

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

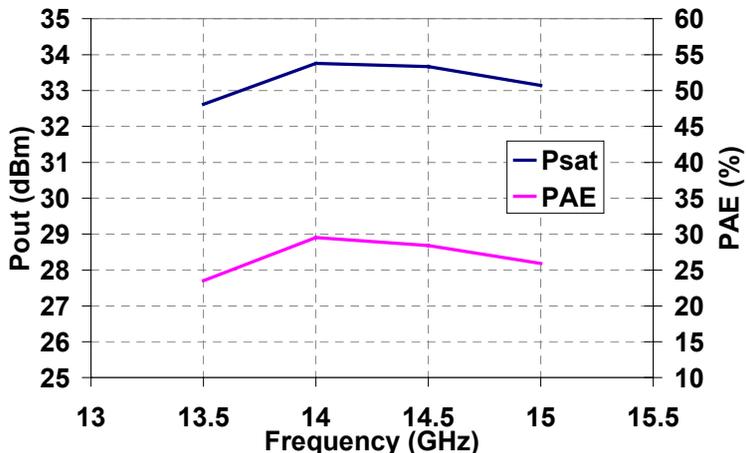
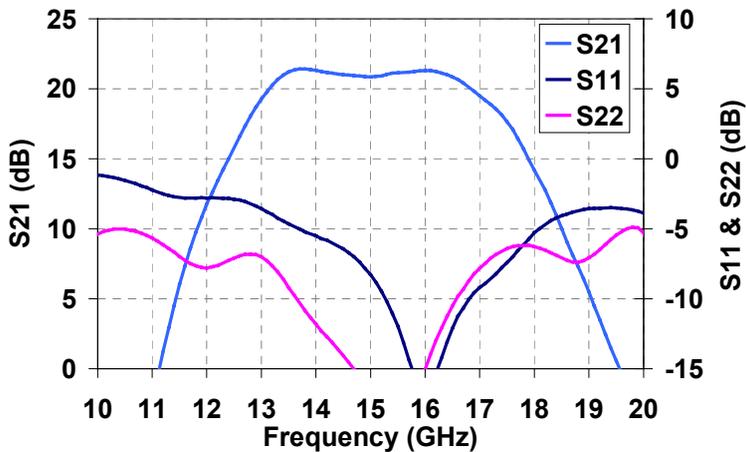


Key Features and Performance

- 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
- 0.5µm pHEMT Technology
- Bias Conditions: 7V, 640mA
- Chip dimensions: 2.0 x 1.4 x 0.1 mm (80 x 55 x 4 mils)

Preliminary Measured Performance

Bias Conditions: Vd=7V Id=640mA



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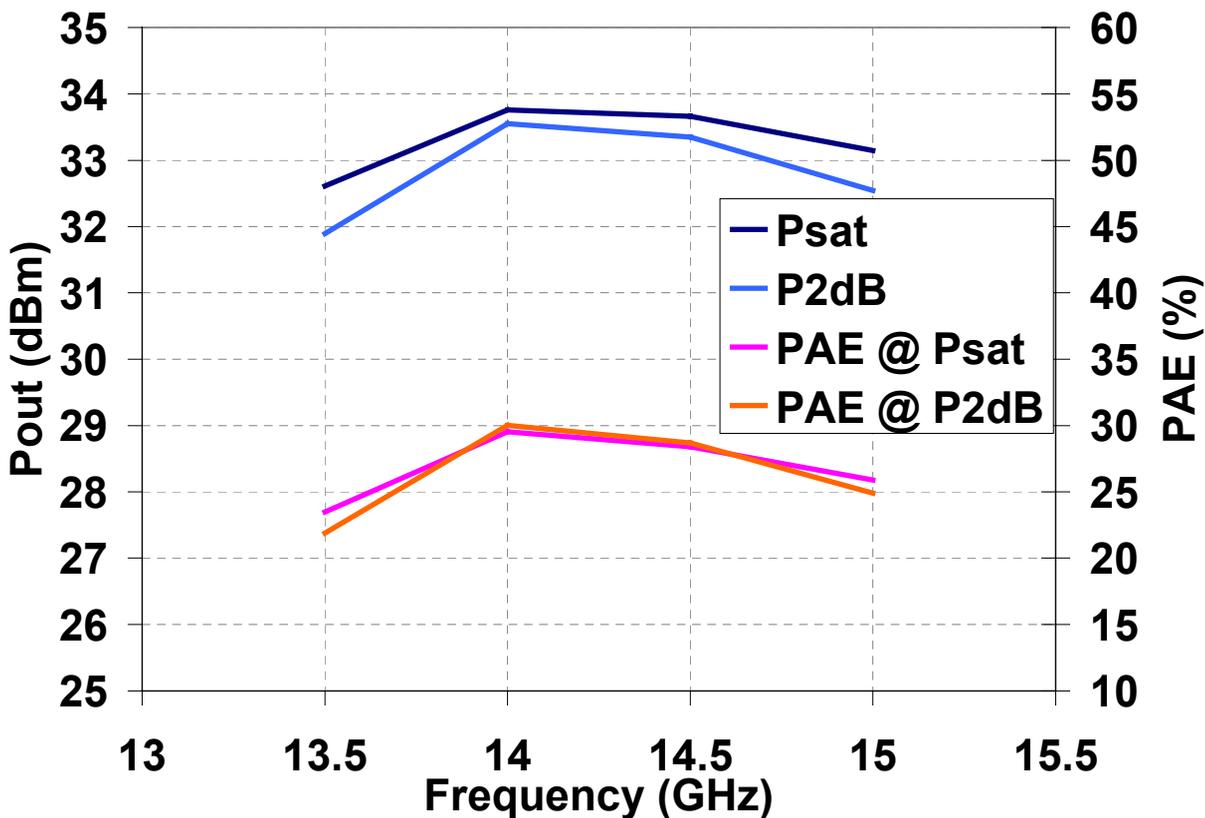
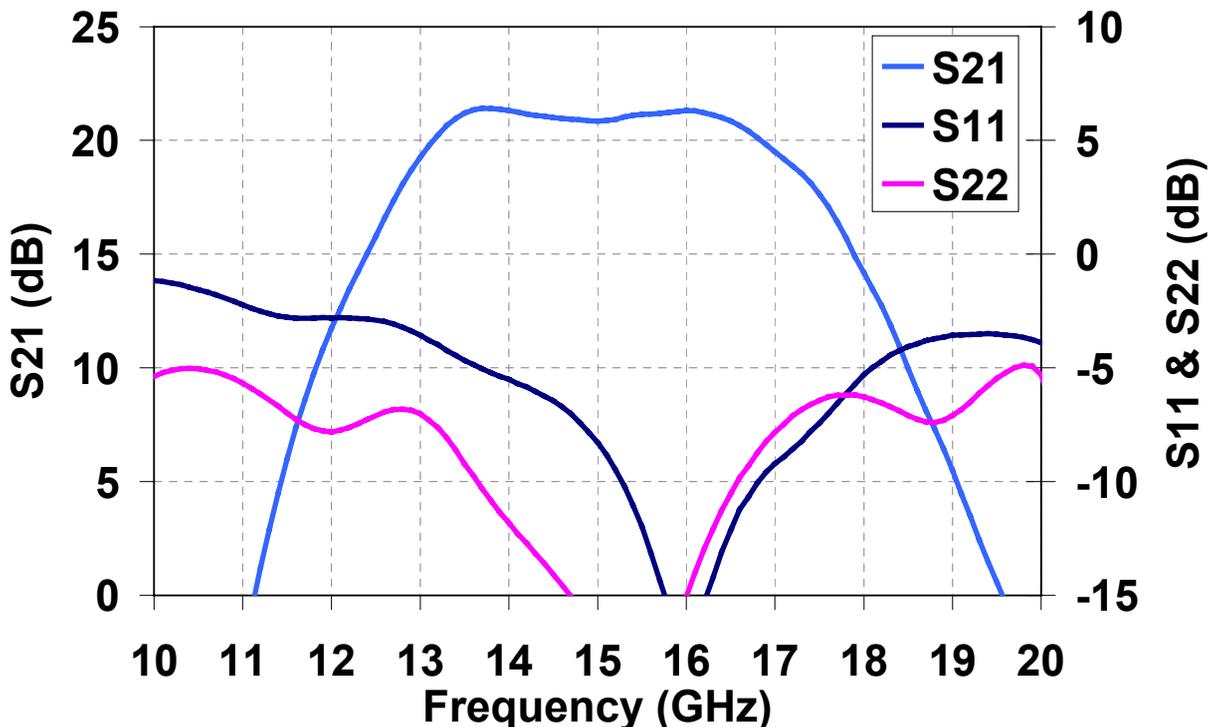
TABLE II
RF CHARACTERIZATION TABLE
($T_A = 25^\circ\text{C}$, Nominal)
($V_d = 7\text{V}$, $I_d = 640\text{mA} \pm 5\%$)

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.

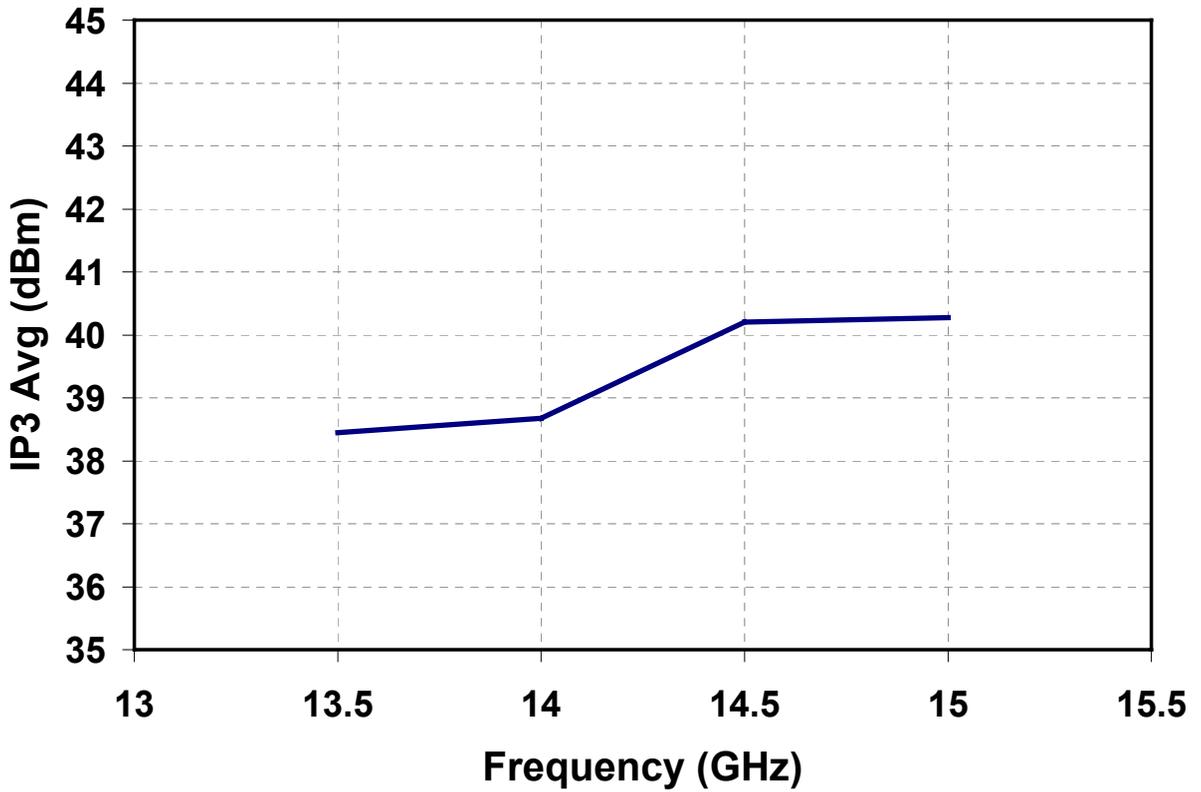
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Typical Fixtured Performance



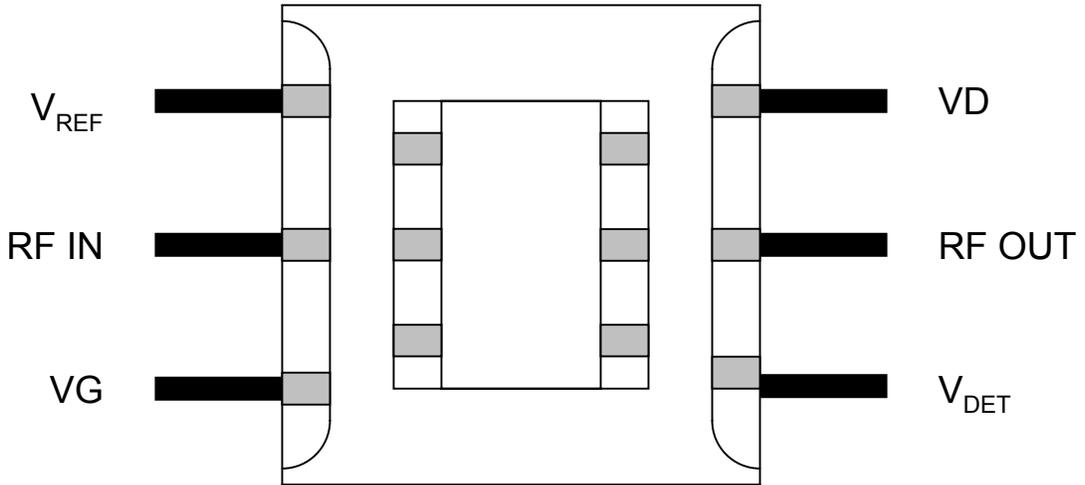
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Typical Fixtured Performance



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Package Pinout Diagram

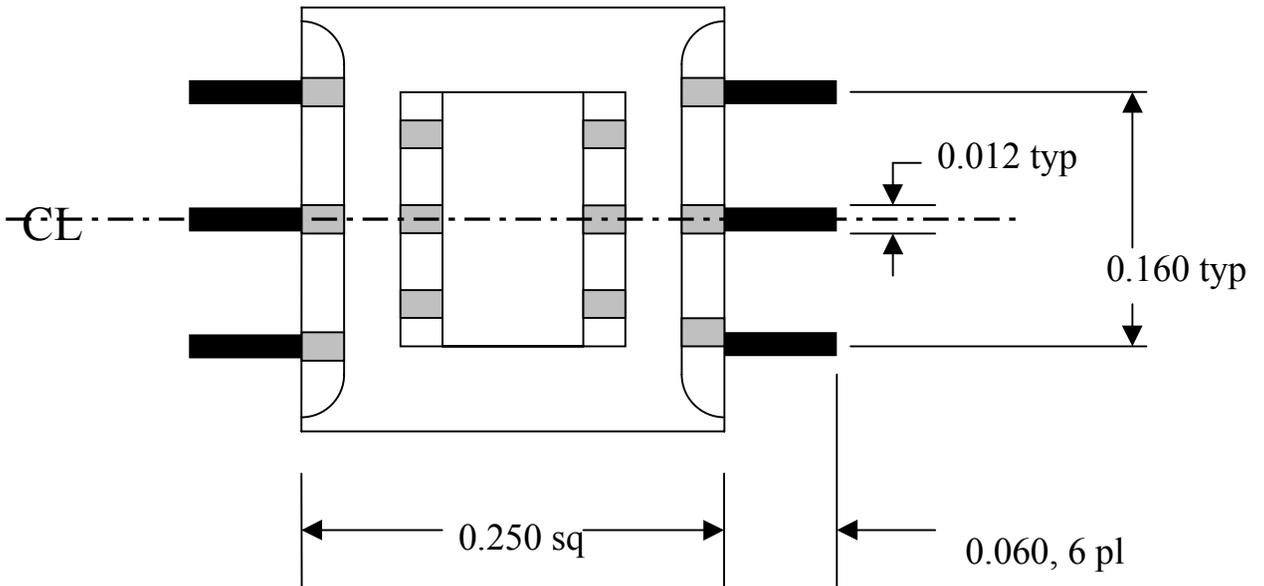


GaAs MMIC devices are susceptible to damage from Electrostatic Discharge. Proper precautions should be observed during handling, assembly and test.

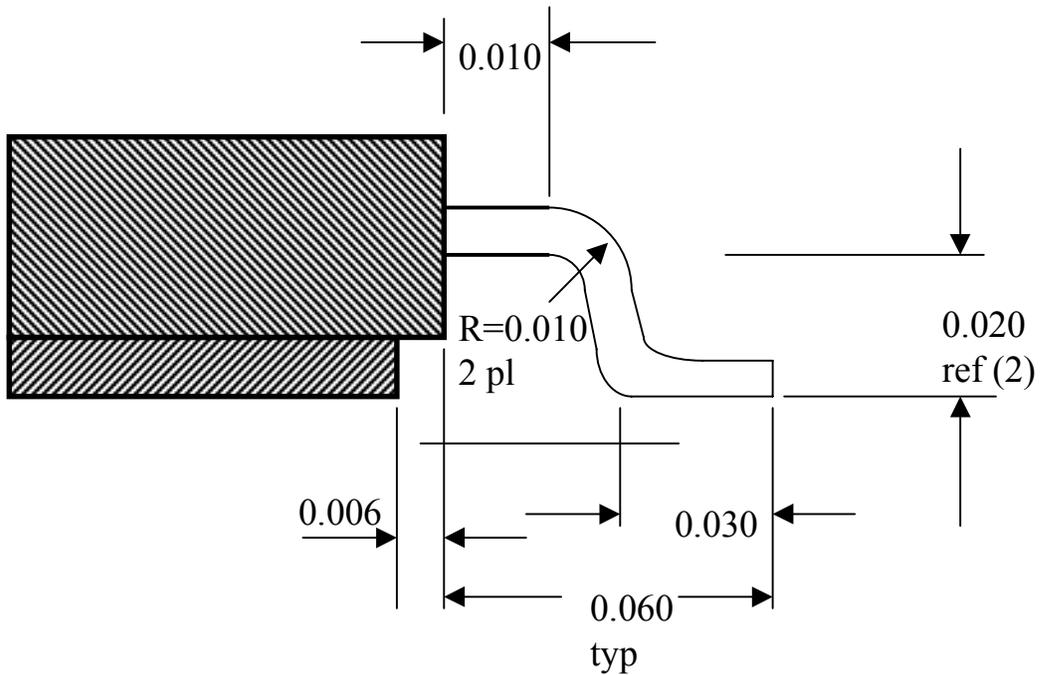
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Mechanical Drawing

Dimensions in inches



Top View

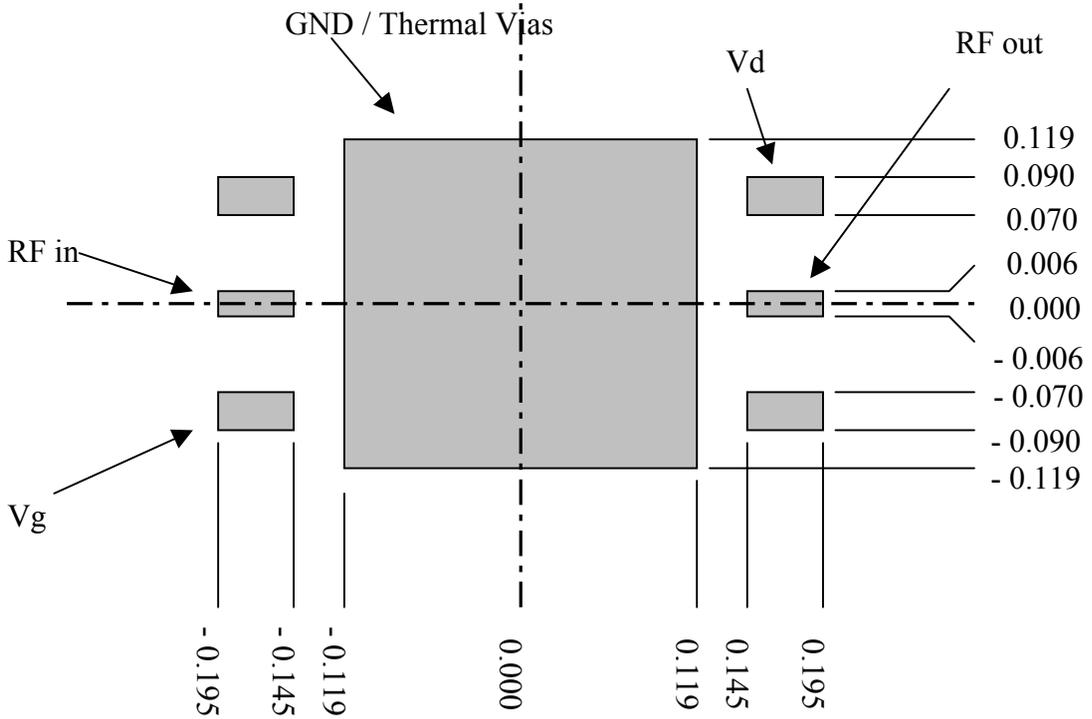


Side View

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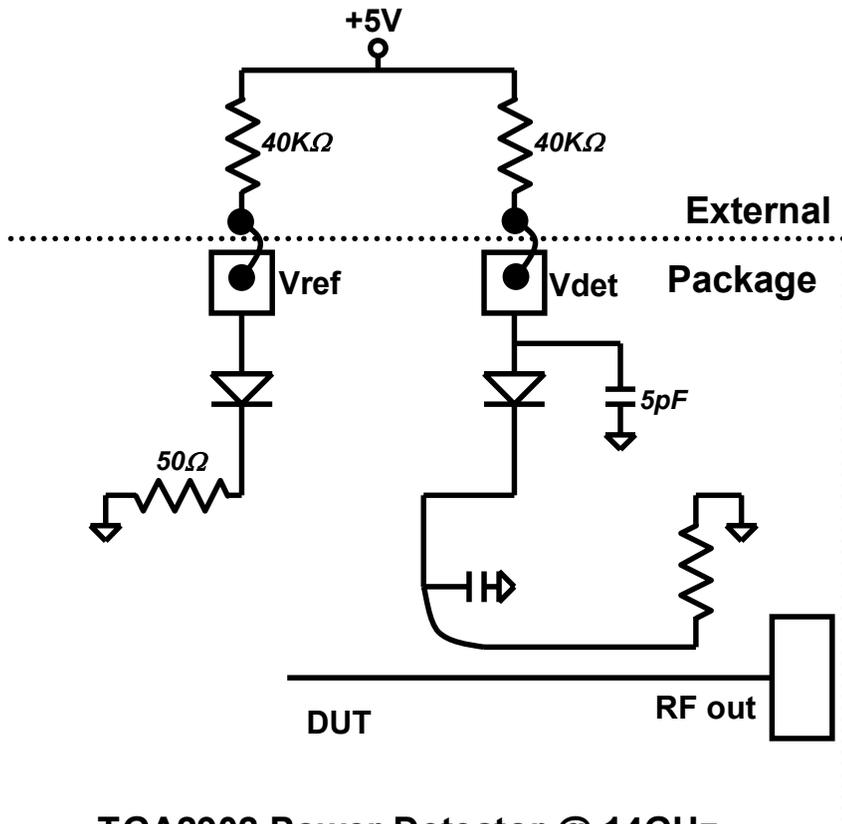
Recommended PWB Land Pattern

Dimensions in inches

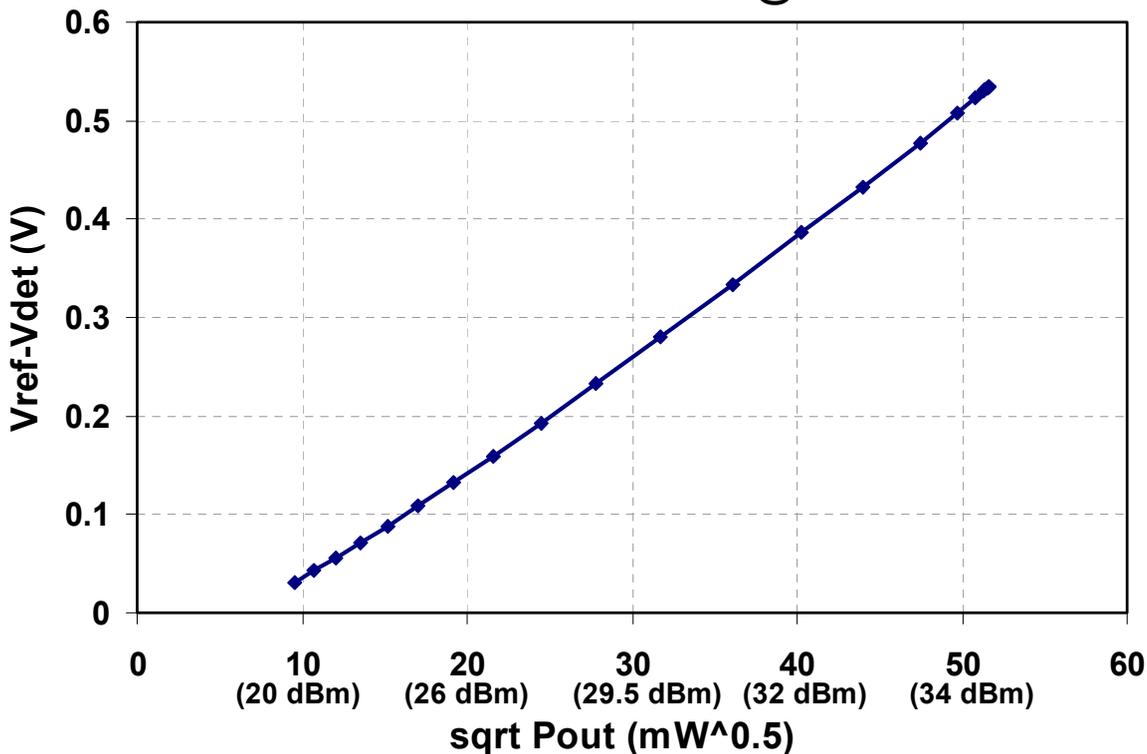


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Power Detector



TGA2902 Power Detector @ 14GHz



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