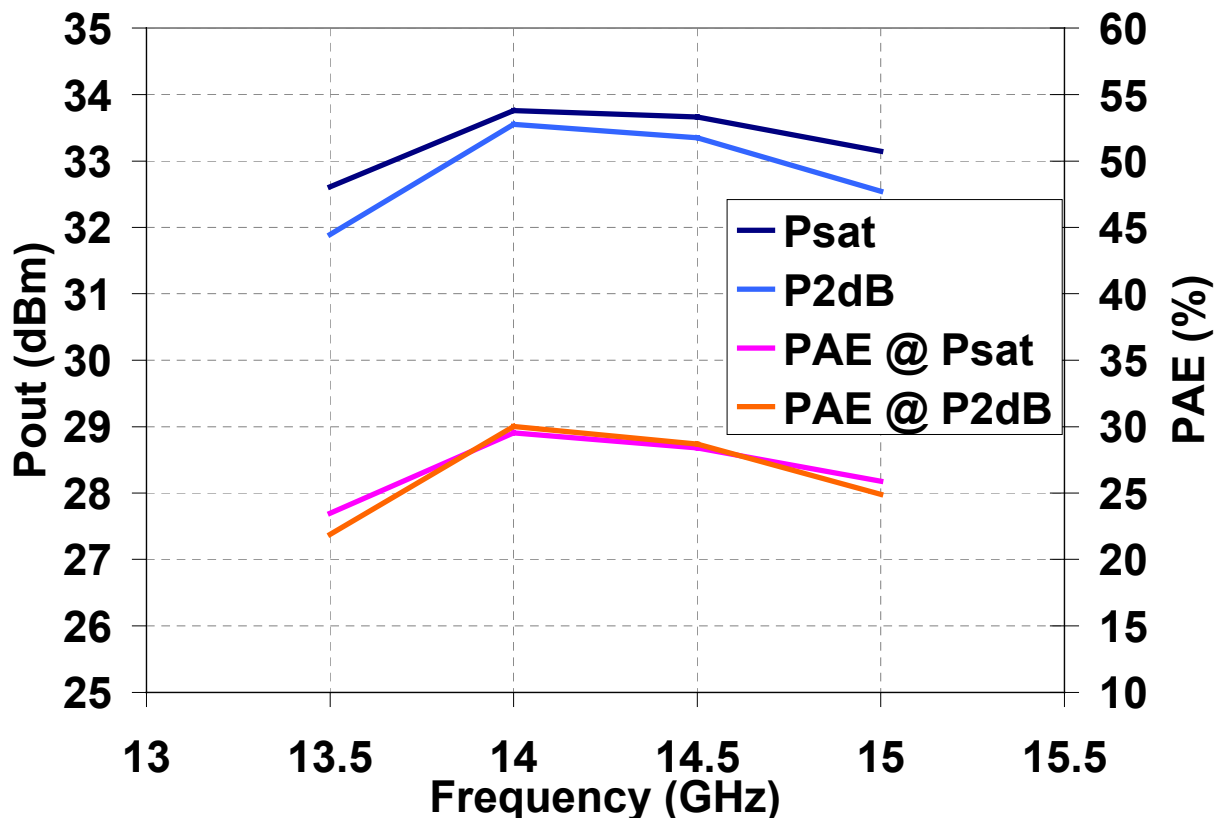
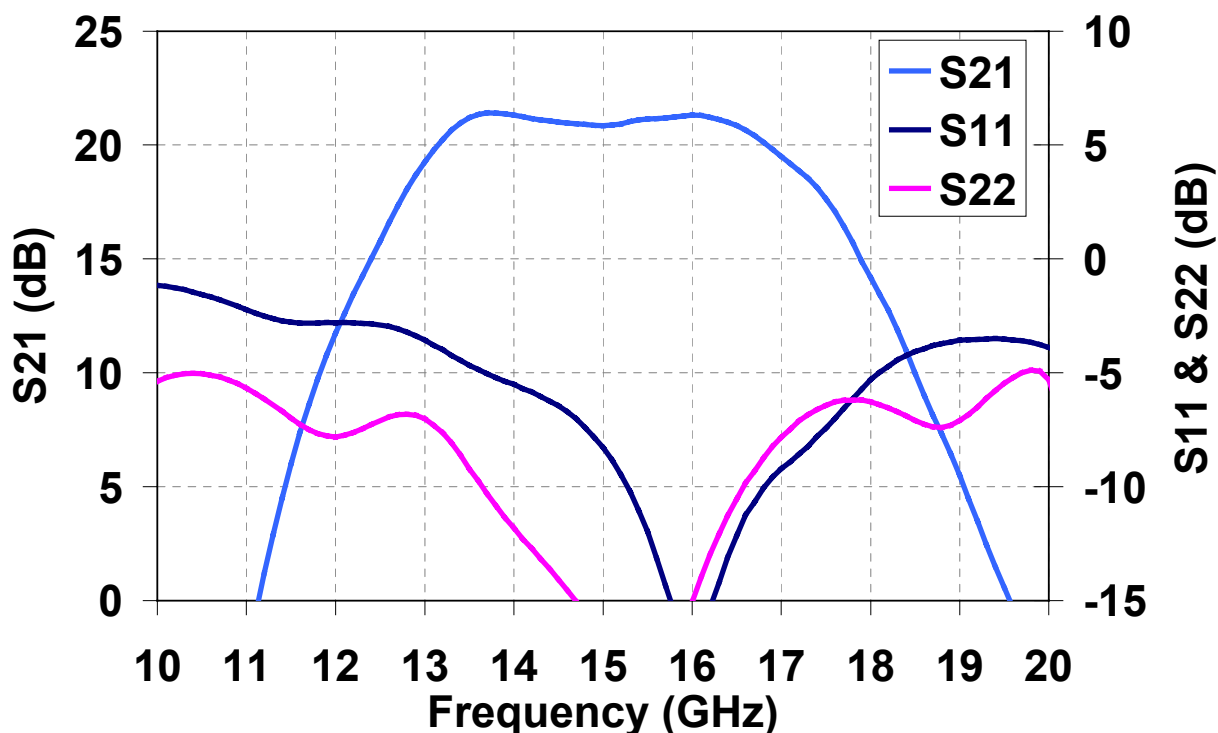
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TABLE II
RF CHARACTERIZATION TABLE
($T_A = 25^\circ\text{C}$, Nominal)
($V_d = 7\text{V}$, $I_d = 640\text{mA} \pm 5\%$)

SYMBOL	PARAMETER	TEST CONDITION	LIMITS			UNITS
			MIN	TYP	MAX	
Gain	Small Signal Gain	F = 13.75-14.5		22		dB
IRL	Input Return Loss	F = 13.75-14.5		8		dB
ORL	Output Return Loss	F = 13.75-14.5		10		dB
PWR	Output Power @ P2dB	F = 13.75-14.5		33.5		dBm
PAE	Power Added Efficiency @ P2dB	F = 13.75-14.5		27		%

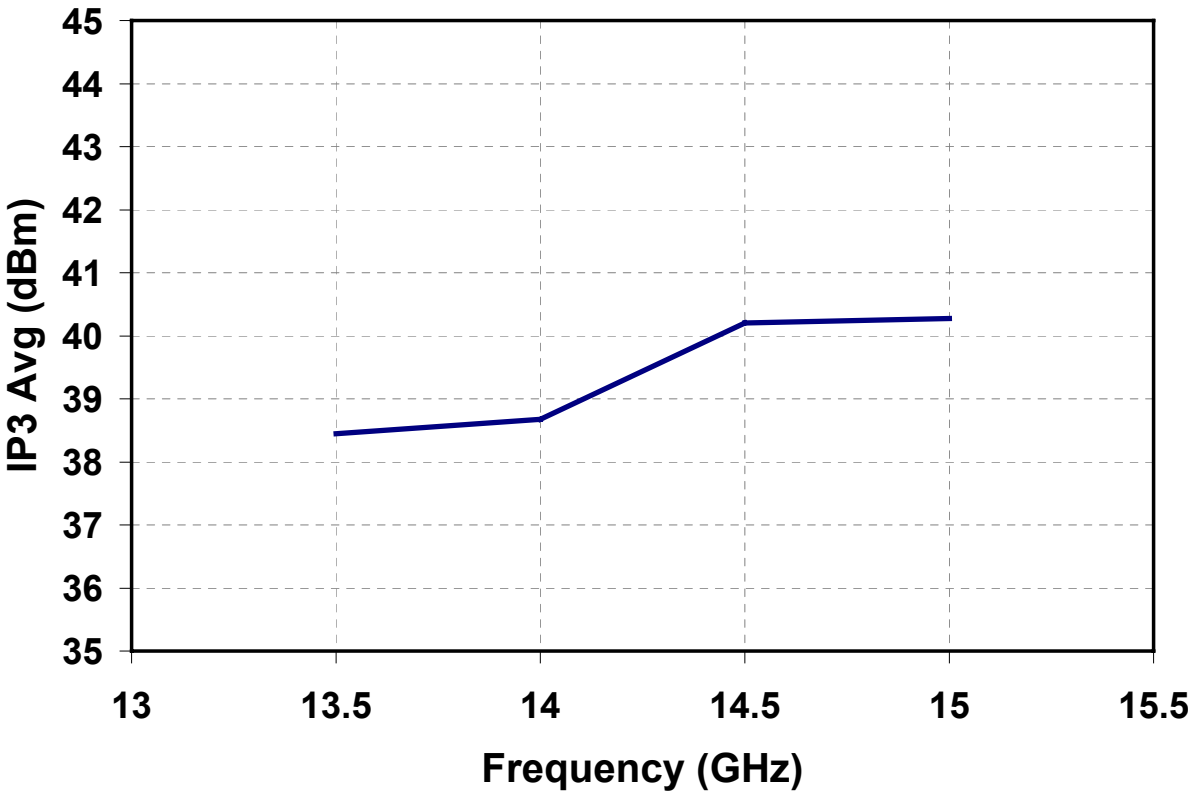
Note: Table III Lists the RF Characteristics of typical devices as determined by fixtured measurements.

Typical Fixtured Performance



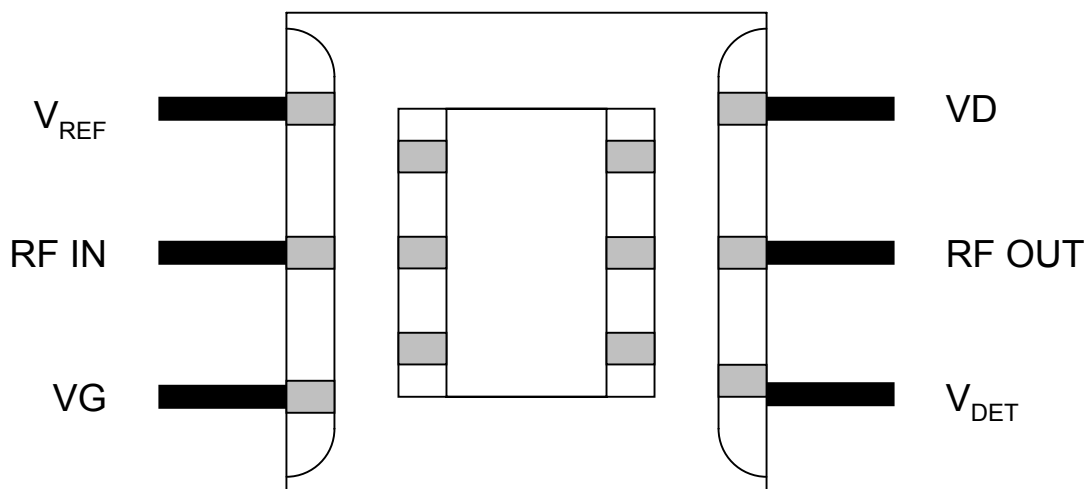
Note: Devices designated as EPU are typically early in their characterization process prior to finalizing all electrical and process specifications. Specifications are subject to change without notice.

Typical Fixtured Performance



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

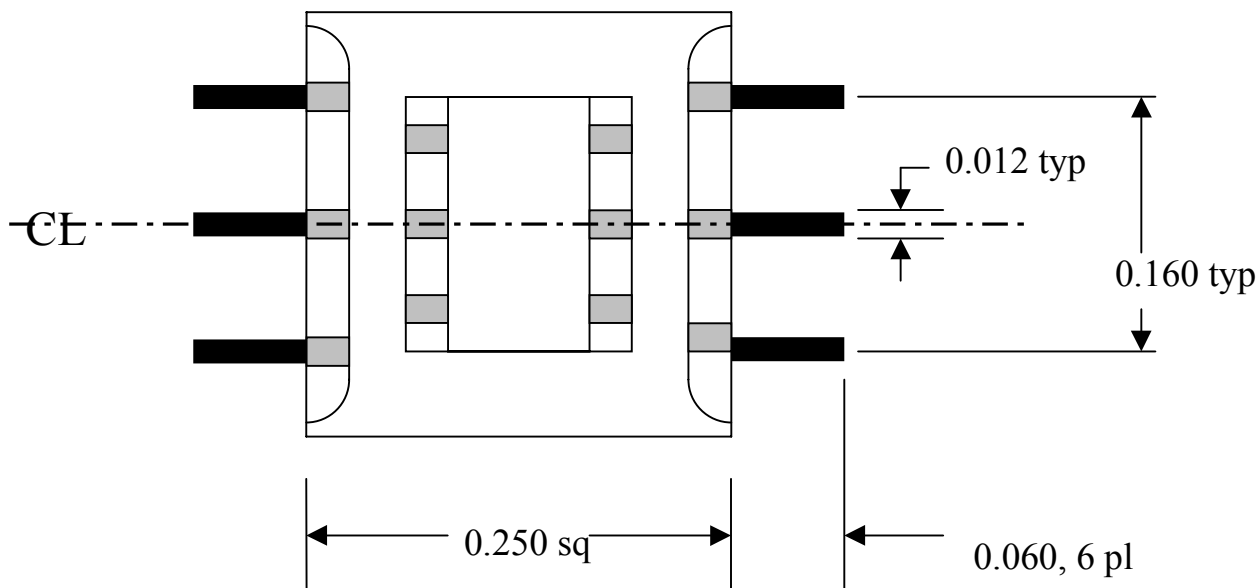


GaAs MMIC devices are susceptible to damage from Electrostatic Discharge. Proper precautions should be observed during handling, assembly and test.

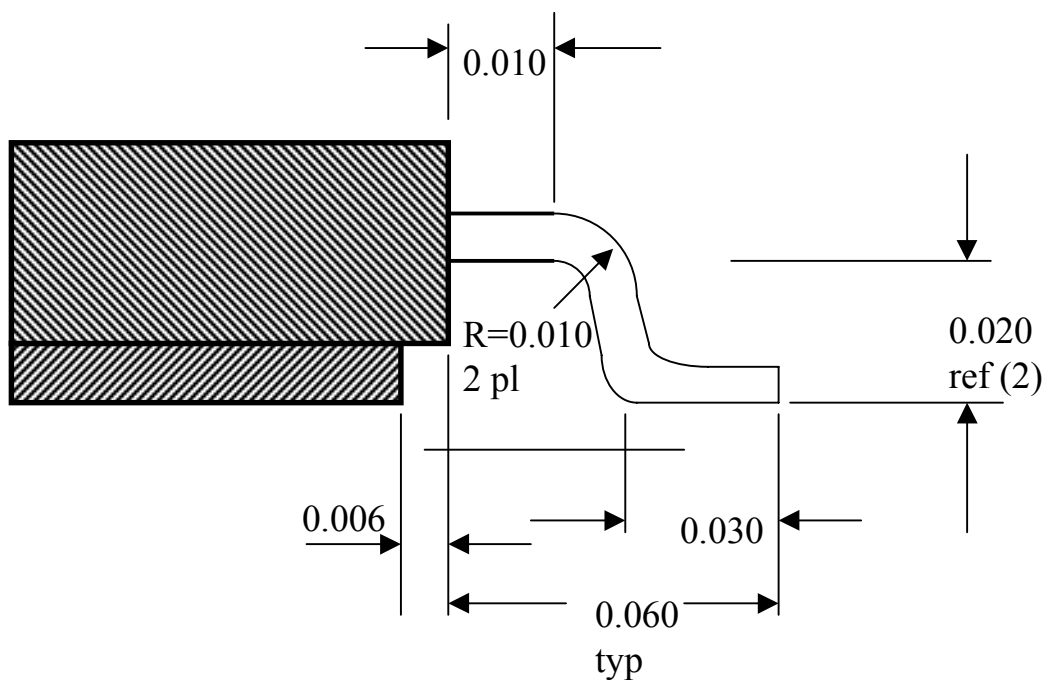
Note: Devices designated as EPU are typically early in their characterization process prior to finalizing all electrical and process specifications. Specifications are subject to change without notice.

Mechanical Drawing

Dimensions in inches



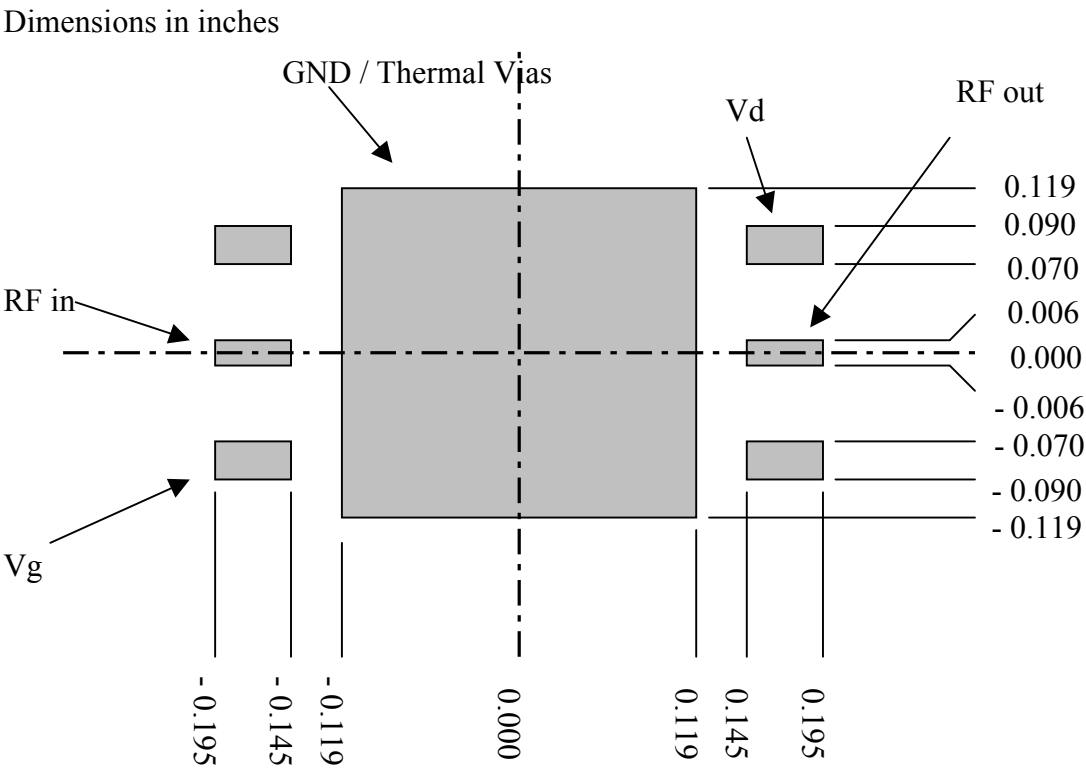
Top View



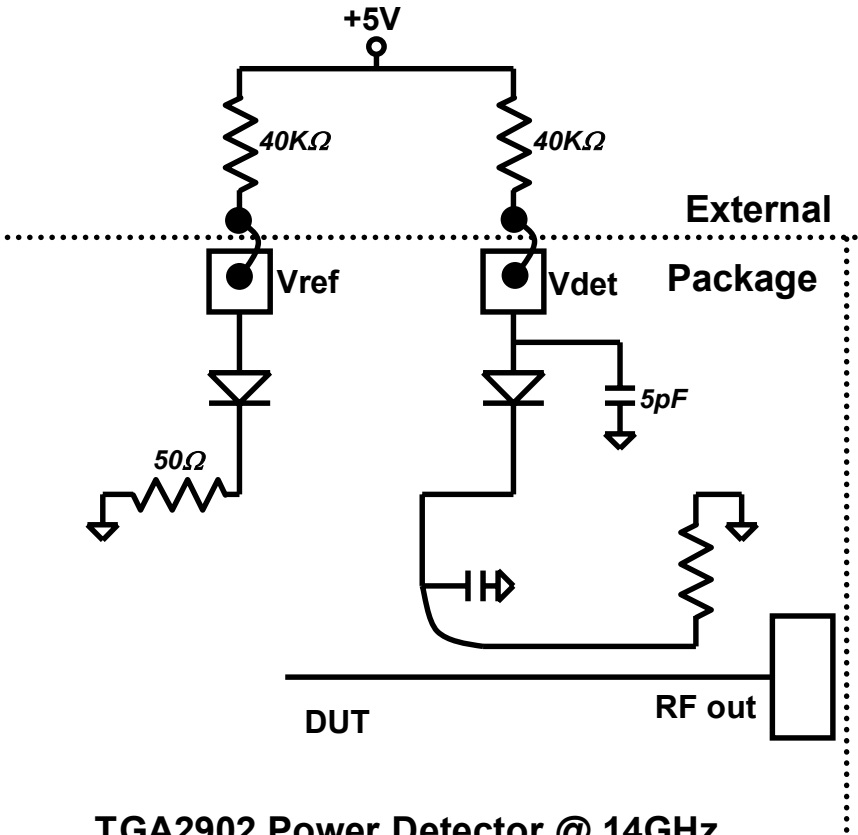
Side View

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.

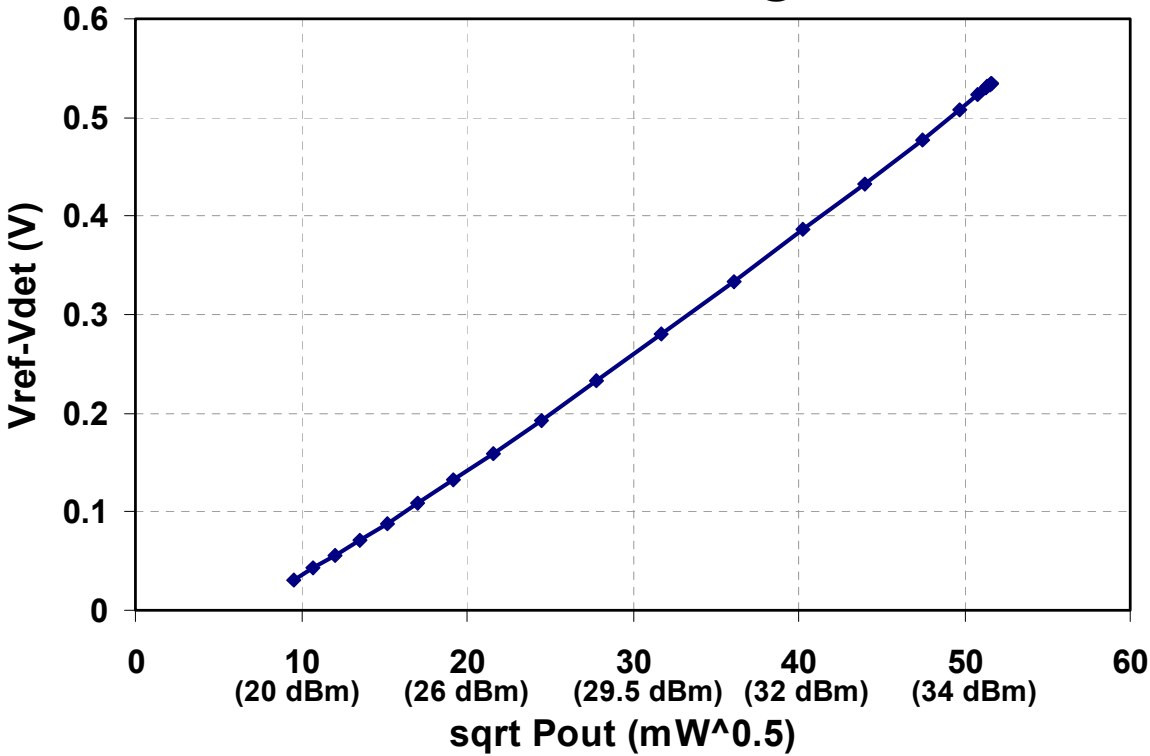
Recommended PWB Land Pattern



Power Detector



TGA2902 Power Detector @ 14GHz



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.